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NUCLEAR SCIENCE ABSTRACTS

1968 Annual Index

Part 3

Subjects

Neodymium Hydroxides to Zymosan

UNITED STATES ATOMIC ENERGY COMMISSION
Division of Technical Information

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Vol. 22
1968
Subject index
Neodymium–
Zymosan

UNITED STATES ATOMIC ENERGY COMMISSION

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NUCLEAR SCIENCE ABSTRACTS

Volume 22

1968 ANNUAL INDEX

Part 3

Subjects

Neodymium Hydroxides - Zymosan

12 Jun 69

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TABLE OF CONTENTS

Volume 22, Annual Index, December 31, 1968

Page

PART 1

CORPORATE AUTHOR INDEX 1

PERSONAL AUTHOR INDEX 133

PART 2

SUBJECT INDEX 1
A-1 Reactor – Neodymium Hydrides

PART 3

SUBJECT INDEX 1095
Neodymium Hydroxides – Zymosan

Volume 22, Annual Index, December 31, 1968

NUCLEAR SCIENCE ABSTRACTS

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- United Kingdom Atomic Energy Authority

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Information on the availability of the published literature and unpublished conference papers abstracted in *Nuclear Science Abstracts* can be obtained from the USAEC Division of Technical Information Extension, P. O. Box 62, Oak Ridge, Tennessee 37830. In addition to the CFSTI availability cited in the Report Number Index, USAEC translations are also on deposit at the National Translation Center, John Crerar Library, Chicago, Illinois 60616.

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All documents abstracted are indexed by subjects and personal authors. Technical report literature is indexed also by corporate author and report number. Each of these indexes in every issue is preceded by an introduction explaining in detail the organization of the index and the principles by which it is compiled. The reader is referred to these explanations for information not found in the brief summary below.

Index References

All index entries refer the reader to volume and abstract number:

FOURRIER, Alain
Radioactive chain of mass number 189, 21:10023

Personal Authors

Every author's name is indexed in the form appearing on the document abstracted:

MONTH, M.
Theory of gradient perturbations in AGS, 21:9872 (BNL-10899)
MONTH, Melvin
Simple relativistic calculation of the electromagnetic form factors of the deuteron, 21:9744

Subjects

The subject index consisting of specific materials, objects, and processes is arranged alphabetically. Modifying phrases specific to these subjects in turn are arranged alphabetically under the subjects.

NUCLEAR MODELS
collective, rotational motions in, (T), 22:37383
Davydov, non-adiabaticity of beta vibrations in even-even rare-earth nuclei, (T), 22:37375 (AD-664798)
Hartree--Fock--Bogolyubov projected spectra for finite nuclei, (T), 22:37392

URANIUM OXIDES UO_2
analysis for microdiffusions of tungsten, laser sampling techniques for spectroscopic, 22:35759
analysis of irradiated, electron-microprobe, 22:36543 (ANL-7450, pp 39-74)
deformation at 1100°C of monocrystals of, pneumatic impaction, 22:36534 (BNWL-724)
drying prior to sintering of extruded rods of, process for, 22:36531(P)
electron diffraction on single-crystal surfaces of, effects of crystal surface on, 22:36549
etching of, 22:36526 (LA-DC-9616)

Corporate Authors

Technical report literature is indexed from the name of the organization or institution responsible for the issuance of the report.

8500 (Y-1561) MIXING AND SAMPLING ENRICHED ^{235}U FLUIDS IN CYLINDRICAL STORAGE CONTAINERS. Final Report. Harrell, J. E. **(Union Carbide Corp., Oak Ridge, Tenn. Y-12 Plant).** Jan. 17, 1967. Contract W-7405-eng-26. 124p. Dep. mn. CFSTI $3.00 cy, $0.65 mn.

is indexed as:

UNION CARBIDE CORP., OAK RIDGE, TENN. Y-12 PLANT.
Mixing and sampling enriched ^{235}U fluids in cylindrical storage containers, 21:8500 (Y-1561)

Report Numbers

Technical report literature is also indexed by report numbers. This index includes information on where individual reports may be obtained. While not reports, patents and conference papers are indexed here as a matter of convenience.

TID- 3311(Suppl. 2)	21-8567	Dep. mn. CFSTI $3.00 cy, $0.65 mn
22298	21-9915	Nucl. News, 9: No. 12, 17-21 (Dec. 1966)
22298	21-9914	Nucl. News, 10: No. 1, 17-20(Jan. 1967)
23267	21-9702	Phys. Rev., 152: 1171-82(Dec. 23, 1966)
23287	21-8498	Dep. mn. CFSTI $3.00 cy, $0.65 mn
23420	21-8764	Lancet, 2: 672-5(Sept. 24, 1966)
23474	21-8528	Dep. mn. CFSTI $3.00 cy, $0.65 mn
23478	21-8641	Dep. mn. CFSTI $3.00 cy, $0.65 mn
23482	21-9471	Dep. mn. CFSTI $3.00 cy, $0.65 mn

SUBJECT INDEX

Cross references are included in cumulative subject indexes and in *Subject Headings Used by the USAEC Division of Technical Information* (USAEC report TID-5001(8th Rev.)).

The reader is also referred to *Guide to Abstracting and Indexing for Nuclear Science Abstracts* (USAEC report TID-4576(Rev.3)).

Most headings in the subject index are specific materials, things, and processes. The headings are followed by modifiers that describe the properties of, or processes applied to, the headings.

All index entries cite *NSA* volume and abstract numbers; volume number precedes the colon and the abstract number follows it. The designation (R) following the abstract number indicates a progress report; (P) indicates a patent; and (T) indicates a translation. Abstracts for reports other than progress reports carry no letter designation. Report numbers, where applicable, are included in parentheses after the abstract number of the citation. Published literature (journal article or book) can be identified by the absence of a report number.

Ideas presented in the original literature, rather than key words, have been indexed. The indexers have selected what seemed the most probable and logical place to look for typical information. Since it is not always possible to anticipate where a user would look for information, the cumulative indexes include numerous cross references. Consideration of synonymous or closely related terms will prove valuable.

Information is indexed for the greatest use to the greatest number of users. This requires that a topic be indexed to headings that most specifically describe it and not ordinarily to the headings that describe its ultimate use or to the general class headings that include the specific headings. For example, information on boiler design for the Fermi Fast Breeder Reactor would be indexed under the headings BOILERS and FERMI FAST BREEDER REACTOR but not necessarily under the headings REACTORS, FAST or REACTORS, BREEDER.

General or broad headings are reserved for general summaries, reviews, comprehensive reports, and similar literature.

Subject Heading Styles

Generally, the direct form of subject entry is used rather than inverted headings; e.g., AMINO ACIDS rather than ACIDS, AMINO; HELIUM ISOTOPES He-4 rather than HELIUM—ISOTOPES He-4 or HELIUM—He-4 ISOTOPES. Note, however, that in some cases parenthetic modifying terms or inverted headings such as NEUTRONS, FAST, are used where the alphabetical arrangement of a direct entry would cause information to be scattered. In addition, organic compounds are usually entered in the index in the inverted form to facilitate grouping like or related compounds with the parent compounds; e.g., BENZENE, BROMO- rather than BROMOBENZENE. In general, the nomenclature used is that of the subject indexes to *Chemical Abstracts.*

Alphabetization

Subject headings are alphabetized word by word. Parenthetic qualifiers, numbers, and Greek letters within subject headings are disregarded in alphabetizing unless there are two or more headings that are otherwise identical, in which case the qualifier, numerical progression, or spelled names for the Greek letters determine the order.

Examples:

M-Capture
  see ELECTRON CAPTURE
MAGNESIUM
MAGNESIUM ALLOYS AND SYSTEMS
MANGANESE FLUORIDES
MANGANESE FLUORIDES MnF_2
MESONS
MESONS (π)
MESONS (ρ)
1-PENTANOL
2-PENTANOL

Modifying Phrases

The modifiers appearing under a subject heading are written specifically to show the relation between the item being indexed and the heading. The modifier therefore contains a maximum of useful information. Although the modifier begins with the word judged to be of greatest use to the greatest number of users, there is still need for the searcher to consider all modifiers under the heading(s) of interest.

Modifiers usually form meaningful phrases when combined with the subject heading. Some are intended to be read following the subject heading, e.g., the entry HYDROGEN—sorption by charcoal should be read "hydrogen sorption by charcoal." As a result of placing the important word first, however, many modifiers must be rearranged for smooth reading, e.g., FORMALDEHYDE—yields in radiolysis of ethyl ether, effects of deuterium on, should be read "effects of deuterium on formaldehyde yields in radiolysis of ethyl ether" and URANIUM—crystal structure of, effect of cooling rate on allotropic transformations in, should be read "effect of cooling rate on allotropic transformations in crystal structure of uranium."

Special characters are added to modifiers in the fields of physics and reactor technology; if the modifier does not establish the experimental or theoretical character of a reference, a symbol (E), (T), or (E/T) is placed immediately after the modifying phrase and before the abstract number.

Physical States and Configurations of Materials

The specific physical state, if other than normal, or the geometric configuration of the material is included in the modifying phrase; e.g., information on liquid metals is indexed under the specific metal with "liquid" in the modifier and carbon crucibles is indexed under CARBON with "crucibles" appropriately placed in the modifier. The information on carbon crucibles is also indexed under CRUCIBLES.

Nomenclature of Inorganic Compounds

Inorganic compounds are indexed to subject headings in the direct form. Cations are listed in the order of increasing valence for polycationic salts of varying valence and in alphabetic order for polycationic salts in which all cations have the same valence; e.g., SODIUM ALUMINUM SILICATES and POTASSIUM SODIUM SULFATES. If more than one anionic species is presented in a compound, the anions are arranged alphabetically, e.g., BERYLLIUM FLUORIDE HYDROXIDES.

Nomenclature of Organic Compounds

Organic compounds are indexed by subject headings based on the indexes to *Chemical Abstracts* except in the area of enzymes, in which specific enzymes, named according to the 1964 recommendations of the International Union of Biochemistry, are used. In many cases nonproprietary names for drugs are used as subject headings, and cross references are made from the systematic chemical names. Subject headings for hormones appear in the inverted style at HORMONES.

Nomenclature of Life Sciences

Subject headings for plants are names of phyla with one exception: members of the Phylum Tracheophyta are indexed under class or subclass names. Scientific names (genus and species) are used as the initial, or file, word in the modifying phrase. Scientific names are omitted only when the name is not available in the literature or cannot be found in available references.

Subject headings for animals are the names of phyla with the following exceptions: (1) members of Phylum Arthropoda and Phylum Chordata are indexed under appropriate class name, and (2) common names are used for members of Class Mammalia.

Subject headings are entered for various classes of commodities, and specific products are identified in the file-word position of the modifier. In the following examples, approved subject headings are capitalized and typical modifier file words are listed in lower case.

Example 1	Example 2
CEREALS	MEATS
bread	beef
flour	fish
oats	mutton
rice	pork
rye	poultry
wheat	seafood

Diseases, pathological conditions, and in vitro studies of atypical cells and tissues are indexed under subject headings for the organism affected, under the appropriate anatomical structure of physiological phenomenon affected, and under the appropriate disease heading. Subject headings for diseases (defined as any deviation from the norm) are DISEASES; DISEASES, INFECTIOUS; DISEASES, NEOPLASTIC; DISEASES, PHYSIOLOGICAL; DISEASES, PLANT; and DISEASES, TRAUMATIC.

Diseases of mixed etiology are treated in the following manner: neoplastic diseases that are also classified as infectious or physiological are indexed under DISEASES, NEOPLASTIC; diseases in which a microorganism is the etiologic agent are classified under DISEASES, INFECTIOUS; physiological anomalies that are neither neoplastic nor infectious are indexed under DISEASES, PHYSIOLOGICAL; the acute radiation syndrome, nonspecific radiation injuries, trauma, and wounds or incisions inflicted mechanically are indexed under DISEASES, TRAUMATIC.

Specific diseases or pathological conditions are named in the file-word position of the modifier, in the author's terminology, and are set off from the remainder of the modifier by commas. Neoplasms are designated as benign or malignant in the file-word position when more specific information is not available.

Multicomponent Alloys and Other Systems

Multicomponent alloys and systems, except well-known trade names, are indexed under a subject heading for each component in the form "element systems" for nonmetals or "element alloys and systems" for metals. The modifier begins with element symbols for each component arranged alphabetically. In addition, if significance is placed on the base metal of the alloy, this is indicated by adding "-base" to the element symbol.

Example: A 1.5C, 12Cr, 0.25V, 0.8Mo, bal Fe alloy is indexed as

```
CARBON SYSTEMS
  C--Cr--Fe-base--Mo--V, ...
CHROMIUM ALLOYS AND SYSTEMS
  C--Cr--Fe-base--Mo--V,...
IRON ALLOYS AND SYSTEMS
  C--Cr--Fe-base--Mo--V, ...
MOLYBDENUM ALLOYS AND SYSTEMS
  C--Cr--Fe-base--Mo--V, ...
VANADIUM ALLOYS AND SYSTEMS
  C--Cr--Fe-base--Mo--V, ...
```

Well-known alloys, such as ZIRCALOY-2, are indexed under the trade name; cross references from each component of the alloy to the trade name appear in cumulative indexes.

Multicomponent systems in which nonmetallic elements are present in large percentage and which are commonly referred to as systems or mixtures are indexed in a manner similar to alloys.

Example: A tungsten–silicon preparation is indexed as

```
TUNGSTEN ALLOYS AND SYSTEMS
  Si--W, ...
SILICON SYSTEMS
  Si--W, ...
```

Multicompound systems and mixtures of inorganic compounds are indexed under the subject heading for each component compound; the modifiers begin with an alphabetical listing of compound formulas.

Example: A lead titanate–lead zirconate mixture is indexed as

LEAD TITANATES
  $PbTiO_3$ --$PbZrO_3$
LEAD ZIRCONATES
  $PbTiO_3$ --$PbZrO_3$

A mixed system of compounds and elements is indexed by a combined form of the preceding conventions; e.g., a dispersion of copper and alumina would be indexed as

ALUMINUM OXIDES
  Al_2O_3--Cu, ...
COPPER ALLOYS AND SYSTEMS
  Al_2O_3--Cu, ...

Mixtures of organic compounds are indexed under subject headings for each component of the mixture; the modifiers begin with an alphabetical listing of compound names.

Example:

ACETIC ACID
  acetic acid--BF_3, ...
BORON FLUORIDES
  acetic acid--BF_3, ...

Example:

BENZENE, CHLORO-
  bromophenol--chlorobenzene, ...
PHENOL, BROMO-
  bromophenol--chlorobenzene, ...

If modifiers for alloys and systems are included with other modifiers under the same subject heading, they are filed last.

Example:

CARBON SYSTEMS
  deposition on nuclear fuel
    particles
  molecular structure of
  neutron total cross section for
  sorptive properties for xenon
  Young's modulus for
  Al--C--Cr, superconductivity in
  B--C, phase studies for
  C--U--Zr, fabrication and
    physical properties of

Nomenclature of Reactor Technology

Subject headings for reactors are of three types:

(1) Specific reactors, e.g., ARGONNE RESEARCH REACTOR, SAXTON POWER REACTOR

(2) Reactors having a common physics or engineering characteristic, e.g., REACTORS, FAST; REACTORS, ORGANIC-COOLED; REACTORS, PRESSURIZED-WATER

(3) Reactors having a common purpose, e.g., REACTORS, POWER; REACTORS, RESEARCH

Information on specific reactors, type (1), is indexed under the one specific subject heading. Information on classes or types of reactors, types (2) (characteristics) and (3) (purpose), is indexed under all applicable headings. For example, information on a heavy-water-moderated organic-cooled power reactor is indexed under REACTORS, HEAVY WATER-MODERATED; REACTORS, ORGANIC-COOLED; and REACTORS, POWER.

Subject headings exist for selected reactor components, e.g., REACTOR FUEL ELEMENTS. When applicable, headings for components are indexed even though they may have been included in a modifier under a type (1) or (2) heading. The materials in reactor components are indexed when the information is peculiar to the material.

Modifier file words under reactor headings are of two primary types: one type expresses reactor characteristics, e.g., reactivity; the other, components, e.g., control rod. If no subject heading appears for a reactor component, the heading REACTORS is used, and the component is used as the modifier file word.

- NEODYMIUM HYDROXIDES
  - magnetic properties of, (E), 22:15582
  - precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6375
  - preparation of, 22:22991 (CONF-670502-, pp 175-86)
- NEODYMIUM IODATES
  - precipitation from homogeneous solutions by double complexation and replacement, logarithmic distribution coefficients of fractional, 22:8054
- NEODYMIUM IODIDES
  - spectra of, vapor-phase, 22:30530
- NEODYMIUM IONS
  - abundance in carbon stars of singly ionized, (E), 22:23975
  - energy level transitions in yttrium oxides, calculation of spontaneous emission probabilities for, 22:36724
  - energy levels in trichloride crystals, lifetimes of, (E), 22:50244
  - interactions between pairs of, in lanthanum bromide and lanthanum chloride, EPR study of high-degree exchange, 22:46227
  - multiphonon orbit-lattice relaxation of excited states of, in crystals, (E/T), 22:48183
  - radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622
  - spectra in single crystals of scandium and yttrium oxides, 22:17802
  - spectra of trivalent, environmental effects on f-f transitions in, 22:21054 (ORO-1797-11, pp 1-113)
- NEODYMIUM ISOTOPES
  - determination in irradiated fuel, 22:16316(R) (GEAP-5505)
  - energy-level transitions from deuteron inelastic scattering, collective, (E), 22:27149
  - isotopic shift in, specific displacement and deformation coefficient for, 22:34251
  - masses of stable, measurements of, (E), 22:48570
  - nuclear charge radii variations from isotope shifts of K x rays, (E), 22:18238
  - quadrupole moments of, (E/T), 22:11957
  - x-ray spectra of μ-mesic, isotope shifts in, (E), 22:37281(R) (NYO-72-191)
  - yields in plutonium-239 thermal neutron fission, (E), 22:44680(R) (IN-1189)
  - yields in uranium-238 neutron fission at 14 MeV, cumulative, (E), 22:35325
- NEODYMIUM ISOTOPES Nd-136
  - beta and electron-capture decay of, (E), 22:5815 (JINR-P6-3468)
  - beta and electron-capture decay scheme of, β and γ spectra for, (E), 22:37344 (JINR-P6-3823)
- NEODYMIUM ISOTOPES Nd-137
  - beta and electron-capture decay of normal and isomeric, (E), 22:5815 (JINR-P6-3468)
- NEODYMIUM ISOTOPES Nd-138
  - beta and electron-capture decay of, γ spectra for, (E), 22:3695 (JINR-P6-3541)
- NEODYMIUM ISOTOPES Nd-139
  - half-life of isomeric, (E), 22:27129
- NEODYMIUM ISOTOPES Nd-141
  - beta and electron-capture decay of isomeric, γ spectra for, (E), 22:42026
  - beta and electron-capture decay of, γ spectra from, (E), 22:50643
  - beta and electron-capture decay of, γ spectra from, (E), 22:5850
  - beta and electron-capture decay scheme for, γ spectra for, (E), 22:53095 (BMwF-FBK-68-11)
  - gamma spectra for, singles and coincidence, (E), 22:53095 (BMwF-FBK-68-11)
  - isomeric transition in, γ intensities for, (E), 22:42026
- NEODYMIUM ISOTOPES Nd-142
  - deuteron elastic scattering at 12 MeV, optical-model analysis of angular distribution for, (E), 22:42083
  - deuteron reactions (d,p) at 12 MeV, differential cross sections and optical-model parameters for, (E/T), 22:1697
  - energy level transitions in, γ single and coincidence spectra for, (E), 22:50656
  - energy levels and transitions from promethium-142 decay, (E), 22:32605
  - energy levels and transitions from promethium-142 decay, (E), 22:32604
  - energy levels from praseodymium-142 decay, (E), 22:32566 (COO-1112-167)
  - energy-level scheme of, evaluated data compilation on, (E), 22:3735
  - energy-level transitions in vibrational bands, from oxygen-16 scattering with Coulomb excitation, (E), 22:27154
  - isomeric transition in, half-life for, (E), 22:32610
  - neutron capture by, mass-spectrometric measurements of pile and thermal, (E), 22:39662
  - neutron reactions (n,2n) at 14.2 MeV, cross sections for, (E), 22:32638
  - neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:50649
  - neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
  - neutron reactions (n,p) and (n,2n) at 14 MeV, activation cross sections for, (E), 22:9889
  - neutron resonance parameters at 1.6 to 9.9 keV, (E), 22:7692 (JINR-P3-3564)
  - neutron resonance parameters to 10 keV, (E), 22:27219
  - nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
  - oxygen-16 scattering at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
  - proton elastic scattering at 9 to 12 MeV using polarized protons, isobaric analog resonances in, (E), 22:27214
  - proton elastic scattering at 9.3 to 11.3 MeV, spins of p-, f-, and h-wave levels in neodymium-143 from polarized, (E), 22:7728
  - proton elastic scattering by, isobaric analog resonances in, (T), 22:27254
  - proton elastic scattering with isobaric analog resonance excitation, cross section and polarization for, (T), 22:7690 (JINR-E2-3551)
  - x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)
- NEODYMIUM ISOTOPES Nd-143
  - alpha decay of, α energies and half-life for, (E), 22:35323
  - energy level spins from elastic scattering of polarized protons by neodymium-142 at 9.3 to 11.3 MeV, p-, f-, and h-wave, (E), 22:7728
  - energy levels and transitions from electron-capture decay of promethium-143, (E), 22:1650 (JINR-P6-3471)
  - energy levels from neodymium-142 (d,p) reactions at 12 MeV, (E), 22:1697
  - energy-level scheme of, evaluated data compilation on, (E), 22:3735
  - neutron capture by, γ spectra from thermal, (E), 22:46729(R) (AECL-3157)
  - neutron capture by, mass-spectrometric measurements of pile and thermal, (E), 22:39662
  - neutron reactions (n,α) with, α widths for, (E), 22:27204
  - neutron reactions (n,γα) with, α spectra from thermal, (E), 22:29974
  - neutron resonance parameters at 55 to 1300 eV, (E), 22:7692 (JINR-P3-3564)
  - neutron resonance parameters to 1.0 keV, (E), 22:27219
  - neutron strength function and scattering radius at 0 to 740 eV, (E), 22:37340(R) (EANDC(E)-89(U))
  - nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
  - yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
  - yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
  - yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
- NEODYMIUM ISOTOPES Nd-144
  - alpha transitions from neodymium-143 (n,γα) reactions, (E), 22:29974
  - deuteron elastic scattering at 12 MeV, optical-model analysis of angular distribution for, (E), 22:42083
  - deuteron reactions (d,p) at 12 MeV, differential cross sections and optical-model parameters for, (E/T), 22:1697
  - energy levels above 1789 keV from promethium-144 decay, (E), 22:50628
  - energy levels and transitions from beta decay of praseodymium-144, (E), 22:9891
  - energy levels and transitions from electron-capture decay of promethium-144, (E), 22:1650 (JINR-P6-3471)
  - energy levels from praseodymium-144 decay, parity assignments for, (E), 22:48509(R) (BMwF-FBK-68-22)
  - energy levels from promethium-144 decay, (E), 22:48526
  - energy levels from unified-model in intermediate coupling calculations, (T), 22:1684
  - energy-level parities from linear polarization correlation measurements, (E), 22:7719
  - energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
  - energy-level transitions from promethium-144 decay, (E), 22:50629
  - energy-level transitions in vibrational bands, from oxygen-16 scattering with Coulomb excitation, (E), 22:27154
  - energy-level transitions in, internal pair production in E1, (E/T), 22:20599
  - gamma energies from cerium-144 decay, precision measurements of, (E), 22:32602
  - neutron capture by, mass-spectrometric measurements of pile and thermal, (E), 22:39662
  - neutron resonance parameters at 0.38 to 13.5 keV, (E), 22:7692 (JINR-P3-3564)
  - neutron resonance parameters to 10 keV, (E), 22:27219
  - nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
  - oxygen-16 scattering at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
  - x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)
  - yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
  - yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
  - yields from thermal fission of plutonium-241,

22:47074(R) (IN-1215)
NEODYMIUM ISOTOPES Nd-145
alpha decay of, α energies and half-life for, (E), 22:35323
energy levels at 72 keV, lifetime of, (E), 22:53095 (BMwF-FBK-68-11)
energy levels from neodymium-144 (d,p) reactions at 12 MeV, (E), 22:1697
energy-level scheme of, evaluated data compilation on, (E), 22:3735
gamma resonance absorption at 67 and 72 keV, recoilless, (E), 22:18233
neutron capture by, γ spectra from thermal, (E), 22:46729(R) (AECL-3157)
neutron capture by, mass-spectrometric measurements of pile and thermal, (E), 22:39662
neutron reactions (n,α) with, α widths for, (E), 22:27204
neutron resonance parameters at 42 to 1000 eV, (E), 22:7692 (JINR-P3-3564)
neutron resonance parameters to 1.0 keV, (E), 22:27219
neutron strength function and scattering radius at 0 to 740 eV, (E), 22:37340(R) (EANDC(E)-89(U))
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
nuclear radius of, isomer shift from Moessbauer measurements, (E), 22:53095 (BMwF-FBK-68-11)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
NEODYMIUM ISOTOPES Nd-146
deuteron elastic scattering at 12 MeV, optical-model analysis of angular distribution for, (E), 22:42083
deuteron reactions (d,p) at 12 MeV, differential cross sections and optical-model parameters for, (E/T), 22:1697
energy levels from beta decay of praseodymium-146, spin--parity assignments for, (E), 22:50645
energy levels of, evaluated data on, (E), 22:22596
energy-level transitions in vibrational bands, from oxygen-16 scattering with Coulomb excitation, (E), 22:27154
neutron resonance parameters at 0.36 to 6.7 keV, (E), 22:7692 (JINR-P3-3564)
neutron resonance parameters to 10 keV, (E), 22:27219
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
oxygen-16 scattering at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
NEODYMIUM ISOTOPES Nd-147
activity of, from third Chinese nuclear explosion, γ spectrometry measurement of, 22:16719
beta decay of, conversion-electron and γ spectra of, (E), 22:14054
beta decay of, fast-slow γ sum-coincidence spectra for, (E), 22:9879
beta decay of, γ-γ angular correlations from, (E), 22:32646
beta decay of, promethium-147 energy levels and transitions from, (E), 22:7707
beta decay of, promethium-147 energy levels from, (E), 22:1629
beta decay scheme, (E), 22:1673
content and distribution in fallout from third Chinese nuclear explosion, May 9, 1966, 22:12450
content in fallout from third Chinese nuclear explosion, 22:4284
content in fallout near Milan, Italy from seventh Chinese nuclear explosion, 22:27922
content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
energy levels from neodymium-146 (d,p) reactions at 12 MeV, (E), 22:1697
fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
uptake by man following inhalation, 22:33715 (SZS-15/67)
NEODYMIUM ISOTOPES Nd-148
activity in Saxton Power Reactor plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel elements, mass spectrometric analysis of burnup effects on, 22:27417(R) (WCAP-3385-14)
determination in plutonium and uranium by isotope-dilution mass spectrometry, 22:1949 (GEAP-5354)
deuteron elastic scattering at 12 MeV, optical-model analysis of angular distribution for, (E), 22:42083
energy levels from beta decay of praseodymium-148, (E), 22:11974
energy levels of, evaluated data on, (E), 22:22596
energy-level transitions in vibrational bands, from oxygen-16 scattering with Coulomb excitation, (E), 22:27154
neutron resonance parameters at 0.15 to 8.8 keV, (E), 22:7692 (JINR-P3-3564)
neutron resonance parameters to 10 keV, (E), 22:27219
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
oxygen-16 scattering at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
use as fuel element burnup indicator, evaluation of, 22:1778(R) (WCAP-6085)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
NEODYMIUM ISOTOPES Nd-149
beta decay of, conversion-electron and γ spectra for, (E), 22:20605
beta decay of, promethium-139 energy levels from, (E), 22:11976
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
NEODYMIUM ISOTOPES Nd-150
deuteron elastic scattering at 12 MeV, optical-model analysis of angular distribution for, (E), 22:42083
deuteron reactions (d,p) at 10 MeV, angular distributions, cross sections, and proton spectra for, (E), 22:9898
energy and transition probabilities of 0^+ and 2^+ levels in, (T), 22:30096
energy level at 131 keV, half-life of, (E), 22:46773
energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)
energy levels of, g-factors and lifetimes of 2^+ rotational, (E), 22:30042
energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
energy-level transitions in vibrational bands, from oxygen-16 scattering with Coulomb excitation, (E), 22:27154
neutron resonance parameters at 0.08 to 3.84 keV, (E), 22:7692 (JINR-P3-3564)
neutron resonance parameters to 10 keV, (E), 22:27219
nuclear charge distribution and transition quadrupole moments from x-ray spectra of μ-mesic, (E/T), 22:37281(R) (NYO-72-191)
nuclear charge radius of, measured by K x-ray isotope shifts, (E), 22:32665
oxygen-16 scattering at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
use in isotope analysis of plutonium--uranium burnup, 22:7787 (AERE-R-5309)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
NEODYMIUM ISOTOPES Nd-151
energy levels from neodymium-150 (d,p) reactions, spins of, (E), 22:9898
NEODYMIUM NITRATES
see also Neodymium Oxide Nitrates
complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
effects on electrophoretic behavior of monodisperse polystyrene lattices in solution, 22:27664
separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
separation by solvent extraction using TBP, thermochemical studies on, 22:18907
NEODYMIUM OXALATES
crystal structure of decahydrates of, 22:2018(R) (BMwF-FBK-67-76)
crystal structure of hydrated, 22:14476 (BMwF-FBK-67-87)
stability constants for, review on, 22:27682
NEODYMIUM OXIDE NITRATES
($NdONO_3$)
precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
NEODYMIUM OXIDES
analysis for oxygen by neutron activation, 22:30457
diffusion of oxygen in Nd_2O_3, 22:52266
diffusion of oxygen in, at 100°C, coefficient for self-, 22:35824
effects on oxidation of hydrogen, effects of oxygen mobility on catalytic, 22:6304
effects on pH functions of glass electrodes, 22:16536
electric conductivity and dielectric breakdown in thin films of, 22:24400 (CONF-670502-, pp 591-602)

electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
Nd_2O_3, stability of sintered pellets of, in water, 22:17156 (BNWL-680, pp 20-4)
preparation of microspheres of, by sol-gel process, 22:4859
preparation of sols, gels, and microspheres of, 22:22991 (CONF-670502-, pp 175-86)
properties of compressed forms of, x-ray analysis of, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on catalytic effects of, on decomposition of 2-propanol, neutron, 22:40116
radiation effects on oxygen-18 exchange between molecular oxygen and, γ, 22:42786
reactions with carbon tetrachloride for conversion to chloride, 22:2560(R) (IS-RD-11)
solubility in boron oxide--strontium oxide systems at 1100°C, 22:41123
spectra of, widths of forbidden zones in reflected, 22:4107
B_2O_3--Nd_2O_3--SrO, phase studies of, 22:31515
Cr_2O_3--Nd_2O_3, phase studies, 22:31524
Nb_2O_5--Nd_2O_3, phase studies, 22:49839
Nb_2O_5--Nd_2O_3, phase studies of, 22:21769
Nb_2O_5--Nd_2O_3, properties of, electric and thermal, 22:21769
Nd_2O_3--PdO, phase diagram at 700 to 1400°C, 22:48788
Nd_2O_3--PdO, phase relations of, in air, 22:19664
Nd_2O_3--U_2O_5, phase studies of, 22:12317
Nd_2O_3--UO_3, molecular structure of hydrated, 22:34119
Nd_2O_3--W, thermoemission of, 22:754
Nd_2O_3--WO_3, crystal structure of, 22:34103
Nd_2O_3--zircon, electrochemical properties as MHD electrode, 22:11295
Nd_2O_3--ZrO_2, electrolytic properties of solid systems of, as function of neodymium content, (E), 22:44218
Nd_2O_3--ZrO_2, properties at high temperatures, electrochemical, 22:23832
Nd_2O_3--ZrO_2, thermal expansion coefficients, 22:2698

NEODYMIUM OXYSULFIDES
crystal structure of, relations with structure of lanthanum oxychlorides and lanthanium molybdates, 22:4893

NEODYMIUM PERCHLORATES
properties of hydrated, in ethyl acetate solutions, acidic, 22:30565

NEODYMIUM PHOSPHIDES
magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
preparation and physicochemical properties of, 22:14487(T) (UCRL-Trans-10222)

NEODYMIUM SELENIDES
crystal structure of, 22:24388 (CONF-670502-, pp 145-54)

NEODYMIUM SILICIDES
crystal structure of Nd_3Si_5, 22:2647

NEODYMIUM SULFATES
see also Neodymium Ethyl Sulfates
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

NEODYMIUM SULFIDES
preparation and electronic structure of single crystals of, (E), 22:5436

NEODYMIUM TELLURIDES
crystal structure of, 22:24388 (CONF-670502-, pp 145-54)
magnetic properties of, effects of temperature on, 22:8833
thermal capacity of Nd_2Te_3 at 12 to 300°K, 22:27695

NEODYMIUM TUNGSTATES
crystal structure and preparation of stable, 22:41090

NEODYMIUM TUNGSTEN OXIDES
preparation of Nd_2WO_6 by reaction of neodymium oxide and tungsten trioxide, 22:34103

NEODYMIUM URANATES
crystal structure of, 22:30523
preparation of, 22:30523
stability of, thermal, 22:30523

NEODYMIUM VANADATES
crystal structure and preparation, (E), 22:49812

Neohexane
see Butane, 2,2-Dimethyl-

Neohydrin (R)
see Chlormerodrin

NEOMYCIN
radiation effects on potency of, γ, 22:52103

NEON
see also Rare Gases
abundance in chondrites, 22:2727
abundance in chondrites, (E), 22:38647 (N-68-11819)
abundance in galactic cosmic rays, (T), 22:17431
abundance in HD 30353, (T), 22:868
abundance in NGC 604, (E), 22:17221
abundance in Sun, (E), 22:26139
alpha elastic scattering at 18 to 50 MeV, model for backscattering in, 22:32723
atomic weight of, based on carbon-12 = 12, 22:42698
bremsstrahlung continuum emission by positive columns of, (E), 22:29486
collisions with sodium, total cross sections for inelastic, (E), 22:993
condensation in meteorites, (T), 22:5023
crystal lattice constants of solid, isotope effects in, (E), 22:46207
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
desorption from (100) tungsten surface, temperature spectrum of, 22:48189
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination in chondrites, (E), 22:4921 (COO-382-75)
determination in iron meteorites, (E), 22:21797
determination in minerals and volcanic glasses, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
determination of, use of gas chromatography in, 22:12229(T) (MLM-1472(tr))
deuterium hydride ion reactions up to 50 eV with, cross sections and isotope ratios for dissociation in, (E), 22:52524
deuterium reactions at 3 to 10 keV with, polarization of Lyman α radiation from, (E), 22:34281
deuterium reactions at 3 to 10 keV with, total cross sections for excitation of Lyman α radiation in, (E), 22:34282
deuteron reaction at 3.0 and 3.2 MeV, evaluation of gaseous targets in, 22:26738 (NP-17333)
diffusion in argon in critical region, 22:25349
effects on enzymes, 22:12819
electric discharge in pure and impure, development of streamer, 22:48136
electric discharges in alkali-metal-seeded, constricted positive column, 22:1237
electric discharges in breakdown potential for, 22:44116 (SC-RR-68-284)
electric discharges in, effect of conducting wall on positive column, (E), 22:52818
electric discharges in, electron energy distribution in striations in, 22:3063
electric discharges in, electron thermal relaxation length in positive column, (E/T), 22:52795
electric discharges in, excitation cross sections for, (T), 22:29218
electric discharges in, ionization growth times in, (T), 22:26433
electric discharges in, magnetic field effects on ionization waves in, 22:44175
electric discharges in, microwave measurements of electron density in striated, 22:9312
electric discharges in, striation production in dc, 22:39088
electric discharges in, variations of plasma parameters in, 22:44149
electron collisions with atoms of, (T), 22:8995
electron reactions at high energies with, calculation of ionization cross sections for, 22:7170
electron reactions with atomic, rf resonance in, (E/T), 22:36711 (UCRL-18178)
electron reactions with doubly ionized, excitation cross sections for, (T), 22:47834
electron reactions with, angular dependence of spin polarization for, (E/T), 22:38767
electron reactions with, cross sections for production of singly charged ions in, (T), 22:45932
electron reactions with, excitation of Rydberg states in, (E), 22:19794
electron reactions with, ion excitation cross sections from, 22:9041
electron reactions with, ionization equilibria calculation from ionization, excitation, and recombination processes in, 22:38722 (N-68-18121)
electron reactions with, long-range effects in, (T), 22:9060
electron reactions with, paramagnetic rf resonance of metastable state from, 22:41326
electron reactions with, production and detection of metastable excited states in, (E), 22:24027 (UCRL-18032)
electron reactions with, resonances in total cross sections for metastable excitation in, (E), 22:21873
electron reactions with, role of intermediate states in excitation by, 22:43898
electron scattering at 40 kV by, cross sections for, (E/T), 22:5108
electron scattering at low energies by, analysis of data on, 22:21876
electron scattering by, slow, (E/T), 22:2812
electron scattering by, spin polarization in, (E), 22:991
electron scattering on $1s^22s^22p$/sup q/ level of, cross section for, 22:7132 (ORNL-4168, pp 119-82)
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
energy exchange at 298°K with tungsten filaments at high temperatures, 22:45799 (UCRL-18043, pp 155-82)
energy exchange at low pressures with tungsten filaments at 700 to 2800°K, 22:28815
energy level transitions of atomic, electron-excited, (E), 22:19796
energy level transitions of atomic, lifetime measurement of, 22:11237
energy levels of metastable excited atoms of, beam measurement of lifetime of, (E), 22:52481 (UCRL-18387)
energy levels of, cross sections for stepwise excitation and quenching processes in $2p^5nd$ and $2p^5np$, 22:29216

energy levels of, lifetime measurements of 3p, 22:36748
Hartree--Fock calculations of polarizability, refractive index, and Verdet coefficients for, fully coupled, 22:38760
Hartree--Fock nonrelativistic calculations for atoms of, comparison of analytic and numerical, 22:38727 (ORNL-TM-2251)
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
helium ion reactions at 400 to 1500 keV with, cross sections for one- and two-electron loss in, (E), 22:47804
helium ion reactions with gaseous, ionization cross sections for 0.2- to 1.8-MeV, (E/T), 22:38738
helium-ion reactions at 150 to 250 keV, autoionization in, (E), 22:31640
hydrogen atom scattering at small angles by, relation between reduced scattering angle and impact parameter for, (T), 22:34280
hydrogen ion (H_2^+ and H_3^+) reactions at 15 to 120 keV with, total electron capture cross sections for, (E), 22:50012
hydrogen ion reactions at 10 keV with, angular dependence of excitation cross sections for molecular, (E), 22:969
hydrogen reactions at 10 to 50 keV with, polarization of Lyman α radiation from, (E), 22:34281
hydrogen reactions at 10 to 50 keV with, total cross sections for excitation of Lyman α radiation in, (E), 22:34282
hydrogen-ion reactions at 20 to 120 keV, dissociation cross sections for 3s hydrogen atom production, (E), 22:15356
hydrogen-ion reactions at 20 to 180 keV, excitation cross sections for, 22:13239
ion mobility in, doubly charged, 22:9085
ionization rate coefficients for, electron-impact, 22:11196 (MATT-582)
iron atom reactions with, ionization ratios from, (E), 22:961
isotopic thermal diffusion in, at 335.6 to 507.4°K, 22:28023
lead-206 recoil reactions with, ionization, energy loss, and particle range in, (E), 22:29225
lifetime by electron collision using phase shift method, radiative, 22:41331
mercury atom collisions with, cross sections for, 22:7178
mesic deuterium atom reactions with, muon transfer in, 22:9024
meson (K^-) absorption at rest by, hyperfragment production in, (E), 22:50298
meson (μ^-) absorption by, probability of heavy charged particle emission in, (E), 22:24836 (JINR-P1-3721)
neon atom and ion reactions with, Q structure and inner-shell vacancies for, (E), 22:38744
neon ion reactions at 100 to 200 keV with, x-ray production cross sections for, (E), 22:21843 (NYO-2962-6, pp 20-9)
neon ion reactions with, Born approximation for ionization from monovalent, 22:29265
neon ion reactions with, cross sections for symmetric resonance charge exchange in, (E), 22:50039
neon-22 or -21 concentration in, by thermal diffusion, 22:49024 (MLM-1495)
neon-ion mobility and reaction rates in, (E), 22:31641
neon-ion reactions at 150 to 250 keV, autoionization in, (E), 22:31640
neon-ion reactions with, Auger electrons from, 22:47819
neutron capture by, γ spectra from thermal, (E), 22:29950
neutron scattering by liquid, relaxation phenomena in, (E/T), 22:32004
oxygen ion (O^{2+}) reactions with, single electron capture in differential scattering, (E), 22:29269
photoelectric cross sections for gaseous, measurement of, 22:19148
plasma of, cataphoretic purification of, (E), 22:1259
plasma of, collision processes in, 22:34642 (AD-666946)
plasma of, collisional effects on electric conductivity of, (T), 22:22181
plasma of, confinement in LM-1 linear quadrupole configuration, 22:46111 (MATT-592)
plasma of, continuous spectra from, (T), 22:17660
plasma of, conversion rates and ion mobilities in afterglow, 22:44153
plasma of, diagnosis in arcs using vacuum uv radiation, 22:34586 (AD-662626)
plasma of, electric conductivity measurement in capacitors, 22:48098
plasma of, electric conductivity of alkali-seeded, (T), 22:24319
plasma of, electron and ion distribution in discharge, (E), 22:19982
plasma of, electron density and collision frequency in afterglow, 22:20022
plasma of, electron temperature effects on electron--ion recombination in, 22:9353
plasma of, ion mobility measurements in, 22:31833
plasma of, microwave radiations from magneto-, 22:41608
plasma of, modes of screw instability in positive column, 22:5388
plasma of, partition of recombination energy in decaying, (E/T), 22:1204
plasma of, pressure and temperature effects on electron--ion recombination in discharge, 22:15527
plasma of, probe measurements in discharge layers of, 22:52763
plasma of, properties in low-voltage arcs, 22:34624(R) (AD-661073)
plasma of, properties in low-voltage arcs, 22:34625(R) (AD-661304)
plasma of, spectral determination of electron temperature and density in, (E), 22:19955
polarization transfer between oriented metastable atoms of helium and, (E), 22:49994
positronium motion in liquid, bubbles due to zero-point, (E), 22:17374
potassium atom reactions with, cross sections for fine structure transitions in, (E/T), 22:2800
potential energy curve for ground state of, calculation using single-configuration wave functions constructed from molecular orbitals, 22:5107
proton reactions at .25 to 4.50 MeV, electron capture cross sections for, 22:11215
proton reactions at 150 to 250 keV, autoionization in, (E), 22:31640
proton reactions at 156 MeV, (E), 22:29918
proton reactions at 2 to 120 keV with, cross sections for production of excited hydrogen atoms in electron capture for, (E), 22:52514
proton reactions at 28 GeV/c in neon--hydrogen bubble chamber, coherent production of $p\pi^+\pi^-$(1470) enhancement in, (E), 22:41729 (BNL-12674)
proton reactions at 5 to 120 keV, electron capture cross sections for, 22:5089
proton reactions on stellar, production of beryllium, boron, and lithium in, (T), 22:811
proton reactions with atomic, charge exchange cross sections for, (T), 22:19795
proton scattering at small angles by, relation between reduced scattering angle and impact parameter for, (T), 22:34280
quantum efficiency of, for x-ray detection, 22:28112
rare gas ion reactions at 60 to 500 keV with, charge transfer cross section analysis using adiabatic hypothesis for, 22:24047
reactions of atoms of, with single-crystal silver, numerical experiments on, 22:34264
reactions of excited atoms of, with H_2 and HD, ion production cross sections and isotope effects in (E/T), 22:50053
reactions of excited atoms of, with helium and neon, depolarization cross sections for, (E), 22:15340
reactions with alkali metal atoms, mixing in ^2P state in inelastic, (T), 22:29284
reactions with molecular hydrogen ions, effects of deuterium on, 22:6310
reactions with neon, effects of electron distribution on potentials for, 22:9084
rubidium atom reactions with, cross sections for fine-structure transitions in, (E/T), 22:2800
scattering by neon, elastic differential cross sections for, (E), 22:2795
scattering of mercury-198 atoms on, polarization in 6^3P_1 state, (E), 22:17381
scattering on atomic and molecular neon at 4 keV, small-angle, 22:2804
scattering on platinum, molecular beam, 22:982
solid, melting phenomena in, (T), 22:1123
sorption by tungsten, mechanism of, 22:10966
spectra from pure and nitrogen-containing, in diffuse discharges, 22:5373
spectra of, (E), 22:47795
spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
thermal conductivity and viscosity of pure, effects of temperature on, 22:45243 (TID-24636)
thermal expansion of crystals of, 22:40993(R) (COO-1198-534)
thermal expansion of single crystals of, isotope effects in, (E), 22:46207
thermodynamic properties of, for use in cryogenic pumping system, 22:10459
use of charged particle beams from nuclei of, for determining effects on bacteria, 22:23683 (UCRL-17481, pp 138-44)
vapor pressure of, isotopic, 22:28013 (MLM-1430)
vapor pressure of, saturated, 22:60(T) (TT-65-50400/4-6)
x-ray absorption coefficients for, in 2- to 200-A region, 22:11199
x-ray absorption in, electron emission from, 22:31651
Cs--Ne, excitation cross sections for, optically pumped, (E), 22:955
H_2--Ne, charged particle reactions with, density-effect correction for ionization loss in, 22:7175
methyl ether--methylamine--Ne, use as tissue-equivalent mixture in radiation detectors, 22:4450(P)

NEON IONS
desorption from Pyrex glass after bombardment, (E), 22:9462
effects on crystal structure of silicon, (E), 22:34751
effects on silicon, channeling and temperature dependence

- of amorphous phase formation from, 22:26491
- effects on sodium and potassium chloride single crystals at 70 to 700 eV, electron emission induced by, 22:50251
- electron reactions at 8 to 100 eV in stellarator plasma with, ionization rate coefficients for, (E), 22:52509
- luminosity zones in planetary nebulae, dimensions of, (T), 22:8914
- mobility and reaction rates in neon, (E), 22:31641
- photo-ionization cross sections for, (T), 22:49920
- production by pulsed duoplasmatron, 22:9724(T) (ANL-Trans-535)
- production in stellarator plasmas, temperature dependence of rate of, 22:1232
- radiation effects on pulse-height defects in thin-window surface-barrier silicon detectors, 22:28088
- reactions with acetylene at 0.5 to 1,200 keV, mass spectrometric studies on, 22:27800
- reactions with aluminum crystals at 100 to 200 keV, channeling effects on characteristic radiations from, (E), 22:26474
- reactions with aluminum crystals at 100 to 200 keV, channeling effects on K-shell excitation in, (E), 22:22201 (NYO-2962-6, pp 36-53)
- reactions with aluminum, magnesium, and neon at 100 to 200 keV, x-ray production in, (E), 22:21843 (NYO-2962-6, pp 20-9)
- reactions with argon and krypton atoms at 5 to 300 eV, cross sections for charge transfer and excitation in, (E), 22:43873
- reactions with argon and neon, Auger electrons from, 22:47819
- reactions with atomic hydrogen, polarization values for Lyman-α emission from, 22:38789
- reactions with clean and gas-coated molybdenum surfaces, electron ejection in, (E), 22:11560
- reactions with clean molybdenum at 30 to 400 eV, effects of angle of incidence on Auger electron emission in, (E), 22:29224
- reactions with germanium and silicon at 30 keV, temperature dependence of ion scattering and secondary electron emission from, (E), 22:26232
- reactions with hydrogen and rare gases at 60 to 500 keV, charge transfer cross section analysis using adiabatic hypothesis for, 22:24047
- reactions with molecular nitrogen, transfer of rotational and vibrational energies in, (E), 22:21895
- reactions with molybdenum surfaces, analysis of, 22:15227
- reactions with neon at 150 to 250 keV, autoionization in, (E), 22:31640
- reactions with neon atoms, Born approximation for ionization from, 22:29265
- reactions with neon, cross sections for symmetric resonance charge exchange in, (E), 22:50039
- reactions with neon, Q structure and inner-shell vacancies for, (E), 22:38744
- reactions with oriented gold foils at 50 keV, sputtering, (E/T), 22:44212 (NP-17564)
- reactions with silicon at 30 keV, use in study of defect annealing, 22:1307
- reactions with tungsten crystals, thermal release of gas following, (E), 22:26483
- scattering by copper single crystals, computer calculations of angular and energy distributions as function of angle of incidence, 22:26228
- scattering on pure and alloyed copper and gold at 30 to 100 keV, structure analysis from, 22:17786
- spectra from Ne IX, two-photon continuum emission from, 22:21903
- spectra in planetary nebulae, (T), 22:8915
- spectra of, from Penning-type ion source, 22:3567
- sputtering on metals at low energies, effects of trapped gas on, (E), 22:19753
- sputtering on polycrystalline targets at 30 keV, effects of angle of incidence on coefficients for, (E), 22:21870
- stopping in argon and nitrogen below 200 keV, electronic cross sections for, (E), 22:26225
- use for radiotherapy, comparison of, with γ rays, negative pion, and x ray, 22:33838 (LA-DC-9402)
- x-ray emission by Ne IX and Ne X in solar spectrum, (E), 22:34137 (AD-663415)

NEON ISOTOPES
- abundance in Carbo and Misteca iron meteorites, (E), 22:8976
- abundance in chondrites, (E), 22:29153
- abundance in hypersthene achondrite and pallasite meteorites, age estimation from, 22:19689
- abundance in meteorites, (E), 22:49974
- abundance in stony meteorites, (E), 22:13128
- abundances in Fayetteville meteorite, (E), 22:13205
- determination of stable, in bismuth--tellurium ore, 22:18721
- effects on separation of carbon-12 from carbon-13 by thermal diffusion, 22:12540(T) (MLM-1476(tr))
- separation by thermal diffusion, 22:2308(R) (MLM-1419)
- separation by thermal diffusion, 22:49024 (MLM-1495)
- separation by thermal diffusion, 22:28013 (MLM-1430)

NEON ISOTOPES Ne-17
- decay by delayed proton emission, (E), 22:29913

NEON ISOTOPES Ne-18
- beta decay of, gamma spectra from, (E), 22:15984
- energy levels for, description using 1p hole state coupling to ground state neon-20, (T), 22:46719
- energy levels from oxygen-16 (He-3,n) reactions up to 13.5 MeV, T = 1, (E), 22:11915
- energy levels from oxygen-16 (He-3,n) reactions, spin--parity assignments for, (E), 22:53101
- energy levels of, calculations using Hartree--Fock method with Hamada--Johnston and nonlocal factorizable potentials, (T), 22:1608
- proton interaction in, state dependence of Coulomb, (T), 22:53247

NEON ISOTOPES Ne-19
- beta decay of, electromagnetic simulation of T violation in, 22:3487
- beta decay of, testing time reversal invariance by, (E), 22:39584
- energy levels for, description using 1p hole state coupling to ground state neon-20, (T), 22:46719
- energy levels from oxygen-17 (He-3,n) reactions, (E), 22:35285(R) (AERE-PR/NP-13)
- half-life, (E), 22:41980

NEON ISOTOPES Ne-20
- alpha differential elastic and inelastic scattering cross sections at 22 to 25 MeV, angular distributions for, (E), 22:26906
- alpha differential inelastic scattering cross sections at 33, 51, and 81 MeV, angular distributions for, (E), 22:39639 (UCRL-17989, pp 43-99)
- alpha elastic and inelastic scattering at 12 to 15 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
- alpha inelastic scattering at 3.96 to 6.08 MeV, γ angular distributions and excitation functions for, (E), 22:41986
- alpha inelastic scattering at 3.96 to 6.08 MeV, γ excitation functions and spectra for, (E), 22:1614 (ANU-P-386)
- alpha reactions $(\alpha,2\alpha)$ at 29 MeV, angular correlation distributions and coincidence spectra for, (E), 22:26890
- alpha reactions (α,γ) at 3 to 6 MeV, resonances in, (E), 22:18190
- alpha reactions (α,p) at 3.96 to 6.08 MeV, γ angular distributions and excitation functions for, (E), 22:41986
- alpha reactions (α,p) at 3.96 to 6.08 MeV, γ excitation functions and spectra for, (E), 22:1614 (ANU-P-386)
- alpha transitions in sodium-20 beta decay, delayed, (E), 22:3654
- boron-11 reactions (B-11,Be-10) and (B-11,B-10) at 116 MeV, cross sections and energy spectra for, (E), 22:9792
- content in carbonaceous and unequilibrated ordinary chondrites, use in age estimation, 22:6461
- description using shell model with residual two-body interaction, (T), 22:11908
- description using shell model, (T), 22:20578 (WASH-1079)
- deuteron differential elastic scattering cross section at 28 MeV, optical-model analysis of angular distribution for, (T), 22:35234
- deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
- deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
- deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
- deuteron reactions (d,n) at 3.92, 5.16, and 6.08 MeV, angular distributions for, (E), 22:53142
- deuteron reactions (d,p) at 2, 3, and 3.2 MeV, differential cross sections for, (E), 22:27031
- deuteron reactions (d,p) at 3.0 and 3.2 MeV, angular distributions and excitation functions for, (E), 22:26977
- effects on cultured mammalian cells, equipment and methods for studying, 22:26752
- effects on lattice constant and thermal expansion of neon single crystals, (E), 22:46207
- energy level at 11.99-MeV from helium-4 $(O\text{-}16,\gamma)$, 22:11944(R) (AECL-2780)
- energy level in ground-state rotational band from helium-4 $(O\text{-}16,\gamma)$ reactions, 8^+, (E), 22:20497(R) (AECL-3009)
- energy levels from alpha inelastic scattering, collective enhancement factors and deformation parameters for, (E), 22:20534
- energy levels from fluorine-19 (p,γ) reactions and proton elastic scattering, (E), 22:26989
- energy levels from Hartree--Fock calculations, (T), 22:26968
- energy levels from lithium-6 (O-16,d) reactions at 20 MeV, α-particle reduced widths for low-lying, (E), 22:32498
- energy levels from oxygen-16 α elastic scattering and oxygen-16 inelastic scattering by helium-4, (E), 22:32512(R) (AECL-3108)
- energy levels from oxygen-16(Li-7,t) reactions at 16 MeV, rotational, (E), 22:11906
- energy levels from oxygen-18 (He-3,n) reactions up to 9.0 MeV, T = 2, (E), 22:11915
- energy levels from oxygen-18 (He-3,n) reactions, spin-

parity assignments for, (E), 22:35285(R) (AERE-PR/NP-13)
energy levels from sodium-20 beta decay, (E), 22:3655
energy levels in ground-state band, deformed, (T), 22:27303
energy levels in rotational bands, molecule-like structure in, (T), 22:53235
energy levels of, calculations using α-cluster model, (T), 22:26972
energy levels of, calculations using projected Hartree--Fock wave functions with realistic two-body forces, (T), 22:26973
energy levels of, calculations using projected Tamm--Dancoff wave functions, (T), 22:53147
energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
energy levels of, description using space scalar approximation to particle--hole interactions, (T), 22:53223
energy levels of, Hartree-Fock calculation of, (T), 22:32503
energy levels of, octupole vibrational, (T), 22:48478 (JAERI-1158, pp 68-70)
energy levels of, stability of Hartree-Fock states against four-body correlations, (T), 22:42135
energy levels of, SU(3) calculations of, (T), 22:14087
energy levels of, SU(3) symmetry for core excitation of, 22:3502
energy levels of, transition probabilities of, (E), 22:20539
energy levels of, variational calculations using Hartree-Fock method with and without angular momentum projection, (T), 22:27045
energy levels with T = 1 from fluorine-19 (d,n) reactions at 2.980 MeV, (E), 22:15982
energy levels with unnatural parity from alpha inelastic scattering, (E/T), 22:39639 (UCRL-17989, pp 43-99)
energy-level scheme of, shell-model calculation of, (T), 22:37380
energy-level transition probabilities for, calculations using shell model with realistic effective interaction, (T), 22:35293(R) (ORNL-4230)
energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
energy-level transitions from carbon-12 (C-12,αγ) reactions, multipolarities of, (E), 22:9818
helium-3 elastic scattering at 10 MeV, angular distribution for, (E), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,α) at 10 MeV, angular distributions for, (E), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,n) at 2 to 5 MeV, cross section for, (E), 22:3666
helium-3 reactions (He-3,n) at 3 to 4.3 MeV, magnesium-22 energy levels from, (E), 22:5817(R) (NYO-GEN-72-28)
helium-3 reactions (He-3,n) at 5.4 MeV, n-γ angular correlations and angular distributions for, (E), 22:37281(R) (NYO-72-191)
helium-3 reactions (He-3,n) with, neutron time-of-flight spectra and Q-values for, (E), 22:48465
neutron capture cross section for, thermal, (E), 22:29950
nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear properties from Hartree--Fock calculations using a realistic two-body force, (T), 22:5890
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
nuclear wave function for, pairing effects in Hartree--Fock, (T), 22:14086
nucleon pair interactions in, SU(3) symmetry for matrix elements of, 22:26679 (NP-17357)
proton reactions (p,α) at 40 MeV, angular distributions and cross sections for, (E), 22:24849
proton reactions (p,α) at 40 MeV, differential cross sections for, (E), 22:1598(R) (COO-1265-49)
proton reactions (p,γ) at 0.98 to 2.2 MeV, γ spectra from, (E), 22:35293(R) (ORNL-4230)
proton reactions (p,γ) at 0.98 to 2.2 MeV, γ spectra from, (E), 22:42019(R) (MLM-1494)
range and stopping power in aluminum, copper, lead, silver, uranium, and water, (T), 22:45926 (UCRL-18127)
reactions (Ne-20,3 to 6n) with molybdenum-92, cross sections for, (T), 22:30025
reactions (Ne-20,3n) with cadmium-111 at 79 MeV, angular distributions and γ spectra for, (E), 22:48528
reactions (Ne-20,4n) with cadmium-110, -112, -114, and -116 at 85 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
reactions (Ne-20,4n) with cadmium-110, cadmium-112, cadmium-114, and cadmium-116, angular distributions and γ spectra for, (E), 22:48528
reactions (Ne-20,f) with uranium-238, fission-fragment mass distribution for, (E), 22:24857 (JINR-P7-3732)
reactions (Ne-20,f) with uranium-238, fission-fragment mass distribution for, (E), 22:24857 (JINR-P7-3732)
reactions (Ne-20,f) with uranium-238, yields of astatine isotopes and polonium isotopes from, (E), 22:22582 (JINR-P7-3710)
reactions (Ne-20,n) with deuterium at 13.95 MeV, sodium-21 energy-level lifetimes from, (E), 22:29900
reactions (Ne-20,p) with deuterium at 13.95 MeV, neon-21 energy-level lifetimes from, (E), 22:29900
reactions (Ne-20,xn) with thulium-169, production of alpha-active gold isotopes by, (E), 22:18261
reactions (Ne-20,xn) with thulium-169, production of alpha-active gold isotopes by, (E), 22:18261
reactions of 21-MeV ion beams of, with benzene or cyclohexane, LET effects in, 22:30593
reactions with aluminum-27, cross sections for compound-nucleus formation in, (E), 22:29945
reactions with gold-197, production of actinium isotopes by, (E), 22:18253
reactions with matter, energy straggling distributions in, 22:24765
reactions with molybdenum-92 at 60 to 120 MeV, yield curves of proton activity produced by, (E), 22:30025
reactions with molybdenum-94 at 100 to 150 MeV, yield curves of proton activity produced by, (E), 22:30025
reactions with samarium-144 at 130 to 210 MeV, production of neutron-deficient nuclei by, (E), 22:30026
reactions with tantalum-181, nucleon transfer in, (E), 22:27197
separation from neon-22 by thermal diffusion, 22:2308(R) (MLM-1419)
separation from neon-22 in thermal diffusion column, 22:12550
stability against pear-shaped deformations, (T), 22:3779
triton elastic scattering at 2 MeV, optical-model analysis of, (E/T), 22:26883
use for therapy, evaluation of, 22:15051
methane--neon-20, thermal diffusion in, 22:16775(T) (MLM-1487(tr))
NEON ISOTOPES Ne-21
concentration in neon by thermal diffusion, 22:2308(R) (MLM-1419)
concentration in neon by thermal diffusion, 22:49024 (MLM-1495)
concentration in neon in four-stage thermal diffusion column, 22:28013 (MLM-1430)
content in carbonaceous and unequilibrated ordinary chondrites, use in age estimation, 22:6461
determination in meteorites, (E), 22:7081
energy level at 350.5 keV, lifetime of, (E), 22:29900
energy levels and mass from neon-22 (d,t) reactions at 39.6 MeV, (E), 22:20555
energy levels from neon-20 (d,p) reactions, spin-parity assignments and spectroscopic factors for, (E), 22:27031
energy levels from neon-20 (d,p) reactions, spin-parity assignments and spectroscopic factors for, (E), 22:26977
energy levels from neon-20 thermal neutron capture, (E), 22:29950
energy levels from neon-22 (He-3,α) reactions, (E), 22:50580
energy levels of, calculations using shell model with configuration mixing, (T), 22:27301
energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
energy levels of, T = 3/2 quartet, (E), 22:53129
energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
energy-level transitions from oxygen-18 (α,n) reactions, lifetimes and multipolarities for, (E), 22:24788 (IA-1128, pp 55-77)
neutron reactions (n,α), total absorption cross section for thermal, 22:32959 (ANL-7310, pp 1-30)
separation from neon-22 by thermal diffusion, 22:23221 (MLM-1455)
NEON ISOTOPES Ne-22
alpha elastic and inelastic scattering at 13 to 15 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
alpha reactions (α,n) at 5 MeV, γ angular distributions from, (E), 22:26936
concentration in neon by thermal diffusion, 22:49024 (MLM-1495)
content in carbonaceous and unequilibrated ordinary chondrites, use in age estimation, 22:6461
determination in meteorites, (E), 22:7081
deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron reaction at 3.0 and 3.2 MeV, evaluation of gaseous targets in, 22:26738 (NP-17333)
deuteron reactions (d,He-3) at 39.6 MeV, fluorine-21 mass and energy levels from, (E), 22:20555
deuteron reactions (d,p) at 3 MeV, DWBA analysis of angular distributions for, (E), 22:26978
deuteron reactions (d,p) at low energies, theory for analyzing, (E/T), 22:9918 (CEA-R-3305)
deuteron reactions (d,t) at 39.6 MeV, neon-21 mass and energy levels from, (E), 22:20555
effects on lattice constant and thermal expansion of neon single crystals, (E), 22:46207

- energy level at 5.14 MeV, lifetime of, (E), 22:18161
- energy levels and transitions from fluorine-19 (α,p) reactions at 12.55 and 13.55 MeV, (E), 22:26847
- energy levels at 11.89 and 12.28 MeV from oxygen-18 (α,γ) reactions, spin-parity assignments and transition parameters for, (E), 22:26948
- energy levels from beta decay of sodium-22, (E), 22:7674
- energy levels from oxygen-18 (α,γ) and (α,n) reactions and α elastic scattering, spin-parity assignments for, (E), 22:35256
- energy levels from sodium-23 (n,d) reactions at 14.1 MeV, (E), 22:26844
- energy levels of, calculations using deformed Hartree--Fock method with configuration mixing, (T), 22:32522
- energy levels of, calculations using shell model with configuration mixing, (T), 22:27301
- energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
- energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
- helium-3 differential elastic scattering cross sections at 0.744 MeV, optical-model ambiguities in, (E), 22:37323
- helium-3 elastic scattering at 10 MeV, optical-model analysis of angular distribution for, (E), 22:37313 (ANU-P-405)
- helium-3 elastic scattering at 9.744 MeV, optical-model analysis using four- and six-parameter Woods--Saxon potentials, (E/T), 22:32513(R) (ANU-P-400)
- helium-3 reactions (He-3,α) at 15 MeV, angular distributions for, (E), 22:50580
- helium-3 reactions (He-3,α) with, analysis using zero-range distorted-wave Born approximation, (E/T), 22:32513(R) (ANU-P-400)
- helium-3 reactions (He-3,d) at 10 and 12 MeV, sodium-23 energy levels and transitions from, (E), 22:3679
- helium-3 reactions (He-3,dγ) at 10 MeV, deuteron-γ coincidence spectra from, (E/T), 22:46739
- neutron capture cross section for, thermal, (E), 22:29950
- nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
- proton elastic and inelastic scattering at 0.6 to 3.1 MeV, excitation functions for, (E), 22:20578 (WASH-1079)
- proton elastic and inelastic scattering by, resonances in, (E), 22:22560(R) (ORO-1067-2)
- proton reactions (p,γ) at 1 to 2 MeV, resonances in, (E), 22:11948(R) (NP-17216)
- proton reactions at 156 MeV, cross sections for production of lithium-9, carbon-16, and nitrogen-17 by, (E), 22:29912
- reactions (Ne-22,4n) and (Ne-22,5n) with americium-243, production of element 105 by, 22:18208 (JINR-D7-3548, pp 3-14)
- reactions (Ne-22,4n) and (Ne-22,5n) with americium-243, production of element 105 by, 22:44678(T) (ANL-Trans-633)
- reactions (Ne-22,4n) and (Ne-22,α4n) with plutonium-247, cross section for, (E), 22:39632 (JINR-P7-3835)
- reactions (Ne-22,5n) and (Ne-22,6n) with terbium-159, production of rhenium-175 and -176 by, (E), 22:9880
- reactions (Ne-22,5n) with uranium-238, cross sections for, (E), 22:3696 (JINR-P7-3556)
- reactions (Ne-22,5n) with uranium-238, production of nobelium-255, (E), 22:39646
- reactions (Ne-22,f) with gold-197 at 154, 177, and 190 MeV, fission-fragment angular distributions for, (E), 22:18215(T) (BNL-tr-192)
- reactions (Ne-22,f) with gold-197, fission-fragment angular distributions from, (E), 22:1669
- reactions of ions of, with plutonium-242, production of element 104 in, 22:12342(T) (JPRS-44045)
- reactions with americium-243, production of element-105 isotopes by, (E), 22:35290 (JINR-P7-3808)
- reactions with gold at 110 and 120 MeV, alpha angular distributions and spectra for, (E), 22:14062
- reactions with molybdenum and tantalum at 2 to 75 keV for production of gas targets for nuclear reaction studies, 22:1552
- reactions with molybdenum-92 at 60 to 120 MeV, yield curves of proton activity produced by, (E), 22:30025
- reactions with platinum-192 and -194, radium-isotope production by, (E), 22:9854 (JINR-P7-3613)
- reactions with terbium-159, nucleon transfer in, (E), 22:27197
- reactions with thorium at 115 and 140 MeV, alpha angular distributions and spectra for, (E), 22:14062
- scattering by bismuth-209, gold-197, and uranium-238, angular distributions for elastic, (E), 22:18215(T) (BNL-tr-192)
- separation from neon-20 by thermal diffusion, 22:2308(R) (MLM-1419)
- separation from neon-20 in thermal diffusion column, 22:12550
- separation from neon-21 by thermal diffusion, 22:23221 (MLM-1455)
- separation from other neon isotopes, three-step mercury mass diffusion columns for, 22:42985
- triton reactions (t,p) at 1 to 3 MeV, p-γ angular correlations for, (E), 22:26992
- triton reactions (t,p) with, p-γ correlations in, (E), 22:20578 (WASH-1079)
- methane--neon-22, thermal diffusion in, 22:16775(T) (MLM-1487(tr))

NEON ISOTOPES Ne-23
- beta decay of, sodium-23 energy levels from, (E), 22:7676
- energy levels from neon-22 (d,p) reactions, spin-parity assignments and spectroscopic factors for, (E), 22:26978
- energy levels from neon-22 thermal neutron capture, (E), 22:29950

NEON ISOTOPES Ne-24
- beta decay of, γ spectra from, (E), 22:20578 (WASH-1079)
- energy level at 1.99 MeV, lifetime measurement using γ Doppler-shift attenuation, (E), 22:20578 (WASH-1079)
- energy levels from neon-22 (t,p) reactions, (E), 22:26992
- energy levels from neon-22 (t,p) reactions, (E), 22:20578 (WASH-1079)
- production in proton reactions with copper, gold-197, silver, and uranium at 1, 2, and 3 GeV, (E), 22:42033

NEON SYSTEMS
- methane--neon, thermal diffusion in, effects of deuterium on, 22:16775(T) (MLM-1487(tr))
- Ar--D--Ne, thermal conductivity of, at 40 to 90ºC, 22:40102
- Ar--Ne, collision-induced translational absorption in, (T), 22:36740
- Ar--Ne, properties of low-voltage arc discharges in, 22:46161
- D$_2$--He--Ne, thermal conductivity of, (E), 22:7148
- D$_2$--Ne, thermal conductivity of, (E), 22:7148
- D--Kr--Ne, thermal conductivity of, at 40 to 90ºC, 22:40102
- H$_2$O--Ne, radiation effects on, effects of deuterium on spectra of OH from x, 22:21080
- H--Ne, properties of low-voltage arc discharges in, 22:46161
- He--Ne, alpha particle reactions with, scintillation from, 22:9046
- He--Ne, collision processes in plasma of, 22:34642 (AD-666946)
- He--Ne, collisions in plasma of, cross sections for transfer of excitation energy in, (E), 22:9035
- He--Ne, thermal conductivity and viscosity of, effects of temperature on, 22:45243 (TID-24636)
- Ne--Xe, shock wave interactions with, thermal ionization in, 22:3129
- Ne--Xe, thermal diffusion factors for, 22:28013 (MLM-1430)

Neopentane
- see Propane, 2,2-Dimethyl-

NEOPENTYL GROUP
- oxidation by carboxylatocopper complex, kinetics of, 22:45051

Neoplasms
- see Diseases, Neoplastic

NEOPRENE
- analysis for inclusions, laser sampling techniques for spectroscopic, 22:35759
- radiation effects on structure of, at low temperature, spectral studies on primary and secondary processes in electron, 22:21098
- recovery of plutonium from gloves of, by total laundering, 22:14560 (NUMEC-1661-1)

NEOSTIGMINE
- use with extract of anterior hypophysis for elimination of colic gases during abdominal radiodiagnosis, 22:4640

NEPA Reactors
- see Reactors, Aircraft

NEPHELINE SYENITES
- strontium-86/-87 and rubidium/strontium ratios in Adirondack, 22:6435 (MIT-1381-15)

NEPHELOMETERS
- design and testing of electric-readout, for oceanographic measurements, 22:42902 (CU-2663-9, App.L)

NEPTUNIUM
- see also Actinides
- alpha emission by, determination of activity from, in urine using sorption on glass fiber filter paper, 22:51633
- amalgamation in lithium citrate solution, electrolytic, 22:18748
- book: Complex Compounds of Transuranides, 22:37755
- chromatographic behavior of, in mixtures of hydrochloric or nitric acids in alcohols, 22:50974
- complexes of, neptunium-239 exchange between neptunium ion and chromium-containing, 22:37743
- complexes with 2,3-dimercaptosuccinonitrile, preparation of, 22:30515
- complexes with 3-sulfosalicylic acid, o-phthalic acid, salicylic acid, citric acid, tartaric acid, and thiocyanate ion, kinetics studies of, 22:27893
- complexes with 8-quinolinol and its derivatives, preparation and stability of, 22:16541
- complexes with diethyldithiocarbamate, preparation of, 22:27652
- complexes with diethyldithiocarbamate, spectra of, ir, 22:27652

complexes with ethyl xanthate, preparation of, 22:30515
complexes with methylenebis(dihexylphosphine oxide), kinetic studies of, 22:27893
complexes with N,N-diethyldithiocarbamic acid, preparation and infrared spectra of, 22:30515
complexes with toluene-3,4-dithiol, preparation of, 22:30515
compounds and complexes of, review of chemistry of, 22:45090
compounds of, Moessbauer resonance of neptunium-237 gammas in, effects of valence on isomer shifts in, 22:12272 (DP-MS-67-82)
compounds of, Moessbauer studies of chemical bonding in, 22:12272 (DP-MS-67-82)
compounds of, solubility studies of, 22:37774
compounds of, thermodynamic properties of, 22:37774
compounds with hydrogen peroxide, composition and stability of, in hydrogen peroxide--nitric acid mixture, 22:30580
conversion to neptunium oxide, method for, 22:25455 (CEA-N-616, pp 295-368)
determination by precipitation with barium sulfate and alpha counting, 22:37656 (UCRL-18140, pp 101-2)
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in meteorites, 22:12338(R) (COO-1167-3)
determination in neptunium--uranium alloys by controlled potential coulometry, 22:1987
determination in urine by extraction using triisooctylamine and alpha counting, 22:35761
determination of, methods for, 22:23114
disproportionation in oxalate solutions, spectral studies on kinetics of, 22:10230
distribution between chloride salt mixtures and copper--magnesium or magnesium--zinc alloy, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
distribution between fused salts and liquid metals in fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
effects on determination of plutonium by amperometric titration, 22:39987 (PG-Report-832)
electronic structure, 22:43590 (ANL-7299, pp 201-19)
electronic structure of, 22:30531
fabrication of irradiation targets of, 22:37640(T) (ANL-Trans-628, pp 2-50)
friction at room temperature to 590ºC, internal, 22:33208(R) (MLM-1456)
magnetic moment of atomic, in dioxide from Moessbauer hyperfine spectra, 22:50240
neutron scattering amplitude, coherent, (E), 22:7393
oxidation to heptavalent state by ozone in alkaline solution, 22:50975
oxidation-reduction reactions of, kinetics of aqueous, 22:30520
preparation of metallic, calciothermic method for, 22:27848 (CEA-N-816, pp 359-414)
production and separation of, review of, 22:6363
production from neptunium oxide in 100 to 400 g batches, 22:6938 (RFP-1032)
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced in calcium fluoride crystals, spectral studies on, 22:37718 (UCRL-17989, pp 181-252)
reactions with iron in aqueous perchlorate solutions at 0.5 to 36.7ºC, kinetics of, 22:2058
recovery from wastes at West Valley fuel processing plant, 22:27859 (NP-17418)
separation from acid solutions by solvent extraction using 4-benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one, 22:45174
separation from aqueous solutions by solvent extraction using alkyl-substituted ammonium salts, 22:6376
separation from dilute organic solutions, process for, 22:10351(P)
separation from fission products, plutonium, and uranium using reversed phase chromatography, 22:2171 (CEA-R-3245)
separation from fuel reprocessing streams at ICPP, 22:8185
separation from irradiated fuel elements, installation and economics for, 22:10342
separation from irradiated fuels at West Valley Reprocessing Plant, application for licensing amendment for, 22:33481 (DOCKET-50201-5)
separation from irradiated fuels at West Valley Reprocessing Plant, 22:33483 (DOCKET-50201-7)
separation from irradiated fuels by fluidized-bed volatility process, 22:8181
separation from irradiated fuels by salt-transport process, 22:8187
separation from irradiated fuels by solvent extraction followed by ion exchange, 22:33479 (DOCKET-50201-1)
separation from irradiated fuels, review of methods for, 22:16649(T) (ORNL-tr-1847)
separation from irradiated fuels, safety analysis of facility at West Valley Reprocessing Plant for, 22:33479 (DOCKET-50201-1)
separation from irradiated reactor fuels, 22:35908(P)
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from other actinides in hydrochloric or nitric acid, paper chromatographic and electrophoretic study of, 22:37832 (CEA-R-3411)
separation from perchloric acid solutions by solvent extraction using alkyl phosphine oxides, 22:27893
separation from plutonium and other fission products by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
separation from plutonium by ion exchange, 22:6364 (AERE-R-5074)
separation from plutonium by solvent extraction using nitromethane, 22:33521
separation from protactinium by paper chromatography in hydrochloric acid mixtures with alcohols, 22:51060
separation from Purex acid sludge solutions by solvent extraction using bis(2-ethylhexyl) phosphate, 22:21154 (BNWL-583)
separation from solutions in reactor fuel processing, 22:47220
separation from spent fuels by aquafluor process, 22:40176 (KR-126, pp 361-84)
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from thorium by paper chromatography in hydrochloric or nitric acid mixtures in alcohols, 22:51060
separation from tributyl phosphate or tridodecylamine solutions from solvent extraction process, 22:37872(P)
separation from uranium by salt-transport processes, 22:6383
separation from uranium solutions by chromatography using tridodecylamine, 22:37640(T) (ANL-Trans-628, pp 2-50)
separation from uranium--plutonium fuels, 22:6382
separation from zirconium-allowed fuels using boric acid in hydrofluoric acid, method for, 22:23095 (IN-1091)
separation of, methods for, 22:23114
solubility in liquid cadmium, 22:23107
solubility in liquid cadmium, 22:51044 (ANL-7425, pp 19-41)
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
sorption by manganese dioxide from nitric acid, 22:157
spectra of, emission, 22:2018(R) (BMwF-FBK-67-76)
thermodynamic functions of penta- and hexavalent, 22:11946(R) (COO-1716-4)
volatilization of, 22:27852(R) (EURAEC-2011)

NEPTUNIUM ALLOYS AND SYSTEMS
Al--Np, fabrication for quick-turn-around target for plutonium-238 production, (E), 22:8702 (BNWL-519)
C--Np, phase studies, 22:31471
Np--Pu, phase studies of, 22:2655
Np--Pu, physical properties of, 22:2627
Np--U, analysis for neptunium and uranium by controlled potential coulometry, 22:1987

NEPTUNIUM BROMIDE OXIDES
crystallographic properties of, 22:16500
preparation of, 22:16500
spectra of, infrared, 22:16500

NEPTUNIUM BROMIDES
complexes with phosphine oxide, preparation of, 22:37722
preparation of anhydrous, by dehydration of hexahydrates, 22:45046
structure of anhydrous, crystal and molecular, 22:45046

NEPTUNIUM CARBIDES
magnetic properties at 150 to 400ºK, 22:43646 (ANL-7299, pp 220-6)
preparation and structure of NpC and Np_2C_3, (E), 22:28889

NEPTUNIUM CHLORIDE OXIDES
crystallographic properties of, 22:16500
preparation of, 22:16500
spectra of, infrared, 22:16500

NEPTUNIUM CHLORIDES
complexes with dimethyl sulfoxide, stability, properties, and infrared spectra of, 22:16522
evaporation of, thermodynamics of, 22:35807
melting point of, 22:35807
vapor pressure at 279 to 423ºC, 22:35807

NEPTUNIUM FLUORIDES
see also Rubidium Neptunium Fluorides
compounds with other metal fluorides, preparation of, 22:8186
CsF--NpF_5, preparation and structure of, 22:30555
NpF_5--RbF, preparation and structure of, 22:30555

NEPTUNIUM FLUORIDES NpF_4
fluorination by bromine tri- and pentafluorides, rates of, 22:25443 (ANL-7375, pp 46-94)
fluorination by bromine trifluoride, bromine pentafluoride, or fluorine to produce neptunium hexafluoride, 22:45138 (ANL-7385)
reactions with fluorine, 22:30555
LiF--NpF_4, preparation and structure of, 22:30555
NaF--NpF_4, preparation and structure of, 22:30555

NEPTUNIUM FLUORIDES NpF_6
chemical properties of, 22:21078
crystal structure of, electron-diffraction study of, 22:33436
production by fluorination of neptunium tetrafluoride or dioxide, 22:45138 (ANL-7385)
reactions with bromine, products of, 22:25443 (ANL-7375, pp 46-94)

reactions with sodium fluorides, 22:51045 (ANL-7425, pp 42-93)
reactivity and thermal stability of, comparison of, 22:45072
separation from uranium fluorides, fluid-bed volatility process for, 22:30118 (ANL-7438)
separation from uranium hexafluoride by reactions with bromine, 22:25443 (ANL-7375, pp 46-94)

NEPTUNIUM IODIDE OXIDES
crystallographic properties of, 22:16500
preparation of, 22:16500
spectra of, infrared, 22:16500

NEPTUNIUM IONS
magnetic moment in neptunium dioxide, neutron-diffraction study of, 22:7393
magnetic moment in neptunium dioxide, neutron-diffraction study of, 22:7394
neptunium-239 exchange between chromium--neptunium complex and, 22:37743
oxidation of hexavalent to heptavalent, 22:48846(T) (ANL-Trans-670)
oxidation-reduction reactions of, 22:30517
preparation and stability of heptavalent, 22:14486(T) (ANL-Trans-574)
production by passage of ozone through suspension of neptunium in alkaline solution, 22:50975
production of heptavalent, by oxidation of hexavalent neptunium, 22:45058
reduction of tetravalent, in lithium chloride--potassium chloride eutectic at 400 to 550°C, chronopotentiometric studies on, 22:16528
spectra in potassium fluoride solutions, 22:30517

NEPTUNIUM ISOTOPES
decay properties of, tables and charts on, (E), 22:7723
metabolism by man following inhalation, 22:30935 (SZS-16/67)
neutron capture cross section calculations using revised mass formula, fast, (T), 22:30021
neutron capture in thermonuclear explosions, cross sections for, (T), 22:14003(T) (BNL-tr-174)

NEPTUNIUM ISOTOPES Np-229
alpha decay of, α energy for, 22:35292 (ORNL-4217, pp 1-81)
alpha decay of, energy spectra and half-life of, (E), 22:32661
production in uranium-233 (p,xn) reactions at 32 and 42 MeV, (E), 22:32661

NEPTUNIUM ISOTOPES Np-230
alpha decay of, α energy for, 22:35292 (ORNL-4217, pp 1-81)
alpha decay of, energy spectra and half-life of, (E), 22:32661
production in uranium-233 (p,xn) reactions at 32 and 42 MeV, (E), 22:32661

NEPTUNIUM ISOTOPES Np-235
production by proton irradiation of uranium at 50 MeV in Harwell Cyclotron, 22:48871 (AERE-R-5790)

NEPTUNIUM ISOTOPES Np-236
content in feed uranium for thermal power reactors, effects on fuel cycle costs of, (T), 22:46903 (MIT-2073-7)

NEPTUNIUM ISOTOPES Np-237
alpha decay of, α and α-γ coincidence spectra for, (E), 22:39638 (UCRL-17989, pp 1-41)
alpha decay of, isomeric transition from, (E), 22:37371
alpha emission by, effects of, on phosphatases in rat kidney and liver, 22:47471
alpha emission by, pathologic effects of, on liver following injection in sheep, 22:33932
alpha spectra of, energies of intense lines in, (E), 22:35357
charged-particle fission of, α emission in, (E), 22:3720
content in feed uranium for thermal power reactors, effects on fuel cycle costs of, (T), 22:46903 (MIT-2073-7)
content in fission chambers, method for determining, 22:14807
content of urine, rapid method for determination of, 22:43301 (AERE-R-5474)
determination in effluent solutions by controlled-potential colorimetry and spectrography, 22:27846 (CEA-N-816, pp 277-323)
determination in presence of plutonium-239 using coincidence detectors, 22:25455 (CEA-N-616, pp 295-368)
economic effects on uranium as feed for pressurized-water reactor fuel cycles, 22:37447 (MIT-2073-6(Vol.2))
economic effects on uranium as feed for pressurized-water reactor fuel cycles, 22:37446 (MIT-2073-6(Vol.1))
effects of fuel cycle of pressurized-water reactors, 22:32907
effects on liver of rats, pathological, 22:10675 (BNWL-480, pp 21-54)
energy levels from americium-241 decay, (E), 22:44716
energy levels of, lifetime measurements using delayed coincidence technique, (E), 22:11950(R) (ORO-3624-1)
energy-level structure and g-factors from alpha decay of americium-241, (E), 22:3722
energy-level transitions from americium-241 decay, conversion coefficients for, (E), 22:18242
energy-level transitions from uranium-237 decay, multipolarities of, (E), 22:50631
gamma emission by, pathologic effects of, on liver following injection in sheep, 22:33932
gamma spectra, (E), 22:9859
half-life and type of decay of, 22:42698
irradiation for increased production of plutonium-238, description of process for secondary, 22:24933 (BNWL-SA-1529)
isomeric transition from americium-241 decay, half-life for, (E), 22:37371
Moessbauer effect in, use for studying isomer shifts, 22:43590 (ANL-7299, pp 201-19)
Moessbauer hyperfine spectra in dioxide, at 4.2 to 30°K, 22:50240
Moessbauer resonance of 59.54-keV gamma ray from, isomer shifts in, 22:12272 (DP-MS-67-82)
Moessbauer resonance of 59.6-keV transition in, isomer shift and hyperfine splittings of, (E), 22:36977
neutron absorption and fission cross sections and resonance integrals for, thermal, (E), 22:27089 (DP-MS-67-118)
neutron fission at 0.4, 0.6, 1.0, and 1.3 MeV, mean kinetic energy of fission fragments in, (E), 22:44693
neutron fission cross section at 1 to 5 MeV, (E), 22:18287
neutron fission cross section at 1 to 5 MeV, (E), 22:20572 (LA-DC-9205)
neutron fission cross section at 12.5 to 17.5 MeV, measurement using fission-foil detector, (E), 22:30013
neutron fission cross section below threshold, intermediate structure in, (E), 22:32607
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron reactions (n,γ), production of plutonium-238 by, 22:18851
neutron resonance parameters at 10 to 100 eV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron scattering amplitude, coherent, (E), 22:7394
nuclear charge distribution, deformation, and moments from isomer shifts and hyperfine splittings, (E), 22:11945(R) (ANL-7384)
nuclear electric quadrupole moment ratio for ground state and isomeric, (T), 22:46772
nuclear magnetic and quadrupole moments from hyperfine structure in Moessbauer spectra, (E), 22:14041
production and uses of, review on, 22:16649(T) (ORNL-tr-1847)
production by US power reactors through 1990, 22:45245 (BNWL-716)
production in commercial power reactors, economic potential for, 22:8317
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in power reactors, economic aspects of, 22:119
production in tubular uranium fuel elements, Monte Carlo calculations of resonance interference during, 22:33149
proton fission at 1 to 9 GeV, cross section for, (E, 22:46804
purification by cation exchange chromatography, 22:27893
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
recovery from power reactor fuels, economics of, 22:49032
separation from plutonium by solvent extraction using tridodecylammonium chloride, 22:27848 (CEA-N-816, pp 359-414)
separation from plutonium, extraction and ion exchange methods for, 22:25455 (CEA-N-616, pp 295-368)
uptake by fetuses and placenta of rats following injection, 22:30948
uptake by man following inhalation, 22:33715 (SZS-15/67)

NEPTUNIUM ISOTOPES Np-238
γ rays from, energies and abundances of, 22:12094(R) (IN-1126)
neutron absorption cross section for, thermal, (E), 22:27089 (DP-MS-67-118)
neutron fission cross section for, thermal, (E), 22:27089 (DP-MS-67-118)

NEPTUNIUM ISOTOPES Np-239
activity from neutron capture by uranium-238 in NORA critical assembly, methods for measuring rho$_{28}$ ratio for, (E), 22:24858 (KR-124)
activity of, from third Chinese nuclear explosion, γ spectrometry measurement of, 22:16719
content and distribution in fallout from third Chinese nuclear explosion, May 9, 1966, 22:12450
content in fallout from June 1967 Chinese nuclear explosion, 22:42877
content in fallout from third and fifth Chinese nuclear explosions, 22:51131
content in fallout from third Chinese nuclear explosion, 22:4284
content in fallout, lithium-drifted silicon beta spectrometers for determining, 22:45331
content in German atmosphere following third Chinese nuclear explosion, 22:18975
content of drinking water in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
determination in irradiated uranium foils, method for precise, 22:4041

  energy levels from americium-243 decay, (E), 22:42031
  energy levels from uranium-239 decay, collective, (E), 22:11961
  energy levels of, lifetime measurements using delayed coincidence technique, (E), 22:11950(R) (ORO-3624-1)
  energy-level g-factors from alpha decay of americium-243, (E), 22:3722
  exchange between chromium--neptunium complex and neptunium ion, 22:37743
  identification by gamma spectrometry in neutron-irradiated uranium samples, 22:12413
  isomeric transition from americium-243 decay, half-life for, (E), 22:37371
  production by beta decay of uranium-239, distribution of valence forms in, 22:27843
  production by neutron irradiation of uranyl compounds, 22:18841
  spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
  uptake by man following inhalation, 22:33715 (SZS-15/67)
NEPTUNIUM ISOTOPES Np-240
  beta decay of, γ spectra from, (E), 22:27184
NEPTUNIUM OXALATES
  composition and stability of, in nitric acid--oxalic acid system, 22:30580
NEPTUNIUM OXIDES
  analysis for iron, thorium, and uranium traces, colorimetric and fluorimetric, 22:25236 (CEA-N-616, pp 20-71)
  crystal structure and thermodynamics of, 22:23007 (UJV-1832)
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  fluorination with fluorine and interhalogens, 22:8186
  magnetic properties at 0 to 300°K, 22:43646 (ANL-7299, pp 220-6)
  neutron diffraction patterns at 5.4°K, 22:43646 (ANL-7299, pp 220-6)
  reduction to metal, 22:6938 (RFP-1032)
  vaporization of, 22:23007 (UJV-1832)
  Ho_2O_3--NpO_2, phase diagrams, 22:2703 (KFK-597)
  NpO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
  NpO_3--Tm_2O_3, phase studies, 22:4890 (KFK-521)
NEPTUNIUM OXIDES NpO_2
  crystal structure and thermodynamics of, 22:23007 (UJV-1832)
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  fluorination by bromine pentafluoride and fluorine, mechanism of, 22:25443 (ANL-7375, pp 46-94)
  fluorination by bromine pentafluoride or fluorine to produce neptunium hexafluoride, 22:45138 (ANL-7385)
  magnetic order in, neutron-diffraction study at 4.6°K of, 22:7394
  magnetic order in, neutron-diffraction study at 5.4 and 78°K of, 22:7393
  neptunium-237 Moessbauer hyperfine spectra at 4.2 to 30°K, 22:50240
  preparation of, method for, 22:25455 (CEA-N-616, pp 295-368)
  vaporization of, 22:23007 (UJV-1832)
NEPTUNYL IONS
  complexes with fluoride ions, formation of, 22:27674
  force constants of, equations for using uranyl ions for estimation of metal--oxygen, 22:14497
  production in molten lithium chloride--potassium chloride eutectic, 22:2071
Neptunyl Potassium Fluorides
  see Potassium Neptunyl Fluorides
NERO
  see Reactors, Maritime
NERVA Project
  see Rocket Reactors (NERVA)
NERVE CELLS
  radiation effects on ultrastructure of, in solar plexus of rats, effects of dose on x, 22:10723
NERVES
  grafting of irradiated human, into dogs, technique for, 22:51933
  radiation effects on action potential of ischiadicus, of frogs, 22:51952
  radiation effects on antigenicity of transplants of human, γ, 22:19257
  radiation effects on ATPase system in peripheral, of crab, monochromatic uv, 22:23437
  radiation effects on bioelectric activity of, of cats, x, 22:45390
  radiation effects on cardiac reflex of vagus, in rabbits following prolonged uptake of iron-59, β and γ, 22:21604
  radiation effects on ganglia of solar plexus, histologic study of repair of x, 22:49505
  radiation effects on grafts of, with artery, Silastic, or vein sheaths, growth following, 22:49496
  radiation effects on growth of, in regenerating limbs of Triturus viridescens, x, 22:43451
  radiation effects on oculomotor and optic, of dogs, pathological laser, 22:570
  radiation effects on performance of heterografts of, in dogs, rabbits, and rats, effects of pretreatment with specific antiserum on, 22:51364
  radiation effects on recovery of rat, from wound trauma, x, 22:51941
  radiation effects on regeneration of hypoglossal, in rabbits, autoradiographic study of x, 22:43455
  radiation effects on repair of, in dogs and rabbits, effects of methyl-2-cyanoacrylate adhesive on phosphorus-32 β, 22:16993
  radiation effects on reparative capacity of peripheral, in leg of rats, fractionated x, 22:45714
  radiation effects on response of frog sciatic, to electrical stimuli, effects of carbon dioxide, cocaine, and pH on x, 22:21568
  radiation effects on response of, to light stimuli in rabbits following chronic ingestion of iron-59, β and γ, 22:21598
  radiation effects on sciatic, of mice, autoradiographic and histological study of x, 22:38221
  radiation effects on sensitivity of, in rabbits to succinylcholine, 22:445
  radiation effects on stem cells of, in chicken embryos, 22:19409
  radiation effects on transmission of impulses by optic, of rabbits, x, 22:23414(R) (ORO-3599-1)
  radiation effects on transplants of, in goats, β, 22:21592
  radiation effects on transplants of, in rats in comparison with effects of azathioprine, 22:40951
  radiation effects on, in brain of rats, x, 22:4693
  radioinduced lesions in sciatic, of toad frog, cytological analysis of laser, 22:25734
  response in frogs, effects of uranyl ions on, 22:40577
NERVOUS SYSTEM
  see also Brain
  see also Nerve Cells
  see also Nerves
  see also Spinal Cord
  artificial, superconductive tunnel junction neuristor for, (E/T), 22:46076
  book: Principles of Nuclear Medicine, 22:49411
  cesium-137 uptake by, of insects, 22:19262
  content of lipids in white matter of, in cattle, 22:25722 (UCLA-12-668, pp 59-69)
  effects on radiosensitivity of animals, functional state of, 22:23657
  effects on x-radiosensitivity of muscles, 22:49217
  function of, effects of toxin extracted from x-irradiated blood cells in rabbits on, 22:19437
  radiation effects on activity of, in beagle dogs following radioisotope inhalation, electrocephalographic study of, 22:23596 (LF-38, pp 144-6)
  radiation effects on bioelectric activity in ganglia of, in turtles, strontium-90 β, 22:10714
  radiation effects on capillary ultrastructure of, in rats, whole-body, 22:33742
  radiation effects on central, of human children, latent pathological, 22:43398 (NP-17495)
  radiation effects on central, of human embryos and fetuses following diagnosis or therapy during pregnancy, 22:47609
  radiation effects on central, of man during space flight, 22:12751(T) (NASA-TT-F-413)
  radiation effects on central, of monkeys and rats, x, 22:14906 (BNL-50057, pp 123-37)
  radiation effects on central, of rabbits, 22:45437
  radiation effects on central, of rats exposed prenatally, protective effects of AET against x, 22:45623
  radiation effects on central, of rats, mechanism of combined effects of convulsant drugs on x, 22:47625
  radiation effects on central, of rats, x, 22:19295
  radiation effects on conditioned reflexes of rats, comparison of fast neutrons, γ, and protons, 22:12755(T) (NASA-TT-F-413, pp 158-74)
  radiation effects on conditioned reflexes of, in mice, fast neutron, γ, and proton, 22:12753(T) (NASA-TT-F-413, pp 130-45)
  radiation effects on conditioned reflexes of, in mice, fast neutron and γ, 22:12754(T) (NASA-TT-F-413, pp 146-57)
  radiation effects on conditioned reflexes of, in rats, effects of dose on whole-body γ, 22:12756(T) (NASA-TT-F-413, pp 175-91)
  radiation effects on conditioned reflexes of, in rats, combined effects of vibrations on x, 22:12759(T) (NASA-TT-F-413, pp 229-43)
  radiation effects on distribution of substance P in central, of rats, effects of age on whole-body x, 22:36201
  radiation effects on function of, in man, internal γ, 22:51795
  radiation effects on functioning of, 22:21634
  radiation effects on ganglia of, in crayfish and prawn, microwave, 22:47629
  radiation effects on hippocampus neurons in, of rabbits, x, 22:45442
  radiation effects on morphology and physiology of, in rabbits, effects of dose fractionation on microwave, 22:583
  radiation effects on neuropathological response of, in rabbits, proton, 22:47592
  radiation effects on rat, relation of, to behavior, 22:33941

- radiation effects on reflex activity in central, of rabbits, γ, 22:47590
- radiation effects on response of, in man, γ, 22:28693
- radiation effects on sensitivity of, in cats to cystamine, x, 22:31245
- radiation effects on supraesophageal ganglia in, of insects, 22:19430
- radiation effects on vasoregulation by human, for use in evaluating hazards of nuclear industry, γ and neutron, 22:31268
- radiation effects on, in man following thulium-170 inhalation, beta, 22:31216
- radiation effects on, in rats, tritium β, 22:19412
- radiation effects on, of animals and man, histopathology of, 22:36377
- radiation effects on, of animals and man, review of genetic and pathological, 22:8613
- radiation effects on, of animals, effects of dose on, 22:47569
- radiation effects on, of animals, low-intensity microwave, 22:10823 (ATD-66-133)
- radiation effects on, of dogs, Thorotrast α, 22:28659
- radiation effects on, of embryos of Triturus, neutron, 22:10877
- radiation effects on, of guinea pigs, comparison of acute and chronic γ, 22:12757(T) (NASA-TT-F-413, pp 192-211)
- radiation effects on, of human population of Marshall Islands exposed to fallout during 1954, 22:43360
- radiation effects on, of mammals, microwave, 22:554(R) (UR-49-810)
- radiation effects on, of man, clinical description of microwave, 22:585
- radiation effects on, of man, immediate and transient, 22:40880
- radiation effects on, of man, implications of, for space flight, 22:6922
- radiation effects on, of man, microwave, 22:10846
- radiation effects on, of man, microwave, 22:21623
- radiation effects on, of man, microwave, 22:25972
- radiation effects on, of man, pathological microwave, 22:49597
- radiation effects on, of mice, effects of dose on lethal γ, 22:23664
- radiation effects on, of mice, γ, 22:23671
- radiation effects on, of mice, laser, 22:10838
- radiation effects on, of monkeys, γ, 22:23669
- radiation effects on, of radar personnel, microwave, 22:33965
- radiation effects on, of radio and television personnel, microwave, 22:28695
- radiation effects on, of rats, effects of age on x, 22:25965
- radiation effects on, of rats, effects of strain on, 22:23659
- radiation effects on, of rats, in utero x, 22:51892
- radiation effects on, of rats, use of electroshock seizures as indicator of x, 22:36390
- radiation effects on, review of ionizing, 22:23629
- radiation injuries to human, electromyographic diagnosis of, 22:38204
- radiation injuries to, following therapy of testicular embryomas and seminomas, x, 22:6851
- radioinduced localized lesions in central, bibliography on ionizing, 22:550 (AD-648028)
- radiosensitivity in rabbits, γ, 22:49484(T) (JPRS-39515, pp 1-13)
- radiosensitivity of central, of rats, comparison of methods for determining, 22:15058
- radiosensitivity of frog and rabbit, relation between resistance and γ, 22:23658
- research in Soviet Union during 50 years, review on, 22:4638
- scanning of sympathetic, in man, use of gold-198 or strontium-85 for, 22:49448
- strontium-85 uptake by, of insects, 22:19262
- technetium-99 uptake by choroid plexus of, in man, effects of potassium perchlorates on, 22:36325

NETHERLANDS

- cesium-137 content of food, milk, and rainwater in, during 1964, 22:4616
- cesium-137 content of foods in, during 1966, 22:15001 (RA-30)
- construction of Proefbedrijf Voedselbestraling food irradiation facilities at Wageningen, 22:43501
- nuclear energy developments in, 22:23080
- nuclear energy research in, 22:30424
- radiation processing of food in, review of, 22:52066
- radiation processing of foods in, 22:31304
- radiation processing of foods in, facilities for γ, 22:43509
- radiation processing of foodstuffs in, program of γ, 22:43511
- radiation protection in hospitals in, regulations for, 22:2518
- radioactive waste processing in, 22:33505
- radioactivity in airborne dusts in DeBilt/Bilthaven, 1965, 22:2227 (RA-29)
- radioactivity of airborne dusts in, 1966, 22:21208 (RA-31)
- radioisotope content of foods in, during 1965, cesium-137 and strontium-90, 22:40660 (EUR-3640)
- radioisotope content of human diet in, during 1963, cesium-137 and strontium-90, 22:33817 (RA-32)
- radioisotope content of human diet in, during 1967, cesium-137 and strontium-90, 22:43312 (RA-34)
- soil and groundwater contamination in, from nuclear explosions, 22:21185 (N-66-21731)
- strontium-90 content of food, milk, and rainwater in, during 1964, 22:4616
- strontium-90 content of foods in, during 1966, 22:15001 (RA-30)
- strontium-90 content of grass and soil in, during 1958 through 1965, effects of calcium on, 22:15014

NETR

- see Air Force Engineering Test Reactor

Network Analyzers

- see Computers

NEURAMINIC ACID

- radiation effects on, of blood serum of rabbits, mechanisms for x, 22:28312

Neurons

- see Nerve Cells

NEUTRAL RED

- effects on mutational effects of uv and x radiation on Euglena gracilis, 22:25823
- radiation effects on aqueous solution of, effects of season on X agent, 22:49248
- radiation effects on aqueous solutions of, combined X agent and heat, 22:49247
- radiation effects on content of, in hepatic cells of rabbits and rats, iodine-131 β and γ, 22:45435

Neutrettos

- see Neutrinos (ν/sub μ/)

NEUTRINO PAIRS

- production in interior of stars, 22:17921

NEUTRINOS

- see also Neutrino Pairs
- absorption in celestial bodies at superhigh temperatures, (T), 22:43705
- absorption in weak interaction processes in highly evolved stars, (T), 22:38684
- beam flux of, meson-focusing device for increasing, 22:11629 (NP-17198)
- beams of, calculations for, (T), 22:11643
- capture rate for chlorine-37, low-energy nuclear cross sections for calculating, (T), 22:18322
- coupling constant for, Cabibbo theory of weak interactions for vector meson--lepton--neutrino, 22:32135
- coupling to matter at very high temperatures and densities, (T), 22:17239
- coupling to photons, theory of weak, 22:50355
- detection at 300-GeV accelerator, bubble chamber for, 22:13874 (CERN-67-26(Vol.1), pp 49-71)
- detection of solar, (T), 22:926
- detection of solar, (T), 22:5033
- detection of, CERN monitoring system for, 22:46679
- detection systems for astrophysical, (T), 22:926
- effects on carbon burning in stars, (T), 22:34208
- emission during carbon-burning phase of stellar evolution, (T), 22:45843
- emission during the carbon-burning stage in stars, (T), 22:31537
- emission from baron 8 on, (T), 22:31558
- emission from carbon--oxygen stars, (T), 22:29173
- emission from central region of 5-solar mass stars after helium burning, (T), 22:24007
- emission from globular cluster stars, (T), 22:52402
- emission from high-density stars, (T), 22:15319
- emission from partially degenerate helium cores, (T), 22:47731
- emission from solar interior, detection of, (T), 22:17295
- emission from stars from $e^{-} + e^{+} \to \nu$ + anti ν and $\gamma + \gamma \to \nu$ + anti ν interactions, 22:50355
- emission from stars of 1.3-solar mass, effects on evolution, (T), 22:24008
- emission from stars, (T), 22:5033
- emission from stars, bibliography on, 22:15324
- emission from stars, effects in red giant stage, (T), 22:24015
- emission from stars, Pauli principle in, (T), 22:45838
- emission from Sun and stars, (T), 22:926
- emission from Sun due to boron-8 decay, (E), 22:31590
- emission from Sun, (T), 22:21804
- emission from Sun, (T), 22:38657 (N-68-19136)
- emission from Sun, due to boron-8 decay, (T), 22:31588
- emission from Sun, effects of mixing on, (T), 22:47767
- emission from Sun, effects on beryllium-7 K capture on, (T), 22:11148
- emission in stellar beta processes, (T), 22:13106
- emission of solar, review on, 22:47740
- exchange between two electrons, long-range forces from pair, 22:20205
- existence and properties of hadronic, review of experiments on, 22:41795
- flux from sun, dependence on helium-3 reactions, (T), 22:4938
- flux from sun, experiments for detecting, (T), 22:17197
- flux from sun, preliminary results for upper limit of, (E), 22:41741 (COO-1749-5)
- flux from sun, relation to initial solar helium abundance and solar age, 22:52460

flux of boron-8 solar, (T), 22:41199
flux of boron-8 solar, effects of heavy element composition on, (T), 22:4977
flux of solar, (T), 22:29124
flux of solar, (T), 22:41246
form factor of, W mediation of weak interactions for electromagnetic, 22:32190
helicity of, review of experimental determination of, 22:52925
interaction cross sections at very-high energies, (T), 22:24077
interaction of solar, with electrons, (T), 22:2845
interactions and production of, review on, 22:3354
interactions at high energies, (E/T), 22:11630
interactions at high energies, relation between s-wave hyperon decay and, 22:29675
interactions at high energies, review on, 22:48276 (CERN-68-23(Vol.2), pp 365-430)
interactions $e + \nu$, current algebra for soft pion production from, 22:3364
interactions $\gamma + \nu$, zero-rest mass for weak, 22:32103
interactions $\nu + n \to l + p$, spectra of heavy leptons from, (T), 22:48277 (IFVE-SEF/STF-68-6-K)
interactions $\nu + N \to \Delta(1236) + l$, differential cross section for polarized lepton production in, (E/T), 22:3358
interactions $\nu + N \to \Delta(1236) + l$, spin-3/2 polarization in, (E/T), 22:3361
interactions $\nu + N \to l^- + N + \pi$, cross sections for, (T), 22:44393
interactions $\nu + N \to l^- + N$, cross sections for, (T), 22:44393
interactions $\nu + N \to$ leptons + hadrons, high-energy behavior of differential cross section of, 22:50348
interactions $\nu + N \to \mu + \Delta(1236)$, Feynman diagram calculation for, 22:44398
interactions $\nu + n \to \mu^- + n + \pi^+$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + n \to \mu^- + p + \pi^0$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + n \to \mu^+ + \Sigma^-$, cross section for, 22:7484
interactions $\nu + N \to N + \mu$, coupling of nucleonic and muonic currents in, (T), 22:26622
interactions $\nu + n \to p + \mu^-$, independent-particle models for, 22:48286
interactions $\nu + n \to$ rho $+ \mu^-$ at high energies, radiative corrections to, 22:11642
interactions $\nu + n$, asymptotic equality with anti $\nu + n$ interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions $\nu + N$, saturation of sum rules for, 22:17913
interactions $\nu + p \to e^- + \pi^+ + p$, generalized Ward-Takahashi identities and current algebra for, 22:13681
interactions $\nu + p \to \mu^- + p + \pi^+$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + p \to n + \mu^+$, spin dependence of, (T), 22:11635
interactions $\nu + p$, asymptotic equality with anti $\nu + p$ interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions $\nu + p$, current algebra for, 22:20171
interactions $\nu + p$, possibility of W strong interactions in, (T), 22:22377
interactions $\nu + p$, saturation of covariant sum rules in quark model for N* production in, 22:15756
interactions $\nu + p$, use of ANL 12-ft hydrogen bubble chamber to study, 22:12607 (CERN-67-26(Vol.1), pp 87-94)
interactions of, development and use of large bubble chambers for, 22:12604 (CERN-67-26(Vol.1), pp 3-23)
interactions of, form factors and vertex amplitudes for, 22:5534
interactions of, lepton charge conservation in, (T), 22:11641
interactions of, research at CERN on, 22:22294
interactions with baryons, differential cross sections for baryon final states in, (T), 22:5545
lepton charge conservation in $\nu \to$ anti ν and anti $\nu \to \nu$ oscillations, (T), 22:11641
Lie group for nonrelativistic, quantizable classical models from, 22:3471
losses in pure carbon stars, effects on stability, (T), 22:31587
magnetic charge on, scalar, (T), 22:2833
mass effects on μ, π^-, and π^+ decays, (T), 22:11643
momenta of, regular null networks in flat space—time for four-, 22:35119
motion in internal gravitational field of superdense stars, 22:41791
polarization in crossed beams, characteristic, (T), 22:17920
production and research with, design and performance of CERN facilities for, 22:32286 (CEAL-2000, pp 330-5)
production in 1.3-solar-mass stars, (T), 22:13143
production in atmosphere by cosmic radiation, (T), 22:21804
production in $\gamma + \pi \to \pi + e + \nu$ interactions near threshold, sum rules, rho dominance, and amplitude of, 22:29665
production in hot stellar plasmas, (T), 22:8977
production in interior of stars, 22:17921
production in stars, (T), 22:15316
production in stellar plasmas, energy losses associated with, (T), 22:11149
production in weak interaction processes in highly evolved stars, (T), 22:38684
production of beams from p + N interactions at 70 GeV, meson-focusing device for, 22:11629 (NP-17198)
production of pairs of, in electron reactions with nucle in stars, flux from, (T), 22:39331
properties of sea of, in the universe, (T), 22:21804
properties of, cross section of possible ν/sub e/ + e $\to$ ν/sub μ/ + μ^- interactions for component nature in, 22:22379
properties of, review of experiments and theory for, 22:50346
reactions with nuclei at high energies, predictions of PCAC hypothesis for cross sections of inelastic, 22:11631
research on, bibliography of, 22:39349
research on, description of CERN's Gargamelle heavy liquid bubble chamber for, 22:36106
research on, experimental and theoretical, 22:22371
retention by neutron stars, (T), 22:34170
scattering by nuclei, current commutation relations for cross section sum rules for, 22:9531
scattering by nuclei, relation between cross sections fo elastic antineutrino and, 22:44395
scattering in weak-interaction processes in highly evolved stars, (T), 22:38684
search for cosmic, underground, 22:50061
sources of, astrophysical, (T), 22:5174
spectra from sun, model for, 22:17197
temperatures in early universe, 22:22334
theory for, geometric, 22:44397
theory for, zero-point kinetic energy of fermion gases for astrophysical, 22:13675
transport in inhomogeneous material, perturbations in, 22:41639
universe of, solution to cosmological equations for, 22:29670
viscosity of, in cosmological models, (T), 22:52378
wave equation for, 22:24581

NEUTRINOS (ANTI ν)
emission from fragments of uranium-235 binary fission, (T), 22:15737 (SRO-141)
emission from germanium-76 double beta decay, germanium detector study of lepton nonconservation in, (E), 22:7432
flux near Savannah River Production Reactor, 22:15738 (SRO-142)
interactions anti $\nu + e$, attenuation effects on polarization properties of recoil electrons from, 22:15742
interactions anti $\nu + e$, proposed experiment for measuring, (E), 22:44315
interactions anti $\nu + N \to \Delta(1236) + l$, differential cros section for lepton polarization in, 22:3358
interactions anti $\nu + N \to l^+ + N + \pi$, cross sections for (T), 22:44393
interactions anti $\nu + N \to l^+ + N$, cross sections for, (T), 22:44393
interactions anti $\nu + N \to N + \mu$, coupling of nucleonic and muonic currents in, (T), 22:26622
interactions anti $\nu + n \to p + \mu^-$, spin dependence of, (T), 22:11635
interactions anti $\nu + n$, asymptotic equality with $\nu + n$ interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions anti $\nu + p \to e^+ + \pi^0 + p$, generalized Ward—Takahashi identities and current algebra for, 22:1368
interactions anti $\nu + p \to \Lambda + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to \mu^+ + \Lambda^0(\Sigma^0)$, cross sections for, 22:7484
interactions anti $\nu + p \to n + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to \Sigma^0 + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to Y + l^+$ at high energies, polarization effects in, (T), 22:1416 (IAE-1241)
interactions anti $\nu + p$, asymptotic equality with $\nu + p$ interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions anti $\nu + p$, possibility of W strong interactions in, (T), 22:22377
interactions anti ν + rho $\to n + \mu^+$ at high energies, radiative corrections to, 22:11642
interactions e + anti $\nu \to \mu$ + anti ν, calculation of cross section for, (T), 22:9561
lepton charge conservation in $\nu \to$ anti ν and anti $\nu \to \nu$ oscillations, (T), 22:11641
polarization in crossed beams, characteristic, (T), 22:17920
reactions (anti ν,e^+) with hydrogen and helium-3 cross sections for, (T), 22:15737 (SRO-141)
scattering by nuclei, current commutation relations for cross section sum rules for, 22:9531
scattering by nuclei, relation between cross sections fo

elastic neutrino and, 22:44395

NEUTRINOS (ν/sub e/)

emission in double beta decay, (T), 22:7747
emission in μ^-, μ^+, π^-, π^+, and π^0 decay, formula for kinetic mass for, 22:29646
interactions $\nu + e \rightarrow \nu + e$, electromagnetic renormalization of vector part of, 22:41766(T) (ANL-Trans-643)
interactions $\nu + n \rightarrow p + e^-$ at high energies, T violation in, (T), 22:53006
interactions $\nu + n \rightarrow p + e^-$, heavy e production in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions $\nu + p \rightarrow n + e^+$, heavy e production in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions ν/sub e/ + d $\rightarrow$ p + p + e^-, cross section for, (T), 22:41942
interactions ν/sub e/ + e $\rightarrow$ ν/sub μ/ + μ^-, neutrino component nature determination from cross section of possible, 22:22379
interactions ν/sub e/ + e^+ $\rightarrow$ anti ν/sub μ/ + μ^+, μ polarization from, (T), 22:3321
interactions ν/sub e/ + e^+ $\rightarrow$ ν/sub μ/ + μ^+, μ polarization from, (T), 22:3321
interactions ν/sub e/ + e^+ $\rightarrow$ ν/sub μ/ + μ^+, two- and four-component theory for, 22:22376
interactions ν/sub e/ + μ^- $\rightarrow$ ν/sub μ/ + e^-, two- and four-component theory for, 22:22376
interactions ν/sub e/ + p $\rightarrow$ n + e^+, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
lepton charge conservation in ν/sub μ/ $\rightarrow$ ν/sub e/ and ν/sub e/ $\rightarrow$ ν/sub μ/ oscillations, 22:11641
mass of, particle composition method for determining, (T), 22:29646
ν/sub e/ + e^+ $\rightarrow$ ν/sub μ/ + μ^+, differential cross sections and μ^+ polarization from, 22:13725
production from $\mu^+ \rightarrow e^+$ + ν/sub e/ + anti ν/sub μ/ decay, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
reactions (ν/sub e/,e^-) with deuterium, cross section for, (T), 22:41942
rest mass in β^+ decay, (E), 22:53153

NEUTRINOS (anti ν/sub e/)

absorption by nuclei, with resonance electron capture, (T), 22:24898(T) (BNL-tr-203)
anti ν/sub e/ + e^- $\rightarrow$ ν/sub μ/ + μ^-, differential cross sections and μ^- polarization from, 22:13725
interactions anti ν + d $\rightarrow$ 2n + e^+, design of detector for, 22:44314
interactions anti ν + d $\rightarrow$ anti ν + n + p, design of detector for, 22:44314
interactions anti ν + d $\rightarrow$ p + n + anti ν, deuterated liquid scintillator study of upper limit for cross section of, (E), 22:46318 (UCI-10-P-19-4)
interactions anti ν/sub e/ + e^- $\rightarrow$ anti ν/sub μ/ + μ^-, μ polarization from, (T), 22:3321
interactions anti ν/sub e/ + e^- $\rightarrow$ anti ν/sub μ/ + μ^-, two- and four-component theory for, 22:22376
interactions anti ν/sub e/ + e^- $\rightarrow$ ν/sub μ/ + μ^-, μ polarization from, (T), 22:3321
interactions anti ν/sub e/ + μ^+ $\rightarrow$ anti ν/sub μ/ + e^+, two- and four-component theory for, 22:22376
interactions anti ν/sub e/ + p $\rightarrow$ n + e^+, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
interactions anti ν/sub e/ + p, cross section for, (T), 22:37389
interactions e + anti ν/sub e/, γ angular and energy distributions in μ^+ + e $\rightarrow$ ν + anti ν + γ interactions for properties of, (T), 22:26618
production from $\mu^+ \rightarrow e^+$ + anti ν/sub e/ + ν/sub μ/, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
reactions (anti ν/sub e/, e^+) with helium-3, cross section for, (T), 22:37389
spectra from binary fission fragments of uranium-235, (T), 22:37389

NEUTRINOS (ν/sub μ/)

emission in μ^-, μ^+, π^-, π^+, and π^0 decay, formula for kinetic mass for, 22:29646
interactions anti ν/sub μ/ + p $\rightarrow$ n + μ^+, spin dependence of, (T), 22:11635
interactions ν + N $\rightarrow$ baryon resonance + μ, baryon resonance $\rightarrow$ baryon + π, polarization correlations in, 22:26613
interactions ν + N $\rightarrow$ baryons + μ, polarization correlations in, 22:26613
interactions ν + n $\rightarrow$ μ^- + p at high energies in nuclei, W effects in, (T), 22:29669
interactions ν + n $\rightarrow$ μ^- + p, spark-chamber study of, (E), 22:48217
interactions ν + n $\rightarrow$ p + μ^-, production and lower bound for mass of heavy μ in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions ν + N underground, sum rules for W effects on μ spectra from, 22:39346
interactions ν + p $\rightarrow$ n + μ^+, production and lower bound for mass of heavy μ in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions ν/sub μ/ + e^+ $\rightarrow$ anti ν/sub e/ + μ^+, μ polarization from, (T), 22:3321
interactions ν/sub μ/ + e^- $\rightarrow$ ν/sub e/ + μ^-, differential cross sections and μ^- polarization from, 22:13725
interactions ν/sub μ/ + e^- $\rightarrow$ ν/sub e/ + μ^-, μ polarization from, (T), 22:3321
interactions ν/sub μ/ + e^- $\rightarrow$ ν/sub e/ + μ^-, two- and four-component theory for, 22:22376
interactions ν/sub μ/ + μ^+ $\rightarrow$ ν/sub e/ + e^+, two- and four-component theory for, 22:22376
interactions ν/sub μ/ + n $\rightarrow$ p + μ^-, spin dependence of, (T), 22:11635
lepton charge conservation in ν/sub μ/ $\rightarrow$ ν/sub e/ and ν/sub e/ $\rightarrow$ ν/sub μ/ oscillations, 22:11641
mass from $\pi^+ \rightarrow \mu^+ + \nu$ decay, magnetic spectrometer study of upper limit for, (E), 22:9505
mass of, particle composition method for determining, (T), 22:29646
production from $\pi^+ \rightarrow \mu^+ + \nu$ decay, magnetic spectrometer study of, (E), 22:9505
reactions with aluminum, spark chamber study of lower limit for W + μ production from, (E), 22:15664 (NEVIS-164)

NEUTRINOS (anti ν/sub μ/)

anti ν/sub μ/ + e^+ $\rightarrow$ anti ν/sub e/ + μ^+, differential cross sections and μ^+ polarization from, 22:13725
interactions anti ν + p $\rightarrow$ μ^+ + n(Λ) at high energies in nuclei, W effects in, (T), 22:29669
interactions anti ν + p $\rightarrow$ n + μ^+, pseudoscalar coupling constant from absorption cross section for, 22:34943
interactions anti ν/sub e/ + e^- $\rightarrow$ ν/sub e/ + μ^-, μ polarization from, (T), 22:3321
interactions anti ν/sub μ/ + e^+ $\rightarrow$ anti ν/sub e/ + μ^+, two- and four-component theory for, 22:22376
interactions anti ν/sub μ/ + e^+ $\rightarrow$ anti ν/sub e/ + μ^+, μ polarization from, (T), 22:3321
interactions anti ν/sub μ/ + μ^- $\rightarrow$ anti ν/sub e/ + e^-, two- and four-component theory for, 22:22376
interactions μ + anti ν/sub ν/, γ angular and energy distributions in μ^+ + e $\rightarrow$ ν + anti ν + γ interactions for properties of, (T), 22:26618
production from $\mu^+ \rightarrow e^+$ + anti ν/sub e/ + ν/sub μ/, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
production from $\mu^+ \rightarrow e^+$ + ν/sub e/ + anti ν/sub μ/ decay, test of lepton quantum number from, 22:9558 (JINR-P2-3601)

NEUTRON-ABSORPTION ANALYSIS

equipment and techniques for titrations in, 22:12233
resonance techniques in, 22:44998
use in analysis of lunar and planetary surfaces, (E), 22:31533
use of resonance, to evaluate spectrum calculations for enriched plutonium--water lattices, (E/T), 22:30329

Neutron Activation Analysis
see Activation Analysis

NEUTRON BEAMS

control device for transmitting, description of helical-grooved ball-and-shutter, 22:25195(P)
dosimetry for radiotherapy, fast, 22:49326 (NYO-2740-5, pp 6-200)
evaluation of epithermal and thermal, for therapy of brain tumors, dosimetric, 22:31068
extraction through reactor tangential channel, effect of material, geometry, and position of scatterers on, 22:44904
flux determination for, use of transmission and reflection matrices for, 22:27496
intensity measurements using helium-3 proportional counters and gold foil activation, 22:5708 (RISO-144)
optics of slow, 22:39566
polarization of thermal, with mixed velocities, methods for measuring, 22:9764
production for research in nuclear physics, survey of, 22:39565
production of intense low-energy, reactor cryogenic facility for, 22:47037
production of polarized, design of magnetic mirror machine for, 22:24408 (IA-1128, pp 21-54)
production of polarized, review of methods for, 22:26781
production of polarized, using double transmission method, (E), 22:44591
sample irradiation in, remote handling equipment for, 22:35979
spin resonance flipper--chopper for slow, 22:36124 (KR-125)
thermalization by hydrocarbons, density and composition measurements by, 22:39980 (EUR-3624)
use for inspection of lead specimens 6 to 12 in. thick, 22:21731
use for radiotherapy, calculation of scattered radiation dose to man from fast, 22:31124
use to study solids, review, 22:13545
use to study structure and dynamics of magnetic materials, 22:46215

NEUTRON CAPTURE THERAPY

considerations attendant to, biological and physical, 22:40780
dosimetry of epithermal and thermal neutron beams for, methods for, 22:31068
dosimetry of, review of, 22:43364
evaluation of neutrons produced in cyclotron by ^{9}Be(^{3}He,n)^{11}C reaction for, 22:19370
performance for solid tumors in man, effects of oxygen on, 22:40780
radiation dose required for, of intracranial neoplasms in man, 22:51836
use for treatment of neoplasms, review of, 22:16997

- NEUTRON CHOPPERS
  - see also Neutron Monochromators
  - see also Neutron Spectrometers
  - accuracy of cross-correlation, for time-of-flight spectroscopy, 22:43091
  - calibration and resolution determination of, Bragg break method for, 22:36086
  - calibration of, dependence of start pulse position on rotor speed for, 22:19139
  - description of improved research reactor, 22:14281(P)
  - description of mechanical, for thermal and resonance neutrons, 22:12127
  - description of thermal, for neutron spectrum measurements at UTR-100, 22:14821 (NP-17261)
  - design and performance for neutron crystal spectrometer, 22:6640
  - design and performance of continuously variable, 22:4467
  - design and performance of mechanical correlation, for thermal neutron spectroscopy, 22:36081
  - design and performance of spin-flip, 22:10586
  - design modification and performance for time-of-flight spectrometry, 22:12595 (AAEC/E-186)
  - design of spin resonance flipper, for polarized slow neutrons, 22:25697
  - development for time-dependent measurements in water, 22:13907 (RPI-328-100, pp 113-19)
  - development of spin resonance flipper--chopper for slow neutrons, 22:36124 (KR-125)
  - neutron transport in, with curved slits, 22:14837
  - rotors for, computer calculation of finite difference stress solutions for, 22:51242 (CEA-R-3467)
  - use of correlation-type spin-flip, for measuring polarization dependent thermal neutron scattering, 22:43086
- NEUTRON CROSS SECTIONS
  - accuracy of, effects on calculations of reactor parameters, (T), 22:18107
  - accuracy of, perturbation analysis of effects on integral data, (T), 22:32448
  - analysis by nonlinear programming, (T), 22:5725
  - analysis of, use of optical model for theoretical, 22:14251(R) (BNWL-534)
  - angular distributions for elastic scattering, Legendre expansion coefficients for, (T), 22:22523 (NAA-SR-12533)
  - autocorrelation function determination from total, 22:32959 (ANL-7310, pp 1-30)
  - bibliography and data compilation on, CINDA 68, 22:46698 (TID-24489)
  - book: Nuclear Data for Reactors, Vol. 1, 22:18078 (STI/PUB-140(Vol.1))
  - calculation for absorption by fission products in thermal reactor spectra, computer program for, (T), 22:20404 (CONF-680307-16)
  - calculation for capture and fission by, transradium elements, method for, (T), 22:20565 (CONF-680307-18)
  - calculation for DTF-IV and 2DF transport codes, computer program for, (T), 22:37278 (GEMP-617)
  - calculation for heavy even-even nuclei using deformed-nucleus optical model, computer program for, (T), 22:1563 (NAA-SR-Memo-12532)
  - calculation for inelastic scattering, at high energy, (T), 22:32435
  - calculation for transport problems, iterative method for, (T), 22:18096
  - calculation from pulse and wave propagation data in fast non-moderating assemblies, methods for, 22:53077
  - calculation from resonance parameters, effects of unresolved resonances on, (T), 22:18108
  - calculation method for multigroup, for use in fuel burnup analysis, 22:14288 (AAEC/E-184)
  - calculation of 26-group, for fast reactor materials, (T), 22:24835(R) (BARC-305)
  - calculation of average multigroup, computer program for, (T), 22:9761 (IN-1062)
  - calculation of capture, using statistical model, (T), 22:9938
  - calculation of Doppler resonance broadening, (T), 22:22527 (RPI-328-112, pp 62-103)
  - calculation of Doppler-broadened effective, models for, (T), 22:15927 (UCRL-50323)
  - calculation of Doppler-broadened p-wave resonance, (T), 22:32439
  - calculation of Doppler-broadened p-wave, (T), 22:48426 (RPI-328-133, pp 60-100)
  - calculation of Doppler-broadened resonance, (T), 22:39551 (RPI-328-123, pp 39-52)
  - calculation of Doppler-broadened resonance, for uranium carbide, (T), 22:32438
  - calculation of Doppler-broadened self-shielded, computer programs for, 22:37277 (AI-AEC-Memo-12645)
  - calculation of few-group microscopic, for fast reactor critical size, (T), 22:48751 (IFA-FR-68)
  - calculation of fission, from raw experimental data, computer programs for, 22:9759 (EUR-3652)
  - calculation of flux-weighted, computer program for, 22:24790 (LA-3873)
  - calculation of generic thermionic reactor, 22:22791 (GA-8309)
  - calculation of graphite-moderated rocket reactor shielding, computer program for, 22:39852(R) (N-68-13502)
  - calculation of group constants for steam- and sodium-cooled fast reactors using 26-group representation, (T), 22:53066 (KFK-770)
  - calculation of group thermal, computer program for, (T) 22:32432 (LA-3893)
  - calculation of inelastic scattering, for fast neutrons, 22:18081
  - calculation of macroscopic, for PDQ-4 code, computer program for, (T), 22:35197 (GEAP-4953)
  - calculation of multigroup constants from 26-group microscopic, computer program for, (T), 22:39544 (KFKI-14/1968)
  - calculation of multigroup, computer program for, (T), 22:11871 (ANL-7318)
  - calculation of multigroup, user's manual for GAMB1T program for, 22:24793 (WANL-TME-1751)
  - calculation of PCTR 8 x 8 lattice multiple configuratio thorium oxide (ThO_2)-target supercell thermal neutron analysis of, 22:50800 (BNWL-792)
  - calculation of ratios of effective, least squares analysis of burnup data for,, 22:25142
  - calculation of resonance, for plutonium-239, using fission widths from channel fission theory, (T), 22:1655 (NAA-SR-12515)
  - calculation of resonance, including interference effect and exact Doppler broadening, computer program for, (T), 22:11876 (WAPD-TM-518)
  - calculation of rethermalization, using velocity-depende cross sections with free-gas scattering kernel, (T), 22:22535
  - calculation of temperature-dependent effective, for continuum region, computer program for, (T), 22:1389 (GA-8003)
  - calculation of thermal capture, using Monte Carlo selection of reduced neutron widths, (T), 22:14026
  - calculation of thermal group constants by conversion of energy- and space-dependent integral equation into energy-dependent form, (T), 22:48419 (RCN-95)
  - calculation of thermal inelastic scattering, computer programs for, (T), 22:9756 (AERE-R-5536)
  - calculation of thermal scattering, computer program for (T), 22:11875 (LA-3823)
  - calculation of variations in Marviken Reactor (R-4) and SGHWR flux distributions from, analysis of, (T), 22:50745 (ZJE-24(Pt.1))
  - calculation using level spacings from Fermi gas model, (T), 22:1712
  - calculation using optical and statistical models, (T), 22:32468
  - calculation using optical model, formalism for, (T), 22:18347
  - calculation with Doppler broadening, using MUFT program (T), 22:18087
  - calculation with self-shielding corrections, resonance parameters for, (T), 22:32626
  - calculational models for, comparison of results from, 22:10050
  - calculations for absorption in unresolved resonance region, statistical, (T), 22:32455
  - calculations for capture by A = 70 to 170 nuclei above MeV, using statistical model, (T), 22:46749
  - calculations for heavy nuclei at 1 to 10 MeV, using loc spherical optical model, (T), 22:35349
  - calculations for resonance absorption in a lump surrounded by a homogeneous medium containing the sam resonance absorber, (T), 22:46703
  - calculations for solids at higher energies, effects of chemical binding on, (T), 22:1567
  - calculations in slab geometry, recursion formulas for semi-analytical multiple scattering, (T), 22:29846
  - calculations of elastic-scattering average and energy-dependent, mean square deviations for, 22:32959 (ANL 7310, pp 1-30)
  - calculations of plutonium recycle reactor, computer programs for, 22:24955 (EUR-3891)
  - calculations using spherical optical model, computer program for, 22:1562 (NAA-SR-Memo-12531)
  - computer program for averaging, for transport calculations, (T), 22:9763 (ORNL-4130)
  - corrections for attenuation and multiple scattering, computer program for calculating, (T), 22:13924
  - corrections for integral data, least-squares method of calculating, (T), 22:35344
  - corrections for multiple scattering, methods developmen for, (T), 22:13908 (RPI-328-100, pp 120-39)
  - corrections to low-energy scattering, Monte Carlo calculations of multiple scattering, (T), 22:39550 (RPI-328-123, pp 32-8)
  - data acquisition and processing for time-of-flight measurements, equipment and computer programs for, 22:18103
  - data acquisition and processing systems for, developmen of, 22:37340(R) (EANDC(E)-89(U))
  - data analysis and evaluation for, automated system for, 22:32433 (NAA-SR-Memo-12529)
  - data analysis and processing for transmission measurements, computer programs for, (T), 22:18104
  - data analysis for partial, methods development for, 22:29830 (GA-8602)
  - data analysis for resonance parameters using Breit--Wigner formalism, computer program for, 22:24799

data analysis for resonance parameters, methods for, (T), 22:53166 (CEA-R-3385)
data analysis for subcritical experiments, 22:20410 (GA-8466)
data analysis for thermal, computer program for least squares fitting, 22:22530 (WAPD-TM-761)
data analysis for unresolved resonance region, computer program for calculating self-shielding and multiple scattering corrections for, (T), 22:20408 (GA-8380)
data analysis for uranium-238 at 0.05 to 15 MeV using generalized optical model, (T), 22:50605
data analysis of capture, for resonance parameters, (T), 22:35285(R) (AERE-PR/NP-13)
data aquisition and processing using PDP-7 computer, supervisor program for, (E), 22:22592 (RPI-328-112, pp 1-15)
data compilation and evaluation for deuterium at 0.0001 eV to 20 MeV, (E/T), 22:48446
data compilation and evaluation for reactor calculations, 22:18099
data compilation and evaluation for reactor calculations, international co-operation in, 22:18109
data compilation and evaluation for shielding calculations, ENDF/B, 22:13904 (LA-3801)
data compilation and evaluation for threshold reactions, 22:29828 (BNL-12417)
data compilation and evaluation for uranium-238 at 0.001 eV to 15 MeV, ENDF/B, 22:7689 (BAW-316)
data compilation and evaluation for, survey of, 22:18106
data compilation for deuterium at 0.0001 eV to 20 MeV, 22:29894 (LA-3271)
data compilation for gadolinium, magnesium, molybdenum, titanium, and vanadium, ENDF/B, 22:50559 (ANL-7387)
data compilation for plutonium-239 and plutonium-240 at 0.001 to 14 MeV, 22:50599 (LA-3528)
data compilation for uranium-235 and uranium-238 at 0.001 to 14 MeV, 22:50598 (LA-3527)
data evaluation and compilation at UKAEA nuclear data library, developments in, 22:35195 (AEEW-M-802)
data evaluation and libraries for activation of indium-115, lead, manganese-55, niobium-93, sulfur-32, and zirconium, 22:24862 (WANL-TME-1746)
data evaluation for activation detectors, status of, 22:37340(R) (EANDC(E)-89(U))
data evaluation for manganese-55, for ENDF/B library, 22:3640 (BNL-50060)
data evaluation for plutonium-239 in keV and resolved resonance region, (T), 22:53168 (JAERI-1162)
data evaluation for plutonium-240, -241, and -242 at 0.01 eV to 15 MeV, 22:22578 (IA-1152)
data evaluation for plutonium-240, ENDF/B, 22:48508 (APDA-218)
data evaluation for rhenium-185 and rhenium-187, for ENDF/B library, 22:20568 (GEMP-587)
data evaluation for sodium-23, ENDF/B, 22:46730 (APDA-217)
data evaluation for tantalum-181 at 0.0001 eV to 15 MeV, 22:20561 (AHSB(S)R-141)
data evaluation for thermal capture and fission of americium-243, berkelium-249, californium isotopes, curium isotopes, and plutonium-242, 22:39627 (BNL-50082, pp 19-24)
data evaluations for plutonium-239, 22:35295 (TPM-RFR-682)
data evaluations in CCDN file, compilation of, 22:32422 (CCDN-NW-7)
data file for reactor applications, ENDF/B, 22:3586 (BNL-50066)
data files for γ production on calcium, chlorine, magnesium, potassium, and sodium-23, 22:37306 (AD-665359)
data for reactors, conference on, 22:18079 (STI/PUB-140(Vol.2))
data for, description of Fortran codes for processing, 22:33086 (ANL-7310, pp 431-511)
data library for hafnium and hafnium isotopes at 0 to 15 MeV, evaluated, 22:16012 (KAPL-3327)
data library tapes of UKAEA Nuclear Data Library, format of, 22:1558 (AEEW-M-774)
data optimization for fitting experimental critical sizes, method of, (T), 22:13897 (AWRE-O-92/64)
data requirements for fast reactor design and operation, (E/T), 22:18101
data requirements for shielding calculations, 22:18102
data requirements for thermal reactor design and operation, (E/T), 22:18100
data sets for protactinium-231, protactinium-233, and uranium-232 at 0.001 eV to 15 MeV, 22:16001 (GA-7462)
data sets for uranium-234 and uranium-236 at 0.001 eV to 15 MeV, 22:16003 (GA-8135)
data storage and retrieval techniques for AIENDF libraries, 22:48418 (NAA-SR-11980(Vol.2))
data storage, retrieval, and display system for, description of computer-oriented, 22:29832 (UCRL-50400(Vol.1))
determination of AARR internal thermal column effective group, 22:32960 (ANL-7310, pp 31-135)
determination of Doppler broadened resonance, techniques for solution to integral equations arising in, 22:33088 (EIR-132)
determination of effective, in plutonium-enriched reactor cores, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
determination of inelastic scattering, in reactor coolant and moderator, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
distribution of macroscopic scattering, in SEFOR core and materials, 22:1763(R) (GEAP-5533)
effects of uncertainties of, on economic design of power reactors, 22:24973 (ORNL-TM-2157)
estimation of thermal capture and fission, for transactinide and transuranium isotopes, (T), 22:24852 (BNL-12353)
evaluation for application to fast breeder design, processing codes for, 22:6138(R) (LA-3820)
evaluation for computer calculation, curve fitting and statistical methods for, (T), 22:29838
evaluation for fast reactor physics analysis, (E/T), 22:30155(R) (NAA-SR-12296)
evaluation for sodium-void reactivity measurement analysis in fast critical assemblies, (E/T), 22:47004 (APDA-216(Vol.1))
evaluation of spectral-averaged foil activation, for fast reactor fluence measurements, 22:48746
evaluation of total, from 2.25 to 15 MeV, review of procedures in, 22:11872 (BNWL-472, pp 6.1-5)
evaluation of, comparison of energy dependent reactivities for, 22:27466 (LA-DC-9404)
evaluation of, computer graphics system for automated, (E/T), 22:5719
evaluation of, use of computer graphics for development of automated system for, 22:28242
fluctuation analysis for fission, methods development for, (T), 22:35285(R) (AERE-PR/NP-13)
fluctuations in total fast, coherence widths for, (E), 22:20578 (WASH-1079)
fluctuations in total, analysis using autocorrelation function, (T), 22:7637(R) (COO-1573-33)
fluctuations in, effects of 2p-1h states on, (T), 22:53243
generation for fast reactors of thermal, use of MC^2-THERMOS code for, 22:33086 (ANL-7310, pp 431-511)
generation of bilinearly-weighted absorption, description of ADRIFT code for, 22:33086 (ANL-7310, pp 431-511)
generation of multigroup, description of MC^2-THERMOS code for, 22:33086 (ANL-7310, pp 431-511)
group constants for FTR calculations, 22:22804(R) (BNWL-685)
incoherent approximation to thermal neutron scattering, (T), 22:26774
interpretation for fission at low energy, (T), 22:18349
library development for three-group, for use on small high-leakage cores, 22:33091 (KAPL-M-6738)
library of multigroup, for uranium-233 at 0.001 eV to 10 MeV, 22:24861 (WANL-TME-1721)
measurement by time-of-flight method, use of CAE 510 computer for, 22:16948
measurement for fission of alpha-emitting and spontaneously fissioning isotopes, method for, (E/T), 22:20571 (LA-DC-9188)
measurement for hydrogenous compounds, research program on, (E), 22:37281(R) (NYO-72-191)
measurement for radioactive fission products in thermal reactor spectra, depletion method for, (E/T), 22:20405 (CONF-680307-17)
measurement in BN-350 type critical assembly, 22:18570
measurement in Ispra-2 research reactor, use of oscillator technique for, 22:50817
measurement in low keV region, technique for, 22:26766
measurement of absorption and scatter, for burnable poisons in long-life SNAP system, 22:37509 (AI-AEC-Memo-12673)
measurement of activation, at 14.4 MeV, 22:22589 (ORO-3346-18)
measurement of capture, for fast reactor materials, 22:27086 (ANL-7375, pp 176-7)
measurement of differential elastic and inelastic scattering, method for, 22:18105
measurement of fast reactor group, GAF, GAND, and GAR computer programs for, 22:10077 (GA-7920)
measurement of fast reactor temperature-dependent, effects on Doppler coefficient of, (T), 22:35709
measurement of fission, use of mica particle track detectors for, 22:40364
measurement of scattering, bright line technique for, 22:2406
measurement of scattering, for nonfissionable nuclei, using time-of-flight method, (E/T), 22:16000 (CEA-R-3360)
measurement of SNEAK critical assembly, microscopic-group data analysis for improved, 22:35627
measurement of standard, for flux determination, (E), 22:18146
measurement of, development of experimental facilities for, 22:37340(R) (EANDC(E)-89(U))
measurement of, time-of-flight spectrometer for, 22:49101
measurement program on partial, using time-of-flight method, 22:37340(R) (EANDC(E)-89(U))
measurement using pulse decay in nonmultiplying assemblies, technical progress review on, 22:35207
measurement using time-of-flight method with nuclear explosions, equipment and techniques for, 22:37280 (LA-3478(Pt.1))
measurement using time-of-flight method, experimental

facility for, 22:29830 (GA-8602)
measurement using time-of-flight method, facility for, 22:22607
measurement using time-of-flight method, research program on, (E), 22:18287
measurement using underground explosions, semiconductor detectors for, 22:47320 (LA-DC-9709)
measurement using underground nuclear explosions, (E), 22:32616
measurements for fast reactor criticality studies, 22:18515
measurements for radiative capture by reactor materials at few keV to 3 MeV using monoenergetic beams, research program on, (E), 22:53165 (ANL-7425, pp 190-2)
measurements in μeV range, Doppler chopper method for, (E), 22:53190
measurements of doubly differential scattering, correction for multiple scattering, (E), 22:1583
measurements of, at National Physical Laboratory, Teddington, England, 22:43129
preparation of MC² library tapes from ENDF/B tapes, computer program for, 22:46694 (APDA-219)
preparation of multigroup, for fast reactor calculations, 22:13900 (IA-1144)
research program and progress at RPI, (E), 22:48423 (RPI-328-133, pp 1-34)
research program and progress at RPI, (E/T), 22:48422(R) (RPI-328-133)
research program on fast capture in medium-weight and heavy nuclei, survey of, (E/T), 22:39606(T) (LA-tr-68-18)
resolution corrections to resonance measurements, methods for, (E/T), 22:41917 (CNAEM-51)
resonance integral calculations treating overlap and interference, (T), 22:5714
resonance integrals for positive and negative energy levels, analytic formulation for infinitely dilute, (T), 22:41932
resonance interference effects at intermediate and fast energies, (T), 22:50657 (ANL-7467)
resonance interference in, calculations using R-matrix and Kapur-Peierls formalism with two-level approximation, (T), 22:3588 (GA-8203)
resonance scattering effects on multigroup averaging, (T), 22:32460
resonance self-shielding corrections to, computer program for calculating, (T), 22:39544 (KFKI-14/1968)
resonance self-shielding factors for plutonium and uranium at high temperature, (T), 22:35348
resonances with high angular momentum at low energy, (T), 22:32707
SCORE evaluation systems for, description of, 22:27396(R) (AI-AEC-12638)
sets for fast reactor calculations, evaluation and comparison of, 22:53379
simulation of fast reactor, effects of flux correction and resonance integral approximation on, (T), 22:18601
standards for national atomic energy program, development of, 22:35200 (NBS-TN-283)
tables for (n,2n) reactions at 14 MeV and in fission spectrum, (T), 22:3596
tables for (n,3n) reactions in fission spectrum, (T), 22:3596
tables for intermediate and fast reactor materials, 22:46695 (EURFNR-537)
temperature dependence of effective, (T), 22:32444
uncertainties in, effects on high temperature gas-cooled graphite reactors, 22:5995
variations in, effects on fast reactor physics calculations of, 22:50760

NEUTRON-DIFFRACTION ANALYSIS
Bragg intensities in, computer program for correction of measured integrated, 22:34739 (AERE-R-5725)
data acquisition system for, development of computer-based, 22:51287
data analysis equipment for, use of EL-X8 computer as, 22:19220
equipment for powder sample, design of fixed-scattering-angle spectrometer, 22:14822 (RISO-164)
equipment for, at 3 to 300°K, design and operation of helium cryostat as, 22:11343
for liquid metals, (T), 22:15374
intensities from polycrystalline samples, computer program for calculating, (T), 22:44575 (IA-1169)
intensity and resolutions in time-of-flight powder diffractometry, 22:44251
intensity asymmetries in, (T), 22:46729(R) (AECL-3157)
magnetic structure determination from, method using spin density Patterson function for, 22:26509
measurement problems of, 22:34779
method for single crystals, 22:4777
methods development for, using polarized beams, 22:24835(R) (BARC-305)
methods development using pulsed electron linear accelerator as neutron source, (E), 22:39552 (RPI-328-123, pp 64-72)
methods for, comparison of time-of-flight and traditional, using continuous and pulsed neutron sources, 22:11490 (CONF-661216-4)
monochromator crystals for, laminar, 22:39562
orthorhombic iron uranates, 22:24444
performance in analysis of uranium monocarbide powders, 22:11041 (EUR-3655)
phase problem in, solution by anomalous dispersion method, 22:15550 (AERE-R-5195)
research at Avogadro RS1 reactor, 22:50235
research programs and progress, (E/T), 22:9921 (JUL-Conf-1)
structural studies using, 22:29544(R) (PRNC-16)
structural studies using, 22:29545(R) (PRNC-84)
study of magnetic structures by, (T), 22:20091
techniques of, 22:22955
use for determining texture of metal sheets, 22:28190
use for measurement of magnon dispersion relationships, 22:44209 (INP-598/PS)
use in structure studies of crystals and molecules, general structure factor formalism for, 22:7391
use in structure studies of liquid alloys, 22:28820
use in study of solids, review of techniques of, 22:13545
uses in physical metallurgy, review, 22:23824
uses of, 22:22955
uses of, characteristics unique to, 22:8781

NEUTRON DIFFRACTOMETERS
collimators for time-of-flight, for powder diffractometry, 22:51288
control circuits for triple axis, on-line computer, 22:19211
control of, PDP-8 computer programs for, 22:45344 (AAEC/E-191)
control system for single-crystal, description of automatic, 22:33692 (ZfK-121, pp 320-425)
data acquisition system for, development of PDP-8 computer-based, 22:12668 (AERE-R-5642)
data processing for MTR time-of-flight, computer program for, 22:49141 (IN-1214)
Debye-Waller factor for crystal in MTR time-of-flight, computer program for determining, 22:49141 (IN-1214)
design and operation of, controlled by SDS 910 computer, 22:19187 (IS-1740)
design and performance of double, 22:14873 (JUL-500-RX)
design for crystal structures of high temperature refractory phases, 22:36498
design of time-of-flight powder, using pulsed linac neutron source, 22:45327
design, installation, and automation of Hilger-Watts four-circle, 22:27623 (IS-T-215)
development of computer controlled, 22:43596 (ANL-7299, pp 280-9)
focusing of time-of-flight, 22:23359 (JINR-E14-3759)
operation at WWR-S reactor, 22:28206 (IFA-FN-33)
recording system for single-crystal, description of automatic, 22:33692 (ZfK-121, pp 320-425)
resolution and intensity of double-axis powder-crystal, calculation of, 22:10669
resolution and luminosity of, collimator effects on, 22:47398 (IA-1167)
resolution of double-axis spectrometer and time-of-flight, 22:45319 (IA-1166)

Neutron Fission
see Fission

NEUTRON MONOCHROMATORS
crystals for diffraction and scattering measurements, laminar, 22:39562
description of improved research reactor, 22:14281(P)
description of large zinc, for studying lattice dynamics in molecular crystals, 22:21391
design and performance for neutron crystal spectrometer, 22:6640
design and performance of double-reflection lead-crystal 22:16940
design of beryllium crystal, for diffractometer system, 22:19187 (IS-1740)
development and characteristics of single crystals as Bragg-reflecting, 22:36077 (AERE-R-5647)
development for resonance neutron capture studies, 22:20578 (WASH-1079)
resolution and intensity of Bragg-reflected beam in, determination by Monte Carlo simulation, 22:25662

Neutron Photography
see Radiography, Industrial

Neutron Radiography
see Radiography, Industrial

NEUTRON SOURCES
see also Intense Neutron Generator (ING)
see also Reactor Thermal Columns
background problems in thin heavy-ice targets for, 22:37254
beam centering in accelerator-based, use of neutron reactions (n,2n) with copper-63 for, 22:15890
calibration by a point detector, (E), 22:29847
calibration by manganese sulfate bath method, sensitivit of, 22:24788 (IA-1128, pp 55-77)
calibration of antimony--beryllium, for La Crosse Boiling-Water Reactor startup, 22:3805(R) (ACNP-6753
calibration of Canadian standard, by boron trifluoride chamber technique, 22:6571
calibration using spherical manganese sulfate bath, 22:20578 (WASH-1079)
collimators for plutonium--beryllium and polonium--beryllium, effective source center for alignment of fast current from, (E/T), 22:53070
collimators for, design of, 22:18123(R) (RLO-1925-11)

contamination from tritium target, vacuum cartridge for containing, 22:48393 (ORO-3346-29)
contamination hazards near accelerator, tritium, 22:43310 (PHS-999-RH-29)
description and uses of pulsed 14-MeV, 22:39564
description for use in neutron studies of condensed matter, (E/T), 22:1570
description of high-flux 14-MeV, using T(d,n) reactions, 22:37248
description of high-flux, using proton-beam reactions with flowing liquid bismuth-lead eutectic target, 22:20432(P)
description of liquid pulsed, for research reactors, 22:6134(P)
design and fabrication of d-T tubes, technology of, 22:18085
design and improvement of, for use in activation analysis, 22:14614
design and operation of 14-MeV pulsed, 22:22538
design and performance of d--T, using Cockcroft--Walton accelerator with duoplasmatron ion source, 22:11886
design concepts for pulsed neutron experiments, technical progress review on, 22:35207
design for activation analysis incorporated in on-line process control equipment, 22:21236 (ORO-2980-16)
design for EBR-II fuel cycle facility, 22:4370
design for neutron radiography, 22:4372
design for radiography of objects in hot cells, 22:4371
design of 14-MeV, for well logging, 22:28189
design of antimony-124--beryllium thermal, 22:44587
design of arc discharge type, (E), 22:15939(P)
design of C. O. I. N. arrangement for open channel irradiation, 22:12937 (CONF-660344-1)
design of cold, using liquid hydrogen moderator with DIDO reactor, 22:13894 (AERE-M-1690)
design of D--D and D--T type, (E), 22:22541(P)
design of d-D and d-T generator tubes, with sealed-in gas replenisher, 22:26785(P)
design of d-T, using target shielding as support structure, 22:26784(P)
design of d-T, with automatic flux control for well logging, 22:26786(P)
design of deuterium (d,n) and tritium (d,n), 22:50509
design of fast, for use in well logging, 22:43134
design of fast, using T(d,n) reaction, 22:24757
design of fission, using californium-252, (E), 22:7620
design of high-intensity pulsed d-D, using low-pressure high-voltage discharge, 22:41930
design of high-yield, using uranium target with electron linac, 22:37250
design of Intense Neutron Generator, using flowing liquid metal as proton-beam target, 22:26769(P)
design of neutron generating tubes, 22:32361 (IFA-AL-1)
design of portable pulsed, 22:43134
design of pulsed d--D, using high-voltage low-pressure discharge, 22:44576 (IPP-1/74)
design of pulsed linac, for powder diffraction, 22:45327
design of pulsed, using Cockcroft--Walton accelerators, 22:7618
design of pulsed, using laser-heated deuterium and tritium plasma, 22:29893(P)
design of pulsed, using magnetized ferrite crystals, (E), 22:24803
design of pulsed, using reactions between hydrogen isotopes, 22:15940(P)
design of pulsed, using rotating shutter between alpha sources and targets, 22:44583(P)
design of rotating target assembly for high-flux 14-MeV, 22:37253
design of sealed-tube d--T, 22:9757 (AERE-R-5616)
design of tube-type, 22:46701(P)
design of UHTREX high temperature plutonium--beryllium, 22:39881 (LA-3953)
design of, using (α,n) reactions, 22:5754(P)
design parameters for neutron howitzers using polonium--beryllium source with paraffin moderator, (E), 22:39560
design parameters for, using deuteron beams from Penning ion source, 22:35204
design study for deuterium gas target, using rotating foil, 22:37246
design study of high flux, by (γ,n) reactions using intense laser-accelerated electrons, feasibility, 22:32234 (BNWL-684)
development and uses of NA-2, 22:3577
development for cold neutron production by filtering reactor spectra, 22:7623
development for petroleum prospecting, 22:11754
development for polarization and cross-section measurements using d-d reactions, 22:7621
development for use in activation analysis, 22:14433 (ORNL-4196, pp 66-89)
development for use in industrial activation analysis, 22:18691 (KN-68-71(R))
development of 14-MeV, at Tunisian CEA 1966-1967, 22:14875(R) (NP-17229)
development of accelerator, 22:11859(P)
development of aqueous, 22:43629(R) (LA-3933)
development of high-intensity thermal, 22:9921 (JUL-Conf-1)
development of linear-accelerator-based ING, technological aspects of, 22:20389
development of portable antimony--beryllium, for production of short-lived radioisotopes, 22:14699
development of pulsed 14-MeV, using D(d,n) reactions, 22:32388
development of standard, (E), 22:7617
dosimetry for use in therapy, 22:43351
evaluation for use in industrial radiography in France, 22:16790
evaluation of antimony--beryllium, for neutron radiography, (E/T), 22:26770
fabrication of plutonium--beryllium, 22:5707 (BARC-294)
failure of SAFARI-1 plutonium-beryllium startup, health physics aspects of, 22:16291 (PEL-154)
flux and shielding data for design of californium-252, (T), 22:29839
flux calculations as function of targets and position in moderator for ING, computer program for, 22:32374
flux distribution from intense thermal, computer program for calculating, 22:41920 (ORNL-TM-2206)
flux measurement for accelerator-type, geometry calculation for, 22:49037
flux ratios for activation analysis, measurement of relative thermal/fast, (E), 22:46699
fluxes from (α,n) and (p,n) reactions, method for measuring, (E), 22:11948(R) (NP-17216)
gamma angular distribution from graphite block containing polonium--beryllium, (E/T), 22:48420(T) (RFP-Trans-51)
handling and storage problems in gas and oil well logging, 22:40696
hazards from use of, for radiometric gages for oil well logging, 22:28489
heat generation in target tube of Intense Neutron Generator, (T), 22:20497(R) (AECL-3009)
installation in LACBWR of antimony--beryllium, 22:7786 (ACNP-67533)
ion beam focusing characteristics of neutron generating tubes, 22:35364 (GEPP-34)
modification of, using Cockcroft-Walton accelerators, 22:9802(R) (NYO-1082-9)
neutron angular distribution from Phillips Neutron Generator PW 5300, fast, 22:35210
neutron distribution in water from tritium (p,n) reaction, (E), 22:1581
neutron emission rates of plutonium--beryllium, containing plutonium-241, (T), 22:1580
neutron energy spectra for plutonium-239-beryllium, plutonium-238-fluorine, and plutonium-238-oxygen-18, (E), 22:3590 (MLM-1422)
neutron energy spectra from americium--beryllium, (E), 22:37340(R) (EANDC(E)-89(U))
neutron energy spectrum for lead-210--beryllium, (E), 22:48430
neutron flux distribution around disk-shaped targets in accelerator-type, (E/T), 22:48427
neutron polarization from deuterium (t,n) and tritium (d,n) reactions, (T), 22:9777
neutron production using deuterium (d,n), tritium (d,n), and tritium (p,n) reactions, (T), 22:39554 (SC-RR-68-19)
neutron production using positive ion-induced reactions, (T), 22:32479 (BNL-50083, pp 179-91)
neutron spectra from americium--beryllium, polonium--beryllium, and plutonium--beryllium, behind hydrogen-bearing shielding, (E), 22:39563
neutron spectra from lithium-7 (p,n) reactions at 8.3 to 9.1 MeV, (E), 22:37347
neutron spectra from moderated and unmoderated proton synchrocyclotron targets, 22:35285(R) (AERE-PR/NP-13)
neutron spectra from plutonium fluoride, (E), 22:41921
neutron spectra from plutonium-238 fluoride, (E), 22:32461
nuclear safeguards applications of californium-252, 22:35199 (LA-DC-9552)
operation in medical schools, regulations for, 22:499
performance of 14-MeV, in monitoring of leached fuel elements, 22:14433 (ORNL-4196, pp 66-89)
performance of continuous and pulsed, in neutron diffraction analysis, 22:11490 (CONF-661216-4)
performance of pulsed low-energy, using deuterium and tritium targets, 22:37251
physics aspects of Harwell Neutron Booster, 22:5680 (AERE-R-5205)
production of monoenergetic neutrons using particle accelerators, (E/T), 22:5752
properties for biological use, 22:16997
properties for use in nondestructive testing, table of, 22:23242
radiation dose measurements in environs of d--T, 22:35179
radiation hazards at accelerator--target, safety procedures for protection against, 22:50487 (CONF-680411)
radiation targets for accelerator, conference on, 22:37239
sample rotator for irradiation with 14-MeV, 22:14433 (ORNL-4196, pp 66-89)
shielding of 14-MeV deuterium--tritium, 22:13530
shielding of californium-252 spontaneous fission, modular, (E), 22:31886 (UCRL-18093)
spectra from beryllium--plutonium, using stilbene scintillation spectrometer, 22:19141

- spectra of beryllium, 22:25860 (UCLA-12-668, pp 29-36)
- spectra of, efficiency of semiconductor detectors for measuring, 22:36090
- spectrum of americium--beryllium, (E), 22:26775
- spontaneous fission, for water-moderated natural-uranium rod exponential piles, 22:30334
- survey of, for neutron spectroscopy, 22:9951
- survey of, for nuclear physics research, 22:39565
- target films for, analysis of microstructure of erbium deuteride, 22:20384
- target for CBNM linac, development of uranium, 22:39522
- target for cyclotron, design of beryllium, 22:37249
- target for fast, design and performance of beryllium-9 cyclotron, 22:37257
- target for, design of, 22:9769(P)
- target performance in sealed-tube 14-MeV, using T(d,n) reactions, 22:37247
- target preparation for, deuterated palladium and titanium, 22:11746 (CEA-R-3065)
- targets for accelerator development of, 22:37245
- targets for accelerator, device for cooling, 22:11855(P)
- targets for D(d,n), yields of deuterium-enriched metal film, 22:37244
- targets for pulsed, optimization of moderators for, 22:37256
- targets for, design and performance of tritium (d,n), 22:37243
- targets for, lattice parameters of tritium-impregnated metal, 22:26762(R) (NP-17412)
- targets for, use of beryllium-9, 22:37255
- testing of, description of automatic self-check system for, 22:28204 (GEPP-27)
- thermal neutron flux variations from point fast, in attenuating medium, theoretical method for calculating, 22:28102
- transfer between hot cells, design of hermetically sealed enclosure for, 22:51211(P)
- transformer for, design of 200-kV, 2-mA, insulating-core, 22:10639
- tube for pulsed fast, for lunar analysis, design and performance of gas-filled, 22:26763 (SC-4797(RR))
- use for determining moisture content of materials, 22:43145
- use for determining water content in various media, 22:25686
- use for industrial chemical analysis, 22:4494
- use in activation analysis, characteristics of, 22:33252
- use in radiometric hygrometers for automatic control and regulation of humidity of sintering charge, 22:2441
- use in soil-moisture gage, 22:6667
- use in thermal neutron radiography, 22:35984
- use of accelerator--target, for activation analysis, 22:50487 (CONF-680411)
- use of deuterium--tritium generator as, for radiotherapy, 22:36299
- use of fast, in moisture gage, 22:10620(P)
- use of plutonium--beryllium, as calibrated gamma sources, 22:36007
- use of pulsed, for determining self-diffusion in zirconium hydride, 22:2690
- use with boron trifluoride proportional detectors for measuring calorific values of heavy oils, 22:30885
- use with proportional detectors for moisture measurements, effects of ignition noise on, 22:4492
- use with scintillation detectors for determining carbon content in coal, fly ash, and iron ore, 22:386
- uses of 14-MeV, nonnuclear, 22:37211 (AD-660658)
- uses of californium-252, 22:32477
- yield from lithium target, pulsed, 22:20387
- yield increases in plutonium--beryllium, from americium-241 buildup, 22:18095
- yield of (He-3,n) reactions with beryllium-9, 22:37238
- yield of, determination of 14-MeV, 22:23292
- yields from moderated alpha--beryllium, determination of thermal neutron, 22:46708

Neutron Spectrographic Analysis
- see Neutron Spectroscopy

NEUTRON SPECTROMETERS
- beam of crystal, design and performance of neutron monochromator for, 22:6640
- calibration for in-pile inspection and measurement, 22:20578 (WASH-1079)
- calibration of time analyzer in time-of-flight, dependence of start pulse position on rotor speed for, 22:19139
- calibration, electronics, and operation of, for measurement of neutron emission from SNAP-19 fuel capsules, 22:10502 (MND-3607-173)
- circuits for coupling boron trifluoride counters in time-of-flight, transistorized mixer, 22:38067 (EUR-3942)
- control and data acquisition for triple-axis, interface design for PDP-8 computer, 22:49097 (ORNL-TM-2246)
- control of HFIR triple-axis, use of PDP-8 computer for, 22:27521(R) (ORNL-4236)
- control of, use of SDS 910 computer linked to magnetic disks by IBM 1401 computer for, 22:340 (IS-1701)
- data acquisition and analysis system for time-of-flight, computer-based, 22:38066 (EUR-3933)
- data analysis for organic scintillation fast, computer program for pulse-height, 22:19135 (ORNL-TM-2112)
- data recording system for time-of-flight, design of magnetic drum, 22:19131 (AERE-M-2016)
- description of plastic scintillation time-of-flight fast for deuteron reactions (d,n) with tritium, 22:19137
- description of rotating crystal, for slow neutron scattering studies, 22:12145
- description of SLEEP Reactor and Swedish Reactors (R-2) monochromator, 22:12131
- description of three axis crystal, for measuring phonons in metals, 22:28161
- description of time-of-flight for cross section measurements, 22:49101
- description of time-of-flight scintillation, at 10 to 10 MeV, 22:28134 (NYO-3914-1)
- description of time-of-flight thermal, using neutron chopper at UTR-100, 22:14821 (NP-17261)
- description of use in reactor beam experiments, 22:1212
- design and fabrication of triple-axis, for studying neutron inelastic scattering, 22:28140
- design and operation, (E), 22:11874(R) (JUL-463-NP)
- design and performance of correlation-type time-of-flight, for pulsed polarized neutrons, 22:12602
- design and performance of double-scatter time-of-flight, 22:38077
- design and performance of multisphere moderated scintillation, using Block--Shon technique, 22:47384 (UR-49-894)
- design and performance of proportional detector, with pulse shape discrimination, for core neutron spectra measurements in reactors, 22:33659 (IN-1054)
- design and performance of rotating-crystal, for analysis of cold neutron scattering by cyclic hydrocarbons, 22:45329
- design and performance of semiconductor, using charged-particle collimation, 22:19144
- design and performance of single-crystal thermal, for pulsed reactor in Dubna, 22:341 (KFKI-8/1967)
- design and performance of stilbene scintillation, for simultaneous neutron and gamma spectroscopy, 22:19141
- design and performance of time-of-flight thermal, for scattering experiments, 22:23310 (IEA-136)
- design and performance of time-of-flight, using proton-recoil plastic scintillation detectors, 22:6635
- design and performance of twin-scintillation fast-, 22:2425
- design and testing of helium-3-sandwiched, for critical assemblies, 22:47360 (IITRI-578-P-31-2)
- design and testing of proton-recoil proportional, for critical assemblies, 22:47360 (IITRI-578-P-31-2)
- design of 90° fast, using ^{3}He(n,p)T reaction free of recoil spectrum effects, 22:28143
- design of 90° helium-3, without recoil spectrum effects, 22:2395 (LA-3752)
- design of correlation-type time-of-flight, with magnetically chopped polarized neutron beams, 22:3084 (KFKI-7/1968)
- design of defocusing, rotating-crystal, high-resolution, for neutrons in MeV range, 22:348
- design of fixed-scattering-angle, for neutron diffractio of powdered samples, 22:14822 (RISO-164)
- design of high-resolution cold, for use with high flux reactors, 22:8368(T) (AERE-Trans-1080)
- design of intermediate, using magnetic analysis of recoi protons, 22:6652 (ORNL-4168, pp 183-230)
- design of low-resolution, using fission thermocouples fo pulsed neutron environment, 22:30838
- design of organic scintillation, for neutrons at 10 to 100 MeV, 22:28135 (NYO-3914-2)
- design of proton-recoil, for measuring spectra of fast neutrons produced by accelerators, 22:4456 (JUL-499-RX)
- design of scintillation time-of-flight, for 10- to 100-MeV neutrons, 22:40447
- design of scintillation, with gamma background discrimination based on time of luminescence, 22:2409
- design of single-crystal, 22:24408 (IA-1128, pp 21-54)
- design of spark chamber, using recoil protons, 22:21339 (TID-24308)
- design of time-of-flight fast, for Karlruhe isochronous cyclotron, 22:45330
- design of time-of-flight fast, using neutron--gamma discriminating scintillation detectors, 22:6630
- design of time-of-flight, for polycrystalline diffraction, 22:45327
- design of time-of-flight, for prompt neutrons, 22:21336 (PINSTECH/PHY-6)
- design of time-of-flight, for studying inelastic scattering of thermal neutrons by single crystals, 22:40438 (INR-P-898/II/PS)
- design of time-of-flight, using neutron--gamma discriminating scintillation detectors, 22:49098
- development of 0.1 atm hydrogen-filled diffusion cloud chamber, for thermal neutrons, 22:23316
- development of fast, using activation detectors, 22:19146
- development of proton-recoil, for fast reactor neutrons in direct beams, 22:9921 (JUL-Conf-1)
- development of time-of-flight, 22:9802(R) (NYO-1082-9)
- development of time-of-flight, 22:37340(R) (EANDC(E)-89(U))
- development using bright line technique for measuring thermal scattering cross sections, 22:2406
- Doppler effect in neutron reflection by rotating-crysta

use in time focusing of reflected neutrons, 22:347
efficiency of lithium-6-sandwiched semiconductor, calculation of geometrical, 22:21342
efficiency of polarized, operating with scattering vectors not normal to the direction of the magnetic field, 22:43087
efficiency of semiconductor, 22:36090
fabrication of rotating crystal, for ISPRA-1 research reactor, 22:28162
isotropy of helium-3 sandwich-type, (E), 22:5735
memories for time-of-flight, design of buffer, 22:28144
operation of time-of-flight, for measuring polarization of thermal neutrons, theory of, 22:30847 (EUR-3910)
operation of triaxial, for measuring polarization of thermal neutrons, theory of, 22:30847 (EUR-3910)
optical characteristics of crystal and time of flight, for scattering experiments in gases and liquids, 22:12128
performance in STSF-1 of lithium glass, analysis of, 22:27462(R) (GA-8543)
performance of banks of boron trifluoride counters, reproducibility of, 22:49112
performance of crystal, at ISPRA-1 reactor, review of, 22:12130
performance of helium-3 proportional detector, 22:10576 (CEA-R-3310)
performance of rotating-crystal, 22:9921 (JUL-Conf-1)
performance of rotating-crystal time-of-flight, 22:19133 (BNWL-SA-1536)
performance of stilbene, 22:33208(R) (MLM-1456)
performance of time-of-flight fast, using associated-particle method, 22:9758 (CEA-R-3254)
performance of time-of-flight, for slow neutrons, 22:28132 (NIJS-R-515)
performance of, using stilbene crystal, 22:1956(R) (MLM-1405)
proton recoil spectra from, least-squares method for unfolding, 22:33662
pulse shape discriminator for time-of-flight fast, design and performance of, 22:10591
pulse-shape discriminator for stilbene scintillation, 22:28159
resolution and intensity of Bragg-reflected beam in, determination by Monte Carlo simulation, 22:25662
resolution of double-axis and time-of-flight, for neutron diffraction, 22:45319 (IA-1166)
resolution of three-axis crystal, for measuring 1 phonon resonances in neutron inelastic scattering by crystals, 22:28223
survey of, for neutron spectroscopy, 22:9951
time delay circuit for EIR time-of-flight, up to 8.6 ms, 22:16929 (EIR-130)
time spread in on-line time-of-flight fast, reduction of, 22:45326
use in geophysics, 22:51248
use in USSR research reactors, description of, 22:12129
use of crystal, for thermal spectra and temperature measurements, 22:49102
use of lead slowing-down time, for measurement of mean free path, 22:29851
use of lithium iodide, for Operation HENRE, 22:6652 (ORNL-4168, pp 183-230)
use of lithium-6-sandwiched, for neutron spectrum measurements in SNEAK, 22:4432
use of multisphere-moderated, for inferring quality factor of mixed radiation near accelerators, 22:8364 (CONF-670305-, pp 255-68)
use of Perlow-type proton-recoil, for continuous spectral measurements, 22:345 (RT/FI-(66)36)
use of rotating-crystal time-of-flight, for inelastic scattering experiments, 22:9921 (JUL-Conf-1)
use of time-of-flight, for neutron spectrum measurements in SUAK, 22:4432
use of two-axis, for mosaic spread measurements for large lead single crystals, 22:2408

NEUTRON SPECTROSCOPY
data analysis for activation, computer program for, 22:21338 (SC-RR-67-746)
equipment for thermal, design and performance of mechanical correlation chopper, 22:36081
improvement in time-of-flight techniques for cold, (E), 22:26778
intensity and resolutions in time-of-flight powder diffractometry, 22:44251
method for multisphere scintillation and activation, at 0.025 eV to 25 GeV, iterative unfolding, 22:12596 (RHEL/R-154)
method for particle track analysis in nuclear emulsions for, use of automatic microscope random-drift, 22:16895
performance in fuel assay for nuclear materials management, 22:18705
pulse effects from Philips 58 AVP photomultiplier on time-of-flight, secondary, 22:10588
resolution correction on VERA reactor by pulsed-source time-of-flight technique, 22:2388 (AWRE-O-8/67)
shape analysis for determining slow-neutron resonance parameters, 22:6628
use for calculation of multi-charge core effects on RBI research reactor reactivity, description of, 22:47015(T) (N-68-24522)
use of threshold detector activations in fast, (E/T), 22:26779

NEUTRONS
see also Dineutrons
see also Neutron Beams
see also Neutron Sources
see also Tetraneutrons
see also Trineutrons
absorbers for, reactivity worth measurements in subcritical assemblies of rod-type, 22:27471
absorption and capture resonance integrals and self-shielding factors for uranium-236, (E), 22:24876
absorption and fission cross sections for A = 242 to 252 nuclei, in thermalized reactor spectrum, (E), 22:20566 (DP-MS-67-111)
absorption by boron-10 below 500 keV, cross section for, (E), 22:37289 (AERE-R-5224)
absorption by erbium, cross sections for, (E), 22:5740
absorption by fission products in thermal reactors, (E/T), 22:18289
absorption by gold, temperature dependence of Doppler coefficient in, (E/T), 22:5742
absorption by in-core thermionic reactor materials, Doppler coefficients for, (E), 22:5743
absorption by multi-nuclide systems, intermediate resonance theory of, (T), 22:1589
absorption by thorium dioxide rods, temperature dependence of, 22:17190
absorption by trace elements in rocks, induced radioactivity calculations for, 22:21187
absorption by tungsten, Monte Carlo analysis of resonance, (T), 22:37345 (N-68-21924)
absorption by uranium-238 at resonance energies, effects of resonance scattering by sodium on, (T), 22:18247
absorption cross section for uranium-237, (E), 22:9876
absorption in a lump surrounded by a homogeneous medium containing the same resonance absorber, resonance integrals for, (T), 22:46703
absorption in closely spaced fuel particles, calculation of self-shielding factors for, (T), 22:5720
absorption in reactors, effect of resonance width on, (E/T), 22:26768
absorption in samples in activation analysis, errors from, 22:40005
absorption in unresolved resonance region, statistical treatment of, (T), 22:32455
absorption integrals of natural hafnium and hafnium isotopes, measurements using reactivity technique for resonance, (E), 22:46794
absorption of, effect of resonance width on resonance, (E), 22:5716
absorption of, method of calculating Doppler functions for resonance, (T), 22:22529 (UJV-1932)
absorption probability for uniform slab with uniform isotropic source, calculations using space-angle synthesis, (T), 22:32434
absorption resonance escape probability calculations for heavy-water-moderated lattices, RESCUE method for, (T), 22:1578
absorption resonance integral and s-wave strength function at 0.008 to 8000 eV, (E), 22:37341 (IN-1132)
absorption resonance integral for rhenium, (E), 22:3689(R) (GA-7820)
absorption resonance integrals for tungsten-184 and tungsten-186, effective, (E), 22:18271
absorption resonance integrals for uranium-238 at surface/mass ratios of 1 to 10, Doppler effect on, (E), 22:32587
absorption resonance integrals for, measurements using Advanced Reactivity Measurement Facility, 22:35198 (IN-1195)
absorption resonance integrals in intermediate resonance approximation, parameters for calculating, (T), 22:35330
absorption resonance self-shielding factor for uranium-238 near sodium resonance, effect of 1/E spectrum on effective, (T), 22:32620
absorption time distribution in slabs of boron-bearing water, (T), 22:44572(T) (ANL-Trans-638)
absorption time distribution in strongly absorbing media, (T), 22:20406 (FEI-85)
activation analysis, description of computer program for induced, (E/T), 22:35666 (N-68-10023)
activation ratios for uranium-235/238, 22:14255 (BNWL-CC-886)
activation reactions with dysprosium nitrate in water, use in determining water flow and mixing, 22:4344
age in water, effects of empty channels on, (E), 22:15933
ages in hydrocarbons, tables of calculated values for, (T), 22:32466
ages in water and tungsten--water mixtures, from d--D and d--T sources, (E/T), 22:48417 (N-68-25058)
albedos for, in shielding materials, 22:31885 (ORNL-RSIC-21)
angular distribution analysis in exponential piles of, description of moments method for, 22:22857 (MIT-2344-11)
angular flux spectra in graphite, measurements using time-of-flight method with pulsed source, (E), 22:37274(R) (AD-664790)
anisotropy of cosmic, (T), 22:9125

attenuation by air ducts in shields, (T), 22:31910
attenuation by concrete, measurement of, 22:49369
attenuation by shielding materials, 22:3157
attenuation in composite shields of lead, lithium hydride, and uranium, 22:2613 (NAA-SR-Memo-12440)
attenuation in sodium shields, (E/T), 22:9409 (NAA-SR-Memo-12467)
attenuation lengths for accelerator-produced, in all-concrete, iron-faced-concrete, and uranium-faced-concrete shields, (E), 22:31906
attenuation of, methods development for calculating, (T), 22:37281(R) (NYO-72-191)
behavior in multiplying media, use of macroscopic-stochastic methods for determining, 22:3937
behavior in reflected reactors, interpretation of pulsed, (E/T), 22:5753
behavior in subcritical assemblies, procedure for evaluating pulsed, (T), 22:7628
beta decay coupling constants for, determination of ratio of axial vector and vector, (T), 22:18308 (SGAE-PH-56/1967)
beta decay of polarized, research progress on, (E), 22:5809(R) (ANL-7354)
beta decay of, coupling constants and charge-dependent effects in, (E/T), 22:27383
beta decay of, radiative corrections to axial-vector coupling constants in, 22:48285
beta decay of, relativistic corrections to recoil spectrum in, (T), 22:50356
beta decay rate for, second-order radiative corrections to Fermi, (T), 22:12002
book: Introduction to General Theory of Particle Transport, 22:22267
book: Linear Transport Theory, 22:20104
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Protection Against Neutron Radiation up to 30 Million Electron Volts, 22:45570
book: The Theory of Neutron Resonance Reactions, 22:32700
buckling and lattice parameter measurements in PDP thorium--heavy water organic, 22:33026
buckling calculations for fast reactor lattices, 22:7892(R) (DPST-67-83-10)
buckling calculations in HWOCR, effects of hydrogen scattering kernel on, 22:3813(R) (AI-CE-54)
buckling corrections in expponential piles, calculational methods for, 22:22831
buckling determination in reflected reactors, importance--shape method for geometric, (T), 22:14296 (RPI-328-100, pp 140-87)
buckling determination in two-dimensional homogeneous reactors, one group method for critical, 22:35725
buckling determinations for polygonal reactor cores, geometric, 22:48800
buckling determinations for reflected-reactor, use of neutron-importance-shape method for geometric, 22:6110
buckling in enriched uranium oxide (UO_2) fueled heavy-water moderated lattices, FRAMA code for material, 22:25084 (IEA-128)
buckling in enriched uranium oxide (UO_2) fueled heavy-water--water moderated lattices in NORA, progressive substitution measurements of material, (E/T), 22:25086 (IEA-139)
buckling in fast critical assemblies, method for analysis of heterogeneity effects on, (T), 22:35645
buckling in heavy water-moderated uranium oxide (UO_2)-fueled lattices, (E/T), 22:32976(R) (MIT-2344-12)
buckling in homogeneous water--uranium-235 lattices, effects in eigenvalues of variation of, 22:33015
buckling in reactors, effects of spatial distribution on, (T), 22:3865
buckling measurement in heavy water moderated superlattice in ZED-2, 22:33047
buckling measurements in Anna, differential reactivity method for material, (E), 22:37543
buckling measurements in critical assemblies, ratio of fast to thermal, 22:32997
buckling measurements in exponential piles, method for prediction analysis of axial, 22:33045
buckling measurements in homogeneous reflected plutonium oxide (PuO_2)--polystyrene, 22:33062
buckling measurements in simulated burned-up natural uranium oxide (UO_2) clusters in ZED-2 Reactor, substitution, 22:33046
buckling measurements in uranium oxide (UO_2)--plutonium oxide (PuO_2) fueled heavy water moderated exponential piles, effects of coolants on, 22:33027
calculation of fluence-to-kerma factors for, in human body, 22:12846 (ORNL-TM-2079)
capture and fission cross sections for uranium-233 at 0.4 to 100 eV, (E), 22:18298
capture by aluminum-27 and iodine-127 at 14 MeV, reaction mechanism of, (E/T), 22:27119
capture by aluminum-27 at 39 keV, gamma spectrum from, (T), 22:5884
capture by americium-241 at 0 to 6.5 MeV, cross section for production of spontaneously fissioning isomeric americium-242 by, (E), 22:3691 (IFA-CRD-34)
capture by americium-241, production of isomeric americium-242 by, (E), 22:27198
capture by americium-241, production of spontaneously fissioning isomeric americium-242 by, (E), 22:13997 (JINR-P15-3618)
capture by americium-241, spin of spontaneously fissioning isomer of americium-242 from, (E/T), 22:20615
capture by anions, effects of cations on distribution of oxidation states following, 22:45093 (COO-1618-9)
capture by antimony and copper at 0.005 to 100 keV, cross section for, (E), 22:35285(R) (AERE-PR/NP-13)
capture by barium, γ spectra from, (E), 22:35350
capture by barium-135 and praseodymium-141, γ spectra from resonance, (E), 22:22580 (JINR-P3-3696)
capture by barium-135 and praseodymium-141, γ spectra from resonance, (E), 22:29988(T) (ANL-Trans-605)
capture by barium-137, γ singles and coincidence spectra for, (E), 22:53202
capture by cadmium-113, γ angular asymmetry in, (E), 22:35311
capture by cadmium-113, γ spectra from, (E), 22:11945(R) (ANL-7384)
capture by cadmium-113, γ spectral measurements using lithium-drifted germanium detectors, (E), 22:11950(R) (ORO-3624-1)
capture by cadmium-113, internal conversion coefficients of high-energy γ rays for, (E), 22:50623
capture by cesium-133, γ spectra from resonance, (E), 22:22581 (JINR-P3-3697)
capture by cesium-133, γ spectra from resonance, (E), 22:29989(T) (ANL-Trans-604)
capture by chlorine-37, rubidium-87, and iridium-193 at 0.15 to 1.4 MeV, cross sections for, (E/T), 22:3648
capture by cobalt-59, cross section for, (E), 22:53160
capture by copper, γ spectra from resonance, (E), 22:20578 (WASH-1079)
capture by copper-64 and scandium-46, effective cross sections for, (E), 22:44674
capture by deuterium, effect of deuteron-neutron interaction on, (T), 22:20444
capture by dysprosium-162, conversion-electron spectra from, (E), 22:5821
capture by dysprosium-163, gadolinium-155, and tungsten-183, γ spectra from resonance, (E), 22:20578 (WASH-1079)
capture by dysprosium-164, dysprosium-165 energy levels from, (E), 22:9862
capture by dysprosium-164, γ coincidence spectra from, 22:9921 (JUL-Conf-1)
capture by erbium isotopes and neodymium isotopes, resonance parameters for, (E), 22:27219
capture by erbium-167 and palladium-105, γ spectra for, (E), 22:20578 (WASH-1079)
capture by europium, lutetium, and holmium-165 below 50 keV, strength functions from energy dependence of cross section for, (E), 22:32592
capture by fissionable materials, solution of rate equations for formation of transuranic elements by, (T), 22:39663
capture by fluorine-19, lead, lead-206, lead-207, magnesium, and sulfur at 1 to 100 keV, resonance, (E), 22:20578 (WASH-1079)
capture by gadolinium-155 at 0.02 to 63 eV, gamma spectra for resonance, (E), 22:46764 (IAE-1443)
capture by gadolinium-155, partial radiative widths for resonances in, (E), 22:22610
capture by gases, γ beam production by, (E), 22:9921 (JUL-Conf-1)
capture by gold-197 at 0.6 to 400 eV, γ spectra for, (E), 22:20578 (WASH-1079)
capture by gold-197 at energies below 400 eV, γ spectra for and resonance widths for, (E), 22:50610
capture by gold-197, holmium-165, and tantalum, measurement of γ spectra using lead spectrometers, (E), 22:32628
capture by hafnium-177, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)
capture by hafnium-179, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by holmium-165 at 0.001 to 10 keV, cross section for, (E), 22:20578 (WASH-1079)
capture by holmium-165 at 2.5 eV to 100 keV, spins and parameters of resonances in, (E), 22:16048
capture by I-127 in meteorites, (T), 22:38685
capture by indium-115, cross-section calculations using level spacings from Fermi gas model, (T), 22:1712
capture by indium-115, lead, manganese-55, niobium-93, sulfur-32, and zirconium, activation cross sections for, 22:24862 (WANL-TME-1746)
capture by iodine-127 and indium-115 at keV energies, cross sections for, (E/T), 22:5826
capture by iridium-191, molybdenum-98, and rhodium-103 in FRM spectrum, activation resonance integrals for, (E), 22:37340(R) (EANDC(E)-89(U))
capture by iron-56, γ spectra from, (E), 22:20578 (WASH-1079)
capture by iron-57, γ coincidence spectra from, (E), 22:9921 (JUL-Conf-1)
capture by lanthanum and praseodymium, upper limit for strength functions of d-neutrons in, (T), 22:32592
capture by lanthanum-139 and molybdenum-95, -96, -97, -98, -100, p-wave radiation widths for resonance, (E), 22:5809(R) (ANL-7354)

capture by lead-208, activation cross section for, (E), 22:20578 (WASH-1079)
capture by lead-208, cross section for, (T), 22:42132
capture by light- and medium-weight nuclei at 2.8 MeV, gamma energies and differential cross sections for, (E/T), 22:5793
capture by lutetium-176, internal conversion electron spectra from, (E), 22:50640
capture by manganese-55 at 0.0253 eV, cross section and resonance integral for, (T), 22:32550
capture by manganese-55, direct reaction mechanism in, (E), 22:24843
capture by mercury-196, calculations of isomer ratios for, (T), 22:32690
capture by mercury-199 at 0.15 to 8.04 MeV, γ spectra from, 22:9902
capture by molybdenum-95 and -96, resonance spins and parities in, (E), 22:20578 (WASH-1079)
capture by neptunium isotopes and uranium isotopes in thermonuclear explosions, cross sections for, (T), 22:14003(T) (BNL-tr-174)
capture by nitrogen-14, γ spectra and Q-value for, (E), 22:44616
capture by nitrogen-14, γ spectra from, (E), 22:20578 (WASH-1079)
capture by nuclei at 15 keV to 15 MeV, gamma spectra from, (E/T), 22:16100
capture by nuclei, analysis and interpretation of isomer ratios in, (T), 22:32690
capture by nuclei, analysis of isomer ratios for level densities and transition strengths, (T), 22:27370
capture by nuclei, angle measuring device for Cauchois gamma spectrometer for measuring, 22:14827
capture by nuclei, calculation of gamma spectra from, (T), 22:5884
capture by nuclei, Doppler effect in resonant, (T), 22:32696
capture by nuclei, lithium-drifted germanium spectrometers for high-resolution gamma spectroscopy during, 22:45315 (AAEC/TM-462)
capture by nuclei, method of calculating gamma spectra from, (T), 22:24915
capture by nuclei, pair formation spectrometer for studying gamma transitions in, 22:10590
capture by nuclei, reactor facility for gamma production by, 22:25085 (IEA-133)
capture by nuclei, review of theory and experimental methods for studying, (E/T), 22:53236
capture by nuclei, slowing-down-time lead gamma spectrometer for measuring resonance parameters for, 22:14828
capture by nuclei, use with nuclear resonance fluorescence to produce high-energy monoenergetic gamma radiation, (E), 22:5832
capture by palladium-105 and tungsten-183, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)
capture by palladium-108 and platinum-198, scintillation spectrometer for measuring gamma rays from, 22:6626
capture by platinum-195 at 10 to 700 eV, partial widths for resonance, (E), 22:18284
capture by platinum-195, radiative strength function for, (E), 22:53174
capture by platinum-196, gamma spectra from, (E), 22:14834
capture by rhenium-185 and rhenium-187 at 0.01 eV to 30 keV, cross sections and resonance parameters, (E), 22:30014
capture by samarium-149, samarium-150 energy levels from, (E), 22:11955
capture by samarium-152, conversion-electron and γ spectra for, (E), 22:20578 (WASH-1079)
capture by samarium-152, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)
capture by scandium-45, scandium-46 gamma spectrum for, 22:14827
capture by scandium-46 in reactor spectrum, cross section for, (E), 22:20501 (SGAE-PH-61/1967)
capture by strontium at 0.058 eV, gamma spectra from, (E), 22:32546
capture by strontium-87, γ-γ angular correlations in, (E), 22:26999
capture by tantalum-181, γ spectra from, (E), 22:20578 (WASH-1079)
capture by tellurium-123, γ spectra for, (E), 22:20578 (WASH-1079)
capture by thorium-232, γ spectra from, (E), 22:9921 (JUL-Conf-1)
capture by thulium-169 below 136 eV, partial radiative widths for, (E), 22:53206
capture by tin-118, -120, and -124 at low energies, energy levels from, (E), 22:16018
capture by transuranium elements, effects of optical anisotropy on, (T), 22:32569 (JINR-P2-3738)
capture by tungsten-182, -183, -184, and -186 at 0.1 to 20 keV, resonances in, (E), 22:22592 (RPI-328-112, pp 1-15)
capture by uranium-233 at 0.4 to 1000 eV, cross sections and resonance integrals for, (E), 22:14001 (RPI-328-100, pp 1-56)
capture by uranium-233 at 20 eV to 1 MeV, cross sections for, (E), 22:18230
capture by uranium-236 at 5 to 124 eV, cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
capture by uranium-238 at 0 to 54 keV in uranium and uranium dioxide at high temperature, Doppler effect on, (E), 22:14027
capture by uranium-238, cross sections for, 22:1873
capture by uranium-238, potential, (E), 22:3686 (BNL-11903)
capture by uranium-238, resonance parameters for, (E), 22:20578 (WASH-1079)
capture by yttrium-89, γ spectra from, (E), 22:9910
capture cross section for lead-208, calculation including spin-orbit interactions, (E), 22:9977
capture cross section for sodium-23 at 0.2 to 100 keV, (E), 22:18193
capture cross section for uranium-235 at 0.0004 to 3 keV, (E), 22:3699 (ORNL-TM-1804)
capture cross section for uranium-238 at 0.03 to 2.05 keV, measurement using time-of-flight method with nuclear explosion, (E), 22:22584 (LA-DC-9181)
capture cross sections for europium-151, europium-153, and lutetium, at 0.025 to 10 keV, time-of-flight measurements using nuclear explosion, (E), 22:22585 (LA-DC-9182)
capture cross sections for rhenium-185 and -187 at 0.01 to 10 eV, (E), 22:3689(R) (GA-7820)
capture cross sections for, calculation using statistical model, (T), 22:9938
capture cross sections in molybdenum at 10 eV to 25 keV, (E), 22:3723
capture in stars, heavy-element synthesis by, (T), 22:5905
capture in supernova explosions, (T), 22:19710
capture of, correlations of partial widths for resonance, (T), 22:20578 (WASH-1079)
capture probability in man, use of, for calculation of accidental dose, 22:6799 (LA-3721)
capture rate measurements in Agesta fuel, epithermal-to-thermal, 22:3807 (AE-299)
capture reactions in stars after core helium burning, (T), 22:52403
capture resonance integral for protactinium-233, (E), 22:3701 (WAPD-TM-612)
capture resonance parameters for aluminum-27, iron isotopes, nickel isotopes, and sodium-23, (E), 22:14001 (RPI-328-100, pp 1-56)
capture-to-fission ratio and resonance integrals at 20 to 600 keV, (E), 22:18298
capture-to-fission ratio for plutonium-239 at 0.01 to 30 keV, (E), 22:35285(R) (AERE-PR/NP-13)
capture-to-fission ratio for plutonium-239 at 10 to 1000 keV, (E), 22:18298
capture-to-fission ratio for uranium-235, epicadmium, (E), 22:16044
capture-to-fission ratio measurements in plutonium-239, 22:53454 (BNWL-828)
capture-to-fission ratios for plutonium-239 and uranium-235, calculation using channel theory, (T), 22:20655
characteristics of free, (T), 22:27500
collimators for, description of variable taper passage sawtooth-positioned opposing block, 22:25201(P)
collision probabilities for finite cylinders and other convex solids, method for calculating, (T), 22:1573
collision probabilities in cylinders of, analysis of spherical harmonics method for, (T), 22:39898 (EUR-3937)
collision probability calculations for purely absorbing cylinders, 22:6153
collision probability matrices in reactor lattice cells, MINOS code for production of, 22:14317
correlations p--n in complex nuclei, effects on cross section for meson (π) reactions (π^+,π^0) and (π^-,π^0), 22:3460
counting statistics for, short time interval, 22:19121
coupling with protons, mixed representations in U(3) x U(3) for parameters of axial-vector, 22:24704
critical parameters for, use of Legendre polynomial method for determining monoenergetic, 22:14306
cross sections in SNEAK 3A-1, calculation of infinite dilute group fission and capture, 22:6092 (EURFNR-397)
data analysis of cosmic-ray, from AECL monitors, (E), 22:7179 (AECL-2785)
decay constant and diffusion length for beryllium, calculations using diffusion theory and transport theory with isotropic scattering, (T), 22:13911
decay constant measurement by pulse method, effect of time of flight on, (E/T), 22:13922
decay constants and diffusion parameters for small blocks of beryllium and beryllium oxide, (E), 22:20422(T) (JPRS-43682, pp 179-98)
decay constants for beryllium oxide assemblies with bucklings of 1.93 to 5.34 x 10^{-2} cm^{-2}, measurements using pulsed source technique, (E), 22:44571 (AAEC/TM-456)
decay constants for homogeneous water—uranium-235 lattices, calculation of pulsed, 22:33015
decay constants for polyethylene and water at various bucklings, (T), 22:29868
decay constants for, method for transformation into reactivity of prompt, 22:14301
decay constants for, use of Legendre polynomial method for determining monoenergetic, 22:14306

decay constants in graphite, measurement using pulsed source technique, (E), 22:26783

decay constants in hydrogenous media, interpretation of, (E/T), 22:39559

decay constants in moderating assemblies, effects of detector location on measurement of, 22:22531

decay constants in reactors, comparison of waiting-time alpha and Rossi-alpha techniques for measuring prompt-mode, (E/T), 22:5731

decay constants in small blocks of beryllium and beryllium oxide, (E), 22:29885

decay constants in small blocks of beryllium and beryllium oxide, measurement using pulsed-source technique, (E), 22:13901 (IAE-1362)

decay constants in spheres of depleted uranium and uranium-238, (E/T), 22:20409(R) (GA-8449)

decay in 3 Cen A, 22:819

decay in quark model, contribution of meson exchange currents to, 22:52968

decay $n \to p + e + \text{anti } \nu$, radiative corrections to, 22:41790

decay of polarized, nonconservation of time reversal in β, (E), 22:52929

decay of polarized, time-parity violation in, (E), 22:50286

decay of pulsed, in crystalline moderators, (T), 22:5749

decay of pulses of, synthesis method for, (T), 22:24801

decay of, calculation of electromagnetic T-violating effects in leptonic, 22:32190

decay of, time reversal invariance in, 22:33187 (ISS-66/50)

decay states in uncrystalline reactor moderators, energy dependent transport theory for determining unstable pulsed, 22:33155

deceleration and diffusion of, design of high-speed time analyzer for measurement of, 22:14612

density from pulsed source in finite moderating volumes, time-dependent, (T), 22:29882

density in SUR-100-BE Reactor, stochastic method for treating transport equations determining, 22:6099 (TUBIK-5)

detection aboard sounding rocket, design of directional scintillation detectors for, 22:36032(R) (N-68-16913)

detection and discrimination from gamma radiation in proportional counters for reactor noise analysis, 22:49084

detection and measurement at fuel plate surfaces, monitor design for, 22:15153 (ANL-7313)

detection and measurement in shields, instruments for, 22:15003(T) (AD-662586)

detection and measurement in space, equipment and methods for, 22:49093

detection and measurement in the presence of γ, performance of chemical dosimeters for, 22:38331

detection and measurement of cosmic, mass absorption coefficients for, 22:2864

detection and measurement of, analytical applications of, 22:7994(T) (ANL-Trans-543)

detection and measurement of, based on the lithium-6 (n,α)t and oxygen-16 (t,n) fluorine-18 reaction sequence, (E), 22:5736

detection at 300-GeV accelerator, bubble chamber for, 22:13874 (CERN-67-26(Vol.1), pp 49-71)

detection at high temperatures, design of ionization chamber for, 22:38014(P)

detection at high temperatures, development of spark chambers using boron converter for, 22:10542(R) (TID-24212)

detection by thallium-activated sodium iodide scintillation spectrometers, 22:8379

detection from concrete shielding of LRL Van de Graaff accelerator, use of gold activation detectors for, 22:9720 (UCID-15235)

detection from focused z-pinch devices, 22:34726 (AD-665416)

detection in electron reactions (e,e'n) with nuclei at 600 MeV/c, 22:21313 (ISS-67/18)

detection in high gamma fluxes, design and performance of boron trifluoride ionization chamber for, 22:36051(P)

detection in in-pile noise experiments, efficiency of adjoint-weighted detector for, 22:30833

detection in moderating nonmultiplying assemblies, energy correlation in, 22:21329

detection in multiplying medium, time-dependent count probability in, (T), 22:44590

detection in space, scintillation detector for, 22:28095

detection of 0.3- to 3.8-MeV, response of NE213 organic liquid phosphors for, 22:12581

detection of 0- to 14-MeV, description of boron trifluoride proportional detectors for, 22:4445

detection of 20-keV to 70-MeV monoenergetic, computer program using Monte Carlo method for determining scintillator pulse-height distributions for, 22:14750 (ORNL-4160)

detection of cosmic, description of recording system for monitor for, 22:23300

detection of cosmic, lifetime in boron trifluoride counters, 22:12576

detection of intermediate-energy, design of detector for, 22:6603

detection of low fluxes of, centrifugal spinner detector for, 22:21341

detection of slow, in presence of γ radiation, liquid scintillator for, 22:21330(P)

detection of solar, in Earth's atmosphere, (T), 22:41265

detection of thermal to 25-MeV, response of europium-activated lithium iodide scintillation detector in polyethylene sphere for, 22:19101 (UR-49-903)

detection of, boron-coated ionization chamber and circuitry for, 22:16890(P)

detection of, characteristics of lithium glass scintillation detectors for, 22:33644

detection of, design and performance of Campbelling system for, 22:6605

detection of, design and performance of mica- and glass-sandwiched, 22:40434

detection of, design of activation detector for in-core, 22:10572(P)

detection of, design of fission foil detectors for, 22:40370

detection of, design of graphite moderated counter for, 22:40373

detection of, design of graphite-moderated boron trifluoride proportional detectors for, 22:38044

detection of, design of self-powered detectors for, 22:36073

detection of, effective cadmium cutoff energies for finite-size detectors for, 22:10544 (WAPD-TM-670)

detection of, fabrication of activation detectors for, 22:19128(P)

detection of, for radiography, 22:10618

detection of, from laser-produced lithium deuteride plasma, (E), 22:50198

detection of, programs for calculating efficiency of lithium-6-loaded glass scintillation detectors for, 22:319

detection of, pulse shape discriminator for NE213 and stilbene scintillation detectors used for, 22:40405

detection of, theoretical efficiency of systems for, 22:10537 (AAEC/TM-403)

detection of, use of polyvinyl alcohols for preparation of films of gold, lanthanum, and sulfur for, 22:14814

detection using gadolinium-loaded scintillator, Monte Carlo calculation of efficiency of, 22:14788

detection using solid-state track detectors, development of energy-threshold, 22:6652 (ORNL-4168, pp 183-230)

detection using stilbene scintillators in small-angle scattering experiments, 22:5809(R) (ANL-7354)

diffraction by bismuth iron oxides, results using continuous and pulsed sources, 22:11490 (CONF-661216-4)

diffraction by crystals near the Curie point, study of magnetic properties by, (E/T), 22:24807

diffraction by crystals, computer program for calculating intensities in, (T), 22:44575 (IA-1169)

diffraction by dialuminides of praseodymium and erbium, 22:48197

diffraction by liquid gallium at 45°C, (E), 22:24835(R) (BARC-305)

diffraction by polarized crystals, temperature dependence of neutron spin precession frequency in, (T), 22:39568

diffusion approximation for regions with steep flux gradients, (T), 22:20424(T) (ORNL-tr-1849)

diffusion approximation for solution of transport equations for, (T), 22:24791 (TRG-Report-1568)

diffusion calculations for beryllium and graphite with temperature discontinuity, (T), 22:14300

diffusion calculations for, boundary conditions at nondiffusion surfaces in multigroup, 22:33137

diffusion coefficient calculations in plutonium-fueled water-moderated reactor systems, Battelle Revised Thermos code for, 22:27481 (BNWL-634, pp 2.1-8)

diffusion coefficient formulation for inhomogeneous media including effects of thin regions, 22:37619

diffusion coefficient in cylindrical cores, use of first collision probabilities for deriving Benoist's formula for, 22:53477

diffusion coefficients for beryllium and beryllium oxide, (E), 22:29885

diffusion coefficients for graphite assemblies with cylindrical void channels, pulsed-source measurements on, (E), 22:32454

diffusion coefficients for plutonium recycle reactors, computer programs for, 22:24955 (EUR-3891)

diffusion coefficients for, average scattering angle for evaluation of, (T), 22:39551 (RPI-328-123, pp 39-52)

diffusion equation for monoenergetic, Green's function solution of one-dimensional steady-state, (T), 22:37275 (AD-665378)

diffusion equation solution for one-group one-dimension media, computer program for, 22:35671 (PNR/SETR-R.-014)

diffusion equations for computer solution using collision probabilities, 22:14317

diffusion equations for fast sodium- and steam-cooled reactors, 26-group constants for, (T), 22:53066 (KFK-770)

diffusion equations for heterogeneous systems, iterative-variational techniques for solution to elliptical, 22:50863

diffusion equations for reactor, derivation for space-time expression for transfer functions with feedback for, 22:12143 (WCAP-2873)

diffusion equations for stability analysis of equilibrium state reactors, solution of one-group approximation, (T), 22:30359
diffusion equations for time-dependent, numerical methods for solutions to, 22:14304
diffusion equations for two-dimensional group, neutron flux synthesis using Green's function in, 22:14318
diffusion equations for two-group solution of buckling in pulsed finite beryllium oxide (BeO) assembly, analysis of, 22:30315
diffusion equations for, Benchmark Problem Book for solutions of, (T), 22:46693 (ANL-7416)
diffusion equations for, comparison of finite differences and differential equations solutions to, 22:14321
diffusion equations for, computer program for solution with criticality searches, 22:20665 (EUR-3882)
diffusion equations for, computer program for solving few-group time-independent two-dimensional, (T), 22:13903 (IDO-17257)
diffusion equations for, computer program for solving one-dimensional multigroup, (T), 22:15916 (GA-7543)
diffusion equations for, computer program for solving one-dimensional time-dependent, (T), 22:32428 (KAPL-M-6728)
diffusion equations for, computer program for solving two-dimensional, (T), 22:15914 (ANL-7305)
diffusion equations for, computer program for solving multigroup, (T), 22:32421 (AAEC/TM-429)
diffusion equations for, computer program for solving two-dimensional few-group, (T), 22:32425 (GA-8307)
diffusion equations for, computer program for solving two-dimensional time-independent multigroup, (T), 22:15917 (GA-8188)
diffusion equations for, computer program for solving multigroup one-dimensional, 22:20407 (GA-8286)
diffusion equations for, error determination using reciprocal variational principles for, 22:14320
diffusion equations for, existence theorems for discrete form of multigroup, 22:6156
diffusion equations for, matrix methods for solution to, 22:50864
diffusion equations for, methods for solution to homogeneous and nonhomogeneous, 22:50862
diffusion equations for, numerical method for solution of time-dependent, (T), 22:13898 (EUR-3742)
diffusion equations for, positivity theorems for discrete form of steady-state multigroup, (T), 22:48801
diffusion equations for, solution using perturbation theory, 22:1585
diffusion equations for, use of prompt-jump approximation for solution to two-group time-dependent, 22:1882 (KAPL-P-3392)
diffusion equations in rectangular or cylindrical geometry in presence of temperature feedback, TWIGL solution to two-dimensional two-group space--time, 22:46710
diffusion equations of few-group, analysis of interface conditions with flux-adjoint weight constants for, (T), 22:25140
diffusion equations with flux-adjoint weighted constants, interface conditions for few-group, (T), 22:39556 (WAPD-TM-733)
diffusion equations with temperature feedback, computer program for solving two-dimensional two-group space-time, (T), 22:29834 (WAPD-TM-743)
diffusion in a lattice with cavities, variational calculations of, (T), 22:1586
diffusion in axially symmetric reactor assemblies, multigroup calculations of, 22:18089
diffusion in heavy water, age and fast-effect for monoenergetic, (T), 22:11878
diffusion in heavy water--light water mixtures at 253 to 294°K, parameters for, 22:1861(R) (TID-24098)
diffusion in lead, research using pulsed-source technique, (E), 22:39539 (AEET/NP-16)
diffusion in multiregion systems, Laplace-transform solution of one-dimensional group equation for, (T), 22:1571
diffusion in slabs, calculation method for, 22:4383
diffusion in spherical geometry, elementary solutions of monoenergetic Boltzmann equation for, (T), 22:11877
diffusion in water--zirconium lattices, (E), 22:5727
diffusion length and streaming factors for water, effects of voids on, (E), 22:11882
diffusion length measurements in aluminum--water lattices of exponential piles, 22:33010
diffusion measurements using modulated sources, (T), 22:3594
diffusion parameters for graphite with cylindrical channels, measurement using pulsed-source technique, (E), 22:13902 (IAE-1363)
diffusion parameters for graphite, (E), 22:7618
diffusion parameters for hydrogenous media, pulsed-source technique for, (E), 22:39559
diffusion parameters for polyethylene and water, (T), 22:29868
diffusion parameters for polyethylene, measurement using pulsed source technique, (E), 22:9765
diffusion parameters for, measurement and analysis using homogeneous moderator--detector, (E/T), 22:5728
diffusion parameters for, use of empirical functions to determine, (E/T), 22:11894
diffusion parameters in graphite with channels, measurement using pulsed source method, (E), 22:29889
diffusion theory computer code MAGOG, 22:3926 (AEEW-R-531)
diffusion theory constant calculations, computer program for fitted, 22:7616 (WAPD-TM-671)
diffusion theory for homogenization of Wigner-Seitz cell, description of two group, (T), 22:35659 (AEEW-R-594)
diffusion theory for plane, cylindrical, and spherical geometries, computer program for one-dimensional multigroup, (T), 22:7610 (ANL-7319)
diffusion theory for reactor, transport effects in, 22:6158
diffusion theory for transient spectra in beryllium, (T), 22:24798
diffusion theory for, extensions of asymptotic, (T), 22:24802
diffusion theory for, reciprocity properties of adjoint kernels in multigroup and age model, (T), 22:24808
diffusion theory for, survey of methods in, 22:48141
diffusion theory for, synthesis approximation model for detailed three-dimensional space-time problems in, 22:16325 (WAPD-TM-736)
diffusion theory for, testing by pulse decay experiments, (E), 22:26783
diffusion theory of, iterative method for determination of minimal eigenvalue in, (T), 22:32472
diffusion wave reflection and refraction at interface between two semi-infinite media, (T), 22:32473
dispersion law for deuterium oxide--uranium carbide systems, 22:32993
dispersion law for, multigroup transport approximations for, 22:33086 (ANL-7310, pp 431-511)
dispersion law parameters, summary of experimental techniques for measuring, 22:32995
dispersion relations for, in terms of reactivity, (T), 22:5723
distribution approximations for, use of comparison functions for spatial and temporal behavior of, 22:14319
distribution from point source in homogeneous medium with spherical surface, (T), 22:41939
distribution in enriched uranium fueled heavy water-moderated reactors of, use of kinetic equations for calculating, 22:24965 (IS-1808)
distribution in fast critical assemblies, heterogeneous effects on, (E/T), 22:7901(T) (ANL-Trans-541)
distribution in multi-zone assembly of, variational method for multi-group calculations of, (T), 22:20966
distribution in reactor fuel assemblies, analysis of integral transport methods for, 22:30390
distribution in reactors, effects of reactivity on, 22:6139
distribution in reactors, use of degenerate kernel formulation of scattering operator for determination of, 22:27493
distribution in time-varying reactors, effects of large step reactivity insertions on, 22:18609
distribution in uranium oxide (UO_2) reflector for BR-1, analysis of, (E/T), 22:53425
distribution of cosmic, during maximum and minimum solar activity, (E), 22:24068
distribution of cosmic, near ground level, (T), 22:45979
distribution of monoenergetic, integral transform methods for infinite medium spherically symmetric scattering and isotropic infinite plane pulsed source, (T), 22:37562 (RT/FI-(68)15)
distributions from pulsed sources in moderators, time-dependent, (T), 22:20417(T) (JPRS-43682, pp 106-22)
distributions in reactors, single-channel flux synthesis for determining static and dynamic, 22:32825
distributions in water from tritium (p,n) reaction source, spatial, (E), 22:1581
Doppler broadening of p-wave and s-wave resonances of, (T), 22:14296 (RPI-328-100, pp 140-87)
dose calculations outside shielding for proton accelerators, 22:20396
dose determinations of high-energy, for radiation protection, depth, (T), 22:31901
dose distribution in cadaver of dogs and in phantom, measurement of, 22:36279
dose equivalent measurements in gamma--neutron fields, use of organic scintillation detectors for, 22:2369
dose equivalent measurements in mixed neutron-gamma fields, method for, 22:16916
dose equivalent measurements in neutron--gamma fields, use of paired ionization chambers for, 22:12659
dose equivalent measurements of, energy absorption spectrum--radiation dose conversion operator for liquid scintillation detectors used in, 22:12658
dose equivalent rate measurements near reactors, performance of detectors for, 22:14746 (AERE-M-1848)
dose equivalent rate measurements of, development of dosimeters for, 22:16920
dose equivalent rates of, design of moderated spherical helium-3-filled proportional counter for evaluating, 22:43123
dose fields for therapy of malignant tumors, use of linear programming and statistical testing for determining optimum, 22:45534
dose from 35-MeV betatrons used for electron- and x-

radiotherapy, 22:51687
dose measurement data from Bonner detectors, multisphere technique for analysis of, 22:36110 (LA-3700)
dose measurements for 35-MeV Asklepitron betatron used for radiotherapy, 22:51688
dose measurements for tungsten--water-moderated critical assembly, analysis of, 22:35602 (N-68-10291)
dose measurements in neutron--gamma fields, tissue-equivalent proportional detectors for, 22:36026 (BNWL-SA-1632)
dose rate attenuation by iron and lead, (T), 22:31909
dose rate in reprocessed breeder reactor fuel, calculation of, 22:23247(T) (EURFNR-385)
dose rate measurements of, design of moderated scintillation detectors for, 22:43119(P)
dose rate measurements of, logarithmic current amplifiers for rate meter used for, 22:23340(P)
dose rate measurements of, proportional and scintillation detectors for, 22:19161 (SZS-2/68)
dose rate measurements of, review of concepts for, 22:43118
dose rates from plutonium dioxide, 22:31060 (MLM-1460)
dose rates from tandem van De Graaff accelerators, angular distributions of, 22:1598(R) (COO-1265-49)
dose to human skin following contamination by plutonium-238-labeled microspheres, 22:38261(R) (SC-CR-67-2845)
dose to man following inhalation of plutonium-238-labeled microspheres, 22:38261(R) (SC-CR-67-2845)
dose to man from contaminants of plutonium-238 used as power source in implanted circulatory assist device, 22:31069
dose to man from plutonium-238-powered circulatory assist device, refining methods to reduce, 22:30784
dose to man, use of proportional detectors for measuring cosmic, 22:2437
dose to personnel at AB Atomenergi during 1966, 22:31057 (AE-312)
dose to personnel at research reactors, 22:6818
dose to thyroid during activation analysis of intrathyroidal iodine content of man, 22:45508(R) (PG-Report-826)
dose-equivalent rate calculations in transverse shielding of 0.5-TeV proton synchrotron, 22:46568 (HASL-199)
dosimetry and quality factor measurements of, equipment for, 22:28181
dosimetry at 10 keV and up, design and performance of proportional detector for, 22:28175 (AERE-R-5656)
dosimetry at depth in tissues, use of plastic phosphor dosimeter to measure proton recoil dose for, 22:45508(R) (PG-Report-826)
dosimetry at high altitude, design of tissue-equivalent proportional detectors for, 22:4482 (BNWL-SA-1364)
dosimetry during criticality excursions, techniques for, 22:36111 (LA-3910)
dosimetry for Drosophila, effects of cage rotation angle on monoenergetic, 22:49326 (NYO-2740-5, pp 6-200)
dosimetry for mice in vicinity of BNL medical research reactor, background, 22:49326 (NYO-2740-5, pp 6-200)
dosimetry for therapy, 22:40780
dosimetry in biological materials, 22:16997
dosimetry in bone and soft tissue phantoms, use of Monte Carlo method in determination of, 22:8524 (CONF-670305-, pp 306-17)
dosimetry in gamma--neutron fields of reactors, use of polymethylmethacrylate dosimeters for, 22:2434
dosimetry in hydrogenous media, 22:24821
dosimetry in intense radiation fields, sensitivity of activation detectors for, 22:21363
dosimetry in man, use of chromosome aberration frequency for, 22:8526 (CONF-670305-, pp 382-90)
dosimetry in mixed gamma--neutron fields of modified thermal column of WRRR, 22:47028
dosimetry in personnel, in presence of γ rays, performance of photographic film detector for, 22:21516
dosimetry in personnel, use of small proportional counters for, 22:43300 (AERE-PR/HPM-12)
dosimetry in rats, comparison of sodium-24 activity to mortality data for, 22:45523
dosimetry near TRIGA Mark II reactor, activation dosimeter for, 22:19163
dosimetry of 700-MeV, in phantoms, 22:10759 (JINR-P16-3587)
dosimetry of absorbed, using photographic method, 22:40680
dosimetry of biomedical power sources using plutonium-238, 22:4604 (LA-3696)
dosimetry of fast, in environs of d--T source, 22:35179
dosimetry of mixed beta, gamma, and neutron radiation, design of personnel dosimeter for, 22:38106(P)
dosimetry of thermal to 10-MeV, scintillation detector--spherical polyethylene moderator system for, 22:28182
dosimetry of, at energies up to 50 MeV, calibration of spherical dosimeters for, 22:6656
dosimetry of, boron-loaded nuclear emulsion in spherical water moderator for, 22:12655
dosimetry of, calibration standards for, 22:12491
dosimetry of, description of fissile radiator--solid-state track detector system for, 22:21358 (ORNL-TM-2120)
dosimetry of, design and performance of spherically moderated helium-3-filled proportional detector for, 22:28174 (AERE-R-5131)
dosimetry of, design of europium-activated lithium iodid scintillator for, 22:28178 (NP-17349)
dosimetry of, design of paraffin- or polyethylene-moderated detectors for rem, 22:23331
dosimetry of, development of semiconductor detectors for 22:38098 (CONF-670545-, pp 200-16)
dosimetry of, errors in rate meters as function of radiobiological effects table, 22:376 (USNRDL-TR-67-67)
dosimetry of, fission foil detector and nuclear emulsion for, 22:19168
dosimetry of, latent image fading in personnel monitorin film for, 22:38102 (MLM-1490)
dosimetry of, multisphere moderated scintillation detector system using Block--Shon technique for, 22:47384 (UR-49-894)
dosimetry of, personnel albedo dosimeter using thermoluminescent detectors for, 22:51253 (RD/B/R-828
dosimetry of, purification and pelletization of sulfur for, 22:12273 (K-1720)
dosimetry of, review on methods for personnel, 22:33673
dosimetry of, sensitivity of aluminum oxide and tungsten for, 22:38105
dosimetry of, sensitivity of moderated boron trifluoride proportional detectors for, 22:21362
dosimetry of, sensitivity of moderated scintillation detectors for, 22:21362
dosimetry of, solid-state particle track detectors for, 22:43050
dosimetry of, use of boron trifluoride proportional counters in remmeter for, 22:28183
dosimetry of, use of low power reactors for calibration of dosimeters for, 22:4489
dosimetry of, use of phosphate glass for, simultaneous with photoluminescent dosimetry of x and gamma radiation, 22:14859
dosimetry of, use of proton-recoil samarium-doped calciu sulfate thermoluminescent dosimeters for, 22:30871
dosimetry of, use of radiation damage in silicon for, 22:12579
dosimetry studies in EBR-II for radiation effects experiments, use of activation detectors for, 22:4438
dosimetry using in-pile twin-rod conduction colorimeter, 22:6169
dosimetry using plastic foil etched with alkali, 22:250 (AECL-2665)
dosimetry using tissue-equivalent phantoms, 22:51597
dosimetry, reference standards for, 22:51586
effects at 50 to 60°C on ductility of A302B steel, 22:31419 (BNWL-532, pp 11.1-43)
effects at 600°C on microstructure of molybdenum, 22:31414 (BNWL-532, pp 12.1-88)
effects of high-dose, on aluminum--copper alloys, 22:19605
effects of high-flux, on sensitivity of boron trifluorid proportional detector with aluminum cathode, 22:16965 (CEA-R-3343)
effects of mixed gamma radiation and, on free radical production in pyrimidine and purine bases and pyrimidine nucleosides, 22:21126
effects of reactor, on aluminum oxide, triplet-state defect from, (E/T), 22:32001
effects on acrylonitrile polymers, density changes from, (E), 22:11500
effects on activity of ion pumps and permeability of cel wall of Chara, 22:45508(R) (PG-Report-826)
effects on activity of phage in Escherichia coli, RBE fo 1 to 500 keV, 22:21432
effects on adhesives in vacuum at cryotemperatures, 22:11105
effects on alkali metal halide crystals, electron-microscope study of macrodefects from, 22:46240
effects on aluminum and aluminum alloys at 78°K, 22:49776
effects on aluminum and platinum at low temperatures, effects of defect doping on, (E), 22:3191
effects on aluminum oxide crystal growth, 22:775
effects on aluminum oxide to induce a molecular ion, 22:14548
effects on aluminum oxide--SAP, 22:19673
effects on aluminum, beryllium, magnesium, silicon, and uranium oxides, 22:7070
effects on aluminum, restoration phenomena following, 22:19594
effects on aluminum, scattering of subthermal neutrons b defects from, (E), 22:31967
effects on aluminum--europium oxide control elements, 22:11091 (ORNL-4199)
effects on aluminum--lithium alloys, nucleation and growth of helium bubbles in, (E), 22:28876
effects on aluminum--uranium alloys, 22:15135 (IN-1133
effects on aluminum--zinc alloys, Guinier--Preston zone formation from, 22:11503
effects on ammonium chromate and potassium chromate, ESF study of, 22:2098 (IFA-ESR-16)
effects on ammonium hypophosphites, 22:42723 (COO-1618-7)
effects on ammonium, potassium, and sodium indium chlorides, 22:45094 (LFEN-78)
effects on annealing of interstitial material in graphit

at 220°C, 22:47716
effects on annealing of point defects in diamonds, 22:15573(T) (NP-tr-1612)
effects on antifriction properties of cast iron, 22:4843
effects on antigenic properties and virulence of bacteria and viruses, 22:52086
effects on antimony- and arsenic-doped germanium, recombination parameters for defects from, (E), 22:37006
effects on aqueous solutions of ammonia, 22:27768
effects on argon diffusion in ionic crystals, 22:3197
effects on austenitic steels and nickel alloys in British power reactors, 22:47660 (CONF-671007-2)
effects on barium and calcium oxides, ESR study of F centers from, (E), 22:17752
effects on barium oxides and strontium oxides, Faraday rotation studies of F centers from, 22:52886
effects on Barkhausen noise in steel, 22:23241
effects on barley seeds, combined effects of γ, 22:12937 (CONF-660344-1)
effects on barley, distribution of gene loci following mutagenic, 22:51548
effects on barley, mutagenic, 22:51502
effects on bcc alloys and metals, 22:4812(R) (ORNL-4195)
effects on bcc metals, 22:15226 (ORNL-TM-2059)
effects on beans, effects of seed exposure on, 22:10889
effects on beryllia, magnesia, and alumina, effects of heating on defects produced in, (E), 22:28963
effects on beryllium and beryllium oxide, review of, 22:36514
effects on beryllium at 77°K, annealing of defects produced in, (E), 22:28866
effects on beryllium oxide crystals, decoration of screw dislocations and twin boundaries from, (E), 22:17771
effects on beryllium oxide-base reactor fuels, 22:774
effects on beryllium oxides, radiation resistance at 100°C from, 22:41662
effects on biochemistry of animals and man, review of, 22:19426
effects on boron-doped nickel alloys, 22:41079
effects on braze alloys, 22:8745 (ORNL-4170, pp 238-44)
effects on brittleness of PM-2A reactor A350-LF3 steel pressure vessel, destructive testing for, 22:53401
effects on brittleness of PM-2A reactor A350-LF3 steel pressure vessel, destructive testing for, 22:53403
effects on bromine--methane systems, 22:16565 (COO-1617-10, pp 8-36)
effects on burros, whole-body, 22:40829 (ORO-657, pp 18-34)
effects on β- and γ-decay characteristics of soils, 22:25800 (UCLA-12-668, pp 37-58)
effects on cadmium telluride crystals, photoelectronic studies of, (E), 22:26531
effects on calcium and barium fluoride crystals, analysis of ESR spectra of self-trapped holes from, 22:24483
effects on calcium fluoride crystals at liquid nitrogen temperatures, color center formation in, (E), 22:15630
effects on calcium fluoride single crystals, etching study, (E), 22:26096
effects on calcium oxide single crystals, optical absorption and stress splitting studies of color centers from, 22:24484
effects on carbon, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
effects on carbon tetrachloride in presence of alcohols, mechanism of formation of phosphorus-32-labeled alkyl phosphates in, 22:30596
effects on carbon tetrafluoride--charcoal and sulfur hexafluoride--charcoal systems, 22:10265(R) (ORO-3632-1)
effects on carrier lifetime in doped silicon, (E), 22:17826
effects on carrier lifetime in ultra-pure n-type silicon, (E), 22:15552 (AWRE-O-69/64)
effects on carrier properties of silicon, (E), 22:13573
effects on carrier properties of silicon, (E), 22:13572
effects on carrier recombination in semiconductors, 22:36965 (AD-666220)
effects on carrier removal rates of n- and p-type silicon, 22:29562
effects on carriers in silicon, 22:36965 (AD-666220)
effects on cast iron, 22:17149(T) (AD-662789)
effects on catalytic effects of neodymium oxide on decomposition of 2-propanol, 22:40116
effects on cavitation in tetrachloroethylene, ultrasonic method for determining bubble dynamics from, 22:25602
effects on cavitation in tetrachloroethylene, use of ultrasonic equipment for studying, 22:25603
effects on cavitation threshold of bromopropane, 22:27748
effects on cell renewal systems in hematopoiesis and intestinal mucosa of rats, lethal, 22:49491 (UCSF-10-P-2-40)
effects on cementite decomposition in white cast iron, 22:2672
effects on chemical reactions in uranium tetrachloride--methanol system, 22:40110(P)
effects on chlorophyll of barley plants following seed exposure, mutagenic, 22:15119
effects on cholinesterase activity in liver and skeletal muscles of rats, 22:19296
effects on chromium and molybdenum carbonyls, 22:16611
effects on chromosomes in Drosophila melanogaster and lens tissues in mice, effects of energy level on RBE for monoenergetic aberrant, 22:49284 (NYO-2740-5, pp 201-66)
effects on chromosomes in epithelium of cornea and duodenum in mice, aberrant, 22:17007
effects on chromosomes in leukocytes of personnel, 22:471
effects on chromosomes in liver cells of mice, recovery from aberrant, 22:43286
effects on chromosomes in lymphocytes of man, aberrant, 22:8526 (CONF-670305-, pp 382-90)
effects on chromosomes of intestinal epithelial cells of mice during mitosis, effects of dose on aberrant, 22:25817
effects on chromosomes of leukocytes of man, aberrant, 22:36248
effects on chromosomes of man, aberrant, 22:51549
effects on chromosomes of rats, aberrant, 22:8577
effects on chromosomes, review of aberrant, 22:51492 (UCRL-18432)
effects on coated fuel particles, 22:23853 (CONF-660524-, pp 273-92)
effects on coated-particle fuels, 22:26093 (ORNL-4229, pp 125-41)
effects on cobalt complexes, 22:21148
effects on cobalt-base fuel cladding alloys, 22:34077 (BNL-12438)
effects on cold brittleness and mechanical properties of molybdenum, at high-temperatures, 22:52217
effects on color centers in potassium chloride crystals, (T), 22:9440
effects on content of epinephrine and norepinephrine in human urine, combined effects of γ-rays on, 22:36394
effects on control systems components and engine of NERVA Reactor, analysis of, 22:35576
effects on copper and molybdenum at 14 MeV, 22:34583 (TID-24491, pp 141-50)
effects on copper at 4.2°K, recovery from, 22:43614 (ANL-7299, pp 290-308)
effects on copper crystals at 400°C, structure of defects from, (E), 22:41680
effects on copper single crystals, formation and structure of slip bands from, (E), 22:17778
effects on copper single-crystal strengthening, 22:43614 (ANL-7299, pp 290-308)
effects on copper tensile properties, computer analysis of, 22:31431
effects on copper, defect formation in, 22:9472
effects on copper, plastic flow of dislocations from, (T), 22:22221
effects on corrosion of niobium--tin--zirconium alloys by steam and water, 22:21730
effects on corrosion of Zircaloy-2 by high pressure water, 22:21661
effects on corrosion of Zircaloy-2 by steam and water, 22:21730
effects on corrosion of zirconium alloys by water, 22:34009 (BNWL-SA-1719)
effects on cotton, mutagenic, 22:49316
effects on creep in metals and alloys at 100°C, 22:2670
effects on creep of nonfissile metals, (E/T), 22:28879
effects on creep of Zircaloy, model of, 22:36512 (WAPD-TM-756)
effects on creep-rupture of 1541 Alloy, Hastelloy R, Hastelloy X, and Incoloy 800, 22:612(R) (GEMP-69)
effects on creep-rupture of molybdenum at high temperatures, 22:4821
effects on critical shear stress of copper and gold single crystals, temperature and strain-rate dependence of, (E), 22:24480
effects on critical shear stress of copper single crystals, data analysis based on multiple spectrum theory, 22:24481
effects on crop plants, dosimetry for mutagenic, 22:31047
effects on crystal phases and mechanical properties of steel, 22:28844 (EURAEC-1751)
effects on crystal structure of cobalt, 22:43617 (DP-MS-67-20)
effects on crystal structure of graphite, 22:41134
effects on crystal structure of rhenium rods, 22:31414 (BNWL-532, pp 12.1-88)
effects on crystal structure of tungsten, 22:612(R) (GEMP-69)
effects on crystal structure, x-ray diffractometer for studying, 22:19200
effects on crystalline alkaline metal bromates, bromine-82g recoil distribution in various bromine oxidation states from, 22:12384
effects on crystallization of amorphous germanium, analysis of, 22:31530
effects on current gain in semiconductor transistors, 22:12724
effects on current gain of bipolar and junction field effect transistors, 22:10671
effects on cyclopentadienylhafnium dichloride and cyclopentadienylzirconium dichloride, 22:25391
effects on cyclopentadienylmanganese tricarbonyl, 22:25390
effects on defects and colloidal lithium particles in

lithium fluorides, (E), 22:9433
effects on deformed germanium monocrystals, 22:34124
effects on deformed molybdenum single crystals, annealing of, 22:28848
effects on density of lithium fluoride crystals, (E), 22:15580
effects on density of uranium carbide and uranium dioxide at 21°C, 22:4903 (CEA-R-3289)
effects on diamond, lattice parameter changes during annealing of, 22:7073(T) (LB/G-2582)
effects on dielectric properties of lithium fluoride monocrystalline strips, (E), 22:36972(T) (UCRL-Trans-10245)
effects on dielectrics, 22:12364
effects on diffusion of hydrogen in quartz at room temperature, 22:33449
effects on dimensional and property changes of nuclear graphites, 22:52298
effects on dimensional changes in pyrolytic carbon, (E), 22:11097
effects on dimensions of pyrolytic carbon, 22:11101(R) (GA-7906)
effects on diphenylmercury, production of recoil radiomercury by, 22:30601
effects on dislocation loops in sapphires, 22:4905
effects on dislocation structure and deformation behavior of copper monocrystals, (E), 22:28872
effects on dislocation velocity in tensile samples of iron, determination using stress relaxation, 22:21748
effects on dissolution of Armco iron in mineral acids, 22:16596
effects on Drosophila, effects of female germ cell exposure on mutagenic, 22:28397 (ANL-7278, pp 144-69)
effects on ductile--brittle transition temperature of steels, stress-wave attenuation method for evaluating, 22:28875
effects on ductility and tensile properties of type 304 stainless steel, 22:34035 (BNL-12439)
effects on ductility of A212B steel, relations with temperature and dose rate, 22:31419 (BNWL-532, pp 11.1-43)
effects on ductility of chromium, 22:45796
effects on ductility of chromium--nickel steels at high temperatures as function of boron and carbon content and mechanical--heat treatment, 22:8791
effects on ductility of metals, 22:13037 (ORNL-TM-2019)
effects on ductility of nickel, (E), 22:28881
effects on ductility of Type 316 stainless steel, 22:48788
effects on ductility of type A302-B pressure vessel steel, analysis of, (E/T), 22:35413 (AD-661803)
effects on ductility of types 304L and 347 stainless steels, 22:4811(R) (AD-646662)
effects on ecological succession, nuclear reactor, 22:38501
effects on elastic properties of graphite, 22:7072
effects on electric conductivity of lithium fluoride crystals, relation of vacancy formation to, (E), 22:46243
effects on electric conductivity of molybdenum and tungsten, 22:612(R) (GEMP-69)
effects on electric conductivity of semiconductors, 22:20086
effects on electric conductivity of tellurium single crystals, (E), 22:29555
effects on electric properties of germanium diodes, 22:7071
effects on electric properties of p-type silicon at 76°K, 22:41651 (SC-DC-68-2328)
effects on electric properties of p-type silicon at 76°K, annealing of, 22:52881
effects on electric properties of silicon Zener diodes at -190° to +90°C, 22:10670 (HMI-B-63)
effects on electric properties of $WS_{2\cdot3}$, (E), 22:24417
effects on electric resistivity and magnetization properties of superconducting niobium wires, (E), 22:31751
effects on electric resistivity of aluminum and beryllium, recovery from, 22:1306
effects on electrical properties of coaxial cables, (T), 22:49172
effects on electrochemical behavior of metals in solution, (E), 22:28735 (EURAEC-2010)
effects on electromotive force in uranium dioxide pellets, 22:43669
effects on electron spin resonance of reactor graphite, 22:28964
effects on electronic circuits, use of equivalent circuits for estimating, 22:10672
effects on electronic properties of graphite, 22:9483
effects on electrophysical properties of barium titanate crystals in presence of gamma rays, 22:18845
effects on Elodea, physiological, 22:6772 (ORNL-4168, pp 61-118)
effects on embrittlement of austenitic steels and nickel alloys, 22:13039(T) (CEA-tr-A-1912)
effects on embrittlement of ferrite steel pressure vessels, 22:52225
effects on embrittlement of steel, relations with composition, heat treatment, and microstructure, 22:31441
effects on embrittlement of zirconium pressure tubes, 22:21728
effects on embryos of Triturus, effects of age on, 22:10877
effects on energy storage in beryllium, recovery after, (E), 22:17794
effects on ESR spectra of carbon blacks, (E), 22:41693
effects on ESR spectra of vanadium ions in calcium tungstate crystals, 22:20052
effects on eyes of rabbits, protective effects of 5-adenylic acid, ATP, cysteamine, serotonin, and vitami B_6, 22:12875
effects on F center formation in sodium chloride single crystals, 22:7386
effects on fast reactor fuel materials, 22:27487(R) (LA 3880)
effects on fast reactor fuels, equipment and methods fo examination of, 22:6138(R) (LA-3820)
effects on fast reactor materials, assessment of irradiation conditions on, (E/T), 22:30298 (BNWL-SA-1488)
effects on fatigue behavior of stainless steel, equatio for, 22:26065 (TRG-Report-1353)
effects on fcc alloys and metals, 22:21745
effects on fcc metals, review of recovery processes in, 22:28867
effects on ferrite properties, (E), 22:20090
effects on fertility of mice, effects of fetal exposure on, 22:6884
effects on FFTF structural materials, methods for correlation of, 22:22803 (BNWL-667)
effects on fission track density in obsidian, 22:8212
effects on foods, health hazards due to induced radioactivity from, 22:31301
effects on formation and reactions of iodine isotopes a liquid hydrocarbons, 22:30536
effects on formation of colloidal lithium in lithium fluoride crystals, (E), 22:15579
effects on fracture toughness of Zircaloy-2, 22:34038 (BNWL-SA-1805)
effects on fuel cladding, review, 22:52126 (BNL-50127)
effects on gallium arsenides, current oscillations from 22:41673
effects on gallium arsenides, recombination radiation from, 22:24429
effects on gas release from beryllium oxide, 22:49820
effects on gases, production of nitrogen oxides and ozo by, 22:42797
effects on gastrointestinal tract of mice, long-term, 22:49549
effects on germanium and silicon semiconductors, 22:942 (TID-24201)
effects on germanium and silicon, relation of recoil-at energy partition between atomic and electronic processes to, review, 22:37012
effects on germanium crystals, partition of average energy deposited per neutron in, (T), 22:44272
effects on germanium oxide, tin oxide, and titanium oxi crystals, ESR study of paramagnetic defects from, 22:44213 (ORNL-TM-2264)
effects on germanium single crystals, use in reversible technique for noise studies, 22:46200
effects on germanium tellurides alloyed with bismuth an copper, 22:46284
effects on germanium, resistance changes from, (E), 22:52859
effects on glass, use of, in dosimetry, 22:31072
effects on glassy germanium oxide and alkali metal--germanium oxide mixtures, ESR study of paramagnetic defects from, 22:44213 (ORNL-TM-2264)
effects on grafting of monomers to cellulose of, from spent fuel, 22:33434
effects on graphite, 22:17193
effects on graphite and pyrolytic carbons at 100 to 2100°C, 22:7061(R) (GA-8202)
effects on graphite lubricants for high temperature applications, 22:8827
effects on graphite reactions with oxygen, 22:41140
effects on graphite, computer program for integration o equations describing defects from, 22:24407 (GAMD-8026)
effects on graphite, ESR studies of, 22:28965
effects on growth and zinc metabolism in swine, 22:519
effects on growth of bones in rats, effects of age on, 22:8643
effects on hardening of copper and copper alloy monocrystals, 22:21744
effects on hardening of iron monocrystals with trace carbon content, 22:41076(T) (ORNL-tr-1932)
effects on hardness of aluminum--lithium alloys, 22:11008
effects on hardness of graphite, 22:28968
effects on hardness of tungsten at 20 to 1300°C, 22:612(R) (GEMP-69)
effects on Hastelloy N at 1200°F in MSRE, 22:12035(R) (ORNL-4191)
effects on HBWR mild steel pressure vessel, 22:17146 (HPR-91)
effects on hearing of man, combined effects of γ radiation on pathological, 22:49529
effects on heating of lithium fluoride crystals, (E), 22:9432

effects on HeLa cells and lymphoma cells from mice, RBE for 14 MeV monoenergetic, 22:45430
effects on hematopoiesis in sheep, pulsed, 22:49472 (CONF-680410-, pp 6.1-14)
effects on hexamminocobalt(III) nitrate, mechanism of oxygen carriers in reactions of cobalt-60 recoil atoms in, 22:16588
effects on high-temperature tensile properties of chromium--nickel steel, 22:714 (N-67-22957)
effects on hollow uranium fuel elements, 22:17153
effects on human blood plasma, aberrant effects of, on chromosomes of leukocytes cultured from controls, 22:40886
effects on hydrocarbon--iodine systems, 22:16566 (COO-1617-10, pp 37-55)
effects on hydrogen embrittlement of A302B, HY80, and A542 carbon steels at 1200°C, analysis of, 22:31416 (BNWL-532, pp 7.1-18)
effects on hydrogen embrittlement of pressure vessel steels, research on, 22:19511 (BNWL-455, Paper 7.1-6)
effects on Incoloy 800 and stainless steel at 2 x 10^{22} neutrons/cm^2, 22:4832
effects on Incoloy 800 and stainless steel cladding materials, 22:25083(R) (GEAP-5541)
effects on intergranular cracking of stainless-steel fuel cladding, 22:26027 (GEAP-5495)
effects on internal friction and tensile properties of metals, 22:26068
effects on internal friction of copper, 22:8799
effects on internal friction of graphite, 22:43667
effects on interstitial recombination around vacancies in aluminum, 22:28868
effects on intestinal mucosa of mice and rats in comparison with γ and x, acute, 22:49552
effects on intestines of mice, pathological, 22:49557
effects on iron solubility in mineral acids, 22:8756
effects on iron, computer simulation of saturation in, 22:17821
effects on iron, interactions of interstitial carbon and nitrogen solutes with defects from, 22:34791
effects on iron--nickel single crystals, magnetization measurements of ordering by, 22:15585
effects on iron--nickel thin film magnetic properties, 22:7362
effects on iron-59 uptake by erythrocytes of mice, 22:49577
effects on lattice parameter of copper single crystals, annealing of, 22:1359
effects on leukocyte count and survival of mice, 22:4635
effects on life span of mammals, 22:40881
effects on life span of mice and rats, effects of age and dose fractionation on, 22:8645
effects on lifetime reduction in silicon and germanium, two-level model for, 22:13575
effects on lighium fluoride crystals, ESR study of tritium centers from, (E), 22:17779
effects on liquids and solids, review on, 22:50965
effects on lithium carbonate--hydrogen hexafluorosilicate, preparation of anhydrous fluorine-18-labeled hydrogen fluoride from, 22:12368
effects on lithium fluoride and lithium hydride single crystals, relation between EPR spectra and exchange interactions of F centers from, (E), 22:37028
effects on lithium fluoride crystals, dose dependence of dislocations from, 22:46245
effects on lithium fluoride crystals, nature and interconversion of F-aggregate centers from, (E), 22:36968 (COO-1054-40)
effects on lithium fluorides, concentration and dimensions of cavities from, (E), 22:36974(T) (UCRL-Trans-10247)
effects on lithium fluorides, lattice defects from, 22:41653(T) (UCRL-Trans-10251)
effects on lithium-doped manganese oxides, production and properties of defects from, (E), 22:37018
effects on low-temperature dielectric properties of silicon dioxide glass, 22:21765
effects on low-temperature heat transfer of silicon and germanium, 22:52849 (CEA-R-3387)
effects on low-temperature properties of molybdenum, niobium, and molybdenum--niobium alloys, 22:688 (AD-646682)
effects on low-temperature specific heat of graphite, 22:52264
effects on lubricant additives, 22:10512
effects on lubricating properties of graphite and molybdenum disulfide, 22:8850
effects on lubricating properties of polyphenyl ethers, 22:8849
effects on luminescence in uranium-activated lithium fluoride, (E), 22:9434
effects on luminescence of lithium fluoride, 22:4170
effects on magnesia single crystals, optical spectra of color centers produced in, (E), 22:29572
effects on magnesium oxide crystals, color centers and zero-phonon lines from, (E/T), 22:15643
effects on magnesium oxide monocrystals, 22:15266
effects on magnesium oxide, spin-orbit coupling and stress spectra of trigonal color centers from, (E), 22:52892
effects on magnesium oxides, evidence for formation of fluorine-containing molecular ions from, (E), 22:34746
effects on magnesium oxides, long-wavelength neutron scattering study of, (E), 22:24474
effects on magnesium oxides, negative-ion vacancies from, 22:41675
effects on magnetic aftereffect of nickel, 22:48168
effects on magnetic anisotropy of Permalloy films, (E), 22:15613
effects on magnetic properties of Armco iron and nickel, 22:44269
effects on magnetic properties of Ni_3Fe, (E), 22:26523
effects on magnetic shielding materials of reactor beam holes, 22:12103
effects on man, pathological, 22:40815
effects on man, remote pathogenic, 22:31239
effects on manganese carbonyls, mechanism and yields of, 22:27753
effects on materials at high-pressures, test facility for, 22:37901 (BNWL-613)
effects on materials, conditions and methods for studying, 22:6318(T) (JPRS-43250)
effects on mechanical and physical properties of graphite, 22:47675 (ORNL-4254, pp 183-240)
effects on mechanical and physical properties of single crystal niobium, 22:4839
effects on mechanical properties and microstructure of tungsten, 22:8793
effects on mechanical properties at 315 and 550°C of type 347 stainless steel, analysis of, 22:31415 (BNWL-532, pp 4.1-5)
effects on mechanical properties of 1,2,4,5-benzenetetracarboxylic 1,2:4,5-diimide polymers with p,p'-oxydiphenylene linkages, 22:25430
effects on mechanical properties of ARBUS Power Reactor fuel elements, analysis of, 22:35478
effects on mechanical properties of ASTM A302-B steel, 22:19576 (BNWL-455, Paper 6.1-9)
effects on mechanical properties of CaO--UO_2--ZrO_2 fuel elements, analysis of, 22:32789(R) (WAPD-MRP-124)
effects on mechanical properties of diamonds, 22:2711
effects on mechanical properties of Fe Al 40 alloy, (E), 22:28880
effects on mechanical properties of Hastelloy N, 22:47675 (ORNL-4254, pp 183-240)
effects on mechanical properties of Hastelloy N at 650 and 760°C, 22:11006 (ORNL-TM-2043)
effects on mechanical properties of heavy-section steel plates for reactor pressure vessels, evaluation program for determination of, 22:10524(R) (ORNL-4176)
effects on mechanical properties of hot pressed and rolled beryllium, 22:666
effects on mechanical properties of industrial ML5 steel, 22:8802
effects on mechanical properties of niobium--tin--zirconium alloys, 22:21730
effects on mechanical properties of PBF type 304 stainless steel-clad calcium oxide (CaO_2)--uranium oxide (UO_2)--zirconium oxide (ZrO_2) fuel elements, measurement of, (E/T), 22:35596(R) (IDO-17260)
effects on mechanical properties of pressure vessel steels for Bohunice Power Reactor Unit 1, evaluation of, 22:50748 (ZJE-27)
effects on mechanical properties of pyrolytic and single-crystal graphite, 22:13078 (TID-24233)
effects on mechanical properties of stainless steel, 22:19590
effects on mechanical properties of structural materials, data compilation on, 22:36511 (N-68-16876)
effects on mechanical properties of thorium--uranium--zirconium fuel elements, 22:30386
effects on mechanical properties of type 347 stainless steel, 22:19574 (BNWL-455, Paper 4.1-18)
effects on mechanical properties of types 304 and 348 stainless steels, 22:31414 (BNWL-532, pp 12.1-88)
effects on mechanical properties of uranium carbide (UC_2) and silicon carbide (SiC)-coated and uncoated uranium oxide (UO_2) fuels, analysis of, 22:42200(R) (ORNL-4200)
effects on mechanical properties of Zircaloy-2, 22:4823
effects on mechanical properties of Zircaloy-2, 22:21730
effects on mechanical properties of Zircaloy-4 pressure tubes, analysis of, 22:35428 (CVNA-289)
effects on mercury-203 enrichment in diphenylmercury by Szilard--Chalmers effect, 22:42758
effects on metals at low temperatures, production of defects from, review, 22:31925 (BNL-50083, pp 204-29)
effects on metals, stress effects on collapse of vacancy cascades initiated by, (E/T), 22:31936 (BNL-50083, pp 389-401)
effects on metaphase chromosomes in human bone marrow cells, whole-body aberrant, 22:51874 (ORAU-106, pp 5-104)
effects on methane and methane--hydrocarbon mixtures, 22:25432
effects on methyl methacrylate polymers, 22:12364
effects on mice and rats in comparison to γ and x, 22:12908
effects on mice, use of tumor induction as measure of mutagenic, 22:49318
effects on microstructure and tensile properties of pressure vessel steels, 22:17147 (NRL-6649)
effects on microstructure of molybdenum at 60 and 200°C,

22:717
effects on microstructure of plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:32743(R) (BNWL-739)
effects on molybdenum mechanical properties, 22:1329
effects on molybdenum single crystals, relations with crystal characteristics, 22:4818
effects on molybdenum, identification of vacancy and interstitial loops from, (E), 22:20049
effects on molybdenum, relations of pressure with annealing, 22:45791 (BNWL-SA-1835)
effects on Mylar capacitors, 22:416(R) (AD-648643)
effects on n-type silicon, impurity and irradiation-temperature dependence of formation and annealing of defects from, (E), 22:3203
effects on n-type silicon, production mechanisms and identification of defects from, review, 22:36999
effects on Nerva structural materials, 22:4813 (TID-24148)
effects on nickel foils, electron microscopic study of agglomerated defects, 22:48169
effects on niobium and niobium alloys, relations with metal impurities, 22:8801
effects on niobium superconductors, 22:1070
effects on niobium, relations of oxygen with Stage III annealing of, 22:43625
effects on notch ductility and tensile properties of A302-B steel, 22:8794
effects on olefinic groups in butadiene polymers, 22:6345
effects on optical absorption in fused silica during TRIGA Reactor pulse irradiation, 22:41648 (N-68-21124)
effects on optical absorption spectra of graphite, 22:11515
effects on optical spectra of magnesium oxide single crystals, (E), 22:7364
effects on orientation and thermal expansion of pyrolytic carbon, (E), 22:11096
effects on origin and orientation of interstitial loops in alpha iron, 22:45790
effects on oxalic acid or ammonium oxalate, 22:42763
effects on oxidation of boron carbides, 22:18828
effects on oxidative phosphorylation in mitochondria of rat tissues, 22:16981
effects on p- and n-type silicon solar cells, transient annealing of, (E/T), 22:13577
effects on p-type silicon, influence of impurities on defects from, (E), 22:36993
effects on p-type silicon, photoconductivity studies of defects from, 22:36995
effects on paramagnetic defect centers in single-crystal calcite, 22:8165
effects on paramagnetic defects associated with hydrogen and deuterium adsorption on calcium and magnesium oxides, 22:45108
effects on pea and spring wheat tissues, effects of dose on, 22:15117
effects on performance of radioelectric cells, (E/T), 22:47863
effects on phenylmercuric compounds, labeling compounds by, 22:2109
effects on phosphorus-32 production in elementary sulfur, 22:18786
effects on physical properties of cobalt, 22:43617 (DP-MS-67-20)
effects on physical properties of graphite, 22:17187
effects on physicochemical properties of glasses, 22:12348
effects on physiology of rhesus monkeys, mixed γ and, 22:49473 (CONF-680410-, pp 8.1-6)
effects on plant leaf embryos, effects of dose on mutagenic, 22:49284 (NYO-2740-5, pp 201-66)
effects on plastic deformation of iron single crystals, dose and temperature dependence of, (E), 22:13598
effects on plutonium carbide (PuC)--uranium carbide (UC) EBR-2 fuel elements, analysis of, 22:50841(R) (LA-3993)
effects on plutonium oxides--uranium oxides--zirconium oxides, 22:19649(R) (NUMEC-3505-30)
effects on polymers, 22:15270
effects on polymers, NMR spectral studies on, 22:48885
effects on potassium bromide and sodium chloride at 500 keV, 22:3169(R) (NYO-3822-2)
effects on potassium chloride and sodium chloride, chemical state of sulfur-35 from, 22:45105
effects on potassium chlorides and sodium chlorides, change in shear properties from, (E), 22:46205
effects on potassium chlorides, production of sulfur-35 by, 22:35874
effects on potassium chromates, effects of electron- and γ-radioinduced thermal annealing on, 22:27827
effects on potassium cyanides, yields in, 22:45100
effects on precipitation of metallic lithium in lithium fluoride and lithium hydride, 22:35832(T) (UCRL-Trans-10244)
effects on pressure vessel steel, relations with solid-solution nitrogen content, 22:11010
effects on pressure vessel steels, effects of fabrication heat treatments on, 22:33169
effects on pressure vessel steels, relations with heat treatments, 22:19588
effects on production of iodine-125 in xenon fluoride, 22:45156
effects on production of sulfur-35-labeled methyl isothiocyanate, 22:45111
effects on properties of aluminum oxide, 22:28969
effects on properties of beryllium oxide, 22:28969
effects on properties of boride and carbide coatings on molybdenum, niobium, tantalum, and tungsten, 22:34127
effects on properties of Elk River reactor pressure vessel steels and welds, (E), 22:30159 (SWRI-1228-P-9-15)
effects on properties of magnesium oxide, 22:28969
effects on pure and niobium-doped calcium tungstate crystals, ESR study of, 22:46278
effects on pyrolytic carbon, 22:11021(R) (GA-7390)
effects on pyrolytic carbon, 22:11089(R) (GA-7100)
effects on pyrolytic carbon and graphite, 22:21777(R) (GA-8376)
effects on quantitative characters in winter rye, effect of seed exposure on mutagenic, 22:6788
effects on rate of Guinier--Preston zone formation in aluminum-zinc alloys at 78°K, 22:23850
effects on reaction between carbon and carbon dioxide, 22:18809 (NP-17282)
effects on reactions between defects and impurities in high purity iron, review of, 22:43616 (CEA-R-3280)
effects on reactions of beryllium oxide with graphite, 22:11092
effects on reactions of hexane with labeled iodine with and without ethyl or isopropyl iodides, iodine-128- an -130-labeled yields in, 22:101
effects on reactions of labeled iodine with methyl iodide, iodine-128-and -130-labeled organic yields in, 22:100
effects on reactor fuel element cladding of metals and metal alloys, analysis of, 22:27492
effects on reactor fuels, description of optical methods for examining, 22:27497
effects on reactor grade graphite at 100 to 2150°C, 22:8853
effects on reactor materials, 22:19676
effects on reactor materials, 22:13040
effects on reactor metals and metal alloys, progress during May to July 1967 on, 22:31413(R) (BNWL-532)
effects on reactor structural materials, 22:19575 (BNWL-455, Paper 5.1-10)
effects on recombination levels in germanium, 22:36965 (AD-666220)
effects on refractory uranium and zirconium compounds, 22:45829(T) (EURFNR-503)
effects on residual stress in Type 304 stainless steel-clad uranium oxide (UO_2) fuel elements, analysis of, 22:50730 (GEAP-4221)
effects on rhenium, stereo-electron microscopy study of defect clusters from, 22:34790
effects on rubidium halide single crystals, temperature dependence of diffusion of krypton from, (E), 22:3479
effects on Santowax OM and Santowax WR, 22:4172
effects on scintillations in plastic and stilbene phosphors, time dependence of, 22:40415
effects on seeds of crops, standardization of doses and methods for mutagenic, 22:51512
effects on seeds of Phaseolus mungo, mutagenic, 22:2163
effects on seeds of wheat, comparison of mutagenic, with EMS and γ, 22:40634
effects on semiconductors, electron microscope observation of damage clusters from, 22:37007
effects on serum proteins of mice, immunoelectrophoretic analysis of whole-body 14 MeV, 22:30960
effects on shear compliance of hot-worked pyrolytic graphite, 22:28966
effects on silica glass, comparison with quenching effects, 22:24405(R) (COO-1255-5)
effects on silicon crystals at 996 +- 8 keV, (E), 22:5100
effects on silicon foils, use of anomalously wide images in electron microscope studies of defects from, 22:24482
effects on silicon microhardness, 22:41691
effects on silicon p--n junctions, 22:17723(R) (COO-1624-11)
effects on silicon transistors, 22:28267
effects on silicon transistors, characteristics of annealing, 22:13578
effects on silicon, electric conductivity changes from, (E), 22:52860
effects on silicon, for neutron dosimetry, 22:12579
effects on silicon, luminescence from recombination of electrons and holes at defects from, review, 22:37021
effects on silicon, recombination emission from, (E), 22:24431
effects on silicon, transmission electron microscopy study of damage from, (E/T), 22:11505
effects on single crystal iron, 22:34081(T) (ORNL-tr-1930)
effects on single crystal iron, relations with carbon content, 22:34082(T) (ORNL-tr-1931)
effects on single crystals of lithium fluoride, 22:3060
effects on single-crystal and polycrystalline molybdenu rods, 22:49770 (BNWL-SA-1812)
effects on single-crystal iron, 22:19592
effects on single-crystal iron, relations with carbon

content, 22:19591
effects on skin of mammals, effects of dose fractionation on, 22:49480 (CONF-680410-, pp 21.1-25)
effects on slip deformation mechanism of polycrystalline iron, (E), 22:28873
effects on slip in bcc metals, 22:716
effects on slip in vanadium, 22:2667(R) (ORO-3612-4)
effects on slip of single-crystal Ferrovac E iron, 22:43615(R) (BNWL-710)
effects on small mammals, fractionation and protraction factors associated with late γ, x, and neutron, 22:49468 (CONF-680410-, pp 2.1-27)
effects on sodium chlorates, chlorides, perchlorates, and pyrophosphates containing metal ions, 22:16613
effects on soil behavior, 22:4270 (CEA-R-3298)
effects on solids, effects of flux and energy spectrum on damage in, 22:10263 (CEA-R-3228)
effects on solids, literature survey, 22:43619(T) (JPRS-46209)
effects on solubility of crystals of strontium sulfate in water, 22:42775
effects on solubility of manganese, sodium, and zinc in water, 22:12388
effects on sorptive properties of alkaline earth oxides for oxygen, 22:12370
effects on space flight personnel, factors affecting, 22:6847
effects on Spert 4 Capsule Driver Core Zircaloy-2-clad uranium oxide (UO$_2$) fuel elements, measurement of, (E), 22:35596(R) (IDO-17260)
effects on SPERT IV stainless steel-clad uranium oxide (UO$_2$) pellet-type fuel elements, measurement of transient, 22:33066
effects on stable elements in bodies of astronauts, 22:19400(R) (BNWL-531-1)
effects on stainless steel, 22:21645(R) (BMI-1826)
effects on stainless steel and steel, 22:23845 (IN-1131, pp 83-90)
effects on stainless steel oxidation by carbon dioxide, 22:19593
effects on steel embrittlement, method of determining, 22:38591
effects on steel for fuel element cladding, 22:4728 (BMI-X-455(Pt.1))
effects on stereospecificity of recombination reactions in chromium chloride complexes with ethylenediamine, effects of thermal annealing on, 22:45127
effects on storage life of food, comparison of, with other forms of ionizing radiation, 22:49669
effects on stress-rupture of Hastelloy N, 22:8696 (ORNL-4170, pp 192-205)
effects on stress-rupture properties of Hastelloy X at 650°C, 22:48788
effects on stress-rupture properties of Incoloy 800 at 705°C, 22:48788
effects on structure of aluminum and magnesium oxides, relations with annealing, 22:772
effects on structure of ammonium hexachloroosmate, 22:23008
effects on structure of pyrolytic graphite at high temperatures, 22:38624 (N-68-10216)
effects on sulfur, state of phosphorus-32 produced from, 22:16605
effects on surface and bulk effects in planar semiconductor devices, 22:33705
effects on surface corrosion of pure iron, 22:8796
effects on survival of burros following exposure to atomic explosion, whole-body, 22:40829 (ORO-657, pp 18-34)
effects on survival of burros, effects of dose-rate on, 22:49471 (CONF-680410-, pp 5.1-16)
effects on survival of hamster cells, 22:28621 (ANL-7278, pp 1-94)
effects on survival of large animals, review of effects of dose-protraction on, 22:49476 (CONF-680410-, pp 12.1-23)
effects on survival of mice, effects of age, dose rate, and strain on, 22:45684
effects on survival of sheep, effects of millisecond and microsecond exposures on, 22:49472 (CONF-680410-, pp 6.1-14)
effects on survival time of monkeys, combined effects of γ rays on pulsed, 22:43393 (AFRRI-SR-68-5)
effects on swaged uranium dioxide at burnup of 3000 MWd/t, 22:41135
effects on swelling of α-uranium, 22:34085
effects on swelling of uranium at 400 to 550°C, 22:34090
effects on swine following exposure to atomic explosion, tumorigenic whole-body, 22:40829 (ORO-657, pp 18-34)
effects on tangential rupture strength of chromium—titanium—vanadium alloy, 22:48788
effects on tensile properties of 300 series stainless steels, 22:34079 (BNWL-SA-1455)
effects on tensile properties of carbon steel, 22:19596
effects on tensile properties of chromium, molybdenum, and nickel steels, 22:718
effects on tensile properties of Hastelloy X 280 and Inconel 600 at 1250°F, 22:34078 (BNWL-SA-1442)
effects on tensile properties of Hastelloy X and type 304 stainless steel at 550°C, 22:30388
effects on tensile properties of niobium, 22:48788
effects on tensile properties of niobium, relations of temperature and dose with, 22:31419 (BNWL-532, pp 11.1-43)
effects on tensile properties of Type 304 and Type 348 stainless steel, 22:48788
effects on terphenyl, 22:35769 (AI-AEC-Memo-12688)
effects on the dehydrogenation efficiency of oxide catalysts, 22:25384
effects on thermal conductivity of lithium fluoride crystals, relation to defect formation, (E), 22:46244
effects on thermal conductivity of monocrystalline graphite, 22:13591
effects on thermal conductivity of oxygen-containing silicon at low temperatures, 22:7389
effects on thermocouples, 22:4841
effects on thin-film capacitors, 22:710(R) (AD-648742)
effects on thorium dioxide—plutonium dioxide, 22:23904 (CONF-660524-, pp 463-73)
effects on tin compounds, retention of tin-113, tin-117m, and tin-119m in products from, 22:16619
effects on tin dioxide crystals at 200 to 300 eV, tin-119m Moessbauer effect detection of 200- to 300-eV (n,γ), (E), 22:29563
effects on titanium—vanadium alloys, review, 22:52126 (BNL-50127)
effects on toughness of type A302B steel, 22:34088
effects on Tradescantia occidentales, RBE of monoenergetic, 22:43300 (AERE-PR/HPM-12)
effects on transfer of activity from iron and iron hydroxide to tris(N-nitroso-N-phenylhydroxylaminato)iron, 22:40136
effects on transition metals, 22:17139 (GA-7978, pp 133-41)
effects on transition temperature in brittle fracture test of steel pressure vessels, analysis of, 22:27448
effects on transmutations in plutonium-239, analysis of, 22:32893
effects on tribromobenzene isomers, distribution of bromine-82 in products of, 22:47181
effects on tribromobenzene isomers, effects of thermal annealing on products of, 22:47181
effects on tumors in rats, effects of dose fractionation on, 22:49480 (CONF-680410-, pp 21.1-25)
effects on tumors, evaluation of therapeutic, 22:36299
effects on tungsten crystal vacancies, annealing recovery from, 22:2664(R) (CU-3551-8)
effects on tungsten single crystals, 22:17104 (GA-7978, pp 11-46)
effects on tungsten, recovery stages from, (E), 22:13042
effects on two coupled core reactor kinetics of first-flight, 22:14311
effects on type 16/13 steel, relations with annealing and mechanical working, 22:34080(T) (EURFNR-464)
effects on type 16/13 steel, relations with boron and carbon content, 22:34080(T) (EURFNR-464)
effects on type 316 stainless steel, 22:4844
effects on type A302B pressure vessel steel, 22:13038 (WAPD-TM-471(Add.1))
effects on types X800 and 1100 aluminum alloys, 22:31434
effects on ultrasonic attenuation in quartz, relation of three-phonon scattering mechanism to , (T), 22:34793
effects on uranium carbide, 22:19671(R) (EURAEC-1980)
effects on uranium dioxide fuel canned in thick Zircaloy tubes, (E), 22:26092 (CEA-R-3358)
effects on uranium dioxide, electron microscopic study of defects produced in, (E), 22:28961
effects on uranium emission from sintered uranium oxide pellets, 22:8792
effects on uranium growth, 22:43590 (ANL-7299, pp 201-19)
effects on uranium, review of theories of breakaway swelling in, 22:28877
effects on uranium-base alloys, 22:23847(T) (AERE-Trans-1093)
effects on vulgare wheat, mutagenic, 22:51535
effects on Wigner defects in graphite, 22:2712 (CEA-R-3226)
effects on X8001 aluminum sheaths, 22:8744 (ORNL-4170, pp 184-91)
effects on xenon release from cesium halides, 22:16600
effects on xenon-filled thermionic diodes, 22:38841 (N-68-12718)
effects on yield surfaces of polycrystalline copper, 22:2673
effects on yielding creep of Zircaloy-2, 22:28853
effects on yttrium ferrate, $Y_3Fe_5O_{12}$, ferromagnetic relaxation changes from, 22:5451
effects on yttrium oxides and yttrium nitrate catalytic effects on decomposition of 2-propanol, 22:2106
effects on zinc sulfide monocrystals, effects of annealing on, 22:4169
effects on zinc sulfide thermally stimulated currents, (E/T), 22:13587
effects on zinc sulfide thermally stimulated currents, 22:13588
effects on Zircaloy-2 and zirconium—niobium alloys, 22:28855
effects on Zircaloy-2 clad uranium oxide (UO$_2$) fuel elements, analysis of, 22:16281 (GEAP-5100-K)
effects on Zircaloy-2 corrosion by steam—water mixtures at 250 to 280°C, in-pile, 22:52139
effects on Zircaloy-2-clad hollow-core uranium rods at

260°C, analysis of, 22:33001
effects on zirconium and Zircaloy-2, 22:43571 (TID-24570)
effects on zirconium and zirconium alloys, 22:21729
effects with gamma radiation on crystal defects in lead nitrate, photoannealing of, 22:30616
effects with gamma radiation on higher aromatic hydrocarbons, 22:35867
efficiency for activation analysis, 22:14469
elastic scattering of, calibration of solenoid for, 22:32961 (ANL-7310, pp 377-430)
electric dipole moment in CP-noninvariant and P-conserving electromagnetic interactions, 22:39450 (JINR-E2-3801)
electric dipole moment of, experiments for measuring, (E), 22:3746 (BNL-11746)
electric dipole moment of, neutron-beam magnetic-resonance measurement of upper limit of, 22:37110
electric dipole moment of, theory with CP violation for calculation of, 22:29735
electric dipole moment of, upper limit for, (E), 22:44375
electric dipole moment of, use of current algebra and PCAC hypothesis for model of, 22:3342
electric form factor from electron elastic scattering by deuterium, (T), 22:44602
electric moment of, model for CP violation for static E1, 22:5536
electric polarizability of, measurement using scattering by lead, (E), 22:20650
electromagnetic form factors from deuterium (e,e'p) reactions with quasielastic scattering, (E), 22:13926 (DESY-67/21)
emission by plutonium-238-enriched plutonium dioxide, effects of oxygen-16 content on, 22:27629 (MLM-1462)
emission from d--d interactions in deuterium plasma, diagnostic use of, 22:26364(T) (LA-tr-67-113)
emission from fission fragments, indirect measurement of, 22:46805
emission from hot deuterium plasma, diagnostic use of, 22:1169
emission from moon, cosmic-ray-induced, (T), 22:11254
emission from μ^- capture by nuclei at high energies, relativistic effects on, (T), 22:13728
emission from noncylindrical z-pinch in deuterium, 22:1280 (LA-3770, Paper C3)
emission from nucleon reactions with aluminum, lead, and oxygen at 750 to 2000 MeV, analytic representation of spectra for, 22:46459 (ORNL-TM-2277)
emission from plasma focus experiment, 22:1279 (LA-3770, Paper C2)
emission from proton reactions with nuclei at 400 to 660 MeV, mean number for secondary evaporation, (E), 22:20127
emission from SNAP-19 fuel capsules, measurement using neutron spectrometer, 22:10502 (MND-3607-173)
emission from stars, (T), 22:5033
emission in plasma focus experiments, 22:1281 (LA-3770, Paper C6)
emission of solar, search for, (E), 22:875
emission rates and energy spectra of, from plutonium-238-fueled power sources, 22:30783
emission times for, measurement of mean, 22:14258(R) (GA-8304)
energy and time distributions from hydrogen-bearing moderating radiators, (T), 22:44572(T) (ANL-Trans-638)
energy density of gases of, (T), 22:30062
energy distribution of high-energy, in shielding, (T), 22:7337 (JINR-P16-3593)
energy distributions from heavy rare-earth metals, effects of crystalline field on, (T), 22:20497(R) (AECL-3009)
energy distributions in critical and subcritical assemblies, equipment for studying, 22:20423(T) (JPRS-43682, pp 199-222)
energy group division on basis of interactions with biological tissues, 22:48433
energy levels of, for motion in magnetic fields, (T), 22:5047
energy losses in phantoms, spectral dependence of, 22:6652 (ORNL-4168, pp 183-230)
energy measurement of Maxwellian distribution in reactors, 22:8363(P)
energy spectra in water and zirconium hydride at room temperature as function of slowing-down time, (E), 22:48412(T) (AERE-Trans-1088)
energy transfer in liquid dielectrics used in ionization chambers, linear, 22:30824(T) (SLAC-Trans-81)
extrapolation distances for small spherical light water reactors, use of pulsed neutron experiment asymptotic decay constant to determine, 22:33154
extrapolation length for black cylinder in absorbing and scattering medium, (T), 22:24820
extrapolation length for Milne problem of two media, (T), 22:32456
extrapolation length for water, measurements using pulsed-source technique, (E), 22:32449
extrapolation length in slabs for monoenergetic, variational calculations of, (T), 22:26773
extrapolation lengths, direct calculation by Monte Carlo method, (T), 22:5730
fission rates in homogeneous systems, equations describing temperature dependence of, 22:42382
fission ratio measurements using plutonium recycle fuel elements, 22:25008
fission ratios for uranium-235/238 and plutonium-239/uranium-235, 22:14255 (BNWL-CC-886)
fission yield of, mass dependence of anisotropy of, 22:32959 (ANL-7310, pp 1-30)
fissioning of uranium-235 by, mass-angle-energy determinations from, 22:30118 (ANL-7438)
fluctuations in reactors, comparison of methods for analysis of, (T), 22:47049
fluence determinations in WWR-S, foil activation techniques for, 22:16294 (UJV-1905)
fluence measurements in ZED-2, effects of various moderators on, 22:12083 (AECL-2772)
fluence measurements of, use of EL-X8 computer for evaluating gamma spectra data from activation detectors for, 22:19113
fluence-to-kerma factors for human body, use of standard man phantom to calculate, 22:31071
flux across interfaces, effects of resonance scattering on multigroup cross sections for calculating, (T), 22:32460
flux analysis in thin critical slabs, angular synthesis method for, 22:12139 (BNWL-472, pp 2.1-3)
flux analysis of, description of Garelis-Russell, Gozani, and pulsed neutron methods for, (T), 22:35703
flux and spectral determinations in fast-thermal STARK, 22:16287 (KFK-668)
flux calculations and measurements for, methods development for, (E/T), 22:48422(R) (RPI-328-133)
flux calculations for fast, analytic representative for, 22:32884
flux calculations for FRO, computer program for time-dependent S/sub N/, (E/T), 22:35632
flux calculations for FTR split core, 22:22804(R) (BNWL-685)
flux calculations for heterogeneous systems using diffusion theory, computer program for, 22:18077 (EIR-126)
flux calculations for HFIR, use of Phoenix fuels in, 22:14289 (BNWL-635)
flux calculations for HWOCR, comparison of eigenvalues for, 22:3813(R) (AI-CE-54)
flux calculations for multiplying and nonmultiplying media using higher harmonics, (T), 22:46696 (FEI-103)
flux calculations for reactor, computerized solution to one-group three-dimensional diffusion equation for, 22:1881 (KAPL-P-3381)
flux calculations for reactors, effects of cell geometry on, 22:6137 (CONF-670431)
flux calculations in transverse shielding of 0.5-TeV proton synchrotron, 22:46568 (HASL-199)
flux calculations of 0.0 to 1.68 eV, computer program for, 22:35661 (DLR-FB-66-91)
flux calculations using Monte Carlo method, time-dependent, (T), 22:48432
flux calculations using transport theory with discrete Sn method, anisotropic, (T), 22:15935
flux changes in activation analysis, equipment for compensating for, 22:30433 (NIM-177)
flux density behavior in pulsed coupled-core reactors, 22:6005
flux density distribution in reactors, activation system for measuring, 22:28116
flux detection system in EBR-2, performance of counting-Campbelling, 22:28072
flux determination in fuel plates, method for, 22:30345 (KAPL-M-6914)
flux determination in periodic reactor lattices, use of Boltzmann equation with fluctuating parameters for, 22:30321
flux determination in pure moderator, calculation of discrete eigenvalues for, 22:30371
flux determination of, use of back-to-back fission chamber and activation detector for absolute, 22:28105
flux determination, convergence acceleration for inner integrals in discrete ordinates method for adjoint, 22:37560 (K-DP-3105)
flux determinations for reactors by adjoint weighting techniques in diffusion theory, 22:16329
flux determinations in beryllium moderators, use of high and low energy neutron pulses for, 22:30376
flux determinations in reactors, method for approximating adjoint from, 22:33138
flux determinations in Shippingport Core 2 Seed 1, wire irradiations for, 22:14147(R) (WAPD-MRP-122)
flux diffusion theory for, development and accuracy of collided, (T), 22:53464 (WAPD-TM-801)
flux distribution calculations for reactor, use of transfer matrix method for, 22:6149
flux distribution calculations in rocket reactor shielding, FASTER code for energy dependent, 22:39859(R) (N-68-13509)
flux distribution calculations in rocket reactor shielding, ODD-K code for spatial and energy, 22:39856(R) (N-68-13506)
flux distribution calculations in rocket reactor shielding, DAFT code for angular, spatial, and energy, 22:39858(R) (N-68-13508)
flux distribution calculations in rocket reactor, TAPAT

diffusion and transport code for, 22:39853(R) (N-68-13503)
flux distribution calculations in rocket reactors, NAGS code for two-dimensional multi-group, 22:39857(R) (N-68-13507)
flux distribution control in nuclear reactors, analysis of, (T), 22:25138
flux distribution flattening in converter reactor core regions, (T), 22:42284
flux distribution for bi-directional reactor refueling, (T), 22:22879
flux distribution for nonequilibrium reactor system, equations for, 22:28846
flux distribution from point source in homogeneous isotropic medium with cylindrical surface, (T), 22:50517
flux distribution in BSR-1, analysis of photon produced, 22:16298(T) (NSJ-tr-93)
flux distribution in FTR stainless steel and vanadium alloy clad uranium, uranium--zirconium, molybdenum--uranium, and plutonium--uranium--zirconium fuel elements, measurements of, 22:27458 (BNWL-514)
flux distribution in FTR stainless steel clad uranium carbide (UC) and plutonium carbide (PuC)--uranium carbide (UC) fuel elements, measurements of, 22:27457 (BNWL-513)
flux distribution in HIFAR fuel element cells, (E/T), 22:14242 (AAEC/TM-408)
flux distribution in homogeneous or multilayer infinite one-dimensional shields for, 4- and 18-group calculations of spherical harmonics for, 22:35675
flux distribution in multiblanket cylindrical heterogeneous, use of unreflected end P_1 approximation for, (T), 22:35678
flux distribution in Otto Hahn Reactor, measurement of, (E/T), 22:46988
flux distribution in Peach Bottom HTGR during zero-power experiments, 22:24939 (CONF-660524-, pp 695-715)
flux distribution in plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel elements, use of transport theory for calculation of, (T), 22:44941
flux distribution in reactor core, one- and two-group model analysis of optimum, (T), 22:53468
flux distribution in reactors, description of multiple-capsule feeder for measurement of, 22:48757(P)
flux distribution in reactors, irreversible process--transport calculations of, 22:14160
flux distribution in solving multigroup diffusion equations, use of polynomial expression for, 22:7923
flux distribution in two-zone reactors, two-point statistical model for, (T), 22:44916(T) (ANL-Trans-651)
flux distribution measurements in NORA, 22:16283(R) (IAEA-3498-21)
flux distribution measurements in subcritical assemblies, 22:16300
flux distribution of monoenergetic, diffusing in an infinite medium, two-sided Laplace integral theory analysis of, 22:35723
flux distributions during operation of core 1 cycle 1 in Trino Power Reactor, analysis of, 22:39769 (EUR-3932)
flux distributions in EL-4 Reactor, analysis of three-dimensional heterogeneous code for calculating, 22:22764
flux distributions in heterogeneous media, method for calculating, 22:20413(T) (JPRS-43682, pp 1-42)
flux distributions in infinite homogeneous media of, n-th Legendre harmonic formulae for space-energy and space-time, (T), 22:30369
flux distributions in LACBWR, foil irradiations for determining, 22:7786 (ACNP-67533)
flux distributions in pressurized water reactors, analysis of external detector measurements of, 22:27478 (BNL-12390)
flux distributions in water, time-of-flight measurements of angle- and energy-dependent, (E), 22:32443
flux expressions for monoenergetic stationary Boltzmann equation, expansion in Chebychev polynomial series of, 22:53457 (BMwF-FBK-68-17)
flux flattening by non-uniform fuel distribution in reactors, effect of resonance capture on, (T), 22:7910 (JINR-P4-3581)
flux flattening calculations for heterogeneous reactors, 22:7909 (JINR-P4-3580)
flux flattening in 1000 MW(e) two-zoned fast reactors, effects of fuel enrichment and composition on radial, (E/T), 22:35468 (PNR/SETR-R.-010)
flux flattening in multiregion reactors, analytical method for determining, 22:14171
flux fluctuations in seed-blanket reactor cores, analysis of space-correlated, 22:32877
flux from source in nonhomogeneous medium, mean, (T), 22:44593
flux in atmosphere from cosmic-ray interactions, (E), 22:43948
flux in concrete ducts, albedo calculations for epicadmium, 22:1288 (ORNL-4147)
flux in cylindrical tubes, (E), 22:50213(R) (EUR-3913)
flux in multiregion reactors, orthogonal solutions to diffusion approximation of, 22:7911 (KAPL-P-3389)
flux in natural uranium--graphite lattices, comparison of theoretical and experimental values for, 22:33013
flux in parallel planes, effects of cylindrical absorbers on depression of, 22:33148
flux in PRTR with uranium dioxide--2 percent plutonium dioxide fuel, 22:6125
flux in upper atmosphere of epithermal albedo, measurement by indium-activation method, (E), 22:24071
flux mapping at KRB reactor, system description for in-core, 22:12590
flux mapping near nuclear explosions, detector energy integration program for, 22:40280 (AD-667933)
flux measurement efficiency in pressurized-water reactors, analysis of detector patterns for, 22:30164(R) (WCAP-3703)
flux measurement in reactors, comparison of wide-range nuclear channels for, 22:53488
flux measurement in reactors, current variations from ionization chambers for, 22:25638
flux measurement of, calculation of optimum efficiency for reactor core detectors for, (T), 22:35677
flux measurement of, fission electric cell for, 22:45289
flux measurements in 5 MW(t) PARR reactor, 22:6097 (PINSTECH/PHY-7)
flux measurements in cavity regions of rocket reactors, 22:3881(R) (NASA-CR-72234(Vol.1))
flux measurements in cylinders of grey and black material, use of Kofink's formulation of P/sub N/ method for extrapolation distance, 22:39932
flux measurements in DFR, 22:18522
flux measurements in fast-thermal critical assembly ERMINE, spectral indices determination from, 22:20916(T) (ANL-Trans-556)
flux measurements in fast-thermal reactor STARK, 22:1859 (KFK-592)
flux measurements in LMFBR, design of miniaturized fissionable material--thermocouple system for, 22:12571 (ANL-7380, pp 146-7)
flux measurements in PCTR, use of foil activation techniques for, 22:22804(R) (BNWL-685)
flux measurements in reactors, design and performance of miniaturized ADIT fission thermocouples for, 22:30905
flux measurements in reactors, design of fission thermocouples for, 22:30838
flux measurements in reactors, fission and ionization chambers for, 22:12568 (AEEW-M-492)
flux measurements in reactors, fission thermocouples for low-temperature, 22:51276(R) (IDO-17269)
flux measurements in reactors, statistical gamma discrimination method for, 22:35684
flux measurements in research reactors, methods for, 22:12108
flux measurements in STARK, 22:16296(T) (EURFNR-352)
flux measurements in WWR-S reactor beam holes, residual, 22:3911
flux measurements of 14-MeV, in reactors, use of copper activation detectors for, 22:16857 (CEA-R-3295)
flux measurements of cosmic, during solar eclipse on Nov. 12, 1966, 22:31663(T) (SC-T-68-1516)
flux measurements of MARYLA-2 WWR-SM reactor, calculation methods for, 22:35597 (INR-878/XXI/PR)
flux measurements of, design and performance of uranium--photographic plate fission foil detectors for, 22:38028
flux measurements of, design of activation foil counting system for, 22:4453(P)
flux measurements of, design of apparatus for, 22:4449(P)
flux measurements of, design of negative-pressure, rotational, bubble-chamber-type detector for measuring, 22:10560
flux measurements of, development of beta-current activation detector for, 22:21312 (HPR-73)
flux measurements of, digital counting device for low-level, 22:14872 (CEA-R-3340)
flux measurements of, efficiency of solid-state track detectors for, 22:30835
flux measurements of, lithium-drifted germanium gamma spectroscopy of gold activation foils for determining fast-to-thermal ratios in, 22:38029
flux measurements of, preparation of thin activation probes for, 22:2340 (ABS-THH-1033)
flux measurements of, semiconductor detectors with converter foils for, 22:51231
flux measurements on, detector development for, 22:37340(R) (EANDC(E)-89(U))
flux measurements under adverse conditions, use of fission chambers for, 22:12573 (ANL-7380, pp 165-7)
flux measurements under adverse conditions, use of Campbell's method for, 22:12573 (ANL-7380, pp 165-7)
flux measurements using averaging and rms type radiation detectors, γ discrimination and sensitivities of counting-Campbelling, 22:28084
flux measurements using boron-10 (n,α), helium-3 (n,p), and lithium-6 (n,α) reactions, standard cross sections for, (E), 22:18146
flux measurements using gold foils, effects of self-shielding and self-absorption factors on, 22:6597
flux measurements using indium foil activation, computer programs for analyzing, (E), 22:32426 (GA-8556)
flux measurements using uranium foils and fission chambers, effects of system heterogeneity on reaction rates in, (E), 22:35333

flux measurements with resonance effects in fast reactors, computer program for B_1 equations solutions for, 22:35663 (GA-7542(Vol.1))
flux monitoring for fast reactors, activation methods for, 22:13035 (BNWL-473, pp 11.1-7)
flux monitoring in reactors, development of regenerative fission chambers for in-core, 22:36025 (BNWL-SA-1621(Rev.))
flux monitoring of, ionization chamber for measuring gamma activities of cobalt for, 22:4422 (AERE-R-5179)
flux monitoring system for reactors, design of wide-range Campbelling, 22:303 (ANL-7224)
flux monitoring using aluminum-cobalt alloy foils, 22:20497(R) (AECL-3009)
flux of cosmic albedo, (E), 22:29311
flux optimization in reactor, 22:6150
flux oscillations in reactors, effects of xenon on induced, 22:27478 (BNL-12390)
flux peaking in 18-element uranium oxide (UO_2) CANDU-BLW rod-type fuel assemblies, effects of configuration and coolant on, 22:44883 (AECL-3143)
flux peaking in fuel elements, methods for calculating, 22:50850
flux perturbation effects of reentrant hole in pulsed-source experiments, method for calculating, 22:32451
flux perturbation in single uranium and uranium--plutonium fuel elements, calculation method for, 22:1874
flux perturbations in bare slab reactors, Green's function mode and variational method analysis of, (T), 22:14296 (RPI-328-100, pp 140-87)
flux perturbations in Dragon Reactor, noise analysis at 20 MW(t) for, 22:35420 (AEEW-R-571)
flux perturbations in water, effects of re-entrant hole depths on pulsed, (T), 22:14296 (RPI-328-100, pp 140-87)
flux profile analysis in water-cooled reactors, BOLERA code for, 22:18588 (RT/FI-(67)28)
flux profile measurements in reactor cores during zero power experiments, small semiconductor detectors for, 22:37989 (CONF-670545, pp 191-9)
flux profiles in La Crosse Boiling-Water Reactor, measurement of, 22:3805(R) (ACNP-67530)
flux profiles in SNEAK-1 and ZPR-3-41, comparison of, 22:6090 (EURFNR-395)
flux ratio of real and adjoint, computer program for two bilinear and linear functionals, 22:35672 (RT/FI-(68)10)
flux shape for point reactor kinetics equations, description of time dependent function of, (T), 22:18606
flux space-time effects in coupled core reactors of, analysis of multimode time synthesis approximation for, (E/T), 22:30351
flux spectra from multiple foil activation measurements, computer program for determining, 22:48413 (BNWL-855)
flux spectral shapes, comparison of fast reactor and Watt fission, 22:12091(R) (BNWL-639)
flux spectrum calculation for fuel burnup analysis, 22:14288 (AAEC/E-184)
flux synthesis in reactors, variational method for, (T), 22:22653(R) (ANL-7419)
flux tilting in Fort St. Vrain Power Reactor, analytical and numerical methods for calculating maximum distribution of, 22:22691 (GA-8115)
flux tilting measurements in two-zone research reactor, 22:16301
flux variation due to heterogeneity in SNEAK 3A-1, (E), 22:5923 (EURFNR-402)
flux variations in HFIR and ORR, effects of coolant flow around control rods on, 22:1860 (ORNL-4149)
flux variations in ORR core from a cadmium--boron neutron filter, (E), 22:20910(R) (ORNL-TM-2147)
fluxes from (α,n) and (p,n) reaction, method for measuring, (E), 22:11948(R) (NP-17216)
fluxes in critical multiplying systems, generalized perturbation method for analysis of bi-linear functionals of real and adjoint, 22:6179
fluxes in reactor moderators, effects on resonance integral of nonuniformity of, 22:30381
fluxes in reactors, effects of cross section variations on spectral fitting of, 22:50868
form factor from e + d quasi-elastic interactions at high energies, counter telescope, spectrometer, Cherenkov, and shower counter study of magnetic, (E), 22:29614 (DESY-68/14)
form factor from quasielastic e + d interactions at q^2 = 18 to 100 fm^{-2}, magnetic, (E), 22:26554
form factors for, SU(3) x SU(3) symmetry for, 22:9653
form factors from diffraction model of p + p and p + n elastic scattering, 22:44383
form factors from e + d elastic and inelastic scattering, electromagnetic, 22:11611
form factors from e + d quasi-elastic interactions, (E), 22:44357
form factors from e + d, e + t, and e + ^{3}He interactions, electromagnetic, 22:3326
form factors from quasi-elastic e + d interactions at 0.27 to 4.47 $(GeV/c)^2$, (E), 22:50280
form factors from thermal neutron scattering by atomic electrons, electromagnetic, 22:11611
form factors of, electromagnetic, 22:46362
form factors of, electromagnetic, 22:11626
generation in 24-BeV proton interactions in emulsion, 22:2831
generation time in fast reactors, description of discrete time and discrete state Markov for, (E/T), 22:35545
half life of, (T), 22:13127
half-life of free, scintillation counter study of, (E), 22:9507
imaging methods for, review of progress in, 22:40333
importance functions in reactors, phase space distribution of, (E/T), 22:18587 (CURL-15)
intensity at sea level of cosmic, solar diurnal, (E), 22:19804
intensity decrease of cosmic, during magnetic storms, (E), 22:52631
intensity during cosmic-ray bursts, barometric effect of, (T), 22:34314
intensity increase of cosmic, preceding Forbush decrease, (E), 22:24070
intensity of cosmic, at sea level and at 260 and 315 millibars, (E), 22:11272
intensity of cosmic, attenuation coefficients of, (T), 22:5153
intensity of cosmic, barometric coefficient distribution during IQSY as measure of, (E), 22:47852
intensity of cosmic, in atmosphere at 42° latitude, (E), 22:26316
intensity variations in cosmic, east--west asymmetry in, (E), 22:21955
intensity variations of cosmic, effects of solar flares and brightening on, (E), 22:21807
intensity variations of cosmic, in Eastern USSR during Aug.--Oct. 1966, (E), 22:11270
intensity variations of cosmic, latitudinal distribution of, (E), 22:21954
intensity variations of cosmic, solar--diurnal, 22:11273
interactions anti ν + n $\rightarrow$ p + μ^-, spin dependence of, (T), 22:11635
interactions anti ν + n, asymptotic equality with ν + n interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions anti p + n $\rightarrow$ anti p + n at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, 22:37143
interactions anti p + n $\rightarrow$ $\Delta(1236)$ + p at 28 GeV/c, differential cross sections and decay angular distributions for, (E/T), 22:3261
interactions anti p + n $\rightarrow$ n + anti p, dispersion theoretic calculation of two-π exchange effects on amplitude of forward, 22:39383
interactions anti p + n $\rightarrow$ π^- + π^- + π^+ at rest in deuterium bubble chamber, analysis of final state in, (E), 22:17863
interactions anti p + n $\rightarrow$ W^- $\rightarrow$ l + anti ν, effects of form factors and polarization on differential and total cross sections of, (T), 22:39388
interactions anti p + n at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti p + n at 1.23 to 1.65 GeV/c, comparison of dip-bump structure in elastic, 22:50376
interactions anti p + n at high energies, cross sections for elastic, (E), 22:17858
interactions anti p + n at rest, statistical model with SU(3) symmetry for multiple particle production in, 22:32139
interactions anti p + n at rest, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions anti p + n at rest, tests of SU(6)/sub W/ and SU(3) predictions for annihilation, 22:22390
interactions anti p + n, π elementarity in elastic unitarity model for, 22:1428
interactions at 3.0 to 7.0 GeV/c with large momentum transfer, review of two-body, (E), 22:39268 (CERN-68-7(Vol.1), pp 252-89)
interactions α + n, coupled-channel Schroedinger equation model and phase shifts for, 22:24689
interactions e^- + n at low energy, (E), 22:5809(R) (ANL-7354)
interactions eta + n $\rightarrow$ eta + n, scattering length for, (T), 22:22401
interactions γ + n $\rightarrow$ K^0 + $\Lambda^0(\Sigma^0)$ below 1.530 GeV in heavy liquid bubble chamber, upper limits for, (E), 22:3245
interactions γ + n $\rightarrow$ p + π^- at 352 to 550 MeV, differential asymmetry ratios with polarized photons in, (E), 22:52918
interactions γ + n $\rightarrow$ π^- + p at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions γ + n $\rightarrow$ π^- + p at 3 GeV/c, violation of quark model sum rules in, (T), 22:22363
interactions γ + n $\rightarrow$ π^- + p at 500 to 800 MeV in deuterium, proposal for scintillation counter study of cross sections for, (E), 22:37069 (NP-17458)
interactions γ + n $\rightarrow$ π^- + p, review of experiments and theory for, 22:11609 (NP-17221)
interactions γ + n $\rightarrow$ π^- + p, vector dominance and quark model relation for polarization in, 22:41769 (DESY-68/33)
interactions γ + n near threshold, π^0 production in, 22:20182
interactions in lunar surface by cosmic-ray produced,

prompt photon spectrum from, (T), 22:15382 (ORNL-TM-2100)
interactions in nuclear emulsions, production of stars, (E), 22:15383
interactions in nuclei, scattering length for, (T), 22:22627
interactions $K + n$ at high energies, 36-plet 2^+ meson exchange for total cross section for, 22:5626
interactions $K + n$, experimental tests of SU(3) predictions for, (T), 22:7544 (ORO-2504-112)
interactions $K^- + (pn) \to \Lambda^0 + n$ in light nuclei, pair absorption model for, 22:29721
interactions $K^- + (pn) \to \Sigma^- + p$ in light nuclei, pair absorption model for, 22:29721
interactions $K^+ + n \to K^0 + p$ at 0.97 GeV/c in spark chamber with beryllium targets, angular distributions for, (E), 22:50308
interactions $K^+ + n \to K^0 + p$ at 2.3 GeV/c, exchange of rho' trajectory in, 22:3445
interactions $K^+ + n \to K^0 + p$ at 2.3 GeV/c, rho' Regge trajectory for, 22:39413
interactions $K^+ + n \to K^0 + p$ at 3 GeV/c in deuterium bubble chamber, cross sections for, (E), 22:50304
interactions $K^+ + n \to K^0 + p$ at 3 GeV/c, violation of quark model sum rule in, 22:22363
interactions $K^+ + n \to K^0 + p$ below 20 GeV/c, rho' Regge trajectory predictions for, 22:39413
interactions $K^+ + n \to K^0 + p$ on beryllium-9 in spark chamber at 0.970 GeV/c, angular distribution and total cross section for, (E), 22:11598
interactions $K^+ + n \to K^0 + p$, real to imaginary ratio of forward amplitude of, 22:29707
interactions $K^+ + n \to K^0 + p$, SU(3) predictions for, 22:46490
interactions $K^+ + n \to K^0 + p$, test of Regge-pole theory from cross-section relations for, 22:24655
interactions $K^- + n \to K^- + n$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $K^+ + n \to K^+ + n$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $K^- + n \to K^- + \pi^+ + \pi^- + n$ at 5.5 and 12.7 GeV/c in hydrogen--neon bubble chamber, coherent $K^-\pi^+\pi^-$ final states in, (E), 22:46333 (BNL-12739)
interactions $K^- + n \to \Lambda$ + delta$^-$ at 2.11 and 2.65 GeV/c in deuterium bubble chamber, upper limit on cross section for, (E), 22:13662
interactions $K^- + n \to \Lambda$ + eta' at 3 GeV/c, $I = 0$ eta$\pi\pi$ and rhoγ enhancements in, (E), 22:29635
interactions $K^- + n \to \Lambda + \pi^- + \pi^0$ at 670 to 910 MeV, cross sections for $\Sigma(1690)$ production in, 22:52939
interactions $K^- + n \to \Lambda + \pi^- + \pi^- + \pi^+$ at 3.9 GeV/c, production of $\Sigma(1616)$ in, (E), 22:44335
interactions $K^- + n \to \Lambda + \pi^-$ at 1.660 to 1.900 GeV in bubble chamber, resonance production from, (E), 22:13669
interactions $K^- + n \to \Lambda + \pi^-$ at 670 to 910 MeV/c, $\Sigma(1660)$ production in, (E), 22:29640
interactions $K^- + n \to \Lambda + \pi^-$ at 815 to 1105 MEV/c in deuterium bubble chamber, Y^* production in, (E), 22:39288
interactions $K^- + n \to \pi^- + \Lambda$ at 4.5 GeV/c in deuterium bubble chamber, preliminary study of Λ polarization in, (E), 22:41736 (COO-1428-81)
interactions $K^- + n \to \pi^+ + \pi^- + \Lambda + \pi^0$ at 2.34 GeV/c in bubble chamber, $\Sigma(1385)$ production from, (E), 22:3284
interactions $K^- + n \to \pi^+ + \pi^- + \Lambda$ at 2.34 GeV/c in bubble chamber, $\Sigma(1385)$ production from, (E), 22:3284
interactions $K^- + n \to \Sigma^- + \pi^+ + \pi^- + \pi^0$ at 2.1 and 2.65 GeV/c in deuterium bubble chamber, H(990) production from, (E), 22:1385 (SLAC-PUB-347)
interactions $K^- + n \to \Sigma^- + \pi^+ + \pi^- + \pi^0$ at 2.1 and 2.7 GeV/c in deuterium bubble chamber, search for $I = 2$ hyperon resonances in, (E), 22:44337
interactions $K^- + n \to \Sigma^- + \pi^+ + \pi^-$ at 1.660 to 1.900 GeV, Y^* production from, (E), 22:3280
interactions $K^- + n \to \Sigma^- + \pi^+ + \pi^-$ at 2.1 and 2.7 GeV/c in deuterium bubble chamber, search for $I = 2$ hyperon resonances in, (E), 22:44337
interactions $K^+ + n$ at 1.96, 2.3, and 3.0 GeV/c, cross sections for inelastic, (E), 22:17873
interactions $K^- + n$ at 3.6 and 3.9 GeV/c in bubble chamber, search for $I = {}^3/_2$ Ξ resonances in, (E), 22:52936 (BNL-12864)
interactions $K^- + n$ at high energies, quark model for double-exchange production cross section for, 22:22398
interactions $K^- + n$ at rest in heavy-liquid bubble chamber, reaction processes from, (E), 22:15683
interactions $K^+ + n$, forward dispersion relation predictions of differential cross sections for, (E/T), 22:24667
interactions $K^- + n$, forward dispersion relation predictions of differential cross sections for, (E/T), 22:24667
interactions $K^+ + n$, polarization of resonances in peripheral SU(6)/sub W/ model for, 22:3491
interactions $K^- + n$, sum-rule analysis of, 22:7517
interactions $K^+ + n$, sum-rule analysis of, 22:7517
interactions $K^- + n$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $K^+ + n$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $\Lambda + n$ in $A = 50$ hyperfragments, kinematical calculation of energy spectra of fast proton emission from stimulated, 22:9625
interactions $n + d \to {}^3He + \pi^- + \pi^0$, possible experiments for test of isospin invariance of, 22:48300
interactions $n + d \to {}^3He + \pi^- + \pi^0$, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)
interactions $n + d \to \gamma + H^3$, parity nonconservation in, (T), 22:53081
interactions $n + d \to n + d$ at 66 to 630 MeV Glauber approximation for polarization effects in, 22:26666 (JINR-P2-3778)
interactions $n + d \to p + 2n$ at 199 MeV, relative differential cross sections and polarization parameters for, (E), 22:22303
interactions $n + d \to t + \gamma$, effects of three-body scattering states in, (T), 22:37288
interactions $n + d$ at 10 GeV/c, total cross section for, (E), 22:53086
interactions $n + d$ at 14 to 27 GeV/c, total cross sections for, (E), 22:17861
interactions $n + d$ at 14, proton energy spectra for, (E), 22:26809
interactions $n + d$, Born approximation using tensor term in nucleon-nucleon potential for, (T), 22:26794
interactions $n + d$, K-harmonics method in continuous spectrum for, 22:48329
interactions $n + d$, scattering length for, (T), 22:20770
interactions $n + d$, scattering lengths for, (T), 22:1590
interactions $n + d$, scattering lengths for, (T), 22:5758
interactions $n + n$ from $\pi^- + d \to 2n + \gamma$ interactions, scattering length for, (E), 22:44333
interactions $n + n$ from $\pi^- + d \to 2n + \gamma$ interactions, scattering length for, (E), 22:50300
interactions $n + n$ in deuterium (p,n) reactions, scattering length for, (E), 22:50526
interactions $n + n$ in lithium-7 (t,2α) reactions, scattering length for final-state, (T), 22:22558
interactions $n + n$, scattering length for, (E), 22:11902
interactions $n + n$, scattering length for, (T), 22:26790
interactions $n + n$, scattering length from deuterium (t,He-3) reactions and tritium (t,α) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
interactions $n + n$, use of Faddeev equations to determine low-energy parameters for, (T), 22:20278
interactions $n + p \to d + \gamma$, parity violation in, 22:9655
interactions $n + p \to \gamma + d$ at 300 to 730 MeV, preliminary results on, (E), 22:44297(R) (UCLA-34-P-106-27)
interactions $n + p \to n + p + 2\pi^+ + 2\pi^- + m\pi^0$ at 2 to 10 GeV in propane bubble chamber, $\Delta^{++}(1236)$ and $\Delta^-(1236)$ production in $p\pi\pi$ effective mass distributions in, (E), 22:44319 (JINR-E1-3940)
interactions $n + p \to n + p + \gamma$ at 208 MeV, cross sections for bremsstrahlung production in, 22:22306
interactions $n + p \to n + p$ at 8 to 30 GeV/c, spark chamber study of cross sections for diffraction, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)
interactions $n + p \to n + p$ at high energies, relativistic calculations for recoil proton spectrometers, 22:4470 (HASL-186)
interactions $n + p \to p + n$, differential cross sections for, (T), 22:46430
interactions $n + p \to p + n$, Regge-pole model for pion-exchange, 22:7494
interactions $n + p$ at 1 to 27 GeV/c, data compilation on, 22:52983
interactions $n + p$ at 1 to 27.0 GeV/c, data compilation for, 22:44320 (NP-17578)
interactions $n + p$ at 1 to 6 GeV, spark chamber study of cross sections for elastic, (E), 22:3263
interactions $n + p$ at 10 GeV/c, total cross section for, (E), 22:53086
interactions $n + p$ at 14 to 27 GeV/c, spark chamber study of total cross sections for, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)
interactions $n + p$ at 14 to 27 GeV/c, total cross sections for, (E), 22:17861
interactions $n + p$ at 18.2 and 9.9 MeV, simultaneous phase-shift analysis of $p + p$ interactions and, (E/T), 22:11691
interactions $n + p$ at 199 MeV, relative differential cross sections and polarization parameters for, (E), 22:22303
interactions $n + p$ at 2 to 10 GeV in bubble chamber, methods of separation of reaction channels in three- and five-prong, (T), 22:39424 (JINR-P1-3881)
interactions $n + p$ at 2.6 GeV/c, two-pion-exchange contributions to, 22:46467
interactions $n + p$ at 200 MeV, differential cross section and polarization for, (E), 22:53092
interactions $n + p$ at 275 to 1500 MeV, use of on-line computer in wire spark chamber study of elastic, 22:47372 (PPAR-3)
interactions $n + p$ at 3 to 6.8 GeV/c, cross sections for elastic, (E), 22:44325
interactions $n + p$ at 630 MeV, spin correlation tensor for polarized, (T), 22:11692
interactions $n + p$ at 7 to 750 MeV, phase-shift analysis of, 22:50417
interactions $n + p$ at high energies, 22:3371
interactions $n + p$ at high energies, total cross sections

for, (E), 22:22299
interactions n + p below 350 MeV, potential consistent with boson exchange theory of nuclear forces for, 22:44451
interactions n + p in deuterium (p,pn) reactions, final-state, (E), 22:11903
interactions n + p in Λ-H^3 hyperfragment, effect of Λ + p parameters from tensor, (T), 22:22412
interactions n + p in organic single crystals, effective cross sections for, (E), 22:9921 (JUL-Conf-1)
interactions n + p to 350 MeV, phenomenological phase-parameter fits to, 22:15817
interactions n + p, generalization of determinant method to continuous channels for S-matrix for, 22:20348
interactions n + p, kinematic constraints on Regge-pole residues for charge-exchange, 22:11683
interactions n + p, review of pion exchange in charge-exchange, 22:24684
interactions n + p, use of sum rules for calculating deuteron binding energy from triplet-S phase-shift in, 22:11689
interactions $\nu + n \to 1 + p$, spectra of heavy leptons from, (T), 22:48277 (IFVE-SEF/STF-68-6-K)
interactions $\nu + n \to \mu^- + n + \pi^+$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + n \to \mu^- + p + \pi^0$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + n \to \mu^- + p$ at high energies in nuclei, W effects in, (T), 22:29669
interactions $\nu + n \to \mu^- + p$, spark-chamber study of, (E), 22:48217
interactions $\nu + n \to \mu^+ + \Sigma^-$, cross section for, 22:7484
interactions $\nu + n \to p + e^-$ at high energies, T violation in, (T), 22:53006
interactions $\nu + n \to p + e^-$, heavy e production in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions $\nu + n \to p + \mu^-$, independent-particle models for, 22:48286
interactions $\nu + n \to p + \mu^-$, production and lower bound for mass of heavy μ in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions $\nu + n \to$ rho + μ^- at high energies, radiative corrections to, 22:11642
interactions ν + n, asymptotic equality with anti ν + n interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions ν/sub μ/ + n $\to$ p + μ^-, spin dependence of, (T), 22:11635
interactions of primary cosmic, in the atmosphere, (T), 22:5176
interactions $p + n \to n + p$ at high energies, Regge pole models with branching in j-plane for differential cross sections of, 22:39377
interactions $p + n \to n + p$, conspiracy of singularities in complex angular momentum plane for, 22:11688
interactions $p + n \to n + p$, Regge-pole analysis of, 22:5603
interactions $p + n \to p + n + \pi^+ + \pi^-$ at 3.7 GeV/c, exchange mechanism for Δ^{++} and Δ^- production in, (E), 22:24542
interactions $p + n \to p + n + \pi^+ + \pi^-$ at 3.7 GeV/c, exchange mechanism, (E), 22:35293(R) (ORNL-4230)
interactions $p + n \to p + n$ at 0.050 to 200 GeV, real part of amplitude of, (T), 22:39403 (JINR-P2-3850)
interactions $p + n \to p + n$ at 3 to 10 GeV in propane bubble chamber, differential and total cross sections for, (E), 22:17855
interactions $p + n \to p + n$ at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, (E), 22:37143
interactions $p + n \to p + n$, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)
interactions $p + n \to p + \pi^+ + \pi^- + n$ in neon--hydrogen bubble chamber, coherent production of $p\pi^+\pi^-$(1470) enhancement in, (E), 22:41729 (BNL-12674)
interactions p + n above 1 GeV, multiplicity distributions of charged secondary particles in, (E), 22:52931 (KFKI-20/1968)
interactions p + n and p + p at 3 to 7 GeV/c, comparison of differential cross sections for elastic, 22:44454
interactions p + n at 0 to 750 MeV, listings of data for, 22:37161 (UCRL-50426)
interactions p + n at 1 to 10 GeV at small angles, tables of differential cross sections for real part of amplitude for, (E), 22:17852 (JINR-P1-3641)
interactions p + n at 1 to 10 GeV, Glauber deuteron model for real part of amplitude of, (T), 22:22411(T) (SLAC-Trans-80)
interactions p + n at 1 to 10 GeV, real part of amplitude of, (E/T), 22:48221
interactions p + n at 100 keV to 1 GeV, bibliography on, (E/T), 22:52937 (LA-4002)
interactions p + n at 19.8 GeV/c in emulsions, (E), 22:48330
interactions p + n at 19.8 GeV/c in emulsions, N* production in, (E), 22:39259
interactions p + n at 2 to 10 GeV, neutron spectra and cross sections of inelastic, (E), 22:46323 (JINR-P1-3909)
interactions p + n at 215 MeV, multi-element scintillation telescope study of asymmetries from double and triple scattering experiment for, (E), 22:20134
interactions p + n at 310 to 700 MeV, polarization parameter for, (E), 22:5503
interactions p + n at 400 MeV, unambiguous phase shift analysis and phase shift energy dependence for, 22:20271 (JINR-E1-3707)
interactions p + n at 8 GeV, real part of amplitude for, (E/T), 22:1381
interactions p + n at high energies, 36-plet 2^+ meson exchange for total cross section for, 22:5626
interactions p + n at high energies, cross sections for charge exchange, (E), 22:17858
interactions p + n at high energies, cross sections for elastic, (E), 22:17858
interactions p + n in nuclei, research using odd-odd spherical nuclei, (E/T), 22:1693
interactions p + n neutron form factor from diffraction model of elastic, 22:44383
interactions p + n, determination of coupling constants from π and $\Lambda + \Sigma$ poles in, (T), 22:32154
interactions p + n, inelastic, (E/T), 22:39262
interactions p + n, meson--nucleon coupling constants from forward dispersion relations for, 22:24683
interactions p + n, scattering length for, (E), 22:20443
interactions p + n, short- and long-range charge independence in, 22:37165
interactions p + n, soft-photon theory of bremsstrahlung production in, 22:37116
interactions π + n above 1 GeV, multiplicity distributions of charged secondary particles in, (E), 22:52931 (KFKI-20/1968)
interactions π + n at 17 GeV in emulsions, angular momentum and momentum transfer squared in inelastic, (E), 22:44324
interactions π + n, phase of scattering amplitude from π + d interactions and Glauber formula, 22:50407
interactions $\pi^+ + 2n \to \pi^- + 2p$ in helium at 610 MeV, (E/T), 22:32067
interactions $\pi^+ + n \to$ eta + p at 930 MeV/c in heavy liquid bubble chamber, (E), 22:48208
interactions $\pi^+ + n \to \omega + p$, Regge-pole model with L--S coupling for, 22:20264
interactions $\pi^+ + n \to p$ + meson resonance at 5.1 GeV/c in deuterium bubble chamber, quasi two-body process in, (E), 22:39275 (CERN-68-7(Vol.2), pp 135-49)
interactions $\pi^- + n \to p + \pi^- + \pi^- + \pi^0$ at 5 GeV/c, $p\pi^-$ enhancements in, (E), 22:29633
interactions $\pi^- + n \to p + \pi^- + \pi^- + \pi^0$ at 5 GeV/c, $p\pi\pi$ enhancements in, (E), 22:29632
interactions $\pi^- + n \to p + \pi^+ + \pi^- + \pi^- + \pi^- + \pi^0$ at 7 GeV/c in deuterium bubble chamber, search for I = 2 multipion resonances in, (E), 22:52938
interactions $\pi^- + n \to p + \pi^+ + \pi^- + \pi^- + \pi^-$ at 7 GeV/c in deuterium bubble chamber, search for I = 2 multipion resonances in, (E), 22:52938
interactions $\pi^+ + n \to \pi^+ + n + \gamma$, possibility of experimental data on asymptotic behavior of effective space--time domain of, 22:26649 (JINR-P2-3590, pp 158-68)
interactions $\pi^- + n \to \pi^- + n + \gamma$, possibility of experimental data on asymptotic behavior of effective space--time domain of, 22:26649 (JINR-P2-3590, pp 158-68)
interactions $\pi^- + n \to \pi^- + n$ at 1.38 to 4.05 GeV/c, spark chamber study of cross sections for backward elastic, (E), 22:13659
interactions $\pi^+ + n \to \Sigma^+ + K^0$ at 1.1 GeV/c in nuclear emulsions, Σ^+ polarization from, (E), 22:1390
interactions π^+ + n at 2.5 GeV/c in deuterium bubble chamber, strange particle production in, (E), 22:29639
interactions π^+ + n at 3 to 4 GeV/c, evidence for existence of H meson from analysis of, 22:46423 (UCRL-18271)
interactions π^+ + n at 3.29 GeV/c in deuterium bubble chamber, resonance production in 4π and 5π systems from, (E), 22:41749
interactions $\pi^- + p \to \pi^0 + n$ at 5.9 to 18.2 GeV, heavy-plate spark chamber study of differential cross sections for, (E), 22:20135 (CEA-R-3209)
interactions $\Sigma^+ + n \to \Lambda + p$ near threshold from $K^- + d \to \pi^- + \Sigma^+ + n$ interactions, (E), 22:34845
interactions with matter, principles of, 22:28178 (NP-17349)
interactions with vector mesons and gravitons in neutron star collapse, 22:43762
kerma at boundary of semi-infinite concrete medium, 22:46195 (ORNL-TM-2284)
kinetics equations for multiregion reactor, analytic solution to time linearized, 22:6145
kinetics equations for semi-infinite medium and infinite slab, formulation using telegraphers equation, (T), 22:39558
kinetics in cylindrical-cavity reactors, 22:6167
leakage analysis in bare spheres of monoenergetic, description of Expected Leakage Probability, (T), 22:20951
leakage determinations in reactors, use of Eigenvalue bias method to compare age measurements with age calculations for, 22:32991

lifetime measurements in cavity regions of rocket reactors, use of pulse-technique for, 22:3881(R) (NASA-CR-72234(Vol.1))
lifetime measurements in UHTREX, use of rod-drop technique for, 22:12029(R) (LA-3835)
linear energy transfer in liquid dielectrics used in ionization chambers, 22:16879
magnetic charge of, (T), 22:45916
magnetic moment in U(6,6), 22:9665
magnetic moment of, current algebra for ratio for proton and neutron, 22:3490
magnetic moment of, quark model for exchange contribution to, 22:5531
magnetic monopole moment of, use of superconducting quantum interferometer for determination of, (E), 22:50282
magnetic scattering in ferromagnetic alloys, diffuse, 22:26782
mass difference $(K^+ - K^0)/(n - p)$ ratio, field algebra for electromagnetic, 22:26602
mass difference (n - p) for, solutions of model field theoretic equation for, 22:29712
mass difference (n - p) from inelastic e + p interactions, 22:11611
mass difference (n - p), (T), 22:13707
mass difference (n - p), analytic continuation of divergent integrals for electromagnetic, 22:50364
mass difference (n - p), calculation using generalized superconvergence relation, 22:11612
mass difference (n - p), dispersion relation treatment of perturbation effects on, 22:15732
mass difference (n - p), effect of strong interaction on electromagnetic, 22:46359
mass difference (n - p), field-theoretic calculation of, 22:11616
mass difference (n - p), inelastic contribution in Cottingham formula for, 22:44363
mass difference (n - p), inelastic model of, 22:11615
mass difference (n - p), sidewise dispersion relations for, 22:52958
material buckling measurements in DIMPLE, 22:3885 (AEEW-R-502)
measurements in exponential piles of pulsed, 22:33011
migration in water moderated aluminum slab lattices of anisotropic, analysis of, (E/T), 22:22869
moderation in heavy element accelerator target assemblies, optimization of, 22:35285(R) (AERE-PR/NP-13)
moderation of, preparation of poly(quaternary ammonium)-borohydrides for, 22:18740 (RMD-5097-F)
moderation using finite cylindrical cadmium filters, cutoff energies with finite-size detectors for, 22:10544 (WAPD-TM-670)
monitor data for cosmic, Canadian stations (Sept.-Dec. 1967), (E), 22:26267 (AECL-3064)
monitoring at Van de Graaff accelerator, boron trifluoride proportional counter system for, 22:47315 (BNWL-715(Pt.1), pp 54-60)
monitoring in reactors, design of comparator circuit for, 22:23392(P)
monitoring of cosmic, data for Deep River station, (E), 22:9118 (AECL-2789)
monitoring of cosmic, directions of viewing in ground-based, (T), 22:13264
monitoring of cosmic, from Jan. to April, 1968, 22:43944 (AECL-3140)
monitoring of Shippingport Pressurized-Water Reactor core 2, 22:16163 (WAPD-PWR-TE-204)
monitoring of, effects of snow on performance of proportional detectors used for, 22:45308
monitoring system for cosmic, development of multiplicity, 22:308(R) (N-67-19359)
monitoring system for ORNL 5-MV Van de Graaff accelerator, operation and maintenance of, 22:25632 (ORNL-TM-2137)
monochromatization of, use of multiple Bragg reflection for high-resolution, 22:14251(R) (BNWL-534)
motion in magnetic fields, radiations from, (T), 22:5047
motion in moderating and multiplying systems, review of approximation techniques in thermalization and transport theory calculations, 22:6177
multiple collision processes for, first-collision probability method for stochastic formulation of, 22:42533
multiplication constant measurements in heavy water-moderated uranium oxide (UO_2)-fueled lattices, (E/T), 22:32976(R) (MIT-2344-12)
multiplication factor calculations for Phoenix fuels for marine reactors, 22:14289 (BNWL-635)
multiplication factor calculations for plutonium recycle reactors, computer programs for, 22:24955 (EUR-3891)
multiplication factor determination in water-moderated plutonium oxide (PuO_2)--uranium oxide (UO_2) lattices, 22:53454 (BNWL-828)
multiplication factor determinations in plutonium oxide (PuO_2)--uranium oxide (UO_2) graphite lattices, 22:12085 (BNWL-472, pp 3.1-33)
multiplication factor determinations using S_8 transport theory, comparison of asymptotic diffusion theory methods with, 22:33108
multiplication factor for uranium--lithium supercell in PCTR, determination of infinite medium, (E/T), 22:27459 (BNWL-634, pp 3.1-27)
multiplication factor measurements in exponential piles, comparison of Monte Carlo calculations with, 22:33000
multiplication factor measurements in heterogeneous exponential piles, 22:32999
multiplication factors for BWR and PWR, effects of use of plutonium fuel on, 22:22658 (BNWL-475)
multiplication factors for fast reactor lattices, 22:7892(R) (DPST-67-83-10)
multiplication factors for plutonium, use of 05R Monte Carlo code for calculation of, 22:33056
multiplication factors for thick graphite-reflected uranium, Monte Carlo calculations of, 22:33054
multiplication factors for UHTREX, effects of perturbations on effective, 22:12029(R) (LA-3835)
multiplication factors for, PERC code for calculating effects of reactor system changes on, 22:7908 (ANL-7304)
multiplication factors in natural uranium--graphite lattices, comparison of theoretical and experimental values for, 22:33013
multiplication in enriched uranium metal, calculation using one-velocity Monte Carlo method, 22:7919 (ORNL-P-2033)
multiplication in uranium-235--graphite critical experiments, 22:6113
multiplication measurements in Connecticut Yankee Power Reactor, inverse, 22:22708 (NYO-3250-11)
multiplication measurements in plutonium-238 heat sources, 22:2307 (MLM-1416(DEL-1))
multiplication of, time-dependent number probability in, (T), 22:44590
multiplicity of cosmic, recorded at Oulu, Finland, Nov. 5, 1965 by super neutron monitor, 22:41395
neutron transport equation for critical slab with anisotropic scattering, methods for solving, 22:18090
noise analysis for fast reactor, probability distribution for p-method, (E/T), 22:35705
noise analysis for homogeneous and heterogeneous reactors, comparison of, 22:1783
noise analysis for reactors, modal effects in triple-correlation, (T), 22:35704
noise analysis in fast-thermal STARK, probability distribution method of, 22:12095(T) (EURFNR-285)
noise analysis in reactors, development of Rossi-α measurement methods for, 22:47044(T) (LA-tr-68-39)
noise in reactors, comparison of methods for analysis of, (T), 22:47049
noise measurements in FRG-0, time-dependent count rate method for, 22:12099
noise measurements in Garigliano Power Reactor, use of cross correlation and filter techniques for, 22:25002
noise measurements in NORA, 22:16356 (KR-116)
noise measurements in reactors, use of autocorrelation function for, 22:3909
noise power spectral density in reactors with external control loops, (T), 22:35724
noise theory in a reactor system involving linear reactivity feedback, 22:27460 (BNWL-634, pp 4.1-55)
nuclear optical-model potential for, symmetry in, (E/T), 22:27278
penetration in shielding, 22:34733
penetration in shielding, computer program for, 22:41637 (ORNL-4181)
penetration in slabs of iron, calculations of, (T), 22:37281(R) (NYO-72-191)
penetration in thick iron slabs, Legendre polynomial expansion of scattering integral in Boltzmann equation for, (T), 22:22519 (BNL-12322)
performance in radiographic diagnostics of heat pipe operation, 22:4375
performance in radiography of boron cermets, 22:4374
photoproduction calculations for heavy water moderated 19-rod fuel clusters in PRTR, 22:12085 (BNWL-472, pp 3.1-33)
photoproduction from sulfur-32 at 20 to 32 MeV, cross sections for, (E/T), 22:9830
photoproduction from uranium-235 fission fragments in heavy water, delayed, (E), 22:37374
photoproduction in determination of deuterium in water, 22:30434(T) (ORNL-tr-1925)
photoproduction of, effects of precursor buildup in SNAP reactors on, 22:16251
photoproduction yields from gamma reactions (γ,n) with carbon-13, detection system for measuring, 22:19110
photoproduction, counting of, in activation analysis, 22:24788 (IA-1128, pp 55-77)
physics research program for reactors, international co-operation in, 22:29843
polarimeter for, using (n,α) scattering as polarization analyzer, 22:45363
polarization and depolarization in partially saturated ferromagnets, 22:15937
polarization from elastic scattering by A = 6 to 240 nuclei, calculations using local optical-model potential, (T), 22:16013 (LA-3788)
polarization from $\gamma + p \to \pi^+ + n$ interactions at 390 MeV, (E), 22:26555
polarization in $e + d \to p + n + e$ backward interactions at very low momentum transfers, formalism for, 22:29619

polarization in π^- + p → eta + n interactions, 22:50398
polarization of, analysis using resonance spin-flip in magnetic fields, (E), 22:22536
polarization of, design and performance of high-energy resolution polarimeter for, 22:40484 (INR-P-897)
polarization of, design of polariscope for measuring, 22:6692
polarization of, measurement using aluminum and carbon spark chamber plates, 22:35285(R) (AERE-PR/NP-13)
polarization of, review of methods for production and measurement of, 22:26781
polarization using double transmission method, (E), 22:44591
population fluctuations of, effects on kinetic properties of steady-state reactors of, (T), 22:6191
populations in reactor systems, P-zero condition in Rossi-α experiments on, (E/T), 22:26776
populations in reactors, Monte Carlo and experimental analyses of fluctuations in, 22:33124
precession of, design of solenoid for, 22:32961 (ANL-7310, pp 377-430)
probability distributions for one-mode stochastic reactor model, use of time-dependent computer program for, 22:14307
production by accelerators, development of long-lived targets of endothermic materials for, 22:5690
production by cosmic particles in atmosphere, (T), 22:19808
production by deuteron and triton reactions with copper, manganese, nickel, and titanium, relative yields from, 22:20370 (KN-67-655(R))
production by deuteron reactions (d,n) with deuterium, polarization measurements of, 22:28230
production by natural radioactivity in soils, 22:30705
production by T^3(d,n)He^4 reaction, design of equipment for, 22:14614
production from deuteron reactions (d,n) with tritium, alpha counting technique for determining 14-MeV yields in, 22:23292
production from $\mu^- + p \to n + \nu$ interactions in meson (μ^-) capture by nuclei, asymmetry in, (T), 22:13716
production from proton reactions with nuclei at 63 MeV, angular distributions, energy, and yield in, 22:6652 (ORNL-4168, pp 183-230)
production from $\Sigma^- \to n + e^- + \nu$, computer program for Lorentz transformation for probability densities for energy and momentum for, 22:15736 (ORO-2504-111)
production in alpha reaction with beryllium at 42 MeV, quality of, 22:1572
production in atmosphere, by cosmic rays, 22:38821 (AD-668483)
production in cosmic meson (μ) reactions with nuclei at 40 GeV, counter array study of cross sections for, (E), 22:34866
production in dense plasma focus experiment, 22:34727 (LA-DC-9327)
production in deuteron and proton reactions with deuterium and tritium, calculations of, 22:32479 (BNL-50083, pp 179-91)
production in deuteron reaction with beryllium at 21 MeV, quality of, 22:1572
production in proton interactions in graphite at 24 GeV/c, (E), 22:26559
production in stellar thermal relaxation cycles, (T), 22:11150
production in the atmosphere by primary cosmic rays, (T), 22:2858
production of (Σ^-n) bound state from meson (K^-) reactions with nuclei at rest in emulsions, (E), 22:7450
production of bound state Ξ^---n in $K^- + d$ interactions at 1.3 and 2.0 GeV/c, cross section for, (T), 22:11693
production of fission spectrum, description of CP-5 cryogenic facility for, 22:20919
production of monochromatic, bibliography on methods for, 22:20041 (NP-17314)
production of monoenergetic, using particle accelerators, (E/T), 22:5752
production of pulsed beams of 14-MeV, from $d + d \to n + {}^3He$ interactions, 22:32388
production of, design of high-speed rotating vacuum seals for targets used for, 22:15898
production of, device for cooling accelerator targets for, 22:11855(P)
production of, operation of positive ion Van de Graaff accelerator for, 22:13887
production of, use of accelerators for, 22:11859(P)
prompt decay constants for, use of harmonic free transfer functions for analysis of, (E/T), 22:35706
propagation in air, Bren Tower measurements of, 22:4391
propagation in reinforced plastics, (T), 22:29842
propagation in shields, effect of anisotropic scattering on, (T), 22:32441
propagation of waves, effects of an interface on, (T), 22:5724
propagation of, at energies less than 500 MeV, for determining effective transverse shielding in high-energy accelerators, 22:17717
properties of stars of, (T), 22:924
pulse buildup tests in ACPR, 22:48737 (SC-DR-68-501)
pulse decay in fast multiplying assemblies and thermal moderating assemblies, analysis using variational methods, (T), 22:29854
pulse propagation in heterogeneous subcritical assemblies, 22:7903
pulse propagation in moderators, discussion of experimental techniques for, 22:33157
pulse propagation velocity in multiplying media, effects of neutron multiplication factor on, 22:32994
quality factor measurements in gamma--neutron fields, us of organic scintillation detectors for, 22:2369
quality factor of 700-MeV, in phantoms, 22:10759 (JINR-P16-3587)
radiation damage to niobium and tantalum, 22:11017
radiation effects on thermal conductivity of graphite, (T), 22:13602
radiation measurement of, effects of concrete shielding thickness on B and W Critical Experiment Laboratory multi-rod critical assembly, 22:32740(R) (BAW-3647-7)
reaction rate measurements in DIMPLE, 22:3885 (AEEW-R-502)
reactions (n,2n) and (n,α) with molybdenum-92 and -100 a 14.1 MeV, activation cross sections for, (E), 22:1689
reactions (n,2n) with americium-243, production of isomeric americium-242 by, (E), 22:27198
reactions (n,2n) with beryllium-9 at 2 to 11 MeV, cross sections for, (E), 22:24833
reactions (n,2n) with copper-63, use for beam centering in accelerator-based neutron sources, 22:15890
reactions (n,2n) with deuterium at 14.1 MeV, neutron--neutron coincidence spectra from, (E), 22:7633
reactions (n,2n) with fluorine-19 in xenon difluoride an xenon tetrafluoride, reactions of recoil fluorine-18 from, 22:40118
reactions (n,2n) with indium-113 and -115 at 14.7 MeV, cross sections for isomer and ground-state production in, (E), 22:20590
reactions (n,2n) with nuclei at 14 MeV, lack of shell effects in, (E), 22:7672
reactions (n,2n) with nuclides, Monte Carlo scatter corrections for cross sections of, 22:14788
reactions (n,2n) with palladium-110 at 14.7 MeV, isomeri cross section ratio for, (E), 22:1672
reactions (n,α) and (n,p) with nuclei (A = 28 to 210) at 14 MeV, analysis of statistical spectra from, (T), 22:3782
reactions (n,α) in stainless steel, helium production by (T), 22:3641 (BNWL-SA-639)
reactions (n,α) with aluminum-27, average cross section for, (E), 22:32524
reactions (n,α) with boron-10 at 0 to 1 MeV, compilation of cross sections and branching ratios for, 22:39579 (EUR-3950)
reactions (n,α) with boron-10 at 1 to 1000 keV, cross section for, (E), 22:18146
reactions (n,α) with chlorine-35, effects of thermal annealing on valence distribution in potassium chlorid single crystals of phosphorus-32 from, 22:18831
reactions (n,α) with chlorine-35, valence distribution o phosphorus-32 produced by, 22:18830
reactions (n,α) with lithium-6 at 10 to 1000 keV, cross section for, (E), 22:18146
reactions (n,α) with lithium-6, Q-value for, (E), 22:45093 (COO-1618-9)
reactions (n,α) with neodymium-143, neodymium-145, samarium-147, and samarium-149, α widths for, (E), 22:27204
reactions (n,α) with nitrogen-14 at 14.1 MeV, angular distributions for, (E), 22:46721
reactions (n,α) with nuclei, cross sections for, (T), 22:11985
reactions (n,α) with oxygen-16 at 14.1 MeV, alpha-particle angular distributions from, (E/T), 22:3633
reactions (n,α) with rhodium-103 and indium-115 at 14 MeV, energy and angular distribution of alpha particle from, (E), 22:20617
reactions (n,α) with samarium-147, α spectra and widths for, (E), 22:9853 (JINR-P6-3605)
reactions (n,α) with tellurium-122, terbium-159, and thulium-169 at 14.2 MeV, energy spectra of alpha particles from, (E), 22:20619
reactions (n,α) with ytterbium-176 at 14.8 MeV, production of erbium-173 by, (E), 22:16019
reactions (n,α), (n,d), (n,p), (n,t), and (n,He-3) with nuclei, survey of research on, (E), 22:14077 (NYO-1082-10)
reactions (n,α_0) at 2.90 and 3.28 MeV, angular distributions from, (E), 22:20554
reactions (n,d) and (n,α) with silicon-28 at 14 to 22 MeV, angular distributions from, (E), 22:26967
reactions (n,d) with sulfur-32 and -34 at 14 MeV, phosphorus-31 and -33 energy levels from, (E), 22:20528
reactions (n,d) with tritium at 14.1 MeV, deuteron spectra from, (E), 22:32484
reactions (n,d) with tritium at 15.1 MeV, neutron--neutron scattering length from, (E), 22:15942
reactions (n,f) with alpha-emitting and spontaneously fissioning isotopes, method for measuring cross sections of, (E/T), 22:20571 (LA-DC-9188)
reactions (n,f) with americium-241 at 0.02 to 50 eV, cross section and resonance widths for, (E), 22:18292
reactions (n,f) with heavy nuclei at low energies, resonance parameters in, (E), 22:18258

reactions (n,f) with isomeric americium-242 at 0 to 4 eV, cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
reactions (n,f) with isomeric americium-242 at 0.02 eV to 6 MeV, cross sections for, (E), 22:18226
reactions (n,f) with isomeric americium-242 at 0.02 eV to 6 MeV, cross sections and resonance integrals for, (E), 22:22615
reactions (n,f) with neptunium-237 below threshold, intermediate structure in cross section for resonance, (E), 22:32607
reactions (n,f) with nuclei at low energy, cross-section interpretation for, (T), 22:18349
reactions (n,f) with nuclei, quasiclassical correlation for angular anisotropy in, (T), 22:9926(T) (ANL-Trans-548)
reactions (n,f) with nuclei, quasiclassical relation for angular anisotropy in, (T), 22:5903
reactions (n,f) with plutonium isotopes, review of, (E/T), 22:3738
reactions (n,f) with plutonium-238 at 0.02 to 100 eV, cross section and resonance widths for, (E), 22:18292
reactions (n,f) with plutonium-238 at 18 eV to 1 MeV, total cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
reactions (n,f) with plutonium-239 and uranium-235, delayed γ energy spectra from, (E), 22:37337 (AD-801007)
reactions (n,f) with plutonium-239 and uranium-235, energy and spin dependence of fission widths for, (T), 22:20655
reactions (n,f) with plutonium-239 at 0.004 to 6 keV, cross section and resonance parameters for, (E), 22:18296
reactions (n,f) with plutonium-239 at 0.01 eV to 10 keV, average ν measurements and resonance spin assignments for, (E), 22:48423 (RPI-328-133, pp 1-34)
reactions (n,f) with plutonium-239 at 14 to 90 eV, resonance parameters from multilevel analysis of cross section for, (E), 22:14048
reactions (n,f) with plutonium-239 below 20 eV, correlation of resonance parameters and interpretation of eta/ν in, (E/T), 22:5825
reactions (n,f) with plutonium-239, angular anisotropy of, (E/T), 22:14095
reactions (n,f) with plutonium-239, fragment energies and yields from, (E), 22:5817(R) (NYO-GEN-72-28)
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, and uranium-235, fission parameters for, 22:22612
reactions (n,f) with plutonium-239, plutonium-241, and uranium-233, iodine-135 yields and fission-product absorption cross sections in, (E), 22:16045
reactions (n,f) with plutonium-239, uranium-233, and uranium-235, effects of nucleon pairing correlations on angular anisotropy of, (T), 22:14080(T) (ANL-Trans-550)
reactions (n,f) with plutonium-240, interpretation of subthreshold cross section for, (T), 22:42064
reactions (n,f) with thorium-230 and uranium-234, fission barriers and compound-nucleus quasistable states in, (T), 22:44711
reactions (n,f) with thorium-232 above 0.6 MeV, relative cross sections for, (E), 22:18259
reactions (n,f) with uranium-233 at 0.4 and 2.6 MeV, fragment kinetic energies and yields from, (E), 22:5857
reactions (n,f) with uranium-233 at 0.4 to 1000 eV, cross sections and resonance integrals for, (E), 22:14001 (RPI-328-100, pp 1-56)
reactions (n,f) with uranium-233 at 20 eV to 1 MeV, cross sections for, (E), 22:39652
reactions (n,f) with uranium-233 at 20 eV to 1 MeV, cross sections for, (E), 22:18230
reactions (n,f) with uranium-234 at 0.004 to 20 keV, cross sections and resonance widths for, (E), 22:50634
reactions (n,f) with uranium-235 at 0 to 20 keV, cross section and resonance integral for, (E), 22:18298
reactions (n,f) with uranium-235 at 0.0004 to 3 keV, cross section for, (E), 22:3699 (ORNL-TM-1804)
reactions (n,f) with uranium-235 at 0.01 to 2.0 eV, anti ν values for, (E), 22:20578 (WASH-1079)
reactions (n,f) with uranium-235 at 0.012 to 2.0 eV, neutron emission in, (E), 22:14001 (RPI-328-100, pp 1-56)
reactions (n,f) with uranium-235 at 0.8 to 170 eV, cross section for, (E), 22:18206 (IAE-1302)
reactions (n,f) with uranium-235 at 2.5 and 7 MeV, fragment kinetic energies and yields from, (E), 22:5857
reactions (n,f) with uranium-235 at thermal energies to 2 MeV, fission fragment energy distribution from, (E), 22:7569(R) (BARC-291)
reactions (n,f) with uranium-235 near threshold energy, width for, (E/T), 22:53185
reactions (n,f) with uranium-235, anisotropy of γ emission in, (E), 22:48555
reactions (n,f) with uranium-235, correlation between neutron and fission widths and compound nucleus spin in, (T), 22:5904
reactions (n,f) with uranium-235, cross sections for, 22:1873
reactions (n,f) with uranium-235, fission-fragment kinetic energy and mass distributions for, (E), 22:22604
reactions (n,f) with uranium-235, periodic antocorrelation effects in cross section for, (E/T), 22:50625
reactions (n,f) with uranium-235, primary charge distribution in, (E), 22:11874(R) (JUL-463-NP)
reactions (n,f) with uranium-235, prompt gamma emission in, (E), 22:9921 (JUL-Conf-1)
reactions (n,γ) with americium-241 in Belgian Reactor-2, production of curium-244 by, 22:2097 (EUR-3560)
reactions (n,γ) with bromine-81 in bromobenzene, chemical effects from, 22:16641
reactions (n,γ) with copper-63 and copper-65 at 10 to 60 keV, averaged intensities of primary gamma rays from, (E), 22:29944
reactions (n,γ) with hafnium-179, cross sections for, 22:33225
reactions (n,γ) with neptunium-237 and uranium-235, production of plutonium-238 by, 22:18851
reactions (n,γ) with nuclei, scintillation detectors for measuring total number of resonance captures in, 22:19095 (IAE-1349)
reactions (n,γ) with nuclei, use of lithium-drifted germanium gamma spectrometer for measurement of, 22:354
reactions (n,γ) with organic compounds, 22:23481(R) (PRNC-102)
reactions (n,γ) with potassium-39, Moessbauer measurements on potassium-40 from, 22:39204
reactions (n,γ) with shields, energy effects on gamma dose calculations, 22:31894
reactions (n,γ) with tin-118, 22:10517
reactions (n,n'γ) with germanium-74, excitation function for gamma ray production in, 22:32959 (ANL-7310, pp 1-30)
reactions (n,p) and (n,α) with nuclei, use for determining composition of lunar surface by, 22:4545
reactions (n,p) and (n,d) with fluorine-19 at 14.1 MeV, compound nucleus and direct effects in, (E/T), 22:26844
reactions (n,p) with aluminum-27, cobalt-59, copper-63, and iron-54, compound and precompound decay probabilities for, (T), 22:27070
reactions (n,p) with carbon-12 at 14.5 to 22 MeV, resonances in, (E), 22:15962
reactions (n,p) with chlorine-35 in alkyl chlorides, 22:16612
reactions (n,p) with copper-63 at 14.3 and 16.6 MeV, proton energy spectra from, (E), 22:11941
reactions (n,p) with helium-3 at 0.3 to 1.0 GeV/c, testing elementary-particle treatment of complex nuclei by, (T), 22:11897
reactions (n,p) with helium-3 at 4 to 1000 keV, cross section for, (E), 22:18146
reactions (n,p) with helium-3, use of Feynman diagrams to determine position of resonances in, (T), 22:18337
reactions (n,p) with iron oxide, preparation of manganese-54 by, 22:2104
reactions (n,p) with magnesium nitride, chemical state of carbon-14 recoil produced by, 22:10264(R) (ORO-3602-1)
reactions (n,p) with medium-weight nuclei, compound and precompound decay states in, (E/T), 22:16078
reactions (n,p) with molybdenum-96, -97, -98, and -100 at 14.1 MeV, activation cross sections for, (E), 22:1689
reactions (n,p) with nitrogen-14 in nitrides, production of carbon-14 by, 22:4183
reactions (n,p) with nitrogen-14 near sea level, carbon-14 production in cosmic, (E), 22:15964
reactions (n,p) with normal and isomeric nuclei near A = 45 and 90, cross-section calculations using statistical theory, (T), 22:20677 (UCRL-50359)
reactions (n,p) with sulfur-32 in sulfur compounds, oxidation states of phosphorus-32 produced by, 22:111
reactions (n,p) with tritium at 14, 18, and 22 MeV, proton energy spectra for, (E), 22:9771
reactions (n,p) with tritium, cross section for, (T), 22:50528
reactions (n,p) with zinc oxides, preparation of copper-67 by, 22:2104
reactions (n,p), (n,α), and (n,2n) with nuclei in the range A = 24 to 48 at 14.2 MeV, statistical-model calculations of cross sections for, (T), 22:20686
reactions (n,p)2n with deuterium at 200 MeV, differential cross section and polarization for, (E), 22:53092
reactions (n,pγ) with potassium-39 at 1.82 to 3.96 MeV, differential cross sections for, (E), 22:20556
reactions (n,t) with tritium at 14.1 MeV, triton angular distribution and spectra from, (E), 22:32484
reactions in light water-moderated uranium dioxide assemblies, fast fission ratio for, (E), 22:39651
reactions in red giants and supernovas, (T), 22:5033
reactions in steel shields of 14 and 2.5 MeV, (E), 22:1286 (FOA-4-4320-23)
reactions of cosmic, with iron at 100 to 1000 GeV, cross sections for, (E), 22:21911
reactions with A = 2 to 48 nuclei, Q-values for three-particle, (T), 22:24888 (BMwF-FBK-67-91)
reactions with A = 50 to 200 nuclei, strength functions and scattering radii for, (E), 22:18285

reactions with air and tungsten, effect of cross-section resolution on transport and secondary gamma calculations, 22:31897

reactions with aluminum manganese and sodium in beach sand, gamma radiation from, 22:35938 (AD-663103)

reactions with aluminum, calcium, and magnesium, fluctuations in total cross sections for, (T), 22:7637(R) (COO-1573-33)

reactions with aluminum, lead, and oxygen at 1 GeV, intranuclear-cascade calculations for, (T), 22:7526 (ORNL-TM-1996)

reactions with aluminum, lead, and oxygen at 750 to 2000 MeV, analytic representation of nucleon and pion emission spectra from, 22:46459 (ORNL-TM-2277)

reactions with americium-241, production of curium-242 by, 22:47152 (BMwF-FBK-68-10)

reactions with ammonia, methane, and hydrogen chloride, rotational correlation functions in, 22:38797

reactions with anthracene, scintillation response anisotropy to recoil protons and carbon ions generated by, 22:40418

reactions with antimony, molybdenum, praseodymium, and tellurium at 6 eV to 250 keV, total cross sections for, (E), 22:18225

reactions with antimony-121 and -123 at 6.24 to 29.7 eV, resonance parameters for, (E), 22:32599

reactions with argon-40 and sulfur-34 at 30 to 600 keV, 22:22560(R) (ORO-1067-2)

reactions with bismuth-209, resonance density functions for, (E), 22:9887

reactions with blood sodium in man for use in dosimetry following accidents, 22:6799 (LA-3721)

reactions with boron in A-286 iron alloy, use in determining boron content, 22:2669

reactions with boron-10 at 0.0001 to 15 MeV, cross sections for, (E/T), 22:3607 (ORNL-TM-1872)

reactions with boron-10 at 100 eV to 10 MeV, total cross sections for, (E), 22:37289 (AERE-R-5224)

reactions with cadmium at 0.01 to 10 eV, total cross sections for, (E), 22:46763 (EIR-134)

reactions with calcium, chlorine, magnesium, potassium, and sodium-23, cross sections for, 22:37306 (AD-665359)

reactions with calcium, cross sections for, 22:37311 (AD-665364)

reactions with carbon at 0.070 to 100 keV, total cross section for, (E), 22:35285(R) (AERE-PR/NP-13)

reactions with carbon nuclei at 100 GeV, cross section for inelastic, (E), 22:21912

reactions with cerium, cesium iodide, gadolinium, holmium, mercury, neodymium, potassium chloride, rubidium bromide, samarium, selenium, and terbium at 30 to 650 keV, total cross sections for, (E), 22:20578 (WASH-1079)

reactions with cerium, cesium iodide, gadolinium, holmium, mercury, neodymium, potassium chloride, rubidium bromide, samarium, selenium, terbium, and vanadium at 30 to 650 keV, (E), 22:22560(R) (ORO-1067-2)

reactions with chlorine, cross sections for, 22:37309 (AD-665362)

reactions with cobalt-59 and manganese-55 at 0.3 to 41 keV, total cross sections and resonance parameters for, (E), 22:27066

reactions with cobalt-59, activation cross section for, (E), 22:53160

reactions with copper single crystals at 9 to 3000 eV, effects of chemical binding on cross sections for, (E/T), 22:1567

reactions with crystallo-hydrates, investigation of water molecule dynamics by, 22:38719 (INP-601/PS)

reactions with deformed rare-earth nuclei, resonance densities in, (T), 22:42015 (JINR-P4-3925)

reactions with deuterium at 0.0001 eV to 20 MeV, data compilation for cross sections of, (E/T), 22:48446

reactions with deuterium at 0.0001 eV to 20 MeV, evaluated cross-section data for, 22:29894 (LA-3271)

reactions with dysprosium isotopes and erbium isotopes, resonance parameters for, (E), 22:27220

reactions with dysprosium, iridium, and lutetium at 0.01 to 10 eV, total cross section and resonance parameters for, (E), 22:18282

reactions with earth-crust nuclei in nuclear explosions, calculation of radionuclides from, (T), 22:21225 (HNS-1229-54)

reactions with erbium isotopes and neodymium isotopes, resonance parameters for, (E), 22:27219

reactions with erbium isotopes, resonance parameters for, (E), 22:24868

reactions with erbium, holmium-165, lutetium, praseodymium-141, thulium-169, and ytterbium at 0.001 to 1.0 eV, total cross sections for, (E), 22:18281

reactions with europium at 0.025 to 1.5 keV, total cross section for, (E), 22:22585 (LA-DC-9182)

reactions with even-even nuclei with collective excitation, square-well optical-model potential for, (T), 22:18352

reactions with fissionable nuclei, correlations of resonance parameters for, (T), 22:18214(T) (BNL-tr-187)

reactions with fissionable nuclei, methods for determining resonance spins in, (E), 22:18294

reactions with gadolinium, sodium-23, and xenon, total cross sections and resonance parameters for, (E), 22:18192

reactions with germanium-70, -72, -73, -74, and -76, cross sections and strength functions for, (E), 22:5786 (JINR-P3-3456)

reactions with germanium-70, -72, -73, -74, and -76, cross sections and resonance parameters for, (E), 22:27069

reactions with gold-197, tungsten, tungsten-182, tungsten-183, tungsten-184, and tungsten-186, effectiv resonance integrals for, (E), 22:18270

reactions with graphite and tantalum-181 at 2 keV and 0 to 700°C, total cross sections for, (E), 22:20578 (WASH-1079)

reactions with hafnium and hafnium isotopes at 0 to 15 MeV, evaluated cross sections for, 22:16012 (KAPL-3327)

reactions with heavy even-even nuclei, effects of nuclea deformation on strength functions for, (T), 22:18211 (NAA-SR-Memo-12538)

reactions with holmium-165, total cross section and resonance parameters for, (E/T), 22:20563 (BNL-12269)

reactions with holmium-165, total cross section for, (T) 22:39627 (BNL-50082, pp 19-24)

reactions with $I = {}^{1}/_{2}$ and ${}^{3}/_{2}$ nuclei at 1 to 5000 eV, s wave resonance parameters for, (E/T), 22:53166 (CEA-R 3385)

reactions with iodine in thyroid gland, 22:10706

reactions with iron shielding, cascade propagation from, (E/T), 22:31904

reactions with light and medium-weight nuclei, computer program for cross-section calculations using spherical optical model, 22:1562 (NAA-SR-Memo-12531)

reactions with lithium in aluminum--lithium alloys, helium bubble production by, 22:715(T) (UCRL-Trans-10135)

reactions with lithium-6 at 70 eV to 7 MeV, total cross sections for, (E), 22:35285(R) (AERE-PR/NP-13)

reactions with magnesium, cross sections for, 22:37308 (AD-665361)

reactions with manganese-55 and vanadium-51 up to 200 keV, resonances in total cross sections for, (E), 22:1626

reactions with manganese-55 at 0.01 eV to 50 keV, Breit-Wigner multilevel analysis of total cross sections for (T), 22:32550

reactions with medium and heavy elements at 2 to 10 MeV, total cross sections for, (E), 22:11936

reactions with medium and heavy elements at 4.5 to 7.5 MeV, total cross sections for, (E), 22:9842

reactions with medium-weight and heavy nuclei, strength functions for, (T), 22:16017(T) (BNL-tr-189)

reactions with molecular gases, rotational correlation functions in, 22:38797

reactions with molybdenum to produce technetium-99m, 22:35857(P)

reactions with molybdenum-98, -100, niobium-93, plutonium-239, rhodium-103, thorium-232, and uranium-233, -235, -238 at 100 eV to 1 MeV, total cross sections and resonance parameters for, (E), 22:18283

reactions with niobium-93 at 0 to 15 MeV, ENDF/B cross sections for, 22:16002 (GA-8133)

reactions with nitrogen, error analysis of cross section for, (T), 22:32448

reactions with nuclei at 14.2 MeV, isospin dependence of optical potential from total cross section data for, (E/T), 22:14057

reactions with nuclei at 2.062 to 2.573 GeV/c in propane bubble chamber, Λp resonances in, (E), 22:46322 (JINR E1-4022)

reactions with nuclei at 27 GeV/c, spark chamber study c total cross sections for, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)

reactions with nuclei at 600 MeV, magnetic spectrometer study of π^+ and π^- production in, (E), 22:34842(T) (ORNL-tr-1924)

reactions with nuclei at 600 MeV, magnetic spectrometer study of π^+ and π^- production in, (E), 22:37078

reactions with nuclei at high energies, Regge pole model for, 22:1450 (AD-648017)

reactions with nuclei below 10 MeV, doorway state theory of, (T), 22:46848

reactions with nuclei, corrections for self-indication method for determining resonance parameters for, (T), 22:24911

reactions with nuclei, correlations of resonance parameters for, (T), 22:14066

reactions with nuclei, counter telescope for measuring angular distribution and energy of charged particles produced in, 22:6638

reactions with nuclei, effect of mutual shielding of resonances of different isotopes on, (T), 22:7766

reactions with nuclei, γ production cross sections and spectra for, (T), 22:30067

reactions with nuclei, multi-element activation detector for measuring resonance integrals for, 22:16901

reactions with nuclei, self-indication method for determining resonance parameters for, (T), 22:24912

reactions with nuclei, telescopic arrangement of detectors for charged particles from, 22:43033

reactions with nuclei, two-channel model for comparison of Hauser-Feshbach and Moldauer theories of, (T), 22:44775
reactions with osmium-192, 22:18738(R) (MLM-1417)
reactions with phosphorus in DNA and nucleotides, 22:462
reactions with plutonium, 22:3737
reactions with plutonium isotopes, review of, (E/T), 22:3738
reactions with plutonium-238 at 0.008 to 6500 eV, total cross section and resonance parameters for, (E), 22:3710
reactions with plutonium-239 and plutonium-240, resonance parameters for, 22:37277 (AI-AEC-Memo-12645)
reactions with plutonium-239 and uranium-235, effects of resonance self-shielding on cross sections for, (T), 22:32626
reactions with plutonium-239 at 0.01 to 30 keV, cross sections and eta values for, (E), 22:18291
reactions with plutonium-239 at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
reactions with plutonium-239 at 4 to 700 eV, total cross section and resonance parameters for, (E), 22:18296
reactions with plutonium-239 at 8 to 300 eV, resonance spins and widths for, (E), 22:18295
reactions with plutonium-239, cross sections and resonance parameters for, 22:35295 (TPM-RFR-682)
reactions with plutonium-239, cross-section calculations using fission widths from channel fission theory, (T), 22:1655 (NAA-SR-12515)
reactions with plutonium-240 at 0.8 to 5 keV, resonance parameters for, (E), 22:18293
reactions with plutonium-240 at 20 to 800 eV, total cross section and resonance parameters for, (E), 22:18293
reactions with plutonium-240, -241, and -242 at 0.01 eV to 15 MeV, nuclear data evaluation for, 22:22578 (IA-1152)
reactions with plutonium-240, plutonium-241, and plutonium-242, evaluated cross sections and resonance parameters for, 22:35347
reactions with plutonium-242 at 0.008 to 3000 eV, total cross section and resonance parameters for, (E), 22:37341 (IN-1132)
reactions with plutonium-242 at 0.008 to 8000 eV, total cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
reactions with potassium, cross sections for, 22:37310 (AD-665363)
reactions with promethium-147 at 0.008 to 200 eV, total cross section and resonance parameters for, (E), 22:39637 (RPI-328-123, pp 1-17)
reactions with promethium-147 at 1.6 to 200 eV, total cross section and resonance parameters for, (E), 22:14001 (RPI-328-100, pp 1-56)
reactions with promethium-147 at 1.6 to 200 eV, total cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
reactions with promethium-147 at 15 to 65 eV, resonance parameters for, (E), 22:20578 (WASH-1079)
reactions with protactinium-231, protactinium-233, and uranium-232 at 0.001 eV at 15 MeV, cross sections and resonance parameters for, 22:16001 (GA-7462)
reactions with radium-226, actinium-227 production by, 22:18738(R) (MLM-1417)
reactions with rhenium, rhenium-185, and rhenium-187, resonance parameters for, (E), 22:20578 (WASH-1079)
reactions with rhenium-185 and -187 at 0.01 to 10 eV, total cross sections for, (E), 22:3689(R) (GA-7820)
reactions with rhenium-185 and -187 at 1 to 100 eV, resonance parameters for, (E), 22:3689(R) (GA-7820)
reactions with rhenium-185 and rhenium-187, cross sections and resonance parameters for, 22:20568 (GEMP-587)
reactions with samarium at 0.06 to 1 eV, total cross sections and resonance parameters for, (E), 22:46762 (CNAEM-52)
reactions with selenium in Lecythis ollaria, 22:30469
reactions with shielding layers of iron and borated polyethylene at 14.6 MeV, gamma production in, (E/T), 22:5403
reactions with shielding, secondary gamma transport from, 22:5402
reactions with shielding, Spinney's method for secondary gamma-ray calculations from, 22:5401
reactions with sodium, ENDF/B cross sections for gamma production in, 22:13904 (LA-3801)
reactions with sodium-23 at 0.2 to 100 keV, total cross section and resonance parameters for, (E), 22:18193
reactions with sodium-23 at 10^{-4} eV to 15 MeV, ENDF/B evaluated cross sections for, (E), 22:46730 (APDA-217)
reactions with sodium-23, cross sections for, 22:37307 (AD-665360)
reactions with sulfur at 0.0022 to 0.266 eV, total cross section for, (E), 22:20548
reactions with tantalum-181 at 0.0001 eV to 15 MeV, cross sections for, 22:20561 (AHSB(S)R-141)
reactions with tantalum-182 at 0.01 to 1000 eV, total cross section and strength function for, (E), 22:37372
reactions with tantalum-182 at 5 to 1000 eV, total cross section and resonance parameters for, (E), 22:20578 (WASH-1079)
reactions with thorium, recoil of protactinium-233 from, 22:48895 (CEA-R-3493)
reactions with thorium-230—thorium-232 mixture to produce uranium-232, 22:45091 (BMwF-FBK-68-09)
reactions with trace elements in hair of man, 22:6740
reactions with tritium at 0.007 to 5 eV, total cross sections for, (E), 22:11896
reactions with tritium at 14.1 MeV, (E), 22:5761
reactions with tungsten-186, resonance integral and Doppler coefficients for, (E), 22:7693 (NAA-SR-12500)
reactions with type-II superconductors, polarized, (E), 22:26338
reactions with uranium carbides UC$_2$ at 0.001 to 10 eV, total cross section for, (E), 22:48414(R) (GA-8773)
reactions with uranium-233 at 0 to 11 eV, resonance parameters for, (T), 22:7708
reactions with uranium-233 at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
reactions with uranium-234 and uranium-236 at 0.001 eV to 15 MeV, cross sections and resonance parameters for, 22:16003 (GA-8135)
reactions with uranium-235 at 0.075 to 2.04 eV, spin dependence of total cross section for, (E), 22:18255
reactions with uranium-235 at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
reactions with uranium-235 at 8.8 and 12.4 eV, resonance spins and widths for, (E), 22:18297
reactions with uranium-235 single-level cross-section analysis for resonance parameters, (T), 22:18299
reactions with uranium-238 at 0 to 200 eV, p-wave resonance parameters for, (E), 22:42036
reactions with uranium-238 in uranyl compounds to produce neptunium-239, 22:18841
reactions with water at 0.0025 to 10 eV, time-of-flight measurements of total cross section of, (E), 22:41924
reactions with water at 0.01 to 15 eV, cross section for, (E), 22:7612 (GA-7581)
reactions with ytterbium-170, -171, -172, -173, -174, and -176, cross sections and resonance parameters for, (E), 22:53192
reactions with Z = 42 to 92 nuclei, cross sections and strength functions for, (E/T), 22:35337
reactions with zirconium-91 at 239 to 1537 eV, resonance parameters for, (E), 22:3689(R) (GA-7820)
reactions with zirconium-91 at 240 to 1537 eV, resonance parameters for, (E), 22:20578 (WASH-1079)
reflection coefficients for, angular dependence of mirror, (T), 22:11484 (JINR-P4-3614)
reflectors for, effects on Sandia Pulsed Reactor of, 22:10065 (SC-RR-67-802)
regeneration factor measurements in heterogeneous exponential piles, 22:32999
resonance absorption in gas-cooled heavy water-moderated reactor, effects of lattice parameters on, 22:10003 (ITEF-518)
resonance absorption in heterogeneous systems, calculation of materials constants for, 22:44901 (UJV-2010)
resonance absorption in multiregion unit cells, use of Nordheim's integration method for, 22:22804(R) (BNWL-685)
resonance absorption in reactors, use of Boltzmann integral equation for calculation of, 22:12147
resonance absorption, lethargy and space-dependent flux calculation for, (T), 22:20950
resonance escape probability determination for uranium-238, 22:53454 (BNWL-828)
resonance escape probability measurements in thorium-water lattices, 22:3902 (TID-24101)
resonance integral calculations for uranium oxide (UO$_2$) fueled exponential piles, effects of resonance overlap on uranium-238, 22:33009
resonance integral calculations in double heterogeneous assemblies of spherical fuel elements, (T), 22:35721
resonance integral calculations treating overlap and interference, (T), 22:5714
resonance integral calculations, fuel-cluster effective surface area determination for, 22:3924 (AECL-2775)
resonance integral for vanadium-51, (E), 22:11925
resonance integral of, calculation method for non-narrow resonance moderator and intermediate, (E/T), 22:30357
resonance integrals for positive and negative energy levels, analytic formulation for infinitely dilute, (T), 22:41932
resonance integrals for reactor materials, effective, (T), 22:24794
resonance integrals for spherical 20 µ diameter gold particles, measurement in graphite and lead diluents of effective, 22:3903 (TID-24121)
resonance integrals for uranium-235 absorption and fission, computer programs for, 22:39897 (EUR-3936)
resonance integrals for, calculation of infinite-dilution, 22:7788(R) (ANL-7382)
resonance integrals for, source distribution effects on calculations of, 22:12102
resonance integrals in two-dimensional systems of fuel, cladding, and water with reflecting boundaries, RESQ2 computer code for calculating, (T), 22:1587
resonance parameters for multiple energy group, calculation of average, (T), 22:3814 (BNWL-SA-1334)

resonance parameters for, calculation of group-averaged, (T), 22:5717
resonance self-shielding factors for plutonium and uranium at high temperature, (T), 22:35348
resonance spacing of, use of synthetic kernel method for analysis of, (T), 22:30362
rethermalization cross sections for, calculation using velocity-dependent cross section with free-gas scattering kernel, (T), 22:22535
rethermalization in heavy gas, (T), 22:35206
scattering amplitude for potassium, coherent, (E), 22:53074
scattering amplitudes for deuterium, fluorine, and mercury, measurements by mirror reflection for coherent, (E), 22:48431
scattering amplitudes for nuclei, real part of forward, (T), 22:20668 (LA-DC-9179)
scattering and polarization in a diffusion cloud chamber from deuterium (d,n) reactions, design of detector for, (E), 22:44577 (NP-17572)
scattering and transmission in benzene, (E/T), 22:11873(R) (GA-8085)
scattering angle in energy-dependent problems, average, (T), 22:48426 (RPI-328-133, pp 60-100)
scattering angles in energy-dependent problems, average, (T), 22:39551 (RPI-328-123, pp 39-52)
scattering angular distributions for, computer programs for analysis of, (T), 22:3745 (ANL-7306)
scattering at low energy, research progress on inelastic, (E/T), 22:39550 (RPI-328-123, pp 32-8)
scattering at low energy, theory of multiple, (T), 22:32478
scattering by 2sld-shell nuclei, DWBA analysis using SU(3) model for inelastic, (T), 22:20497(R) (AECL-3009)
scattering by acetic acid and methanol, study of transport properties by, (E), 22:13919
scattering by alpha-cobalt, magnon dispersion relations from inelastic, 22:48150 (INP-610)
scattering by aluminum-27, phosphorus-31, silicon, and sulfur at 5.95 MeV, differential cross sections for elastic and inelastic, (E/T), 22:32526
scattering by ammonium compounds, temperature effects on slow, (E), 22:5817(R) (NYO-GEN-72-28)
scattering by anharmonic crystals, dissertation summary of research on, (T), 22:39561
scattering by antiferromagnetic materials in strong magnetic fields, (T), 22:29840
scattering by atoms dissolved in ferromagnetic iron and nickel, (E), 22:24809
scattering by benzene, cross sections for, (E/T), 22:53072
scattering by beryllia, calculations, 22:44208 (GA-8758)
scattering by beryllium and graphite, coherent inelastic, (T), 22:48414(R) (GA-8773)
scattering by biphenyl, (T), 22:11873(R) (GA-8085)
scattering by bismuth and lead, temperature dependence of coherent amplitude for forward, (E), 22:11893
scattering by boron-10 at 0.2 to 80 keV, cross section for, (E), 22:35285(R) (AERE-PR/NP-13)
scattering by carbon, aluminum, iron, and bismuth, cross sections for inelastic, (T), 22:11922
scattering by carbon-12 at 1.0 and 2.0 MeV, computer program for finite-geometry and polarized multiple-scattering corrections to polarized data from, 22:7625
scattering by cerium-140 at 1.64 to 1.87 MeV, angular distribution of gamma rays from inelastic, (E), 22:27037
scattering by chromium, critical magnetic, (E/T), 22:24814
scattering by chromium-52, angular distribution of 1.4-MeV gamma from inelastic, (E/T), 22:35182
scattering by cobalt fluorides, magnetic, (E), 22:11944(R) (AECL-2780)
scattering by cobalt, temperature dependence of magnetic, (E), 22:1569
scattering by cold-worked copper, small-angle, (E), 22:9921 (JUL-Conf-1)
scattering by copper, effects of grain size on, (E), 22:11874(R) (JUL-463-NP)
scattering by crystalline, amorphous, and liquid selenium, (E), 22:11874(R) (JUL-463-NP)
scattering by crystals and liquids, dynamics from inelastic, (T), 22:15930
scattering by crystals of polyethylene, cross sections for multiphonon, (T), 22:29837
scattering by crystals, method for improving resolution in measurements of 1 phonon resonances in inelastic, 22:28223
scattering by crystals, program for computing dynamical matrix, phonon dispersion relations, and structure factors for inelastic, 22:1294 (IN-1125)
scattering by deformed A less than or equal to 40 nuclei, elastic and inelastic, (T), 22:37340(R) (EANDC(E)-89(U))
scattering by deformed polycrystalline copper of subthermal, small-angle, 22:48435
scattering by dense materials, detection and measurement for flaw determination, 22:33619(P)
scattering by deuterium at 14.3 MeV, differential cross sections for elastic, (E), 22:18121
scattering by deuterium, Born approximation using tensor term in nucleon-nucleon potential for elastic, (T), 22:26794
scattering by deuterium, phase analysis of elastic, (E/T), 22:11895
scattering by doubly closed-shell nuclei, elastic, (E), 22:20578 (WASH-1079)
scattering by erbium isotopes at 0.007 to 1 eV, cross sections for, (E), 22:11958
scattering by ethylene adsorbed on activated charcoal, slow, (E), 22:11218
scattering by ferromagnetic alloys, second-order effects in elastic, (T), 22:44596
scattering by ferromagnetic materials, spin-flip and spin-wave contributions to inelastic, (E), 22:18088
scattering by fluids, high-density corrections for, (T), 22:41933
scattering by fluorine-19, description of intermediate-structure resonances using shell model with Feshbach formalism, (T), 22:3616
scattering by gaseous and solid methane, relation of molecular dynamics to inelastic, (E), 22:41287 (INP-608)
scattering by gaseous methane, spectra from, (E), 22:31635
scattering by gold-197 and rhodium-103 at 40 to 700 eV, cross sections and resonance parameters for, (E), 22:16000 (CEA-R-3360)
scattering by gold-197 at 0.13 to 1.50 MeV, differential cross sections and time-of-flight spectra for, (E), 22:9872
scattering by graphite at 15, 490, 1000, and 1370ºC, doubly differential cross sections for inelastic, (E), 22:20416(T) (JPRS-43682, pp 81-105)
scattering by heavy nuclei, imaginary part of optical potential for, (T), 22:30069
scattering by heavy nuclei, performance of time-of-flight spectrometer for inelastic, 22:10591
scattering by heavy water at low energy, coherent, (T), 22:20431
scattering by helium-3, use of Feynman diagrams to determine position of resonances in elastic, (T), 22:18337
scattering by helium-4, forward dispersion relations for elastic, (T), 22:53085
scattering by holmium-165 at 35 to 750 eV, spins and parameters of resonances in elastic, (E), 22:16048
scattering by hydrides of cerium, thorium, and uranium, lattice dynamics from cold inelastic, (E/T), 22:5440
scattering by hydrogen at 10 to 700 keV, cross section for, (E), 22:18146
scattering by hydrogenous liquids at 0.009 to 0.0013 eV, cross sections for, (E), 22:24811
scattering by iron and nickel, spin correlation in critical magnetic, (T), 22:1568
scattering by iron at 1 to 2 MeV, resonance, (E), 22:11924
scattering by iron-56 at 0.87 to 0.95 MeV, angular distribution of gamma rays from inelastic, (E), 22:27037
scattering by iron-56, angular distribution of 0.84-MeV gamma from inelastic, (E/T), 22:35182
scattering by Ising magnet, frequency and temperature dependence of inelastic, (T), 22:29852
scattering by light and heavy water mixtures at 0.404 eV, differential cross sections for, (E/T), 22:7611(R) (GA-7105)
scattering by liquid and solid lead, Brillouin, (E), 22:13921
scattering by liquid argon at 94ºK, quasielastic, (E/T), 22:1575
scattering by liquid helium, inelastic, (E), 22:20497(R) (AECL-3009)
scattering by liquid helium, temperature dependence of, (E), 22:48437
scattering by liquid metals up to 900ºC, design of target heater assembly for, 22:20381
scattering by liquid parahydrogen at 0.217 and 0.366 eV, differential cross sections for, (E), 22:7611(R) (GA-7105)
scattering by liquids and solids, conference on inelastic, 22:41918 (JAERI-1157)
scattering by liquids at high pressures, design of sample container for studying inelastic, 22:1576
scattering by liquids at low energy, research progress on theory of inelastic, (T), 22:35201(R) (NYO-3326-22)
scattering by liquids, convolution approximation in theory of coherent, (T), 22:35203
scattering by liquids, relaxation phenomena in, (E/T), 22:32004
scattering by liquids, study of structure and transport properties by, (T), 22:13920
scattering by lithium fluorides and sodium chlorides, inelastic, (E), 22:9921 (JUL-Conf-1)
scattering by lithium-6 at 4.83, 5.74, and 7.5 MeV, differential cross sections for elastic and inelastic, (E), 22:7645
scattering by lithium-7 at 3.35, 4.83, 5.74, and 7.5 MeV, differential cross sections for elastic and inelastic, (E), 22:7645
scattering by magnetic materials, use to study structure and dynamics, 22:46215

scattering by magnetite below 119°K, (E), 22:24815
scattering by magnetite below 119°K, search for spin-wave excitation energy changes in, (E), 22:15924 (KR-122)
scattering by magnetized crystals, wave-mechanical calculation of, 22:9429(T) (AERE-Trans-1075)
scattering by manganese difluoride near the critical point, magnetic, (E), 22:24812
scattering by manganese-55 and vanadium-51 at 1.0 to 3.1 MeV, energy levels from inelastic, (E), 22:7673
scattering by manganese-55 at low energies, total and coherent cross sections and resonance integral for, (T), 22:32550
scattering by medium-weight and heavy nuclei, optical-model analysis of elastic, (T), 22:18300
scattering by medium-weight nuclei at 2.8 MeV, optical-model analysis of elastic, (T), 22:24917
scattering by metals in magnetic fields, (T), 22:32512(R) (AECL-3108)
scattering by mixed magnetic systems, cross section for diffuse elastic, (T), 22:22539
scattering by molecules of gaseous oxygen, magnetic contribution to cross section for inelastic, (T), 22:44584
scattering by monatomic gases or liquid, cross sections for incoherent, (T), 22:32512(R) (AECL-3108)
scattering by nickel up to 1420°K, magnetic, (E/T), 22:24805
scattering by nickel, (E), 22:11874(R) (JUL-463-NP)
scattering by niobium hydride, titanium hydride, zirconium hydride, and uranium carbide at low energy, differential cross sections for, (E), 22:3592 (RPI-328-101)
scattering by niobium hydrides, thorium hydrides, and zirconium hydrides at low energy, inelastic, (E/T), 22:13908 (RPI-328-100, pp 120-39)
scattering by niobium hydrides, thorium hydrides, titanium hydrides, uranium carbide, uranium dioxide, and zirconium hydrides, doubly differential cross sections for inelastic, (E), 22:29864
scattering by normal and deuterated polyethylene, directional frequency functions for calculating cross sections for, (T), 22:18098
scattering by nuclear Hartree-Fock field, potential, (T), 22:29941 (IPNO/TH-118)
scattering by nuclear square-well potential, theory using solutions of time-dependent Schroedinger equation, 22:12000
scattering by nuclei at 4 MeV, optical-model analysis of elastic, (T), 22:24918
scattering by nuclei, connection of (n,2n) reaction mechanism with inelastic, (E), 22:13966
scattering by nuclei, criterion for weak perturbing systems for elastic, (T), 22:13865
scattering by nuclei, effects of 2p-1h states on cross sections for, (T), 22:53243
scattering by nuclei, effects of 2p-1h states on elastic cross sections for, (T), 22:46820 (UCSD-10-P-11-75)
scattering by nuclei, lifetime measurements for nanosecond excited states using intense pulsed beams, 22:32728
scattering by nuclei, time-dependent wave formalism for elastic, (T), 22:3772
scattering by nuclei, time-of-flight techniques in inelastic, (E), 22:15968
scattering by nuclei, use of analytical and Monte Carlo methods for determining multiple scattering corrections in analysis of, 22:1579
scattering by nuclei, widths of intermediate resonances in, (T), 22:27372
scattering by oriented nuclei using polarized beams, cross section and spin-flip probability for, (T), 22:44791
scattering by osmium-190, activation cross section for inelastic, (E), 22:20578 (WASH-1079)
scattering by oxygen-16, cross-section calculations using Feshbach formalism for elastic, (T), 22:3620
scattering by oxygen-16, effects of exchange and Pauli principle on elastic, (T), 22:5896
scattering by paramagnetic crystalline erbium and holmium, energy distribution from, (E), 22:24817
scattering by paramagnetic materials, (T), 22:13915
scattering by paramagnetic materials, calculations using Ising model, (T), 22:13916
scattering by paramagnetic materials, calculations using cluster model and Heisenberg model, (T), 22:18084
scattering by paramagnetic terbium at 660°K, energy distributions in, 22:24786 (CONF-670502-, pp 297-306)
scattering by plane thick layer, particle distribution in multiple, (T), 22:39303
scattering by platinum and copper--platinum alloys, lattice vibrations from inelastic, (E), 22:26764 (SGAE-PH-60/1967)
scattering by plutonium-239 at low energy, (E), 22:48423 (RPI-328-133, pp 1-34)
scattering by polycrystalline graphite, coherent one-phonon, (T), 22:5747
scattering by polyethylene at 0.16 to 1 eV, doubly differential cross sections for inelastic, (E), 22:13908 (RPI-328-100, pp 120-39)
scattering by polyethylene, doubly differential cross sections for, (T), 22:39541(R) (GA-8626)
scattering by polyethylene, model for, (T), 22:48414(R) (GA-8773)
scattering by potassium-39 and -41 at 1.82 to 3.96 MeV, differential cross sections for elastic, (E), 22:20556
scattering by rhodium-103 at 125 to 450 eV, resonance, (E), 22:20578 (WASH-1079)
scattering by rubidium manganese fluoride near the Neel point, inelastic magnetic, (E), 22:24818
scattering by single crystals of cobalt-doped manganese fluoride, inelastic, (E), 22:20497(R) (AECL-3009)
scattering by single crystals of magnesium oxide, differential cross section for coherent inelastic, (E/T), 22:53067
scattering by single crystals of paramagnetic holmium, (E), 22:20497(R) (AECL-3009)
scattering by spin fluctuations in paramagnetic materials, 22:24806
scattering by tellurium, (E), 22:11874(R) (JUL-463-NP)
scattering by terbium, critical, (E/T), 22:24813
scattering by Ti_2O_3 and V_2O_3, (E), 22:24810
scattering by tritium at 0.007 to 5 eV, cross sections for, (E), 22:11896
scattering by tritium at 14.1 MeV, (E), 22:5761
scattering by tritium at 14.1 MeV, neutron angular distributions from elastic, (E), 22:32484
scattering by uranium carbide and uranium dioxide at 0.134 eV, doubly differential cross sections for inelastic, (E), 22:13908 (RPI-328-100, pp 120-39)
scattering by virtual magnon states in dilute alloys, incoherent inelastic, (E/T), 22:24804
scattering by water and heavy water at low energy, (T), 22:7622
scattering by water at 0.006 to 10 eV, differential cross section for, (E), 22:13910
scattering by water at 0.101 and 0.213 eV, doubly differential cross sections for inelastic, (E), 22:39557
scattering by water at 0.23, 0.33, 0.50, and 0.63 eV, doubly differential cross sections for inelastic, (E), 22:13908 (RPI-328-100, pp 120-39)
scattering by water at 27, 170, and 270°C, inelastic, (E/T), 22:48425 (RPI-328-133, pp 56-9)
scattering by water at high temperature, research program on doubly differential cross sections for, (E/T), 22:39550 (RPI-328-123, pp 32-8)
scattering by water, calculations of differential cross sections using modified Nelkin model with hindered rotations, (T), 22:53073
scattering by zirconium hydride at 0.008 to 1.0 eV and 296 and 700°K, differential cross section for, (E), 22:15918 (GA-8345)
scattering by zirconium hydride at elevated temperatures, (E/T), 22:11873(R) (GA-8085)
scattering calculations in slab geometry, recursion formulas for semi-analytical multiple, (T), 22:29846
scattering cross section for zirconium hydride, calculations using central force model, (T), 22:20409(R) (GA-8449)
scattering cross sections and resonance parameters for plutonium-241, uranium-233, and uranium-235 at 1 to 30 eV, (E), 22:20577 (UCRL-70826)
scattering data for, computer program for Monte Carlo calculations of correction factors for multiple, (T), 22:39550 (RPI-328-123, pp 32-8)
scattering effects in generic thermionic reactor, analysis of inelastic, 22:22791 (GA-8309)
scattering from chromium tribromide, paramagnetic, (E), 22:26463
scattering from concrete shielding after 660-MeV proton bombardment, (E/T), 22:3149 (JINR-P16-3514)
scattering from edge-type dislocation rings in metals, theory of small-angle, 22:23817
scattering from fluids near critical point, asymptotic form of radial distribution function for small-angle, 22:20096 (TP-210)
scattering from liquid argon at elevated temperatures, (E), 22:21891
scattering in disordered solid solutions, cross sections for, (T), 22:22207
scattering in graphite moderators, effects of temperature on inelastic, 22:30377
scattering in liquids and solids, rotating crystal spectrometer for measuring slow, 22:12145
scattering in magnetic materials, design and performance of beam scattering apparatus for, 22:45346 (AERE-R-5698)
scattering in SEFOR core and materials, distribution of macroscopic cross sections for, 22:1763(R) (GEAP-5533)
scattering in shielding, calculation methods for, 22:48142
scattering in vanadium silicides, absence of paramagnetic, 22:37035
scattering inelastically in air, water, and nuclear emulsions of cosmic, cross sections for, (T), 22:22299
scattering inelastically in crystals, structure factors for, (T), 22:15558 (IN-1147)
scattering kernel for biphenyl, (T), 22:32436
scattering kernel for, formulation using secondary model of scattering, (T), 22:44578
scattering kernels for solid moderators, computer program for calculating effective temperature using Debye model for determining, 22:24413 (WANL-TME-1666)

scattering kernels for transport equation with isotropic scattering, temperature effects on, (T), 22:29863
scattering kernels for uranium dioxide, formulation of, (T), 22:48414(R) (GA-8773)
scattering kernels in solids, use of time-dependent transport equation for determination of elastic and inelastic, 22:30372
scattering law data for moderators at various temperatures, compilation of, 22:48411 (AERE-R-5778)
scattering law data for, Monte Carlo program for multiple scattering corrections to, (T), 22:48425 (RPI-328-133, pp 56-9)
scattering law data for, multiple scattering corrections to doubly differential, (T), 22:48414(R) (GA-8773)
scattering law for benzene at 296 to 1000ºK, (T), 22:20409(R) (GA-8449)
scattering law for beryllium oxide, incoherent approximation for, (T), 22:48414(R) (GA-8773)
scattering law for biphenyl, (T), 22:20409(R) (GA-8449)
scattering law for gases and liquids, high-density corrections to, (T), 22:41933
scattering law for graphite, (E), 22:9921 (JUL-Conf-1)
scattering law for heavy water, (E/T), 22:22522 (GA-8283)
scattering law for liquid heavy water at 0.157, 0.206, 0.304, 0.370, and 0.404 eV, (E/T), 22:7611(R) (GA-7105)
scattering law for liquid heavy water at 300ºK, (E), 22:41925
scattering law for mixture of light and heavy water, (E), 22:53064 (AERE-R-5832)
scattering law for molecular gases, effects of two-quantum vibrational excitations on, (T), 22:29870
scattering law for polyethylene, calculations using incoherent approximation, (T), 22:39541(R) (GA-8626)
scattering law for solids with layer and linear lattices, calculation by summing multiphonon processes, (T), 22:24797
scattering law for uranium carbides, (E/T), 22:48425 (RPI-328-133, pp 56-9)
scattering law for water at 0.05 eV, (E), 22:41926
scattering law for water at 16ºC, (E/T), 22:37279 (IN-1141)
scattering law for water, calculations using exact formalism and short collision approximation, (T), 22:39541(R) (GA-8626)
scattering law for water, correction for multiple scattering, (E), 22:1583
scattering law for zirconium hydride at 296 to 1000ºK, (T), 22:20409(R) (GA-8449)
scattering law for zirconium hydride, (T), 22:13908 (RPI-328-100, pp 120-39)
scattering law for, computer program for multiple scattering corrections using Monte Carlo method, (T), 22:22528 (RPI-328-112, pp 104-19)
scattering law model for, short time approximation for evaluating Egelstaff--Schofield, 22:22804(R) (BNWL-685)
scattering laws for uranium carbide, uranium dioxide, and zirconium hydride, (T), 22:29864
scattering lengths for bismuth, bromine, carbon, and chlorine, coherent, (E), 22:37340(R) (EANDC(E)-89(U))
scattering measurements in heavy and light water moderators, neutron spectral density determination from inelastic, 22:30378
scattering model for polyphenyls, (T), 22:32437
scattering of long wavelength, by defects in solids, (T), 22:1291 (AERE-R-5479)
scattering of polarized, by ferromagnetic materials in high-intensity magnetic fields, (E/T), 22:9921 (JUL-Conf-1)
scattering of slow, by coherent parametrically excited spin waves, (E), 22:44258
scattering of slow, by protons in hydrogen bonds, elastic and inelastic cross section calculations using double-potential-well model, 22:46280
scattering of slow, in ferromagnetic and antiferromagnetic crystals, (T), 22:26467
scattering of, continuous flow cryostat for measuring, 22:46055
scattering of, corrections for multiple, (T), 22:9921 (JUL-Conf-1)
scattering of, design and fabrication of triple-axis spectrometer for studying inelastic, 22:28140
scattering of, design of facility for studying inelastic, 22:24408 (IA-1128, pp 21-54)
scattering of, efficiency of NM-64 monitor for precision measurements of, 22:45295
scattering of, efficiency of semiconductor detectors for studying inelastic, 22:36090
scattering of, energy distribution for one-quantum coherent, (T), 22:5713
scattering of, exclusion principle and equivalent potentials for, 22:50268
scattering of, polarization measurements in elastic, 22:32959 (ANL-7310, pp 1-30)
scattering of, thermistor and thermocouple devices for controlling temperature of targets for, 22:2473
scattering on iron, Fisher correlation function from critical, 22:22251
scattering on polymers, analysis of low-frequency motions from, (E/T), 22:24472
scattering on rare earths in paramagnetic phase, crystal field effects on inelastic, 22:41661
scattering on spherical-top molecules, rotational--vibrational, (T), 22:15346
scattering resonance integral for holmium-165, (T), 22:39627 (BNL-50082, pp 19-24)
scattering resonances in heavy elements, effects on fast spectra and Doppler coefficients, (T), 22:5715
scattering spectra for, method for calculating, (T), 22:15936
scattering system for time-of-flight studies, design of, 22:32453
scattering, computer program SURF for conical and plane surface, 22:17714 (GEMP-582)
scattering, transport theory for, (T), 22:44288
shielding calculations, SABINE computer program for, 22:26444
shielding design for californium-252, modular, 22:31886 (UCRL-18093)
shielding design for, computer program for, 22:3148 (EUR-3636)
shielding for 800-MeV proton linear accelerator for Los Alamos Meson Physics Facility, 22:3557 (HASL-188)
shielding for Hinkley Point 2 Reactor core and boiler, description of, 22:46969
shielding for NASA Research Reactor HB-6 beamhole, calculation methods for, (T), 22:35601 (N-68-10133)
shielding in fast reactors, effects of liquid sodium on, 22:18503
shielding materials for, properties of, 22:7340
shielding of Fermi Fast Breeder Reactor, effectiveness of, 22:44807 (APDA-221)
shock waves in high-density stellar plasma of, (T), 22:2738
slowing down and thermalization in zirconium hydride, time dependence of, (T), 22:29879
slowing down by elastic scattering in infinite absorbing one-isotope medium, Placzek-type oscillations in, (T), 22:41935
slowing down calculations for, time moments in space-time, 22:6159
slowing down density in lead, effects of small absorbing samples on, (E/T), 22:29845
slowing down in absorbing medium, (T), 22:32467
slowing down in aluminum--water plate lattices, anisotropy of, (E), 22:32475
slowing down in aluminum--water slab systems, Monte Carlo calculations of anisotropy of, (T), 22:32474
slowing down in heavy elements, time moments of, (T), 22:48426 (RPI-328-133, pp 60-100)
slowing down in homogeneous isotropic medium with cylindrical surface, (T), 22:50517
slowing down in hydrogen, calculations of spatially dependent, 22:6160
slowing down in hydrogenous rocks, differential equations for, 22:33563
slowing down in lead, mean free path for, (E), 22:29851
slowing down in lead, research using pulsed-source technique, (E), 22:39539 (AEET/NP-16)
slowing down in nonhydrogenous infinite homogeneous media of, solution of differential equations for, (T), 22:25149
slowing down in zirconium-water lattice assembly, measurements using accelerator sources, (E), 22:5710 (WAPD-T-2015)
slowing down interval curtailment in multigroup calculations, (T), 22:35699
slowing down kernel for, space--time dependent deviation using Fourier--Laplace transforms for, 22:1783
slowing down of pulsed, analysis of physical behavior for asymptotic, (T), 22:35710
slowing down parameters in homogeneous medium, calculations as Markov process, (T), 22:50520
slowing down process description for, (T), 22:27500
slowing down theory for, eigendistributions in, (T), 22:15928
slowing down time measurements in graphite piles, use of resonance filter method for, 22:3908
slowing-down and heating-up relaxation time constants for graphite, (T), 22:44579
slowing-down equation for, angular density and area formulation of, (T), 22:50513
slowing-down equations for homogeneous medium, formulation and solutions of, (T), 22:50514
slowing-down equations for, solution using Laguerre polynomials and associated functions, 22:20419(T) (JPRS-43682, pp 137-49)
slowing-down sources for, computer programs for calculating, (T), 22:32426 (GA-8556)
slowing-down theory using discrete ordinates representations for scattering transfer kernels, (T), 22:9762 (NAA-SR-12493)
slowing-down time to plutonium-239 resonance in beryllium oxide, (E), 22:29878
slowing-down times in water and zirconium hydride at room temperature, measurement using pulsed source technique, (E), 22:48412(T) (AERE-Trans-1088)
sources for, description of, 22:3913
spectra above shielding of accelerators, dose conversion from, (T), 22:31905
spectra across Triga fuel element in cadmium-bearing

heavy water, (E), 22:39541(R) (GA-8626)
spectra analyses using fast Fourier algorithms, description of technique for, 22:33166
spectra analysis for, mean emission time correction for time-of-flight, (T), 22:20934(R) (GA-8462)
spectra analysis in enriched plutonium--water lattices, resonance absorption measurements for, (E/T), 22:30329
spectra calculation of fast reactor, GAF, GAND, and GAR computer programs for, 22:10077 (GA-7920)
spectra calculations for water-moderated thermal reactor, use of computer codes for, 22:46904(T) (N-68-24779)
spectra determination using plutonium recycle fuel elements, 22:25008
spectra determinations for STSF-1, 22:30302(R) (GA-8377)
spectra distribution in fast reactors, analysis of energy and spatial, (T), 22:30155(R) (NAA-SR-12296)
spectra distribution in heterogeneous reactors, determination of resonance, 22:44894 (IFA-FR-69)
spectra effects in natural uranium and graphite lattices, zero reactivity method for calculating, (E/T), 22:10074 (EUR-3637)
spectra for power reactors, review of calculational methods for determining, 22:14175
spectra for pulsed polarized, design and performance of correlation-type time-of-flight spectrometer for measuring, 22:12602
spectra formulation for fast reactors, derivation of approximate form for, 22:42285
spectra from americium--beryllium, polonium--beryllium, and plutonium--beryllium sources behind hydrogen-bearing shielding, (E), 22:39563
spectra from moderated and unmoderated proton synchrocyclotron targets, (E), 22:35285(R) (AERE-PR/NP-13)
spectra from outputs of detectors with energy-dependent response, computer program for unfolding, 22:48421 (RHEL/M-135)
spectra from plutonium dioxide isotopic heat sources, 22:8304
spectra from plutonium--beryllium and polonium--beryllium sources, measurement from nuclear emulsions, 22:22553
spectra from plutonium-238 in metal and oxide, 22:25440(R) (MLM-1443)
spectra in an infinite homogeneous absorber, solution of time- and energy-dependent, by singular eigenfunctions method, (T), 22:11889
spectra in coolant and structural material of sodium-cooled reactors, (E), 22:30155(R) (NAA-SR-12296)
spectra in critical assemblies, effects of fuel-moderator ratios on, 22:7897 (LA-DC-9110)
spectra in depleted slabs of uranium, spatially dependent resonance, (E/T), 22:5739
spectra in EBR-2, description of computer corrected foil data analysis of, 22:32741 (BNWL-532, pp 3.1-17)
spectra in fast reactors, effects of iterating on elastic removal cross sections on calculated, 22:6013
spectra in fast zero-power reactors, use of time-of-flight and proton-recoil methods for measurement of, 22:6101
spectra in graphite- and beryllium oxide-moderated assemblies fueled with plutonium and enriched uranium, (E/T), 22:30326
spectra in hydrogenous media, deviation from 1/E, 22:24821
spectra in multiplying media, position-dependent, (T), 22:11891
spectra in plane water--iron--water shields, position-dependent, (T), 22:20424(T) (ORNL-tr-1849)
spectra in polystyrene sulfonic acid, time-of-flight, (E), 22:11874(R) (JUL-463-NP)
spectra in pulsed systems, space, time, and energy separability in, (T), 22:11879
spectra in reactors, data tabulations on isotopes for multifoil activation measurements of, 22:47318 (EURFNR-527)
spectra in reactors, measurement using scintillation counters, (E), 22:7619
spectra in reactors, measurements in the keV range using resonance foils, (E/T), 22:5737
spectra in reactors, transmission method for measuring, 22:23288
spectra in shielding, (T), 22:50213(R) (EUR-3913)
spectra in slabs of water, time-dependent, (E), 22:22525(R) (RPI-328-112)
spectra in spheres of uranium-235 and uranium-238, (E), 22:20409(R) (GA-8449)
spectra in standard shield geometrics, comparison of discrete ordinates calculations with, 22:53063 (AD-672225)
spectra in thin polyethylene slabs, (E/T), 22:15932
spectra in uranium oxide (UO_2)--water lattices, use of gold--manganese--nickel alloy foils in measurements of, 22:1868
spectra in uranium-238 slabs surrounded by borated polyethylene, (E/T), 22:11873(R) (GA-8085)
spectra in water near absorbing plane cadmium surface, anisotropy of, (E), 22:44573(T) (ANL-Trans-648)
spectra in water near plane cadmium surface, anisotropy of, (E), 22:20415(T) (JPRS-43682, pp 63-80)
spectra in water near plane cadmium surface, anisotropy of, (E), 22:20411 (IAE-1216)
spectra in water near plane cadmium surface, anisotropy of, (E/T), 22:29876
spectra in water, chopper for measuring time-dependent, 22:13907 (RPI-328-100, pp 113-19)
spectra in zirconium hydride, time-dependent, (T), 22:29879
spectra measurement in uranium-238 slabs, comparison of S_4 transport theory with spatially dependent, 22:22871
spectra measurements for variable multi-rod core of Modified Critical Facility, analysis of, (E/T), 22:32969 (GA-8468)
spectra measurements in natural uranium oxide (UO_2)--water lattices, 22:14268
spectra measurements in reactors, efficiency of semiconductor detectors for measuring, 22:36090
spectra measurements in ZPR-III assemblies 47 and 48, analysis of, 22:30303 (GEAP-5271)
spectra near synchrocyclotron, use of nuclear emulsions for measuring scattered, 22:33653
spectra of fast cosmic ray, measurement of energy, 22:33087 (ANL-7310, pp 513-22)
spectra of, corrections for mean emission time to time-of-flight measurements of, (T), 22:32458
spectra of, development of multi-element activation detector for measuring resonance, 22:16901
spectra of, least-squares method for unfolding proton-recoil, 22:33662
spectra of, measurement using lithium-6 (n,t) reaction with semiconductor detection of tritons, (E), 22:35243
spectra of, measurement using time-of-flight method with pulsed source, 22:35207
spectra of, semiconductor detectors with converter foils for measuring, 22:51231
spectra perturbations by radial reentrant hole in cylindrical fuel rod cells, (E), 22:44920(R) (GA-8622)
spectra shift in heavy water-moderated reactors, method for, 22:7906(P)
spectra variations in large reactors, spatial effects on, (T), 22:50879
spectra with upscattering in reactor fuel elements, comparison of calculation and measurement, 22:30320
spectral determinations in pulsed reactors, simplified mathematical model for, 22:14309
spectral measurements in RRR, use of activation foils for integral, 22:18564
spectral measurements of, by lithium-6 (n,t) reactions using nuclear emulsions and surface-barrier detectors, 22:40363
spectral measurements using resonance absorbers, (E/T), 22:9768
spectral perturbation from reentrant holes, (E), 22:20934(R) (GA-8462)
spectral-index measurements using activation methods, review of, 22:29873
spectrum in HIFAR fuel element cells, (E/T), 22:14242 (AAEC/TM-408)
spectrum in upper atmosphere during solar eclipse of Nov. 12, 1966, (E), 22:24067(T) (SC-T-68-1514)
spectrum index measurements in NORA, 22:16283(R) (IAEA-3498-21)
spectrum measurements by multiple-foil activation method, comparison with reactor physics calculations and time-of-flight measurements, 22:4434
spectrum measurements in ZPR, use of proton-recoil proportional detectors for, 22:4433
spectrum of cosmic, at sea level of 20 to 4000 GeV, (E/T), 22:24084
stars of, properties of, (T), 22:923
state of matter in stars of, (T), 22:5027
streaming effects in cylinders and flat guides of, one-group diffusion approximation for analysis of, (T), 22:27503
streaming from void tubes in uranyl fluoride solution reactors, multigroup method analysis of, (E/T), 22:16288 (NASA-TN-D-4270)
streaming in cylindrical channels, Wiener--Hopf solution for integral equation describing, (T), 22:27495
streaming through two-legged, thick-wall steel duct, (E/T), 22:34730 (AD-663563)
temperature measurements in fuel rods, method for integral, (E/T), 22:32976(R) (MIT-2344-12)
temperature measurements in urania--water lattices, 22:1868
theory as composite particles, 22:17966
theory for Sakata triplet (p, n, Λ), Lagrangian in SU(3) symmetry for, 22:17994
theory of stars of, 22:7123
thermalization at low temperature, reactor cryogenic facility for studying, 22:47037
thermalization from nonstationary source in nonmultiplying systems, research review for, (E/T), 22:29881
thermalization in benzene, model of molecular dynamics for, (E/T), 22:53072
thermalization in beryllium and graphite, time-dependent, (E/T), 22:26765(T) (AERE-Trans-1084)
thermalization in beryllium oxide, measurements using spectral indicators, (E), 22:29878
thermalization in beryllium, transient spectra for, (T), 22:24798
thermalization in blocks of beryllium, (E/T), 22:3598
thermalization in finite media, (T), 22:5748

thermalization in graphite, time-dependent, (T), 22:44579
thermalization in ice and zirconium hydride, time-dependent, (E/T), 22:29887
thermalization in infinite medium, asymptotic properties of energy distribution during, (T), 22:5711
thermalization in lead, research using pulsed neutron source, (E), 22:29849
thermalization in moderator with nonuniform temperature distribution, calculations using heavy-gas model, (T), 22:11887
thermalization in monatomic gases, computer program for calculating transfer matrices for, (T), 22:13909 (WANL-TME-1617)
thermalization in nonuniform medium, transport operator for, time-dependent, (T), 22:5750
thermalization in organic moderators of, Monte Carlo analyses of time-dependent, 22:30382
thermalization in pulsed media, few-pole expansion formalism for, (T), 22:29835
thermalization in spherical water systems of, analysis of, 22:39875 (BNL-50082, pp 1-18)
thermalization in water spheres, (E/T), 22:11892
thermalization in water, measurements using pulsed source technique, (E), 22:50516
thermalization in water, modified Nelkin model with hindered rotations for, (T), 22:53073
thermalization in water, research progress on, (E), 22:39549 (RPI-328-123, pp 26-31)
thermalization in water, time-dependent, (E), 22:20421(T) (JPRS-43682, pp 165-78)
thermalization in water, time-dependent, (E), 22:29888
thermalization in water, time-dependent, (E), 22:32459
thermalization measurements in graphite using pulsed source with reaction rate method, (E), 22:29883
thermalization measurements in water and zirconium hydride in FiR-1 research reactor, 22:30383
thermalization of, collision and quasi-diffusion methods for solving problems in, (T), 22:29859
thermalization of, conference on, 22:29856 (STI/PUB-160(Vol.1))
thermalization of, conference on, (E/T), 22:29872 (STI/PUB-160(Vol.2))
thermalization of, derivation of non-equilibrium thermodynamic laws for, (T), 22:27502
thermalization of, development of time-of-flight system for integral experiments using pulsed sources, 22:37281(R) (NYO-72-191)
thermalization of, effect of 1/v and non-1/v capture cross section on, (E), 22:37281(R) (NYO-72-191)
thermalization of, eigenvalue treatment of theory of, 22:30370
thermalization of, numerical methods in theory of, (T), 22:20414(T) (JPRS-43682, pp 43-62)
thermalization of, research on differential, (E/T), 22:22522 (GA-8283)
thermalization of, research program and progress on integral, (E/T), 22:26758(R) (GA-8280)
thermalization of, research progress on integral, 22:48414(R) (GA-8773)
thermalization of, research progress on integral, (E/T), 22:39541(R) (GA-8626)
thermalization of, research progress on integral, (E/T), 22:20409(R) (GA-8449)
thermalization of, research progress on, (E), 22:13907 (RPI-328-100, pp 113-19)
thermalization of, research progress on, (E/T), 22:3587(R) (GA-7647)
thermalization of, research progress on, (E/T), 22:22525(R) (RPI-328-112)
thermalization of, secondary model for time eigenvalue spectrum in, (T), 22:11881
thermalization of, spectral calculations using Laguerre polynomials and associated functions, 22:20419(T) (JPRS-43682, pp 137-49)
thermalization of, survey on, (E/T), 22:15929
thermalization of, symposium on, 22:20412(T) (JPRS-43682)
thermalization of, time-dependent, (T), 22:41929
thermalization parameter measurements in water by pulsed source and non 1/v absorber method, 22:35697
thermalization parameters for graphite, (E), 22:29890
thermalization power of Miramid plastic for, pulsed-source measurements of, (E), 22:53068
thermalization time in graphite, determination using frequency characteristic method, (E/T), 22:29891
time focusing of reflected, from rotating-crystal spectrometers, use of Doppler effect for, 22:347
time-of-flight experiments, conditioner with integrated circuits for, 22:45377
transmission in access tunnels to CERN proton synchrotron, computer calculation of, 22:48392(T) (ORNL-tr-1989)
transmission in holmium-165, design of Stanford cryogenic oriented target for studying, 22:35166(R) (AD-663169)
transmission through large concrete-walled rectangular ducts, (T), 22:5751
transport analysis of, cylindrical and spherical geometries for, (T), 22:18658
transport analysis of, description of stationary-medium equation for, (T), 22:20966
transport approximation for analyzing exponential piles, using one-dimensional S/sub N/ code, (T), 22:32457
transport calculations for bare sphere using j/sub N/ method with multiple collisions, (T), 22:18599
transport calculations for helical tubular void region, method of determining flight-path intersections with walls for, (T), 22:41919 (N-68-18541)
transport calculations for three-dimensional geometry using Monte Carlo method, computer program for, (T), 22:32427 (IN-1109)
transport calculations in rocket reactor shielding, evaluation of methods for, 22:39851(R) (N-68-13501)
transport calculations using Monte Carlo methods, discussion of, 22:33133
transport equation for cylindrical geometry, C/sub n/ approximation method for Boltzmann, (T), 22:24820
transport equation for heavy gas, solution for energy moments of angle-dependent flux, (T), 22:35206
transport equation for infinite homogeneous slab with uniform source, space--angle synthesis approximation of, 22:27481 (BNWL-634, pp 2.1-8)
transport equation for isotropic scattering in plane geometry, calculations using Case method for multigrou treatment of, (T), 22:46705
transport equation for monoenergetic, correlation of Case method with Chandrasekhar theory of radiative transfer (T), 22:50511
transport equation for monoenergetic, in cylindrical geometry, solution of time-dependent Boltzmann, (T), 22:3593
transport equation for monoenergetic, semi-analytical method for solution in plane geometry, (T), 22:44574 (EIR-105)
transport equation for monoenergetic, solution for semi-infinite aluminum--water slab lattices, (T), 22:44586
transport equation for monoenergetic, solution for spherical geometry, (T), 22:44600
transport equation for monoenergetic, solution using spherical harmonics method, (T), 22:1584
transport equation for one-dimensional geometries, metho for numerical solution of, (T), 22:1577
transport equation for plane geometry, method for approximating Boltzmann, (T), 22:24819
transport equation for slab geometry with isotropic scattering, eigenfunctions and eigenvalues of, (T), 22:18091
transport equation for spherical reactor criticality, use of spherical harmonics approximation of monoenergetic Botzmann, 22:20949
transport equation for thin embedded homogeneous layer, solution of energy-independent, (T), 22:3589 (JUL-484-RE)
transport equation for, angular slowing-down density formulation for, (T), 22:50513
transport equation for, biorthogonal angular polynomial expansion of two-dimensional, (T), 22:24800
transport equation for, C/sub n/ method for approximatio of, (T), 22:39540 (CEA-R-3170)
transport equation for, computer program for discrete ordinates solution of two-dimensional, 22:24792 (WANL-TME-1680)
transport equation for, computerized solution to the multigroup discrete S/sub n/ approximation to Boltzmann, 22:3925 (AEEW-R-498)
transport equation for, conversion from energy- and space-dependent form into energy-dependent form for calculation of thermal group constants, (T), 22:48419 (RCN-95)
transport equation for, existence and uniqueness of nonnegative eigen-functions of Boltzmann operator, (T) 22:32464
transport equation for, inner iteration convergence acceleration in discrete ordinates solutions of, (T), 22:32440
transport equation for, iterative method for fitting absorption cross sections to fixed-source, (T), 22:18096
transport equation for, moments solution of time-independent, (T), 22:37281(R) (NYO-72-191)
transport equation for, numerical method for solution of linear Boltzmann, (T), 22:24796
transport equation for, quantum-mechanical derivation of (T), 22:20425
transport equation for, solution for calculation of derivative functionals by Monte Carlo method, (T), 22:5712
transport equation for, solution using diffusion approximation with spherical harmonics method, (T), 22:24791 (TRG-Report-1568)
transport equation for, space-angle synthesis using tria functions with known spatial functions and unknown angular mixing functions, (T), 22:32434
transport equation for, time-dependent Green's function of, (T), 22:13912
transport equation for, truncation of spherical harmonic expansion of, (T), 22:1582
transport equation for, with isotropic one-term degenerate thermalization kernel, (T), 22:29857
transport equation in finite cylindrical geometry, computer program for solution using discrete S/sub n/ method, 22:15926 (TIM-847)
transport equation in P/sub L/ approximation with

anisotropic scattering for plane layers, computer program for numerical solution of, (T), 22:39546(T) (ORNL-tr-1952)
transport equation in S/sub infinity/ approximation for plane geometry with isotropic scattering, method solving, (T), 22:18093
transport equation in slab geometry, numerical integration of integral, (T), 22:37281(R) (NYO-72-191)
transport equation solutions by numerical methods, (T), 22:46702
transport equation solutions by Stabilized March Technique, one-dimensional one-velocity, (T), 22:46704
transport equation using one-collision operator for delayed neutrons, two-time doublet, (T), 22:44585
transport equation with anisotropic scattering for slab geometry, solution of, (T), 22:41922
transport equation with anisotropic scattering in spherical geometry for monoenergetic, eigenvalues for, (T), 22:29848
transport equation with anisotropic scattering, solution for Milne problem, (T), 22:3595
transport equation with fission and slowing-down kernels, solution to Milne problem for, 22:30374
transport equation with isotropic scattering cast in form for numerical calculations, two-group one-dimensional, 22:46707
transport equation with proton gas model of scattering, time and space eigenvalues of, (T), 22:41927
transport equations for homogeneous medium, solutions of energy- and time-dependent, (T), 22:50514
transport equations for mono-energetic, eigenfunction expansions for space-time-dependent, (T), 22:39553 (RT/FI-(68)14)
transport equations for monoenergetic, solution for two-region spheres using method of singular integral equations, (T), 22:41937
transport equations for multiplying media, solution of time-dependent, (T), 22:50515
transport equations for multiplying slabs solved by Laplace transformation, (T), 22:44598
transport equations for reactors, solution by transformation of integrodifferential form into singular integral equation for, 22:3932 (TID-24099)
transport equations for slab geometry, solution by direct integration with discrete ordinates method, (T), 22:44589
transport equations for weapons shielding calculations, methods for solving, (T), 22:32424 (DASA-1892-3)
transport equations for, Benchmark Problem Book for solutions of, (T), 22:46693 (ANL-7416)
transport equations for, complementary variational principles for solving, (T), 22:35202
transport equations for, computer program for discrete-ordinates solution of two-dimensional, (T), 22:53065 (ANL-7426)
transport equations for, Green function formulation of source term for, (T), 22:50512
transport equations for, integral formulation of multigroup, (T), 22:29841
transport equations for, solution for albedo and Milne problems using Case method, (T), 22:18092
transport equations for, solution for half-space problems, (T), 22:50511
transport equations for, solution using discrete ordinates S/sub n/ method, (T), 22:22524 (ORNL-RSIC-19)
transport equations for, techniques for solution to, 22:14172
transport equations for, use of quadrature for solving directly the singular integral form of one-velocity, 22:33141
transport equations for, use of reflection-transmission matrix methods for, 22:33140
transport equations for, use of variational principles with arbitrary adjoint source for solution to monoenergetic Boltzmann, 22:33139
transport equations in slab geometry, MS/sub n/ and double MS/sub n/ methods for solving, (T), 22:48439
transport equations with degenerate scattering indicatrices, method for solving multigroup, 22:20420(T) (JPRS-43682, pp 150-64)
transport equations with degenerate scattering indicatrices, methods for solving, (T), 22:29860
transport equations with delayed, analysis of initial value problem for, 22:33130
transport in a homogeneous slab, j/sub N/ multigroup calculations of, (T), 22:1560 (EUR-3620)
transport in air-over-ground geometry, Monte Carlo calculation of time-dependent, 22:50214 (ORNL-4289(Vol.2))
transport in air-over-ground geometry, time-dependent, (T), 22:31898
transport in arbitrary finite body, invariant imbedding as generalization of resolvent equation for, 22:20345
transport in cylindrical rods, (T), 22:7613 (ITEF-482)
transport in infinite, periodic, plane lattice of, perturbation method for calculating, (T), 22:20930 (AEEW-R-219)
transport in inhomogeneous media, numerical solution using a linear differential equation for scalar flux, 22:37622
transport in iron, (E/T), 22:5726
transport in plane and cylindrical geometry, Gegenbauer polynominal solutions of Boltzmann equation for, (T), 22:11880
transport in reactors, use of optimum biasing function for calculation of Monte Carlo, 22:6147
transport in shielding materials, accuracy of two-dimensional discrete ordinates code for calculation of, 22:36960 (K-DP-3106)
transport in shielding materials, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
transport in shielding, Monte Carlo program SOBER for complex geometries, 22:9408 (DAC-60659)
transport in shielding, use of Markov transition matrices to calculate time dependence of, 22:31899
transport in slab geometry, improved S/sub N/ calculations of, (T), 22:1588
transport in spherical assemblies, fundamental mode decay constant for, 22:20036
transport in spherical geometry, Green's function for one-speed, 22:29538
transport in the atmosphere, calculations for point sources at air-ground interface, 22:4281
transport in thin slabs, inverse albedo problem for, 22:50217
transport in two half-spaces, effects of anisotropic scattering on, (T), 22:32456
transport in variable density atmosphere and ground, computer program for, 22:39146 (UNC-5179)
transport kernals for a finite spherical region containing a central black zone, first-flight, (T), 22:44599
transport kernel for spherical geometry, calculation using first-flight collision probability method, (T), 22:13914
transport of solar, in Earth atmosphere, 22:31662 (ORNL-TM-2194)
transport of, research at Israel AEC, Jan.--Dec. 1967, 22:48806(R) (IA-1168)
transport problems for, analysis of variational formulation of S/sub N/ method for solution of, 22:39936
transport spectrum analysis for, model for time dependent, (T), 22:14296 (RPI-328-100, pp 140-87)
transport theory and nongrey radioactive transfer, equivalence of models in, 22:46301
transport theory calculations for reactor, polynomial flux approximations for integral, 22:6154
transport theory for calculating Doppler effect for systems with anisotropic scattering and nonuniform temperature distributions, (T), 22:7627
transport theory for coupled reactors, (T), 22:3599
transport theory for cylindrical and spherical geometry, double spherical harmonics approximation for, (T), 22:41938
transport theory for monoenergetic, effective source strength for anisotropic scattering in homogeneous infinite medium, (T), 22:48438
transport theory for monoenergetic, in slab geometry with anisotropic scattering, (T), 22:9767
transport theory for moving medium, (T), 22:35209
transport theory for multiplying assemblies, characterization of criticality for one-dimensional, (T), 22:32463
transport theory for plane geometry in P/sub L/ approximations, formalism using blackness theory, (T), 22:1561 (KAPL-P-3391)
transport theory for reactors, numerical solutions in terms of orthogonal series expansions for albedo operators for, 22:1789
transport theory for regions with steep flux gradients, diffusion approximation to, (T), 22:20424(T) (ORNL-tr-1849)
transport theory for slab geometry, albedo problem in, (T), 22:24795
transport theory for synthetic scattering kernel for, (T), 22:44578
transport theory for, calculation of anisotropic neutron flux using discrete S/sub n/ method, (T), 22:15935
transport theory for, coarse-graining of Hamiltonian for, (T), 22:35547
transport theory for, connection between absorption and anisotropic scattering in, (T), 22:11884
transport theory for, ergodic formalism for, (T), 22:37273 (AD-664026)
transport theory for, exact solution of Milne problem with general scattering law in, (T), 22:22263
transport theory for, formulation in Monte Carlo terms of, 22:3941
transport theory for, lectures on, (T), 22:20402 (AEEW-M-676)
transport theory for, method for solving Fredholm equations for initial-value problems in, (T), 22:53071
transport theory for, relation of variational principle to pseudoentropy production, (T), 22:7626
transport theory for, sequent correlations in evolutionary stochastic point processes in, 22:15712
transport theory in asymptotic P/sub N/ approximation, (T), 22:20427
transport theory in discrete ordinates approximations, ray effects in, (T), 22:32476

transport theory in P/sub N/ approximations for plane geometry, matrix formulation of blackness conditions for, (T), 22:41940
transport theory in plane geometry, eigenfunction expansion method in two-group, 22:35695
transport theory in plane geometry, semianalytical methods for, (T), 22:11883
transport theory of, discussion of quantum-mechanical derivation of Boltzmann equation for, (T), 22:46706
transport theory using invariant embedding, (T), 22:29858
transport theory with anisotropic scattering in double P/sub 1/ approximation, formulation using anisotropy functions, (T), 22:41934
transport theory with energy-dependent branching processes, (T), 22:35196 (EIR-133)
transport through ducts and cavities, modeling relationships in, 22:36958(R) (AD-663570)
transport, streaming through concrete ducts, (E/T), 22:31902
use for activation analysis of trace elements in animals, plants, and soils, 22:17049
use for determining ash content of carbon, 22:51272
use for radiographic visualization of wet tissues, evaluation of, 22:40759
use in crystal structure research, (E/T), 22:15921 (JUL-Conf-1(Suppl.))
use in crystal structure studies, (E/T), 22:15923 (JUL-CONF-1(Suppl.), Paper 3)
use of reactor, in medicine, 22:43364
use of resonance, in activation analysis, 22:6261
use to determine soil moisture, bibliography on, 22:42862
use to measure soil moisture, 22:23131 (CONF-680112-1)
uses in chemistry, 22:22955
uses in high-resolution radiography, 22:4373
uses in natural gas industry, review of, 22:25621
uses in radiography, 22:4369
uses in radiography, 22:4376
uses in studies of condensed matter, review of, (E/T), 22:1570
wave and pulse propagation in research reactors, experimental techniques for measuring, 22:32996
wave propagation experiments in polycrystalline media, elastic continuum in, (T), 22:32465
wave propagation in beryllium, calculations using multigroup diffusion theory, (T), 22:18094
wave propagation in finite systems, dispersion relation for, (T), 22:18080
wave propagation in graphite, diffusion approximation to Boltzmann equation for, (T), 22:48440
wave propagation in infinite medium, analysis using energy-dependent transport theory, (T), 22:41936
wave propagation in polycrystalline reactor moderators, velocity-dependent transport theory analysis of, (E/T), 22:35714
wave propagation in semi-infinite medium, analysis using invariant embedding, (T), 22:29858
wave propagation of, convergence of eigenfunction expansion for, (T), 22:48428
wave propagation problem for, convergence of eigenfunction expansion method for solution of, (T), 22:32446
wave propagation through interfaces, energy-dependent, (T), 22:32445
wavelength determination by diffraction from static and rotating single crystals of sodium chloride, (E), 22:46709
yield from 660-MeV protons on concrete, 22:34736
yields of accelerator sources, manganese bath activation detector for determining, 22:36037

NEUTRONS (anti n)
detection of 2- to 4-GeV/c, design and performance of scintillation detectors for, 22:372

NEUTRONS, COLD
(Neutrons of less velocity than thermal neutrons; at 15°C their energy is below 0.01 eV.)
book: Low-energy Neutron Physics, 22:50519
detection of, activation--scintillation techniques for, 22:12586
effects on liquids and solids, equipment for measurement of, 22:12122
energy-loss scattering experiments using time-of-flight method with research reactors, (T), 22:44594
filters for, effectiveness of polycrystalline and single crystal, 22:12144
production by filtering reactor spectra, techniques for, 22:7623
reactions with cadmium at 8 µeV, total cross section measurements by Doppler chopper method, (E), 22:53190
reactions with tantalum-181, cross sections for, 22:20561 (AHSB(S)R-141)
scattering by acetic acid, benzene, dioxane, ethylene glycol, naphthalene, and water, (E), 22:32429(T) (KFK-tr-235)
scattering by benzene and water, inelastic, (E/T), 22:29871
scattering by bismuth--gallium, bismuth--zinc, and gallium--lead alloys, temperature dependence of critical opalescence in, (E), 22:44595
scattering by bismuth-209 and lead at 0.4 to 1.3 MeV, cross sections for incoherent, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by carbon dioxide and carbon disulfide near critical point, coherent, (E), 22:32431 (KFKI-10/1968
scattering by cyclic hydrocarbons, rotating-crystal spectrometer for analysis of, 22:45329
scattering by defects in neutron-irradiated aluminum, (E), 22:31967
scattering by deuterium-substituted methane, (E), 22:24835(R) (BARC-305)
scattering by dysprosium-160, dysprosium-161, dysprosiu 162, dysprosium-163, and dysprosium-164 at 1.08A, amplitudes and cross sections for coherent, (E), 22:53211
scattering by gaseous ammonia and methane, inelastic, (E), 22:18086
scattering by graphite and nickel, small-angle, (E), 22:29850
scattering by ice and water, inelastic, (E), 22:35205
scattering by iron near Curie point, critical, (E), 22:22520 (CEA-R-3317)
scattering by iron near Curie temperature, inelastic, (E), 22:32430 (KFKI-8/1968)
scattering by iron, temperature dependence of small-angl critical magnetic, (E), 22:13918
scattering by liquid argon, temperature dependence of quasielastic, (E), 22:24785 (BNL-12372)
scattering by liquid bismuth--zinc alloys, critical inelastic, (E), 22:13896 (AERE-R-5627)
scattering by liquid gallium, cross section for, (E/T), 22:26780
scattering by liquid helium, inelastic, (E), 22:32512((AECL-3108)
scattering by liquid--gas systems near critical point, coherent, (E), 22:32431 (KFKI-10/1968)
scattering by magnetic and nonmagnetic materials, (T), 22:20428
scattering by molecules of the point group C/sub 3v/, cross sections for, (T), 22:48429
scattering by polycrystals of tin, inelastic, (E), 22:13923
scattering by potassium acid phosphates, quasi-elastic, (E), 22:7378
scattering from adsorbed molecules, (E), 22:1012
scattering from paramagnetic chromium halides, 22:13604
scattering inelastically on solid benzene at 77 to 298° (E), 22:5408 (IFA-FN-29)
spectroscopy of, improvement in time-of-flight technique for, (E), 22:26778
wave propagation in graphite, (T), 22:22532
wave propagation in graphite, effects of Bragg cut-off on, (E/T), 22:41928

NEUTRONS, DELAYED
(Neutrons emitted within several seconds following fission of a nucleus.)
abundances in fission reactions, comparison of calculate fission yields of neutron precursors with, (E/T), 22:29994
decay rates in NRX reactor, comparison of calculated an measured, 22:6081
detection and measurement of, use in control of nuclear materials, 22:6206 (LA-3741)
effective fraction of, in a uranium--water lattice, (E/T), 22:25104
effects on reactivity and control rod drop measurements in heavy water moderated assemblies, 22:27472
emission and precursors of, studies of, (E/T), 22:2994
emission from tellurium-134 following antimony-134 beta decay, (E), 22:5852
group-collapsing method for, description of, 22:39876 (CEA-R-3375)
monitoring for determination of fissionable material in fuel reprocessing steps, 22:12225 (ORNL-4135)
monitoring of, equipment design for operation in gamma field for, 22:12404 (ORNL-4094, pp 19-27)
production by deuterium (γ,n) reactions in heavy water reactors, (E), 22:24824
relative value in reactors, calculation of, (T), 22:32470
release from fuel cladding, detection system for, 22:10110(P)
transport equation using one-collision operator for, tw time doublet, (T), 22:44585
yields from neutron fission of thorium-232, uranium-235 and uranium-238 at 3 and 14 MeV, (E), 22:24859 (LA-D 9403)
yields from neutron fission of thorium-232, uranium-235 and uranium-238 at 3 and 14 MeV, absolute, (E), 22:32591

NEUTRONS, EPITHERMAL
(Neutrons of greater velocity than thermal neutrons; 15°C their energy is 0.1 to 100 eV.)
absorption at isolated resonances, (T), 22:44581
absorption by silver in reactor spectrum, cross section and resonance integral for, (E), 22:44745
absorption cross sections and resonance integrals for ytterbium-168, -170, -171, -172, -173, -174, and -176 (E), 22:20562 (BNL-12263)
absorption material for, description of multi-layer concentric cylinder, 22:14283(P)
activation analysis for boron-10 concentration in stainless steel, description of, 22:35682(P)

activation of iodine in thyroid gland of man, uniformity of, 22:15065
attenuation in shielding assemblies of BR-5 Reactor (USSR), analysis of, 22:18565
capture and fission cross sections for uranium-233, simultaneous measurements of, (E), 22:48558
capture by cobalt-59, activation cross sections for, (E), 22:50558 (AEEW-R-597)
capture by copper-63, copper-65, and iron-56, γ spectra from, (E), 22:35285(R) (AERE-PR/NP-13)
capture by erbium-167, average γ spectra from resonance, (E), 22:42049
capture by erbium-167, γ resonance, (E), 22:27087(R) (ANL-7405)
capture by gadolinium at 0 to 100 eV, cross section for, (E), 22:29830 (GA-8602)
capture by gadolinium-155 at 0.02 to 63 eV, γ spectra for resonance, (E), 22:46764 (IAE-1443)
capture by germanium-74, germanium-76, selenium-80, strontium-84, and zinc-68, isomeric cross-section ratios for, (E), 22:15977
capture by gold-197 and thulium-169, γ spectra from, (E), 22:3686 (BNL-11903)
capture by gold-197 and tungsten-186, measurements of γ spectra using liquid scintillator for resonance, (E), 22:48423 (RPI-328-133, pp 1-34)
capture by hafnium-177, molybdenum-95, molybdenum-96, palladium-105, ruthenium-99, and ruthenium-101, cross sections and resonance spin assignments for, (E), 22:48554
capture by iron-56, sodium-23, and thorium-232, γ spectra and radiative widths for, (E), 22:20498 (BNL-12268)
capture by manganese-55, indium-115, antimony-121, antimony-123, and lanthanum-139, resonance integrals for, (E), 22:46758
capture by niobium-93, resonance parameters and γ spectra for, (E), 22:53194
capture by plutonium-240, radiative widths for resonance, (E), 22:32598
capture by rhenium-185 and rhenium-187, cross sections and resonance parameters for, (E), 22:30014
capture by thorium-232 at 0.1 to 3.4 eV, cross section and resonance parameters for, (E), 22:35343
capture by thulium-169, partial radiative widths for, (E), 22:53206
capture by tin-118, p-wave, (E), 22:3686 (BNL-11903)
capture by tungsten-182, -183, -184, and -186, resonances in, (E), 22:22592 (RPI-328-112, pp 1-15)
capture by uranium-233 at 20 to 63 eV, cross section for, (E), 22:39652
capture by uranium-233, cross section for, (E), 22:29986 (ORNL-TM-2140)
capture by uranium-233, cross section for, (E), 22:20576 (ORNL-TM-2159)
capture by zirconium at 0.01 to 1.0 eV, cross section for, (E), 22:24853 (GA-8557)
capture cross section for uranium-238, measurement using time-of-flight method with nuclear explosion, (E), 22:22584 (LA-DC-9181)
capture of, use in research on nuclear parameters and reactions, (E), 22:3686 (BNL-11903)
capture rate in hafnium control rods, effects of new cross section data on, 22:33147
capture rates in MCR shield materials, determination of radiative, (E), 22:32928 (NDA-2143-9)
capture-to-fission ratio and fission integral for uranium-235, variation from 293 to 1100°K, (E/T), 22:5824
capture-to-fission ratio for plutonium-239, (E), 22:48423 (RPI-328-133, pp 1-34)
capture-to-fission ratio for plutonium-239, data evaluation for, (T), 22:53168 (JAERI-1162)
capture-to-fission ratio for plutonium-239, method for measuring, (E), 22:35345
capture-to-fission ratios for plutonium-239 and uranium-235, measurements using time-of-flight method, (E), 22:37364
capture-to-fission ratios for plutonium-239, plutonium-241, uranium-233, and uranium-235, resonance, 22:42016 (KAPL-P-3438)
capture-to-fission ratios for uranium-233 and -235, integral measurements of, (E), 22:5819 (WAPD-TM-613)
detection during well logging, design of scintillation detectors for, 22:40477
detection of, design of scintillation detector for, 22:38013(P)
distribution in uranium-fueled water-moderated lattice, analysis of, (E/T), 22:35592 (CNAEM-47)
dose rate equivalent measurement in Hungarian WWR-S reactor, 22:6130
dosimetry in human phantoms, Monte Carlo calculation of, 22:28456 (ORNL-P-3048)
dosimetry of, use of niobium-93 activation foils for, 22:28177 (FFN-74)
effects on chromosomes and fertility of Drosophila, 22:19315
effects on Shigella flexneri, protective effects of anoxia and glycerol against, 22:6929
fission yields from, measurements of absolute, 22:16316(R) (GEAP-5505)
flux angular components of, direct measurement of, (E), 22:5721
flux determinations in Harwell research reactors, 22:16264 (AERE-M-1870)
flux distribution measurements in Shippingport Pressurized-Water Reactor Core 2, 22:20824 (WAPD-MRP-123)
flux measurement in RA research reactor for bulk shield removal age-diffusion multigroup program, 22:12113
flux measurements in FRG, 22:3904(T) (ORNL-tr-1522)
flux measurements in radial and tangential test facilities of ZR-3, 22:18605
flux measurements in research reactors, dosimetry methods for, 22:12110
flux measurements of KIWI-Transient Nuclear Test effluent, analysis of, 22:39849 (LA-3449)
fluxes of, activation resonance integrals and self-shielding factors for measuring, (E), 22:16011 (JUL-503-RX)
measurement of Swedish Reactor (R-3) primary shielding for, analysis of, (E/T), 22:44805 (AE-325)
multigroup analysis of one-dimensional P-1 group equations, PIGG computer program for, 22:48752 (KR-129)
reactions (n,α) with samarium-147, α spectra from resonance, (E), 22:32659
reactions (n,f) and (n,γ) with plutonium-239 and uranium-235, cross sections and resonance integrals for, (E), 22:42011(T) (BNL-tr-219)
reactions (n,f) with plutonium-239 near 83 eV, cross-section analysis using multilevel formalism, (T), 22:30012
reactions (n,f) with plutonium-239, cross section and resonance parameters for, (E), 22:24863(T) (BNL-tr-197)
reactions (n,f) with uranium-232 at 5 to 1900 eV, cross section for, (E), 22:27105
reactions (n,f) with uranium-233 at 20 to 63 eV, cross section for, (E), 22:39652
reactions (n,f) with uranium-233, cross section for, (E), 22:20576 (ORNL-TM-2159)
reactions (n,f) with uranium-233, cross section for, (E), 22:29986 (ORNL-TM-2140)
reactions (n,f) with uranium-235 at 0.2 to 20 eV, fission-fragment kinetic energy in resonance, (E), 22:39672
reactions (n,f) with uranium-235, cross section and resonance parameters for, (E), 22:30005
reactions (n,f) with uranium-235, ratio of binary to ternary fission in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,γ) with nuclei, gamma spectra from, (E), 22:5830
reactions with arsenic-75, copper-63, gold-197, manganese-55, sodium-23, and tungsten-186, activation resonance integrals and self-shielding factors, (E), 22:16011 (JUL-503-RX)
reactions with biological tissues, group division on basis of, 22:48433
reactions with cadmium-shielded indium, corrections for activation, 22:33652
reactions with erbium isotopes and ytterbium isotopes, resonance parameters for, (E), 22:37281(R) (NYO-72-191)
reactions with erbium isotopes, resonance parameters for, (E), 22:24868
reactions with gadolinium isotopes, resonance parameters for, (E), 22:42014 (JINR-P3-3882)
reactions with gadolinium-155 and gadolinium-157, resonance parameters for, (E), 22:29830 (GA-8602)
reactions with $I = {}^1/_2$ and ${}^3/_2$ nuclei, s-wave resonance parameters for, (E/T), 22:53166 (CEA-R-3385)
reactions with neptunium-237 at 10 to 100 eV, resonance parameters for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with plutonium-239 at 0 to 440 eV, total cross section and resonance parameters for, (E), 22:24863(T) (BNL-tr-197)
reactions with plutonium-240, -241, and -242, cross sections, resonance parameters, and fission parameters for, 22:22578 (IA-1152)
reactions with plutonium-240, total cross section and resonance parameters for, (E), 22:32597
reactions with rhenium-185 and rhenium-187 at 0.01 to 100 eV, total cross sections for, (E), 22:30014
reactions with samarium-149 and thulium-169, resolution corrections to resonance parameters for, (E/T), 22:41917 (CNAEM-51)
reactions with tantalum-181, cross sections for, 22:20561 (AHSB(S)R-141)
reactions with tantalum-181, total cross section and strength function for, (E), 22:37372
reactions with thorium-230, total cross section for, (E), 22:37342 (ITEF-546)
reactions with tungsten at 27 eV, resonance parameters for, (E), 22:22607
reactions with uranium carbides at 0.1 eV, total cross section for, (E), 22:39541(R) (GA-8626)
reactions with uranium-233, cross sections and resonance parameters for, 22:24861 (WANL-TME-1721)
reactions with uranium-235 at 1 to 40 eV, resonance spins for, (E), 22:29992
reactions with uranium-238, p-wave resonance parameters for, (E), 22:42036
reactions with ytterbium-170, -171, -172, -173, -174, and

-176, total cross sections for, (E), 22:20562 (BNL-12263)
resonance absorption in heterogeneous systems, calculation of materials constants for, 22:44901 (UJV-2010)
resonance absorption of uranium-238, flat-flux approximation for, 22:18607
resonance escape probabilities for, comparison of analyses of, 22:3813(R) (AI-CE-54)
resonance parameters of, shape-analysis method for determining, 22:6628
scattering by beryllium oxide at 0.134, 0.165, and 0.257 eV, doubly differential cross sections for, (E), 22:22522 (GA-8283)
scattering by dysprosium, holmium-165, and lutetium, time-of-flight measurements of total cross sections for, (E), 22:35340
scattering by erbium-162, -164, -166, -167, -168, and -170, cross-section measurements using time-of-flight method, (E), 22:35339
scattering by heavy water at 0.15 to 0.65 eV, doubly differential cross sections for, (E), 22:22522 (GA-8283)
scattering by impurity-bearing ferromagnetic materials, differential cross sections for inelastic, (T), 22:24789 (ITF-67-45)
scattering by lead and zirconium, cross sections for, 22:24862 (WANL-TME-1746)
scattering by liquid, solid, and heavy water, inelastic, (E), 22:26199 (BNWL-SA-1535)
scattering by niobium hydrides, thallium hydrides, titantium hydrides, and zirconium hydrides at 0.1 to 1.0 eV, cross sections for inelastic, (E), 22:53076
scattering by oriented polyethylene at 0.234 eV, doubly differential cross sections for inelastic, (E), 22:22528 (RPI-328-112, pp 104-19)
scattering by plutonium-241, uranium-233, and uranium-235 at 1 to 30 eV, cross sections for, (E), 22:53193
scattering by polyethylene at 0.1 to 1 eV, differential cross sections for inelastic, (E), 22:5709 (RPI-328-102)
scattering by tungsten at 10 to 300 eV, cross section for, (E), 22:22607
scattering by uranium carbide at 0.134 eV, doubly differential cross section for, (E), 22:32438
scattering by water at 0.304 eV, cross sections for inelastic, (E), 22:20779 (BNWL-624, pp 3.1-159)
scattering by water at 200°C, doubly differential cross sections for inelastic, (E), 22:22528 (RPI-328-112, pp 104-19)
scattering cross sections for molecules of nitrogen at room temperature, (T), 22:29869
scattering cross sections for, bright line technique for measuring, 22:2406
scattering in reactor-grade graphite of .611 eV, analysis of, 22:35717
scattering law for beryllium oxide at 300°K, (E), 22:22522 (GA-8283)
scattering law for reactor-grade graphite, (E/T), 22:22522 (GA-8283)
shielding for, testing of various materials for, 22:7925
slowing down in lead, measurements using pulsed source technique, (E), 22:29892
spectra in cadmium-bearing heavy water, space-dependent, (E/T), 22:29875
spectra in graphite, time-dependent, (E), 22:29892
spectra in heterogeneous highly-enriched-fuel reactors, variational and Bubnov-Galerkin synthesis of spatially dependent, 22:35722
spectra in natural uranium--heavy water lattices, (E/T), 22:30336
spectra in two-dimensional homogeneous reactor cells, (T), 22:29853
spectra indices for ORGEL-type fuel clusters, 22:16145 (EUR-3736)
spectra measurements in depleted borated polyethylene and uranium slabs for 0.001 keV to 2 keV, analysis of time-of-flight method for, (E/T), 22:39930
spectra of, magnetic analysis of recoil protons for determining, 22:6652 (ORNL-4168, pp 183-230)
spectra of, use of activation detectors for measuring, 22:8348
spectral indices in uniform heavy water lattices, (E/T), 22:14270
spectral measurements in uranium oxide (UO_2)--water lattices, use of lutetium and copper foils for, 22:1868
spectral measurements using cadmium-difference method, (E), 22:20426
use for radioisotope production in control rods,, 22:25176(P)
use in method for determination of soil density and water content, 22:23144
NEUTRONS, FAST
(Neutrons of energy 100 kev and up.)
see also Neutrons, Fission
absorption cross sections for 1- to 100-keV, scandium-filtered beam apparatus for measuring, 22:26766
absorption cross sections for gold-197 and silver, measurement using self-indication method, (E), 22:20578 (WASH-1079)
absorption cross sections for lithium and lithium-6 at 1 to 100 keV, (E), 22:5809(R) (ANL-7354)
absorption cross sections for Z = 24 to 94 nuclei at 24 keV, measurement using transmission method in spherica geometry, (E), 22:18288
absorption material for, description of multi-layer concentric cylinder, 22:14283(P)
activation of iodine in thyroid gland of man, uniformity of, 22:15065
ages in water and tungsten--water mixtures, from d--D ar d--T sources, (E/T), 22:48417 (N-68-25058)
angular distribution of, from Phillips Neutron Generato PW 5300, 22:35210
angular distribution, energy, and yield from alpha, deuteron, and proton reactions with lithium, 22:20387
attenuation calculations in rocket reactor shields, KAP-point kernel code for, 22:39854(R) (N-68-13504)
attenuation in nonhydrogenous--thin hydrogenous shields, (T), 22:31908
attenuation in uniform media, calculations using solutic of inhomogeneous multigroup transport equation by Fourier transform method, (T), 22:26761 (NIJS-R-520)
attenuation in water and aluminum-water slabs, (E), 22:32447
capture by A = 41 to 176 nuclei at 0.1 to 3 MeV, cross sections for, (E), 22:32596
capture by A = 70 to 170 nuclei above 1 MeV, statistical analysis of cross sections for, (T), 22:46749
capture by aluminum-27, fluorine-19, iron, lead, magnesium, nickel, and sulfur, resonances in, (E), 22:27068
capture by aluminum-27, iron, nickel, and sodium-23 at 1 to 200 keV, resonance widths for, (E), 22:42004
capture by aluminum-27, iron, nickel, and sodium-23, resonance parameters and radiative widths for, (E), 22:44627 (TID-24601)
capture by americium-241 at 0.2 to 7.2 MeV, production c spontaneously fissioning isomeric americium-242 by, (E), 22:7691 (JINR-E15-3573)
capture by americium-241 at 0.25 to 7 MeV, measurement c excitation function using lithium-7 (p,n) reactions, (E), 22:37347
capture by antimony-121, antimony-123, tin-122, and tin-124 at 0.3 to 2.7 MeV, cross sections for, (E), 22:48535
capture by barium, barium-131, barium-132, and barium-135, γ spectra from resonance, (E), 22:27161
capture by barium-138, lanthanum-139, and praseodymium-141 at 14 MeV, activation cross sections for, (E), 22:9889
capture by calcium-40 and silicon-28 at 14 MeV, γ spectr from, (E), 22:5787 (NIJS-R-505)
capture by calcium-40, chromium-52, iron-56, silicon-28, and sulfur-32 at 14 MeV, giant dipole resonance in, (E/T), 22:35251 (NIJS-P-213)
capture by cesium-133, hafnium, molybdenum, niobium-93, rhenium, tantalum, and tungsten at 10 to 150 keV, cros sections for, (E), 22:35346
capture by fission products, cross sections for, (T), 22:37340(R) (EANDC(E)-89(U))
capture by fission products, statistical method of calculating cross sections for, (T), 22:50606
capture by gold, cross section for, 22:37340(R) (EANDC(E)-89(U))
capture by gold-197 and uranium-238 at 25 to 500 keV, cross sections for, (E), 22:35346
capture by holmium-165, indium-115, manganese-55, and sodium-23 at 1 to 20 MeV, activation cross sections for, (E), 22:3743
capture by indium-113 at 0.36 to 1.02 MeV, activation cross sections for, (E), 22:14039
capture by indium-115 at 0.36 to 1.02 MeV, activation cross section for, (E), 22:14039
capture by iron-56, sodium-23, and thorium-232, γ spect and radiative widths for, (E), 22:20498 (BNL-12268)
capture by medium-weight and heavy nuclei, research program on, (E/T), 22:39606(T) (LA-tr-68-18)
capture by reactor materials, cross-section measurement program on, (E), 22:53165 (ANL-7425, pp 190-2)
capture by rubidium-85, vanadium-51, and yttrium-89, cross sections for, (E), 22:37312 (ANL-7450, pp 105-
capture by rubidium-87, strontium-84, strontium-86, and yttrium-89, cross sections for, (E), 22:27086 (ANL-7375, pp 176-7)
capture by selenium-80, isomeric cross-section ratios for, (E), 22:32560
capture by uranium-238 at 25 to 500 keV, cross section for, (E), 22:37373
capture by uranium-238 in fast critical assembly, measurements on Doppler effect in, (E), 22:32562 (AE-314)
capture by uranium-238 in reactor spectrum, Doppler effect for, (E), 22:3706
capture cross sections and strength functions for A = 9 to 197 nuclei, (E), 22:37340(R) (EANDC(E)-89(U))
capture cross sections for A = 27 to 197 nuclei at 3 Me (E), 22:3683
capture cross sections for antimony, cadmium, chromium, indium, lead, manganese, nickel, niobium, and silver 5 to 100 keV, (E), 22:11948(R) (NP-17216)
capture cross sections for cesium, hafnium, molybdenum, niobium-93, rhenium, tantalum, and tungsten at 10 to

150 keV, (E), 22:3687 (EURFNR-404)
capture cross sections for fast reactor materials, measurement program for, (E), 22:27086 (ANL-7375, pp 176-7)
capture cross sections for gold-197 and uranium-238 at 25 to 500 keV, (E), 22:3687 (EURFNR-404)
capture cross sections for holmium-165, indium-115, manganese-55, and sodium-23 at 1 to 20 MeV, (E), 22:3674
capture rates for tantalum, tungsten, and uranium-238 at 0.2 to 30 keV, temperature-dependent, (E), 22:5811 (EURFNR-400)
capture-to-fission ratio for plutonium-239 in PCTR spectrum, integral measurements of, (E), 22:35288 (BNWL-774)
capture-to-fission ratios for plutonium-239, plutonium-240, plutonium-242, uranium-233, uranium-235, and uranium-238 as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
decay constants in nonmultiplying spheres of depleted uranium, (E), 22:24787 (GA-8536)
decay measurements in uranium-238 exponential piles, 22:33016
design of shielding for protection against therapeutic doses of, 22:8551
detection and measurement of cosmic-ray-produced, equipment for, 22:2425
detection and measurement of, design of proton-recoil telescope for, 22:39586
detection in intense transient gamma fields, detectors for, 22:43053
detection of 10- to 70-MeV, efficiency of plastic scintillator for, 22:6604
detection of 100-eV to 10-MeV, design of plastic scintillation system for, 22:14748 (GA-8184)
detection of 2.7- and 14.5-MeV, efficiency of NE-213 organic scintillator for, 22:23295
detection of, continuous flow manganese bath system for, 22:7788(R) (ANL-7382)
detection of, description of organic scintillation detector with gamma discrimination for, 22:36053
detection of, design and performance of phosphorus-diffused silicon diode for, 22:314
detection of, design and performance of proportional detectors for, 22:19112
detection of, design of paraffin-moderated boron trifluoride proportional detectors for, 22:33656(P)
detection of, dissertation summary of research on, (E), 22:44588
detection of, effects of double scattering on efficiency of stilbene scintillators for, 22:43058
detection of, efficiency of thallium-activated sodium iodide scintillator for, 22:40382
detection of, geometrically designed moderator with boron trifluoride proportional detector for, 22:23299
detection of, performance of iron activation integrator for, 22:23268 (UJV-1885)
detection of, proton-recoil detector using plastic scatterer for, 22:43068
detection of, pulse-height distribution of recoil proton in organic scintillators used for, 22:14815
detection of, response function calculations for polyethylene-moderated boron carbide fission chambers for, 22:4436
detection of, response of plastic phosphors for, 22:2407
detection of, use of thin polyethylene proton radiator with silicon detector for, 22:12587
detection using boron carbide-shielded sodium iodide, 22:22526 (RPI-328-112, pp 16-59)
detection using large scintillators, research on, (E), 22:37340(R) (EANDC(E)-89(U))
determination of amount of, in fission spectrum, (E), 22:50620
dose albedo on concrete, metals and soil, 22:4394
dose distribution in cylindrical tissue-equivalent phantom irradiated with slant beams of, 22:6652 (ORNL-4168, pp 183-230)
dose distribution of, use of tissue-equivalent proportional counter for measuring LET, 22:38054
dose distributions in liquid nitrogen, from 14-MeV source, (E), 22:26759 (GA-8485)
dose measurement in Phoebus 1B, effects of 360° open-well shield on, 22:48722 (LA-3746)
dose rate and quality factor distribution in tissue-equivalent phantoms at energies up to 700 MeV, 22:14823(T) (LA-tr-68-8)
dose rate determination using polonium-beryllium source, 22:40663 (LA-DC-9418)
dose rate equivalent measurement in Hungarian WWR-S reactor, 22:6130
dose rate in concrete ducts, albedo calculations for, 22:1288 (ORNL-4147)
dose rates in concretes, polyethylene, and water from point sources of californium-252 and uranium-235, (T), 22:29839
dose to roots of potted plants, 22:31080
dose to tissues, calculation of buildup of, 22:38315
dose transmission of 14-MeV, by concrete, 22:13530
doses and spectra from slab shields, angle-dependent, (E), 22:32442
dosimetry at 0.36 to 22.5 MeV, design and performance of silicon detectors for, 22:373 (AD-648642)
dosimetry at bone-tissue interface, 22:38314
dosimetry by nuclear track registration in solid material, personnel, 22:49348
dosimetry for corn embryos, effects of scattering on monoenergetic, 22:49326 (NYO-2740-5, pp 6-200)
dosimetry in fast reactors, efficiency of foil activation techniques for, 22:48746
dosimetry in forest trees, 22:6772 (ORNL-4168, pp 61-118)
dosimetry in human phantoms, Monte Carlo calculation of, 22:28456 (ORNL-P-3048)
dosimetry in man following criticality accident, use of content of copper-64, gold-198, manganese-56, and sodium-24 in silver film badge shield and personal effects for, 22:23504 (HW-76823)
dosimetry in man following criticality accident, use of radiochemical analysis of biological samples for, 22:23504 (HW-76823)
dosimetry in mixed radiations, photographic film using multiple filters for, 22:19173(P)
dosimetry in relation to production of tumors in rats, 22:38483
dosimetry of 0.3- to 16-MeV, proton-recoil proportional detector with multiple radiators for, 22:45274 (BARC-330)
dosimetry of 14-MeV, for operation HENRE, 22:6652 (ORNL-4168, pp 183-230)
dosimetry of californium-252, using silicon diodes and activation foils, 22:43109 (TID-24609)
dosimetry of, design and performance of dosimeter for personnel, 22:43108 (IFA-PN-19)
dosimetry of, design and performance of proportional detectors for, 22:19112
dosimetry of, design of silicon diode for, 22:36113(P)
dosimetry of, development of silicon detectors for personnel, 22:38099 (CONF-670545, pp 217-27)
dosimetry of, effects of β, γ, and x radiation on performance of Kodak type A film for, 22:51266
dosimetry of, isochronal and isothermal annealing of radiation damage in silicon detectors for, 22:33666 (AD-661323)
dosimetry of, performance of thermoluminescent dosimeters for, 22:23533
dosimetry of, use of Kodak NTA photographic film for personnel, 22:16917
dosimetry of, use of nuclear emulsions for personnel, 22:38100 (KFKI-12/1968)
dosimetry of, use of photographic film dosimeters for, 22:6653 (RT/PROT-(67)12)
dosimetry of, use of rhodium-103 activation for, 22:6652 (ORNL-4168, pp 183-230)
dosimetry of, use of synthetic hydrophilic polymers for preparation of nuclear emulsions for, 22:16911
dosimetry using nonphotographic nuclear track registration, personnel, 22:21361
dosimetry using nuclear emulsions, 22:21530
dosimetry using tissue-equivalent ionization chamber, 22:498(T) (NP-tr-1575)
effects at 1350°F on tensile properties of Hastelloy X 280, Inconel X750, and Inconel-600, 22:31414 (BNWL-532, pp 12.1-88)
effects at 290°C on tensile properties of types 304 and 348 stainless steels, 22:31414 (BNWL-532, pp 12.1-88)
effects at 705°C on creep-rupture and tensile properties of aluminum--chromium--iron alloys, 22:31418 (BNWL-532, pp 10.1-26)
effects at cryogenic temperatures on aluminum--titanium--tin alloys, 22:19604
effects in presence of hydrogen at 650 to 775°F, on mechanical properties of Zircaloy-4, 22:4825
effects of 14.6-MeV, on heavy- and light-water ferrous sulfate solutions, ferric ion yields in, 22:2429
effects of pre-exposure doses of, on graphite reactions with sodium at 600°C, 22:52300
effects on 220 reflection by silicon plane crystals, (E), 22:34788
effects on aging of petroleum oils in contact with structural materials, 22:14524
effects on aluminum and beryllium core components in ORR, 22:24991
effects on aluminum oxide, 22:26094 (ORNL-4229, pp 142-5)
effects on aluminum--lithium alloys, annealing at 78 to 340°K of defects produced by, (E), 22:28865
effects on animals, 22:16997
effects on annealing of Permalloy, 22:36510(R) (EURAEC-2037)
effects on anthocyanin pigments of Coleus and Poinsettia, mutagenic, 22:40952 (ORO-657, pp 93-120)
effects on ASTM A302-B steel, research program on, 22:19584 (GA-8064)
effects on austenitic, ferritic, and martensitic stainless steels, 22:19601
effects on bacteria, effects of LET and oxygen enhancement ratio on, 22:6928
effects on barley plants, effects of seed exposure on mutagenic, 22:21490
effects on barley plants, protective effects of ethylenimine treatment of seeds against mutagenic,

22:40772
effects on barley seeds, comparison of mutagenic, to EMS, γ, and x, 22:51498
effects on barley seeds, RBE for, 22:31279
effects on barley, effects of ethylenimine on mutagenic, 22:19320
effects on barley, effects of temperature on mutagenic, 22:19321
effects on beryllium diffusion in beryllium oxides, 22:8797
effects on beryllium in BR-2 in-pile loop, 22:1856 (EUR-3626)
effects on beryllium oxides, at high temperatures, dislocation loops from, (E), 22:13550
effects on beryllium, electron microscopic study of helium bubbles formed in, (E), 22:28878
effects on biological systems, mechanisms for, 22:40822(T) (JPRS-44070, pp 1-9)
effects on bone marrow of mice and rats, 22:40844
effects on bone-tissue interface, use of polythene phantom to study, 22:516
effects on bowing of aluminum--cadmium shim safety rods in ORR, 22:24991
effects on brittleness of A302B pressure vessel steel, analysis of, 22:53345
effects on brittleness of iron, effects of composition on, (E), 22:28874
effects on brittleness of steels and nickel alloys, 22:7027
effects on calcium and strontium oxide single crystals, F centers from, (E), 22:17770
effects on calcium tungstates, oxygen vacancies from, (E), 22:29553
effects on calibration of Alumel/Chromel thermocouples, measurement of, 22:33161
effects on carbon-containing molybdenum, annealing of, 22:43615(R) (BNWL-710)
effects on cathodic hydrogen charging of steel, 22:43618 (IN-1200)
effects on ceramic thermionic fuel rods of, description of EBR-2 assembly for measuring, 22:25090 (LA-DC-9025)
effects on chlorophyll of barley plants, RBE for latent mutagenic, 22:43296
effects on chromosomes and fertility of Drosophila, 22:19315
effects on chromosomes and survival of potato seedlings in comparison to γ radiation, 22:19317
effects on chromosomes in bone marrow and spermatogonia of mice, RBE for aberrant, 22:21478
effects on chromosomes in cultured human lymphocytes, determination of dose effects and RBE for aberrant, 22:28431
effects on chromosomes in Drosophila gametes, aberrant, 22:21483
effects on chromosomes in sperm of mice, persistence of, in embryo fibroblast cultures, 22:17038
effects on chromosomes in wheat seed, aberrant, 22:482
effects on chromosomes of barley, effects of oxygen abundance and temperature on repair of, 22:14984
effects on chromosomes of Crepis capillaris, RBE for aberrant, 22:21488
effects on chromosomes of Tradescantia microspores, effects of dose on aberrant, 22:12830
effects on chromosomes of Vicia faba following seed exposure, combined effects of FUDR on aberrant, 22:21466
effects on chromosomes of wheat seeds, comparison of aberrant, to EMS and γ, 22:51500
effects on chrysoberyl, 22:19679
effects on ciliary body in rabbit eyes, electron microscopy of, 22:49595
effects on coercive force in annealed molybdenum Permalloy, (E), 22:13547
effects on compressive deformation of niobium single crystals, 22:31430 (ORNL-4246, pp 75-83)
effects on conditioned reflexes of mice, 22:12754(T) (NASA-TT-F-413, pp 146-57)
effects on conditioned reflexes of mice, 22:12753(T) (NASA-TT-F-413, pp 130-45)
effects on conditioned reflexes of rats, comparison of, with γ and protons, 22:12755(T) (NASA-TT-F-413, pp 158-74)
effects on copper crystals, x-ray diffraction study of, 22:22215
effects on corn plants, effects of seed exposure on, 22:33980
effects on corn, RBE for cytogenetic, 22:12838
effects on corrosion of Zircaloy-2 by steam at 360 and 400°C, 22:34084(T) (WAPD-Trans-87)
effects on corrosion of Zircaloy-2 by water vapor at 350°C, 22:26026 (CEA-N-616, pp 106-44)
effects on creep and tensile properties of iron-base 1541 alloy, 22:43615(R) (BNWL-710)
effects on creep stages of Incoloy 800, 22:31436
effects on creep-rupture and delayed creep of molybdenum and tungsten at 700 and 1100°C, analysis of, 22:31418 (BNWL-532, pp 10.1-26)
effects on creep-rupture of rhenium--tungsten alloys, 22:19603
effects on crystal structure of pure platinum, 22:2663 (CU-3551-7)
effects on crystallization of amorphous films of germanium and tantalum oxide, 22:33446
effects on cultured cells, normal tissues, and tumors of mammals, 22:40869
effects on cultured kidney cells, comparison of acute, t charged particles, 22:49617
effects on cyclic deformation of single-crystal copper, 22:28852
effects on defect clusters in gold at 0.5 to 100 MeV, 22:21739
effects on defect clusters in pure molybdenum, 22:52212 (BNWL-846)
effects on defect production in lithium-doped zinc oxide at 80 to 330°K, (E), 22:17731
effects on defects in aluminum, relations of additive metals with anneal-recovery from, 22:43624
effects on deformation and tensile properties of Ferrova iron, 22:38510 (BNL-50082, pp 93-152)
effects on deformation of single-crystal niobium, 22:43615(R) (BNWL-710)
effects on density of pyrolytic carbon, 22:19674
effects on dimension of Fort St. Vrain Power Reactor boronated graphite control elements, measurement of, 22:48644 (GAMD-8619)
effects on dimensional changes in carbons and graphites, 22:28967
effects on dimensional stability of graphite, 22:36551 (BNWL-740)
effects on dimensional stability of rhenium monocrystals 22:28850
effects on dislocation density in silicon, 22:37032
effects on dislocation halos in boron-10-doped Hastelloy R-235, 22:8787 (GEMP-563)
effects on DNAase content of urine of rats, diagnostic value of, 22:33919
effects on ductility of A-212-B steel, tensile and notch impact studies of, 22:31422 (ORNL-4246, pp 6-27)
effects on ductility of A533 steel, at 2.3 x 10^{19} flux and 550°F, 22:31417 (BNWL-532, pp 9.1-23)
effects on ductility of chromium--molybdenum--nickel--vanadium steel, 22:31417 (BNWL-532, pp 9.1-23)
effects on ductility of chromium--molybdenum--nickel steel, 22:31417 (BNWL-532, pp 9.1-23)
effects on ductility of steel, analysis of, 22:42338
effects on durum wheat, mutagenic, 22:40619 (RT/BIO-(68)20)
effects on efficiency of silicon mesa diodes, 22:49173
effects on electric and photoelectric properties of monocrystals of p-type silicon, 22:16618
effects on electric conductivity and photoconductivity o selenium single crystals as function of temperature, (E), 22:37046
effects on electric conductivity of molybdenum, annealin of 4°K, 22:43626
effects on electric conductivity of pure molybdenum, 22:52210 (BNWL-844)
effects on electric properties of aluminum oxides, (E), 22:39157 (N-68-13368)
effects on electric properties of n-type indium arsenides, 22:15638
effects on electric resistivity and Hall mobility of cadmium sulfide single crystals, (E), 22:41683
effects on embrittlement of ferrite steel pressure vessels, 22:52225
effects on embrittlement of maraging steel, 22:31435
effects on embrittlement of stainless steel, 22:45792 (BNWL-SA-1996)
effects on energy storage by graphite, 22:28960 (BNL-10306)
effects on eyes of mice, effects of dose on cataractogenic, 22:12924
effects on fatigue and tensile properties of type 347 stainless steel, 22:49775
effects on formation of integral pores in nickel foil, 22:52214 (BNWL-SA-1768(Rev.))
effects on frequency of anaphase chromosome aberrations in liver of mice, effects of dose on, 22:31049
effects on FTR driver fuel elements, measurement of, 22:30299 (BNWL-SA-1750)
effects on fuel elements for sodium-cooled fast ceramic reactor, 22:7808(R) (GEAP-5522)
effects on fuel jacket materials, 22:647(R) (BNL-50077)
effects on gastrointestinal tract of mice in comparison to x, 22:40935
effects on germanium and silicon, use of anomalous x-ray transmission for detection of, 22:46206
effects on germanium hydride, yields of germanium-75-labeled products in, 22:48874(R) (COO-1713-5)
effects on germanium single crystals, small-angle x-ray scattering study of spike damage produced in, 22:4819
effects on germanium, temperature dependence of defects from, (E), 22:13546
effects on germination of deciduous tree seeds, combined effects of γ radiation on, 22:28714
effects on graphite in BR-2 in-pile loop, 22:1856 (EUR-3626)
effects on gross volume gain of monocarbides of niobium, tantalum, titanium, tungsten, and zirconium, 22:48788
effects on growth of cottonwood clones, 22:6772 (ORNL-4168, pp 61-118)
effects on growth of graphite, comparison of bromination changes to, 22:778

effects on hair color and organ weight of swine, unilateral, 22:38427(R) (ORO-659)
effects on hardening of austenitic stainless steel, 22:36519
effects on hardening of iron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
effects on hardness and strength of niobium at 300 and 600°C, 22:31432
effects on hardness and strength of niobium—zirconium alloys at 300 and 600°C, 22:31432
effects on hardness of copper and copper alloys, 22:43623
effects on hardness of pure molybdenum, 22:52213 (BNWL-847)
effects on Hastelloy C at cryogenic temperatures, 22:19604
effects on Hastelloy X, Inconel 120, and stainless steel, 22:13036 (BNWL-473, pp 7.1-71)
effects on heat resisting alloys and metals, 22:19578 (BNWL-455, Paper 10.1-40)
effects on helium bubble production and creep in A-286 iron alloy, 22:4836
effects on hematopoiesis in mice, effects of splenectomy or thymectomy on, 22:38466
effects on hematopoietic system of rabbits and rats, RBE for, in comparison to β and x, 22:40822(T) (JPRS-44070, pp 1-9)
effects on human leukocytes following accidental exposure, combined effects of γ rays on cytogenetic, 22:40645
effects on hydrocarbons, estimates of LET in, 22:27807
effects on impact properties of steel, 22:52127(R) (RISO-179)
effects on impact strength of Uddeholm UHB 2103/R3 steel, 22:47692
effects on Incoloy 800, 22:19597
effects on Inconel X-750 and 713°C at cryogenic temperatures, 22:19604
effects on induced radioactivity of transplants following radiosterilization of tissue, 22:8666
effects on initiation of boiling in sodium, 22:52227
effects on insulating oxide ceramics, literature survey, 22:36553 (N-68-17095)
effects on iron alloys, reactions of carbon and nitrogen with defects from, 22:36510(R) (EURAEC-2037)
effects on iron and platinum, 22:15141 (BNL-50057, pp 79-100)
effects on lattice constants of refractory zirconium and uranium compounds, 22:41132 (KFK-745)
effects on lattice parameters of germanium and silicon, (E), 22:48193
effects on lattice parameters of pure molybdenum, 22:52211 (BNWL-845)
effects on lattice stability of silicon carbide, 22:4916
effects on lead nitrate, 22:116
effects on leaf size and seedling development in Vicia, effects of seed exposure on, 22:8653
effects on lens epithelium of mice and rabbits, 22:15063
effects on lens of rabbits in comparison to x rays, RBE for, 22:51966
effects on lens of rabbits, effects of dose fractionation on pathological, 22:51964
effects on life span of mice, effects of dose rate on RBE of whole-body, 22:36374
effects on lithium diffusion in silicon, 22:4845
effects on lithium mobility in silicon, 22:13010
effects on lithium-drifted germanium semiconductor detectors at 1.10, 5.75, and 16.49 MeV, 22:28264
effects on lysozyme and RNAase, ESR analysis of, 22:12820
effects on magnesia, optical absorption studies of color centers produced in, 22:46281
effects on magnetic properties of Permalloy, 22:36510(R) (EURAEC-2037)
effects on magnetorestriction of iron—silicon systems, 22:47691
effects on maize, mutagenic, 22:28420
effects on malignant tumors in man, use of californium-252 as interstitial source for therapeutic, 22:49375 (BNL-12409)
effects on mammals, effects of dose distribution on, 22:12922
effects on martensitic transformations in beta-phase brass, 22:52218
effects on martensitic transformations in β brass, 22:34066 (ORO-3395-5)
effects on mechanical properties of 1100 aluminum, 22:23842 (BMI-1834)
effects on mechanical properties of 1100 H18 aluminum alloy, 22:28843 (DUN-SA-22)
effects on mechanical properties of 347 stainless steel cladding materials, 22:15261(R) (BMI-1819)
effects on mechanical properties of A350-LF3 steel pressure vessels for PM-2A reactor, analysis of, 22:42196 (NRL-6739)
effects on mechanical properties of aluminum alloys, at cryogenic temperatures, 22:19604
effects on mechanical properties of graphites and pyrolytic carbon, measurement from 600 to 1300°C of, 22:42392(T) (ORNL-tr-1968)
effects on mechanical properties of Hastelloy X, 22:19597
effects on mechanical properties of Hastelloy X, Incoloy 800, and Inconel 625 at high temperatures, 22:713 (GEAP-4985)
effects on mechanical properties of Hastelloy X- and Type 316 stainless steel-clad plutonium oxide (PuO_2)—uranium oxide (UO_2) fuel elements, analysis of, 22:42200(R) (ORNL-4200)
effects on mechanical properties of Incoloy-800, 22:31437
effects on mechanical properties of iron, 22:31419 (BNWL-532, pp 11.1-43)
effects on mechanical properties of NERVA materials at -423°F, analysis of, 22:32938
effects on mechanical properties of niobium—zirconium alloys, 22:45798
effects on mechanical properties of reactor graphite, (E), 22:11098
effects on mechanical properties of refractory oxides, (E), 22:28962
effects on mechanical properties of stainless steel, 22:19597
effects on mechanical properties of stainless steel-clad plutonium oxide (PuO_2)—uranium oxide (UO_2), 22:32970(R) (GEAP-5584)
effects on mechanical properties of stainless steels at 20 to 800°C, 22:19601
effects on mechanical properties of stainless steel at cryogenic temperatures, 22:19604
effects on mechanical properties of stainless steel, 22:31437
effects on mechanical properties of titanium-base alloys and aluminum 1099 at cryogenic temperatures, 22:41075(R) (N-68-13825)
effects on mechanical properties of Type 347 stainless steel, 22:43615(R) (BNWL-710)
effects on mechanical properties of type 347 stainless steel, 22:23842 (BMI-1834)
effects on mechanical properties of type 347 stainless steel, 22:19602
effects on mice, effects of dose on whole-body, 22:31237
effects on mice, method for estimating RBE of, 22:36375
effects on mice, pathological 14.2 MeV, 22:33940
effects on mice, protective effects of anticancer agents against, 22:31188
effects on mice, RBE for, 22:40891
effects on mice, RBE for dominant lethal mutagenic 14.1 MeV, 22:47501 (NP-17136)
effects on microstructure and thermal properties of graphites, 22:52299
effects on microstructure of deformed Hastelloy R 235, 22:43615(R) (BNWL-710)
effects on microstructure of tungsten, 22:31433
effects on microstructure of Type 304 stainless steel, 22:43615(R) (BNWL-710)
effects on microstructure of vanadium foils, annealing of, 22:43621 (RCN-96)
effects on mitosis in liver of mice, effects of hepatectomy on, 22:28621 (ANL-7278, pp 1-94)
effects on mitosis of corneal epithelium, RBE for, 22:17044
effects on molecules, theoretical studies on activating, 22:25400
effects on molybdenum at 600°C, annealing of defects produced in, (E), 22:28847
effects on molybdenum single-crystal lattices, 22:43615(R) (BNWL-710)
effects on molybdenum, vacancy dislocation loops produced by 1100°C annealing of defects from, (E), 22:26452 (GEMP-594)
effects on morphology and survival of cells in normal tissues and sarcomas in rats, effects of dose fractionation on RBE for, 22:49419
effects on narrow-base p—n—p—n devices, 22:2478
effects on neoplasms, effects of oxygen abundance on therapeutic, 22:8485
effects on nichrome and tantalum thin film resistors, 22:33704
effects on Nigella damascena, effects of ploidy and seed exposure on mutagenic, 22:21489
effects on niobium, 22:31428 (ORNL-4246, pp 55-66)
effects on niobium carbides, tantalum carbides, titanium carbides, tungsten carbides, and zirconium carbides at 300 to 700°C, 22:21779
effects on niobium tensile properties, annealing of, 22:43615(R) (BNWL-710)
effects on niobium, oxygen reactions at point defects induced by, 22:43615(R) (BNWL-710)
effects on nitrogen and oxygen trapping in vanadium, 22:43615(R) (BNWL-710)
effects on o- and m-terphenyl at 100 to 450°C, 22:51025
effects on optical absorption in transparent aluminum oxides, beryllium oxides, and silicon oxides, (E), 22:48153 (N-68-23481)
effects on optical attenuation of compound semiconductors, (T), 22:13570
effects on organs of rats, pathological, 22:43468
effects on Otto Hahn reactor pressure vessel steel, 22:37508
effects on oxidation of zirconium alloys in water, 22:17072 (AECL-2797)
effects on oxidative phosphorylation in mitochondria from

brain of mice, effects of substrate on, 22:16994
effects on oxygen internal friction peak of niobium, annealing of, 22:31426 (ORNL-4246, pp 42-51)
effects on pea plants, effects of seed exposure on, 22:51523
effects on pea plants, effects of seed exposure on mutagenic, 22:51518
effects on pea plants, mutagenic, 22:51523
effects on pea seeds, effects of recessive genes on mutagenic, 22:51513
effects on peas, RBE for, 22:21628
effects on performance of sodium coolant thermocouples for Fast Test Reactor, 22:40508 (BNWL-SA-1857)
effects on phosphine mixtures with butadiene, ethylene, and silane, yields of silicon-31-labeled products in, 22:48874(R) (COO-1713-5)
effects on physical properties of metal-clad helium-bonded plutonium carbide (PuC)--uranium carbide (UC) pellet-type fuel elements, analysis of, 22:39789 (UNC-5198)
effects on physical properties of metal-clad plutonium carbide (PuC)--uranium carbide (UC) pellet-type fuel elements, analysis of, 22:39790(R) (UNC-5201)
effects on physical properties of Santowax OM and WR at 300 to 427°C, (E/T), 22:42388 (MIT-334-94)
effects on plastic deformation of carbon steel, 22:7025
effects on plutonium carbide--uranium carbide fuels, relations with burnup, 22:36509 (CONF-671005-7)
effects on polycrystalline aluminum oxide at low temperatures, 22:19681
effects on polycrystalline beryllium oxide at low temperatures, 22:19681
effects on polycrystalline magnesium oxide at low temperatures, 22:19681
effects on potassium chromate and tris(ethylenediamine)cobalt nitrate, effects of thermal annealing on, 22:12362
effects on precipitation in aluminum--copper alloys, 22:36518
effects on precipitation in aluminum--zinc alloys, 22:43614 (ANL-7299, pp 290-308)
effects on pressure vessel steels, review, 22:19598
effects on protein synthesis in blood plasma of rats, whole-body, 22:6752
effects on pure aluminum at 78°K, recovery of defects produced in, (E), 22:28869
effects on pyrolytic carbon, 22:8822 (ORNL-4170, pp 163-72)
effects on rate of Guinier--Preston zone formation in aluminum-zinc alloys at 78°K, 22:23850
effects on rats, carcinogenic, 22:28661
effects on rats, effects of age at exposure on, 22:40890
effects on rats, effects of age on latent, 22:33896 (AD-662222)
effects on reactor materials, 22:21734
effects on reactor vessel steels, 22:19599
effects on refractory metal carbides, 22:26094 (ORNL-4229, pp 142-5)
effects on refractory metal nitrides at 150°C, 22:26094 (ORNL-4229, pp 142-5)
effects on refractory metal silicides at 150°C, 22:26094 (ORNL-4229, pp 142-5)
effects on reproduction of cells in intestine of rats, effects of dose on, 22:40918
effects on reproductive capacity of cultured cells from mammals, effects of oxygen on, 22:19370
effects on reproductive integrity of bone marrow CF cells, RBE for, 22:49583
effects on seeds of barley, cress, peas, and wheat, genetic, 22:17050(R) (EUR-3606)
effects on shielding of SNAP-10 test facility, 22:3880 (NAA-SR-12504)
effects on Shigella flexneri, effects of dose rate in relation to oxygen-enhancement ratio on, 22:28712
effects on shoot growth and survival in forest trees, 22:6772 (ORNL-4168, pp 61-118)
effects on silicon single crystals and surface-barrier junctions, 22:6707 (LYCEN-6756)
effects on silicon single crystals, annealing in, 22:15637
effects on silicon single crystals, recombination emission spectra from, 22:15636
effects on silicon, activation energy of defects from, 22:44264
effects on silicon, luminescence from, 22:39158(R) (N-68-17349)
effects on silicon, luminescence spectra from recombination of defects from, (E), 22:46279
effects on silicon, photomechanical, 22:44224
effects on silicon, relation of Fermi level to, 22:39186
effects on silkworm gonial cells, effects of BUDR on mutagenic 14 MeV, 22:47501 (NP-17136)
effects on single-crystal and polycrystalline molybdenum rods, 22:49770 (BNWL-SA-1812)
effects on sintering of silica sand, 22:26090 (BNL-10279)
effects on skin of mice, pigs, and rats, RBE of, 22:8596 (CONF-670305-, pp 128-42)
effects on skin of mice, repair of, 22:12931
effects on skin of rats, tumorigenic, 22:21576
effects on skin of swine, effects of dose fractionation on, 22:572
effects on slip in deformed foils of iron, 22:43615(R) (BNWL-710)
effects on slip in iron and iron alloys, 22:38595
effects on sperm cells of Drosophila, effect of oxygen on RBE of, 22:40615(R) (EUR-3889)
effects on spermatogonia of mice, effects of dose rate and quality factors on RBE for, 22:40912
effects on spermatogonia of, RBE for mutagenic, 22:12839
effects on stability of coated-particle reactor fuels, 22:4915
effects on steel in BR-2 in-pile loop at 300°C, 22:1856 (EUR-3626)
effects on steels, spectral effects in, 22:26066 (UJV-1931)
effects on strain aging of A-212-B steel, 22:31424 (ORNL-4246, pp 30-5)
effects on strain aging of Zircaloy-2, 22:41078
effects on strain gage pressure transducers, 22:4559 (TID-24144)
effects on strain relaxation in copper--niobium--zirconium-base alloys, 22:43622 (WAPD-TM-746)
effects on strain relaxation of Zircaloy-4, 22:43622 (WAPD-TM-746)
effects on strain-stress properties of A-212-B steel, annealing of, 22:31423 (ORNL-4246, pp 27-30)
effects on strength of cellulose triacetate polymers, polyethylene terephthalate, and polymethyl methacrylate, 22:33390
effects on stress-relaxation of niobium--zirconium alloys, 22:19597
effects on structure of graphite, 22:15265
effects on subspecies of bread wheats, effects of seed exposure on γ, 22:17012
effects on surface structure of Ferrovac E type iron, (E), 22:19575 (BNWL-455, Paper 5.1-10)
effects on survival and weight of duckweed, 22:47636
effects on survival of cells, effects of oxygen on, 22:33939
effects on survival of cultured human kidney cells, effects of oxygen on, 22:49211
effects on survival of mammalian cell cultures, 22:52013
effects on survival of rats, relation of beam orientation to, 22:40822(T) (JPRS-44070, pp 1-9)
effects on swelling of graphite, 22:45832
effects on tensile properties of A-302-B and A-212-B steels, 22:31425 (ORNL-4246, pp 36-7)
effects on tensile properties of Incoloy 800 and Type 304, Type 316, Type 321, and Type 347 stainless steel, analysis of, 22:50732(R) (GEAP-5631)
effects on tensile properties of Inconel-120, 22:31414 (BNWL-532, pp 12.1-88)
effects on tensile properties of molybdenum at 70 to 1000°C, 22:30388
effects on tensile properties of type 304 stainless steel, 22:4833
effects on tensile properties of Type 304 stainless steel at 100°C, 22:38510 (BNL-50082, pp 93-152)
effects on tensile properties of type 304 stainless steel, 22:4834
effects on tensile properties of Type 304, Type 316L, Type 347 stainless steels and Incoloy 800 at 1300°F, measurement of, 22:32970(R) (GEAP-5584)
effects on tensile properties of type 410 stainless steel, 22:4835
effects on tensile properties of type A350-LF3 steel, 22:31417 (BNWL-532, pp 9.1-23)
effects on tensile properties of types 410 and AM350 stainless steels, 22:31414 (BNWL-532, pp 12.1-88)
effects on tensile properties of vanadium alloys, (E), 22:19573 (BNWL-455, Paper 3.1-8)
effects on tensile properties of Zircaloy-2, 22:19597
effects on tensile properties of Zircaloy-2, analysis of, 22:35419 (AECL-3126)
effects on tensile properties of Zircaloy-4 and zirconium--niobium--copper alloys, 22:28858
effects on tensile properties of Zircaloy-4 at 55 to 415°C, 22:30388
effects on tensile strength of type 304 stainless steel, 22:19589
effects on testes of mice, RBE for mutagenic, 22:19408
effects on thermal conductivity of semiconductors at low temperatures, 22:41688
effects on thermoelastic materials, 22:6354(P)
effects on thorium dioxide--uranium dioxide dispersed in beryllium oxide, 22:19587
effects on tungsten, defects produced in, (E), 22:28864
effects on Type 316 stainless steel in flowing sodium, 22:43615(R) (BNWL-710)
effects on Type A302-B steel, 22:43615(R) (BNWL-710)
effects on uranium oxide (UO_2) fuel in BR-2 in-pile loop, at 1000°C, 22:1856 (EUR-3626)
effects on vacancy cluster production in Type 304 and Type 316 stainless steel and iron, analysis of, 22:53411 (BNWL-819)
effects on vanadium, annealing of defects produced in, 22:52850 (GEMP-612)
effects on vanadium, trapping of oxygen and nitrogen at defects produced by, 22:31427 (ORNL-4246, pp 51-5)
effects on velocity--stress dislocations in niobium single crystals, 22:28849
effects on volume changes of silicon dioxide--uranium

dioxide vitro ceramics, annealing effects on, 22:17155
effects on water, microbubble production in, 22:362
effects on welds of Hy 80 steel, 22:34087
effects on wheat plants, effects of dose and seed exposure on mutagenic, 22:21494
effects on work hardening of Ferrovac E iron, 22:41081
effects on xenon-133 diffusion in cesium iodide monocrystals at 200 to 500°C, 22:6315(R) (ORO-3508-3)
effects on yield stresses of niobium, flux dependence of, 22:31429 (ORNL-4246, pp 66-75)
effects on zinc sulfide F-center formation, ESR study of, 22:1330
effects on zinc sulfide single crystals, dose dependence of color centers from, (E), 22:29594
effects on Zircaloy 4 mechanical properties at 130 to 775°F, 22:52221
effects on Zircaloy-2, 22:23845 (IN-1131, pp 83-90)
effects on Zircaloy-2 and zirconium--niobium alloy pressure tubes, 22:28859
effects on Zircaloy-4-clad fuel rod containing low-density uranium dioxide pellets, 22:41133 (WAPD-TM-596)
effects on zirconium, 22:34075 (AECL-3086)
effects on zone-refined nickel, recovery stages in annealing of, (E), 22:28870
emission of solar, experiment to detect, (T), 22:28981(T) (SC-T-68-1518)
energy and flux distributions in thorium blanket of plutonium-239-fueled reactor, (E), 22:44580
energy measurements using transmission technique, accuracy of, (E), 22:20450 (COO-7-0456)
energy spectrum, method for reducing 4π proton-recoil proportional counter data to, 22:49067 (ANL-7394)
fission energy release from, analysis of mass balance in, 22:37400 (AECL-3109)
fission factor calculations in thermal reactor lattices, use of Monte Carlo method and multigroup procedure for, (T), 22:42402
fission rate measurements in EBR-2, statistical error due to angular correlation in, 22:9988(R) (ANL-7391)
fission ratio for uranium carbide (UC)-fueled heavy water-moderated ECO reactor, measurement of, (E/T), 22:37551
fission ratio of uranium-238 to uranium-235 in natural uranium heavy water lattices, (E/T), 22:14269
fission yields from, use of depleted uranium-238 for, 22:16316(R) (GEAP-5505)
fluence of, activation of niobium-93 for measuring, 22:8352
flux calculations for burst-type molten-salt reactor, analysis of 2 to 3 x 10^{16} n/cm^2, (T), 22:39882 (ORNL-TM-2282)
flux density in depleted uranium, angular, energy, and spatial distribution of, (E), 22:13906 (RPI-328-100, pp 57-112)
flux determination in Plum Brook Reactor HB-6 facility using sulfur pellets and gold foils, 22:37535 (N-68-15643)
flux determination using threshold detectors, approximate quadruture formulas for data analysis for, 22:38025
flux distribution in HTR reactor, analysis of, 22:47031
flux distribution in multiregion fast reactors of, use of analog computer for calculation of radial, 22:46956
flux distribution in trisected FTR core, measurement of, 22:42164(R) (BNWL-775)
flux distributions in iron, angular, (E/T), 22:22526 (RPI-328-112, pp 16-59)
flux distributions in reactors, re-entrant hole perturbation of, 22:22527 (RPI-328-112, pp 62-103)
flux formulation for, derivation of linear functionals of adjoint, 22:3943
flux in pulsed assemblies, energy- space-, and time-dependent, (T), 22:39551 (RPI-328-123, pp 39-52)
flux measurement in Phoebus 1B, effects of 360° open-well shield on, 22:48722 (LA-3746)
flux measurement of, stilbene spectrometer for, 22:33208(R) (MLM-1456)
flux measurements at 0.3 to 16 MeV, proton-recoil proportional detector with multiple radiators for, 22:45274 (BARC-330)
flux measurements in FRG, 22:3904(T) (ORNL-tr-1522)
flux measurements in radial and tangential test facilities of ZR-3, 22:18605
flux measurements in reactors using isomer production by inelastic scattering, (E/T), 22:7705
flux measurements in reactors, calibration of activation detectors for, 22:21321(T) (ORNL-tr-1843)
flux measurements in reactors, polynomial method for analysis of data from activation detectors in, 22:2368
flux measurements in research reactors, dosimetry methods for, 22:12110
flux measurements in research reactors, uranium-238 activation detectors for, 22:40376
flux measurements in WR-1, 22:3884 (AECL-2763)
flux measurements of KIWI-Transient Nuclear Test effluent, analysis of, 22:39849 (LA-3449)
flux measurements of, calibration of silver activation detectors for, 22:47349
flux measurements of, fission chamber for local, 22:49074
flux measurements of, methods for, 22:4428 (NP-17063)
flux measurements of, technique for increasing efficiency of sulfur activation detectors for, 22:21320(T) (ORNL-tr-1842)
flux measurements of, use of plastic particle track detectors for, 22:40364
flux measurements using fluorine-19 (n,2n) reactions, cross section for, (E), 22:13942
flux measurements using threshold detectors, (E), 22:48509(R) (BMwF-FBK-68-22)
flux measurements, moderated uniform-sensitivity proportional detectors for, 22:28118
flux monitoring of, development of aluminum--copper alloy activation detector for, 22:4437
flux of accelerated particle-induced, geometry calculation for, 22:49037
flux production in thermal reactor test regions, spectrum-hardening filter for, (E), 22:44907
flux profile in uranium oxide (UO_2) light water-moderated critical assembly, measurement of, (E/T), 22:1875
flux spectra in depleted uranium, position-dependent, (E), 22:48424 (RPI-328-133, pp 35-55)
flux spectra in iron, angular, (E), 22:48424 (RPI-328-133, pp 35-55)
flux spectrum measurements in slabs of iron and depleted uranium, re-entrant hole effects on, (T), 22:48426 (RPI-328-133, pp 60-100)
flux spectrum measurements using time-of-flight method, models for analyzing, (T), 22:48426 (RPI-328-133, pp 60-100)
flux values at pressure vessel of terrestrial power reactor, 22:7814(R) (ORNL-4178)
hodoscope for TREAT facility, circuit diagrams for amplifier discriminator boards for, 22:32735 (ANL-7310, pp 249-375)
importance function of water-moderated reactor, effects of central water gaps on, 22:39884
interactions n + d at 0.5 to 5.3 MeV, charge-state flipping contribution to cross sections for, (E/T), 22:52930 (KFKI-19/1968)
interactions n + d at 14 MeV, differential cross section for elastic, (E), 22:53083
interactions n + p at 0.5 to 5.3 MeV, charge-state flipping contribution to cross sections for, (E/T), 22:52930 (KFKI-19/1968)
linear energy transfer in dielectric liquids, (T), 22:38800
linear energy transfer of, in relation to neutron-radiosensitivity of mammalian cells, 22:49365
measurement of Swedish Reactor (R-3) primary shielding for, analysis of, (E/T), 22:44805 (AE-325)
moderation calculations for, stochastic model for, (T), 22:5729
monitoring of, design and performance of portable dose-equivalent meter for, 22:2371
monitoring of, design of proton-recoil proportional detector for, 22:6570
monitoring system for, design of, 22:8358
monitoring using titanium-46 (n,p) reactions, scandium-46 burnout in, (T), 22:44674
neutron reactions with copper, lead, and uranium at 4 MeV, total cross sections for, (E), 22:20549
penetration in air, effects of nitrogen neutron cross sections on, (T), 22:7614 (LA-3810)
penetration in lithium hydride shield, 22:31911
phase space distribution in reactor flux of, analysis of adjoint function, (E/T), 22:1833
physics measurements for liquid sodium-cooled fast reactors, analysis of, 22:39875 (BNL-50082, pp 1-18)
polarization of 2- to 20-MeV, calculation of analyzing power of liquid helium polarimeter for measuring, 22:28259
polarization of 2- to 20-MeV, design and performance of liquid helium polarimeter for measuring, 22:28230
production by ^{9}Be(^{3}He,n)^{11}C reaction in cyclotron, evaluation of therapeutic use of, 22:19370
production by cyclotrons, for use in therapy, 22:12878
production by deuterium-tritium reaction for use in therapy, 22:43351
production by deuteron reactions (d,n) with tritium, time-of-flight spectrometer for measuring spectra of, 22:19137
production in 86-in. cyclotron, 22:14433 (ORNL-4196, pp 66-89)
production of polarized, using deuterium (t,n) and tritium (d,n) reactions, (T), 22:9777
production of, description of copper reflected fast source reactor for, 22:12134
production of, design of lead--tantalum composite target for, 22:32375
pulse propagation experiments in non-moderating assemblies, operational B/sup N//sub L/ technique for analysis of, (T), 22:53077
radiation facility for, description of 50 W liquid helium cryogenic system for, 22:14264
reactions (n, charged particle) with nuclei, telescope arrangement of radiation detectors for charged particles from, 22:43065
reactions (n,2α) with potassium-39 at 14 MeV, effective cross section for, (E), 22:50579
reactions (n,2n) with A = 134 to 208 nuclei at 14 MeV, spin cut-off parameters for, (T), 22:39701
reactions (n,2n) with A = 140 to 204 nuclei at 14.7 MeV,

cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,2n) with A = 140 to 204 nuclei at 14.7 MeV, cross sections for, (E), 22:50649
reactions (n,2n) with A = 85 to 109 nuclei at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameters for, (E), 22:50583
reactions (n,2n) with antimony-121 and rubidium-85 at 12.6 to 19.6 MeV, isomeric cross-section ratios for, (E), 22:42006
reactions (n,2n) with antimony-121 at 13 to 15 MeV, isomeric cross-section ratios for, (E), 22:16051
reactions (n,2n) with antimony-121, antimony-123, cadmium-106, holmium-165, praseodymium-141, samarium-144, tantalum-181, and tin-112 at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,2n) with antimony-121, arsenic-75, cadmium-106, cerium-140, cerium-142, chromium-52, holmium-165, praseodymium-141, rubidium-85, samarium-144, tantalum-181, and tin-112 at 12.6 to 19.6 MeV, (E), 22:42006
reactions (n,2n) with antimony-123 and samarium-144 at 14 MeV, isomeric cross-section ratios for, (E), 22:42006
reactions (n,2n) with barium-138, cerium-140, neodymium-142, praseodymium-141, and samarium-144 at 14 MeV, activation cross sections for, (E), 22:9889
reactions (n,2n) with bromine-81, indium-113, molybdenum-92, and samarium-144, isomeric cross-section ratios for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,2n) with bromine-81, indium-113, molybdenum-92, and samarium-144 at 14 and 15 MeV, isomeric cross-section ratios for, (E), 22:24872
reactions (n,2n) with cadmium-112 and nickel-58 at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
reactions (n,2n) with calcium-40 at 14.7 MeV, cross section for, (E), 22:41998
reactions (n,2n) with calcium-48 and potassium-39 at 14.2 MeV, activation cross sections for, (E), 22:18180
reactions (n,2n) with cerium-140 and cerium-142 at 14.8 MeV, cross sections for, (E), 22:48559
reactions (n,2n) with chlorine-35 and potassium-39 at 15 MeV, cross sections for, (E), 22:39622
reactions (n,2n) with chlorine-35, molybdenum-92, and scandium-45 at 14.8 MeV, isomeric cross-section ratios for, (E), 22:32539
reactions (n,2n) with cobalt-59 and molybdenum-92, isomer ratios and cross sections for, (E), 22:27055
reactions (n,2n) with cobalt-59 at 12 to 18 MeV, excitation function and isomeric cross-section ratio for, (E), 22:26934
reactions (n,2n) with copper-63 and -65 at 14.7 MeV, cross sections for, (E/T), 22:7683
reactions (n,2n) with copper-63 and iron-54 at 13.9 to 17.4 MeV, excitation functions for, (E), 22:35281
reactions (n,2n) with copper-63, copper-65, silver-107, and silver-109 at 13.7 to 14.7 MeV, activation cross sections for, (E), 22:22573
reactions (n,2n) with copper-63, fluorine-19, gallium-69, silver-107, and zinc-64 at 14.8 MeV, cross sections for, (E), 22:24835(R) (BARC-305)
reactions (n,2n) with copper-63, fluorine-19, gallium-69, silver-107, and zinc-64 at 14.8 MeV, cross sections for, (E), 22:32536
reactions (n,2n) with copper-65 and fluorine-19 at 14 MeV, cross-section fluctuations in, (E), 22:1607
reactions (n,2n) with copper-65, fluorine-19, gold-197, indium-115, silver-107, and tantalum-181 at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,2n) with deuterium at 14.1 MeV, differential cross sections for, (E), 22:48445
reactions (n,2n) with europium-153, gadolinium-160, neodymium-142, and terbium-159 at 14.2 MeV, cross sections for, (E), 22:32638
reactions (n,2n) with fluorine-19 at 13.5 to 14.8 MeV, cross section for, (E), 22:13942
reactions (n,2n) with fluorine-19, holmium-165, indium-115, manganese-55, and sodium-23 at 12.7 to 19.5 MeV, activation cross section for, (E), 22:3743
reactions (n,2n) with fluorine-19, holmium-165, indium-115, manganese-55, and sodium-23 at 12.7 to 19.4 MeV, activation cross sections for, (E), 22:3624
reactions (n,2n) with gallium-69, phosphorus-31, silver-107, and zinc-64 at 14.8 MeV, cross sections for, (E), 22:29973
reactions (n,2n) with indium-113 and indium-115 at 14.7 MeV, isomeric cross-section ratios for, (E), 22:30003
reactions (n,2n) with potassium-39 at 14.2 MeV, cross section for, (E), 22:32530
reactions (n,2n) with tellurium-120, tellurium-122, tellurium-128, and tellurium-130 at 14.8 MeV, isomeric cross-section ratios for, (E), 22:42058
reactions (n,2n) with tellurium-130 at 14 MeV, γ spectra from, (E), 22:39671
reactions (n,2n) with thallium-203 at 14 MeV, isomeric cross-section ratio for, (E), 22:48545
reactions (n,2n) with uranium-238, effective cross section for, (E), 22:40376
reactions (n,2n)2α with beryllium-9, effective cross section for, (E), 22:18129
reactions (n,3n) with cesium-133, iodine-127, niobium-93, and rhodium-103 at 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
reactions (n,3n) with indium-113, praseodymium-141, and silver-107 at 18.2 to 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
reactions (n,α) and (n,p) with nitrogen-14 at 5.8 to 8.6 MeV, differential cross sections and γ spectra for, (E), 22:20576 (ORNL-TM-2159)
reactions (n,α) and (n,p) with nitrogen-14 at 5.8 to 8.6 MeV, γ spectra and production cross sections for, (E), 22:37291 (ORNL-TM-2267)
reactions (n,α) and (n,p) with potassium-41 at 14.2 MeV, cross sections for, (E), 22:32530
reactions (n,α) and (n,p) with Z = 16 to 58 nuclei at 14.8 MeV, cross sections for, (E), 22:48499
reactions (n,α) with aluminum-27 at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,α) with aluminum-27 at 13.7 to 14.7 MeV, activation cross sections for, (E), 22:22573
reactions (n,α) with aluminum-27 at 14 MeV, cross section for, (E), 22:32517
reactions (n,α) with aluminum-27 at 14 MeV, cross-section fluctuations in, (E), 22:1607
reactions (n,α) with aluminum-27 at 6 to 20 MeV, activation cross section for, (E), 22:3624
reactions (n,α) with aluminum-27 at 6 to 20 MeV, activation cross section for, (E), 22:3743
reactions (n,α) with barium-138 at 14 MeV, activation cross sections for, (E), 22:9889
reactions (n,α) with boron-10 at 30 to 500 keV, cross section for, (E), 22:13946
reactions (n,α) with boron-10 at 300, 400, and 500 keV, γ production cross sections for, (E), 22:20578 (WASH-1079)
reactions (n,α) with boron-10, data evaluation for cross sections and branching ratios of, 22:39579 (EUR-3950)
reactions (n,α) with calcium-40 at 2.9 to 5.1 MeV, differential cross sections and α spectra for, (E), 22:7659 (LYCEN-6755)
reactions (n,α) with calcium-40 at 5.13 MeV, α angular distribution and spectra for, (E), 22:15975
reactions (n,α) with calcium-44 and potassium-41 at 14.2 MeV, activation cross sections for, (E), 22:18180
reactions (n,α) with carbon-12 at 14 and 16 MeV, differential cross section for, (E), 22:50540
reactions (n,α) with cesium-133 in reactor spectrum, cross section for, (E), 22:24837 (KR-123)
reactions (n,α) with chromium-54 at 14.8 MeV, activation cross section for, (E), 22:1616
reactions (n,α) with fluorine-19, oxygen-16 energy level at 6.130 keV from, (E), 22:29930
reactions (n,α) with gadolinium-158 at 14.2 MeV, cross section for, (E), 22:32638
reactions (n,α) with lanthanum-139 at 16 MeV, using polarized beams, asymmetry of, (E), 22:42073
reactions (n,α) with lithium-6 at 100 to 400 keV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,α) with lithium-6 at 150 to 280 keV, cross-section measurement using associated-particle method, (E), 22:18147
reactions (n,α) with nickel-64 at 14.8 MeV, iron-61 beta decay scheme from, (E), 22:1618
reactions (n,α) with nitrogen-14 and oxygen-16 at 15 MeV, angular distributions for, (E), 22:44626
reactions (n,α) with nitrogen-14 and zirconium at 14 MeV, angular correlations and energy spectra for, (E), 22:35261
reactions (n,α) with nitrogen-14 at 14 MeV, differential cross sections and spectra for, (E), 22:20454
reactions (n,α) with nitrogen-14 at 6.0 to 8.4 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
reactions (n,α) with nuclei, use of ionization chambers with scintillation detectors for measurements in, 22:38009
reactions (n,α) with oxygen-16 at 14 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,α) with oxygen-16 at 14 MeV, differential cross sections and spectra for, (E), 22:20457
reactions (n,α) with oxygen-16 at 14.8 to 18.8 MeV, angular distributions of differential cross sections for, (E), 22:46720
reactions (n,α) with oxygen-18 at 7.5 to 8.6 MeV, cross sections for, (E), 22:11912
reactions (n,α) with potassium-41 in reactor spectrum, cross section for, (E), 22:41997
reactions (n,α) with sodium-23 at 15 MeV, cross sections for, (E), 22:53123
reactions (n,α) with tellurium-122 and thulium-169 at 14 MeV, α spectra from, (E), 22:3692 (INR-814/I/PL)
reactions (n,α) with thallium-205 at 15 MeV, gold-202 production by, (E), 22:11969
reactions (n,α) with vanadium-51 at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,α) with xenon at 12.5 to 18.0 MeV, cross-section excitation function and α spectra for, (E), 22:3713
reactions (n,α), (n,d), (n,p), and (n,t) with fluorine-1 at 14.4 MeV, angular distributions for, (E), 22:44614
reactions (n,d) and (n,p) with helium-3 at 14.4 MeV, angular distributions for, (E), 22:26821
reactions (n,d) with arsenic-75, calcium-40, chlorine-35, nitrogen-14, and potassium-39 at 14.4 MeV, differentia cross sections for, (E), 22:5798

reactions (n,d) with calcium-43 and -44 at 14.2 MeV, activation cross sections for, (E), 22:18180
reactions (n,d) with chlorine-35 at 14 MeV, deuteron angular distributions and spectra from, (E), 22:3684
reactions (n,d) with sulfur-32 and sulfur-34 at 14 MeV, angular distributions and yields for, (E), 22:29978
reactions (n,d), (n,p), and (n,2n) at 13 to 15 MeV, cross sections for, (E), 22:20578 (WASH-1079)
reactions (n,d), (n,p), and (n,t) with tritium at 15 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with curium-244 and plutonium-238 at 1.0, 1.5, 3.0, and 14.9 MeV, cross sections for, (E), 22:20571 (LA-DC-9188)
reactions (n,f) with heavy elements at 1 keV to 10 MeV, cross sections for, (E), 22:24873
reactions (n,f) with heavy nuclei, mass and charge distributions from, 22:20975(R) (BMwF-FBK-67-89)
reactions (n,f) with neptunium-237 at 0.4, 0.6, 1.0 and 1.3 MeV, mean kinetic energy of fission fragments in, (E), 22:44693
reactions (n,f) with neptunium-237 at 12.5 to 17.5 MeV, cross-section measurement using fission-foil detector, (E), 22:30013
reactions (n,f) with neptunium-237, uranium-235, and uranium-238 at 1 to 5 MeV, cross sections for, (E), 22:18287
reactions (n,f) with neptunium-237, uranium-235, uranium-236, and uranium-238 at 1 to 5 MeV, relative cross sections for, (E), 22:20572 (LA-DC-9205)
reactions (n,f) with plutonium-239 and -241 at 0.5 to 14.8 MeV, prompt neutron emission in, (E), 22:14029
reactions (n,f) with plutonium-239 at 0.15 to 1.5 MeV, fission-fragment angular distributions in, (E), 22:53209
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, uranium-235, and uranium-238, tritium yields in, (T), 22:53165 (ANL-7425, pp 190-2)
reactions (n,f) with plutonium-239, plutonium-241, thorium-232, uranium-233, uranium-235, and uranium-238, fission yields for, 22:20559 (AERE-R-5086)
reactions (n,f) with plutonium-239, product decay from, (E/T), 22:5827
reactions (n,f) with plutonium-239, thorium-232, uranium-233, and uranium-235 at 2 MeV, neutron spectra for, (E), 22:11948(R) (NP-17216)
reactions (n,f) with plutonium-239, uranium-233, and uranium-235 at 14 MeV, fission-product activities for, (T), 22:20569 (HNS-1229-77)
reactions (n,f) with plutonium-239, uranium-233, and uranium-235 at 0.3 to 2.5 MeV, relative cross sections for, (E), 22:32621
reactions (n,f) with plutonium-239, uranium-235, and uranium-238 at 1.5 to 15 MeV, prompt neutron emission in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with radium-226 at 3 to 15 MeV, cross section and fission-fragment angular distribution for, (E), 22:24870
reactions (n,f) with thorium and uranium at 15 MeV, fragment spectra from, (E), 22:1665
reactions (n,f) with thorium-232 at 0.5 to 1.2 MeV, differential and integral cross sections for, (E/T), 22:16053
reactions (n,f) with thorium-232 at 1 to 6 MeV, fission-fragment energy and mass distributions in, (E), 22:35360
reactions (n,f) with thorium-232 at 1.2, 1.4 and 1.6 MeV, fission-fragment angular distributions and cross sections for, (E), 22:50651
reactions (n,f) with thorium-232 at 1.2, 1.4, and 1.6 MeV, fission-fragment angular distributions and cross sections for, (E), 22:39635(R) (NYO-3938-1)
reactions (n,f) with thorium-232 at 1.3 to 1.8 MeV, angular distributions of fragments for, (E), 22:50646
reactions (n,f) with thorium-232 at 1.5 to 3.3 MeV, measurements of anti ν for prompt neutron emission in, (E), 22:42017(T) (LA-tr-68-20)
reactions (n,f) with thorium-232 at 1.5 to 3.3 MeV, average number of prompt neutrons from, (E), 22:39643
reactions (n,f) with thorium-232 at 14.8 MeV, mass distribution in, (E), 22:44704
reactions (n,f) with thorium-232 at 14.8 MeV, mass distribution of fission fragments for, (E), 22:53216
reactions (n,f) with thorium-232 at 14.8 MeV, yields in symmetric, (E), 22:20598
reactions (n,f) with thorium-232, fission-fragment angular anisotropy and mass asymmetry in, (E), 22:35286(T) (ANL-Trans-611)
reactions (n,f) with thorium-232, uranium-235, and uranium-238 at 3 and 14 MeV, absolute delayed neutron yields from, (E), 22:32591
reactions (n,f) with thorium-232, uranium-235, and uranium-238 at 3 and 14 MeV, delayed neutron emission in, (E), 22:20578 (WASH-1079)
reactions (n,f) with thorium-232, uranium-235, and uranium-238 at 3 and 14 MeV, delayed neutron yields from, (E), 22:24859 (LA-DC-9403)
reactions (n,f) with uranium-233 and -235 at 1.5 MeV, mean kinetic energy of fission fragments in, (E), 22:14063
reactions (n,f) with uranium-233 and uranium-235, at 0.1 to 2.0 MeV, average kinetic energy of fission fragments in, (E/T), 22:46766(T) (LA-tr-68-19)
reactions (n,f) with uranium-233 at 0.43, 0.63, and 1.10 MeV, fragment energy and mass distributions in, (E), 22:14064
reactions (n,f) with uranium-233, -235, and -238 at 0 to 7 MeV, fission-fragment energy and yield in, (E/T), 22:18348
reactions (n,f) with uranium-234 at 0.2 to 1.2 MeV, fission-fragment angular distributions for, (E), 22:42029
reactions (n,f) with uranium-234 at 0.2 to 1.2 MeV, fission-fragment angular distributions for, (E), 22:27231
reactions (n,f) with uranium-234 at 0.2 to 1.2 MeV, fission-fragment angular distributions for, (E), 22:39635(R) (NYO-3938-1)
reactions (n,f) with uranium-235 and uranium-238 at 5 to 9 MeV, mean kinetic energy of fission fragments in, (E), 22:44714
reactions (n,f) with uranium-235 and uranium-238 at 14 MeV, fission-product charge distributions and yields from, (E), 22:46761 (APED-5398)
reactions (n,f) with uranium-235 and uranium-238 in reactor spectra, effects of system heterogeneity on rate of, (E), 22:35333
reactions (n,f) with uranium-235 and uranium-238, barium-140 yields from, (E), 22:22618
reactions (n,f) with uranium-235 at 0.10, 0.26, 0.70, and 1.30 MeV, fragment energy and mass distributions in, (E), 22:14064
reactions (n,f) with uranium-235 at 0.2 to 16 MeV using monoenergetic beams, fission-fragment energy and mass distributions from, (E), 22:48561
reactions (n,f) with uranium-235 at 0.4 to 3.3 MeV, average number of prompt neutrons from, (E), 22:39643
reactions (n,f) with uranium-235 at 0.4 to 3.3 MeV, measurements of anti ν for prompt neutron emission in, (E), 22:42017(T) (LA-tr-68-20)
reactions (n,f) with uranium-235 at 14 MeV, charged-particle emission in, (E), 22:14023
reactions (n,f) with uranium-235 at 14 MeV, γ angular distribution from, (E), 22:46810
reactions (n,f) with uranium-235 at 3 MeV, angular anisotropy of fission fragments in binary and ternary, (E), 22:32630
reactions (n,f) with uranium-235 at 3 MeV, angular anisotropy of fission fragments in binary and ternary, (E), 22:29979 (BARC-318)
reactions (n,f) with uranium-235 at 3 MeV, fission-fragment angular anisotropy in ternary, (E), 22:27099
reactions (n,f) with uranium-235 at 3 MeV, fragment angular anisotropy from binary and ternary fission, (E), 22:7569(R) (BARC-291)
reactions (n,f) with uranium-235 at 6 MeV, fission-fragment energy and mass distributions in, (E), 22:20578 (WASH-1079)
reactions (n,f) with uranium-235 below 3 MeV, effect of fission fragment mass distribution on total kinetic energy in, (E), 22:32563(T) (ANL-Trans-606)
reactions (n,f) with uranium-235 in fast critical assembly, measurements on Doppler effect in, (E), 22:32562 (AE-314)
reactions (n,f) with uranium-235 in reactor spectrum, Doppler effect for, (E), 22:3706
reactions (n,f) with uranium-235, fission-fragment energy and mass distributions in, (E), 22:32631
reactions (n,f) with uranium-235, resonance parameters from multilevel analysis using R-matrix theory, (T), 22:48522 (LA-3917)
reactions (n,f) with uranium-238 at 1.4, 1.6, 1.9, 5.0, 5.5, and 6.9 MeV, fission-fragment energy and mass distributions in, (E), 22:42018(T) (LA-tr-68-21)
reactions (n,f) with uranium-238 at 1.5 to 18 MeV, fission-fragment mass distributions from, (E), 22:1668
reactions (n,f) with uranium-238 at 14 MeV, asymmetry of angular distribution for, (E), 22:35261
reactions (n,f) with uranium-238 at 14 MeV, cumulative yields of isotopes in, (E), 22:35325
reactions (n,f) with uranium-238 at 18 to 21 MeV, delayed neutron yields in, (E), 22:24869
reactions (n,f) with uranium-238 at 4.65 and 15.3 MeV, fission fragment track analysis in solid-state detectors for, 22:14792
reactions (n,f) with uranium-238 at 5.6 MeV, mass-energy-angle correlations for, 22:22653(R) (ANL-7419)
reactions (n,f) with uranium-238 at 6 to 9 MeV, fission-fragment kinetic energy from, (E), 22:22603
reactions (n,np) with chromium-53 at 14.8 MeV, activation cross section for, (E), 22:1616
reactions (n,p) and (n,2n) with deuterium at 14 MeV, final-state interactions in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,p) and (n,np) with nitrogen-14 at 14 MeV, cross sections for, (E), 22:35261
reactions (n,p) and (n,np) with zinc-64 at 14 MeV, proton angular and energy distributions from, (E/T), 22:22561(T) (ORNL-tr-1850)
reactions (n,p) and (n,t) with praseodymium-141 at 14.8 MeV, cross sections for, (E), 22:48559
reactions (n,p) with A = 19 to 190 nuclei at 14 MeV, cross sections for, (E), 22:35261
reactions (n,p) with aluminum-27 and arsenic-75 at 14.2

MeV, cross sections for, (E), 22:32638
reactions (n,p) with aluminum-27 and iron-56 at 13.7 to 14.7 MeV, activation cross sections for, (E), 22:22573
reactions (n,p) with aluminum-27, calcium-42, calcium-43, calcium-44, and potassium-41 at 14.2 MeV, activation cross sections for, (E), 22:18180
reactions (n,p) with argon-38 at 14.8 MeV, activation cross section for, (E), 22:20511
reactions (n,p) with argon-40 at 14 MeV, proton angular and energy distributions from, (E), 22:32541
reactions (n,p) with argon-40 at 17 MeV, production of isomeric chlorine-40 by, (E), 22:22564
reactions (n,p) with arsenic-75, chlorine-37, and copper-65 at 14.8 MeV, cross sections for, (E), 22:24835(R) (BARC-305)
reactions (n,p) with barium-138, cerium-140, lanthanum-139, neodymium-142, and praseodymium-141 at 14 MeV, activation cross sections for, (E), 22:9889
reactions (n,p) with boron-11 and sodium-23 at 15 MeV, cross sections for, (E), 22:53123
reactions (n,p) with boron-11 at 14.5 MeV, cross section for, (E), 22:11910
reactions (n,p) with boron-11 at 14.5 MeV, cross section for, (E), 22:26932(R) (NP-17434)
reactions (n,p) with bromine-81 and cadmium-106 in reactor spectrum, cross sections for, (E), 22:24837 (KR-123)
reactions (n,p) with cadmium-106 at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,p) with calcium-44 at 14.7 MeV, cross section for, (E), 22:41998
reactions (n,p) with chromium-52, -53, and -54 at 14.8 MeV, activation cross sections for, 22:1616
reactions (n,p) with deuterium at 14 MeV, neutron-neutron angular correlation in, (E), 22:35215
reactions (n,p) with iron-56, magnesium-24, and titanium-48 at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,p) with lead-208 and strontium-88 at 14 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,p) with magnesium-24 at 14 MeV, cross section for, (E), 22:32517
reactions (n,p) with mercury-202 at 15 MeV, gold-202 production by, (E), 22:11969
reactions (n,p) with mercury-204 at 15 MeV, gold-204 production by, (E), 22:11969
reactions (n,p) with nickel-58 at 15 MeV, isobaric analog resonances in, (E), 22:27054
reactions (n,p) with nickel-58 at 2 to 18 MeV, excitation function and isomeric cross-section ratio for, (E), 22:26934
reactions (n,p) with nickel-58 at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
reactions (n,p) with nickel-58, isomer ratio and cross section for, (E), 22:27055
reactions (n,p) with scandium-44, scandium-46, yttrium-88, and zirconium-90 at 0.1 to 1.0 MeV, cross-section calculations using statistical theory, (T), 22:20677 (UCRL-50359)
reactions (n,p) with silicon-28 at 14 MeV, cross-section calculations using finite-range distorted-wave Born approximation, (T), 22:11949(R) (ORO-2972-47)
reactions (n,p) with silicon-28 at 21.3 MeV, ionization defect of aluminum-27 recoils from, 22:22569
reactions (n,p) with sulfur-32 at 2.17 to 2.88 and 12.5 to 17.5 MeV, cross sections for, (E), 22:30013
reactions (n,p) with sulfur-32, activation cross section for, 22:24862 (WANL-TME-1746)
reactions (n,p) with sulfur-33, cross section for, (E), 22:5790(T) (CEA-tr-A-1898)
reactions (n,p) with tellurium-126, and tellurium-128 at 14.8 MeV, isomeric cross-section ratios for, (E), 22:42058
reactions (n,p) with titanium-46, -47, -48, -49, and -50 at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
reactions (n,p) with ytterbium-174 at 15 MeV, cross section for, (E), 22:24885
reactions (n,p) with ytterbium-176 at 15 MeV, cross section for, (E), 22:24886
reactions (n,p) with Z = 8 to 33 nuclei at 14 MeV, cross sections for, (E/T), 22:32729
reactions (n,t) with bismuth-209 at 14.8 MeV, cross section for, (E), 22:53216
reactions (n,t) with calcium-40 at 14.2 MeV, activation cross section for, (E), 22:18180
reactions (n,t) with zinc 64 at 14.7 MeV, cross section for, (E), 22:48504
reactions (nα) with tellurium-126 and tellurium-128 at 14.8 MeV, isomeric cross-section ratio for, (E), 22:42058
reactions and scattering of, dissertation summary of research on, (E), 22:44588
reactions and scattering on aluminum, boron, carbon, fluorine, and oxygen, gamma cross sections for, (E), 22:48463
reactions and scattering on iron, magnesium, manganese-55, silicon, and sulfur at 14 MeV, γ spectra from, (E), 22:44642
reactions and scattering on iron-56 at 1.0 to 7.6 MeV, γ production cross sections for, (E), 22:41979 (ORNL-4249)
reactions at 14 MeV with uranium, solid-state track detectors for studying fission fragments from, 22:25642
reactions with A = 28 to 205 nuclei at 14.4 MeV, activation cross sections for, (E), 22:22589 (ORO-3346-18)
reactions with aligned and unaligned holmium-165 at 2 to 120 MeV, total cross sections for, (E), 22:35285(R) (AERE-PR/NP-13)
reactions with aluminum-27, beryllium-9, carbon, copper, iron, lead, tungsten, and uranium at 27 GeV/c, total cross sections for, (E), 22:44619
reactions with aluminum-27, cadmium, copper, lead, and uranium-238 at 100 to 150 MeV, total cross sections for, (E), 22:53140
reactions with aluminum-27, calcium, and magnesium, fluctuations in total cross sections for, (E), 22:20578 (WASH-1079)
reactions with aluminum-27, chromium, cobalt-59, fluorine-19, iron, lead, manganese-55, nickel, phosphorus-31, silicon, and vanadium-51 at 0.4 to 1.2 MeV, total cross sections for, (E), 22:39575 (CEA-R-3279)
reactions with antimony, indium, iodine, mercury, and rhenium, analysis of total cross sections for strength functions, (E/T), 22:30015
reactions with argon-40, calcium-48, and suflur-34, total cross sections for, (E), 22:20578 (WASH-1079)
reactions with beryllium and sodium in tissue equivalent phantoms, 22:25961(R) (BNWL-531-2)
reactions with beryllium-9 at 1.9 to 4.6 MeV, total cross section for, (E), 22:20449 (CONF-680307-15)
reactions with biological tissues, group division on basis of, 22:48433
reactions with bismuth-209 and calcium-48 at 100 to 600 keV, total cross sections for, (E), 22:22560(R) (ORO-1067-2)
reactions with bismuth-209, calcium, carbon, iron, oxygen, sulfur, and thallium at 0.3 to 30 MeV, total cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with boron-10 at 14 to 21 MeV, total elastic and nonelastic cross sections for, (E), 22:11949(R) (ORO-2972-47)
reactions with boron-10, total cross section for, (E), 22:37289 (AERE-R-5224)
reactions with cadmium, erbium, hafnium, iron, lead, neodymium, palladium, samarium, and tantalum at 14 MeV, total cross sections for, (E), 22:35338
reactions with calcium and potassium at 1.8 to 8.3 MeV, total cross sections for, (E), 22:3653
reactions with calcium, potassium, and sodium at 14.7 MeV, total cross sections for, (E), 22:13987
reactions with calcium-48 at 0.1 to 1 MeV, total cross section for, (E), 22:22560(R) (ORO-1067-2)
reactions with calcium-49 in human cadavers or phantoms, 22:36192
reactions with carbon at 7 to 8 MeV, total cross section for, (E), 22:20450 (COO-7-0456)
reactions with carbon-12 and nitrogen-14 at 13 to 15 MeV, nonelastic cross sections for, (E), 22:20578 (WASH-1079)
reactions with carbon-12 at 0.7 to 4.0 MeV, total cross section for, (E), 22:20578 (WASH-1079)
reactions with carbon-12 at 14 to 25 MeV, cross sections for, (E), 22:53111
reactions with cerium at 0.8 to 2.1 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
reactions with cerium-142 at 1.0, 1.5, and 1.75 MeV, γ angular distributions for, (E), 22:20578 (WASH-1079)
reactions with chlorine, magnesium, and potassium at 5.0 to 8.5 MeV, total cross sections for, (E), 22:37340(R (EANDC(E)-89(U))
reactions with chromium-53, copper-63, copper-65, and titanium-49, total cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with deuterium and hydrogen at 10 GeV/c, total cross sections for, (E), 22:53086
reactions with elements in soil, effects of, on integral dose to roots, 22:31080
reactions with gold single crystals, radiation sputterin in, (E), 22:44237
reactions with gold-197, molybdenum, silver, and tin, total cross sections for, (E), 22:20578 (WASH-1079)
reactions with iron and sulfur at 1.8 to 2.6 MeV, total cross sections for, (E), 22:48488
reactions with iron at 0.3 to 1.5 MeV, total cross section for, (E), 22:18194
reactions with lead-206, interpretation of fine structur in total cross section as doorway state, (T), 22:1671
reactions with lead-208, niobium-93, plutonium-239, and uranium-235 at 1 to 10 MeV, cross-section calculations using local spherical optical model, (T), 22:35349
reactions with lithium and lithium-6 at 10 to 900 keV, total cross sections for, (E), 22:5809(R) (ANL-7354)
reactions with lithium-7 at 1.12 to 2.30 MeV, total cros section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with lithium-7 at 14 to 19 MeV, upper limit to cross section for trineutron production for, (E), 22:41955
reactions with nickel-58, phosphorus-31, sulfur-32, and zinc-64 at 1.0 to 2.2 MeV, cross sections for, (E),

22:18195
reactions with nitrogen-14 at 2.0 to 4.2 MeV, total cross section for, (E), 22:20449 (CONF-680307-15)
reactions with nitrogen-14 at 4 to 7 and 14 to 21 MeV, total elastic and nonelastic cross sections for, (E), 22:11949(R) (ORO-2972-47)
reactions with nuclei at 14-MeV, ΔE—E semiconductor telescope detector for studying, 22:23263 (CEA-R-3378)
reactions with nuclei, energy dependence of cross sections for, (T), 22:20667 (INR-830/I/PL)
reactions with oriented holmium-165 at 0.33 to 5.6 MeV, deformation effect in total cross section for, (E), 22:18243
reactions with oriented holmium-165 at 2 to 135 MeV, total cross section for, (E), 22:18216
reactions with oxygen at 0.25 to 2.5 MeV, total cross section for, (T), 22:1581
reactions with oxygen at 2.37 MeV, feasibility study on measurement of total cross section for, 22:37281(R) (NYO-72-191)
reactions with oxygen, total cross section for, (E), 22:20450 (COO-7-0456)
reactions with oxygen-16 at 1 to 4 MeV, total cross section and resonance parameters for, (E), 22:35293(R) (ORNL-4230)
reactions with oxygen-16 at 1.1 to 3.7 MeV, total cross section and resonance parameters for, (E), 22:42019(R) (MLM-1494)
reactions with oxygen-16 at 1.8 to 3.7 MeV, total cross section for, (E), 22:20576 (ORNL-TM-2159)
reactions with oxygen-16 at 1.8 to 3.7 MeV, total cross section for, (E), 22:20449 (CONF-680307-15)
reactions with phantoms, spectra of recoil particles from, 22:6652 (ORNL-4168, pp 183-230)
reactions with plutonium-239 and plutonium-240, data compilation on cross sections for, 22:50599 (LA-3528)
reactions with plutonium-240, -241, and -242, cross sections, resonance parameters, and fission parameters for, 22:22578 (IA-1152)
reactions with reactor and shielding materials, gamma production by, (E), 22:5829
reactions with rhenium at 0.5 to 1.5 MeV, total cross section for, (E), 22:5810 (ANL-7363)
reactions with silicon at 400 to 1200 keV, total cross section and resonance parameters for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with sodium-23 at 0.8 to 1.8 MeV and at 4 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
reactions with sodium-23, analysis of cross sections using optical model and Hauser—Feshbach theory, (T), 22:46748
reactions with sulfur and tungsten at 5.3 to 6.3 MeV, total cross sections for, (E), 22:20523
reactions with tantalum at 0.1 to 0.7 MeV, total cross section for, (E), 22:5810 (ANL-7363)
reactions with tantalum-18, tungsten, tungsten-182, tungsten-184, and tungsten-186 at 0.6 to 25 MeV, total cross sections for, (E/T), 22:32648
reactions with tantalum-181, cross sections for, 22:20561 (AHSB(S)R-141)
reactions with tellurium at 14 MeV, short-lived γ activities from, (E), 22:39671
reactions with titanium at 300 to 1200 keV, total cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with uranium-233, cross sections and resonance parameters for, 22:24861 (WANL-TME-1721)
reactions with uranium-235 and uranium-238, data compilation on cross sections for, 22:50598 (LA-3527)
reactions with uranium-238 at 0.05 to 15 MeV, generalized optical model analysis of cross sections for, (T), 22:50605
reactions with uranium-238 at 14 MeV, total cross section for, (E), 22:53167 (CEA-R-3503)
reactions with uranium-238, use of foils for determining fission factor for, 22:10565
reactions with water at 14.7 MeV, total cross section for, (E), 22:44649
reactions with Z = 12 to 83 nuclei, search for intermediate structure in total cross sections for, (E), 22:20537
reactions with Z = 6 to 82 nuclei at 14.7 MeV, total cross sections for, (E), 22:44649
reactions with zirconium-90, -92, -94, and -96 at 2 to 60 keV, total cross sections and resonance parameters for, (E), 22:14043
removal cross section for lead slab as function of polyethylene thickness, (T), 22:39555 (WAPD-TM-662)
scattering by A = 23 to 238 nuclei at 1.5 MeV, optical-model analysis of elastic, (E/T), 22:24840
scattering by A = 23 to 240 nuclei, Legendre expansion coefficients for angular distributions of elastic, (T), 22:22523 (NAA-SR-12533)
scattering by A = 27 to 209 nuclei at 6, 7, and 8 MeV, optical-model potential for elastic, (E/T), 22:27278
scattering by A = 48 to 238 nuclei at 1 MeV, effects of compound-nucleus structure on elastic and inelastic, (T), 22:27379
scattering by alpha particles, design of fast-neutron polarimeter utilizing, 22:2467
scattering by aluminum-27 and arsenic-75 at 14 MeV, γ spectra from, (E), 22:20497(R) (AECL-3009)
scattering by aluminum-27 and iron-56 at 1 to 4 MeV, cross-section calculations using six-parameter optical model for inelastic, (T), 22:3658
scattering by aluminum-27 and sulfur at 60 to 226 keV, angular distributions for elastic, (E), 22:11948(R) (NP-17216)
scattering by aluminum-27 at 3.5 MeV, γ angular distributions and spectra for inelastic, (E), 22:42005
scattering by aluminum-27, carbon-12, cobalt-59, magnesium-24, silicon-28, and sulfur-32 at 7.6 MeV, differential cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by aluminum-27, carbon-12, iron, niobium-93, oxygen, plutonium-239, silicon, tungsten, and uranium-235, γ production cross sections for inelastic, (E), 22:18287
scattering by aluminum-27, chlorine, magnesium, sodium-23, and sulfur at 2.8 MeV, γ angular distributions from inelastic, (E), 22:35249 (AD-663112)
scattering by aluminum-27, chlorine-35, magnesium-24, sodium-23, and sulfur-32 at 2.8 MeV, inelastic, (E), 22:20578 (WASH-1079)
scattering by aluminum-27, copper, molybdenum, selenium, silicon, sulfur, tin, and yttrium-89 at 0.4 to 1.5 MeV, elastic, (E), 22:20578 (WASH-1079)
scattering by aluminum-27, copper-63, copper-65, and iron-56 at 2.9 MeV, differential cross sections for inelastic, (E), 22:35260
scattering by antimony-121 and antimony-123, γ and neutron spectra from inelastic, (E), 22:27153
scattering by arsenic, cerium, chromium, cobalt, iron, and yttrium at 6 MeV, elastic and inelastic, (E), 22:35285(R) (AERE-PR/NP-13)
scattering by arsenic-75, holmium-165, iodine-127, and lanthanum at 14 MeV, inelastic, (E), 22:32512(R) (AECL-3108)
scattering by atmosphere at 5 MeV, neutron fluence from, (E), 22:29836
scattering by barium-135, barium-137, gold-197, indium-115, iridium-191, and mercury-199, activation cross sections for inelastic, (E), 22:48560
scattering by barium-138, iron-56, and titanium-48, optical-model analysis using pole representation, (T), 22:32711
scattering by beryllium-9, bismuth-209, cadmium-114, carbon-12, cobalt-59, indium-115, iodine-127, lead, nickel-62, niobium-93, and tin-118 at 4 MeV, elastic, (E), 22:14019
scattering by bismuth-209 at 0.9 to 2.0 MeV, γ angular distributions for inelastic, (E), 22:27208
scattering by bismuth-209 at 1.04 MeV, γ angular distributions for inelastic, (E/T), 22:42071
scattering by bismuth-209, antimony-121, and antimony-123, γ angular distributions and spectra for inelastic, (E), 22:20578 (WASH-1079)
scattering by boron-10 and -11 at 0.50 to 2.24 MeV, differential cross sections and polarizations for, (E), 22:5809(R) (ANL-7354)
scattering by cadmium-111 at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for inelastic, (E), 22:24842
scattering by calcium and potassium at 2 to 8 MeV, differential cross sections for elastic, (E), 22:3653
scattering by calcium-40, nickel, and zinc at 14 MeV, effects of exchange interaction on inelastic, (T), 22:44675
scattering by carbon at 5.7 to 7.7 MeV, γ and neutron angular distributions for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by carbon-12 and nitrogen-14 at 13 to 15 MeV, cross sections for inelastic, (E), 22:20578 (WASH-1079)
scattering by carbon-12 at 0.5 to 2.0 MeV, differential cross section and polarization for elastic, (E), 22:20578 (WASH-1079)
scattering by carbon-12 at 13 to 21 MeV, cross sections for elastic and inelastic, (E), 22:39586
scattering by carbon-12 at 14 MeV, spectra of inelastic, 22:19137
scattering by carbon-12 at 14 to 21 MeV, differential cross sections for elastic, (E), 22:11949(R) (ORO-2972-47)
scattering by carbon-12 at 14 to 25 MeV, differential cross sections for elastic and inelastic, (E), 22:53111
scattering by carbon-12 at 14.7 MeV, angular distribution of polarization in, (E), 22:32365 (MIT-2098-422, pp 13-21)
scattering by carbon-12 at 15 MeV, n-γ angular correlations from inelastic, (E), 22:29933
scattering by carbon-12 at 15 to 20 MeV, angular distributions for elastic and inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by carbon-12 at 15.85 MeV, angular distribution of neutron polarization in elastic, (E), 22:35225
scattering by carbon-12 at 15.85 MeV, asymmetry and polarization angular distributions for elastic and inelastic, (E), 22:5773
scattering by carbon-12 at 15.85 MeV, using polarized neutrons, asymmetry coefficients for inelastic, (E), 22:35225

scattering by carbon-12, asymmetry measurements using recoil method for elastic and inelastic, (E), 22:35224
scattering by carbon-12, copper-65, iron-54, iron-56, nickel-58, and nickel-60 at 2.33 MeV, elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by carbon-12, copper-65, iron-54, iron-56, and nickel-58 at 2.3 MeV, cross-section and polarization angular distributions, (E), 22:7637(R) (COO-1573-33)
scattering by cerium-140 at 1.64 to 1.87 MeV, γ angular distributions for inelastic, (E/T), 22:42071
scattering by chromium at 0.3 to 1.0 MeV, phase-shift analysis of, (E/T), 22:5809(R) (ANL-7354)
scattering by chromium, cobalt, copper, iron, nickel, and titanium at 1.5 MeV, angular distributions and differential cross sections for elastic, (E), 22:53154
scattering by cobalt and copper at 1.5 to 8.1 MeV, angular distributions of differential cross sections for, (E/T), 22:13954 (AE-303)
scattering by cobalt-59 at 4.9 MeV, neutron angular distributions and spectra for, (E), 22:7637(R) (COO-1573-33)
scattering by cobalt-59, copper-63, copper-65, lanthanum-139, manganese-55, and praseodymium-141 at 2.9 MeV, γ spectra from inelastic, (E), 22:50643
scattering by copper, lead, and uranium at 4 MeV, polarization effects on Coulomb, (E), 22:20549
scattering by copper-63 and copper-65 at 0.7 to 1.4 MeV, cross sections and γ spectra for inelastic, (E), 22:18182
scattering by copper-63, copper-65, gold-197, holmium-165, molybdenum, niobium-93, rhenium, sodium-23, tantalum, uranium, and zirconium at 0.3 to 1.5 MeV, inelastic, (E), 22:18194
scattering by deformed rare-earth nuclei, level density parameters from inelastic, (E), 22:27104
scattering by deuterium and tritium at 6 to 23 MeV, angular distributions and polarization for elastic, (E), 22:20578 (WASH-1079)
scattering by deuterium at 14 MeV, differential cross section for elastic, (E), 22:53083
scattering by deuterium at 14 MeV, recoil deuteron angular distribution for elastic, (E), 22:26809
scattering by deuterium at 2.7 to 14 MeV, resolution correction for scintillation detection of recoil deuterons from, 22:16864
scattering by deuterium at 5.6, 7.0, 8.0, and 9.0 MeV, differential cross section for elastic, (E), 22:18287
scattering by first excited state of carbon-12, DWBA analysis with and without spin-orbit coupling, (E/T), 22:26853
scattering by fluorine-19 at 0.3 to 1.5 MeV, differential cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by fluorine-19 at 0.5 to 2.2 MeV, phase-shift analysis of, (E/T), 22:5809(R) (ANL-7354)
scattering by fluorine-19 at 570 and 850 keV, germanium detector for measuring gamma spectra from inelastic, 22:10553
scattering by fluorine-19, gamma spectra from, (E), 22:29930
scattering by germanium at 0.3 to 1.5 MeV, differential cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by germanium-73, γ spectra from inelastic, (E), 22:3660
scattering by gold-197 and iron-56 at 2.5 and 14 MeV, γ angular distributions from, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by gold-197 at 0.2 to 1.6 MeV, differential cross sections for, (E), 22:27151
scattering by gold-197, lead, thorium-232, tungsten, and uranium at 0.6 to 1.2 Mev, differential cross sections and polarization for elastic, (E), 22:20578 (WASH-1079)
scattering by heavy elements of 0.5 to 2.7 MeV, system for studying small-angle, 22:5809(R) (ANL-7354)
scattering by helium at 0.2 to 7.0 MeV, neutron and recoil angular distributions for, (E), 22:26797
scattering by helium at 0.2 to 7.0 MeV, phase-shift analysis of differential cross sections for, (E), 22:39587
scattering by helium at 1.01 and 2.44 MeV using polarized neutrons, angular distributions of asymmetry in, (E), 22:26798
scattering by helium-3 and tritium at 14.4 MeV, angular distributions for elastic, (E), 22:26821
scattering by helium-3 at 12 and 16 MeV, asymmetry measurements on, (E), 22:48202(R) (BMwF-FBK-68-01)
scattering by holmium-165 at 3.0 to 7.5 MeV, angular distributions for elastic and inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by hydrogen at 200 MeV, differential cross section and polarization for, (E), 22:53092
scattering by indium at 1.5 MeV, γ production cross sections for inelastic, (E), 22:20578 (WASH-1079)
scattering by indium-113 at 0.36 to 1.02 MeV, activation cross section for inelastic, (E), 22:14039
scattering by indium-115 at 0.36 to 1.02 MeV, activation cross section for inelastic, (E), 22:14039
scattering by indium-115 at 1 to 20 MeV, activation cross section for inelastic, (E), 22:3624
scattering by indium-115 at 1 to 20 MeV, activation cros section for, (E), 22:3743
scattering by iodine-127 at 0.06 to 0.9 MeV, cross sections for inelastic, (E), 22:5842
scattering by iodine-127 at 50 to 50 keV, cross section for inelastic, (E), 22:26932(R) (NP-17434)
scattering by iodine-127 at 570 and 850 keV, germanium detector for measuring gamma spectra from inelastic, 22:10553
scattering by iron at 0.3 to 1.5 MeV, cross section for elastic, (E), 22:18194
scattering by iron at 0.3 to 1.5 MeV, differential cros sections for elastic and inelastic, (E), 22:50585
scattering by iron at 0.35 to 0.97 MeV, fine and intermediate structure resonances in, (E), 22:29962
scattering by iron, nickel, and tungsten at 1.0 to 4.5 MeV, differential cross sections for elastic and inelastic, (E), 22:27067
scattering by iron-54 at 1.8 to 5.3 MeV, γ angular distributions from, (E), 22:3668
scattering by iron-56 and phosphorus-31 at 4.7 and 5.5 MeV, γ spectra from inelastic, (E), 22:35285(R) (AERE PR/NP-13)
scattering by iron-56 at 0.35 to 0.97 MeV, differential cross section and polarization for elastic, (E), 22:20578 (WASH-1079)
scattering by iron-56 at 0.4 to 1.2 MeV, angular distributions for elastic, (E), 22:39575 (CEA-R-3279
scattering by iron-56 at 0.87 to 0.99 MeV, γ angular distributions for inelastic, (E/T), 22:42071
scattering by iron-56 at 1.0 to 7.6 MeV, cross sections for inelastic, (T), 22:20576 (ORNL-TM-2159)
scattering by iron-56 at 1.0 to 7.6 MeV, differential cross sections for elastic and inelastic, (E), 22:41979 (ORNL-4249)
scattering by iron-56 at 4.0 to 7.6 MeV, cross sections for elastic, (T), 22:20576 (ORNL-TM-2159)
scattering by iron-56 at 4.6 to 7.6 MeV, cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by iron-56 at 4.6 to 7.6 MeV, differential cross sections for elastic and inelastic, (E), 22:11918 (ORNL-TM-2052)
scattering by lanthanum and praseodymium-141 at 8 MeV, differential cross sections and time-of-flight spectr for elastic, (E), 22:20564 (CONF-680307-13)
scattering by lanthanum-139 and praseodymium-141 at 0.5 to 2.3 MeV, γ spectra from inelastic, (E), 22:26932((NP-17434)
scattering by lanthanum-139 and praseodymium-141 at 0.2 to 2.5 MeV, differential cross sections for elastic a inelastic, (E), 22:11948(R) (NP-17216)
scattering by lanthanum-139 and praseodymium-141 at 0.2 to 2.5 MeV, differential cross sections for elastic a inelastic, (E), 22:27218
scattering by lead at 4.56 MeV, differential cross section for elastic, (E), 22:50630
scattering by lead, magnesium, silicon, sulfur, and zin at 14 MeV, generalized optical model for inelastic, (T), 22:44772
scattering by light nuclei, optical-model analysis of elastic, (T), 22:30051
scattering by lithium-6 at 1.0 to 2.3 MeV, integrated cross section for elastic, (E), 22:37340(R) (EANDC(E 89(U))
scattering by lithium-6 at 4.8, 5.7, and 7.5 MeV, differential cross sections for elastic and inelastic (E), 22:7639 (LA-3765)
scattering by lithium-6 at 5 to 7 MeV, cross sections f inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by lithium-7 at 1.12 to 2.30 MeV, differenti cross sections for elastic and inelastic, (E), 22:29904 (EUR-3903)
scattering by lithium-7 at 1.12 to 2.30 MeV, integrated cross section for inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by lithium-7 at 14 MeV, neutron time-of-flig spectra from inelastic, (E), 22:15960
scattering by lithium-7 at 3.3, 4.8, 5.7, and 7.5 MeV, differential cross sections for elastic and inelastic (E), 22:7639 (LA-3765)
scattering by manganese-55 and vanadium-51, γ angular distributions and production cross sections for inelastic, (E), 22:20578 (WASH-1079)
scattering by nickel and zinc at 0.50 to 1.75 MeV, angular distributions for elastic, (E), 22:26932(R) (NP-17434)
scattering by nickel at 3.0 to 8.1 MeV, angular distributions of differential cross section for elastic, (E/T), 22:13954 (AE-303)
scattering by nickel-58, nickel-60, and nickel-62 at 1. to 2.4 MeV, cross sections for inelastic, (E), 22:26932(R) (NP-17434)
scattering by niobium-93 and tantalum-181 at 1 to 2 MeV γ spectra from inelastic, (E), 22:27158
scattering by niobium-93 at 160 MeV, γ spectra from inelastic, (E), 22:27159
scattering by niobium-93 at 6.0 and 7.5 MeV, differenti cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by nitrogen-14 and oxygen-16 at 14.8 MeV, differential cross sections for elastic, (E), 22:181
scattering by nitrogen-14 at 4.0 to 6.5 MeV, resonances

in elastic and inelastic, (E), 22:53125
scattering by nitrogen-14 at 5.8 to 8.6 MeV, differential cross sections and γ spectra for inelastic, (E), 22:20576 (ORNL-TM-2159)
scattering by nitrogen-14 at 5.8 to 8.6 MeV, γ spectra and production cross sections for inelastic, (E), 22:37291 (ORNL-TM-2267)
scattering by nitrogen-14 at 6.0 to 8.4, γ spectra for inelastic, (E), 22:20578 (WASH-1079)
scattering by nuclei at 0.4 to 4.6 MeV, analysis of optical model using pole representations for elastic, (T), 22:32712
scattering by nuclei at 2.75 MeV, method for studying gamma spectra from inelastic, (E), 22:32561
scattering by nuclei, Monte Carlo computer program for finite-geometry and polarized mutliple-scattering corrections to polarization data from, 22:7625
scattering by nuclei, resonance interference in, (T), 22:50657 (ANL-7467)
scattering by oxygen-16, resonances in elastic, (T), 22:37281(R) (NYO-72-191)
scattering by palladium at 0.3 to 1.5 MeV, angular distributions for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by platinum, rhenium, and tantalum at 0.3 to 1.5 MeV, angular distributions for elastic and inelastic, (E), 22:27109
scattering by platinum, rhenium, and tantalum at 0.3 to 1.5 MeV, differential cross sections for elastic and inelastic, (E/T), 22:5810 (ANL-7363)
scattering by platinum, rhenium, and tantalum, angular distributions for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by plutonium-239 at 0.2, 0.3, and 0.4 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by rhodium-103 at 0.18 to 14.8 MeV, activation cross sections for inelastic, (E), 22:24851 (AECL-3043)
scattering by silicon at 4, 6, 6.7, and 7.5 MeV, cross sections for, (E), 22:20578 (WASH-1079)
scattering by silicon at 4.0 to 5.8 MeV, differential cross sections for elastic and inelastic, (E), 22:1621
scattering by silicon-29 at 0.57 to 2.28 MeV, energy level excitation by, (E), 22:46743
scattering by sodium iodide at 10 to 150 keV, cross sections and pulse-height spectra for inelastic, (E), 22:11948(R) (NP-17216)
scattering by sodium-23 at 1.5 to 6.5 MeV, cross sections for elastic and inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by strontium-87 at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for inelastic, (E), 22:24842
scattering by sulfur and zinc at 4.5 to 8.0 MeV, differential cross sections for elastic and inelastic, (E), 22:27067
scattering by tin at 0.3 to 1.5 MeV, differential cross section for elastic, (E), 22:18194
scattering by tungsten at 1 MeV, γ production cross sections for inelastic, (E), 22:20578 (WASH-1079)
scattering by tungsten-186 at 0.3 to 1.5 MeV, excitation cross section for inelastic, (E), 22:18194
scattering by uranium-235 at 0.1 to 1.8 MeV, cross sections and spectra for inelastic, (E), 22:18286
scattering by uranium-238 at 14 MeV, cross sections for elastic and inelastic, (E), 22:53167 (CEA-R-3503)
scattering by uranium-238, adiabatic coupled-channel calculations of cross sections for, (T), 22:37340(R) (EANDC(E)-89(U))
scattering by uranium-238, adiabatic coupled-channel calculations for, (T), 22:27209
scattering by uranium-238, elastic and inelastic, (T), 22:18204 (BMwF-FBK-67-90)
scattering by vanadium, differential cross sections for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by vanadium-51 at 0.4 to 1.0 MeV, γ angular distributions and yields for inelastic, (E), 22:26941
scattering by vanadium-51 at 1.0 to 3.8 MeV, angular distributions and excitation functions for inelastic, (E), 22:48495
scattering by yttrium-89 in reactor spectrum, activation cross sections for inelastic, (E), 22:50586
scattering by zinc-64, zinc-66, and zinc-68 at 1.2 to 2.2 MeV, cross sections for inelastic, 22:26932(R) (NP-17434)
scattering by, lithium-6, lithium-7, niobium-93, and silicon-28 at 3 to 8 MeV, differential cross sections for elastic and inelastic, (E), 22:18287
scattering cross section for uranium-238, testing by pulse decay experiments, (E), 22:24767 (GA-8536)
scattering cross section for zirconium-90 at 1.8 to 3.6 MeV, calculations using energy-dependent potentials, (T), 22:32435
scattering cross sections for heavy even-even nuclei, computer program for calculation using deformed-nucleus optical model, (T), 22:1563 (NAA-SR-Memo-12532)
scattering cross sections for, calculation of inelastic, (T), 22:18081
scattering experiments at 14 MeV, time-of-flight system for, 22:44597
scattering experiments using, design of shadow bar for, 22:322
scattering in soils, moisture determination from, 22:6666
scattering in uranium-238 exponential piles, measurement of inelastic, 22:33016
scattering measurements in aluminum, 22:5916 (AEEW-R-551)
scattering of, model for inelastic, (T), 22:35211
shielding calculations for Aircraft Nuclear Propulsion reactor, use of computer programs for, 22:50782 (APEX-918)
shielding calculations for Fort St. Vrain Power Reactor, computer programs for, 22:14136 (GA-8065)
shielding calculations for Otto Hahn Reactor, analysis of, (E/T), 22:46991
shielding for, testing of various materials for, 22:7925
shielding measurements for NERVA reactor, analysis of, 22:32942
slowdown in a finite hydrogenous medium, time dependent solution of pulsed, (T), 22:14296 (RPI-328-100, pp 140-87)
slowing down in beryllium and graphite, (E/T), 22:26765(T) (AERE-Trans-1084)
slowing down in heavy materials, (T), 22:22527 (RPI-328-112, pp 62-103)
slowing down in heavy media, time moments of, (T), 22:39551 (RPI-328-123, pp 39-52)
slowing down in pulsed media, few-pole expansion formalism for, (T), 22:29835
slowing down in water from tritium (p,n) reaction source, (E), 22:1581
slowing down of, continuous model for inelastic, (T), 22:35211
slowing down time in thin slabs of hydrogenous material, (E), 22:37340(R) (EANDC(E)-89(U))
slowing-down times in graphite, measurement using resonance filter method, (E), 22:29890
spectra and kinetics in uranium-238 spheres, calculation of, (T), 22:11873(R) (GA-8085)
spectra calculations for higher energy, use of associated Laguerre polynomials for, 22:30373
spectra calculations for Subcritical Time-of-Flight Spectrum Facility, 22:7894(R) (GA-8191)
spectra determination from experimental activations of threshold detectors, (E/T), 22:26779
spectra emerging from spherical shells of graphite, polyethylene, sodium, and natural uranium, measurements using time-of-flight method, (T), 22:37276 (AERE-R-5364)
spectra for, model for correlation of integral experiments and, 22:50833
spectra from lithium-7 (p,n) reactions at 8.3 to 9.1 MeV, (E), 22:37347
spectra from plutonium-238 fluoride, (E), 22:32461
spectra in beam port of Triga Mark-II, use of nuclear emulsion for measurement of, 22:30332
spectra in depleted uranium, time-of-flight measurements of position-dependent, (E), 22:39548 (RPI-328-123, pp 18-25)
spectra in fast reactors, analytic method for calculating, 22:22527 (RPI-328-112, pp 62-103)
spectra in graphite and water, (E), 22:26787
spectra in graphite, iron, and lead, (T), 22:29841
spectra in graphite, iron, and water slabs calculations of, (T), 22:44589
spectra in iron and depleted uranium, position-dependent, (E/T), 22:22526 (RPI-328-112, pp 16-59)
spectra in iron and depleted uranium, position-dependent, (E), 22:20578 (WASH-1079)
spectra in iron, analysis of space-dependent, 22:39875 (BNL-50082, pp 1-18)
spectra in iron, measurement using time-of-flight method, (E), 22:13906 (RPI-328-100, pp 57-112)
spectra in iron, position-dependent, (E), 22:39548 (RPI-328-123, pp 18-25)
spectra in iron, time-of-flight measurements of, (E), 22:5738
spectra in iron--water slab shields, (T), 22:44589
spectra in IRT (Sofia) Reactor beam channel, 22:24821
spectra in large carbide and oxide fast reactor cores, evaluation of adjoint, (T), 22:14296 (RPI-328-100, pp 140-87)
spectra in liquid nitrogen, from 14-MeV source, (E), 22:26759 (GA-8485)
spectra in shielding layers, use of lithium-6-sandwiched surface barrier detectors for measuring, 22:38064 (CONF-670545, pp 185-90)
spectra in spheres of depleted and enriched uranium, measurements using pulsed source technique, (E), 22:29829 (GA-8551)
spectra in subcritical assemblies, data analysis for, 22:20410 (GA-8466)
spectra measurements in 2MW(t) UA-RR-1 reactor, use of activation detectors for, 22:42370
spectra measurements in reactors, computer program for analyzing data from proton-recoil proportional detectors for, 22:25631 (AWRE-O-9/68)
spectra measurements in reactors, lithium-6-sandwiched semiconductor detectors for, 22:36055
spectra measurements in STSF critical assembly, analysis of, 22:47008(R) (GA-8715)

- spectra measurements in VERA and VIPER, accuracy of time-of-flight method for, 22:35653
- spectra measurements in VERA assembly 19A, 22:35653
- spectra measurements in ZPR-3 assembly-51, analysis of, 22:33031
- spectra measurements of, computer program, P/sub n/-approximation, and S/sub N/-method for, (E/T), 22:35707
- spectra measurements of, use of activation detectors for, 22:8339 (JUL-414-RX)
- spectra of 0.2- to 1-MeV, sealed helium-3 gas scintillation detector for measuring, 22:47329
- spectra of accelerator-produced, spectrometer for measuring, 22:4456 (JUL-499-RX)
- spectra of cosmic, near sea level, (E), 22:15386
- spectra of, collimation, geometrical efficiency, and spatial resolution in measurements of, (T), 22:13906 (RPI-328-100, pp 57-112)
- spectra of, computer program for analyzing scintillation pulse-height, 22:19135 (ORNL-TM-2112)
- spectra of, computer program for processing activation data for determining, 22:30834
- spectra of, development of detectors for measuring, 22:48424 (RPI-328-133, pp 35-55)
- spectra of, measurement using proton recoil track in nuclear emulsions, 22:16898
- spectra of, measurement using sandwich foil activation, (E/T), 22:20403 (CONF-680307-14)
- spectra of, measurement using time-of-flight method, (E/T), 22:13906 (RPI-328-100, pp 57-112)
- spectra of, measurement using time-of-flight method with associated-particle technique, 22:9758 (CEA-R-3254)
- spectra of, measurement using time-of-flight method, 22:9802(R) (NYO-1082-9)
- spectra of, methods development for calculating, (T), 22:13906 (RPI-328-100, pp 57-112)
- spectra of, methods development for reduction of time-of-flight data, 22:39548 (RPI-328-123, pp 18-25)
- spectra of, photographic scanning technique for measurement of proton tracks in nuclear emulsions used for determining, 22:36082
- spectral determination of reactor, equations for, 22:16309 (CEA-R-3351)
- spectrum measurements from SNEAK and SUAK, use of proton-recoil, lithium-6-sandwiched, and time-of-flight spectrometers for, 22:4432
- spectrum measurements of, use of nuclear emulsions for, 22:4435
- streaming in annular ducts, shielding analysis for, (T), 22:42534
- streaming through concrete ducts, calculations using albedo concept, (E/T), 22:34731 (AD-665003)
- transmission by polarized cobalt-59 at 1.19 MeV, spin-spin interaction in, (E), 22:27024
- transmission through iron at 4 to 200 MeV, measured and calculated linear, (E/T), 22:50518
- transport approximations for use above 0.8 MeV, numerical comparison of, (T), 22:29833 (WAPD-TM-690)
- transport equation in plane geometry, solution by Fourier transform method of inhomogeneous multigroup, (T), 22:26761 (NIJS-R-520)
- transport equation with anisotropic elastic scattering, solution for shielding calculations, (T), 22:50510
- transport in missile launch tube, albedo Monte Carlo analysis of, 22:31900
- transport of 14-MeV, calculation for air-ground interface, 22:4280
- transport theory for, numerical comparison of diffusion-like approximations for, (T), 22:48802
- use for activation analysis of blood and thyroid gland, 22:17049
- use for measurement of water content in soils, 22:25511
- use for radiography at CENG, research on, 22:51222 (TID-24730)
- use for radioisotope production in control rods,, 22:25176(P)
- use in activation analysis of hydrogenous materials, 22:11948(R) (NP-17216)
- use in nuclear physics research, survey of, 22:39565
- uses in radiography, 22:4372
- uses in radiography of objects in hot cells, 22:4371
- yields of 14-MeV, from deuteron reactions with tritium, (T), 22:7630 (SC-RR-67-346)

NEUTRONS, FISSION

(Neutrons produced in the fission of a nucleus.)

- activity produced by graphical technique for estimating, 22:18724
- age-to-indium resonance in light and heavy water-moderated thorium dioxide assemblies, (E), 22:11885
- attenuation in water and aluminum-water slabs, (E), 22:32447
- calculations of eta for thermal neutron fission of uranium-233, using RECAP 4C Monte Carlo program, (T), 22:32590
- capture by gold-197 and indium-115, average cross section for, (E), 22:32524
- diffusion in heavy water, age and fast-effect in, (T), 22:11878
- dosimetry in man, use of chromosome aberrations in leukocytes of circulating blood for, 22:23536
- dosimetry in tissue equivalent materials, fluence-dose conversion factors for, 22:43309(T) (ORNL-tr-1963)
- dosimetry of californium-252 spontaneous, in phantoms, 22:30866 (BNL-12452)
- effects on barley seeds, effects of boron on, 22:52024
- effects on choline content of liver of rats, effects of dose on, 22:47490
- effects on content of choline in liver of rats, effects of dose on, 22:21434
- effects on epithelial cells of cornea of mice, physiological regeneration following, 22:25802(T) (JPRS-42635, pp 65-71)
- effects on epithelium of cornea and intestines in mice, effects of dose fractionation on genetic, 22:21594
- effects on erythropoietic stem cells of mice, effect of dose fractionation on, 22:577
- effects on growth of black-eyed peas, effects of seed exposure on, 22:21638
- effects on hematopoiesis in mice, effects of dose fractionation on, 22:28621 (ANL-7278, pp 1-94)
- effects on histamine content of rat tissues, effects of dose on, 22:25726
- effects on human chromosomes, aberrant, 22:38246
- effects on hybrid cotton seeds, use of marker traits to determine effects of seed moisture content on mutagenics, 22:40952 (ORO-657, pp 93-120)
- effects on intestine of guinea pigs, acute pathological, 22:49553
- effects on intestine of mice, comparison of, with γ, 22:49551
- effects on lens of eyes in goats, whole-body, 22:19415
- effects on mammary glands of rats, neoplastic, 22:28621 (ANL-7278, pp 1-94)
- effects on mortality in young chickens, protective effects of AET against, 22:8591
- effects on oxidation of stainless steels, 22:4842
- effects on personnel in nuclear industry, methods for evaluation of, 22:31268
- effects on plants of barley, cotton, oats, soybeans, and wheat, effects of seed exposure on, 22:38427(R) (ORO-659)
- effects on plants, RBE for, 22:19456
- effects on rabbits, RBE for, 22:582
- effects on reactivity of thermal reactors of spectra of, 22:30161 (WAPD-T-1950)
- effects on seeds of barley, oats, and wheat, mutagenic, 22:40952 (ORO-657, pp 93-120)
- effects on serum enzyme release by sheep, mechanism for effects of LET on, 22:21427
- effects on silicon, production and annealing of defects from, (E), 22:37041
- effects on sodium-24 excretion in rats, 22:51874 (ORAU-106, pp 5-104)
- effects on testicular weight loss in mice in comparison with effects of x radiation, 22:28621 (ANL-7278, pp 1-94)
- effects on weight of testes of mice, RBE of, 22:28274 (ANL-7278, pp 250-82)
- energy spectrum of slowing down, method for calculating, 22:14166
- flux distribution measurements in Phoebus 1B shield, 22:6084
- propagation in atmosphere, research program on, (E), 22:26759 (GA-8485)
- reactions (n,2n) with beryllium-9, cross section for, (E), 22:22546 (WAPD-TM-667)
- reactions (n,3n) with nuclei, cross sections for, (T), 22:3596
- reactions (n,f) with plutonium-239, uranium-233, and uranium-235, fission-product activities for, (T), 22:20569 (HNS-1229-77)
- reactions (n,f) with plutonium-239, uranium-235, and uranium-238, fission-product charge distributions and yields from, (E), 22:46761 (APED-5398)
- reactions (n,p) with rhodium-103, average cross section for, (E), 22:35300
- reactions (n,p) with sulfur-32, average cross section for, (E), 22:32524
- reactions with beryllium-9 in beryllium oxide, (E), 22:9921 (JUL-Conf-1)
- reactions with carbon, lead, and water at 1 to 9 MeV, total cross sections for, (E), 22:7619
- scattering by indium-115, average cross section for excitation of the metastable state, (E), 22:32524
- slowing down by transition metal hydrides, 22:19528
- slowing down in lithium hydride, space-independent, (T), 22:9762 (NAA-SR-12493)
- slowing-down ages and spectra in concrete, (E), 22:3956
- spectra from thermal neutron fission of plutonium-239, uranium-233, and uranium-235, measurement using high-energy activation detectors, (E), 22:16046
- spectra of, use of aluminum-27 and gold-198 activation detectors for determining, 22:14804
- spectral characteristics of SEFOR, integrated, 22:16191
- spectrum at 6 to 20 MeV from uranium-235 fission, (E), 22:5828
- transport calculations for infinite medium of oxygen, effects of cross-section sets on, (T), 22:39545 (ORNL TM-2252)
- transport in atmosphere, effects of air-ground interface on, (T), 22:3591 (ORNL-TM-1819)
- yields of, variation with fragment mass, (T), 22:35394

NEUTRONS, FUSION

(Neutrons produced in the fusion of two nuclei.)
reactions (n,f) with uranium-238, fission-product activities for, (T), 22:20569 (HNS-1229-77)

NEUTRONS, INTERMEDIATE
(neutrons of energy 100 eV to 100 keV)
capture and fission cross sections for uranium-233, simultaneous measurements of, (E), 22:48558
capture by A = 41 to 176 nuclei at 5 to 100 keV, cross sections for, (T), 22:32596
capture by aluminum-27, iron, nickel, and sodium-23, resonance parameters and radiative widths for, (E), 22:44627 (TID-24601)
capture by aluminum-27, iron, nickel, and sodium-23 at 1 to 200 keV, resonance widths for, (E), 22:42004
capture by antimony-121, antimony-123, indium-115, lanthanum-139, and manganese-55, resonance integrals for, (E), 22:46758
capture by bromine-79, germanium-76, indium-115, rhodium-103, selenium-80, tellurium-130, and zinc-68 at 24 keV, isomeric cross-section ratios for, (T), 22:32537
capture by cesium-133, hafnium, molybdenum, niobium-93, rhenium, tantalum, and tungsten at 10 to 150 keV, cross sections for, (E), 22:35346
capture by copper at 0.2 to 16.5 keV, resonance parameters for, (E), 22:39625
capture by copper-63, copper-65, and iron-56, γ spectra from, (E), 22:35285(R) (AERE-PR/NP-13)
capture by dysprosium-164, germanium-76, palladium-108, and tellurium-130 at 24 keV, cross sections and spin-cutoff parameters for, (E/T), 22:48498
capture by erbium-167, average γ spectra from resonance, (E), 22:42049
capture by fission products, cross sections for, (T), 22:37340(R) (EANDC(E)-89(U))
capture by fission products, statistical method of calculating cross sections for, (T), 22:50606
capture by gold, cross section for, 22:37340(R) (EANDC(E)-89(U))
capture by gold-197 and platinum-195, resonance, (E), 22:37340(R) (EANDC(E)-89(U))
capture by gold-197 and tungsten-186, measurements of γ spectra using liquid scintillator for resonance, (E), 22:48423 (RPI-328-133, pp 1-34)
capture by gold-197 and uranium-238 at 25 to 500 keV, cross sections for, (E), 22:35346
capture by gold-197 at 10 to 60 keV, resonance averaged γ spectra for, (E), 22:50617
capture by hafnium-177, molybdenum-95, molybdenum-96, palladium-105, ruthenium-99, and ruthenium-101, cross sections and resonance spin assignments for, (E), 22:48554
capture by iron-56 and nickel-58, p-wave strength function for, (E), 22:39637 (RPI-328-123, pp 1-17)
capture by molybdenum, resonance, (E), 22:37340(R) (EANDC(E)-89(U))
capture by nickel-62 at 4.6 keV, radiative width for resonance, (E), 22:39637 (RPI-328-123, pp 1-17)
capture by niobium-93, resonance parameters and γ spectra for, (E), 22:53194
capture by plutonium-240 at 38 to 820 eV, radiative widths for resonance, (E), 22:32598
capture by rhenium-185 and rhenium-187, cross sections and resonance parameters for, (E), 22:30014
capture by sodium-23 at 2 to 4 keV, radiative width of 2.85-keV resonance in, (E), 22:26930 (GA-8496)
capture by tungsten, tungsten-182, tungsten-183, tungsten-184, and tungsten-186, average cross sections for, (E), 22:39637 (RPI-328-123, pp 1-17)
capture by uranium-233, cross section for, (E), 22:29986 (ORNL-TM-2140)
capture cross sections and strength functions for A = 93 to 197 nuclei, (E), 22:37340(R) (EANDC(E)-89(U))
capture-to-fission ratio for plutonium-239 at 0.454 to 24.8 keV, measurements using lattice reactivity, (E), 22:32589
capture-to-fission ratio for plutonium-239, (E), 22:48423 (RPI-328-133, pp 1-34)
capture-to-fission ratio for plutonium-239, data evaluation for, (T), 22:53168 (JAERI-1162)
capture-to-fission ratio for plutonium-239, method for measuring, (E), 22:35345
capture-to-fission ratios for plutonium-239 and uranium-235, measurements using time-of-flight method, (E), 22:37364
capture-to-fission ratios for plutonium-239, plutonium-241, uranium-233, and uranium-235, resonance, (E), 22:42016 (KAPL-P-3438)
effects on vacancy cluster production in Type 304 and Type 316 stainless steel and iron, analysis of, 22:53411 (BNWL-819)
flux measurements of KIWI-Transient Nuclear Test effluent, analysis of, 22:39849 (LA-3449)
reactions (n,α) with boron-10, data evaluation for cross sections and branching ratios of, 22:39579 (EUR-3950)
reactions (n,f) and (n,γ) with plutonium-239 and uranium-235, cross sections and resonance integrals for, (E), 22:42011(T) (BNL-tr-219)
reactions (n,f) with plutonium-239 at 400 to 405 eV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with plutonium-239, cross section and resonance parameters for, (E), 22:24863(T) (BNL-tr-197)
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, and uranium-235 at 2 keV, cross sections for, (E), 22:32588
reactions (n,f) with plutonium-240 at 0.2 to 8 keV, resonance structure and widths for, (E), 22:27095
reactions (n,f) with uranium-232 at 5 to 1900 eV, cross section for, (E), 22:27105
reactions (n,f) with uranium-233, cross section for, (E), 22:29986 (ORNL-TM-2140)
reactions (n,f) with uranium-235, cross section and resonance parameters for, (E), 22:30005
reactions (n,f) with uranium-235, fission-fragment energy and mass distributions in, (E), 22:32631
reactions (n,f) with uranium-235, resonance parameters from multilevel analysis using R-matrix theory, (T), 22:48522 (LA-3917)
reactions (n,t) with lithium-6 at 250 keV, triton energy distributions from, (E), 22:35243
reactions with antimony, indium, iodine, mercury, and rhenium, analysis of total cross sections for strength functions, (E/T), 22:30015
reactions with biological tissues, group division on basis of, 22:48433
reactions with boron-10, total cross section for, (E), 22:37289 (AERE-R-5224)
reactions with chromium-53, copper-63, copper-65, and titanium-49, total cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with copper-63 and copper-65, resonance parameters for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with copper-63, copper-65, lanthanum-139, neodymium-143, neodymium-145, praseodymium-141, and vanadium-51, strength functions and scattering radii for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with erbium isotopes and ytterbium isotopes, resonance parameters for, (E), 22:37281(R) (NYO-72-191)
reactions with gadolinium isotopes, resonance parameters for, (E), 22:42014 (JINR-P3-3882)
reactions with germanium-70, -72, -73, -74, and -76, cross sections and strength functions for, (E), 22:35258
reactions with gold-197 at 24 keV, Monte Carlo analysis of shell transmission data for cross sections of, (T), 22:32586
reactions with I = $^1/_2$ and $^3/_2$ nuclei, s-wave resonance parameters for, (E/T), 22:53166 (CEA-R-3385)
reactions with plutonium-239 and plutonium-240, data compilation on cross sections for, 22:50599 (LA-3528)
reactions with plutonium-239 at 0 to 440 eV, total cross section and resonance parameters for, (E), 22:24863(T) (BNL-tr-197)
reactions with plutonium-240 at 20 to 5700 eV, total cross section and resonance parameters for, (E), 22:32597
reactions with selenium-74, selenium-76, selenium-77, selenium-78, and selenium-80, total cross sections and resonance parameters for, (E), 22:48479 (JINR-P3-3956)
reactions with tantalum-181 at 2 keV, temperature dependence of total cross section for, (E), 22:32588
reactions with tantalum-182 at 0.01 to 1000 eV, total cross section and strength function for, (E), 22:37372
reactions with uranium-235 and uranium-238, data compilation on cross sections for, 22:50598 (LA-3527)
reactions with uranium-238, p-wave resonance parameters for, (E), 22:42036
reactions with xenon-129 and xenon-130, strength functions for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions with zirconium-91 at 159 to 3900 eV, resonance parameters for, (E), 22:24853 (GA-8557)
scattering by aluminum-27 at 5.9, 35, and 88 keV, resonance, (E), 22:48423 (RPI-328-133, pp 1-34)
scattering by nuclei, resonance interference in, (T), 22:50657 (ANL-7467)
scattering by tellurium, resonance, (E), 22:37340(R) (EANDC(E)-89(U))
scattering of, theory of multiple, (T), 22:32478
slowing down in pulsed media, few-pole expansion formalism for, (T), 22:29835
spectra emerging from spherical shells of graphite, polyethylene, sodium, and natural uranium, measurements using time-of-flight method, (T), 22:37276 (AERE-R-5364)
spectra in fast subcritical assemblies, time-of-flight measurements of, (E), 22:32452
spectra measurements in depleted borated polyethylene and uranium slabs for 0.001 keV to 2 keV, analysis of time-of-flight method for, (E/T), 22:39930
spectra measurements in STSF critical assembly, analysis of, 22:47008(R) (GA-8715)
spectra measurements of, description of BR-1 graphite thermal columns spherical-cavity for, (E), 22:35624
spectra of, development of detectors for measuring, 22:39541(R) (GA-8626)
spectra of, development of lithium glass detectors for measuring, 22:48424 (RPI-328-133, pp 35-55)

NEUTRONS, PILE
(mixed spectrum neutrons present in a reactor core)
absorption by silver, cross section and resonance integral for, (E), 22:44745
absorption resonance integrals for silver and tantalum,

measurements using pile oscillator method, (E), 22:50603
capture by aligned cobalt-59 and samarium-149, anisotropy of γ angular distribution from, (E), 22:37340(R) (EANDC(E)-89(U))
capture by fermium-255, cross section for, (E), 22:42046
capture by indium-115, lead, manganese-55, niobium-93, sulfur-32, and zirconium, activation cross sections for, 22:24862 (WANL-TME-1746)
capture by iridium-191, molybdenum-98, and rhodium-103 in FRM spectrum, activation resonance integrals for, (E), 22:37340(R) (EANDC(E)-89(U))
capture by neodymium-142, neodymium-143, neodymium-144, and neodymium-145, cross-section measurements using mass spectrometry, (E), 22:39662
capture by scandium-46 in reactor spectrum, cross section for, (E), 22:41990
capture by uranium-238 in fast critical assembly, measurements of Doppler effect in, (E), 22:32562 (AE-314)
capture by uranium-238 in NORA critical assembly, methods for measuring rho$_{28}$ ratio for, (E), 22:24858 (KR-124)
capture rate for uranium-236 in zero-power fast reactor, coincidence measurements of, (E), 22:46809
capture resonance integrals for thorium-232 in homogeneous mixture, effective, (E), 22:48415 (JAERI-1160)
capture-to-fission ratio for plutonium-239 in PCTR spectrum, integral measurements of, (E), 22:35288 (BNWL-774)
energy and flux distributions in thorium blanket of plutonium-239-fueled fast reactor, (E), 22:44580
fission spectrum of, amount of fast neutrons in, (E), 22:50620
flux distributions in aluminum--water slab lattices, (T), 22:44586
reactions (n,2n) with yttrium-89 in FRM spectrum, average cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,α) with cesium-133, cross section for, (E), 22:24837 (KR-123)
reactions (n,α) with potassium-41, cross section for, (E), 22:41997
reactions (n,α) with tungsten-184 in reactor spectrum, cross section for, (E), 22:35301
reactions (n,f) with uranium-235 and uranium-235 in fast spectra, effects of system heterogeneity on, (E), 22:35333
reactions (n,f) with uranium-235 in fast critical assembly, measurements of Doppler effect in, (E), 22:32562 (AE-314)
reactions (n,p) with bromine-81 and cadmium-106, cross sections for, (E), 22:24837 (KR-123)
reactions (n,p) with rhodium-103, average cross section for, (E), 22:35300
reactions (n,p) with sulfur-32, activation cross section for, 22:24862 (WANL-TME-1746)
reactions (n,p) with tungsten-182 and tungsten-183 in reactor spectrum, cross sections for, (E), 22:35301
reactions (n,t) with lithium-6, measurement of cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactopms (n,t) with lithium-6 at 250 keV, triton energy distributions from, (E), 22:35243
scattering by yttrium-89 in reactor spectrum, activation cross sections for inelastic, (E), 22:50586
spectra of, least-squares method for unfolding proton-recoil data, 22:33662

NEUTRONS, PROMPT
(Neutrons emitted within 10^{-8} sec following fission of a nucleus.)
behavior in SORA mockup assembly of, Rossi-α analysis of effects of beryllium and iron reflectors on, 22:35605 (ORNL-4263)
decay constant for a reflected assembly, (T), 22:5734
decay constant for, (E/T), 22:6111
decay constant measurements in SHE, 22:3907
decay constant measurements in slightly enriched critical assemblies, use of zero probability method for, 22:30312
decay constant measurements in unreflected unmoderated enriched uranium subcritical assemblies, use of Rossi-α technique for, 22:33004
decay constant measurements, use of transfer functions for, 22:42396(T) (SC-T-68-1532)
decay constants at different bucklings in natural uranium--water assembly, comparison of calculations and measurements of, (E/T), 22:22833
decay constants for light water-moderated enriched-uranium subcritical assemblies, (E), 22:7618
decay constants for, measurement in semi-homogeneous experiment of, 22:1869
decay constants for, reactivity measurement technique using generation time formulation of, 22:20947
decay constants in SNEAK-1 and ZPR-3-41, comparison of, 22:6090 (EURFNR-395)
decay constants in subcritical enriched-uranium cylinders, (E), 22:15925 (ORNL-TM-1736)
decay in fast assemblies, comparison of Rossi-alpha and pulsed-neutron techniques for measuring, (E/T), 22:5732
decay in reflected reactors, analysis by two-group time-dependent solution of the diffusion equations, (T), 22:5733
decay rates in NRX reactor, comparison of calculated and measured, 22:6081
decay, use of count rate after filter dead time for measurement of, 22:6172
effects on cavitation in tetrachloroethylene, use of ultrasonic equipment for studying, 22:25603
effects on survival of burros, combined effects of γ-rays on whole-body, 22:38427(R) (ORO-659)
effects on survival of swine, combined effects of γ-rays on whole-body, 22:38427(R) (ORO-659)
emission from fission fragments, average number and energy in, (T), 22:35392
emission in fast neutron fission of plutonium-239, uranium-235, and uranium-238, (E), 22:37340(R) (EANDC(E)-89(U))
emission in fast neutron fission, dependence on fission-fragment energy and yield, (E/T), 22:18348
emission in fast neutron fission, probability of, (E), 22:18290
emission in proton fission of uranium-233 and uranium-238 at medium excitation energies, (E), 22:50601 (ORNL-TM-2272)
emission in uranium-235 thermal neutron fission fragments, (E), 22:1645 (AWRE-O-43/67)
emission in uranium-235 thermal neutron fission, (E), 22:9899
energy in spontaneous and thermal neutron-induced fission, calculation of average, (T), 22:32652
lifetime in BWR and PWR, effects of use of plutonium fuel on, 22:22658 (BNWL-475)
lifetime in deuterium reflectors, 22:6167
lifetime measurements of, in BN-350 type critical assembly, 22:18570
noise for zero power range in Otto Hahn Reactor, calculation of, 22:46986
spectrometer for, design of time-of-flight, 22:21336 (PINSTECH/PHY-6)
time-dependent uncorrelated term, analysis of Rossi-α background count, (E/T), 22:42562

NEUTRONS, THERMAL
(Neutrons in equilibrium with the medium through which they are diffusing; at 15ºC their energy is 0.01 to 0.1 eV.)
absorption and capture resonance integrals and self-shielding factors for uranium-236, (T), 22:24876
absorption and fission cross sections and resonance integrals for neptunium-237, plutonium-238, and uranium-235, (E), 22:27089 (DP-MS-67-118)
absorption and fission resonance integrals for uranium-236, (E), 22:27089 (DP-MS-67-118)
absorption by cobalt-59, cross section for, (E), 22:50558 (AEEW-R-597)
absorption by gold foils, internal conversion and gamma corrections for detectors for measuring activation by, 22:21325
absorption by plutonium-242, cross section for, (E), 22:37341 (IN-1132)
absorption cross section and resonance integral for plutonium-238, (E), 22:3710
absorption cross sections and resonance integrals for ytterbium-168, -170, -171, -172, -173, -174, and -176, (E), 22:20562 (BNL-12263)
absorption cross sections and resonance integrals for americium-243, berkelium-249, californium-250, californium-252, curium-244, curium-245, curium-246, einsteinium-253, and plutonium-242, (E), 22:20567 (DP-MS-67-112)
absorption cross sections for fission products in reactor spectra, computer program for, (T), 22:20404 (CONF-680307-16)
absorption cross sections for neptunium-238 and uranium-237, (E), 22:27089 (DP-MS-67-118)
absorption cross sections for promethium-149 and promethium-151, (E), 22:20405 (CONF-680307-17)
absorption material for, description of multi-layer concentric cylinder, 22:14283(P)
absorption of, use for determining cadmium content of ores, 22:4494
absorption, scattering, and total cross sections for erbium, holmium-165, lutetium, praseodymium-141, thulium-169, and ytterbium, (E), 22:18281
activation of iodine in thyroid gland of man, uniformity of, 22:15065
activity produced by, graphical technique for estimating, 22:18724
attenuation by plastic--steel layers, effects of hydrogen inclusions and thickness variations on, 22:277
beam intensity measurements using helium-3 proportional counters and gold foil activation, 22:5708 (RISO-144)
book: Low-energy Neutron Physics, 22:50519
buckling determination in beryllium oxide (BeO) assemblies, pulsed neutron method for, (T), 22:14273
capture and fission cross sections and resonance integrals for transuranium isotopes, method for estimating, (T), 22:24852 (BNL-12353)
capture by americium-243, berkelium-249, californium isotopes, curium isotopes, and plutonium-242, cross sections and resonance integrals for, 22:39627 (BNL-50082, pp 19-24)
capture by antimony-121, antimony-123, copper-63, and copper-65, γ spectra from, (E), 22:5809(R) (ANL-7354)

capture by argon, gamma spectra from, 22:14836
capture by argon, γ spectra from, (E), 22:50564
capture by arsenic-75 and iodine-127, γ singles and coincidence spectra from, (E), 22:50641
capture by arsenic-75, arsenic-76 energy levels from, (E), 22:20557
capture by arsenic-75, gamma spectra from, (E), 22:32547
capture by barium, mercury, palladium, tin, and xenon isotopes, cross sections for, (E), 22:22608
capture by barium-135, xenon-124 and xenon-126, activation cross sections and resonance integrals for, (E), 22:46768 (NYO-3664-6)
capture by boron and cadmium nuclei, measurement of γ-quanta from, 22:6286
capture by cadmium, cross section for, (E/T), 22:9874
capture by cadmium-133, γ asymmetry in, (E), 22:22591 (RISO-167)
capture by calcium, chromium, cobalt, lead, mercury, sulfur, and titanium using polarized beams, γ circular polarization from, (E), 22:37340(R) (EANDC(E)-89(U))
capture by calcium-44, gamma spectra and Q-value for, (E), 22:37321
capture by carbon-13, fluorine-19, magnesium-24, magnesium-25, and magnesium-26, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by cerium-140, γ spectra from, (E), 22:35293(R) (ORNL-4230)
capture by cerium-140, potassium-39, potassium-40, rhenium-185, rhenium-187, thallium-203, thallium-205, tin-112, tin-114, and tin-115, γ spectra from, (E), 22:20576 (ORNL-TM-2159)
capture by chlorine-35, chlorine-36 energy levels from, (E), 22:20557
capture by chlorine-35, γ-γ angular correlations from, (E), 22:3644 (IFA-NR-25)
capture by cobalt-59 and deuterium, cross sections for, (E), 22:46729(R) (AECL-3157)
capture by cobalt-59 and terbium-159, γ directional correlations and spectra from, (E), 22:32629
capture by cobalt-59, activation cross sections for, (E), 22:50558 (AEEW-R-597)
capture by cobalt-59, cross section for, (E), 22:20497(R) (AECL-3009)
capture by copper-63 and copper-65, γ spectra from, (E), 22:29955
capture by copper-63, copper-65, and iron-56, γ spectra from, (E), 22:35285(R) (AERE-PR/NP-13)
capture by copper-65, copper-66 nuclear properties from thermal, (E), 22:5854
capture by deuterium, cross section for, (E), 22:20497(R) (AECL-3009)
capture by deuterium, effects of three-body scattering states on, (T), 22:37288
capture by deuterium, parity nonconservation in, (T), 22:53081
capture by deuterium, radiative transitions in, (T), 22:26793
capture by dysprosium-164, gamma spectrum from, 22:14832
capture by erbium-168, niobium-93, uranium-234, and yttrium-89, γ spectra for, (E), 22:20578 (WASH-1079)
capture by europium-151 and -153, cross sections and resonance integrals for, (E), 22:1663
capture by europium-151, internal conversion electron coincidence spectra from, (E), 22:44695
capture by fluorine-19, fluorine-20 nuclear properties from polarized, (E), 22:5854
capture by gallium-69, gallium-71, and scandium-45, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by germanium, iridium, and manganese-55, γ spectra from, (E), 22:3660
capture by germanium-70, -74, -76, selenium-76, -78, -80, -82, strontium-84, and zinc-68, -70, cross sections and isomeric cross-section ratios for, (E), 22:15977
capture by germanium-73, gamma spectrum from, 22:14832
capture by gold-197, γ spectra and resonance widths for, (E), 22:50610
capture by gold-197, γ spectra from, (E), 22:50610
capture by gold-197, manganese-55, tantalum-181, and vanadium-51, γ spectra from, (E), 22:9921 (JUL-Conf-1)
capture by hafnium-176, hafnium-178, hafnium-180, tantalum-181, and yttrium-89, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by holmium-165, cross section and resonance integral for, (T), 22:39627 (BNL-50082, pp 19-24)
capture by indium-113, isomeric cross-section ratio for, (E), 22:26935
capture by iridium-193, cross section and γ spectra for, (E), 22:42044
capture by iron-56, γ spectra from, (E), 22:18168
capture by iron-56, sodium-23, and thorium-232, γ spectra and radiative widths for, (E), 22:20498 (BNL-12268)
capture by iron-56, zinc-64, and zinc-67, circular polarization of gamma rays from, (E), 22:7671
capture by iron-57 and nickel-61, γ spectra from, (E), 22:3698 (KFK-616)
capture by iron-57 and nickel-61, γ spectra from, (E), 22:37340(R) (EANDC(E)-89(U))
capture by iron-57, γ spectra from, (E), 22:1620
capture by isomeric cobalt-58, cross section for, (E), 22:44674
capture by lithium-6, carbon-12, fluorine-19, and iron-56, gamma spectra and Q-values for, (E), 22:29930
capture by lithium-7, lithium-8 nuclear properties from polarized, (E), 22:5854
capture by manganese-55, direct reaction mechanism in, (E), 22:24843
capture by molybdenum-95, molybdenum-97, neodymium-143, and neodymium-145, γ spectra from, (E), 22:46729(R) (AECL-3157)
capture by natural titanium, γ spectra for, (E), 22:48476 (IA-1102)
capture by neodymium-142, neodymium-143, neodymium-144, and neodymium-145, cross-section measurements using mass spectrometry, (E), 22:39662
capture by neon, γ spectra from, (E), 22:29950
capture by neon-20 and neon-22, cross sections for, (E), 22:29950
capture by nickel-60 and nickel-62, γ spectra from, (E), 22:37340(R) (EANDC(E)-89(U))
capture by niobium-93, niobium-94 energy levels and configurations from, (E), 22:29999
capture by nuclei with isomeric excitation, relative probabilities for, (T), 22:14113
capture by nuclei with isomeric excitation, relative probabilities for, (T), 22:20666 (FEI-79)
capture by nuclei, compilation of γ spectra from, 22:39648
capture by nuclei, review of experimental methods in, (E), 22:5831
capture by osmium-190, isomeric cross-section ratio for, (E), 22:44679 (IAN-E-1)
capture by phosphorus-31 and sodium-23 using polarized beams, γ circular polarization from, (E), 22:39613
capture by platinum and platinum-195, γ spectra from, (E), 22:27156
capture by plutonium-239 and uranium-233, cross sections for, (E), 22:20576 (ORNL-TM-2159)
capture by potassium-39 and potassium-41, γ spectra from, (E), 22:26995
capture by potassium-39, Moessbauer effect of 29.4-keV γ ray from, (E), 22:5791
capture by potassium-41, γ spectra from, (E), 22:35293(R) (ORNL-4230)
capture by praseodymium-141, γ spectra for, (E), 22:50612
capture by prompt- γ rays, review of, 22:4609
capture by rare-earth isotopes, γ spectra from, (E), 22:50604
capture by rhenium-187, conversion-electron spectra from, (E), 22:9895
capture by samarium-148, cross section for, (E), 22:44677 (AAEC/TM-443)
capture by samarium-149, conversion--electron and γ spectra from, (E), 22:30011
capture by samarium-149, γ spectra from, (E), 22:28148
capture by samarium-149, internal conversion electron spectra from, (E), 22:50604
capture by samarium-149, samarium-150, and tellurium-123, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by scandium-45, γ spectra from, (E), 22:26952
capture by scandium-45, γ spectra from, (E), 22:20578 (WASH-1079)
capture by silver-107 and -109, γ spectra from, (E), 22:5809(R) (ANL-7354)
capture by silver-107, silver-108 nuclear properties from polarized, (E), 22:5854
capture by silver-109, silver-110 conversion-electron spectra from, (E), 22:16024
capture by silver-109, silver-110 nuclear properties from polarized, (E), 22:5854
capture by strontium carbonate, gamma spectrum from, 22:14832
capture by strontium-87, γ-γ angular correlations from, (E), 22:37340(R) (EANDC(E)-89(U))
capture by strontium-87, strontium-88 γ-γ angular correlations from, (E), 22:3698 (KFK-616)
capture by sulfur-34, cross section for, (E), 22:18167
capture by tantalum-181, conversion-electron spectra from, (E), 22:35287(T) (BNL-tr-215)
capture by tellurium-128 with isomeric excitation, activation cross sections and resonance integrals for, (E), 22:32585
capture by thulium-169, correlation between reduced neutron and radiative width in, (E/T), 22:20587
capture by thulium-169, γ spectra from, (E), 22:9912
capture by thulium-169, γ spectra from, (E), 22:50604
capture by tin-122, tin-123 energy levels from, (E), 22:9893
capture by tin-124, tin-125 energy levels from, (E), 22:9893
capture by titanium isotopes, γ spectra from, (E), 22:24854 (IA-1128, pp 12-20)
capture by titanium-48, (E), 22:20570 (ITEF-52)
capture by titanium-48, titanium-49 energy levels from, (E), 22:9826
capture by uranium-238 in reactors, methods for measuring neptunium-239 activity from, 22:24858 (KR-124)
capture by vanadium-51, γ spectra from, (E), 22:1635
capture by ytterbium-168, gamma spectra from, (E/T), 22:46769(T) (ORNL-tr-1954)
capture by ytterbium-168, γ spectra from, (E), 22:37355
capture by Z = 1 to 46 nuclei, compilation of γ spectra from, 22:9820

capture by zinc-67, γ spectra for, (E), 22:13964
capture by zirconium at 0.01 to 1.0 eV, cross section for, (E), 22:24853 (GA-8557)
capture cross section for deuterium, calculations using zero-range approximation, (T), 22:32480
capture cross section for holmium-165, (E), 22:14028
capture cross section for samarium-147, (E), 22:3742
capture cross sections and resonance integrals for mercury-196 and mercury-202, (E), 22:27130
capture cross sections and resonance integrals for americium-241 and -243, (E), 22:14004(T) (BNL-tr-175)
capture cross sections and resonance integrals for molybdenum-98, rubidium-85, selenium-74, and zinc-64, (E), 22:9815
capture cross sections and resonance integrals for transradium elements, method for calculating, (T), 22:20565 (CONF-680307-18)
capture cross sections for A = 45 to 243 nuclei, calculation using Monte Carlo selection of reduced neutron widths, 22:14026
capture with excitation of isomeric states, relative probabilities for, (T), 22:42095(T) (ANL-Trans-644)
capture-to-fission ratio for plutonium-239, (E), 22:44680(R) (IN-1189)
collimator for Triga Mark II, design of total-reflecting conical, 22:30324
decay constants and density in finite coherent moderators, from pulsed source, (T), 22:29861
decay constants for cadmium-bearing water, (E), 22:13893 (AE-309)
decay constants for pulsed slab and spherical assemblies, analysis of, (T), 22:35638
decay constants for pulsed spherical geometry water assembly, discrete-ordinates analysis of, (E/T), 22:35711
decay constants for water in spherical geometry, effects of scattering anisotropy on, (T), 22:29867
decay constants from pulsed-source experiments in poison-bearing water, (E), 22:41931
density at various atmospheric depths in years of minimum solar activity, (E), 22:38833
density in water-moderated reactors, effects of central water gaps on, 22:39884
density ratios for, comparison of calculated and experimental values of, 22:10086
detection and measurement of integrated fluxes of, design of Geiger—Mueller detector with activable cathodes for, 22:45310
detection during well logging, design of scintillation detectors for, 22:40477
detection of high-flux, in reactors, development of regenerative fission-chamber detectors for, 22:304 (BNWL-430)
detection of, activation—scintillation techniques for, 22:12586
detection of, design of activation detector for, 22:33643(P)
detection of, design of boron trifluoride proportional detectors for, 22:33656(P)
detection of, efficiency of gadolinium with semiconductor detector for measuring internal conversion electrons for, 22:25649
detection of, liquid scintillator for, 22:28126(P)
detection of, performance of dispersed lithium fluoride and silver-activated zinc sulfide scintillator for, 22:47334
detection of, testing of borazine and borazarene derivatives for use as phosphors for, 22:37974 (CNEA-206)
diffraction by vibrating quartz crystal, 22:48434
diffusion and rethermalization in Santowax-R and water, (E), 22:29874
diffusion and thermalization parameters for graphite, (E), 22:46700
diffusion and thermalization parameters for graphite, measurement using pulsed source technique, (E), 22:18097
diffusion coefficient in graphite of, effects of empty channels on, 22:30307 (ORNL-TM-2085)
diffusion coefficients for heavy water, (E), 22:29884
diffusion coefficients for water and heavy water, 22:22521 (DP-1090)
diffusion coefficients for water and heavy water, (E), 22:41923
diffusion in beryllium oxide with empty channels, parameters for, (E/T), 22:26777
diffusion in beryllium oxide, pulsed-source determination of parameters for, (E/T), 22:26772
diffusion in heavy and light water of, analysis of, (T), 22:18658
diffusion length in concrete, (E), 22:39567
diffusion lengths for, computer program for calculating, (T), 22:32432 (LA-3893)
diffusion lengths in pure and poison-bearing water, (E), 22:29874
diffusion parameter measurements in graphite in ANNA reactor, 22:25087 (INR-P-853/IXA/PR)
diffusion parameters for benzene at 20°C, measurement using pulsed source technique, (E), 22:9766
diffusion parameters for beryllium oxide, pulse decay measurements of, (E), 22:44592
diffusion parameters for Dowtherm-A at 20 to 200°C, (E/T), 22:32437
diffusion parameters for graphite, measurement using pulsed source technique, (E), 22:3597
diffusion parameters for graphite, measurements using pulse propagation, (E), 22:29890
diffusion parameters for perfluorodimethylcyclohexane, measurements using two-region pulsed source technique, 22:32450
diffusion parameters for perfluorodimethylcyclohexane, measurements using two-region pulsed-beam technique, (E), 22:50521
diffusion parameters for water at 21.7°C, measurement using pulsed source technique and spherical geometry, (E), 22:1559 (CTH-RF-12)
diffusion parameters for water, measurements using pulsed source technique, (E), 22:29886
diffusion parameters in water, determination by pulsed method and spherical geometrics, 22:44201
diffusion parameters of heavy and light water mixtures, measurement of pulsed, 22:3933 (TID-24100)
disadvantage factor for, measurement in Ozenji superheating fuel elements of, 22:10067
distribution in cylindrical heterogeneous cells, space and energy, 22:3934 (UJV-1836)
distribution in graphite—water system of, measurement of space—energy, 22:22828(T) (AERE-Trans-1085)
distribution in uranium-fueled water-moderated lattice, analysis of, (E/T), 22:35592 (CNAEM-47)
dose absorbed at embryo of dry rice seed, calculation of, 22:43344
dose measurement in Phoebus 1B, effects of 360° open-well shield on, 22:48722 (LA-3746)
dose rate equivalent measurement in Hungarian WWR-S reactor, 22:6130
dosimetry by nuclear track registration in solid material, personnel, 22:49348
dosimetry for food processing, performance of semiconductor and thermoluminescent detector for, 22:17050(R) (EUR-3606)
dosimetry for protection of personnel, performance of photographic emulsions for, 22:49351
dosimetry for protection of personnel, performance of photographic emulsions for, 22:49350
dosimetry in environment of work areas, 22:21535
dosimetry in human phantoms, Monte Carlo calculation of, 22:28456 (ORNL-P-3048)
dosimetry in mixed radiations, photographic film using multiple filters for, 22:19173(P)
dosimetry in presence of γ rays, performance of photoluminescent detectors for, 22:21515
dosimetry of, design and performance of dosimeter for personnel, 22:43108 (IFA-PN-19)
dosimetry of, design and performance of photographic dosimeter for, 22:43125
dosimetry of, development of lithium fluoride thermoluminescent dosimeters for, 22:4486
dosimetry of, supralinear response of lithium fluoride thermoluminescent dosimeters for, 22:21357 (COO-1105-129)
dosimetry of, use of niobium-93 activation foils for, 22:28177 (FFN-74)
dosimetry of, use of photographic film dosimeters for, 22:6653 (RT/PROT-(67)12)
dosimetry using nonphotographic nuclear track registration, personnel, 22:21361
effects on activity of aminotransferases in subcellular fractions of rat brain, effects of dose on, 22:51350
effects on alkali metal orthophosphates, 22:42724 (COO-1618-8)
effects on animal and human neoplasms, combined effects of boron anions on, 22:51673(R) (NYO-3267-5)
effects on Arabidopsis, mutagenic, 22:23484(R) (COO-1512-5)
effects on boron carbide, literature review, 22:26091 (BNWL-679)
effects on bromine and tribromomethane mixtures and benzene and bromine mixtures, effects of phase homogeneity on, 22:2141
effects on bromine-80 recoil processes in sodium bromate, effects of crystal defects on thermal annealing of, 22:37794
effects on cadmium compounds, defects from, 22:24492
effects on cadmium suflide and cadmium telluride, 22:770 (N-67-26321)
effects on cadmium tellurides, 22:17192
effects on ceramic electric insulating materials, 22:776
effects on chloroplast pigments in barley, mutagenic, 22:25801(R) (COO-332-2)
effects on chloroplasts of barley, mutagenic, 22:36234
effects on cholinesterase activity in liver and muscles of rats, 22:23446
effects on chromosomes of Nigella damascena, RBE for aberrant, 22:45484
effects on chromosomes of pearl millet, effects of seed exposure on mutagenic, 22:23497
effects on colloids, surface studies using, 22:50955
effects on combining ability of millet, combined effects of EMS on, 22:23488(R) (ORO-2976-15)
effects on combining ability of pearl millet, combined effects of EMS on, 22:23487(R) (ORO-2976-14)
effects on content of adrenal hormones and pyrocatechol

in brain and muscles of adrenalectomized mice, 22:51944
effects on corn, mutagenic, 22:23485(R) (COO-1512-6)
effects on corrosion of pearlite steel and titanium alloys, 22:52224
effects on crystal structure and electric properties of uranium monocrystals, 22:52219
effects on cytology and morphology of pearl millet, effects of seed exposure on, 22:23498
effects on development of secondary xylem tissues in yellow poplar and white oak trees, 22:21625(R) (ORO-3400-3)
effects on diffusion of krypton in uranium carbide powders at 430 to 1000°C, 22:2708 (EUR-3556f)
effects on dimension of Fort St. Vrain Power Reactor boronated graphite control elements, measurement of, 22:48644 (GAMD-8619)
effects on durum wheat, effects of seed exposure on mutagenic, 22:8655
effects on durum wheat, mutagenic, 22:40619 (RT/BIO-(68)20)
effects on electric resistivity and length of alpha uranium, (E), 22:44246
effects on electrochemical properties of silver and zinc electrodes, effects of oxide films on, 22:6330
effects on FTR driver fuel elements, measurement of, 22:30299 (BNWL-SA-1750)
effects on gaseous and solid fission product swelling in uranium, uranium carbide, and uranium dioxide, 22:38592
effects on genetic variance in maize, 22:47525
effects on grain yield of corn, 22:23484(R) (COO-1512-5)
effects on graphite corrosion at 400°C, 22:13080
effects on growth of oat plants, effects of seed exposure on, in comparison to effects of EMS, 22:17008
effects on heat resisting alloys and metals, 22:19578 (BNWL-455, Paper 10.1-40)
effects on homozygous lines of corn, effects of seed exposure on, 22:23484(R) (COO-1512-5)
effects on induced radioactivity of transplants following radiosterilization of tissue, 22:8666
effects on Japanese morning glory plants, effects of seed exposure on, 22:26003
effects on lithium fluoride and lithium hydride crystals, precipitation of metallic lithium from, (E), 22:36973(T) (UCRL-Trans-10246)
effects on lithium fluoride, ESR and NMR spectra of lithium from, 22:10267(T) (UCRL-Trans-10151)
effects on lithium sulfate monohydrate single crystals, EPR studies of defects from, 22:36967 (COO-1054-39)
effects on mechanical and physical properties of thorium, thorium—uranium alloys, and plutonium—thorium alloys, analysis of, 22:53456 (BNWL-861)
effects on mechanical properties of alloys and metals at 5°K of, 22:20919
effects on mortality in young chickens, protective effects of AET against, 22:8591
effects on neoplasms of mice in comparison to boron-10 effects, therapeutic, 22:31148
effects on nitride fuels, 22:15261(R) (BMI-1819)
effects on p-type silicon, effects of isochronal annealing after, 22:11502
effects on phosphate-doped potassium chromate crystals, annealing of, 22:33396
effects on plutonium carbide—uranium carbide fuels, relations with burnup, 22:36509 (CONF-671005-7)
effects on racemization of potassium trisoxalato chromium(III) complex, 22:14546
effects on rhizogenesis in tomato plants, effects of boron-10 content on, 22:8651
effects on seedling growth and survival in barley, effects of boron content of seed and seed exposure on, 22:12943
effects on seeds of tomatoes, genetic, 22:17050(R) (EUR-3606)
effects on seeds, effects of moisture on lethal γ and, 22:47501 (NP-17136)
effects on shielding of SNAP-10 test facility, 22:3880 (NAA-SR-12504)
effects on silane, yields of silicon-31-labeled products in, 22:48874(R) (COO-1713-5)
effects on soybean seeds, selection studies on mutagenic, 22:36244
effects on stability of borides of chromium, lanthanum, titanium, and zirconium, 22:34086
effects on stable elements in bodies of astronauts, 22:19400(R) (BNWL-531-1)
effects on sterility of preserved tissue transplants in man, combined effects of γ radiation on, 22:52093
effects on strength of cellulose triacetate polymers, polyethylene terephthalate, and polymethyl methacrylate, 22:33390
effects on stress-rupture of Hastelloy N tubing, 22:11009
effects on structure of high-alumina and mullite—corundum ceramic materials, 22:23906
effects on tensile properties of zirconium—chromium—niobium alloy, 22:23841 (BARC-300)
effects on thorium dioxide—uranium dioxide dispersed in beryllium oxide, 22:19587
energy distribution in hydrogenous media, time moments of, (T), 22:39551 (RPI-328-123, pp 39-52)
filters for, effectiveness of polycrystalline and single crystal, 22:12144
fission energy release from, analysis of mass balance in, 22:37400 (AECL-3109)
flux calculations for ING, computer program for, 22:32374
flux calculations for, description of multidimensional geometries two-group diffusion, (T), 22:16322 (UJV-1900)
flux decay in beryllium at large bucklings, measurements using pulsed source, (E), 22:44582
flux density measurements in reactors, use of microwave cavity resonators for determining, 22:4509
flux density standards for, at National Physical Laboratory, Teddington, England, 22:43129
flux density standards for, calibrations of, (E), 22:18083
flux depression from an activation probe in a moderating medium, method based on albedo concept for measurement of, (E/T), 22:6178
flux depressions using irradiation-loops in water-moderated reactors, analysis of, (E/T), 22:18582 (CEA-R-3173)
flux determination in Plum Brook Reactor HB-6 facility using sulfur pellets and gold foils, 22:37535 (N-68-15643)
flux determination in reactors, design of digital transferometer for fission chamber power density spectral technique for, 22:23261 (CEA-R-3241)
flux determinations in Harwell research reactors, 22:16264 (AERE-M-1870)
flux distribution from intense neutron generator, computer program for calculating, 22:41920 (ORNL-TM-2206)
flux distribution in Bohunice Power Reactor cylindrical lattice cell, one group transport equation solution for, (T), 22:50745 (ZJE-24(Pt.1))
flux distribution in critical and subcritical assembly accidents, BLAST computer program for, 22:47019 (PEL-152)
flux distribution in Helena graphite-moderated natural uranium exponential pile, effects of configuration on, (E/T), 22:48745
flux distribution in HTR reactor, analysis of, 22:47031
flux distribution in Otto Hahn Reactor, effects of second core configuration on, 22:46996
flux distribution in Otto Hahn Reactor, foil activation method for, 22:46983
flux distribution in Otto Hahn Reactor, use of 20 semiconductor detectors for measurement of, 22:46987
flux distribution in PCTR 8 x 8 lattice multiple configuration thorium oxide (ThO_2)-target supercell, activation analysis of, 22:50800 (BNWL-792)
flux distribution in UAR-I core and test facilities, use of copper and gold foils for measurement of, 22:25100
flux distribution in water-moderated spherical cavities containing boron trifluoride, (T), 22:11890
flux distribution measurements in RRR research reactor, 22:14274
flux distribution measurements in Shippingport Pressurized-Water Reactor Core 2, 22:20824 (WAPD-MRP-123)
flux distributions in water near probe tubes, calculation using two-dimensional transport theory, (T), 22:29880
flux filling of, effect on reactors of, 22:3938
flux flattening in a flat central zone natural uranium fuel reactor, fuel exchange method of, (T), 22:5928 (IBK-532)
flux flattening in-core, mathematical expression for fuel concentration causing, 22:16323 (UJV-1904)
flux fluctuations in large reactors, use of auto-spectral density technique for determination of, 22:32878
flux in concrete ducts, albedo calculations for, 22:1288 (ORNL-4147)
flux in heavy gaseous moderators, Laguerre polynomials in calculation of, 22:50852
flux in water, calculations of time-dependent, (T), 22:48426 (RPI-328-133, pp 60-100)
flux measurement for JRR-4, 22:16285 (JAERI-1139)
flux measurement for simple geometries, effects of nonpositive input titres on nonuniform, (E/T), 22:3827(R) (EURAEC-1912)
flux measurement for simple geometries, effects of burnout on uniform, (E/T), 22:3824(R) (EURAEC-1873)
flux measurement in Phoebus 1B, effects of 360° open-well shield on, 22:48722 (LA-3746)
flux measurement in RA research reactor for bulk shield removal age-diffusion multigroup program, 22:12113
flux measurements for Garigliano Power Reactor fuel elements, 22:22713(R) (TID-24304)
flux measurements in FRG, 22:3904(T) (ORNL-tr-1522)
flux measurements in PULSTAR and TRIGA research reactors, design and performance of detector using boron-10 (n,α) lithium-7 reaction, 22:43048
flux measurements in radial and tangential test facilities of ZR-3, 22:18605
flux measurements in RB-1 Reactor, analysis of, 22:48741
flux measurements in reactors, design and performance of semiconductor detectors using converters for, 22:40357 (CEA-R-3304)
flux measurements in reactors, design of in-core

regenerative fission chamber for, 22:30837
flux measurements in reactors, development of microwave techniques for, 22:390 (BNWL-SA-1314)
flux measurements in reactors, use of flow-thru air activation for perturbed, 22:18585 (CEA-R-3338)
flux measurements in research reactors, dosimetry methods for, 22:12110
flux measurements in research reactors, uranium-238, thorium-232, and aluminum-27 activation detectors for, 22:40376
flux measurements in subcritical assemblies, scintillation detectors for, 22:2374
flux measurements in WR-1, 22:3884 (AECL-2763)
flux measurements in WWR-S reactor, electronic calculator for, 22:51284
flux measurements of KIWI-Transient Nuclear Test effluent, analysis of, 22:39849 (LA-3449)
flux measurements of, boron-coated ionization chamber for, 22:49066 (AERE-R-5800)
flux measurements of, design of semiconductor detectors for, 22:8342
flux measurements of, use of cobalt activation detectors for, 22:4426 (JUL-495-RX)
flux measurements using activation foils, self-absorption, self-shielding, and flux depression effects in, 22:23289
flux monitoring of, development of aluminum--copper alloy activation detector for, 22:4437
flux peaking in smooth and finned fuel element cladding, effects on thermal stress and temperature distribution of, 22:3821 (EUR-3557)
flux perturbations in reactors by foil activation detectors, method for avoiding, 22:53470
flux profile calculations in UHTREX fuel elements, one- and two-dimensional, 22:24969 (LA-DC-9426)
flux profile in NORA, effects of steel rod and water reflector on, 22:3892(R) (IAEA-3498-20)
flux profile in uranium oxide (UO_2) light water-moderated critical assembly, measurement of, (E/T), 22:1875
flux profiles around uranium--lithium supercell in PCTR, 22:22804(R) (BNWL-685)
flux standards for, determination of optimal geometry for, (E), 22:15934
flux values at pressure vessel of terrestrial reactor, 22:7814(R) (ORNL-4178)
flux variations in facilities for fast neutron activation analysis, (E), 22:46699
fluxes from moderated and reflected californium-252 neutron sources, (T), 22:29839
group constants in regular lattices, methods for determination of, (E/T), 22:10063 (RCN-62)
importance function of water-moderated reactor, effects of central water gaps on, 22:39884
interactions with elements in tissues of man and mice, yield of chlorine-38, manganese-56, and sodium-24 from, 22:40819
kinetic energy in graphite, measurement by integral method using lutetium activation, (E), 22:35208
leakage spectra from hydrogenous moderators, angular- and energy-dependent, (T), 22:29866
measurement of Swedish Reactor (R-3) primary shielding for, analysis of, (E/T), 22:44805 (AE-325)
measurements in DOSAR thermal pile, using gold foils, 22:2272 (ORNL-TM-2009)
Milne problem with arbitrary scattering kernel, solution using invariant imbedding method, (T), 22:32469
monitoring system for, design of, 22:8358
multigroup analysis of one-dimensional P-1 group equations, PIGG computer program for, 22:48752 (KR-129)
optics of beams of, 22:39566
phase space distribution in reactor flux of, analysis of adjoint function, (E/T), 22:1833
polarization from scattering by magnetized iron, (E), 22:11888
polarization of beams of, with mixed velocities, methods for measuring, 22:9764
production of high-flux, design of proton linac--lead--bismuth target facility for, 22:1517 (AECL-2750)
propagation in water, one-velocity diffusion approximation analysis of perturbation from, (E/T), 22:22878
pulse width following thermalization in liquid parahydrogen and polyethylene, (E), 22:3587(R) (GA-7647)
reactions (n,α) with boron-10, cross-section branching ratio and Q-value for, (E), 22:13941
reactions (n,α) with boron-10, data evaluation for cross sections and branching ratios of, 22:39579 (EUR-3950)
reactions (n,α) with lithium-6, Q-value for, (E), 22:13941
reactions (n,α) with neon-21, total absorption cross section for, 22:32959 (ANL-7310, pp 1-30)
reactions (n,α) with nuclei, possibility of, (T), 22:11953
reactions (n,α) with potassium-40, cross sections and Q-value for, (E), 22:13973
reactions (n,α) with rare-earth nuclei, plutonium-239, and uranium-235, survey of, (E), 22:48521 (JAERI-1158, pp 123-4)
reactions (n,α) with uranium-235, upper limit of cross section for, (E), 22:42012 (INR-P-911)
reactions (n,α) with uranium-235, upper limit to cross section for, (E), 22:48557
reactions (n,α), (n,p), and (n,np) with argon-40 at 14.8 MeV, activation cross sections for, (E), 22:20511
reactions (n,f) with americium-241 and -242, cross sections and resonance integrals for, (E), 22:14004(T) (BNL-tr-175)
reactions (n,f) with americium-241, kinetic energies of fragments from, (E), 22:11970
reactions (n,f) with americium-243, berkelium-249, californium isotopes, curium isotopes, and plutonium-242, cross sections and resonance integrals for, 22:39627 (BNL-50082, pp 19-24)
reactions (n,f) with heavy nuclei, mass and charge distributions from, 22:20975(R) (BMwF-FBK-67-89)
reactions (n,f) with isomeric uranium-235, measurement of cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with neptunium-238, cross section for, (E), 22:27089 (DP-MS-67-118)
reactions (n,f) with plutonium-239 and uranium-233, cross sections for, (E), 22:20576 (ORNL-TM-2159)
reactions (n,f) with plutonium-239 and uranium-233, ternary fission in, (E), 22:9855(R) (ORO-2843-12)
reactions (n,f) with plutonium-239 and uranium-235, energy distribution of long-range α particles in, (E), 22:32634
reactions (n,f) with plutonium-239, emission of long-range α particles and light nuclei in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with plutonium-239, fission yields for, (E), 22:44680(R) (IN-1189)
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, and uranium-235, fission parameters for, 22:22612
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, and uranium-235, fission yields from, 22:20559 (AERE-R-5086)
reactions (n,f) with plutonium-239, plutonium-241, uranium-233, and uranium-235, fission-product yields from, (E), 22:3690 (GEAP-5356)
reactions (n,f) with plutonium-239, plutonium-241, and uranium-235, fission-product charge distributions and yields from, (E), 22:46761 (APED-5398)
reactions (n,f) with plutonium-239, range of fragments from, (E), 22:20659
reactions (n,f) with plutonium-239, uranium-233, and uranium-235 in reactors, absorption cross sections and yields of fission products in, (E/T), 22:18289
reactions (n,f) with plutonium-239, uranium-233, and uranium-235, fission-product activities for, (T), 22:20569 (HNS-1229-77)
reactions (n,f) with plutonium-239, uranium-233, and uranium-235, time dependence of fission-product β activity from, (E), 22:7714
reactions (n,f) with plutonium-239, uranium-233, and uranium-235, fission-neutron spectra from, (E), 22:16046
reactions (n,f) with plutonium-241, yields from, 22:47074(R) (IN-1215)
reactions (n,f) with transradium elements, cross sections and resonance integrals for, (T), 22:20565 (CONF-680307-18)
reactions (n,f) with uranium-233 and -235, absolute yields of stable isotopes from, (E), 22:24855(R) (IN-1157(Rev.))
reactions (n,f) with uranium-233 and -238, fragment kinetic energies and yields from, (E), 22:5857
reactions (n,f) with uranium-233 and uranium-235, palladium-115 and silver-112 yields in, (E), 22:32579 (TID-24500)
reactions (n,f) with uranium-233 at 0.025 eV, calculations of eta using RECAP 4C Monte Carlo program, (T), 22:32590
reactions (n,f) with uranium-233, fission-fragment energy-correlation measurements for, (E), 22:53204
reactions (n,f) with uranium-233, fission-fragment energy-mass correlations in, (E), 22:35293(R) (ORNL-4230)
reactions (n,f) with uranium-233, mass distribution of fission fragments for, (E), 22:53216
reactions (n,f) with uranium-235 and uranium-238, barium-140 yields from, (E), 22:22618
reactions (n,f) with uranium-235 with emission of Z > 2 particle, ternary, (E), 22:3703
reactions (n,f) with uranium-235, absolute yields of molybdenum-99 and barium-139 from, (E), 22:18268
reactions (n,f) with uranium-235, angular-energy correlation of light particles and fragments in ternary fission, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with uranium-235, antimony-134 cumulative fission yield for, (E), 22:50613
reactions (n,f) with uranium-235, average energy of prompt neutrons in, (T), 22:32652
reactions (n,f) with uranium-235, α angular and energy distributions in, (E), 22:24854 (IA-1128, pp 12-20)
reactions (n,f) with uranium-235, α angular distribution in ternary fission, (E), 22:9855(R) (ORO-2843-12)
reactions (n,f) with uranium-235, charge and energy distribution in, (T), 22:18339
reactions (n,f) with uranium-235, charged-particle spectra from, (E), 22:3693 (INR-822/IA/PL)

reactions (n,f) with uranium-235, charged-particle emission in, (E), 22:14023
reactions (n,f) with uranium-235, cross sections and α energy spectra from, (E), 22:5812 (INR-817/IA/PL)
reactions (n,f) with uranium-235, decay properties and yields of gallium-77 and gallium-78 from, (E), 22:32581 (USNRDL-TR-68-35)
reactions (n,f) with uranium-235, delayed neutron precursors in, (E), 22:44708
reactions (n,f) with uranium-235, dependence of fission-fragment kinetic energy on mass distribution in, (E), 22:32563(T) (ANL-Trans-606)
reactions (n,f) with uranium-235, dependence of γ angular anisotropy on fission-fragment energy and mass ratio in, (E), 22:48562
reactions (n,f) with uranium-235, emission of $Z > 2$ particles in ternary, (E), 22:48556
reactions (n,f) with uranium-235, energetics of ternary fission, (E/T), 22:37362
reactions (n,f) with uranium-235, energy spectra of long-range α particles from, (E), 22:42037
reactions (n,f) with uranium-235, fine structure in fragment charge distribution from, (E), 22:30004
reactions (n,f) with uranium-235, fission fragment energy distribution from, (E), 22:7569(R) (BARC-291)
reactions (n,f) with uranium-235, fission-fragment range and mass distributions in, (E), 22:44697
reactions (n,f) with uranium-235, fission-fragment masses from range measurements on, (E), 22:32625
reactions (n,f) with uranium-235, fission-fragment mass and energy distributions in symmetrical, (E), 22:9846 (CEA-R-3309)
reactions (n,f) with uranium-235, fission-fragment charge distribution in, (E), 22:9907
reactions (n,f) with uranium-235, fission-fragment ranges in aluminum from, (E), 22:39651
reactions (n,f) with uranium-235, fission-product energy release rates for, (E/T), 22:13990 (GEMP-579)
reactions (n,f) with uranium-235, fractional chain yield of 17-sec gallium-77 in, (E), 22:44733
reactions (n,f) with uranium-235, fractional cumulative yields of molybdenum-103, -105, and -106 from, (E), 22:18303
reactions (n,f) with uranium-235, γ angular anisotropy in, (E), 22:18269
reactions (n,f) with uranium-235, γ angular distribution from, (E), 22:11960
reactions (n,f) with uranium-235, γ energy release in, (E), 22:3709
reactions (n,f) with uranium-235, identification of silver-118 fission product in, (E), 22:44735
reactions (n,f) with uranium-235, K x-ray yield dependence on fission-fragment mass, (E), 22:20622
reactions (n,f) with uranium-235, low-energy α spectra from ternary, (E), 22:48557
reactions (n,f) with uranium-235, mass and time distributions of delayed neutron emission in, (E), 22:46767 (NP-17532)
reactions (n,f) with uranium-235, mass-angle-energy correlation in, 22:32959 (ANL-7310, pp 1-30)
reactions (n,f) with uranium-235, molybdenum-isotope yields in, (E), 22:9921 (JUL-Conf-1)
reactions (n,f) with uranium-235, nuclear charge distribution and arsenic-83 and arsenic-84 yields in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (n,f) with uranium-235, palladium-117 yield in, (E), 22:29987 (USNRDL-TR-68-25)
reactions (n,f) with uranium-235, product yield studies for, (E), 22:29983 (MIT-905-108, pp 1-32)
reactions (n,f) with uranium-235, prompt neutron emission from fission fragments in, (E), 22:9899
reactions (n,f) with uranium-235, prompt x-ray spectrum from fission products in, (E), 22:7714
reactions (n,f) with uranium-235, prompt-neutron emission from fission fragments in, (E), 22:1645 (AWRE-O-43/67)
reactions (n,f) with uranium-235, recoil studies on iodine-131 and -133 yields in, (E), 22:24788 (IA-1128, pp 55-77)
reactions (n,f) with uranium-235, search for $A = 32$ fission products from, (E), 22:9855(R) (ORO-2843-12)
reactions (n,f) with uranium-235, ternary fission in, (E), 22:42012 (INR-P-911)
reactions (n,f) with uranium-235, with four-particle emission, (E), 22:9878
reactions (n,f) with uranium-235, yield of 5-sec palladium-117 in, (E), 22:44736
reactions (n,f) with uranium-235, yields of ground-state and isomeric promethium-148 in, (E), 22:42065
reactions (n,f) with uranium-238 in uranium dioxide single crystal, fission-fragment angular distribution in, (E), 22:35308
reactions (n,γ) with nuclei, design of spectrometer for studying gamma radiation from, 22:6629
reactions (n,γ) with nuclei, double-focusing beta spectrometer for measuring conversion electron spectra from, 22:6633
reactions (n,γ) with tin-112, cross sections for, 22:14433 (ORNL-4196, pp 66-89)
reactions (n,γf) with plutonium-239, detection of, (E), 22:39644
reactions (n,p) with chlorine-35, cross sections and Q-value for, (E), 22:13973
reactions (n,p) with helium-3 in gas-cooled reactors, tritium production from, (T), 22:42217
reactions (n,p) with potassium-40, cross sections and Q-value for, (E), 22:13973
reactions (n,p) with sulfur-33, cross section for, (E), 22:35280
reactions with aluminum--erbium alloys, magnetic properties from, (E), 22:39198
reactions with antimony-123, cesium-133, chromium-50, iridium-191, mercury-202, and silver-109, effective cross sections and resonance integrals for, (E), 22:20597
reactions with benzene at 0.001 to 10 eV, total cross section for, (E), 22:20578 (WASH-1079)
reactions with beryllium and sodium in tissue equivalent phantoms, 22:25961(R) (BNWL-531-2)
reactions with biological tissues, group division on basis of, 22:48433
reactions with erbium-167, total cross section for, (E), 22:7734
reactions with fissionable nuclei, computer program for least squares data fitting, 22:22530 (WAPD-TM-761)
reactions with gold at 0.95 to 6.95 A, total cross sections of, (E), 22:23310 (IEA-136)
reactions with iodine in human thyroid, 22:36192
reactions with neodymium, production of promethium-147 by, 22:23068
reactions with plutonium-240, -241, and -242, cross sections, resonance parameters, and fission parameters for, 22:22578 (IA-1152)
reactions with plutonium-242, total cross section for, 22:37341 (IN-1132)
reactions with stainless steel, transmutations from, 22:21645(R) (BMI-1826)
reactions with tantalum-181, cross sections for, 22:20561 (AHSB(S)R-141)
reactions with thorium-230, total cross section for, (E), 22:37342 (ITEF-546)
reactions with titanium deuteride, titanium hydride, zirconium deuteride, and zirconium hydride, total cross sections for, (E), 22:1566
reactions with water, time-of-flight measurements of total cross section for, (E), 22:41924
reactions with ytterbium-170, -171, -172, -173, -174, and -176, total cross sections for, (E), 22:20562 (BNL-12263)
reactivity of, sensitivity to fission neutron and prompt gamma spectra of, (T), 22:30161 (WAPD-T-1950)
resonance parameters of, shape-analysis method for determining, 22:6628
scattering and dynamics in heavy water, inelastic, 22:22804(R) (BNWL-685)
scattering by an ideal quantum gas, cross section for, (T), 22:15931
scattering by anharmonic crystals, differential cross section for, (T), 22:20429
scattering by atomic electrons, neutron electromagnetic form factors from, 22:11611
scattering by crystalline materials, incoherent approximation to cross sections for, (T), 22:26774
scattering by dysprosium, holmium-165, and lutetium, time-of-flight measurements of total cross sections for, (E), 22:35340
scattering by erbium-162, -164, -166, -167, -168, and -170, cross-section measurements using time-of-flight method, (E), 22:35339
scattering by ferromagnetic materials near the Curie point, (E), 22:24816
scattering by graphite and nickel, small-angle, (E), 22:29850
scattering by heavy water, inelastic, (E/T), 22:9760(R) (GA-8116)
scattering by impurity-bearing ferromagnetic materials, differential cross sections for inelastic, (T), 22:24789 (ITF-67-45)
scattering by lead and zirconium, cross sections for, 22:24862 (WANL-TME-1746)
scattering by liquid heavy water at 300°K, doubly differential cross section for inelastic, (E), 22:41925
scattering by liquid solutions of ortho- and para-deuterium, 22:18757
scattering by lithium iron oxides and iron oxides, polarization effects in spin-wave, (E/T), 22:26505
scattering by magnetic and nonmagnetic materials, (T), 22:20428
scattering by magnetically ordered solids, nuclear polarization effects in, (T), 22:20430
scattering by methane at 4.8 to 105°K, cross section for, (E), 22:20578 (WASH-1079)
scattering by moleculas of the point group C/sub 3v/, cross sections for, (T), 22:48429
scattering by molecules of water, doubly differential cross sections for, (T), 22:18082
scattering by nickel-61 and nickel-64, amplitudes of, 22:43596 (ANL-7299, pp 280-9)
scattering by oriented polyethylene at 0.03, 0.04, and 0.08 eV and 4.2, 77, and 300°K, cross sections for, (E), 22:39542 (IN-1151)
scattering by reactor-grade graphite, inelastic, (E/T), 22:9760(R) (GA-8116)

scattering by single crystals of cobalt, inelastic magnetic, (T), 22:15919 (INP-568/PS)
scattering by single crystals of lead, temperature dependence of coherent extinction for, (E), 22:37283
scattering by single crystals, time-of-flight spectrometer for studying inelastic, 22:40438 (INR-P-898/II/PS)
scattering by solid methane, effects of molecular reorientation on quasielastic, 22:48436
scattering by trivalent rare-earth ions in octahedral crystal fields, (E), 22:32423 (CONF-670969-1)
scattering by trivalent ytterbium ions, cross section for paramagnetic, (E), 22:20562 (BNL-12263)
scattering by uranium carbide UC$_2$ at 0.01, 0.011, and 0.012 eV, cross sections for coherent elastic, (E/T), 22:48414(R) (GA-8773)
scattering by water at 0.05 eV, doubly differential cross sections for inelastic, (E/T), 22:37279 (IN-1141)
scattering by water, doubly differential cross sections for inelastic, (E), 22:41926
scattering by ytterbium ions Yb^{3+}, cross section for paramagnetic, (E), 22:53192
scattering by zirconium hydride at 25 to 890°C, cross section for, (E), 22:1566
scattering cross section and kernels for water, (E/T), 22:41924
scattering cross sections for beryllium and ice, crystal lattice frequency distributions for calculating, (T), 22:15920 (JAERI-1146)
scattering cross sections for crystalline materials, computer program for calculating, 22:11875 (LA-3823)
scattering cross sections for macroscopic systems of atoms, continued fraction representation for, (T), 22:46729(R) (AECL-3157)
scattering cross sections for molecules of nitrogen at room temperature, (T), 22:29869
scattering cross sections for molecules, quasi-classical approximation for, (T), 22:29862
scattering cross sections for, computer programs for calculating inelastic, (T), 22:9756 (AERE-R-5536)
scattering from liquids, molecular dynamics and theory of, 22:43854 (EUR-4037)
scattering in liquid argon, optimization of results obtained from integrals over Poisson distributed data on elastic, 22:53075
scattering in polyphenyl reactor moderators, calculations of, 22:30380
scattering in reactor-grade graphite of .02 to .611 eV, analysis of, (E/T), 22:35717
scattering in unmagnetized iron, small-angle, (E), 22:11513
scattering in water, inelastic, 22:22804(R) (BNWL-685)
scattering law for beryllium oxide at 300°K, (E), 22:22522 (GA-8283)
scattering law for graphite at 0.054 and 0.101 eV and at 1300 and 1800°K, 22:13895 (AERE-R-5574)
scattering law for graphite, (E/T), 22:3587(R) (GA-7647)
scattering law for liquid sodium at 102°C, at low momentum transfers, (E), 22:46697 (IN-1199)
scattering law for reactor-grade graphite, (E/T), 22:22522 (GA-8283)
scattering law for, review of quantum-mechanical formalism for, (T), 22:7615 (UCID-15249)
scattering law parameters for gadolinium, magnesium, molybdenum, titanium, and vanadium, ENDF/B data compilation on, 22:50559 (ANL-7387)
scattering of, bibliography on, (E/T), 22:26760 (JAERI-4043)
scattering of, correlation method for measuring polarization-dependent, 22:43086
scattering process characteristics for, (T), 22:27500
shielding calculations for Fort St. Vrain Power Reactor, computer programs for, 22:14136 (GA-8065)
shielding for, testing of various materials for, 22:7925
spectra and integral parameters in heterogeneous systems, integral method for determining, (T), 22:29855
spectra and scattering in benzene moderator, calculation of, 22:30379
spectra and temperature measurements of 0.011- to 0.43-eV, with crystal spectrometer, 22:49102
spectra calculation in square water-moderated and hexagonal zirconium hydride-moderated lattices, MEGMOC code for region-dependent, 22:37618
spectra calculations for, using THERMOS with Honeck's modified Nelkin model in water-moderated enriched uranium assemblies, 22:25141
spectra determination using time-of-flight techniques for water moderator reactors, 22:33049
spectra in beryllium, (E/T), 22:11873(R) (GA-8085)
spectra in beryllium, in pulsed source experiments, (T), 22:24798
spectra in biphenyl, (E/T), 22:11873(R) (GA-8085)
spectra in cadmium-bearing heavy water, space-dependent, (E/T), 22:29875
spectra in enriched uranium--paraffin moderated multiplying assembly, position-dependent, (E/T), 22:30325
spectra in erbium nitrate solutions, (E), 22:5740
spectra in graphite thermal column of WWR-S Bucharest, polynomial method determination of analytical form of, 22:44891 (IFA-FR-61)
spectra in graphite, time-dependent, (E/T), 22:13917
spectra in graphite-water systems with temperature discontinuity between graphite and water, (E/T), 22:20418(T) (JPRS-43682, pp 123-36)
spectra in heterogeneous lattices, calculation by integral form of transport equation of energy, 22:39906
spectra in heterogeneous lattices, methods for calculation of space and energy dependent, 22:44943
spectra in heterogeneous reactor lattices, calculations of, (T), 22:1574
spectra in ice and zirconium hydride, time-dependent, (E/T), 22:29887
spectra in infinite media, method for calculating, 22:20414(T) (JPRS-43682, pp 43-62)
spectra in natural uranium--heavy water lattices, (E/T), 22:30336
spectra in slabs of water, measurements of time-dependent, (E), 22:39549 (RPI-328-123, pp 26-31)
spectra in slabs of water, time-dependent, (E), 22:32459
spectra in small uranium rods, (E), 22:5741
spectra in two-dimensional homogeneous reactor cells, (T), 22:29853
spectra in two-zone graphite-water assemblies, (E), 22:29877
spectra in water from pulsed fast neutron source, time-dependent, (E), 22:20421(T) (JPRS-43682, pp 165-78)
spectra in water near probe tubes, calculation using two-dimensional transport theory, (T), 22:29880
spectra indices for ORGEL-type fuel clusters, 22:16145 (EUR-3736)
spectra indices in uniform heavy water lattices, (E/T), 22:14270
spectra measurement in a single uranium rod in water moderator, (E/T), 22:20934(R) (GA-8462)
spectra measurement in lattice of small uranium rods in water moderator, (E/T), 22:20934(R) (GA-8462)
spectra measurements in central cell of triangular pitch uranium rod lattice Lattice Experiment Facility, description of, 22:53414 (GA-8805)
spectra measurements in heterogeneous reactors, integral transport equation for, (T), 22:35634
spectra measurements in reactor lattices, angular, 22:14258(R) (GA-8304)
spectra measurements in uniform heterogeneous and homogeneous systems, Cadilhac method for, (E/T), 22:27482 (EUR-3350)
spectra measurements in uranium--water lattices of, (E/T), 22:22834
spectra measurements in WWR-S at Rez, description of, 22:44900 (UJV-1906)
spectra of, activation determination of Laguerre expansion coefficients of perturbed, (E), 22:32471
spectra of, calculations using Laguerre polynomials and associated functions, 22:20419(T) (JPRS-43682, pp 137-49)
spectra of, computer program for calculating, (T), 22:9761 (IN-1062)
spectra of, measurement using sandwich foil activation, (E/T), 22:20403 (CONF-680307-14)
spectra of, methods for calculating and measuring, (E/T), 22:15929
spectra of, review of methods for calculating space-dependent, (T), 22:29865
spectra variation determination in WWR-SM Warsaw by lutetium foil-dysprosium foil spectrum index measurements, 22:47012 (INR-895)
spin resonance flipper--chopper for, 22:36124 (KR-125)
temperature measurements in graphite and internal thermal columns of WWR-S Bucharest, 22:44892 (IFA-FR-62)
time moments for, single relaxation time model for analysis of, (T), 22:14296 (RPI-328-100, pp 140-87)
transmission calculations for thin 1/v absorbers using exact and approximate methods, (T), 22:53069
transport equation for non-absorbing media, solution for Milne problem using variational-iterative methods, (T), 22:29866
transport equation for, solution for Milne problem with capture, (T), 22:22540
transport equation near temperature discontinuity, exact solution of energy-dependent, (T), 22:35194 (AD-663369)
transport equation with anisotropic scattering, solution for Milne problem using variational method, (T), 22:7624
use in crystal structure studies, (E/T), 22:15922 (JUL-CONF-1(Suppl.), Paper 1)
use in method for determination of soil density and water content, 22:23144
use in radiography, French developments in, 22:16790
use in radiography, image intensification system for, 22:4540
use in soil density and water content measurements, 22:23145
wave propagation experiments in graphite, effect of Bragg continuum on, (T), 22:22533
wave propagation in graphite, (E), 22:24835(R) (BARC-305)
wave propagation in graphite, (T), 22:22532
wave propagation in heavy water, (E), 22:29884
wave propagation in moderating media, (E/T), 22:46700
wave propagation in semi-infinite medium, analysis using

  Boltzmann equation with one-term degenerate thermalization kernel, (T), 22:29857
Neutrophils
  see Leukocytes
NEVADA
  volcanic rocks in, argon/potassium method of dating, 22:48914(R) (COO-689-100)
NEVADA PROVING GROUNDS AREA
  nuclear tests by AEC at, during May 1967, 22:40697
  taxonomy of poisonous plants found at, 22:7967 (SWRHL-33-r)
NEVADA TEST SITE
  animals in proximity to, strontium-90 content of bones of, 22:8559
  announcement by Atomic Energy Commission of underground nuclear tests at, during July 1967, 22:40693
  determination of small mammal invasion of trapped-out habitat at, 22:33776 (COO-1336-6)
  detonation of test underground nuclear explosions at, during June 1966, 22:28522
  detonation of underground nuclear test explosions at, during April 1966, 22:28458
  detonation of underground nuclear tests at, during May 1966, 22:36257
  distribution of insects (Miridae) of, 22:23483
  ecology of animals and plants at, 22:33778 (UCLA-12-640, pp 45-60)
  fallout distribution at, from Plumbbob Operation, 22:18963 (BNWL-481-1, pp 93-101)
  fission product contamination of environment at, from KIWI-A reactor test, 22:33778 (UCLA-12-640, pp 45-60)
  geologic characteristics of Pahute Mesa, preshot Project Cabriolet survey of, 22:51125 (PNE-966)
  geophysical hole exploration for Scroll experiment at, density and sonic velocity measurements for, 22:35927 (UCID-15233)
  granodiorites from, triaxial compression measurements on, 22:16702
  monitoring in Utah, 22:15084
  nuclear tests at, during 1966, underground, 22:25850
  nuclear tests at, during 1966, underground, 22:28502
  nuclear tests at, during 1966, underground, 22:23522
  nuclear tests at, during 1966, underground, 22:23520
  nuclear tests at, during 1966, underground, 22:23518
  nuclear tests by AEC at, during April 1967, 22:40690
  nuclear tests by AEC at, during July 1967, underground, 22:28510
  radiation damage to vegetation of, β and γ, 22:23479(R) (ORO-2412-1)
  radiation effects on ecology of animals at, 22:19306
  radiation effects on ecology of animals inhabiting, 22:8495 (COO-1355-17)
  radiation effects on ecosystems of, 22:25800 (UCLA-12-668, pp 37-58)
  radiation effects on ecosystems of, fallout, 22:23480(R) (ORO-2412-7)
  radioecology of arthropods at, 22:25800 (UCLA-12-668, pp 37-58)
  radioinduced abnormalities in amphibian larvae at, following nuclear tests, 22:15049
  rock at, preshot studies of engineering and geologic properties of dry, 22:51124 (PNE-905)
  survival of winter annuals at, species data on, 22:25800 (UCLA-12-668, pp 37-58)
  taxonomy of insects (Miridae) of, 22:23483
  test holes and wells in, tabulation of hydrogeologic data from, 22:10360 (TEI-872)
  testing for deep drill holes at Pahute Mesa in, hydraulic methods for, 22:10361 (TID-24209)
  underground nuclear tests at, during April 1967, 22:28517
  underground nuclear tests at, during Feb. 1967, 22:28508
  underground nuclear tests at, during Jan. 1967, 22:28526
  underground nuclear tests at, during March 1967, 22:28519
  underground nuclear tests at, during May 1967, 22:28514
  underground nuclear tests at, during Sept. 1967, 22:28506
NEW ENGLAND REGION
  aeroradioactivity survey and areal geology of southeastern, 22:169 (CEX-58.4.6)
  radiation monitoring in northern, 22:2220
NEW HAMPSHIRE
  aeroradioactivity survey and areal geology of, 22:169 (CEX-58.4.6)
  granite deposits in, distribution of potassium, thorium, and uranium in, 22:2199
NEW JERSEY
  radioactivity content of forest soils in, during 1964 to 1966, 22:23515
NEW MEXICO
  molybdenum deposit in Questa, argon/potassium method of dating, 22:48914(R) (COO-689-100)
  radon-222 content in natural gas from northwestern, 22:25853
  uranium deposits in southern San Juan basin of, 22:27926
NEW ORLEANS
  radiation dose to human population of, from diagnostic radiography, x, 22:28534
New Production Reactor (NPR)
  see Hanford Production Reactors (N)
NEW YORK
  aeroradioactivity survey and areal geology of southeastern, 22:169 (CEX-58.4.6)
  radiation dose to human population of New York City, from diagnostic radiography, x, 22:28532
  radiation protection measures in public health programs in, 22:51601
  radioactivity content of environment at Brookhaven, during 1966, 22:23518
  radioactivity content of environment at Knolls Atomic Power Laboratory in, during 1965, 22:28502
  strontium-90 content in diets in, comparison of predicted and measured values for, 1967, 22:25529 (HASL-193, pp I.217-22)
  strontium-90 content of food in, during May to June 1967, 22:40697
  strontium-90 content of fresh and powdered milk and water in city of, during 1954 to 1968, 22:40661(R) (HASL-197)
  strontium-90 content of human diet in, during 1965, 22:23522
  strontium-90 content of human diet in, during 1966, 22:23518
  strontium-90 content of human diet in, during Aug. to Dec. 1966, 22:23515
  strontium-90 content of milk and water supplies in, during 1965, 22:36257
  strontium-90 content of surface waters in, during 1966, 22:23515
  strontium-90 content of tap water in, during 1966, 22:28514
  strontium-90 content of water supplies in, during 1965 to 1966, 22:23518
  strontium-90 content of water supplies in, during March to November 1966, 22:40697
  uranium content of biological materials in, 22:28501
  uranium content of human diet in, 22:28501
NEW ZEALAND
  environmental radioactivity from October to December 1967, 22:42869(R) (NP-17523)
  environmental radioactivity in, 1967, 22:42870(R) (NP-17524)
  irradiation facilities in, for sterilizing medical supplies, 22:48995
  radioisotope content of milk in, effects of fallout on, 22:40715
  uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)
Newts (Diemictylus)
  see Diemictylus under Amphibia
Niagara Mohawk Power Reactor
  see Nine-Mile Point Power Reactor
NICHROME
  hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
  radiation effects on corrosion of electrodes of, in basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
  radiation effects on thin film resistors of, fast neutron, 22:33704
  Nichrome--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
NICKEL
  see also TD Nickel
  abundance in chromosphere, (T), 22:17317
  abundance in coprecipitated plutonium oxide (PuO_2)--uranium oxide (UO_2) of, impurity analysis for, 22:27489(R) (NUMEC-3524-47)
  abundance in γ Capricorni, (E), 22:38692
  abundance in HD 122563, (E), 22:869
  abundance in HR 774, (E), 22:23983
  abundance in photosphere, (E), 22:23934
  abundance in Sun, (E), 22:26139
  alpha elastic scattering at 24.7 MeV, optical model analysis of, (E/T), 22:3645 (INP-558/PL)
  alpha reactions at 24.7 MeV, total cross section from transmission method, (E), 22:7688
  alpha reactions up to 9 MeV with, range-energy relation for, 22:10761 (MIT-952-4, pp 132-201)
  alpha reactions with, x-ray excitation cross sections for, 22:52525
  alpha scattering in thin foils of, at 6, 9, and 20 MeV, multiple, (E), 22:27039
  alpha total cross section at 24.7 MeV, measurement using transmission method, (E), 22:3645 (INP-558/PL)
  analysis for carbon by gamma photon activation methods, 22:27596
  analysis for gallium by titration using EDTA, 22:7979(T) (UCRL-Trans-10161)
  analysis for oxygen, 22:12223 (NAA-SR-12616)
  analysis for oxygen by alpha activation methods, 22:27594
  analysis for phosphorus, extraction method for spectrophotometric, 22:4043
  analysis for tin by activation and isotopic-exchange methods, 22:2008
  analysis for trace elements, methods for, 22:37679
  analysis of solutions of, for trace amounts of cobalt and copper, chromatographic, 22:22976
  antimony-121 Moessbauer spectra in, magnetic field from, 22:11528
  argon scattering by surfaces of, flux and speed

distributions in, (E), 22:47829
argon-ion reactions at 100 to 300 eV, trapping and thermal reemission in, (E), 22:29591
argon-ion sputtering on, yields from, 22:31606
atomic weight of, based on carbon-12 = 12, 22:42698
boron-10 reactions at 64 MeV, proton transfer in, (E), 22:24880
cadmium-111 hyperfine magnetic fields in, measurements using perturbed angular correlations, (E), 22:46263
cesium ion reactions with surfaces of, temperature effects on energy spectra of slow ions from, (E), 22:24028(T) (AD-666243)
chromatographic behavior on cerium phosphate paper, 22:153
chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
cladding of thin foils of, description of fabrication for uranium rods of, 22:20865(P)
coating of steel by, welding techniques for, 22:15164
coatings by chemical vapor deposition, 22:7045
complexes of, molecular structure of, 22:3978 (ORO-2503-8)
complexes with [ethylenebis[[(carboxymethyl)imino]ethylenenitrilo]] tetraacetic acid, stability constants for nonprotonated, 22:45038
complexes with 1,2-cyclohexanedione dioxime, preparation of, nucleation in, 22:12161(R) (COO-582-14)
complexes with 2,4-pentanedione and pyridine, preparation of, for use as secondary standards, 22:45039
complexes with 6-hydroxy-2-methyl-7-oxo-1,3,5-cycloheptatriene-1-carboxylic acid, stability of, 22:10236
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with acrylic acid (or acrylonitrile)--divinylbenzene--vinylpyridine copolymer, 22:45059
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with dialkyldioximes, crystal structure of, 22:12161(R) (COO-582-14)
complexes with diethyldithiocarbamate, separation on silica gel by thin-layer chromatography, 22:35900
complexes with o-forminidoylphenol, transesterification of, effects of deuterium on, 22:21077
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with tetraphenylporphine, γ radiolysis of, 22:16610
complexes with trimeric β-ketoenols, structure of, 22:27517(R) (MIT-1965-63)
complexes with TTA, fractional sublimation of, 22:35911
content of marine algae, crustaceans, fish, and mollusks, 22:22903 (PRNC-104, pp 57-67)
content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
content of serum, method for determination of, 22:6216(R) (ORO-3461-9)
content of zooplankton in Puerto Rico, 22:22902 (PRNC-104, pp 24-53)
corrosion by 650°C liquid sodium, effect of magnesium solute on, 22:24925(R) (ANL-7427)
corrosion by aqueous solutions, review of, 22:52142
corrosion by boiling magnesium chloride, optical metallography of, 22:19473(R) (COO-1319-53)
corrosion by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
corrosion by liquid sodium, 22:12966
corrosion by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
corrosion film thickness determination by beta backscatter, 22:49687(P)
corrosion in fluoride volatility process, 22:150
corrosion of filters of, in fluidized-bed fluoride volatility process, 22:14557 (BMI-X-490)
corrosion of plate, by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
corrosion of soot-coated, by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
corrosion resistance to bromine, 22:15140 (BMI-X-489)
creep, 22:52174
creep of, void formation during, 22:45799 (UCRL-18043, pp 155-82)
crucible for molten, development of, 22:28888 (RFP-882)
crystal lattice voids in heated high-purity, effects of quenching on, (E/T), 22:52163 (ORO-3108-51)
crystal structure of, effects of boron on, 22:4788
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deposition by electrocrystallization in fused salts, 22:37704(T) (ANL-Trans-610, pp 57-63)
deposition by ultrasound in aqueous media, electrolytic, 22:25323 (CEA-N-616, pp 97-105)
deposition from molten salts, electro-, 22:23003 (IA-1128, pp 97-146)
deposition of films of, on silicon, epitaxy in, 22:9420(R) (COO-623-127)
deposition of, by electrocrystallization in molten chloride salts, 22:25323 (CEA-N-616, pp 97-105)
deposition of, effects of ultrasound on electrolytic, 22:25451 (CEA-N-616, pp 145-51)
deposition on barium strontium carbonate by decomposition of nickel carbonyl, 22:7045
deposition on reactor core components, electrolytic, 22:28747(P)
deposition on steatite bodies, methods for, 22:7033
deposition on thorium, method for, 22:26035(P)
deposition on zirconium, method for, 22:26035(P)
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as impurity in uranium tetrafluoride by carrier distillation, spectrographic, 22:30431 (JEN-192-DQ/1-66)
determination as trace impurity in calcium, 22:1967 (Y-1590)
determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation analysis, 22:7989 (CONF-660905-2)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by amperometric titration, theoretical corrections for, 22:4037
determination by atomic-absorption spectroscopy using induction plasma, 22:1985
determination by displacement chromatography on acidic cation exchange resin, 22:12416
determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by x-ray fluorescence methods, 22:1957 (ORNL-IIC-10(Vol.1), pp 336-55)
determination in alloys by neutron activation methods, 22:33269
determination in ancient copper coins and bronze objects by fast neutron activation methods, 22:27592
determination in binary alloys with copper or silver, polarographic, 22:9(R) (NBS-TN-425)
determination in biological samples by co-oxidation of rubeanic acid, polarographic, 22:4057
determination in blood by neutron activation methods, 22:12259
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in calcium--nickel mixture by chelometric titration using TTHA, 22:22965
determination in chromium by activation methods using γ-spectrometry after ion exchange, 22:33245
determination in copper, activation, 22:27558
determination in Fermi Fast Breeder Reactor coolant sodium, 22:12974
determination in ferrite materials by neutron activation, 22:27606
determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
determination in high purity liquid sodium, use of atomic-absorption and spectrophotometry for, 22:27396(R) (AI-AEC-12638)
determination in high-purity niobium, 22:1981
determination in high-purity water by x-ray fluorescence spectroscopy, 22:27552
determination in highly alloyed steels by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
determination in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, colorimetric, 22:25246
determination in iron meteorites by photon activation methods, 22:27592
determination in iron--uranium alloys, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
determination in irradiated uranium dioxide fuel pins, electron probe, 22:25321 (ANL-7375, pp 95-134)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in mild steel, x-ray fluorescence, 22:50938
determination in molybdenum and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in molybdenum by photometric method using dimethylglyoxime--persulfate, 22:37679
determination in molybdenum--uranium alloys by spectrography, 22:27533 (JEN-187-DQ/I-63)
determination in nickel-activated zinc silicon fluorides, polarographic, 22:9(R) (NBS-TN-425)
determination in niobium, solvent extraction, ion exchange chromatographic, and spectrophotometric methods for, 22:30484
determination in plutonium oxide, method for, 22:25236 (CEA-N-616, pp 20-71)

determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in refined soybean oil by neutron activation methods, 22:48841
determination in scandium, spectroscopic, 22:18727
determination in seawater after concentration on chelating resins by atomic absorption spectrophotometry, 22:14442
determination in silicates, spectrometric, 22:22960
determination in solutions of refractory materials, spectrographic, 22:21032
determination in steels, activation, 22:7989 (CONF-660905-2)
determination in tin chloride by cathode-ray polarography, 22:42600
determination in uranium and its compounds by atomic absorption spectroscopy, 22:16411 (GAT-507)
determination in uranium and uranium compounds by atomic absorption, 22:45014
determination in uranium by atomic absorption spectrophotometry, 22:8026
determination in uranium by atomic absorption spectroscopy, 22:14460
determination in uranium oxide using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in vulcanized rubber by bremsstrahlung activation, 22:12260
determination in Zircaloy by x-ray fluorescence, 22:47097
determination in Zircaloy-2 by x ray fluorescence, 22:7024
determination in Zircaloy-2, spectrographic, 22:4006
determination in Zircaloys, spectrographic, 22:22926 (BARC-312)
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, in metal solutions, chromatographic, 22:22976
determination of trace amounts of, in rare earth compounds by flame spectrometry, 22:25238 (IS-T-223)
determination of trace amounts of, in steels, chromatographic and radiometric, 22:22973
determination of trace amounts of, in uranyl nitrate, comparison of spectrographic methods for, 22:1999
determination of trace amounts of, in zinc sulfide phosphors by neutron activation, 22:30467
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of, effects of uranium on polarographic, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
deuterium exchange and equilibration reactions in aqueous solutions of catalysts of, mechanism of, 22:12314
deuteron differential elastic scattering cross sections and polarization at 7 to 11 MeV and 30° to 135°, (E), 22:29975
deuteron reactions with, neutron yields from, 22:20370 (KN-67-655(R))
diffusion in hyperstoichiometric nickel monoxide, 22:43628 (ANL-7299, pp 268-79)
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in liquid silver, 22:43565(R) (COO-841-15)
diffusion in nickel chromites, 22:52288
diffusion in nickel oxides, 22:52288
diffusion of beryllium at 1020 to 1400°C in, 22:45772
diffusion of deuterium and hydrogen in monocrystalline, at 200 to 420°C, 22:35813
diffusion of hydrogen at 360°K in, effects of deuterium on, 22:21082
diffusion of hydrogen in, from 35 keV H^+ ion implantation, 22:52171
diffusion of, dependence on temperature of self, 22:686
dislocation velocity in crystalline, model of, 22:36506
dissolution in sodium disilicate glass at 0 to 1000 psi hot press, 22:45799 (UCRL-18043, pp 155-82)
dissolution of single crystals of, stress--strain studies of, 22:8692(R) (COO-1319-57)
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in starfish from coast of Puerto Rico, 22:21408 (PRNC-104, pp 54-6)
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
effects as coatings on mechanical properties of vacuum annealed uranium, 22:49708 (AWRE-O-38/68)
effects of additions of, on sinterability of molybdenum fibers, 22:52155
effects of additive of, on recovery of aluminum and aluminum alloy lattice defects after deformation at 78°K, 22:19560
effects of electrodes of, on deuterium separation factor in hydrogen electrode reactions, 22:14499
effects of ultrasound on deposits of, 22:25451 (CEA-N-616, pp 145-51)
effects on activation sintering of hafnium and zirconium carbides, 22:15240
effects on colorimetric determination of uranium, 22:33262
effects on corrosion of steel by superheated steam and water at 300 to 500°C, 22:626
effects on corrosion of titanium by saline water, 22:26029 (ORNL-4229, pp 71-83)
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of molybdenum using aspartic acid, polarographic, 22:12239
effects on deuterium exchange reactions with organic compounds, 22:35819
effects on deuterium self-exchange reactions in labeled toluene, catalytic, 22:33340
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on electronic specific heat of iron, 22:41049
effects on hardness and yield strength of cobalt-base alloys, 22:36483
effects on hydrogen peroxide yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 78-96)
effects on hydrogen sorption by zirconium, 22:21659
effects on hydrogenation and deuterium--hydrogen exchange of benzene, 22:4143
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on properties of copper--zirconium alloys, 22:6987
effects on properties of niobium alloys, 22:23706 (BM-RI-7116)
effects on radioinduced embrittlement of heat resisting alloys at high temperatures, (E), 22:19574 (BNWL-455, Paper 4.1-18)
effects on radioprotective effects of AET and serotonin in mice, 22:17032
effects on recombination radiation spectra from electron-excited gallium arsenides, (E), 22:24421
effects on recrystallization of doped tungsten wires, 22:49757
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on superconducting transition temperature of cerium--cobalt alloys, (E), 22:7237
effects on superconducting transition temperature of aluminum, (E), 22:7217
effects on titrimetric determination of uranium, 22:22972
electrocrystallization of deposits of, from aqueous media, effects of ultrasonics on, 22:27619 (CEA-N-816, pp 90-101)
electrodesorption of gas from, effects of 10^{-6} to 10^{-9} torr on, 22:52215(T) (SLAC-Trans-86)
electron diffraction patterns of single-crystal, model interpretation of, 22:15220
electron reactions with, characteristic energy losses in, (E/T), 22:22204(R) (ORO-2755-20)
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electrophoretic behavior of, dissolved in molten alkali nitrates, 22:14493
electrorefining of, 22:49701
fabrication of powdered, into composites incorporating sapphire whiskers, 22:49838 (AWRE-O-43/68)
fatigue life of, effects of space charges on high-temperature, 22:37955
fission-fragment ranges and energy losses in, (E), 22:1350
fluorine-19 hyperfine magnetic fields in, measurements using time-differential spin precession technique, (E), 22:46726
fluorine-19 magnetic hyperfine fields in, measurement using recoil implantation with perturbed γ angular distributions, (E), 22:44624
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
gamma backscattering at 0.412 to 1.25 MeV, 22:11489
germanium-71 hyperfine fields in, measurements of, (E), 22:48485

growth of single crystal, use of Czochralski crystal pulling technique for, 22:6937 (IS-1703)
hardness and porosity of sintered, effects of simple and binary carbides on, 22:23774
hardness at -180 to 800°C, 22:38621(T) (KFK-tr-252)
heat transfer properties of zirconium dioxide-coated multifoil layers of, at 200 to 800°C, 22:51177(R) (ALO-3634-10)
heat treatments and phase studies, 22:52174
helium-3 reactions at 29 MeV, total cross section for, (E), 22:18188
hydrogen-ion reactions at 1 to 10 keV, effects of hydrogen on secondary electron emission from, 22:9043
hyperfine interactions in, studied by ^{150}Sm Coulomb-excited perturbed angular correlations, 22:9108
hyperfine magnetic fields at nuclei in, measurements using ion implantation with perturbed angular correlation method, (E), 22:46267
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
ion recoil ranges in, at 0.22 to 5.2 MeV, (E), 22:11968
ionization at low temperature, 22:28806
ionization by electron impact, calculations of cross sections and rate coefficients of, 22:43856 (IPP-1/76)
iron-57 Moessbauer effect in superparamagnetic, (E), 22:17765
iron-57 Moessbauer spectrum in, high-pressure effects on, (E), 22:3219
isotopic abundances in HFIR-irradiated, measurement of relative, 22:14434 (ORNL-4196, pp 93-8)
joining to low-carbon steels, explosive method for, 22:38528
joints with different materials, metallography of, 22:43553
krypton-ion reactions at 100 to 300 eV, trapping and thermal reemission in, (E), 22:29591
magnetic aftereffect at 150 to -180°C in single crystals of, after neutron irradiation and plastic deformation, 22:48168
magnetic behavior in intermetallic compounds with rare earth metals and yttrium, (T), 22:15598
magnetic fields at nuclei of Sn-119 impurity atoms in, Moessbauer study of, 22:13561
magnetostrictive properties of single-crystal, 22:1299 (ORO-2839-13)
mechanical properties of, effects of boron on, 22:4788
mercury vaporization on, effect of temperature and surface roughness on, (E), 22:10485(R) (SAN-677-15)
metallography of, performance of aluminum oxide--resin mounts for, 22:26058 (RFP-1104)
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture at 1 to 200 keV, resonance parameters and radiative widths for, (E), 22:44627 (TID-24601)
neutron capture at 1 to 200 keV, resonance widths for, (E), 22:42004
neutron capture by, resonances in fast, (E), 22:27068
neutron capture cross sections at 5 to 100 keV, (E), 22:11948(R) (NP-17216)
neutron capture in, rate of radiative epithermal, (E), 22:32928 (NDA-2143-9)
neutron differential elastic and inelastic scattering cross sections at 1.0 to 4.5 MeV, (E), 22:27067
neutron differential elastic and inelastic scattering cross sections at 1.0 to 4.5 MeV, (E), 22:27067
neutron differential elastic scattering cross sections and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
neutron differential elastic scattering cross section at 3.0 to 8.1 MeV, optical-model analysis of angular distribution for, (E/T), 22:13954 (AE-303)
neutron diffraction by powders of, data on, 22:28206 (IFA-FN-33)
neutron elastic scattering at 0.50 to 1.75 MeV, angular distributions for, (E), 22:26932(R) (NP-17434)
neutron elastic scattering at 1.5 MeV, angular distributions and differential cross section for, (E), 22:53154
neutron inelastic scattering at 14 MeV, effects of exchange interaction on, (T), 22:44675
neutron magnetic scattering by, spin correlation in critical, (T), 22:1568
neutron magnetic scattering up to 1420°K, (E/T), 22:24805
neutron scattering by, (E), 22:11874(R) (JUL-463-NP)
neutron scattering by, small-angle cold and thermal, (E), 22:29850
neutron scattering near the Curie point, thermal, (E), 22:24816
neutron total cross section at 0.4 to 1.2 MeV, (E), 22:39575 (CEA-R-3279)
neutron total cross section at 14.7 MeV, (E), 22:44649
neutron transmission properties in, 22:15915 (CONF-661216-3)
nickel-61 Moessbauer effect in, (E), 22:46747
nitrogen molecule scattering by surfaces of, flux and speed distributions in, (E), 22:47829
nuclei 61 < Z < 75 hyperfine fields in, recoil-implanted, (E), 22:11535
oxidation by carbon dioxide, kinetics and thermodynamics of, 22:17080
oxidation model of, 22:8735 (ORNL-4170, pp 51-3)
oxidation of, 22:10917
oxidation of, oxygen transport during, 22:52239
oxidation rate of type 270, at 1000°C, 22:19043(R) (DP-1143-1)
oxidation-rate constant at 77 to 298°K and 10^{-6} to 10^{-8} torr oxygen, method for, 22:38519
performance as coating for metals, evaluation of flame-sprayed, 22:10932
photon absorption cross sections up to 25 MeV, (E), 22:26963
photon reactions (γ,n) and (γ,2n) from threshold to 25 MeV, cross sections for, (E), 22:26963
photon reactions (γ,n) at 9 to 25 MeV, integrated cross sections and yield curves for, (E), 22:35272
photon reactions at 11 to 34 MeV, intermediate structure in, (E/T), 22:22563
plasma of, temperature determination from spectral shift and broadening, 22:3021
plating thickness on uranium, use of Geiger-Mueller detectors for measuring, 22:14867 (AWRE-O-2/65)
positron annihilation in magnetized, rates of polarized, 22:45958
precipitation from aqueous sulfuric acid solutions by salicylaldoximate, 22:33359
preparation and properties of low index surfaces of monocrystals of, high-energy electron diffraction studies on, 22:36497
preparation by powder metallurgy, 22:49682
preparation of compact deposits of, by electrocrystallization, 22:27619 (CEA-N-816, pp 90-101)
properties as filter in fluoride volatility process, 22:40158(R) (K-L-1780(Pt.25))
properties for use as encapsulating material for cobalt-60 power sources, 22:16780
properties for use in vacuum systems, 22:16828
properties of powder compacts of, prepared by high-velocity impact, 22:43562
proton diffusion in, determination by condensation method, (E), 22:7166
proton diffusion in, determination by condensation method, 22:26203(T) (NP-tr-1631)
proton reactions at 10 GeV with, in nuclear emulsions, (E), 22:21976
proton reactions with, in meteorites, (E), 22:52307(R) (AD-665431)
proton scattering at 15 to 90 keV on foils of, angular distributions from, (E), 22:11211
radiation damage in zone-refined, recovery stages of electron and fast-neutron, (E), 22:28870
radiation effects on corrosion of electrodes of, in acid solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on creep of, neutron, 22:2670
radiation effects on desorption of water by, low-energy electron, 22:11015
radiation effects on electro-formed reflectors of, proton and ultraviolet, 22:49771 (N-68-23560)
radiation effects on lattice parameters of annealed, gamma, 22:52874
radiation effects on magnetic properties of, neutron, 22:44269
radiation effects on mechanical properties of polycrystalline, neutron, 22:21745
radiation effects on microstructure of, annealing effects on neutron, (E), 22:19580 (BNWL-455, Paper 12.1-100)
radiation effects on reflectance of coated solar mirrors of, proton and ultraviolet radiation, 22:31440
radiation effects on uptake of, by mitochondria isolated from spleens of rats, whole-body x, 22:40853
radioinduced defects in pure foils of, electron microscopic study of agglomerated, 22:48169
radioinduced diffusion of cobalt in, electron and γ, 22:8800
radioinduced embrittlement of, studies of neutron, (E), 22:28881
radioinduced voids in high-purity foils of, fast neutron, 22:52214 (BNWL-SA-1768(Rev.))
reaction with magnesium in sodium solution at 650°C, 22:22653(R) (ANL-7419)
reactions with aluminum oxide catalyst, 22:4066(R) (COO-1354-13)
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
refining of, radioactive tracer studies of electrolytic process for, 22:14712
rhodium-100 nuclear magnetic resonance in, resonance destruction of angular correlations in, (E/T), 22:46234
ruthenium-99 hyperfine magnetic fields in, measurement using perturbed angular correlations, (E), 22:46263
samarium-150 hyperfine magnetic field in, (E), 22:1354
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087

separation by ion exchange, role of complexation reactions in, 22:33517
separation by solvent extraction using TBP, 22:23119
separation from aluminum and uranium by chelating ion exchange and partition chromatography, 22:33289
separation from aqueous solution by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:8193
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from arsenic by paper chromatography, 22:25257
separation from bismuth and lead by ion exchange using dimethyl sulfoxide--hydrochloric acid--methanol, 22:21171
separation from cerium by chromatography using sodium polyphosphate, 22:159
separation from cobalt or copper in hydrochloric acid solution, ion exchange, 22:40192
separation from low-grade Indian uranium ore by flotation method, 22:40149 (AEET/Met.-9)
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals by precipitation using cinnamic acid, 22:37855
separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from nitrate solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from other metals using alginic acid, ion exchange, 22:45170
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from titanium by paper chromatography, 22:25257
separation from titanium by paper chromatography, 22:25258
separation from tungsten by paper chromatography, 22:25257
separation from uranium by ion exchange, 22:12427
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of alkali metals simultaneously from, ion exchange, 22:37856
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of iron from, by method based on fractional sublimation of TTA chelates, 22:35911
separation of lead from, by complexing with thionalide, 22:4024
separation of rhenium from, by solvent extraction using tetraphenylarsonium chloride, 22:47087
separation of thorium and uranium from divalent, by ion exchange, 22:142
separation of uranium from, in acetic acid, paper electrochromatographic method for, 22:16672
separation of zinc from, by precipitation using sodium benzilate, 22:30560
solubility in high purity liquid sodium, effects of temperature on, 22:27396(R) (AI-AEC-12638)
solubility in liquid aluminum--zinc alloys, 22:51044 (ANL-7425, pp 19-41)
solubility in mercury at 500 to 750ºC, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
solubility in sodium, 22:52126 (BNL-50127)
solubility in sodium at 340 to 495ºC, 22:38510 (BNL-50082, pp 93-152)
solvent properties of monocrystalline, for deuterium and hydrogen at 200 to 420ºC, 22:35813
sorption by manganese dioxide from nitric acid, 22:157
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorptive properties for hydrogen ions, 22:4129
sorptive properties for sulfate anions, 22:10917
sputtering by mercury ions at 1 to 10 keV, yield from, (E), 22:41339
sputtering coefficients for argon, krypton, and neon ions of 30 keV on polycrystalline, effects of angle of incidence on, (E), 22:21870
sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
sulfur surface segregation in, analysis by Auger electron emission, (E), 22:21866
surface friction and wear of, effects of crystal structure and properties on, 22:52177
tantalum-181 hyperfine magnetic field in, measurements using time-differential precession method, (E), 22:46265
thermal conductivity of foils of, incorporating quartz paper spacers, 22:40302(R) (ALO-3632-29)
thermal conductivity testing of, for use in insulation materials, 22:12555(R) (ALO-3632-23)
thermodynamic activity of, in liquid beryllium, 22:31363
thermodynamics of surface alloying of, with boron--titanium, 22:30575
thermoelectric power of, effect of pressure on, 22:40993(R) (COO-1198-534)
tin-119 Moessbauer effect in, (E), 22:35285(R) (AERE-PR/NP-13)
tin-119 Moessbauer effect in, temperature dependence of hyperfine fields in, (E), 22:1362
triton reactions up to 3 MeV with, LET for, 22:10761 (MIT-952-4, pp 132-201)
triton reactions with, neutron yields from, 22:20370 (KN-67-655(R))
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
uptake by internal organs of pelagic fish, 22:2491
use as backing material for uranium-235 fission sources, 22:248 (NP-17092)
use as carrier metal for rare earth addition to uranium, 22:28754 (LA-3911)
use for catalyst in methane production in cooling system of carbon dioxide-cooled graphite-moderated reactors, description of, 22:48663(P)
use for measuring fast neutron flux by activation, calibration of, 22:21321(T) (ORNL-tr-1843)
use in carbothermic reduction of uranium oxide to carbide, 22:36529(P)
use in heat pipe structures, effects on heat transfer, 22:23209 (LA-DC-9027)
use of coatings of, for testing use of VAPOTRON principle in boiling water reactors, 22:1759 (EURAEC-1890)
welding fusion zone distribution from wire inserts of, in electron beam welds of titanium plates, 22:41026
welding of, method and temperature for diffusion, 22:6943
welding to magnesium or magnesium alloys, to form sealed joints, 22:12995(P)
x-ray spectra of, temperature dependence of intensity of Kβ' satellite in, (E), 22:11198 (UUIP-558)
xenon ion ranges at 500 keV to 1.75 MeV in, (E), 22:11538

NICKEL 200
mechanical and physical properties of, testing for FTR core structural materials of, 22:47006 (BNWL-748)

NICKEL ACETATES
analysis for oxygen by neutron activation, 22:30457
stability constants for, paper electrophoretic studies on, 22:8051

NICKEL ALLOYS AND SYSTEMS
see also A-286 (Iron Alloy)
see also Duranickel
see also Hastelloy
see also Hastelloy B
see also Hastelloy C
see also Hastelloy N
see also Hastelloy R235
see also Hastelloy W
see also Hastelloy X
see also Hastelloy X 280
see also Haynes Stellite 6E
see also Haynes 25 Alloy
see also Haynes 56 Alloy
see also Incoloy
see also Incoloy 800
see also Incoloy 825
see also Inconel
see also Inconel X
see also Inconel X750
see also Inconel 120
see also Inconel 600
see also Inconel 625
see also Inconel 702
see also Inconel 713C
see also Inconel 718
see also Inconel 800
see also INOR-8
see also K Monel
see also Kovar (Iron Alloy)
see also Monel
see also Monel 400
see also Multimet
see also Nichrome
see also Nickel 200
see also Nimonic
see also Nimonic 80A
see also Nimonic-90
see also Nimonic PE 16
see also Rene-41
see also Udimet 500 and 700
see also Uranus B6
see also Uranus 65
see also Waspaloy
Al--Fe--Ni, Moessbauer study of chemical composition and magnetic properties of phases in, 22:41660
analysis for boron, colorimetric, 22:30460
analysis for cerium and vanadium by direct amperometry, 22:45016
analysis for scandium by atomic absorption, 22:45023
analysis for zirconium using gallocyanine, colorimetric, 22:33287
cladding for gas-cooled reactor fuel elements, fabrication of, 22:42281(P)

graphite--NbC, creep as a function of composition and temperature, compressive, 22:41101 (WANL-TME-1761)
graphite--NbC, polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
graphite--NbC, properties of hot-pressed, effects of heat treatments on, 22:731(R) (N-67-19056)
graphite--NbC--TaC, elastic properties of die-pressed composites of, (E), 22:34109
graphite--NbC--TaC, polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
HfC--NbC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
Mo--NbC, welding of, method for diffusion, 22:6943
Nb--NbC, welding of, method for diffusion, 22:6943
Nb--Sn--NbC, synthesis of two-phase high-field superconducting, 22:26347
NbC--NbN, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
NbC--NbN, thermodynamics of, 22:28943
NbC--PuC, preparation of improved fuels of, 22:52251(P)
NbC--PuC--UC, preparation of improved fuels of, 22:52251(P)
NbC--Ta, welding of, method for diffusion, 22:6943
NbC--TaC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
NbC--TaC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
NbC--TiC, crystal structure of homogeneous, 22:52281
NbC--TiC, electric conductivity of homogeneous, 22:52281
NbC--TiC, microhardness of homogeneous solid solution, 22:52281
NbC--TiC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
NbC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
NbC--UC, preparation of improved fuels of, 22:52251(P)
NbC--UC--ZrC, phase studies, 22:15208 (IS-T-219)
NbC--VC, miscibility at 1200°C to critical point, 22:43653
NbC--W, welding of, method for diffusion, 22:6943
NbC--WC, preparation and properties of, 22:38629
NbC--ZrC, electric properties of, effects of niobium content on, 22:17730
NbC--ZrC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
NbC--ZrC, thermal expansion of solid solutions of, 22:47706

NIOBIUM CARBONITRIDES
formation mechanisms and thermodynamics in steels, 22:2623

NIOBIUM CHLORIDE OXIDES
separation from niobium pentachloride, rectification method for, 22:12306
NbCl$_5$--NbOCl$_3$, fusibility diagram of, 22:12306

NIOBIUM CHLORIDES
reactions with zinc for vapor deposition of niobium layers on aluminum oxide, 22:21751 (EUR-3743)
reduction by hydrogen to produce niobium metal, 22:38531
reduction by niobium metal, 22:47063 (IS-T-263)
reduction by niobium metal in gas chromatograph, effects of temperature on kinetics of, 22:20985 (IS-1780)
reduction of NbCl$_5$, by cadmium or zinc for vapor deposition, 22:43549
reduction to niobium metal using calcium, 22:43548
separation of niobium chloride oxide from, rectification method for, 22:12306
AlCl$_3$--KCl--NaCl--NbCl$_5$, phase diagrams of, 22:12307
NbCl$_5$--NbOCl$_3$, fusibility diagram of, 22:12306
NbCl$_5$--UO$_2$, reduction by hydrogen to prepare uranium, 22:38531

NIOBIUM FLUORIDES
see also Potassium Niobium Fluorides
chemistry of, 22:25328 (ORNL-4229, pp 50-67)
determination of volatile radioactive, method for, 22:25454 (CEA-N-616, pp 246-94)
niobium-90 half-life in, effect of chemical binding on isomeric, (E), 22:11964
preparation of, 22:47112 (ORNL-4254, pp 88-173)
separation from uranium hexafluoride, 22:23106
separation of plutonium hexafluoride from, by sublimation, 22:25443 (ANL-7375, pp 46-94)
spectra of, 22:47112 (ORNL-4254, pp 88-173)

NIOBIUM HYDRIDES
compatibility with uranium dioxide at 650 to 700°C, 22:11066
crystal structure and purity of, prepared by electrolytic hydrogen charging, 22:17172
neutron differential inelastic scattering cross sections at 0.238eV, (E), 22:3592 (RPI-328-101)
neutron doubly differential inelastic scattering cross section at 0.238 eV and at 77 and 296°K, (E), 22:29864
neutron inelastic scattering at 0.1 to 1.0 eV, cross sections for, (E), 22:53076
neutron inelastic scattering at low energy, (E), 22:13908 (RPI-328-100, pp 120-39)
solvent properties for hydrogen, 22:13033

NIOBIUM ISOTOPES
energy levels of odd-A, from proton inelastic scattering, (E), 22:32651

NIOBIUM ISOTOPES Nb-90
beta and electron-capture decay scheme of, β and γ spectra, (E), 22:11959
beta decay scheme of, β and γ spectra for, (E), 22:14002 (UUIP-555)
beta decay, effect of chemical and physical state on rate of, (E), 22:3741
energy levels from beta and electron-capture decay of molybdenum-90, (E), 22:20589
energy-level transitions in, conversion electron spectra from, (E), 22:25664
half-life of isomeric, effect of chemical binding on, (E), 22:11964
production and properties of short-lived isomeric, by proton reactions with zirconium at 10 MeV, (E), 22:24874

NIOBIUM ISOTOPES Nb-91
energy level from zirconium-90 (p,γ) reactions, radiative width of isobaric analog, (E), 22:53186
energy levels from molybdenum-92 (d,He-3) reactions, (E), 22:27200
energy levels from proton scattering by zirconium-90, isobaric analog, (E), 22:11949(R) (ORO-2972-47)
energy levels from zirconium-90 (He-3,d) reactions, (E), 22:39629 (CONF-670970-, pp 229-42)
energy levels from zirconium-90 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
energy levels from zirconium-90 (He-3,d) reactions, spectroscopic factors for, (E), 22:27141
energy levels from zirconium-90 proton elastic scattering, spin assignments from polarization data for isobaric analog, (E), 22:20629
energy levels from zirconium-90 proton elastic scattering, isobaric analog, (E), 22:39653
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, damping widths of isobaric analog, (T), 22:37393
energy levels of, shell-model calculations of elastic proton decay and damping widths of isobaric analog, (T), 22:44724
energy-level transitions from zirconium-90 (He-3,d) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
proton decay from isobaric analog resonances in zirconium-90 (He-3,d) reactions, (E), 22:39629 (CONF-670970-, pp 229-42)
proton decay of isobaric analog states in zirconium-90 (d,n) reactions, (E), 22:53164

NIOBIUM ISOTOPES Nb-92
energy levels from niobium-93 (p,d) reactions, transition strengths for isobaric analog, (E), 22:29993
energy levels from zirconium-91 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
energy levels of, calculations using jj-coupling shell model, (T), 22:48587 (JAERI-1158, pp 138-44)
energy levels of, description using shell model with effective interaction, (T), 22:27135
half-life of, (E), 22:24845
proton decay of isobaric analog states in zirconium-91 (d,n) reactions, (E), 22:53164

NIOBIUM ISOTOPES Nb-93
carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 13.6 MeV, diffraction structure in angular distributions for, (E), 22:48501
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
energy levels from fast neutron inelastic scattering, spin-parity assignments for, (E), 22:27158
energy levels from zirconium-92 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
energy levels, (E), 22:5809(R) (ANL-7354)
energy-level transitions from electron inelastic scattering, (E), 22:26911
neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture at 10 to 150 keV, cross section for, (E), 22:35346
neutron capture by, activation cross section for, 22:24862 (WANL-TME-1746)
neutron capture by, γ spectra from thermal, (E), 22:20578 (WASH-1079)
neutron capture by, niobium-94 energy levels and configurations from thermal, (E), 22:29999
neutron capture by, resonance parameters and γ spectra for, (E), 22:53194
neutron capture cross section at 10 to 150 keV, (E), 22:3687 (EURFNR-404)
neutron cross sections at 0 to 15 MeV, ENDF/B, 22:16002 (GA-8133)
neutron cross sections at 1 to 10 MeV, calculations using local spherical optical model, (T), 22:35349
neutron differential elastic and inelastic scattering cross sections at 3 to 8 MeV, (E), 22:18287
neutron differential elastic and inelastic scattering cross sections at 6.0 and 7.5 MeV, (E), 22:20578 (WASH-1079)
neutron elastic scattering at 4 MeV using polarized

neutrons, differential cross section and polarization angular distribution for, (E), 22:14019
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
neutron inelastic scattering at 1 to 2 MeV, γ spectra from, (E), 22:27158
neutron inelastic scattering at 160 MeV, γ spectra from, (E), 22:27159
neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
neutron reactions (n,3n) at 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
neutron strength function and scattering radius at 0 to 4.1 keV, (E), 22:18285
neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
nuclear charge distribution of, measurement using electron scattering, (E), 22:26911
nuclear magnetic resonance in lithium niobate, 22:31966
nuclear spin--lattice relaxation in niobium--zirconium superconductors, 22:31780
photon reactions (γ,α) at 30.5 MeV, α energy distribution from, (E), 22:11971
photon reactions (γ,p) at 17.5 to 24.0 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27224
photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
proton decay of isobaric analog states in zirconium-92 (d,n) reactions, (E), 22:53164
proton reactions (p,α) and (p,He-3) with, (E/T), 22:13927(R) (USC-136-132)
proton reactions (p,d) and (p,t) at 55 MeV, 22:27140
proton reactions (p,d) at 55 MeV, isobaric analog resonances in, (E), 22:29993
proton reactions (p,n) at 30 and 50 MeV with excitation of isobaric analog states in, (E), 22:46734
proton reactions (p,n) at 4.6 to 5.3 MeV, molybdenum-93 energy levels from, (E), 22:27118
proton reactions (p,n) at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
use for fast neutron fluence detection by activation, 22:8352
use of foils for neutron dosimetry by activation, 22:28177 (FFN-74)

NIOBIUM ISOTOPES Nb-94
beta spectra for, shape factor for, (E), 22:27103
beta transition in, matrix elements for twice-forbidden, (T), 22:44698
energy levels and configurations from thermal neutron capture by niobium-93, (E), 22:29999
energy levels from niobium-93 neutron resonance capture, (E), 22:20578 (WASH-1079)
energy levels from niobium-93 resonance neutron capture, (E), 22:53194
energy levels of, description using shell model with effective interaction, (T), 22:27135
energy-level transitions from niobium-93 thermal neutron capture, (E), 22:20578 (WASH-1079)
half-life of, (E), 22:24845
neutron binding energy from niobium-93 resonance neutron capture, (E), 22:20578 (WASH-1079)
neutron binding energy from niobium-93 thermal neutron capture, (E), 22:20578 (WASH-1079)
nuclear spin of ground state of, (E), 22:27103

NIOBIUM ISOTOPES Nb-95
activity in atmosphere, use of scintillation detectors aboard aircraft for measurement of, 22:18971
beta decay of, gamma transition energies in, (E), 22:7674
beta decay of, γ spectra for, (E), 22:18262
content and distribution in fallout from third and fifth Chinese nuclear explosions, 22:51131
content in atmosphere over Atlantic Ocean from June 17, 1967 and Dec. 24, 1967 Chinese nuclear explosions, 22:48954
content in atmospheric precipitation at Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
content in Bucharest atmosphere, 1964 to 1966, 22:51103
content in Danish atmosphere and precipitation, July through Dec. 1967, 22:51093 (FFR-401/68)
content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
content in soils of northeast and east-central Georgia, 22:48939
content in Swedish atmosphere following June 1967 Chinese nuclear explosion, 22:51094 (FOA-4-4369)
content of birch leaves and fir, pine, and spruce needles sampled in U.S.S.R. during 1962, 22:51615
content of food samples in India during 1963 to 1965, 22:40656 (AEET-273)
deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
detection and measurement in fallout at Pinstech, Pakistan after May 9, 1966 Chinese nuclear explosion, 22:51097 (PINSTECH/HP-3)
determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
determination in liquids by gamma counting and differential decay, 22:1956(R) (MLM-1405)
determination in presence of zirconium-95 by extraction chromatography and counting, 22:40029
diffusion in tungsten monocrystals at 1800°C, 22:19542
distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
energy levels from beta decay of zirconium-95, (E), 22:7674
energy levels, (E), 22:5809(R) (ANL-7354)
energy-level transitions from zirconium-95 β decay, branching ratio for, (E), 22:20560 (AERE-R-5342)
energy-level transitions from zirconium-95 β decay, (E), 22:18262
fallout at Leningrad from 1954 to 1965, 22:12453
fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
half-life of, 22:14433 (ORNL-4196, pp 66-89)
half-life of, (E), 22:24845
half-life of, accurate measurement of, (E), 22:29990
inhalation by rats, kinetics of, 22:8476
ion-exchange behavior in oxalic acid, recoil effects on, 22:10349
measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
metabolism by rats, 22:8475
metabolism by rats following inhalation, assessment of hazards from, 22:40583
preparation of, 22:18905
production in soil by neutron activation, dose to plant roots from, 22:31080
proton decay of isobaric analog states in zirconium-94 (d,n) reactions, (E), 22:53164
recoil properties of isomeric, from proton fission of bismuth and uranium, (E), 22:12338(R) (COO-1167-3)
removal from PRTR heavy water primary system, measurement of, 22:22816 (HW-75557(Rev.)(Del.))
separation by solvent extraction using naphthenic acid, 22:35904
separation from uranyl nitrate by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
separation of plutonium from, by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
uptake by man following inhalation, 22:33715 (SZS-15/67)
uptake from atmosphere and soil by grasses, 22:45541
use as tracer for diffusion in hcp zirconium, 22:43577
use as tracer for fine sediments in northern San Francisco Bay, 22:4272 (TID-24140)
yields of isomeric, in uranium-235 proton fission, (E), 22:18218

NIOBIUM ISOTOPES Nb-96
beta decay of, beta particle and conversion electron spectra from, (E), 22:20583
beta decay of, γ angular correlations from, (E), 22:11944(R) (AECL-2780)
preparation of carrier-free, from proton-irradiated targets, 22:50994

NIOBIUM ISOTOPES Nb-97
beta decay of, molybdenum-97 energy levels from, (E), 22:16031
energy levels from beta decay of zirconium-97, (E), 22:16032
energy levels, (E), 22:5809(R) (ANL-7354)

NIOBIUM ISOTOPES Nb-98
decay of isomeric, 22:20975(R) (BMwF-FBK-67-89)
production by decay of zirconium-98, 22:37833 (CEA-R-3451)

NIOBIUM ISOTOPES Nb-99
beta decay of isomeric, half-life and γ spectra for, (E), 22:9905
beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)

NIOBIUM ISOTOPES Nb-100
beta decay of isomeric, half-life and γ spectra for, (E), 22:9905
beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
beta decay properties, (E), 22:1689
decay of isomeric, 22:20975(R) (BMwF-FBK-67-89)

NIOBIUM ISOTOPES Nb-101

Cr--Ni, pipe fabrication methods for reactor heat exchangers in Japan, 22:14177
Cr--Ni, uses in chemical processing industries, 22:52142
Cr--Ni--Mo--steel, compatibility with plutonium carbide--uranium carbide fuel at 800°C, 22:31458
Cr--Ni--P, performance as brazing alloy for high temperatures, 22:12991
Cr--Ni--P, testing as brazing alloy for sodium corrosion loop, 22:12972
Cr--Ni--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Ni--Si, brazing characteristics, 22:21673 (WAPD-T-1947)
Cr--Ni--Si, testing as brazing alloy for sodium corrosion loop, 22:12972
Cr--Ni--Si--stainless steel, corrosion cracking by water at 350°C, stress, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, cladding for vibratory compacted uranium oxide (UO_2) fuel elements of, fabrication of, 22:42213 (WCAP-3374-5)
Cr--Ni--stainless steel, corrosion by water vapor at 600°C, effects of aluminum and silicon additions and nickel content on, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, corrosion cracking by water at 350°C, stress, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, elongation of, effects of boron and carbon content at 750°C, 22:48788
Cr--Ni--steel, corrosion by liquid sodium at 500 to 600°C, 22:23768
Cr--Ni--steel, corrosion by magnesium chloride, 22:26026 (CEA-N-616, pp 106-44)
Cr--Ni--steel, corrosion by sodium hydroxide at 360°C, 22:26026 (CEA-N-616, pp 106-44)
Cr--Ni--steel, fatigue limits at 540 and 600°C, 22:26041
Cr--Ni--steel, oxidation of niobium-stabilized, by carbon dioxide at 750 and 850°C, structure of surface oxides formed by, 22:34123
Cr--Ni--steel, stress-rupture of, effects of liquid sodium and air at 700°C on, 22:48788
Cr--Ni--steel--Ti, corrosion by carbon dioxide in Windscale AGR tubes of austenitic, 22:44857
Cr--Ni--steel--Ti, corrosion by liquid sodium, 22:47660 (CONF-671007-2)
Cr--Ni--steel--Ti, corrosion by liquid sodium at 500 to 600°C, 22:23768
Cr--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
Cr--Ni--ThO_2, creep and fracture of, effects of environment, rolling, and temperature on, 22:11054
Cr--Ni--ThO_2, testing cermet, for encapsulation of cobalt-60, 22:10929
Cr--Ni--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Ni-base, fracture failures in thorium oxide dispersion strengthened, 22:49765
Cr--Ni-base, neutron magnetic scattering by, (E), 22:24809
Cr--Ni-base, oxidation rate of Tophet A and Tophet 30, at 1000°C, 22:19043(R) (DP-1143-1)
Cr--Ni-base, properties of, effects of molybdenum on electric and mechanical, 22:7001
Cr--Ni-base, use as reinforcing filament in heat-resistant ceramics, 22:7035
Cr--Ni-base--Nb, mechanical properties of, effects of aging temperature on, 22:7005
Cr--Ni-base--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
Cu--Er--Ni, crystal structure of, 22:28821
Cu--Er--Ni, crystal structure of intermetallic Er_2NiCu, 22:2647
Cu--Er--Ni, phase studies of, 22:28821
Cu--Fe--Ni, iron-57 Moessbauer effect doublet line structure in, origin of, 22:34781
Cu--Fe-base--Ni, preparation and properties of age-hardened martensitic, 22:43555(P)
Cu--Gd--Ni, crystal structure of, 22:28821
Cu--Gd--Ni, crystal structure of intermetallic Gd_2NiCU, 22:2647
Cu--Gd--Ni, phase studies of, 22:28821
Cu--Ni, analysis for copper and nickel, polarographic, 22:9(R) (NBS-TN-425)
Cu--Ni, analysis for phosphorus, extraction method for spectrophotometric, 22:4043
Cu--Ni, analysis for silicon by atomic absorption spectrophotometry, 22:30436(R) (UCRL-50006-68-1)
Cu--Ni, analysis of, methods for, 22:37679
Cu--Ni, corrosion by aqueous solutions, review of, 22:52142
Cu--Ni, corrosion by saline water, effects of sulfides on, 22:26029 (ORNL-4229, pp 71-83)
Cu--Ni, corrosion by seawater in condensers of power reactors, 22:47661 (CONF-671007-6)
Cu--Ni, magnetic fields at nuclei of tin-119 impurity atoms in, Moessbauer study of, 22:13561
Cu--Ni, magnetostrictive properties of single-crystal, 22:1299 (ORO-2839-13)
Cu--Ni, performance as coating for metals, evaluation of flame-sprayed, 22:10932
Cu--Ni, phase diagrams and thermodynamic properties of, 22:4803
Cu--Ni, properties of single-crystal, neutron diffraction determination of, 22:4777
Cu--Ni, radiation effects on rate processes in, 22:15230
Cu--Ni, uses in chemical processing industries, 22:52142
Cu--Ni, weld zone-cracking tests of, 22:10927 (WERL-0029-4)
Cu--Ni--Ti, corrosion, stability, and strength of solders of, 22:17090
Cu--Ni--W, mechanical properties of, effects of sintering on, 22:6953
Cu--Ni--W, production of high-density sintered, 22:6953
Cu--Ni--Y, thermal capacity of $YCu_{0.9}Ni_{0.1}$ at 1.3 to 5°K, 22:52889
Cu--Ni--Zr, corrosion, stability, and strength of solders of, 22:17090
Cu-base--Ni, Moessbauer effect in, (E), 22:46746
Dy--Ga--Ni, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Er--Fe--Ni, phase studies of solubility of, 22:23821
Er--Ga--Ni, crystal structure of intermetallic, 22:23805 (CONF-670502-, pp 156-65)
Er--Ni, crystal structure of, 22:28821
Er--Ni--Si, crystal structure of, 22:28821
Er--Ni--Si, crystal structure of Er_6Ni_3Si, 22:2647
Er--Ni--Si, phase studies of, 22:28821
Er--Ni--Y, crystal structure of, 22:28821
Er--Ni--Y, phase studies of, 22:28821
Eu--Ni, crystal structure and interatomic distances of $EuNi_5$, (E), 22:13542
Eu--Ni, crystal structure of intermetallic $EuNi_5$, 22:22243
Fe--Hf-base--Ni, corrosion by steam, 22:10921(P)
Fe--Hf-base--Ni, tensile properties of, 22:10921(P)
Fe--Mo--Ni, coercive force and magnetostriction of 4-79 molybdenum Permalloy tape, effects of process variables on, (E), 22:15608
Fe--Mo--Ni, electrodeposition on substrates, effects of ultrasonic waves on, 22:52145
Fe--Mo--Ni, phase studies on temperature dependence of Young's modulus and kinetics in, 22:2648
Fe--Mo--Ni, radiation effects on coercive force in annealed molybdenum Permalloy, fast neutron, (E), 22:13547
Fe--Mo--Ni, radiation effects on magnetic properties of, relation to defect production, electron, (E), 22:31927 (BNL-50083, pp 265-72)
Fe--Mo--Ni--Ru--W-base, preparation method for improved, 22:6976(P)
Fe--Mo--Ni-base, magnetic properties of roll-flattened Mo--Permalloy ribbon, effects of aging on, (E), 22:31366
Fe--Mo--Ni-base, magnetic stress sensitivity of roll-flattened Mo--Permalloy ribbons, (E), 22:31367
Fe--Mo--Ni-base, properties of vacuum-melted HyMu 800, 22:2631
Fe--Ni, atomic moments of iron and nickel atoms in fcc, effects aluminum additions on, 22:43594 (ANL-7299, pp 251-64)
Fe--Ni, corrosion by boiling magnesium chloride, optical metallography of, 22:19473(R) (COO-1319-53)
Fe--Ni, dislocation-solute atom interactions in, 22:10983(R) (COO-1676-1)
Fe--Ni, magnetic fields at nuclei of tin-119 impurity atoms in, Moessbauer study of, 22:13561
Fe--Ni, magnetic properties in order-disorder Ni_3Fe, radiation effects on, (E), 22:26523
Fe--Ni, martensite formation in, effects of cooling temperature on, 22:693(T) (UCRL-Trans-10137)
Fe--Ni, martensite formation in, effects of magnetic fields on, 22:693(T) (UCRL-Trans-10137)
Fe--Ni, martensite formation in, oscilloscopic investigation of, 22:693(T) (UCRL-Trans-10137)
Fe--Ni, metallography of, optical stage for study of, 22:1120
Fe--Ni, Moessbauer effect of monocrystals of, ordered by neutron irradiation, 22:44234
Fe--Ni, neutron radiation effects on magnetic properties of thin film, 22:7362
Fe--Ni, nuclear magnetic resonance of iron-57 in, (E), 22:7384
Fe--Ni, oxidation of Nilo 48, in carbon dioxide at 700 to 1000°C, 22:43538
Fe--Ni, phase diagram, 22:21687 (COO-1319-61)
Fe--Ni, phase diagrams of, 22:15209(T) (MLM-1381(tr))
Fe--Ni, phase equilibria at 230 to 370°C, determination by carbonyl and evaporation processes, 22:15209(T) (MLM-1381(tr))
Fe--Ni, phase studies, 22:31411
Fe--Ni, plastic deformation, 22:31411
Fe--Ni, plastic deformation in, effects of fabrication on, 22:693(T) (UCRL-Trans-10137)
Fe--Ni, positron annihilation in annealed and deformed, (E), 22:17367
Fe--Ni, positron annihilation in deformed, angular distribution of photons from, (E), 22:52513
Fe--Ni, production from iron and nickel carbonyls, 22:693(T) (UCRL-Trans-10137)
Fe--Ni, properties of single-crystal, neutron diffraction determination of, 22:4777
Fe--Ni, radiation effects on anisotropy-field inhomogeneity, angular dispersion, and coercive force of thin Permalloy films, helium-3, 22:48194
Fe--Ni, radiation effects on annealing of, fast neutron,

22:36510(R) (EURAEC-2037)
Fe--Ni, radiation effects on magnetic anisotropy of Permalloy films, argon-ion and neutron, (E), 22:15613
Fe--Ni, radiation effects on magnetic properties of Permalloy, fast neutron, 22:36510(R) (EURAEC-2037)
Fe--Ni, radiation effects on rate processes in, 22:15230
Fe--Ni, radioinduced magnetic ordering in single-crystal, effects on magnetization curves, (E), 22:15585
Fe--Ni, strength of, methods for increasing, 22:31411
Fe--Ni--Pr, crystal structure of, stability of, 22:23821
Fe--Ni--U, superconducting transition temperature of, (E), 22:24202
Fe--Ni--W, aging mechanisms of, 22:38553
Fe--Ni--W, hardness of, effects of heating on, 22:10997
Fe--Ni--W, mechanical properties of, effects of sintering on, 22:6953
Fe--Ni--W, phase diagram, 22:10997
Fe--Ni--W, phase studies on temperature dependence of Young's modulus and kinetics in, 22:2648
Fe--Ni--W, production of high-density sintered, 22:6953
Fe--Ni--W-base, crystal structure and properties of, 22:4780
Fe--Ni--W-base, effects of nickel--iron ratio on strength, ductility and hardness of, 22:4780
Fe-base--Mn--Mo--Ni--Si, mechanical properties at high temperatures, 22:19546
Fe-base--Ni, magnetic properties of thin layers of, on copper, 22:19539
Ga--Gd--Ni, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ho--Ni, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Lu--Ni, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni--rare earth, crystal structure of intermetallic compounds of, 22:43594 (ANL-7299, pp 251-64)
Ga--Ni--Sm, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni--Tb, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni--Tm, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni--Y, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni--Yb, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Ni-base, neutron magnetic scattering by, (E), 22:24809
Gd--La--Ni, crystal structure of, 22:28821
Gd--La--Ni, phase studies of, 22:28821
Gd--Ni, crystal lattice spacings in intermetallic compounds of, 22:23822
Gd--Ni, crystal structure of, 22:28821
Gd--Ni, crystal structure of intermetallic Gd$_3$Ni, 22:49759
Ge--Ni, analysis for germanium, x-ray spectrographic, 22:4 (AERE-R-5452)
Ge--Ni, crystal structure of intermetallic Ni$_{1.75}$Ge in, disorder--order transitions in, 22:2654
Ge--Ni, preparation of, 22:14482 (ORNL-4196, pp 90)
Ge--Ni-base, neutron magnetic scattering by, (E), 22:24809
Hf-base--Ni, corrosion by steam, 22:10921(P)
Hf-base--Ni, tensile properties of, 22:10921(P)
In--Ni, crystal structure of intermetallic Ni$_{1.5}$In in, disorder--order transitions of, 22:2654
In--Ni--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
La--Ni, crystal structure of, 22:28821
La--Ni, crystal structure of intermetallic La$_3$Ni, 22:49759
La--Ni--Si, crystal structure of La$_2$NiSi$_3$, 22:2647
Lu--Ni, crystal structure of intermetallic LuNi$_5$, 22:22243
Mg--Mn--Nd--Ni, diffusion in solid-solution, effects of magnesium, neodymium, and nickel on, 22:31402
Mg--Mn--Nd--Ni, phase diagrams, 22:31402
Mg--Ni, reactions of intermetallic compounds in, with hydrogen, products of, 22:37707 (BNL-50082, pp 27-39)
Mg--Ni, reactions of intermetallic Mg$_2$Ni, with hydrogen, 22:15141 (BNL-50057, pp 79-100)
MgO--Ni, mechanical properties of, 22:2626
Mn--Mo--Nb--Ni--steel, radiation effects on mechanical properties of pressure vessel, evaluation of temperature and neutron, 22:50748 (ZJE-27)
Mn--Ni, radiation effects on rate processes in, 22:15230
Mn--Ni, structure studies of intermetallic MnNi$_3$ using 1 MW reactors, 22:50239
Mn--Ni--Si, testing as brazing alloy for sodium corrosion loop, 22:12972
Mo$_2$C--Ni, thermodynamic properties of, effects of carbon content on, 22:755
Mo--Nb--Ni--Ta--TiC, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Mo--Ni, analysis of, beta fluorescence, 22:50943
Mo--Ni, corrosion by aqueous solutions, review of, 22:52142
Mo--Ni, crystal structure of intermetallic Ni$_4$Mo, long and short order in, (E), 22:37047
Mo--Ni, microstructure of mixed powders of, after 2-hr sintering at 1473°K, 22:52193
Mo--Ni, phase studies, 22:13034
Mo--Ni, phase studies, 22:31401
Mo--Ni, uses in chemical processing industries, 22:52142
Mo--Ni--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Mo--Ni-base, electric conductivity and structural transformations in, effects of temperature on, 22:7022
Mo--Ni-base, electric conductivity of sintered, 22:52193
Mo--Ni-base, electric conductivity of, relations with short-range ordering, 22:31401
Mo--Ni-base, microstructure of deformation induced dislocations in, 22:47684
Mo--Ni-base, neutron magnetic scattering by, (E), 22:24809
Nb--Ni, crystal structure and properties of unidirectionally solidified intermetallic Ni--Ni$_3$Nb eutectic, 22:41066
Nb--Ni, nickel diffusion in, effects of composition and temperature on, 22:17134
Nb--Ni, superconducting proximity effect in sandwiches of, (E), 22:22096
Nb--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
Nb--Ni--Zr, phase equilibria in, 22:45786
Nb--Ni-base, electrodeposition on iron and steel, electrolyte composition effects on, 22:17087
Nb--Ni-base, galvanomagnetic effect, (E), 22:48171
Nb--Ni-base, neutron magnetic scattering by, (E), 22:24809
Nd--Ni, crystal structure of, 22:28821
Nd--Ni, thermal capacity measurements on intermetallic compounds in, at 4 to 300°K, 22:35823
Nd--Ni--Zr, crystal structure of, 22:28821
Nd--Ni--Zr, phase studies of, 22:28821
Ni--Nb, phase studies of hexagonal close-packed structures in, 22:4805
Ni--Os, analysis for osmium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
Ni--Pr, magnetic properties of intermetallic PrNi$_2$ at 4 to 300°K, 22:41061
Ni--Pr, thermal capacity measurements on intermetallic compounds in, at 4 to 300°K, 22:35823
Ni--Pr, thermal capacity of intermetallic PrNi$_2$, at 1.5 to 300°K, 22:23756 (CONF-670502-, pp 546-55)
Ni--Pr--Y, magnetic properties at 4 to 300°K, 22:41061
Ni--Pu, phase studies of, 22:2655
Ni--Pu, physical properties of, 22:2627
Ni--rare earth, magnetic and crystallographic properties of intermetallic compounds containing two rare earths, (E), 22:39161(R) (NYO-3454-22)
Ni--rare earth, magnetic behavior of nickel in intermetallic compounds of, (T), 22:15598
Ni--rare earth, magnetic properties of intermetallic Ln$_2$Ni$_{17}$ (Ln = lanthanide or yttrium), (E), 22:39167 (NYO-3454-22, Paper 6)
Ni--rare earth, magnetic properties of intermetallic Lu$_2$Ni$_{17}$(Lu = Y, Sm, Gd, Tb, Dy, Ho, Er, Tm, or Lu), 22:46201
Ni--rare earth, magnetic properties of Ln$_2$Ni$_{17}$ compounds, 22:52883
Ni--rare earths, crystal structure of intermetallic RE$_3$Ni, 22:49759
Ni--rare earths, preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
Ni--Re, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Ni--Re, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Ni--Rh, analysis for rhodium, x-ray spectrographic, 22:4 (AERE-R-5452)
Ni--Rh, thermal capacity of, at 0.05 to 5°K, 22:45029 (UCRL-18043, pp 7-105)
Ni--Ru, analysis for ruthenium, x-ray spectrographic, 22:4 (AERE-R-5452)
Ni--Si, corrosion by aqueous solutions, review of, 22:52142
Ni--Si, uses in chemical processing industries, 22:52142
Ni--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ni--Sn, crystal structure of intermetallic Ni$_{1.5}$Sn in, disorder--order transitions of, 22:2654
Ni--steel, fatigue testing at 250, 300, and 480°C for nuclear use, 22:49737
Ni--steel, heat treatment for improved low temperature properties, 22:28783(T) (TT-66-59003-4/A)
Ni--steel, radiation effects on impact properties of, fast neutron, 22:52127(R) (RISO-179)
Ni--Ta, phase studies of hexagonal close-packed structures in, 22:4805
Ni--ThO$_2$, crystal structure of hot-pressed, 22:2626
Ni--ThO$_2$, mechanical properties of hot-pressed, 22:2626
Ni--ThO$_2$, work-hardening, (E/T), 22:41060
Ni--Ti, corrosion by saline water, effects of sulfides on, 22:26029 (ORNL-4229, pp 71-83)
Ni--Ti, phase studies of martensitic, intermetallic compound in, 22:49752 (COO-588-14)
Ni--Ti--V, corrosion by liquid sodium at 500 to 600°C, 22:23768
Ni--TiC, strength of, effects of molybdenum or molybdenum carbide on, 22:28940

  Ni--TiC, wettability by molybdenum, 22:28940
  Ni--Tm, crystal structure of intermetallic Tm$_3$Ni, 22:49759
  Ni--Tm, crystal structure of intermetallic TmNi$_5$, 22:22243
  Ni--U, analysis for uranium, extraction-photometric method for, 22:16427
  Ni--U, phase diagram, 22:15170 (BMwF-FBK-67-88)
  Ni--U, superconducting transition temperature of intermetallic U$_6$Ni, (E), 22:24202
  Ni--U-base, heat treatment and properties of, 22:2618
  Ni--V, preparation and properties of, 22:2560(R) (IS-RD-11)
  Ni--W, atomic arrangements as function of cold working and heat treatment in, (E), 22:41682
  Ni--W, electrodeposition on plates, from pyrophosphate baths, 22:28765
  Ni--W-base, properties of sintered filters of, 22:31342
  Ni--Y, crystal structure of, 22:28821
  Ni--Y, magnetic behavior of nickel in intermetallic compounds of, (T), 22:15598
  Ni--Y, magnetic properties of Y$_2$Ni$_{17}$ compounds, 22:52883
  Ni--Yb, crystal structure and interatomic distances of YbNi$_5$, (E), 22:13542
  Ni--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Ni--Zr, crystal structure of, 22:28821
  Ni--Zr, phase studies on splat-cooled, 22:47683
  Ni--Zr-base, sorptive properties for hydrogen, effects of nickel on, 22:21659
  Ni-base--Re, neutron magnetic scattering by, 22:24809
  Ni-base--Ru, neutron magnetic scattering by, (E), 22:24809
  Ni-base--Sb, neutron magnetic scattering by, (E), 22:24809
  Ni-base--Si, particle coarsening in precipitates of, 22:15207 (CALT-221-39)
  Ni-base--Sn, neutron magnetic scattering by, (E), 22:24809
  Ni-base--Ta, galvanomagnetic effect, (E), 22:48171
  Ni-base--Ta--Ti--W, corrosion by air at 2100°F, 22:15150
  Ni-base--Ti, particle coarsening in precipitates of, 22:15207 (CALT-221-39)
  Ni-base--V, diffusion of deuterium and hydrogen in, at 180 to 460°C, 22:35813
  Ni-base--V, neutron magnetic scattering by, (E), 22:24809
  Ni-base--V, solvent properties of, for deuterium and hydrogen at 180 to 460°C, 22:35813
  Ni-base--W, crystal structure of, effects of cold working on ordering in, 22:38563 (N-68-11803)
  Ni-base--W, neutron magnetic scattering by, (E), 22:24809
  Ni-base--Zn, neutron magnetic scattering by, (E), 22:24809
NICKEL ALUMINATES
  diffusion of cations in, 22:52288
NICKEL, BIS(ALANINATO)-
  radiation effects on solid, yields from γ, 22:25419
NICKEL, BIS(GLYCINATO)-
  radiation effects on solid, yields from γ, 22:25419
NICKEL CARBIDES
  deposition on carbon fibers, method for, 22:15248(P)
NICKEL CARBONYLS
  effects on activity of RNA nucleotidyltransferase in hepatic nuclei of rats, 22:6216(R) (ORO-3461-9)
  effects on alveolar endothelium of rats, pathological, 22:6216(R) (ORO-3461-9)
  effects on cortisone-induced activity of tryptophan oxygenase in liver of rats, 22:6216(R) (ORO-3461-9)
  effects on rats, carcinogenic, 22:6216(R) (ORO-3461-9)
  inhibition of phenobarbital-induced synthesis of cytochrome P-450 by, in liver of rats, 22:6216(R) (ORO-3461-9)
  metabolism of nickel-63-labeled, in rats, 22:6216(R) (ORO-3461-9)
  properties of, 22:15209(T) (MLM-1381(tr))
  reduction for vapor deposited nickel coatings, 22:7045
NICKEL CHLORIDES
  magnetic structure of NiCl$_2$.6H$_2$O, 22:23481(R) (PRNC-102)
  spectra of, effects of melting on electronic, 22:8733 (ORNL-4170, pp 45-8)
  spectra of, in molten salt, absorption, 22:8733 (ORNL-4170, pp 45-8)
NICKEL CHROMATES
  effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
NICKEL CHROMITES
  diffusion of chromium in, 22:52288
  diffusion of nickel in, 22:52288
NICKEL COUPLES
  electric potential and exchange current measurements on, in molten fluorides, 22:10139(R) (ORO-3518-4)
NICKEL DEUTERIDES
  decomposition of, kinetics of, 22:27641
NICKEL, DICYCLOPENTADIENYL-
  use in measuring L/K electron-capture ratios in nickel-56 and -57, (E), 22:5807
NICKEL FERRATES Ni(FeO$_2$)$_2$
  crystallographic anisotropy of, gamma radiation effect on first constant of magnetic, 22:29554
  diffusion of cations in, 22:52288
  iron-57 Moessbauer absorption spectra in powders of, (E), 22:17764
  Moessbauer effect in crystals of, 22:24408 (IA-1128, pp 21-54)
NICKEL FLUORIDES
  nickel-61 Moessbauer effect in, (E), 22:46746
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
  reactions of hydrated, with uranium tetrafluoride and uranium pentafluoride, study of complexes formed by, 22:27706
  NiF$_2$--UF$_4$, crystal structure of hydrated compounds in, 22:42690
NICKEL HALIDES
  complexes of, formation constants for, 22:37776 (BNL-50082, pp 79-92)
NICKEL HYDRIDES
  crystal structure of α- and β-, effects of deuterium on, 22:16492
  decomposition of, kinetics of, 22:27641
NICKEL IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  detection in solar spectrum, (T), 22:29012
  effects on contraction of uterus of guinea pigs, 22:25724
  effects on oxidation of water by hypochlorites and persulfates, oxygen-18 isotope effects in catalytic, 22:27660
  effects on oxidation of water, oxygen-18 isotope effects on, 22:27660
  effects on spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
  electrophoretic mobility in acetate buffers, 22:27567
  proton relaxation times in aqueous solutions of, effects of deuterium on, 22:42699
  radiative association in the ionosphere, (T), 22:13328
  reactions of aqueous, with alumina of high surface area, 22:4066(R) (COO-1354-13)
NICKEL IRON GERMANIUM OXIDES
  iron-57 Moessbauer effect studies in spinel, in octahedrial and tetrahedral sites, (E), 22:17769
NICKEL ISOTOPES
  abundance ratio in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
  Coulomb displacement energies of, (E), 22:48507(R) (ANL-7436)
  description using shell model, (T), 22:5809(R) (ANL-7354)
  description using strongly admixed spherical shell-model configurations of neutrons in 2p(3/2), 1f(5/2), and 2p(1/2) orbits, (T), 22:3672
  energy levels of, calculations using BCS and two-quasiparticle wave functions for low-lying, (T), 22:42094 (ANL-7439)
  energy levels of, calculations using modified Tamm--Dancoff quasiparticle approximation, (T), 22:3675
  energy levels of, calculations using simplified model, (T), 22:48592
  helium-3 differential elastic and inelastic scattering cross sections at 20 to 35 MeV, angular distributions for, (E), 22:27026
  nucleogenesis during silicon burning, (T), 22:11140
  production of foils of, for nuclear research, 22:263
  proton reactions (p,t) with even-A, cross sections for, (T), 22:27022
  triton reactions (t,p) with even-A, cross sections for, (T), 22:27022
NICKEL ISOTOPES Ni-56
  electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
  electron-capture decay of, L/K ratios for, (E), 22:5807
  energy levels from nickel-58 (p,t) reactions, (E), 22:1598(R) (COO-1265-49)
  energy levels from nickel-58 (p,t) reactions, spin assignments for, (E), 22:48483
  energy levels of, calculations using shell model with tensor forces for vibrational, (T), 22:7716
NICKEL ISOTOPES Ni-57
  beta decay of, β-γ circular polarization correlations and Coulomb matrix elements for, (E), 22:35259
  electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
  electron-capture decay of, L/K ratios for, (E), 22:5807
  energy levels of, calculation of neutron single-particle, (T), 22:37378
  energy levels of, calculations using independent quasi particle model, (T), 22:1734
NICKEL ISOTOPES Ni-58
  abundance ratio to various other nickel isotopes in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
  alpha differential elastic and inelastic scattering cross sections at 24 to 40 MeV, angular distributions for, (E), 22:39639 (UCRL-17989, pp 43-99)
  alpha differential elastic scattering cross sections at 43 and 64.3 MeV, (T), 22:30086

alpha elastic and inelastic scattering at 21 MeV, angular distributions for, (E), 22:13978
alpha elastic scattering at 52.3, 58.9, 67.7, and 85.6 MeV, angular distributions for elastic, (E), 22:35285(R) (AERE-PR/NP-13)
alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
alpha reactions (α,αpn), (α,αp2n), and (α,3pn) at 50 to 60 MeV, recoil angular distributions for, (E), 22:37316(R) (UR-3591-9)
alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
alpha reactions (α,d) at 50 MeV, Q-value for formation of high-spin state in, (E), 22:39616
alpha reactions (α,p) at 19.3 and 20.1 MeV, angular distributions for, (E), 22:37318
alpha reactions (α,t) and (α,He-3) at 44 MeV, angular distributions and spectra for, (E), 22:26985
binding energy of, variational calculations using simplified Hartree--Fock theory, (T), 22:44644
deuteron differential inelastic scattering cross sections at 26 MeV, (E/T), 22:7681
deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 12 MeV using polarized deuterons, angular distribution of vector polarization in, (E), 22:27029
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron inelastic scattering at 12 MeV, spin-flip, (E), 22:27011
deuteron inelastic scattering at 13.6 MeV, calculation of angular distributions for, (T), 22:13956
deuteron reactions (d,α) at 7.0 MeV, cobalt-56 energy levels from, (E), 22:20520
deuteron reactions (d,He-3) at 82 MeV, angular distributions for, (E), 22:27007
deuteron reactions (d,p) at 19 MeV, angular distributions for l = 3, (E), 22:37387
deuteron reactions (d,t) with, configuration mixing effects in, (T), 22:32726
deuteron reactions at 2 to 21 MeV, recoil ranges from, (E), 22:11968
deuteron reactions at 20 to 60 MeV, recoil ranges for, (T), 22:37316(R) (UR-3591-9)
electron inelastic scattering at high energies, study of nuclear collective states from, (T), 22:3803
electron inelastic scattering by, form factors for, (E), 22:3667
electron scattering at high energies, second-order corrections to DWBA calculations for, (T), 22:50689
energy levels from projected Hartree--Fock calculations, (T), 22:20689
energy levels from proton inelastic scattering at 40 MeV, (E), 22:1598(R) (COO-1265-49)
energy levels from proton inelastic scattering, lifetime measurements using γ Doppler-shift attenuation method, (E), 22:11926
energy levels from proton inelastic scattering, spins and multipole mixing ratios for, (E), 22:27005
energy levels of, calculations using j-j coupling model with surface delta interaction, (T), 22:32554
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, intrinsic, (T), 22:32540
energy levels of, lifetime measurements using Doppler shift attenuation method, (E), 22:27049
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
energy-level spins, multipolarities, and transition branching ratios from proton inelastic scattering at 8 MeV, (E), 22:1627
energy-level transition radii and probabilities from electron inelastic scattering form factors, (E), 22:3667
helium-3 differential elastic and inelastic scattering cross sections at 51 MeV, (E), 22:29964
helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
helium-3 differential elastic and inelastic scattering cross sections at 20 to 35 MeV, angular distributions for, (E), 22:27026
helium-3 elastic and inelastic scattering at 24.15 and 27.64 MeV by, angular distribution of, (E), 22:26739(R) (NP-17423)
helium-3 elastic and inelastic scattering at 37.7 MeV, angular distributions for, (E), 22:15999
helium-3 elastic and inelastic scattering at 43.7 MeV, angular distributions for, (E), 22:15999
helium-3 elastic and inelastic scattering by, research program on, (E), 22:39605 (CONF-670970-, pp 253-70)
helium-3 elastic scattering at 51, 73, and 86 MeV, optical-model parameters for, (E), 22:48507(R) (ANL-7436)
helium-3 elastic scattering at 51.4, 73.2, and 83.5 MeV, angular distributions for, (E), 22:35285(R) (AERE-PR/NP-13)
helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
helium-3 reactions (He-3,α) at 51 MeV, differential cross sections for, (E), 22:29964
helium-3 reactions (He-3,α) with, analysis using distorted-wave Born approximation, (T), 22:9800(R) (COO-535-571)
helium-3 reactions (He-3,d) at 16.4 MeV, angular distributions for, (E), 22:37333
helium-3 reactions (He-3,p) at 13 MeV, ground-state Q-value for, (E), 22:32516 (MIT-2098-422, pp 43-68)
helium-3 reactions (He-3,p) at 13 MeV, proton angular distributions and spectra for, (E), 22:13959
meson (π-) capture at 15 MeV, double charge exchange in, 22:46335 (JINR-P1-3946)
neutron capture resonance parameters at 7 to 124 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron differential elastic and inelastic scattering cross sections and polarizations at 2.33 MeV, (E), 22:20578 (WASH-1079)
neutron elastic and inelastic scattering at 2.3 MeV, cross-section and polarization angular distributions for, (E), 22:7637(R) (COO-1573-33)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron inelastic scattering cross sections at 1.5 to 2.4 MeV, (E), 22:26932(R) (NP-17434)
neutron reactions (n,2n) at 2.2 to 3.5 MeV and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
neutron reactions (n,d), (n,np), and (n,pn) at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
neutron reactions (n,d), (n,p), and (n,2n) at 13 to 15 MeV, cross sections for, (E), 22:20578 (WASH-1079)
neutron reactions (n,p) at 1.0 to 2.2 MeV, cross section for, (E), 22:18195
neutron reactions (n,p) at 15 MeV, isobaric analog resonances in, (E), 22:27054
neutron reactions (n,p) at 2 to 18 MeV, excitation function and isomeric cross-section ratio for, (E), 22:26934
neutron reactions (n,p) at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
neutron reactions (n,p) with, isomer ratios and cross sections for fast, (E), 22:27055
neutron resonance parameters at 6 to 124 keV, (E), 22:44627 (TID-24601)
neutron strength function for, p-wave, (E), 22:39637 (RPI-328-123, pp 1-17)
neutron strength functions for, p-wave, (E), 22:44627 (TID-24601)
neutron strength functions for, p-wave, (E), 22:42004
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
neutron total cross sections for, calculations using optical and statistical models, (T), 22:32468
neutron transmission properties in, 22:15915 (CONF-661216-3)
nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear particle diffraction scattering cross sections for, calculation using complex angular momentum method with vibrational state mixing, (T), 22:35405
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
photon reactions (γ,n) and (γ,2n) from threshold to 25 MeV, cross-section anomaly at giant resonance in, (E), 22:53157
photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
proton differential elastic and inelastic scattering cross sections at 3 to 6 MeV, (E), 22:1625
proton differential elastic and inelastic scattering cross sections at 40 MeV, optical model analysis of, (E/T), 22:1598(R) (COO-1265-49)
proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
proton elastic scattering at 9 to 10 MeV, intermediate resonance parameters for, (E), 22:27065
proton inelastic scattering at 18.6 MeV using polarized protons, asymmetries in, (E), 22:9834
proton inelastic scattering at 30 MeV, collective-model distorted wave calculations of, (T), 22:30102
proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:3650
proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:35273
proton inelastic scattering at 6.0 to 6.5 MeV,

polarization from, (E), 22:24844
proton inelastic scattering at 8 MeV, p-γ angular correlations in, (E), 22:27005
proton inelastic scattering at 8 to 10 MeV, γ Doppler-shift attenuation in, (E), 22:11926
proton inelastic scattering at 9.25, 10.46, and 15 MeV, proton spin--flip probability for, (E), 22:50538
proton inelastic scattering by, deformed spin-dependent optical-model potential for, (T), 22:22639
proton reactions (p,3p3n) with, isomeric cross-section ratio for, (E), 22:35265
proton reactions (p,α) at 10 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
proton reactions (p,α) at 9 to 10 MeV, intermediate resonance parameters for, (T), 22:27065
proton reactions (p,d) with, configuration mixing effects in, (T), 22:32726
proton reactions (p,d) with, form factors for, (T), 22:27268
proton reactions (p,γ) at 1.10 to 1.85 MeV, γ triple correlations and Q-value for, (E), 22:27034
proton reactions (p,n) at 9.5 to 10.6 MeV, double analog reasonances in, (E), 22:35282
proton reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) at 370 MeV, cross sections and mechanisms of, (E/T), 22:20552
proton reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) at 370 MeV, cross sections for, (E/T), 22:18201
proton reactions (p,t) at 40 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666
proton reactions (p,t) at 40 MeV, triton spectra from, (E), 22:1598(R) (COO-1265-49)
proton reactions (p,t) at 50 MeV, angular distributions for, (E), 22:48483
proton scattering at 40 MeV, real part of optical potential for, (T), 22:44774
proton scattering by, optical-model potential for, (T), 22:27262
triton reactions (t,p) with, calculations using surface delta interaction for residual nucleus, (T), 22:32554
use in monitoring fast neutron damage in zirconium, 22:34075 (AECL-3086)
use in neutron fluence measurements in fast reactors, 22:48746

NICKEL ISOTOPES Ni-59
cosmogenic activity in stone meteorites, (E), 22:2742
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, description using extended Tamm-Dancoff approximation for one- and three-quasiparticle, (T), 22:32535
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level transitions from cobalt-59 (p,n) reactions at 3.1 to 5.2 MeV, multipole mixing ratios for, (E), 22:32549
energy-level transitions from iron-56 (α,n) reactions at 6.5 to 9.3 MeV, multipole mixing ratios from, (E), 22:32549
nuclear data sheets for, 22:29958
production by cosmic particles in cosmic dust, (T), 22:21945
radioactivity in Granes meteorite, cosmic-ray-induced, (E), 22:47743
yield from nuclear explosions, effects on radiation dose to man, 22:23511 (UCRL-70788)

NICKEL ISOTOPES Ni-60
abundance ratio to nickel-58 in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
alpha and proton emission in compound-nucleus reactions, effects of angular momentum on, (E), 22:53150
alpha differential elastic and inelastic scattering cross sections at 12 to 17 MeV, angular distributions for, (E), 22:20551
alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
alpha reactions (α,d) at 50 MeV, Q-value for formation of high-spin state in, (E), 22:39616
alpha reactions (α,n) at 6.5 to 9.3 MeV, gamma angular distributions from, (E), 22:32549
alpha reactions (α,n) with, γ angular distribution from, (E), 22:18187
alpha reactions (α,p) at 19.3 and 20.1 MeV, angular distributions for, (E), 22:37318
deuteron elastic scattering at 11.8 MeV using polarized deuterons, asymmetry of deuteron angular distribution from, (E), 22:24838
deuteron elastic scattering at 7, 9, and 11 MeV using polarized deuterons, cross-section and polarization angular distributions for, (E), 22:20509
deuteron inelastic scattering at 12 MeV, spin-flip, (E), 22:27011
deuteron inelastic scattering at 13.6 MeV, calculation o angular distributions for, (T), 22:13956
deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
deuteron reactions (d,p) at 7.5 MeV, angular distributions for, (E), 22:3649
electron inelastic scattering by, form factors for, (E), 22:3667
energy level of, lifetime of first excited, (E), 22:46731(R) (COO-1746-8)
energy level of, measurement of lifetime for first excited, (E), 22:26929(R) (COO-1420-139)
energy levels and transitions in, from proton inelastic scattering, (E), 22:29954
energy levels and transitions, (E), 22:5817(R) (NYO-GEN-72-28)
energy levels from cobalt-59 (α,t) reactions, collective 3^-, (E), 22:53159
energy levels from cobalt-59 (He-3,d) reactions, (E), 22:7666
energy levels from cobalt-59 (p,γ) and (p,n) reactions, isobaric analog, (E), 22:37315 (KFK-704)
energy levels from projected Hartree--Fock calculations, (T), 22:20689
energy levels from proton inelastic scattering at 40 MeV, (E), 22:1598(R) (COO-1265-49)
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level spins and transition strengths from proton inelastic scattering, (E), 22:30048(R) (PUC-937-307)
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
energy-level transition probabilities from proton inelastic scattering, (E), 22:48519 (JAERI-1158, pp 56-63)
energy-level transition radii and probabilities from electron inelastic scattering form factors, (E), 22:3667
energy-level transitions from cobalt-60 beta decay, (E), 22:11932
helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
helium-3 reactions (He-3,d) at 16.4 MeV, angular distributions for, (E), 22:37333
helium-3 reactions (He-3,p) at 13 MeV, ground-state Q-value for, (E), 22:32516 (MIT-2098-422, pp 43-68)
neutron capture by, γ spectra from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture resonance parameters at 1 to 97 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron differential elastic and inelastic scattering cross sections at 1.0 to 4.5 MeV, (E), 22:27067
neutron differential elastic and inelastic scattering cross sections and polarizations at 2.33 MeV, (E), 22:20578 (WASH-1079)
neutron inelastic scattering cross sections at 1.5 to 2. MeV, (E), 22:26932(R) (NP-17434)
neutron resonance parameters at 1 to 97 keV, (E), 22:44627 (TID-24601)
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
neutron total cross sections for, calculations using optical and statistical models, (T), 22:32468
nuclear data sheets for, 22:29958
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
photon reactions (γ,n) and (γ,2n) from threshold to 25 MeV, cross-section anomaly at giant resonance in, (E), 22:53157
photon reactions (γ,np) with, isomer ratio for, (E), 22:18175
photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
proton differential elastic and inelastic scattering cross sections at 40 MeV, optical model analysis of, (E/T), 22:1598(R) (COO-1265-49)
proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:364 (ORNL-4182)
proton differential inelastic scattering cross section 18 MeV, angular distribution of, (E/T), 22:7666
proton inelastic scattering at 10.5 and 14 MeV, proton spin--flip probability for, (E), 22:50538
proton inelastic scattering at 13 MeV, spectroscopy of, (E), 22:29954
proton inelastic scattering at 16.5 MeV using polarized protons, asymmetries in, (E), 22:9834
proton inelastic scattering at 17.5 MeV, (E), 22:30048(R) (PUC-937-307)
proton inelastic scattering at 30 MeV, collective-model distorted-wave calculations of, (T), 22:30102
proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:3650

proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:35273
proton inelastic scattering at 55 MeV, DWBA analysis of angular distributions for, (E), 22:48519 (JAERI-1158, pp 56-63)
proton inelastic scattering at 6.0 to 6.5 MeV, polarization from, (E), 22:24844
proton inelastic scattering by, deformed spin-dependent optical-model potential for, (T), 22:22639
proton reactions (p,α) at 10 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
proton reactions (p,t) at 40 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666

NICKEL ISOTOPES Ni-61
abundance ratio to nickel-58 in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
deuteron inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:3649
energy level at 67.4-keV, magnetic moment from Moessbauer measurements, (E), 22:35293(R) (ORNL-4230)
energy levels from cobalt-59 (He-3,p) reactions at 11.65 MeV, (E), 22:15979
energy levels from copper-61 decay, (E), 22:5809(R) (ANL-7354)
energy levels from deuteron inelastic scattering, proton inelastic scattering, and nickel-60 (d,p) reactions, (E), 22:3649
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, description using extended Tamm-Dancoff approximation for one- and three-quasiparticle, (T), 22:32535
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level at 67.4-keV, g-factor measurement using Moessbauer effect, (E), 22:46747
energy-level transition probabilities for, l-forbidden M1, (T), 22:39708
energy-level transitions from cobalt-59 (He-3,p) reactions, (E), 22:32516 (MIT-2098-422, pp 43-68)
energy-level transitions from helium-3 inelastic scattering, interpretation by core-excitation model, (E/T), 22:26962
energy-level transitions from nickel-61 neutron capture, (E), 22:37340(R) (EANDC(E)-89(U))
helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
hyperfine structure of, 22:31659
hyperfine structure of 67.4-keV transition in, measurements using Moessbauer effect, (E), 22:46747
Knight shift of, in ferromagnetic materials, effects of temperature on NMR spectra of, 22:50234
Moessbauer effect in copper--nickel alloys, (E), 22:46746
Moessbauer effect in iron, (E), 22:35293(R) (ORNL-4230)
Moessbauer effect in iron, nickel fluorides, and nickel oxides, (E), 22:46746
neutron capture by, γ spectra from thermal, (E), 22:3698 (KFK-616)
neutron capture by, γ spectra from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture resonance parameters at 1 to 90 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron resonance parameters at 1 to 90 keV, (E), 22:44627 (TID-24601)
neutron scattering amplitudes of, thermal, 22:43596 (ANL-7299, pp 280-9)
nuclear data sheets for, 22:29958
nuclear ground-state electric quadrupole moment, 22:31659
nuclear magnetic moment of ground state of, (T), 22:39708
nuclear magnetic moments of ground state and first excited state, measurement using Moessbauer effect, (E), 22:46746
nuclear magnetic moments of ground state and first excited state of, measurement using Moessbauer effect, (E), 22:46747
production of single-line source of, 22:27534 (NBS-TN-421)
proton inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:3649
proton reactions (p,n) at 6.8 MeV, neutron angular distributions and spectra from, (E), 22:1632
proton reactions (p,p'γ), (p,p'n), and (p,np') at 17 MeV, angular and energy correlations for, (E), 22:42048

NICKEL ISOTOPES Ni-62
abundance ratio to nickel-58 in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
alpha elastic and inelastic scattering at 21 MeV, angular distributions for, (E), 22:13978
alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
alpha reactions (α,d) at 50 MeV, Q-value for formation of high-spin state in, (E), 22:39616
alpha reactions (α,p) at 19.3 and 20.1 MeV, angular distributions for, (E), 22:37318
deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
electron inelastic scattering by, form factors for, (E), 22:3667
energy level at 7.64 MeV, parameters from γ resonance scattering, (E), 22:27193
energy level at 7.646 MeV from γ resonance scattering, spin-parity assignment for, (E), 22:24881
energy levels and transitions, evaluated data on, (E/T), 22:29957
energy levels from copper-63 (d,He-3) reactions at 34.2 MeV, (E), 22:32548
energy levels from nickel-61 neutron capture, spin-parity assignments and branching ratios for, (E), 22:26999
energy levels from nickel-61 thermal neutron capture, (E), 22:37340(R) (EANDC(E)-89(U))
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level lifetimes, (E), 22:7726
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
energy-level spins and transitions from nickel-61 thermal neutron capture, (E), 22:3698 (KFK-616)
energy-level transition radii and probabilities from electron inelastic scattering form factors, (E), 22:3667
gamma resonance scattering by, γ spectra from, (E), 22:27193
gamma resonance scattering using thermal neutron capture by iron, (E), 22:24881
helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
helium-3 reactions (He-3,d) at 11 MeV, cross-section angular distributions and deuteron spectra for, (E), 22:9811
neutron capture by, γ spectra from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture resonance parameters at 2.3 and 4.6 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron differential elastic and inelastic scattering cross sections at 1.0 to 4.5 MeV, (E), 22:27067
neutron elastic scattering at 4 MeV using polarized neutrons, differential cross section and polarization angular distribution for, (E), 22:14019
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron inelastic scattering cross sections at 1.5 to 2.4 MeV, (E), 22:26932(R) (NP-17434)
neutron reactions (n,α) at 14.8 MeV, cross sections for, (E), 22:48499
neutron resonance at 4.6 keV, radiative width for, (E), 22:39637 (RPI-328-123, pp 1-17)
neutron resonance parameters at 2.34 and 4.6 keV, (E), 22:44627 (TID-24601)
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
proton inelastic scattering at 16.5 and 18.6 MeV using polarized protons, asymmetries in, (E), 22:9834
proton inelastic scattering at 6.0 to 6.5 MeV, polarization from, (E), 22:24844
proton reactions (p,α) and inelastic scattering at 14.3 MeV, angular distributions and spectra for, (E), 22:20544
proton reactions (p,α) at 10 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
proton reactions (p,α) at 14.3 MeV, α angular distributions and spectra for, (E), 22:3652
proton reactions (p,α) with, excitation functions for, (E), 22:39635(R) (NYO-3938-1)
proton reactions (p,γ) at 1.10 to 1.85 MeV, γ triple

correlations and Q-value for, (E), 22:27034
proton reactions (p,n) at 6.8 MeV, neutron angular distributions and spectra from, (E), 22:1632
proton reactions (p,t) at 40 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666
reactions (Ni-62,xn) with californium-251 at 320 to 400 MeV, calculation of cross sections for, (T), 22:1690
NICKEL ISOTOPES Ni-63
beta dosimetry in small body cavities using thermoluminescence, 22:31107
diffusion in nickel--niobium alloys, effects of alloy composition and temperature on, 22:17134
energy levels and transitions, evaluated data on, (E/T), 22:29957
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, description using extended Tamm-Dancoff approximation for one- and three-quasiparticle, (T), 22:32535
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level transitions from nickel-62 neutron capture, (E), 22:37340(R) (EANDC(E)-89(U))
use of foils of, with electron-capture detectors for pesticide residue analysis, 22:2439
NICKEL ISOTOPES Ni-64
abundance ratio to nickel-58 in dunite and iron meteorites, measurement of, by mass spectrometry, 22:14455
alpha elastic and inelastic scattering at 21 MeV, angular distributions for, (E), 22:13978
alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
alpha reactions (α,p) at 19.3 and 20.1 MeV, angular distributions for, (E), 22:37318
deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
energy levels and transitions, evaluated data on, (E/T), 22:29957
energy levels from copper-65 (d,He-3) reactions at 34.2 MeV, (E), 22:32548
energy levels from copper-65 (t,α) reactions, (E), 22:26932(R) (NP-17434)
energy levels from copper-65 (t,α) reactions, (E/T), 22:44673
energy levels from deuteron inelastic scattering, deformation parameters for, (E), 22:48509(R) (BMwF-FBK-68-22)
energy levels of, calculations using shell model with effective interactions, (T), 22:20541
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
helium-3 elastic scattering at 25 MeV, optical-model potential for, (T), 22:27364
helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
neutron capture resonance parameters at 9 to 84 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron reactions (n,α) at 14.8 MeV, cross sections for, (E), 22:48499
neutron reactions (n,α) at 14.8 MeV, iron-61 beta decay scheme from, (E), 22:1618
neutron resonance parameters at 9 to 84 keV, (E), 22:44627 (TID-24601)
neutron scattering amplitudes of, thermal, 22:43596 (ANL-7299, pp 280-9)
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:364 (ORNL-4182)
proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
proton inelastic scattering at 10.5 and 14 MeV, proton spin--flip probability for, (E), 22:50538
proton inelastic scattering at 18.6 MeV using polarized protons, asymmetries in, (E), 22:9834
proton reactions (p,α) at 10 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P 400)
proton reactions (p,t) at 40 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666
triton elastic scattering at 20 MeV, optical-model potential for, (T), 22:27364
NICKEL ISOTOPES Ni-65
beta decay of, β-γ circular polarization correlations an Coulomb matrix elements for, (E), 22:35259
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, description using extended Tamm-Dancof approximation for one- and three-quasiparticle, (T), 22:32535
energy levels of, quasiparticle configuration-mixing calculations using realistic interaction for, (T), 22:32542
half-life of, (E), 22:24845
NICKEL NIOBATES
preparation of monocrystals of, chemical transport reactions for, 22:52296
NICKEL NITRATES
thermal decomposition of, 22:35768(T) (AEC-tr-6939)
$Ni(NO_3)_2$--$UO_2(NO_3)_2$, analysis for uranium, β-radiation method for, 22:16464
NICKEL OXALATES
radiation effects on thermal decomposition of, 22:15231
NICKEL OXIDES
analysis for lead, polarographic, 22:9(R) (NBS-TN-425)
crystal growth by arc transfer method, 22:52289
crystal growth by epitaxial deposition, 22:52289
densification during hot pressing, (E/T), 22:31445
diffusion in, energies of cation, 22:52288
diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
diffusion of nickel in, 22:52288
diffusion of nickel in hyperstoichiometric NiO, 22:4362 (ANL-7299, pp 268-79)
diffusion of oxygen in, 22:52288
effects of semiconductor impurities of, on radiolysis of ammonium, potassium, and sodium nitrates, 22:30632
effects on decomposition kinetics in effects of x radiation on ammonium perchlorate, 22:47173
effects on oxygen-16 exchange reactions with oxygen-18 i carbon dioxide, catalytic, 22:128
effects on radiolysis of potassium and sodium nitrates, 22:33398
electric conductivity of hyperstoichiometric NiO, 22:43628 (ANL-7299, pp 268-79)
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
grain boundary energies of bycrystal, 22:43628 (ANL-7299, pp 268-79)
neutron diffraction by polycrystalline, pulsed linac source and time-of-flight spectrometer for studying, 22:45327
nickel-61 Moessbauer effect in, (E), 22:46747
nickel-61 Moessbauer effect in, isomer shifts for, (E), 22:46746
oxygen-18 exchange between carbon dioxide and, kinetics of, 22:21058
preparation of, oxygen transport in, 22:52239
radiation effects on catalytic oxidation of carbon monoxide on, at 25ºC, γ, 22:42727(T) (RFP-Trans-31)
radiation effects on oxygen adsorption and reactivity on surfaces of, 22:52301
radiation effects on production of trivalent nickel ions in, effects of dose on γ or x, 22:10272
radiation effects on sorption of carbon monoxide and oxygen by, γ, 22:42730(T) (RFP-Trans-34)
reactions with carbon, effects of pressure and temperature on, 22:11022(R) (NYO-1710-71)
sorptive properties for hydrogen ions, 22:4129
spheroidizing powdered NiO, using rf induction coupled plasma generator, 22:17161 (UCRL-17896)
valence state of iron from cobalt-57 decay in bulk and ultrafine-particle, Moessbauer study of, 22:20082
CaO--NiO, diffusion mechanisms of, solid-state, 22:4579 (UCRL-18043, pp 155-82)
MgO--NiO, diffusion kinetics, 22:45799 (UCRL-18043, pp 155-82)
NiO--U_2O_5, compound formation and structure in, 22:1231
NiO--U_3O_8, preparation and properties of, 22:31454
NICKEL SILICIDES
production by auxiliary metal bath procedure, 22:38614
NICKEL STEEL

  corrosion by liquid sodium, 22:12966
  Cr--Mo--Ni, use in Obrigheim power reactor in Germany, 22:17093
  Cr--Ni--Ti, growth of fuel cans of, during oxidation by carbon dioxide, 22:15148
  machining of, thermal expansion and reduced tool life in hot-, 22:21678
  mechanical properties of rolled maraging, 22:10998
  radiation effects on pressure vessel, neutron, 22:17147 (NRL-6649)
  radiation effects on tensile properties of maraged, at 1.5 x 10^{19}, 3.1 x 10^{19}, and 3.3 x 10^{19} n/cm^2, 22:718
  tensile properties of A350, A353, Hy-80, and T-1, for reactor pressure vessels, 22:17147 (NRL-6649)
  thermal fatigue life of maraging, 22:6999
  use as reactor pressure vessel material, 22:2671
  use for lining of heat-insulated prestressed concrete pressure vessels of low-carbon, description of, 22:53478(P)
  Al--C--Cr--Mn--Mo--Ni--Si, mechanical properties at high temperature as function of stress rate, 22:673
  C--Cr--Mn--Mo--Ni, ductility and strength of, effects of composition and temperature on, 22:660 (UCRL-17805)
  C--Cr--Mn--Mo--Ni--Si, mechanical properties at high temperature as function of stress rate, 22:673
  C--Cr--Mn--Mo--Ni--Si--V--W, radiation effects on mechanical properties of, 2.5-MeV electron, 22:8790
  Co--Mo--Ni--Ti, crystal structure banding in rolled plates of, 22:10998
  Cr--Mn--Mo--Ni--Si, mechanical properties of nitrogen-containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)
  Cr--Mn--Mo--Ni--Si--V, mechanical properties of nitrogen-containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)
  Cr--Mo--Nb--Ni, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
  Cr--Mo--Ni, analysis for phosphorus, extraction method for spectrophotometric, 22:4043
  Cr--Mo--Ni, mechanical properties of, radiation effects in Garigliano Power Reactor on, 22:18418 (EURAEC-1985)
  Cr--Mo--Ni, properties at room temperature and 315°C, impact and tensile, 22:612(R) (GEMP-69)
  Cr--Mo--Ni, radiation effects on tensile properties of, at 1.5 x 10^{19} and 3.1 x 10^{19} n/cm^2, 22:718
  Cr--Mo--Ni, radiation embrittlement of, effects of nitrogen and oxygen on neutron, 22:19577 (BNWL-455, Paper 9.1-34)
  Cr--Mo--Ni, specifications of, for use in boilers and pressure devices, 22:676
  Cr--Mo--Ni, strength and tensile properties of, 22:15181 (GEMP-1002, pp 108-22)
  Cr--Mo--Ni, use in Obrigheim power reactor, 22:17093
  Cr--Mo--Ni--U, analysis for niobium, photometric extraction method for, 22:6275
  Cr--Nb--Ni, growth of fuel cans of, during oxidation by carbon dioxide, 22:15148
  Cr--Ni, crystal structure and properties of thick sections of type A543, 22:19531
  Cr--Ni, radiation effects on embrittlement at high temperatures as function of boron and carbon content and mechanical--heat treatment, neutron, (E), 22:8791
  Cr--Ni, radiation effects on high-temperature tensile properties of, neutron, 22:714 (N-67-22957)
  Cr--Ni, radiation effects on tensile properties at 650 to 850°C, neutron, 22:2668
  Mn--Mo--Ni, corrosion by carbon dioxide at less than or equal to 550°C, 22:17075
  Mn--Mo--Ni--V, corrosion by carbon dioxide at less than or equal to 550°C, 22:17075
NICKEL SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  neutron reactions with hydrated, investigation of water molecule dynamics from, 22:38719 (INP-601/PS)
  $NiSO_4$--K_2NbF_7, performance as electrolyte for deposition of nickel--niobium coating on iron and steel, 22:17087
NICKEL SULFIDES
  dissociation energies of gaseous, 22:4117
Nickel-TD
    see TD-Nickel
NICKEL THORIUM NITRATES
  structure of crystalline hydrates of, ir spectral studies on, 22:12300
NICKEL TUNGSTEN OXIDES
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
NICKEL URANATES
  preparation of NiU_3O_{10}, 22:23020
  spectra of NiU_3O_{10}, effects of oxygen vapor pressure on infrared, 22:23020
  thermal capacity of, at 500 to 1000°K, 22:4118
NICKEL URANIUM FLUORIDES
  preparation of hydrated, 22:27706
NICKELATES
    see also Barium Nickelates
Nickelocene
    see Nickel, Dicyclopentadienyl-
Nicotinamide
    see Vitamin B Group--nicotinamide
NICOTINAMIDE-ADENINE DINUCLEOTIDE
  content of blood and liver in irradiated mice following homologous bone marrow transplants, 22:38206
  content of blood and urine in whole-body irradiated man following transplant of allogenic bone marrow, 22:38206
  effects on autooxidation of irradiated myoglobin from sperm whales and tuna, 22:49183(R) (UCB-34-P-95-15)
  oxidation of reduced, by melanin, effects of phenothiazine on, 22:51308 (ORAU-106, pp 171-93)
  radiation effects on content of, in carcinomas and host livers, effects of nicotinamide on fractionated x, 22:28646
  radiation effects on synthesis of, in mice, x, 22:45396
  radioprotective effects of, on oestradial 17-β-dehydrogenase, x, 22:33836 (BMwF-FBK-67-85)
NICOTINAMIDE-ADENINE DINUCLEOTIDE PHOSPHATE
  radioprotective effects of, on oestradial 17-β-dehydrogenase, x, 22:33836 (BMwF-FBK-67-85)
  reduced, effects on androgen biosynthesis in testes of dogs, 22:43244
NICOTINAMIDE, N-METHYL-
  determination in urine by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)
NICOTINE
  induced calcium-45 uptake by sartorius muscle from frogs, effects of potassium on, 22:6737
  induced calcium-45 uptake by sartorius muscle of frogs, effects of pH on, 22:6738
NICOTINIC ACID
  analysis for selenium, neutron activation method for, 22:4050
  effects on oxygen content of sarcomas, effects of, on radiosensitivity, 22:33878
Nicotinic Acid, 1,2,5,6-Tetrahydro-1-methyl-, Methyl Ester
    see Arecoline
NICOTINONITRILE, 1,4-DIHYDRO-1-BUTYL-
  decomposition of, effects of deuterium on, 22:18785
NICOTINONITRILE, 1,4-DIHYDRO-1-ETHYL-
  decomposition of, effects of deuterium on, 22:18785
NICOTINONITRILE, 1,4-DIHYDRO-1-METHYL-
  decomposition of, effects of deuterium on, 22:18785
NICOTINONITRILE, 1,4-DIHYDRO-1-PENTYL-
  decomposition of, effects of deuterium on, 22:18785
NICOTINONITRILE, 1,4-DIHYDRO-1-PROPYL-
  decomposition of, effects of deuterium on, 22:18785
NIEDER AICHBACH POWER REACTOR
  control system for, description of, 22:42220
  description of, 22:39823
  design parameters for, 22:22712 (STI/PUB-174)
  development program for, description of, 22:39832
NIFENAZONE
  radioprotective effects of, on skin of man, uv, 22:45594
NIGER
  (the country)
  uranium exploration in, program for, 22:40274
  uranium mineral deposits in, characterization of, 22:45201
  uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)
NIMONIC
  coating of, method for electrodeposition of wear-resistant composite, 22:2590
NIMONIC 80A
  radiation effects on creep of, neutron, 22:2670
NIMONIC 90
  performance as coating for molybdenum, 22:2574
  radiation effects on properties of, review of neutron, 22:52192
NIMONIC PE 16
  fatigue testing at 750°C for nuclear use, 22:49737
  radiation effects on creep of, neutron, 22:2670
NIMROD Synchrotron
    see Harwell Synchrotron
NINE MILE POINT POWER REACTOR
  design parameters for, 22:22712 (STI/PUB-174)
  economics of, analysis of construction, 22:20881
  fuel elements in Core I of, ISOCHECK method for isotopic analysis of, 22:16119 (CEND-299)
  specifications for, experience in development of technical, 22:20857
NIOBATES
    see also Barium Niobates
    see also Cadmium Niobates
    see also Calcium Niobates
    see also Cobalt Niobates
    see also Fluoroniobates
    see also Iron Niobates
    see also Lithium Niobates
    see also Magnesium Niobates
    see also Manganese Niobates
    see also Nickel Niobates
    see also Potassium Niobates
    see also Silver Niobates
    see also Sodium Niobates
    see also Strontium Niobates
    see also Uranium Niobates
    see also Zinc Niobates
  effects on defect formation in gamma-irradiated calcium molybdates and calcium tungstates, ESR studies of, 22:41664
  performance as electrolyte in niobium--nickel alloy deposition, 22:17087

NIOBIUM

- activity in niobium carbide at 1500 to 3000°K, 22:10205 (LA-3744)
- activity in niobium--zirconium alloys, 22:28790
- addition of oxygen to, method for precise trace amounts, 22:34101 (ORO-2570-12)
- analysis for cobalt, copper, iron, nickel, and zinc, solvent extraction, ion exchange chromatographic, and spectrophotometric methods for, 22:30484
- analysis for impurities, 22:1981
- analysis for impurities, manual on, 22:48820 (NP-17627)
- analysis for impurities, review of methods for, 22:2012
- analysis for nitroben and oxygen by spark source mass spectrography, 22:25273
- analysis for nitrogen by neutron activation methods, 22:6283
- analysis for oxygen by fast neutron activation methods, 22:6284
- analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
- analysis for phosphorus by photometry, 22:47095
- analysis for tantalum by neutron activation methods, 22:50933
- analysis for trace amounts of molybdenum and tungsten by dithiol method, 22:48837
- analysis for trace elements, methods for, 22:37679
- annealing effects on neutron irradiated, 22:43615(R) (BNWL-710)
- annealing spectrum of electron irradiated, 22:11017
- atomic weight of, based on carbon-12 = 12, 22:42698
- behavior of iridium-coated, 22:40997(R) (N-68-13805)
- bibliography on, 22:49681
- bonding of plates of, to titanium--vanadium alloy by explosion welding, 22:47670
- bonding to alumina in graded composites by hot pressing, 22:52249
- bonding to aluminum oxide, 22:21751 (EUR-3743)
- book: Analytical Chemistry of Niobium and Tantalum, in Russian, 22:2012
- book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
- book: High Temperature Materials, 22:31360
- book: Technology of the Production of Niobium and its Alloys, 22:34025
- book: The Chemistry of Niobium and Tantalum, 22:4150
- book: Uncommon Metals, 22:10981
- bremsstrahlung spectra from beta-excited, (E), 22:13248
- cathodes of, preparation and current--voltage characteristics of, 22:13599
- cathodic behavior in sulfuric acid solutions of benzaldehyde or oxalic acid, 22:52172
- chemistry of, as related to TBP extraction process, 22:40052 (KR-126, pp 101-19)
- cladding of thin foils of, description of fabrication for uranium rods of, 22:20865(P)
- coating for oxidation protection, using molybdenum disilicide or niobium disilicide, 22:34107
- compatibility with liquid metal--fused chloride system for fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
- compatibility with uranium phosphide at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
- complexes with 3,3',4',5,7-pentahydroxyflavone, spectral studies on, 22:27680
- complexes with 8-quinolinol, preparation and properties of, 22:50959
- complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
- complexes with Alizarin Red S, composition, stability, and spectral characteristics of, 22:50918
- complexes with ammonium thiocyanate in hydrochloric acid solutions, polarographic studies on reduction of, 22:16546
- complexes with β-ketoenols, preparation and properties of, review of, 22:2061
- content in igneous rock samples from Pennsylvania and Tasmania, 22:48959
- content of radioactive, in fallout in Czechoslovakia following Chinese nuclear tests during 1964 to 1967, 22:45517
- corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
- corrosion by copper--magnesium--uranium alloy in chloride salt system, 22:25442 (ANL-7375, pp 19-45)
- corrosion by gases in ATR model loop at 2100°F, 22:43615(R) (BNWL-710)
- corrosion by helium in ATR model gas loop, 22:13036 (BNWL-473, pp 7.1-71)
- corrosion by lithium, effects of carbon on, 22:6936
- corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
- corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
- corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
- corrosion by potassium at 200 to 1250°C, effects of interstitial oxygen on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
- corrosion of, anodic film growth in, 22:26029 (ORNL-4229, pp 71-83)
- corrosion resistance of nuclear materials containing, 22:31357
- creep at 900 to 1900°C, role of diffusion processes in, 22:38550
- creep mechanisms at low temperatures, 22:41055
- creep of, relation with grain size and strain rate, 22:23792
- critical state equation for superconducting wires of, 22:52685
- crystal stacking fault energies at 300°K, 22:38570
- crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
- Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
- current losses in superconducting, effects of static magnetic field on alternating, (E), 22:52701
- current losses near lower critical field in monocrystalline and polycrystalline superconducting, ac, (E), 22:36875
- current--voltage relations for superconducting wires of, (E/T), 22:11381
- damage by spark machining in single crystals of, dislocation, (E), 22:31404
- de Haas--van Alphen oscillations in, Fermi-surface model treatment of, (T), 22:52877
- decontamination in first contactor in TBP fuel reprocessing, 22:16678
- deformation characteristics, 22:2639
- deformation in single-crystal, temperature effects on, 22:701
- deformation of surface layers of drawn wires of, x-ray-diffraction analysis of, 22:23772
- deformation twinning of, effects of stress on, 22:21717 (COO-916-13)
- density of single-crystal, hydrostatic and x-ray measurements of, 22:41679
- deposition of epitaxial films on magnesium oxide, vapor, (E), 22:7369
- deposition of thin films of, by dc diode and substrate bias sputtering, 22:45935
- deposition on aluminum oxide, chemical-vapor method for, 22:21751 (EUR-3743)
- detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
- determination as ascorbate, spectrophotometric, 22:2009
- determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
- determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
- determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
- determination by amperometric titration using N-phenylbenzohydroxamic acid, 22:37672
- determination by atomic-absorption spectroscopy, amplification method for, 22:30470
- determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
- determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
- determination in chromium--molybdenum--nickel--vanadium steel, photometric extraction method for, 22:6275
- determination in copper--niobium alloy by x-ray fluorescence, 22:47097
- determination in corrosion water and sodium sulfate by x-ray fluorescence spectrometry, 22:33280
- determination in ferroniobium after separation from tantalum by precipitation by oxine, volumetric, 22:4038
- determination in fuel reprocessing plant streams, 22:16356 (KR-116)
- determination in highly alloyed steels by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
- determination in hydrochloric acid solutions containing hydroxylamine, 22:48823
- determination in iron ores, spectrochemical, 22:27615
- determination in metals and alloys, spectrophotometric, 22:22971
- determination in mild steel by x-ray spectroscopy, 22:30481
- determination in niobium--uranium--zirconium alloy by x-ray absorption edge method, 22:8023
- determination in niobium--zirconium alloy by x-ray fluorescence, 22:47097
- determination in presence of mercury and alkaline earth elements, chelatotitration methods for, 22:4046
- determination in presence of titanium and zirconium by hydrogen peroxide complex formation, volumetric, 22:33228
- determination in presence of zirconium by extractive photometry using 1-phenyl-1,3-butanedione, 22:45015
- determination in protactinium-231, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
- determination in stabilized stainless steels, spectrophotometric, 22:27608
- determination in steel by spectrophotometry using 4-(2-pyridylazo)-resorcinol, 22:25283
- determination in steel, colorimetric, 22:1979
- determination in tantalum by neutron activation methods, 22:50933
- determination in uranium by colorimetry after solvent extraction using N-phenylbenzohydroxamic acid, 22:33238

determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zirconium and its alloys using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:16440
determination of radioactive, in water after separation by ion exchange, gamma spectroscopic method for, 22:18722
determination of trace amounts of, in alloys and metals using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of, review of methods for, 22:48827
determination of, review of methods for, 22:18728
determination of, review of methods for, 22:2012
determination using Alizarin Red S, 22:50918
determination using TBP extraction and thiocyanate, effects of diluents on spectrometric, 22:1990
determination using thiocyanates, kinetics of spectrophotometric, 22:40011
determination using trihydroxychalcone, gravimetric, 22:33285
deuterium diffusion in, relaxation processes from, (E), 22:48173
diffusion in yttrium at 1000 to 1300°C, 22:38547
diffusion of carbon in, equations for, 22:7013
diffusion of fission-product, in dense sintered aluminum oxide, 22:2693
diffusion of nonvolatile, from neutron-irradiated graphite--uranium carbide--uranium dioxide systems, 22:45140 (BMwF-FBK-68-08)
diffusion of sulfur in crystalline, effects of temperature on, 22:17133
diffusion of vanadium in, effects of temperature on, 22:10977
diffusion of, dependence on temperature of self, 22:686
dislocation damping in single crystals of high-purity, frequency dependence of, 22:47673 (COO-1198-564)
dislocation damping in, effects of strain amplitude and temperature on, 22:10983(R) (COO-1676-1)
dislocation distribution around spark-machined notch in single crystals of, (E), 22:31346 (ORNL-4246, pp 84-8)
dislocation mobility at 1.8 to 300°K in, effects of stress and temperature on, (E), 22:7017 (GA-7974)
dislocation mobility in monocrystals of, measurement of, 22:49751(R) (CALT-473-28)
dislocation relaxations in single crystals of, 22:39172
dislocation relaxations of, thermally activated, 22:17107 (GA-7978, pp 119-23)
dislocation structures in single-crystal, 22:23830
dislocation velocity in single-crystal, as a function of stress, 22:28849
dislocations pinning in, effects of temperature and exposure time on, 22:17138 (GA-7978, pp 125-32)
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in products from fuel reprocessing by fluidized-bed fluoride volatility process, 22:30664
distribution on ion exchanger of Napolitan yellow tufa, 22:35883 (EUR-3922)
ductility at 77, 191, and 300°K, effects of hydrogen on, 22:41036
ductility of, effects of hydrogen on, 22:43591 (ANL-7299, pp 227-37)
ductility of, oscillating stress amplitude measurement of, 22:17106 (GA-7978, pp 95-117)
effects as additive on tungsten corrosion at high temperatures, 22:43537
effects of additions of, on mechanical properties of construction steel, 22:19530
effects on chemical and electrical properties of titanium oxide, 22:19647
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on electronic specific heat of iron, 22:41049
effects on ferromagnetism of zinc--zirconium alloys, (E), 22:1320
effects on hydrogen sorption by zirconium, 22:21659
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on mechanical properties of manganese steel, 22:6998
effects on properties of chromium--manganese steel, 22:28794
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on steel, 22:2640
effects on superconducting properties of ZrV_2 alloy, (E), 22:31754
effects on Zircaloy-4, 22:19480 (WAPD-TM-647)
elastic constants of single-crystal and polycrystalline, third-order, (T), 22:37039
elastic moduli at 20 to 2700°C, 22:21706
electric conductivity and dissipation in mixed state of superconducting, nonlinear, (E/T), 22:24218
electric conductivity at 2 to 300°K, 22:31375
electric conductivity of pure, low-temperature, (E), 22:24235
electric conductivity of, effects of oxide films on, 22:50969
electric properties and microhardness of superconducting, 22:1095
electric resistive fields in superconducting, measurement of Hall and longitudinal, 22:41519
electrochemical refining of commercial, in chloride salt melts, 22:52153
electrocrystallization from potassium fluoride--potassium fluoroniobate mixtures, 22:45056
electron reflection at 600 to 1200 keV, 22:45965
electron tunneling in superconducting thin-film junctions with oxides, (T), 22:46056
electronic structure, x-ray isochromat spectral study of, 22:17747
energy gap in superconducting, (E), 22:1127
energy gap of superconducting single crystals of, tunneling measurements on anisotropic, (E), 22:26332
enthalpy, 22:28780 (TID-24314(PT.1))
enthalpy of solution of carbon monoxide in, at 1600 to 1900°C, 22:19636
erosion by microsecond temperature rise, spall threshold temperature determination from tests of, 22:52131 (BNWL-756)
evaporation from niobium carbide in vacuum at 2773 to 2973°K, 22:28917
extrusion to form bimetallic tubes with stainless steel, evaluation of, 22:631 (N-67-22891)
fabrication and pressure treatment of, 22:12997
fabrication of porous, by plasma arc spraying powders, 22:17084 (66-C-318)
fabrication of powder shapes of, by molding and sintering, 22:638(P)
Fermi surface of, 22:46210
fine structure at low temperatures, x-ray K-absorption, 22:31979
flow stress at 4.2°K in superconducting, (E/T), 22:48064
flux pinning frequency of Type-II superconducting, 22:44025
galvanomagnetic properties of single crystals of, 22:9473
galvanomagnetic properties of single crystals of, (E), 22:46210
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
grain boundary penetration by lithium in oxygen-doped bicrystals of, kinetics, (E), 22:41001
grain boundary penetration by lithium, parameters of, 22:41056
hardening of single-crystal, kinetics of, 22:10972
hardness and tensile strength at 300 and 600°C, 22:31432
hardness of, effects of nitrogen and oxygen on, (E), 22:15253(R) (TID-24210)
hardness of, effects of nitrogen on, 22:677
hydrogen diffusion in, relaxation processes from, (E), 22:48173
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
ion-exchange behavior in nitric acid, comparison of, with that of zirconium, 22:10345
ion-exchange behavior in oxalic acid, 22:10349
joining to low-carbon steels, explosive method for, 22:38528
joints with different materials, metallography of, 22:43553
machining and properties of, 22:8750(T) (AD-658385)
machining of, 22:8750(T) (AD-658385)
machining of, thermal expansion and reduced tool life in hot-, 22:21678
magnetic field distributions in type-II superconducting, measurements using perturbed $\gamma-\gamma$ angular correlations, (E), 22:46062
magnetic flux jumping in superconducting sputtered cylindrical films of, as function of applied field, temperature, and film thickness, (E), 22:41520
magnetic flux penetration and dissipation in superconducting, (E), 22:5295
magnetic flux penetration in superconducting, (E), 22:7234
magnetic properties of superconducting, anomalous, (E), 22:19909
magnetic properties of superconducting, effects of temperature on, 22:44056
magnetization and energy losses in superconducting wires of, ac-induced, (T), 22:13423
magnetization of superconducting, sources of hysteresis in, (E), 22:5296
measurement of internal friction in cold-worked, at 90 to 290°K, 22:13022
mechanical and physical properties of, effects of nitrogen--oxygen mixtures on, 22:683
mechanical and sorptive properties of, effects of high-temperature gases in ATR model loop on, 22:13036 (BNWL-473, pp 7.1-71)
mechanical properties and twinning of polycrystalline, at low temperatures, 22:688 (AD-646682)
mechanical properties of, review, 22:52189
mechanical properties, effects of nitrogen on, 22:644 (AD-647889)
melting in electron beam furnace, 22:23734
melting of high-purity, metallic contamination during

electron-beam, 22:36442 (ORNL-TM-2208)
melting of, use of point-focus electron beams for floating-zone, 22:663
mercury vaporization on, effect of temperature and surface roughness on, (E), 22:10485(R) (SAN-677-15)
metallurgical activation energy of, analysis of stress-strain data for, 22:17110 (GA-7978, pp 155-61)
metallurgical properties of nuclear materials containing, 22:31357
metallurgy of, research on, 22:43524
metallurgy of, review of, 22:12957
microstructure of thin foils of bcc, electron metallographic, 22:2661
microwave properties of superconducting, 22:46085
microwave surface resistance of superconducting, (E/T), 22:46053
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture cross section at 5 to 100 keV, (E), 22:11948(R) (NP-17216)
neutron resonance absorption by, Doppler coefficient for, (E), 22:5743
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
niobium-90 half-life in, effect of chemical binding on isomeric, (E), 22:11964
nuclear level densities from neutron inelastic scattering, (E/T), 22:27217
nuclear relaxation in superconducting, near upper critical field, (E), 22:17566
oxidation at 450 to 720°C and 1 to 760 torr, kinetics of, 22:38518
oxidation at 600 to 1200°C, kinetics of, 22:23827
oxidation behavior at 400 to 1000°C, 22:49749
oxidation in liquid sodium, 22:10910 (ANL-7335)
oxidation model of, 22:8735 (ORNL-4170, pp 51-3)
oxidation of, 22:21766
oxidation of, cation diffusion in surface, 22:739
oxidation of, effects of geometrical configuration and stress on, 22:2560(R) (IS-RD-11)
oxidation of, effects of lithium oxide additions on, 22:49689
oxidation protection at high temperatures by silicide coatings, 22:2571
oxidation protection by silicides, research program on, 22:52133(R) (N-68-23469)
oxidation-rate constant at 77 to 298°K and 10^{-6} to 10^{-8} torr oxygen, method for, 22:38519
perturbations in BN-350 type critical assembly from, analysis of, 22:18570
phonon dispersion curves for, (E), 22:37044
phonon dispersion curves for, temperature dependence of, (E), 22:32512(R) (AECL-3108)
photon reactions (γ,α) at 32.5 MeV, α energy spectra and yield curves for, (E), 22:50592
physical properties and thermal treatment of nuclear materials containing, 22:31357
power losses in superconducting, effects of surface treatment on field dependence of ac, (E), 22:2985
precipitation from boiling acid solutions by phytin, 22:33319
precipitation of nitrides in, effects of nitrogen on, 22:677
preferred orientation in deformed, 22:8727 (ORNL-4170, pp 8-11)
preparation, 22:36471
preparation and properties of composites with fibrous refractory oxides, 22:41018
preparation as flux-monitor by irradiation in MTR for intercalibration of counting laboratories, 22:43615(R) (BNWL-710)
preparation by bomb reduction of niobium pentachloride using calcium, 22:43548
preparation by electrowinning from molten salt electrolyte, 22:19492
preparation by hydrogen reduction of niobium chloride, 22:38531
preparation of coatings by reduction of pentachloride using cadmium or zinc, 22:43549
preparation of high purity monocrystals of, 22:40993(R) (COO-1198-534)
preparation of high-purity, method for, 22:23803
preparation of powdered, by calciothermic reduction of niobium pentoxide, 22:52146
preparation of pure single-crystal, material sources for float-zone, 22:43615(R) (BNWL-710)
preparation of single-crystal damaging effects of spark machining method of, 22:43615(R) (BNWL-710)
production and uses of, 22:36445
production and uses, 1967, review of, 22:31315
production of bicrystals of, by arc-zone melting, 22:19503
properties and uses of, review of, 22:15182 (IS-1757)
properties and uses of, review of, 22:23803
properties for use in modern technology, 22:2563
properties for use in vacuum systems, 22:16828
properties in vacuum at high temperatures, effects of oxygen on, (E), 22:52176
properties of powder compacts of, prepared by high-velocity impact, 22:43562
properties of pressure-worked, effects of environment on, 22:15195
properties of purified single crystals of, 22:31334 (ORNL-4246, pp 89-105)
purification and single-crystal growth by electron-beam float-zone melting, evaluation of source materials for, 22:31334 (ORNL-4246, pp 89-105)
radiation effects on bcc, Stage III annealing of neutron, 22:43615(R) (BNWL-710)
radiation effects on compressive deformation of pure single crystals of, temperature dependence of fast-neutron, 22:31430 (ORNL-4246, pp 75-83)
radiation effects on deformation of single-crystal, fast neutron, 22:43615(R) (BNWL-710)
radiation effects on electric resistivity and magnetization properties of superconducting wires of, neutron, (E), 22:31751
radiation effects on hardness and strength at 300 and 600°C, fast neutron, 22:31432
radiation effects on low-temperature properties of, neutron, 22:688 (AD-646682)
radiation effects on mechanical and physical properties of, neutron, 22:4839
radiation effects on mechanical properties of, relations of impurities with neutron, 22:8801
radiation effects on oxygen internal friction peak of, annealing of fast-neutron, 22:31426 (ORNL-4246, pp 42-51)
radiation effects on properties of boride coatings on, neutron, 22:34127
radiation effects on properties of, neutron, 22:21746
radiation effects on rods of single crystal, neutron, 22:4839
radiation effects on single-crystal, neutron, 22:4812(R (ORNL-4195)
radiation effects on slip after plastic deformation in, neutron, 22:4839
radiation effects on superconducting, neutron, 22:1070
radiation effects on tensile properties of sheet, fast neutron, 22:15225 (GEMP-1002, pp 38-64)
radiation effects on tensile properties of, analysis of neutron, 22:48788
radiation effects on tensile properties of, annealing of fast neutron, 22:43615(R) (BNWL-710)
radiation effects on tensile properties of, relations of temperature with neutron, 22:31419 (BNWL-532, pp 11.1 43)
radiation effects on velocity—stress relations of monocrystalline, fast neutron, 22:28849
radiation effects on, effect of annealing on, neutron, 22:4812(R) (ORNL-4195)
radiation effects on, electron and neutron, 22:11017
radiation effects on, neutron, 22:15226 (ORNL-TM-2059)
radiation effects on, relations of oxygen with Stage III annealing of neutron, 22:43625
radiation emission spectrum at 1433°K, infrared, 22:52194
radiation hardening of, flux dependence of fast-neutron, 22:31429 (ORNL-4246, pp 66-75)
radiation-anneal hardening of, mechanism studies, 22:31428 (ORNL-4246, pp 55-66)
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced defects in, annealing characteristics of fast-neutron, 22:31428 (ORNL-4246, pp 55-66)
radioinduced defects in, oxygen reactions at fast neutron, 22:43615(R) (BNWL-710)
radioinduced embrittlement of, mechanisms of in-pile, 22:31421 (ORNL-4246, pp 1-6)
radioinduced hydriding of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
radioinduced oxidation of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
reactions in vacuum at 1200 to 2000°C with silicon monocarbide, 22:52231
reactions with Arsenazo III and its analogs, 22:40093
reactions with carbon at 1500 to 2200°C, phase studies of, 22:31506
reactions with carbon monoxide, carbon dioxide, or thei mixtures at 1400°C, 22:4081
reactions with electrolytically charged hydrogen, purit of niobium hydride from, 22:17172
reactions with graphite at 1700 to 2300°C, 22:4774 (WANL-TME-1370)
reactions with lithium and oxygen, vacuum distillation technique for recovery of products from, 22:25342
reactions with niobium and tantalum pentachlorides, 22:47063 (IS-T-263)
reactions with niobium pentachloride in gas chromatograph, effects of temperature on kinetics of, 22:20985 (IS-1780)
reactions with oxygen and potassium, vacuum distillatio technique for recovery of products from, 22:25342
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
recovery of defects after irradiation and cold work, review, 22:24375 (BLG-424)
refining by electrolysis of fused salts, equipment for, 22:38610(P)
relaxation peak in monocrystal, at 10 to 60 megahertz

frequency, 22:15214
relaxation properties of superconducting, mixed, and normal single crystals of, from internal friction and Young's modulus measurements, 22:1115
resonance integral for, analysis of neutron, 22:42428
separation by extraction using salicylohydroxamic acid, spectrophotometric study of, 22:45172
separation by solvent extraction using dioctyl ester of methylenediphosphonic acid, 22:42833
separation from acid solutions by solvent extraction using amine-type and phosphoryl reagents, studies on distribution ratios and molecular structure in, 22:6411
separation from aqueous solutions by extraction after complexing with pyrocatechol and various quaternary salts, 22:48906
separation from aqueous solutions by solvent extraction using 2-thenoyltrifluoroacetone, 22:14433 (ORNL-4196, pp 66-89)
separation from aqueous solutions by solvent extraction using amines, 22:18903
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from chloride nitrate, and sulfate solutions by solvent extraction using phosphoryl compounds, 22:6403
separation from columbite by ion exchange and solvent extraction, economics of, 22:6940
separation from feed solutions in fuel reprocessing prior to solvent extraction, 22:40166 (KR-126, pp 87-100)
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from hydrochloric acid by solvent extraction using TBP, composition of complexes formed in, 22:37863
separation from hydrochloric acid by solvent extraction using 1-phenyl-1,3-butanedione, 22:45015
separation from hydrofluoric acid solutions by solvent extraction using 2-(dioctylamino)ethanol and 3-(dioctylamino)propanol, 22:51080
separation from intermediate products of tin and tungsten production, 22:45175
separation from iron by anion exchange, 22:10328
separation from irradiated fuels by fluidized-bed volatility process, 22:8181
separation from lead by hydrolysis method using sodium sulfite and tannic acid, 22:4024
separation from low-level waste by ion exchange, 22:47206(T) (ORNL-tr-1771)
separation from mixtures of niobium pentachloride and tantalum pentachloride by calcium fluoride--calcium oxide reactions, 22:23864
separation from molybdenum, tantalum, and tungsten by column chromatography using methyl isobutyl ketone, 22:8190
separation from molybdenum, titanium, tungsten, and zirconium, 22:2012
separation from ores, 22:40191
separation from other fission products, 22:37833 (CEA-R-3451)
separation from other fission products by electrophoretic focusing of ions, 22:35912
separation from other materials by ion exchange using tin phosphate, 22:33552
separation from other metals by ion exchange, 22:22971
separation from other metals in hydrofluoric acid-organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from plutonium, 22:33501
separation from plutonium dioxide--uranium dioxide fuels, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from spent fuels by solvent extraction using TBP, 22:16679
separation from sulfuric acid solutions by solvent extraction using TBP, 22:23119
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from tantalum and titanium in hydrochloric acid solutions by solvent extraction using TBP, 22:27888
separation from titanium in hydrochloric acid by solvent extraction using TBP, 22:37863
separation from titanium, frothing method for, 22:4262
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by solvent extraction, 22:16356 (KR-116)
separation from uranium by solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
separation from uranium hexafluoride by selective sorption techniques, 22:4240
separation from zirconium by extraction chromatography, 22:40029
separation from zirconium by ion exchange, 22:37833 (CEA-R-3451)
separation from zirconium by paper chromatography, 22:23111
separation from zirconium by phosphate precipitation, 22:18905
separation from zirconium using methylenebis(dihexylphosphine oxide), chromatographic, 22:146
separation of protactinium from, by precipitation uwing hydrogen peroxide, 22:37849
separation of uranium from, by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
single crystal deformation of, 22:700
single crystal twinning of, effect of compression, temperature, and tension on, 22:700
single crystals of, electron metallography of, 22:701
single slip orientation of, hardening curves for, 22:700
slip and yield of monocrystals of, at room temperature, 22:23839
solubility in alpha zirconium at 600ºC, 22:52196 (AECL-2715)
solubility in liquid plutonium at 700 to 1000ºC, 22:38555
solubility in liquid plutonium, enthalpy of, 22:40053 (LA-3951)
solubility in magnesium, 22:19524(T) (UCRL-Trans-10219)
solubility in mercury at 500 to 750ºC, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
solvent properties for hydrogen at 2600 to 2820ºC, effects of pressure on, 22:52187
solvent properties for oxygen, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
sorption by manganese dioxide from nitric acid, 22:157
sorptive properties for oxygen at 1100 to 1800ºC, kinetics, (E), 22:29557
specific heat of, measurement to melting point, 22:4766 (CEA-R-3287)
strain release of, effects of temperature on, 22:17112 (GA-7978, pp 173-7)
strain--stress values at 77 to 448ºK, determination by stress relaxation, 22:28775 (BARC-313)
strain-aging kinetics of oxygen-doped, 22:23838
strain-stress characteristics of single crystals of, (E/T), 22:13029
stress dislocation mechanisms of, 22:17105 (GA-7978, pp 83-94)
structure of, calculation of electronic band, 22:8776
superconducting critical current in, microstructure dependence of maximum, 22:5287
superconducting critical current in, relation of dissolved oxygen to peak effect in, (E), 22:44048
superconducting critical field of, relation of magnetocaloric effect to upper, 22:7220
superconducting critical fields for pure, temperature dependence of ratio of upper two, (E), 22:17576
superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
superconducting energy gap as function of crystallographic orientation, tunneling measurements of, 22:2977
superconducting energy gaps in thick films of, measurement using far-infrared absorption spectra, 22:17549
superconducting junctions of, response to far-infrared radiation, (E), 22:41526
superconducting properties of single crystals of pure, effects of crystal orientation on mixed-state, (E), 22:31769
superconducting properties of single-crystal, effects of deformation on, (E/T), 22:34566
superconducting properties of, effects of extended defects on, 22:26327
superconducting properties of, effects of oscillating magnetic fields on, (E), 22:1089
superconducting transition measurements in thin films of, deposited by sputtering, 22:1078
superconducting transition temperature of films of, reactively sputtered in argon containing nitrogen, 22:48057
superconducting transition temperature of, effects of pressure up to 45 kbar on, (E), 22:7232
superconducting transitions in, kappa$_1$ and kappa$_2$, (E), 22:29429
superconducting, tunnel effect in single-crystal, (E), 22:26334
superconductivity of, critical temperature of, 22:15497
superconductivity of, dislocation interaction studies, 22:43600(R) (TID-24562)
superconductivity of, in fine composite with copper, 22:22076
superconductivity of, Nernst effect in, 22:41513
superconductivity of, review of, 22:43599 (NYO-3001-2)
superconductivity of, ultrasonic attenuation near H/sub c2/, (E), 22:29407
superconductivity, helicon studies of, 22:15566(R) (NYO-2150-40)
surface impedance of superconducting, near H/sub c2/, 22:50111
surface structure of single-crystal, field-emission-microscope study of, 22:13599

tensile properties of electron-beam refined, effects of oxygen on, 22:23801
tensile properties of sheet-welded, analysis of, 22:48787
tensile properties of single crystal, 22:4812(R) (ORNL-4195)
tensile properties of single crystals of, effects of annealing on, 22:10972
tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
texture development in cold-rolled, (E), 22:41035
thermal capacity, 22:28780 (TID-24314(PT.1))
thermal conductivity above 1500°K, review, 22:28781 (TID-24314(Pt.2))
thermal conductivity at room temperature, 22:679
thermal conductivity in mixed state of, anisotropy in, (E/T), 22:26504
thermal conductivity of, effects of ruthenium on, 22:45774
thermal emittance of aluminized, at 1600 to 3200°F, 22:10961
thermal emittance of siliconized, at 1600 to 3200°F, 22:10961
thermal fatigue life of die-casting dies of, 22:6999
thermionic emission parameters of faces of single crystals of, (E), 22:46268
thermodynamics, 22:36541
thermodynamics of surface alloying of, with boron--hafnium, boron--zirconium, and silicon--tungsten, 22:30575
tunneling between thin tin films and bulk, microwave-photon assisted, (E), 22:17592
ultrasonic attenuation in mixed state of, anisotropy and temperature dependence of, (E/T), 22:52705
ultrasonic attenuation in superconducting, (E/T), 22:22108
use as intermediate layer in welding graphite, 22:15242
use for fast neutron fluence detection by activation, 22:8352
welding fusion zone distribution from wire inserts of, in electron beam welds of titanium plates, 22:41026
welding method for, using liquid nitrogen cooled electrodes, 22:41015
welding of, electron beam method for, 22:19505
welding of, method and temperature for diffusion, 22:6943
welding to boron carbonitrides, diffusion, 22:6943
x-ray spectra from beta-excited, (E), 22:13248

NIOBIUM ALLOYS AND SYSTEMS
see also B-66 (Niobium Alloy)
see also C-129Y (Niobium Alloy)
see also Cb-132 (Niobium Alloy)
see also Cb-132M (Niobium Alloy)
see also Cb-752 (Niobium Alloy)
see also Cb-753 (Niobium Alloy)
see also D-36 (Niobium Alloy)
see also D-43 (Niobium Alloy)
see also FS-85 (Niobium Alloy)
see also Haynes 56 Alloy
see also Inconel X
see also Inconel X750
see also Inconel 600
see also Inconel 625
see also Inconel 718
see also Multimet
see also Uranus 65
analysis for molybdenum using phosphoric acid, titrimetric, 22:22948
analysis of, use of ion-exchange separation in, 22:48838
book: Technology of the Production of Niobium and its Alloys, 22:34025
coating with aluminum--tin intermetallic for oxidation protection, 22:2582
coating with silicide-glaze composite for corrosion protection, 22:47663
coating with silicides, 22:49697
coatings for oxidation protection of, review, 22:41002
coatings for, development of high-temperature, 22:7030
corrosion by hot acids, 22:31323
corrosion protection by coating of chromium--silicon--titanium alloy and aluminum--tin alloy, 22:36433
corrosion protection by coating with aluminum niobium silicides, 22:34014(P)
corrosion protection by silicide coatings, 22:41007
creep resistance of silicide-glaze composite coated, 22:47663
creep-rupture of SU 16, 22:8737 (ORNL-4170, pp 65-79)
current--voltage relations for superconducting wires of, (E/T), 22:11381
deposition of titanium on, description of nonelectrolytic process for, 22:30389
development and properties of, review on, 22:4751 (NP-17109)
development with improved high-temperature properties, 22:23706 (BM-RI-7116)
dislocation damping in, effects of strain amplitude and temperature on, 22:10983(R) (COO-1676-1)
effects of carbon, chromium, and aluminum additions on properties of, 22:49735
effects on corrosion of copper--iron--zirconium-base alloys by water vapor at 500°C, kinetics of, 22:28732 (CEA-N-816, pp 102-39)
fabrication and pressure treatment of, 22:12997
forging of, for large equipment components, 22:23789
machining of, 22:8750(T) (AD-658385)
mechanical properties, 22:52174
mechanical properties and fabrication of, review, 22:52189
mechanical properties for reactor core and cladding use, 22:41057
mechanical properties of, 22:7016
mechanical properties of, effect of hydrogen additions on, 22:49734
metallography of electron beam-melted, 22:49724
oxidation at 550 to 1050°C, kinetics and oxide films of, (E), 22:31329
oxidation at high temperature and low pressure, 22:2568(R) (N-67-16673)
phase studies of omega transformations in, 22:49752 (COO-588-14)
plating process for, 22:34030
preparation by vacuum melting, addition agents for, 22:28759
production and uses of, 22:36445
properties and uses of, review of, 22:23803
properties for use in vacuum systems, 22:16828
radiation effects on mechanical properties of, relations of impurities with neutron, 22:8801
radiation effects on properties of, neutron, 22:21746
solubility of nitrogen and oxygen in, effects of hafnium on, 22:31324
strength of, effects of composition on, 22:2641
tensile properties, review, 22:21651
Al$_2$O$_3$--Nb, fabrication and properties of graded ring composites of, 22:52249
Al--Co--Nb, phase studies, 22:49766
Al--Cr--Co--Mo--Nb--Ni-base--Ti, fabrication of In-100, methods for power metallurgy, 22:10978
Al--Cr--Co--Nb--Ni-base--Ti--W, fabrication of MAR-M-200, methods for powder metallurgy, 22:10978
Al--Cr--Nb, phase studies, 22:49766
Al--Cu--Nb, phase studies, 22:49766
Al--Ga--Nb, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Al--Ge--Nb, composition and microstructure of as cast an annealed, 22:10952 (UCRL-17982)
Al--Ge--Nb, superconducting properties in high magnetic fields, (E), 22:38980
Al--Ge--Nb, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Al--Ge--Nb, superconducting transition temperature of intermetallic Nb$_3$Al--Nb$_3$Ge phases in, 22:17585
Al--Ge--Nb, superconductivity of intermetallic compounds of, 22:45745 (UCRL-18043, pp 107-53)
Al--Hf-base--Nb, corrosion by steam, 22:10921(P)
Al--Hf-base--Nb, tensile properties of, 22:10921(P)
Al--In--Nb, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Al--Mo--Nb, microstructure of solid solutions between intermetallic compounds Mo$_3$Al and Nb$_3$Al in, 22:38573
Al--Mo--Nb, phase studies, 22:49766
Al--Mo--Nb--Ta--Ti-base, corrosion cracking of plates an weldments of, stress, 22:2619
Al--Nb, metallography of intermetallic superconducting, optical stage for study of, 22:1120
Al--Nb, superconducting properties of intermetallic Nb$_3$Al in high magnetic fields, (E), 22:38980
Al--Nb, superconducting properties of intermetallic Nb$_3$Al, effects of arsenic on, 22:10952 (UCRL-17982)
Al--Nb, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Al--Nb--Ni, phase studies, 22:49766
Al--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Al--Nb--Ta--Ti-base, corrosion by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
Al--Nb--Ta--Ti-base, corrosion cracking plates and weldments of, stress, 22:2619
Al--Nb--Ta--Ti-base, mechanical properties of plates and weldments of, 22:2619
Al--NbAl$_3$, preparation of intermetallic compound dispersions in, 22:34069
Au--Nb--V, magnetic properties of, atomic environment effects on, (T), 22:7374
B--Co-base--Nb, magnetic and physical properties of, 22:652(R) (N-67-22066)
B--Cr-base--Mn--Nb--Si, microstructure and properties of 22:19639
B--Mn--Mo--Nb--Ni-base--Si, microstructure and properties of, 22:19639
B--Mn--Mo--Nb--Ni-base--Si--Ti, microstructure and properties of, 22:19639
B--Mn--Nb--Ni-base--Si, microstructure and properties of 22:19639
B--Nb, phase diagrams, 22:36548
Be--Nb, phase diagram, 22:10986(T) (JPRS-43479)
Be--Nb, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
Be--Nb, properties of intermetallic Nb$_2$Be$_{17}$ and NbBe$_{12}$ a

low temperatures, (E), 22:36985
C--Cr--Nb, phase equilibria, 22:28950
C--Fe--Nb--V-base--Zr, fabrication of Vanstar-9, for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, mechanical properties of Vanstar-9, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, preparation and properties, 22:8710(R) (WCAP-3791-9)
C--Fe--Nb--V-base--Zr, preparation and properties of Vanstar-9, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--Fe--Nb--V-base--Zr, radiation effects on mechanical properties of Vanstar-9, in-pile, 22:34046(R) (WARD-3791-17)
C--Hf--Nb, phase studies of, 22:31324
C--Hf--Nb--W, microstructure of thin foils of bcc, electron metallographic, 22:2661
C--Mo--Nb, phase diagrams, 22:11076
C--N--Nb--steel, composition and crystal structure of delta- and epsilon-phase, 22:41120
C--Nb, phase diagram revision, 22:31489
C--Nb, thermodynamic properties of solid-solution, 22:653(R) (N-67-22439)
C--Nb, thermodynamics, 22:36541
C--Nb--O, phase studies of alpha solid solutions in, 22:41100(T) (ORNL-tr-1942)
C--Nb--Sn, superconductivity of intermetallic phases in, 22:4851 (UCRL-17826)
C--Nb--Sn, superconductivity of phases in, 22:45745 (UCRL-18043, pp 107-53)
C--Nb--Sn--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Nb--steel, composition and crystal structure of delta- and epsilon-phase, 22:41120
C--Nb--U, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
C--Nb--Zr, electric properties of complex defective monocarbides in, 22:41111
C--Nb--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
C--Nb--Zr, phase diagram, 22:21651
C--Nb--Zr, properties and uses of, review of, 22:23803
C--Nb--Zr, reaction energies of non-stoichiometric, 22:28813
Co--Cr--Fe-base--Mn--Mo--Nb--Ni--W, oxidation rate of N 155, at 1000°C, 22:19043(R) (DP-1143-1)
Co--Cr--Fe-base--Mo--Nb--Ni--W, radiation effects on mechanical properties of, neutron, 22:19575 (BNWL-455, Paper 5.1-10)
Co--Nb, crystal structure at 700°C during solid-solution decomposition, 22:15210
Co--Nb, phase studies of, 22:45787
Co--Nb--Si, phase studies of, 22:10996
Co--Nb--Zr, crystal structure of, effects of heat treatments on, 22:13030
Co--Nb--Zr, hardness of, 22:13030
Co--Nb--Zr, phase studies of, 22:13030
Co-base--Cr--Fe--Nb, radiation effects on mechanical properties of UMCO 51, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Fe--Nb--Ni--W, tensile properties for cobalt-60 heat source capsules, 22:10500 (DP-1096)
Cr--Fe--Mo--Nb--Ni-base--Ta--Ti, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Cr--Fe--Nb--Ni, radiation effects on, neutron, 22:13040
Cr--Fe-base--Nb--Ni, corrosion by steam and water under superheater conditions, 22:36484
Cr--Mo--Nb--Ni-steel--V, creep and stress-rupture of Type 1613, effects of sodium at 700°C on, 22:38532(T) (ANL-Trans-594)
Cr--Mo--Nb-base, elastic moduli at 20 to 2700°C, 22:21706
Cr--Nb, crystal structure of intermetallic $NbCr_2$ layers of, on chromium, 22:52278
Cr--Nb, differential thermal analysis at 1000 to 2300°C, equipment and methods for, 22:16736 (BMwF-FBK-67-86)
Cr--Nb--Ni, fabrication of butt welded tubes of, with homogeneous grain structure, 22:8721(P)
Cr--Nb--Ti--V--W, elasticity, 22:10959
Cr--Nb--Zr, effect of thermal treatment on hardness and tensile properties of, 22:6980 (BARC-295)
Cr--Nb--Zr, tensile properties of, description of, 22:48788
Cr--Nb--Zr-base creep properties at 300 to 470°C, 22:23753 (BARC-308)
Cr--Nb--Zr-base, radiation effects on tensile properties of, thermal neutron, 22:23841 (BARC-300)
Cr--Nb-base, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Cr--Ni-base--Nb, mechanical properties of, effects of aging temperature on, 22:7005
Cu--Nb, analysis for components by x-ray fluorescence, 22:47097
Cu--Nb, superconducting proximity effects in sandwiches of, (E), 22:22096
Cu--Nb--Sn--stainless steel, superconducting properties of, mechanical and electrical, 22:29447
Cu--Nb--Ta, phase studies at 1100 to 2100°C, 22:23831
Cu--Nb--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cu--Nb--Zr-base, properties for reactor structures of, in layered fabrications with high-strength alloys incorporating zirconia separating barrier, 22:36467(P)
Cu--Nb--Zr-base, radiation induced strain relaxation in, fast neutron, 22:28858
Cu--Nb--Zr-base, radioinduced strain relaxation of, temperature dependence of fast neutron, 22:43622 (WAPD-TM-746)
Fe--Nb, analysis for aluminum using stilbazo, photometric, 22:18700
Fe--Nb, analysis for niobium after separation from tantalum, volumetric, 22:4038
Fe--Nb, analysis for phosphorus by photometry, 22:47095
Fe--Nb, crystal structure of intermetallic NbFe, (E), 22:22253
Fe--Nb, diffusion of carbon in, at 950 to 1050°C, 22:704
Fe--Nb, production of, methods for ferroniobium, 22:28767
Fe--Nb, thermal capacity of intermetallic $NbFe_2$, 22:36461
Fe--Nb, thermal capacity of intermetallic $NbFe_2$, at 293 to 1173°K, 22:49742
Fe--Nb--Ti-base, phase equilibrium and superconductivity of, 22:19535
Fe--Nb--V--Zr, cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
Fe--Nb--V--Zr, mechanical properties of, for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)
Fe--Nb--V--Zr, production for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)
Fe--Nb--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe--Nb-base, tensile properties of, 22:4790
Ga--Ge--Nb, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Ga--Nb, phase studies of intermetallic compounds of, 22:8768
Ga--Nb, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Ga--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Ge--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
H--Nb, phase diagram, 22:26059(T) (AD-663333)
H--Nb, tensile and bending properties of, effect of hydrogen content on, 22:2691
Hf--Nb, thermoelectric properties of, 22:9430
Hf--Nb--Zr, phase studies of, 22:31324
Hf--Nb-base, properties, 22:31321
Hf--Nb-base--W, properties as high-temperature alloy, 22:41038
Hf-base--Mo--Nb, corrosion by steam, 22:10921(P)
Hf-base--Mo--Nb, tensile properties of, 22:10921(P)
Hf-base--Nb, corrosion by steam, 22:10979(P)
Hf-base--Nb, corrosion by steam, 22:10921(P)
Hf-base--Nb, tensile properties of, 22:10979(P)
Hf-base--Nb, tensile properties of, 22:10921(P)
Hf-base--Nb--Sn, corrosion by steam, 22:10979(P)
Hf-base--Nb--Sn, corrosion by steam, 22:10921(P)
Hf-base--Nb--Sn, tensile properties of, 22:10979(P)
Hf-base--Nb--Sn, tensile properties of, 22:10921(P)
Hf-base--Nb--Sn--Zr, tensile properties of, 22:10979(P)
Hf-base--Nb--Zr, corrosion by steam, 22:10979(P)
Hf-base--Nb--Zr, tensile properties of, 22:10979(P)
Hf-base--NbSn--Zr, corrosion by steam, 22:10979(P)
HfC--Mo--Nb-base--W, elastic moduli at 20 to 2700°C, 22:21706
In--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Mn--Mo--Nb--Ni--steel, radiation effects on mechanical properties of pressure vessel, evaluation of temperature and neutron, 22:50748 (ZJE-27)
Mo--Nb, deformation of single crystals of, effects of composition and crystal orientation on, 22:23793
Mo--Nb, deformation twinning of, effects of stress on, 22:21717 (COO-916-13)
Mo--Nb, ductility of, effects of composition on, 22:23793
Mo--Nb, fabrication by high-temperature vacuum extrusion, 22:10934
Mo--Nb, magnetic properties of superconducting, effects of temperature and molybdenum content on, 22:44056
Mo--Nb, mechanical properties at 200 to -269°C, 22:688 (AD-646682)
Mo--Nb, mechanical properties of vacuum electron-beam zonal melted, 22:52174
Mo--Nb, mechanical properties of vacuum extruded products of, 22:10934
Mo--Nb, microstructure of thin foils of bcc, electron metallographic, 22:2661
Mo--Nb, phonon dispersion curves for, (E), 22:37044
Mo--Nb, radiation effects on low-temperature properties of, neutron, 22:688 (AD-646682)
Mo--Nb, solid-solution hardening of, effects of composition on, 22:23793
Mo--Nb, spectral emissivity at 2000, 2200, and 2400°K,

(E), 22:41342
Mo--Nb, tensile properties, 22:4790
Mo--Nb, tensile properties of, effects of orientation on, 22:23793
Mo--Nb, thermal conductivity of, effect of density of states on, 22:29550
Mo--Nb--Ni--Ta--TiC, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Mo--Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--Ti--Zr, mechanical properties of, 22:7016
Mo--Nb--Ti--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Mo--Nb--U-base, composition and preparation of, 22:28757(R) (UCRL-13341)
Mo--Nb--U-base, preparation and properties for reactor fuels, 22:23743(P)
Mo--Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)
Mo--Nb--U-base--Zr, preparation and properties for reactor fuels, 22:23743(P)
Mo--Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000ºC on, 22:48788
Mo--Nb--Zr, coating of, deposition methods for protective, 22:52174
Mo--Nb--Zr, phase diagrams for, analysis of solubility boundaries of, 22:52204
Mo--Nb-base, corrosion by oxygen-contaminated sodium at 650ºC, 22:28731 (ANL-6982)
Mo--Nb-base, tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
Mo--Nb-base--Ti, corrosion by oxygen-contaminated sodium at 650ºC, 22:28731 (ANL-6982)
Mo--Nb-base--Ti--W, corrosion by hydrochloric acid, lithium at 1000ºC, or sulfuric acid, 22:17118
Mo--Nb-base--Ti--W, microstructure of, effects of composition and temperature on, 22:38551
Mo--Nb-base--Ti--W, physical properties of, effects of composition and temperature on, 22:38551
Mo--Nb-base--Ti--W, preparation and properties of, 22:17118
Mo--Nb-base--Ti--W, welding of, 22:17118
Mo--Nb-base--V--W, mechanical properties of, 22:52174
Mo--Nb-base--W, elastic moduli at 20 to 2700ºC, 22:21706
Mo--Nb-base--W--Zr, corrosion by hydrochloric acid, lithium at 1000ºC, or sulfuric acid, 22:17118
Mo--Nb-base--W--Zr, preparation and properties of, 22:17118
Mo--Nb-base--W--Zr, welding of, 22:17118
Mo-base--Nb, crystal lattice parameters of, 22:43612
N--Nb, thermodynamics of interstitial, 22:10984 (COO-1676-3)
N--Nb--steel, composition and crystal structure of and delta- and epsilon-phase, 22:41120
N--Nb--Ta, preparation and superconducting properties of wires of, (E), 22:17559
N--Nb--Ti, preparation and superconducting properties of wires of, (E), 22:17559
N--Nb--Ti, superconducting properties of reactively sputtered thin film, 22:29428
N--Nb--Zr, preparation and superconducting properties of wires of, (E), 22:17559
N--Nb--Zr, superconducting properties of reactively sputtered thin film, 22:29428
Nb$_3$Al--Mo$_3$Al, superconductivity in, (E), 22:19915
Nb--Fe, electric conductivity, friction, and tensile properties of irradiated and unirradiated vacuum-melted, 22:4812(R) (ORNL-4195)
Nb--Fe, radiation effects on vacuum-melted, effects of annealing on neutron, 22:4812(R) (ORNL-4195)
Nb--Mo--U-base, fabrication of fine-grain cast, 22:8720(P)
Nb--NbC, welding of, method for diffusion, 22:6943
Nb--Nd--O, phase diagram, 22:49839
Nb--Ni, crystal structure and properties of unidirectionally solidified intermetallic Ni--Ni$_3$Nb eutectic, 22:41066
Nb--Ni, nickel diffusion in, effects of composition and temperature on, 22:17134
Nb--Ni, superconducting proximity effect in sandwiches of, (E), 22:22096
Nb--Ni--O, phase precipitation from supersaturated solid solutions of, effects of aging on, 22:11069
Nb--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
Nb--Ni--Zr, phase equilibria in, 22:45786
Nb--Ni-base, electrodeposition on iron and steel, electrolyte composition effects on, 22:17087
Nb--Ni-base, galvanomagnetic effect, (E), 22:48171
Nb--Ni-base, neutron magnetic scattering by, (E), 22:24809
Nb--O, phase studies, 22:26087
Nb--O, thermodynamics of interstitial, 22:10984 (COO-1676-3)
Nb--O--Zr, phase studies, 22:49769
Nb--Pu, phase diagrams and properties, 22:36495
Nb--Pu, phase studies of, 22:2655
Nb--Re-base, sorptive properties for water vapor of electron emitters of, determination of, 22:28803
Nb--Ru, thermal conductivity at 50 to 350ºC, effects of ruthenium content on, 22:45774
Nb--Sc$_2$O$_3$--Y$_2$O$_3$, exchange reactions of, thermodynamics of, 22:23717
Nb--Si, thermodynamics of surface alloying of molybdenum with, 22:30575
Nb--Sn, alternating current losses in superconducting intermetallic Nb$_3$Sn, (E), 22:46040 (N-68-19140)
Nb--Sn, analysis of intermediate phases of, 22:697
Nb--Sn, coil configurations for, used as combined function elements in accelerators, 22:32352 (CEAL-2000, pp A150-1)
Nb--Sn, compacting by hot-pressing, effects of temperature and grain size on, 22:38530
Nb--Sn, configurations of superconducting coils of, for use as separated-function elements in accelerators, 22:32297 (CEAL-2000, pp 391-2)
Nb--Sn, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Sn, fabrication of intermetallic Nb$_3$Sn, 22:22079
Nb--Sn, flux jumping in sintered superconducting intermetallic Nb$_3$Sn, use of helium flowing through pores to control, 22:11367
Nb--Sn, grain structure of superconducting, (E), 22:19917
Nb--Sn, isotope effect in superconducting, (T), 22:9238
Nb--Sn, lattice softening and stiffening of single-crystal, at low temperatures, 22:41507
Nb--Sn, magnet coils of, design of intermetallic Nb$_3$Sn superconducting, 22:21256
Nb--Sn, magnetic flux jumps in intermetallic Nb$_3$Sn, temperature increase preceding, (E), 22:36877
Nb--Sn, magnetic hysteresis in superconducting intermetallic Nb$_3$Sn, relation to structure, 22:44035
Nb--Sn, magnetic hysteresis of superconducting, in Nb$_3$Sn region, (E), 22:24199
Nb--Sn, metallography of, anodic oxidation method for, 22:28823
Nb--Sn, performance of super conducting magnets of intermetallic Nb$_3$Sn, at 2.18ºK, 22:15141 (BNL-50057, pp 79-100)
Nb--Sn, phase stability of intermetallic Nb$_3$Sn after hea treatment, (E), 22:26053 (INR-871/XIV/PS)
Nb--Sn, phase transformation in intermetallic, low-temperature, 22:11524
Nb--Sn, preparation of stabilized superconducting Nb$_3$Sn by diffusion process, (E), 22:11353
Nb--Sn, properties and techniques of winding for superconducting tapes of intermetallic Nb$_3$Sn, 22:1137
Nb--Sn, properties of intermetallic Nb$_3$Sn, effects of stoichiometry deviations on, 22:44062
Nb--Sn, single crystals of intermetallic Nb$_3$Sn, growth by chemical transport, 22:635
Nb--Sn, superconducting critical fields of intermetallic Nb$_3$Sn, 22:22080
Nb--Sn, superconducting critical surface of commercial Nb$_3$Sn ribbon, 22:46082
Nb--Sn, superconducting magnets of intermetallic Nb$_3$Sn, transient stabilization of, 22:29435
Nb--Sn, superconducting phase transition in polycrystalline Nb$_3$Sn, high-resolution x-ray study of, 22:46060
Nb--Sn, superconducting properties of intermetallic Nb$_3$Sn, relation to lattice stability, (T), 22:44034
Nb--Sn, superconducting properties of intermetallic Nb$_3$S doped with zirconium oxide, 22:36874
Nb--Sn, superconducting properties of intermetallic Nb$_3$Sn, effect of hydrogen impurities on, (E), 22:2632
Nb--Sn, superconducting resistive transition in intermetallic Nb$_3$Sn, 22:22084
Nb--Sn, superconductive properties of intermetallic Nb$_3$Sn, 22:38530
Nb--Sn, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Nb--Sn, superconductivity of intermetallic Nb$_3$Sn, in niobium carbide matrices, 22:4851 (UCRL-17826)
Nb--Sn, thermal capacity measurements on intermetallics Nb$_3$Sn and Nb$_6$Sn at 1 to 42ºK in magnetic fields up to 53 kG, 22:17604
Nb--Sn, tin-119 Moessbauer effect in Nb$_3$Sn, temperature dependence of, 22:48181
Nb--Sn, use in nonsymmetric copper--Nb$_3$Sn--stainless steel composite superconductors, 22:11371
Nb--Sn, use in superconducting, large-bore, high-field modular magnet, (E), 22:11346
Nb--Sn, use of intermetallic, in superconducting coils, 22:5289
Nb--Sn, use of ribbon, in 10- to 100-kG magnet coils, 22:21255
Nb--Sn--NbC, synthesis of two-phase high-field superconducting, 22:26347
Nb--Sn--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Nb--Sn--Zr-base, radiation effects on mechanical properties of, neutron, 22:21730

Nb--Sn--Zr-base, radioinduced corrosion by steam and water, neutron, 22:21730
Nb--Sn--Zr-base, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Nb--Ta, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Nb--Ta, coatings for, preparation of oxidation-resistant, 22:43536
Nb--Ta, creep mechanisms at low temperatures, 22:41055
Nb--Ta, current transport properties of superconducting, 22:11358
Nb--Ta, deformation twinning of, effects of stress on, 22:21717 (COO-916-13)
Nb--Ta, magnetic properties of superconducting, reversible and irreversible, (E), 22:11402
Nb--Ta, mechanical and physical properties of, effects of composition on, 22:684
Nb--Ta, melting of, electron beam, 22:15157
Nb--Ta, oxidation model, 22:8735 (ORNL-4170, pp 51-3)
Nb--Ta, superconducting Ginzburg-Landau parameters of, temperature dependence of, (E), 22:44028
Nb--Ta, superconducting transitions in, kappa$_1$ and kappa$_2$, (E), 22:29429
Nb--Ta, superconducting transport current distribution in sheets of, (E), 22:5293
Nb--Ta--Ti, critical fields and critical temperatures of solid-solution, effects of composition on, 22:45745 (UCRL-18043, pp 107-53)
Nb--Ta--Ti, superconducting properties of wires of, (E), 22:7230
Nb--Ta--V, phase diagrams for, analysis of high-temperature equilibrium, 22:52202
Nb--Ta--W, creep strength of, effects of metallic borides and carbides on, 22:26049
Nb--Ta-base, deformation of single crystals of, effects of niobium content on stress--strain curves for, 22:23795
Nb--Ta-base, superconductivity of, 22:13021
Nb--TaC, welding of, method for diffusion, 22:6943
Nb--Ti, alternating current losses in superconducting, (E), 22:46040 (N-68-19140)
Nb--Ti, corrosion by acids, effects of increased niobium content on, 22:19484
Nb--Ti, corrosion by oxygen contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb--Ti, creep and heat resistance of, 22:10993
Nb--Ti, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Ti, critical current density of superconducting, effect of plastic deformation on, (E), 22:1092
Nb--Ti, critical current density of superconducting, with yttrium, gadolinium, thorium, and oxygen inclusions, 22:1099
Nb--Ti, critical currents in superconducting, (E), 22:24197
Nb--Ti, critical transport currents and omega phase precipitation in superconducting, 22:1102
Nb--Ti, effective resistivity of mixed-state superconductors of, in varying magnetic fields, (E), 22:36877
Nb--Ti, elasticity of, effect of chromium, tungsten, and vanadium additives on, 22:10959
Nb--Ti, electric conductivity of superconducting joints, 22:1090
Nb--Ti, electrochemical and mechanical properties of, 22:19484
Nb--Ti, energy losses in superconducting magnets of, measurement of ac, 22:29386 (UCRL-18176)
Nb--Ti, flux jumps in superconducting rods of, (E), 22:44047
Nb--Ti, formation of α phase in superconducting, during heating in electron microscope, (E), 22:29394
Nb--Ti, magnetic flux flow and stabilization in superconducting, 22:31733(R) (ORNL-TM-2233)
Nb--Ti, magnetic flux flow and stabilization in superconducting, (E/T), 22:22070(R) (ORNL-TM-2162)
Nb--Ti, magnetic flux flow and stabilization of superconducting, 22:9234(R) (ORNL-TM-2075)
Nb--Ti, magnetic flux jumps in superconducting, in rapidly varying magnetic fields, (E), 22:36877
Nb--Ti, magnetic properties of superconducting, reversible and irreversible, (E), 22:11402
Nb--Ti, magnetization and energy losses in superconducting, ac-induced, (T), 22:13423
Nb--Ti, melting of, electron beam, 22:15157
Nb--Ti, microstructure of thin-wire superconducting, 22:44063
Nb--Ti, preparation and properties of superconducting wires of, 22:2980
Nb--Ti, propagating current of superconducting, 22:1100
Nb--Ti, soldering of copper-clad, to aluminum, production of nanohm resistance joints by ultrasonic, 22:5288
Nb--Ti, source of instability in superconducting, (E), 22:44024
Nb--Ti, specific heat at superconducting transition temperature, 22:46066
Nb--Ti, stability of flux-flow state in superconducting strips of intermetallic NbTi, (E), 22:38981
Nb--Ti, superconducting critical currents in, relation of current--voltage characteristics to peak effect in, (E), 22:44049
Nb--Ti, superconducting critical currents on copper-clad Nb--40 percent Ti, 22:29446
Nb--Ti, superconducting magnet coil of, electrical loss measurements in, 22:48038 (UCRL-18374)
Nb--Ti, superconducting magnet coils of, development of, 22:22083
Nb--Ti, superconducting performance in magnet coils, 22:46079
Nb--Ti, superconducting properties of, 22:26321(T) (ANL-Trans-598)
Nb--Ti, superconducting properties of, 22:31766
Nb--Ti, superconducting properties of copper-clad Nb--40 percent Ti, 22:19900 (NP-17338)
Nb--Ti, superconducting properties of, effects of metal, nitrogen, and oxygen additions on, (E), 22:34563
Nb--Ti, superconducting transition currents in solenoids in helium I and II, liquid temperature effects on, 22:46074
Nb--Ti, superconductivity stabilization and use in solenoid coil, 22:46081
Nb--Ti, thermal conductivity at low temperatures, magnetic field and temperature dependences of, (E), 22:44029
Nb--Ti, thermoelectric properties of, (E), 22:9430
Nb--Ti, use as superconductor in high-current-density magnet, 22:48066
Nb--Ti, use in copper matrix for fabrication of 48-kG 10-cm-bore superconducting magnet coils, 22:11374
Nb--Ti, use in large-current integrally-processed composite superconductor with copper, 22:11373
Nb--Ti--V, creep at >650°C, 22:49747
Nb--Ti--V, creep at 650 to 800°C, effects of titanium content on, 22:2578
Nb--Ti--V, stress rupture at >650°C, 22:49747
Nb--Ti--V, tensile properties at 650 to 800°C, effects of titanium content on, 22:10953(T) (ORNL-tr-1790)
Nb--Ti--V, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
Nb--Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
Nb--Ti--W, coating of, deposition methods for protective, 22:52174
Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--Ti--W-base, oxidation at 1000 to 1300°C, mechanisms of, 22:52174
Nb--Ti--W-base, oxidation of, effects of alloying elements on, 22:52174
Nb--Ti--Zr, critical current density of superconducting, in magnetic fields, 22:38548
Nb--Ti--Zr, critical currents in superconducting, (E), 22:24197
Nb--Ti--Zr, ductility of electron-beam-melted ingots of, 22:47669
Nb--Ti--Zr, magnetic properties of annealed, effects of oxygen reactions and zirconium content on, 22:17128
Nb--Ti--Zr, phase studies of, 22:23823
Nb--Ti--Zr, superconducting properties of, 22:31766
Nb--Ti--Zr, superconductivity destruction in, phase composition and structure during, (E), 22:19923
Nb--Ti--Zr, superconductivity of, effects of critical current density in high magnetic field on, 22:49729
Nb--Ti--Zr, superconductivity of, effects of crystal structure on, 22:49729
Nb--Ti--Zr-base, analysis for zirconium using gallocyanine, colorimetric, 22:33287
Nb--Ti-base, phase morphology in, transmission electron microscopy studies on omega, 22:15212
Nb--Ti-base, phase transformation and superconductivity of, 22:19535
Nb--Ti-base, phase transformations in superconducting, 22:48063
Nb--TiC, erosion by potassium, effects of temperature on cavitation-type, 22:52126 (BNL-50127)
Nb--U, analysis for trace constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Nb--U, electrochemical behavior in citric acid, 22:31341
Nb--U, etching of, potentiostatic method for electrolytic, 22:31341
Nb--U, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
Nb--U, production of homogeneous, with predetermined void sizes, 22:15168(P)
Nb--U, separation of uranium from, by electrorefining in fused salts, 22:25454 (CEA-N-616, pp 246-94)
Nb--U, thermal capacity at 0 to 1000°C, 22:41043
Nb--U--Zr, analysis for components by x-ray absorption edge method, 22:8023
Nb--U--Zr, elasticity and shear of, measurements in vacuum at temperatures up to 2000°C, 22:52175
Nb--U--Zr, x-ray diffraction data at 150 to 573°C, 22:21389 (UCID-15254)
Nb--U-base, heat treatment and properties of, 22:2618
Nb--U-base, mechanical properties at 100 to 600°C, 22:21650
Nb--U-base, tensile properties of gamma quenched and aged, at ambient temperature, 22:34053
Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)

Nb--U-base--Zr, stress cracking of, effects of dry and wet air on delayed, 22:19479 (UCID-15256)
Nb--UN, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
Nb--UO_2, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Nb--UO_2, physical properties of sintered fuels of, 22:34096 (GMAD-3078-21)
Nb--UO_2, preparation of cermets of, by hot pressing and vapor deposition, 22:26076
Nb--UO_2, radiation effects on fuel elements of, in-pile, 22:4831
Nb--UO_2, radiation testing of MCR fuels of, 22:32924 (GMAD-3078-30)
Nb--UO_2, sintered fuels of, fabrication of, 22:34096 (GMAD-3078-21)
Nb--V, creep and heat resistance of, 22:10993
Nb--V, creep mechanisms at low temperatures, 22:41055
Nb--V, superconductivity of, 22:15497
Nb--V--Zr, phase studies at 500, 700, and 1000°C, 22:19550
Nb--V--Zr-base, performance as braze alloy for joining beryllium oxide to niobium--zirconium alloys, 22:652(R) (N-67-22066)
Nb--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Nb--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--W, creep and heat resistance of, 22:10993
Nb--W, creep of, dependence on temperature of, 22:686
Nb--W, creep strength of, effects of metallic carbides and borides on, 22:26049
Nb--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--W, mechanical properties of vacuum electron beam zone melted, 22:52174
Nb--W, tensile properties, 22:4790
Nb--W, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--W--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Nb--Zn, lattice constants and phase studies of, 22:38578
Nb--Zn, preparation and properties of, 22:6971
Nb--Zn--Zr, magnetic properties of, 22:39174
Nb--Zr, alternating current losses in superconducting, (E), 22:46040 (N-68-19140)
Nb--Zr, analysis for niobium by x-ray fluorescence, 22:47097
Nb--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Nb--Zr, cladding for uranium oxide (UO_2) fuel elements, design and performance parameters for Zr--2.5 w/o Nb, 22:35415 (AECL-2758)
Nb--Zr, corrosion by liquid potassium, (E), 22:32926 (GMAD-3078-32(Vol.2))
Nb--Zr, corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
Nb--Zr, corrosion of oxygen contaminated, by reflux-boiling sodium at 1095°C, 22:33152
Nb--Zr, crack propagation characteristics of hydrided and unhydrided pressure tubes of, 22:53454 (BNWL-828)
Nb--Zr, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Zr, crystal orientation in rolled, effects of rolling temperature on, (E), 22:8772
Nb--Zr, defects in oxide films on, design of mercury porosimeter for determining, 22:41118
Nb--Zr, deposition as corrosion-resistant coatings for 316 stainless steel, chemical vapor, 22:6966
Nb--Zr, design of Nb—75 Zr superconducting magnet for 85 kG, 22:41514
Nb--Zr, ductility of electron-beam-melted ingots of, 22:47669
Nb--Zr, effects of low-temperature aging on resistive transition of superconducting, in pulsed magnetic fields, 22:1101
Nb--Zr, electric conductivity of superconducting joints, (E), 22:1090
Nb--Zr, hardness of, effects of nitrogen on, 22:677
Nb--Zr, magnetic flux distribution in superconducting, observation of, 22:5294
Nb--Zr, magnetization and energy losses in superconducting wires of, ac-induced, (T), 22:13423
Nb--Zr, maximum completely stabilized current density in superconducting, (E), 22:41527
Nb--Zr, mechanical properties of neutron-irradiated, 22:45798
Nb--Zr, mechanical properties of, effects of absorbed oxygen on, 22:6982 (IS-T-131)
Nb--Zr, mechanical properties of, effects of carburization and nitriding on, 22:12968
Nb--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Nb--Zr, niobium-93 nuclear spin--lattice relaxation in superconducting, 22:31780
Nb--Zr, oxidation at 870 to 1000°C, kinetics of breakaway transition in, 22:45751
Nb--Zr, oxidation of, analysis of, 22:48788
Nb--Zr, oxidation of, effects of copper on, 22:21660
Nb--Zr, persistent currents in superconducting solenoid, decay rate of, (E), 22:24206
Nb--Zr, phase boundaries in, $\alpha/(\alpha + \beta)/\beta$, 22:52196 (AECL-2715)
Nb--Zr, phase studies, 22:49769
Nb--Zr, phase studies, 22:31323
Nb--Zr, precipitation of nitrides in, effects of nitrogen on, 22:677
Nb--Zr, radiation effects on fuel cladding of, neutron, 22:22830
Nb--Zr, radiation effects on oxidation by water, fast-neutron, 22:17072 (AECL-2797)
Nb--Zr, separation from nitric acid by solvent extraction using tridodecylamine, effects of plutonium on, 22:37862
Nb--Zr, separation from plutonium by solvent extraction using nitromethane, 22:33521
Nb--Zr, source of instability in superconducting, (E), 22:44024
Nb--Zr, spin--lattice relaxation processes in superconducting, (E), 22:31739
Nb--Zr, stress analysis of, effects of cold working on, 22:708
Nb--Zr, structure of, effects of oxygen on, 22:6994
Nb--Zr, superconducting critical currents in, effects of chemical composition on, 22:44060
Nb--Zr, superconducting critical surface of wire of, 22:46082
Nb--Zr, superconducting flux jumps at liquid helium temperatures, 22:48062
Nb--Zr, superconducting magnet coils of, performance of semistabilized, 22:22082
Nb--Zr, superconducting performance in magnet coils, 22:46079
Nb--Zr, superconducting properties of, effect of structure on, 22:1096
Nb--Zr, superconducting properties of, effects of dispersed precipitation on, (E), 22:31748
Nb--Zr, superconducting rings of, stabilized levitated, 22:29455
Nb--Zr, superconducting solenoids of, design of partially stable 90-kG, 22:29387
Nb--Zr, superconducting transition currents in solenoids in helium I and II, liquid temperature effects on, 22:46074
Nb--Zr, superconducting transport current distribution in sheets of, (E), 22:5293
Nb--Zr, superconductivity destruction in, phase composition and structure during, (E), 22:19923
Nb--Zr, superconductivity in, quenching of, 22:11356
Nb--Zr, superconductivity of, effects of oxygen on, 22:6994
Nb--Zr, tensile properties of, effects of cold-working and annealing on, 22:35419 (AECL-3126)
Nb--Zr, thermodynamic properties of, 22:28790
Nb--Zr, transition temperatures of superconducting, 22:38545
Nb--Zr, use in electromagnetic induction pump cell, effect on cavitation and performance, 22:8256 (ORNL-TM-1793)
Nb--Zr, use of superconducting, in delay lines, 22:6684
Nb--Zr-base, corrosion by aqueous hydrogen fluoride--nitric acid--sulfuric acid, measurement of, 22:21665
Nb--Zr-base, corrosion by hydrogen and terphenyl, effects of surface preoxidation on, 22:19486
Nb--Zr-base, corrosion by pressurized water, effects of preparation on, 22:21702
Nb--Zr-base, corrosion by water at 400°C, effects of cold deformation on, 22:36431(T) (JPRS-45460)
Nb--Zr-base, creep of, effects of oxygen content on, 22:21702
Nb--Zr-base, creep of, in-pile testing of, 22:19580 (BNWL-455, Paper 12.1-100)
Nb--Zr-base, creep resistance of, effects of annealing temperature on, 22:21702
Nb--Zr-base, crystal structure after strain relieving, 22:19552
Nb--Zr-base, development for reactor components, 22:49739
Nb--Zr-base, fracture of, effects of cold work, heat treatment, and hydriding on, 22:648 (BNWL-560)
Nb--Zr-base, mechanical and physical properties of, effects of preparation on, 22:21702
Nb--Zr-base, mechanical properties at 30 to 600°C, effects of hydrogen on, 22:41042
Nb--Zr-base, mechanical properties of, effect of heat treatment on, 22:34033 (BARC-306)
Nb--Zr-base, mechanical properties of, effects of temperature on, 22:41042
Nb--Zr-base, oxidation by fused nitrate--nitrite salt, film potential measurements during, 22:2566 (AECL-2777)
Nb--Zr-base, oxidation kinetics at 300 to 500°C, 22:623
Nb--Zr-base, phase compositions in, 22:52196 (AECL-2715)
Nb--Zr-base, phase transformations in, ω, 22:28837
Nb--Zr-base, plasticity of cold formed, 22:21729
Nb--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Nb--Zr-base, radiation effects on creep of reactor

pressure tubes of, fast neutron, 22:28859
Nb--Zr-base, radiation effects on creep of, in-pile, 22:28860
Nb--Zr-base, radiation effects on creep of, measurement of in-pile, 22:4828
Nb--Zr-base, radiation effects on creep of, neutron, 22:28855
Nb--Zr-base, radiation effects on creep of, relations with stress and temperature, (E), 22:19581 (BNWL-SA-1598)
Nb--Zr-base, radiation effects on creep-rupture of heat-treated, in-pile, 22:13036 (BNWL-473, pp 7.1-71)
Nb--Zr-base, radiation effects on mechanical properties of, neutron, 22:21729
Nb--Zr-base, radiation effects on stress relaxation of, fast neutron, 22:19597
Nb--Zr-base, radiation effects on tensile properties of, in-pile, 22:43615(R) (BNWL-710)
Nb--Zr-base, radioinduced corrosion by water, effects of air on in-pile, 22:21658
Nb--Zr-base, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Nb--Zr-base, radioinduced creep at 300°C, in-pile, 22:34037 (BNWL-SA-1458)
Nb--Zr-base, sorptive properties for hydrogen, 22:21729
Nb--Zr-base, sorptive properties for hydrogen, effects of niobium on, 22:21659
Nb--Zr-base, superconductivity of, 22:8730 (ORNL-4170, pp 27-31)
Nb--Zr-base, tubes of, properties of resistance butt welded, 22:2596
Nb--Zr-base, zirconium-alpha-phase precipitation in, kinetics of, 22:38567
Nb--Zr-base, zirconium-beta-phase decomposition in, kinetics of, 22:38567
Nb--ZrC, welding of, method for diffusion, 22:6943
Nb-base--Sn, phase diagrams, 22:23814 (INR-877/XIV/PS)
Nb-base--Ti, corrosion by mineral acids, effects of increased titanium content on, 22:19485
Nb-base--Ti, electrochemical and mechanical properties of, 22:19485
Nb-base--Ti--V, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--V--Zr, oxidation by air at 900 to 1200°C, mechanisms of, 22:2581
Nb-base--Ti--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--Zr, magnetic properties of wires of, at 4.2°K, 22:13012
Nb-base--U, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Nb-base--V--Zr, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
Nb-base--W, corrosion by low-oxygen sodium at 1350°C, 22:43629(R) (LA-3933)
Nb-base--W, deformation of, flow stress and mechanisms of, 22:47680
Nb-base--W, tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
Nb-base--W--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Zr, brazing to beryllium oxide ceramics, tests of, 22:652(R) (N-67-22066)
Nb-base--Zr, compatibility with potassium--sodium alloys in high-temperature radiator loops, 22:31327
Nb-base--Zr, corrosion by lithium at 1100 to 1350°C, 22:8695 (ORNL-4170, pp 93-6)
Nb-base--Zr, corrosion by lithium at high temperatures and velocities, 22:38514 (N-68-11617)
Nb-base--Zr, corrosion by low-oxygen sodium at 1350°C, 22:43629(R) (LA-3933)
Nb-base--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Zr, corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
Nb-base--Zr, corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
Nb-base--Zr, corrosion by sodium at 1200 to 1600°F, effects of oxygen on, 22:31326
Nb-base--Zr, diffusion of nitrogen in, 22:8737 (ORNL-4170, pp 65-79)
Nb-base--Zr, extrusion with stainless steel to form tubes, evaluation of, 22:631 (N-67-22891)
Nb-base--Zr, flow stress of solid-solution, strain rate dependence of, (E), 22:31369
Nb-base--Zr, hardness and tensile strength at 300 and 600°C, 22:31432
Nb-base--Zr, mechanical and sorptive properties of, effects of high-temperature gases in ATR model loop on, 22:13036 (BNWL-473, pp 7.1-71)
Nb-base--Zr, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
Nb-base--Zr, performance on bearings of high-temperature lithium and potassium--sodium pumps, effects of carbide coatings on, 22:2576
Nb-base--Zr, phase transformations in nitrided, 22:19554
Nb-base--Zr, radiation effects on hardness and tensile strength at 300 and 600°C, fast neutron, 22:31432
Nb-base--Zr, radioinduced hydriding of, in ETR water loop, 22:19580 (BNWL-455, Paper 12.1-100)
Nb-base--Zr, radioinduced oxidation of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
Nb-base--Zr, tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
Ni--Nb, phase studies of hexagonal close-packed structures in, 22:4805
Nn-base--V, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138

NIOBIUM BORIDES
bonding forces between atoms in NbB$_2$, x-ray line-broadening measurements of, 22:49840
chemical and crystallographic properties of plasma-sprayed, 22:47704
electric conductivity of, temperature coefficient, (E), 22:28932
enthalpy of formation of, fluorine bomb calorimetry measurements on, 22:2053
mechanical properties of plasma-sprayed, 22:47704
preparation of NbB$_2$, from niobium pentoxide by boron reduction, 22:36528
thermal conductivity at room temperature, 22:679

NIOBIUM CARBIDE OXIDES
thermodynamics of alpha-solid solutions of, 22:11061

NIOBIUM CARBIDES
activities of carbon and niobium in, at 1500 to 3000°K, 22:10205 (LA-3744)
characteristics of powders of, effects of morphology on, 22:23764 (LA-DC-8964)
chemical analysis, density, and structure morphology of commercial-grade powdered, 22:751 (LA-3653)
compatibility with molybdenum-base alloys, rhenium, and tungsten at 2450 to 2500°C, 22:49825
corrosion at high temperatures by impurities in inert gases, 22:15233
crystal structure of, effects of temperature on, 22:30388
diffusion of carbon in, 22:28917
effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
elastic properties of NbC, determination by sound velocity, 22:49830
electric conductivity at 1200 to 3500°K, (E), 22:26084
electric conductivity at 2 to 300°K, 22:31375
electric conductivity of, temperature coefficient, (E), 22:28932
emissivity at 1200 to 3500°K, total hemispherical and spectral, (E), 22:26084
enthalpy at high temperatures, 22:11076
evaporation in vacuum at 2500 to 3400°K, 22:28920
evaporation in vacuum at 2773 to 2973°K, 22:28917
evaporation rates in vacuum, 22:28918
formation mechanisms and thermodynamics in steels, 22:2623
hardness of, effects of high pressure and high temperature on, 22:52272
magnetic susceptibility of, effects of carbon content on, 22:47705
mechanical behavior of, review of, 22:49826
particle size distribution in commercial-grade powdered, use in characterization, 22:751 (LA-3653)
phase studies, 22:4774 (WANL-TME-1370)
phase studies of alpha solid solutions of, 22:41100(T) (ORNL-tr-1942)
preparation and properties of 100 to 1000 A particles of, 22:38604(T) (SC-T-68-1535)
production in iron--niobium alloys at 950 to 1050°C, 22:704
properties and uses, 22:52275
properties of, analysis of physico-mechanical, 22:52271
radiation effects at 300 to 700°C, fast-neutron, 22:21779
radiation effects on gross volume gain of, analysis of fast neutron, 22:48788
radiation effects on NbC, effects of dose on fast neutron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
reactions with carbon monoxide, carbon dioxide, or their mixtures at 1400°C, 22:4081
superconducting properties of, 22:24209
superconducting transition temperature, 22:48034(T) (LA-tr-68-31)
superconductivity in interstitial, 22:22117
thermal capacities of superconducting NbC/sub 1-x/ and Nb$_2$C at 1.5 to 18°K, (E), 22:44038
thermodynamic properties of, 22:28920
thermodynamics, 22:36541
thermodynamics at 1300 to 2500°K, 22:753
thermodynamics of alpha solid solutions of, 22:11061
C--NbC, electric conductivity of arc-cast and hot-pressed, up to 1700°C, 22:26083 (USBM-RC-1327)
C--NbC, preparation and high-temperature properties of, 22:49680(R) (USBM-RC-1347)
Co--NbC--TaC--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
Co--NbC--TaC--WC-base, phase studies using microprobe and acid etching, 22:34117
Co--NbC--TiC--WC, properties of vacuum sintered, effects of carbide composition and carbon content on, 22:43658
Co--NbC--WC, phase diagrams and properties of, 22:17183
Co--NbC--WC, phase diagrams and properties of, 22:17183
Co--NbC--WC, properties of cemented, effects of carbon and niobium carbide contents on, 22:41107

- graphite--NbC, creep as a function of composition and temperature, compressive, 22:41101 (WANL-TME-1761)
- graphite--NbC, polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
- graphite--NbC, properties of hot-pressed, effects of heat treatments on, 22:731(R) (N-67-19056)
- graphite--NbC--TaC, elastic properties of die-pressed composites of, (E), 22:34109
- graphite--NbC--TaC, polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
- HfC--NbC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- Mo--NbC, welding of, method for diffusion, 22:6943
- Nb--NbC, welding of, method for diffusion, 22:6943
- Nb--Sn--NbC, synthesis of two-phase high-field superconducting, 22:26347
- NbC--NbN, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- NbC--NbN, thermodynamics of, 22:28943
- NbC--PuC, preparation of improved fuels of, 22:52251(P)
- NbC--PuC--UC, preparation of improved fuels of, 22:52251(P)
- NbC--Ta, welding of, method for diffusion, 22:6943
- NbC--TaC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- NbC--TaC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
- NbC--TiC, crystal structure of homogeneous, 22:52281
- NbC--TiC, electric conductivity of homogeneous, 22:52281
- NbC--TiC, microhardness of homogeneous solid solution, 22:52281
- NbC--TiC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- NbC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
- NbC--UC, preparation of improved fuels of, 22:52251(P)
- NbC--UC--ZrC, phase studies, 22:15208 (IS-T-219)
- NbC--VC, miscibility at 1200ºC to critical point, 22:43653
- NbC--W, welding of, method for diffusion, 22:6943
- NbC--WC, preparation and properties of, 22:38629
- NbC--ZrC, electric properties of, effects of niobium content on, 22:17730
- NbC--ZrC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- NbC--ZrC, thermal expansion of solid solutions of, 22:47706

NIOBIUM CARBONITRIDES
- formation mechanisms and thermodynamics in steels, 22:2623

NIOBIUM CHLORIDE OXIDES
- separation from niobium pentachloride, rectification method for, 22:12306
- $NbCl_5$--$NbOCl_3$, fusibility diagram of, 22:12306

NIOBIUM CHLORIDES
- reactions with zinc for vapor deposition of niobium layers on aluminum oxide, 22:21751 (EUR-3743)
- reduction by hydrogen to produce niobium metal, 22:38531
- reduction by niobium metal, 22:47063 (IS-T-263)
- reduction by niobium metal in gas chromatograph, effects of temperature on kinetics of, 22:20985 (IS-1780)
- reduction of $NbCl_5$, by cadmium or zinc for vapor deposition, 22:43549
- reduction to niobium metal using calcium, 22:43548
- separation of niobium chloride oxide from, rectification method for, 22:12306
- $AlCl_3$--KCl--NaCl--$NbCl_5$, phase diagrams of, 22:12307
- $NbCl_5$--$NbOCl_3$, fusibility diagram of, 22:12306
- $NbCl_5$--UO_2, reduction by hydrogen to prepare uranium, 22:38531

NIOBIUM FLUORIDES
- see also Potassium Niobium Fluorides
- chemistry of, 22:25328 (ORNL-4229, pp 50-67)
- determination of volatile radioactive, method for, 22:25454 (CEA-N-616, pp 246-94)
- niobium-90 half-life in, effect of chemical binding on isomeric, (E), 22:11964
- preparation of, 22:47112 (ORNL-4254, pp 88-173)
- separation from uranium hexafluoride, 22:23106
- separation of plutonium hexafluoride from, by sublimation, 22:25443 (ANL-7375, pp 46-94)
- spectra of, 22:47112 (ORNL-4254, pp 88-173)

NIOBIUM HYDRIDES
- compatibility with uranium dioxide at 650 to 700ºC, 22:11066
- crystal structure and purity of, prepared by electrolytic hydrogen charging, 22:17172
- neutron differential inelastic scattering cross sections at 0.238eV, (E), 22:3592 (RPI-328-101)
- neutron doubly differential inelastic scattering cross section at 0.238 eV and at 77 and 296ºK, (E), 22:29864
- neutron inelastic scattering at 0.1 to 1.0 eV, cross sections for, (E), 22:53076
- neutron inelastic scattering at low energy, (E), 22:13908 (RPI-328-100, pp 120-39)
- solvent properties for hydrogen, 22:13033

NIOBIUM ISOTOPES
- energy levels of odd-A, from proton inelastic scattering, (E), 22:32651

NIOBIUM ISOTOPES Nb-90
- beta and electron-capture decay scheme of, β and γ spectra, (E), 22:11959
- beta decay scheme of, β and γ spectra for, (E), 22:14002 (UUIP-555)
- beta decay, effect of chemical and physical state on rate of, (E), 22:3741
- energy levels from beta and electron-capture decay of molybdenum-90, (E), 22:20589
- energy-level transitions in, conversion electron spectra from, (E), 22:25664
- half-life of isomeric, effect of chemical binding on, (E), 22:11964
- production and properties of short-lived isomeric, by proton reactions with zirconium at 10 MeV, (E), 22:24874

NIOBIUM ISOTOPES Nb-91
- energy level from zirconium-90 (p,γ) reactions, radiative width of isobaric analog, (E), 22:53186
- energy levels from molybdenum-92 (d,He-3) reactions, (E), 22:27200
- energy levels from proton scattering by zirconium-90, isobaric analog, (E), 22:11949(R) (ORO-2972-47)
- energy levels from zirconium-90 (He-3,d) reactions, (E), 22:39629 (CONF-670970-, pp 229-42)
- energy levels from zirconium-90 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels from zirconium-90 (He-3,d) reactions, spectroscopic factors for, (E), 22:27141
- energy levels from zirconium-90 proton elastic scattering, spin assignments from polarization data for isobaric analog, (E), 22:20629
- energy levels from zirconium-90 proton elastic scattering, isobaric analog, (E), 22:39653
- energy levels of, calculations using independent quasi particle model, (T), 22:1734
- energy levels of, damping widths of isobaric analog, (T), 22:37393
- energy levels of, shell-model calculations of elastic proton decay and damping widths of isobaric analog, (T), 22:44724
- energy-level transitions from zirconium-90 (He-3,d) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
- proton decay from isobaric analog resonances in zirconium-90 (He-3,d) reactions, (E), 22:39629 (CONF-670970-, pp 229-42)
- proton decay of isobaric analog states in zirconium-90 (d,n) reactions, (E), 22:53164

NIOBIUM ISOTOPES Nb-92
- energy levels from niobium-93 (p,d) reactions, transition strengths for isobaric analog, (E), 22:29993
- energy levels from zirconium-91 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels of, calculations using jj-coupling shell model, (T), 22:48587 (JAERI-1158, pp 138-44)
- energy levels of, description using shell model with effective interaction, (T), 22:27135
- half-life of, (E), 22:24845
- proton decay of isobaric analog states in zirconium-91 (d,n) reactions, (E), 22:53164

NIOBIUM ISOTOPES Nb-93
- carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
- deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron elastic scattering at 13.6 MeV, diffraction structure in angular distributions for, (E), 22:48501
- deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
- deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
- energy levels from fast neutron inelastic scattering, spin-parity assignments for, (E), 22:27158
- energy levels from zirconium-92 (He-3,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels, (E), 22:5809(R) (ANL-7354)
- energy-level transitions from electron inelastic scattering, (E), 22:26911
- neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron capture at 10 to 150 keV, cross section for, (E), 22:35346
- neutron capture by, activation cross section for, 22:24862 (WANL-TME-1746)
- neutron capture by, γ spectra from thermal, (E), 22:20578 (WASH-1079)
- neutron capture by, niobium-94 energy levels and configurations from thermal, (E), 22:29999
- neutron capture by, resonance parameters and γ spectra for, (E), 22:53194
- neutron capture cross section at 10 to 150 keV, (E), 22:3687 (EURFNR-404)
- neutron cross sections at 0 to 15 MeV, ENDF/B, 22:16002 (GA-8133)
- neutron cross sections at 1 to 10 MeV, calculations using local spherical optical model, (T), 22:35349
- neutron differential elastic and inelastic scattering cross sections at 3 to 8 MeV, (E), 22:18287
- neutron differential elastic and inelastic scattering cross sections at 6.0 and 7.5 MeV, (E), 22:20578 (WASH-1079)
- neutron elastic scattering at 4 MeV using polarized

  - neutrons, differential cross section and polarization angular distribution for, (E), 22:14019
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
- neutron inelastic scattering at 1 to 2 MeV, γ spectra from, (E), 22:27158
- neutron inelastic scattering at 160 MeV, γ spectra from, (E), 22:27159
- neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
- neutron reactions (n,3n) at 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
- neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
- neutron strength function and scattering radius at 0 to 4.1 keV, (E), 22:18285
- neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
- neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
- nuclear charge distribution of, measurement using electron scattering, (E), 22:26911
- nuclear magnetic resonance in lithium niobate, 22:31966
- nuclear spin--lattice relaxation in niobium--zirconium superconductors, 22:31780
- photon reactions (γ,α) at 30.5 MeV, α energy distribution from, (E), 22:11971
- photon reactions (γ,p) at 17.5 to 24.0 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27224
- photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
- proton decay of isobaric analog states in zirconium-92 (d,n) reactions, (E), 22:53164
- proton reactions (p,α) and (p,He-3) with, (E/T), 22:13927(R) (USC-136-132)
- proton reactions (p,d) and (p,t) at 55 MeV, 22:27140
- proton reactions (p,d) at 55 MeV, isobaric analog resonances in, (E), 22:29993
- proton reactions (p,n) at 30 and 50 MeV with excitation of isobaric analog states in, (E), 22:46734
- proton reactions (p,n) at 4.6 to 5.3 MeV, molybdenum-93 energy levels from, (E), 22:27118
- proton reactions (p,n) at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
- proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
- use for fast neutron fluence detection by activation, 22:8352
- use of foils for neutron dosimetry by activation, 22:28177 (FFN-74)

NIOBIUM ISOTOPES Nb-94
- beta spectra for, shape factor for, (E), 22:27103
- beta transition in, matrix elements for twice-forbidden, (T), 22:44698
- energy levels and configurations from thermal neutron capture by niobium-93, (E), 22:29999
- energy levels from niobium-93 neutron resonance capture, (E), 22:20578 (WASH-1079)
- energy levels from niobium-93 resonance neutron capture, (E), 22:53194
- energy levels of, description using shell model with effective interaction, (T), 22:27135
- energy-level transitions from niobium-93 thermal neutron capture, (E), 22:20578 (WASH-1079)
- half-life of, (E), 22:24845
- neutron binding energy from niobium-93 resonance neutron capture, (E), 22:20578 (WASH-1079)
- neutron binding energy from niobium-93 thermal neutron capture, (E), 22:20578 (WASH-1079)
- nuclear spin of ground state of, (E), 22:27103

NIOBIUM ISOTOPES Nb-95
- activity in atmosphere, use of scintillation detectors aboard aircraft for measurement of, 22:18971
- beta decay of, gamma transition energies in, (E), 22:7674
- beta decay of, γ spectra for, (E), 22:18262
- content and distribution in fallout from third and fifth Chinese nuclear explosions, 22:51131
- content in atmosphere over Atlantic Ocean from June 17, 1967 and Dec. 24, 1967 Chinese nuclear explosions, 22:48954
- content in atmospheric precipitation at Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
- content in Bucharest atmosphere, 1964 to 1966, 22:51103
- content in Danish atmosphere and precipitation, July through Dec. 1967, 22:51093 (FFR-401/68)
- content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
- content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
- content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
- content in soils of northeast and east-central Georgia, 22:48939
- content in Swedish atmosphere following June 1967 Chinese nuclear explosion, 22:51094 (FOA-4-4369)
- content of birch leaves and fir, pine, and spruce needles sampled in U.S.S.R. during 1962, 22:51615
- content of food samples in India during 1963 to 1965, 22:40656 (AEET-273)
- deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
- detection and measurement in fallout at Pinstech, Pakistan after May 9, 1966 Chinese nuclear explosion, 22:51097 (PINSTECH/HP-3)
- determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
- determination in liquids by gamma counting and differential decay, 22:1956(R) (MLM-1405)
- determination in presence of zirconium-95 by extraction chromatography and counting, 22:40029
- diffusion in tungsten monocrystals at 1800°C, 22:19542
- distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
- energy levels from beta decay of zirconium-95, (E), 22:7674
- energy levels, (E), 22:5809(R) (ANL-7354)
- energy-level transitions from zirconium-95 β decay, branching ratio for, (E), 22:20560 (AERE-R-5342)
- energy-level transitions from zirconium-95 β decay, (E), 22:18262
- fallout at Leningrad from 1954 to 1965, 22:12453
- fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
- half-life of, 22:14433 (ORNL-4196, pp 66-89)
- half-life of, (E), 22:24845
- half-life of, accurate measurement of, (E), 22:29990
- inhalation by rats, kinetics of, 22:8476
- ion-exchange behavior in oxalic acid, recoil effects on, 22:10349
- measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
- metabolism by rats, 22:8475
- metabolism by rats following inhalation, assessment of hazards from, 22:40583
- preparation of, 22:18905
- production in soil by neutron activation, dose to plant roots from, 22:31080
- proton decay of isobaric analog states in zirconium-94 (d,n) reactions, (E), 22:53164
- recoil properties of isomeric, from proton fission of bismuth and uranium, (E), 22:12338(R) (COO-1167-3)
- removal from PRTR heavy water primary system, measurement of, 22:22816 (HW-75557(Rev.)(Del.))
- separation by solvent extraction using naphthenic acid, 22:35904
- separation from uranyl nitrate by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
- separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
- separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
- separation of plutonium from, by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
- uptake by man following inhalation, 22:33715 (SZS-15/67)
- uptake from atmosphere and soil by grasses, 22:45541
- use as tracer for diffusion in hcp zirconium, 22:43577
- use as tracer for fine sediments in northern San Francisco Bay, 22:4272 (TID-24140)
- yields of isomeric, in uranium-235 proton fission, (E), 22:18218

NIOBIUM ISOTOPES Nb-96
- beta decay of, beta particle and conversion electron spectra from, (E), 22:20583
- beta decay of, γ angular correlations from, (E), 22:11944(R) (AECL-2780)
- preparation of carrier-free, from proton-irradiated targets, 22:50994

NIOBIUM ISOTOPES Nb-97
- beta decay of, molybdenum-97 energy levels from, (E), 22:16031
- energy levels from beta decay of zirconium-97, (E), 22:16032
- energy levels, (E), 22:5809(R) (ANL-7354)

NIOBIUM ISOTOPES Nb-98
- decay of isomeric, 22:20975(R) (BMwF-FBK-67-89)
- production by decay of zirconium-98, 22:37833 (CEA-R-3451)

NIOBIUM ISOTOPES Nb-99
- beta decay of isomeric, half-life and γ spectra for, (E), 22:9905
- beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)

NIOBIUM ISOTOPES Nb-100
- beta decay of isomeric, half-life and γ spectra for, (E), 22:9905
- beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
- beta decay properties, (E), 22:1689
- decay of isomeric, 22:20975(R) (BMwF-FBK-67-89)

NIOBIUM ISOTOPES Nb-101

  beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
  gamma spectra, (T), 22:7706
NIOBIUM MINERALS
  see also Pyrochlores
NIOBIUM NITRIDES
  critical current peak effect in superconducting, 22:29450
  formation mechanisms and thermodynamics in steels, 22:2623
  phase studies of alpha solid solutions of, 22:41100(T) (ORNL-tr-1942)
  phase transformations, 22:19554
  physical properties of, 22:4078
  preparation by nitrogen diffusion into niobium wires, (E), 22:17559
  radiation effects at 150ºC on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
  superconducting critical fields of, (E), 22:22080
  superconducting transition temperature, 22:48034(T) (LA-tr-68-31)
  superconducting transition temperature as function of nitrogen content, (E), 22:17559
  superconducting transition temperature of, formed by reactive sputtering of niobium films, 22:48057
  superconductivity in interstitial, 22:22117
  thermodynamics of alpha-solid solutions of, 22:11061
  NbC--NbN, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
  NbC--NbN, thermodynamics of, 22:28943
NIOBIUM OXIDES
  addition to hypostoichiometric dioxides of thorium and uranium for reactor fuels, 22:38611(P)
  analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
  analysis for tantalum using methyl violet, photometric, 22:1995
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  crystal defect structure of Nb_2O_5, relations with titanium oxide structure, 22:11084
  crystal structure, 22:4801
  crystal structure of high-temperature, electron microscope study of, 22:17780
  crystal structure of $NbO_{2.483}$, 22:17179
  determination in niobium--tantalum minerals, gravimetric, 22:16451
  diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
  diffusion of oxygen in monocrystals of Nb_2O_5, 22:28924
  diffusion of oxygen in, effects of temperature and pressure on, 22:21766
  diffusion of oxygen in, mechanisms of, 22:43628 (ANL-7299, pp 268-79)
  effects of films of, on electric conductivity of niobium, 22:50969
  effects on growth processes of corundum crystals, 22:31485
  effects on thermal conductivity of thorium oxide, uranium dioxide, and thorium oxide--uranium oxide mixtures, 22:13070(P)
  electric conductivity of, 22:21766
  electric field migration in, measurement of, (E), 22:15253(R) (TID-24210)
  electric pulse effect on ferroelectric $[Pb_{.99}Nb_{.02}(Zr_{.66}Ti_{.34})_{.98}O_3]_{.90}(LaFeO_3)_{.10}$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.65}Ti_{.35})_{.99}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.80}Ti_{.20})_{.99}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.50}Sn_{.50})_{.86}Ti_{.14}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.60}Sn_{.40})_{.92}Ti_{.08}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.65}Ti_{.35})_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.68}Ti_{.07}Sn_{.25})_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electrolytic rectification in anodic films of, correlation of capacitance change and current flow in, (E), 22:15605
  electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
  electron tunneling in superconducting thin-film junctions with niobium and vanadium, (T), 22:46056
  equilibrium pressures over niobium--oxygen solid solutions as function of temperature, 22:41100(T) (ORNL-tr-1942)
  europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
  formation mechanisms at 600 to 1200ºC, 22:23827
  formation of $Nb_{25}O_{62}$, possibility of, 22:38638
  hardness of, effects of nitrogen and oxygen on, (E), 22:15253(R) (TID-24210)
  ion diffusion in niobium surface, estimation by platinum wire marker movement, 22:739
  mass transfer in, effects of electric field migration on interstitial, (E), 22:15253(R) (TID-24210)
  oxygen potentials in nonstoichiometric, effects of defects and temperature on, 22:4883
  preparation of $NbO_{2.483}$ by chemical transport, 22:17179
  pressure of carbon monoxide over solid-solution, effects of dissolved carbon and oxygen at 1600 to 1900ºC on, 22:19636
  reactions with americium oxides, solid-state, 22:30548
  reactions with carbon monoxide, carbon dioxide, or their mixtures at 1400ºC, 22:4081
  reduction to metal powder, calciothermic, 22:52146
  separation from columbite by ion exchange and solvent extraction, economics of, 22:6940
  thermodynamic properties of NbO_2, measurement by solid state emf coulometry, 22:52268
  thermodynamics of alpha-solid solutions of, 22:11061
  thermodynamics of formation of, 22:31447
  Al_2O_3--Nb_2O_5, crystal structure of binary oxides from, 22:38638
  Al_2O_3--Nb_2O_5, phase studies of, 22:38638
  B_2O_3--Na_2O--Nb_2O_5, phase studies of glasses of, 22:21773
  CaO--Nb_2O_5, phase studies, 22:19641
  Ce_2O_3--Nb_2O_5, phase studies, 22:49839
  Ce_2O_3--Nb_2O_5, phase studies of, 22:21769
  Ce_2O_3--Nb_2O_5, properties of, electric and thermal, 22:21769
  Cr_2O_3--Nb_2O_5, crystal structure of binary oxides from, 22:38638
  Cr_2O_3--Nb_2O_5, phase studies of, 22:38638
  Fe_2O_3--Nb_2O_5, crystal structure of binary oxides from, 22:38638
  Fe_2O_3--Nb_2O_5, phase studies of, 22:38638
  Fe_2O_3--Nb_2O_5--TiO_2--U_3O_8--Y_2O_3, reactions with chlorine gas, avoidance of $NbOCl_3$ formation in, 22:50984
  In_2O_3--Nb_2O_5, phase studies of, 22:38638
  KCl--KF--K_2NbF_7--Nb_2O_5, electrolysis of molten, electrowinning of niobium by, 22:19492
  La_2O_3--Nb_2O_5, phase studies, 22:49839
  La_2O_3--Nb_2O_5, phase studies of, 22:21769
  La_2O_3--Nb_2O_5, properties of, electric and thermal, 22:21769
  MgO--Nb_2O_5, crystal structure of compounds in, (E), 22:28944
  Na_2O--Nb_2O_5, compound formation in, 22:2682
  Na_2O--Nb_2O_5, phase studies at 1200ºC, 22:19651
  Na_2O--Nb_2O_5--SiO_2, radiation effects on glasses of, ESR studies of γ, 22:30636
  Na_2O--Nb_2O_5--SiO_2, radioinduced niobium centers in, ESR study of, 22:31965
  Nb_2O_5--Nd_2O_3, phase studies, 22:49839
  Nb_2O_5--Nd_2O_3, phase studies of, 22:21769
  Nb_2O_5--Nd_2O_3, properties of, electric and thermal, 22:21769
  Nb_2O_5--Pr_2O_3, phase studies, 22:49839
  Nb_2O_5--Pr_2O_3, phase studies of, 22:21769
  Nb_2O_5--Pr_2O_3, properties of, electric and thermal, 22:21769
  Nb_2O_5--rare earth oxides, phase studies of, 22:4895
  Nb_2O_5--Sc_2O_3, phase studies of, 22:38638
  Nb_2O_5--ZnO, phase diagrams of, effects of substitution of cobalt, copper, or nickel for zinc on, 22:19655
  Nb_2O_5--ZrO_2, crystal structure and preparation of, 22:52242
  NbO_2--TiO_2, oxygen potentials in nonstoichiometric, effects of defects and temperature on, 22:4883
NIOBIUM OXYCHLORIDES
  thermodynamic properties of, 22:11048
NIOBIUM PHOSPHIDES
  electron band structure of, magnetic susceptibility and NMR studies of, 22:17807
Niobium Potassium Fluorides
  see Potassium Niobium Fluorides
NIOBIUM SELENIDES
  crystal structure of $NbSe_2$, band model of, 22:47712
NIOBIUM SILICIDES
  crystal structure of layers of, on niobium, 22:52278
  effects as coating, on oxidation of niobium or tantalum, 22:2571
  performance as coating for aircraft turbines, 22:34107
  production by auxiliary metal bath procedure, 22:38614
  use in oxidation protection of niobium, 22:52133(R) (N-68-23469)
NIOBIUM STEEL
  corrosion by liquid sodium, 22:12966
  production of commercial, thermodynamics of carbide, carbonitride, and sulfide formation in, 22:2623
  properties, 22:2640
  Cr--Mo--Nb--Ni, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
  Cr--Mo--Nb--V, mechanical properties and structure of, at 500 to 550ºC, 22:21723
  Cr--Nb--Ni, growth of fuel cans of, during oxidation by carbon dioxide, 22:15148
NIOBIUM SULFIDES
  formation mechanisms and thermodynamics in steels, 22:2623
NIOBIUM TANTALUM CHLORIDES
  $BiCl_3$--$NbTaCl_5$, phase studies on, 22:18794
  $NbTaCl_5$--PCl_3, phase studies on, 22:18794
  $NbTaCl_5$--PCl_5, phase studies on, 22:18794
  $NbTaCl_5$--$SbCl_3$, phase studies on, 22:18794
  $NbTaCl_5$--$SbCl_5$, phase studies on, 22:18794

NbTaCl$_8$--VCl$_4$, phase studies on, 22:18794

NIOBIUM TUNGSTATES

  crystal structure of high-temperature, electron microscope study of, 22:17780

NIOBIUM URANIUM OXIDES

  structure of crystalline, 22:50968

Nipodal

  see Proclorperazine

NITRATES

  see also Alkali Metal Nitrates
  see also Aluminum Nitrates
  see also Americium Nitrates
  see also Ammonium Cerium Nitrates
  see also Ammonium Nitrates
  see also Ammonium Uranyl Nitrates
  see also Barium Nitrates
  see also Bismuth Nitrates
  see also Calcium Nitrates
  see also Cerium Nitrates
  see also Cesium Nitrates
  see also Cesium Thorium Nitrates
  see also Cesium Uranyl Nitrates
  see also Chromium Nitrates
  see also Cobalt-Nitrates
  see also Copper Nitrates
  see also Dysprosium Nitrates
  see also Erbium Nitrates
  see also Europium Nitrates
  see also Gadolinium Nitrates
  see also Holmium Nitrates
  see also Iron Nitrates
  see also Lanthanum Nitrates
  see also Lead Nitrates
  see also Lithium Nitrates
  see also Lutetium Nitrates
  see also Magnesium Cerium Nitrates
  see also Magnesium Lanthanum Nitrates
  see also Magnesium Thorium Nitrates
  see also Manganese Nitrates
  see also Manganese Thorium Nitrates
  see also Mercury Nitrates
  see also Neodymium Nitrates
  see also Nickel Nitrates
  see also Nickel Thorium Nitrates
  see also Plutonium Nitrates
  see also Plutonyl Nitrates
  see also Potassium Nitrates
  see also Potassium Thorium Nitrates
  see also Praseodymium Nitrates
  see also Radium Nitrates
  see also Rare Earth Nitrates
  see also Rare Earth Oxide Nitrates
  see also Rubidium Nitrates
  see also Rubidium Thorium Nitrates
  see also Rubidium Uranyl Nitrates
  see also Ruthenium Nitrosyl Nitrates
  see also Samarium Nitrates
  see also Silver Nitrates
  see also Sodium Nitrates
  see also Sodium Thorium Nitrates
  see also Strontium Nitrates
  see also Tellurium Nitrates
  see also Terbium Nitrates
  see also Thallium Nitrates
  see also Thorium Hydroxide Nitrates
  see also Thorium Nitrates
  see also Thulium Nitrates
  see also Uranium Nitrates
  see also Uranyl Nitrates
  see also Ytterbium Nitrates
  see also Yttrium Nitrates
  see also Zinc Lanthanum Nitrates
  see also Zirconium Nitrates
  see also Zirconyl Nitrates
  analysis for cesium and potassium using sodium cyanotriphenylborate, gravimetric, 22:18707
  analysis for nitrogen-14/nitrogen-15 ratio in nitrogen-15-labeled, method for spectral, 22:33291
  analysis for nitrogen-15, infrared spectrometric method for, 22:12232
  analysis for uranium, colorimetric, 22:33262
  book: Continuous Compilation of New Reference Data on Diffusion Processes in Inorganic Solids and Their Melts, Vol. 1, No. 1, 22:31381
  complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
  complexes with uranyl ions, formation of, 22:25338
  content of diet, effects of, on thyroid secretion rate in young sheep, 22:51298(R) (COO-1484-3)
  corrosive effects of aqueous, on chromium--iron--nickel alloys, 22:8697
  corrosive effects of aqueous, on chromium--iron--nickel alloys, 22:19481(T) (BNWL-tr-25)
  determination in lanthanum chromite leach water, polarographic, 22:27530 (CEA-N-816, pp 9-65)
  determination in plutonium solutions, 22:37639(T) (ANL-Trans-610, pp 1-56)
  determination in pulverized corundum by isotope dilution techniques, 22:42644
  determination of trace amounts of, in deuterium oxide, spectrophotometric method for, 22:22970
  displacement experiments in soil column before and after radiosterilization, 22:42989
  distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
  distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
  distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
  distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
  distribution in northeast Pacific Ocean of, in Columbia River effluent, 22:14594 (RLO-1725-85)
  effects of ions of, on yields in gamma radiolysis of frozen aqueous solutions of perchloric acid and sodium perchlorate, 22:16578
  effects on contraction of cardiac muscle of amphibians, mammals, and reptiles, 22:10713
  effects on determination of scandium by atomic absorption, 22:45023
  effects on distribution of uranyl ions in 2,4-pentanedione--phosphoric acid ester, 22:27894
  effects on polarographic behavior of uranium, 22:27535 (NIM-129)
  effects on solvent extraction of thorium nitrates, precalculation of salting out, 22:10330
  effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
  effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
  effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
  effects on stability of molybdenum-containing fission products in acid solutions, 22:27845 (CEA-N-816, pp 150-276)
  nitrogen isotope exchange and fractionation between nitrite ions and, 22:18760
  radiation effects on, ESR studies of unstable intermediates in, 22:25405
  radioinduced production in soils, gamma, 22:42865
  radioinduced reduction to ammonia and nitrites in pure and seawater, γ, solar, and uv, 22:23078
  radiolysis of concentrated solutions of, effects of cations on yields in, 22:23034 (IA-1128, pp 78-96)
  radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
  radiolysis of solid, EPR spectral studies on mechanism of γ, 22:51041
  radiolysis of solid, studies on fragments and mechanism in, 22:30607
  reactions of aqueous solutions of, in pores of carbon of high surface area, effects of hydrochloric and nitric acids on, 22:4066(R) (COO-1354-13)
  reactions with lanthanides, spectral studies on effects of solvents on, 22:45010
  separation of cerium from phosphate-containing solutions of, by solvent extraction using ethylenebis[dioctylphosphine oxide], 22:10331
  separation of cerium from, by solvent extraction using ethylenebis[dioctylphosphine oxide], 22:10331
  separation of neodymium and samarium from aqueous solutions of, by solvent extraction using bis(2-ethylhexyl) esters of phosphoric acid, 22:21163
  separation of niobium, tantalum, and zirconium from, by solvent extraction using phosphoryl compounds, 22:6403
  separation of zirconium from solutions of, by solvent extraction using di-n-butyl phosphate, 22:131 (AERE-R-2945)
  uptake by seedlings of wheat following nitrogen depletion, 22:25718(R) (ORO-2410-9)
  uptake by seedlings of wheat following nitrogen depletion, 22:25719(R) (ORO-2410-10)

NITRIC ACID

  analysis for cadmium, copper, and lead, polarographic, 22:9(R) (NBS-TN-425)
  analysis for chromium, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
  analysis for free acid in solutions containing uranium by alkalimetric titration, 22:47096
  analysis for free acids, effects of hydrolyzable ions on automated ion exchange--colorimetric method for, 22:14448
  analysis for manganese, copper, zinc, and arsenic by neutron activation methods, 22:4050
  analysis for plutonium and uranium, spectrophotometric, 22:16416(T) (EURFNR-386)
  analysis for plutonium, rapid spectrophotometric, 22:21037
  analysis for protactinium-233, 22:7985 (AERE-AM-105)
  analysis for thorium and uranium, activation, 22:4042
  analysis for uranium by alkalimetric titration, 22:47096
  analysis for uranium by amperometric titration, 22:25240 (PG-Report-827)
  analysis of aqueous solutions of, for uranium, solvent extraction and polarographic, 22:48822
  barium distribution in, 22:25479
  cesium-137 leaching from sandy clay soils by, effects of high-level waste salts on, 22:21298 (DP-1124)
  corrosive effects of boiling 65 per cent solutions of, on Type 430 stainless steel, 22:36438
  corrosive effects of boiling, on aluminum/stainless steel couples, effects of uranyl nitrate on, 22:26026 (CEA-N-616, pp 106-44)

corrosive effects of hydrofluoric acid- and hydrogen peroxide-containing, on Corronel 230, Uranus 65, and Uranus B6, 22:25452 (CEA-N-616, pp 154-214)
corrosive effects on aluminum and beryllium, 22:26029 (ORNL-4229, pp 71-83)
corrosive effects on chromium--iron--nickel alloys, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
corrosive effects on low-carbon stainless steel at 95°C, effects of iron ions on, 22:26026 (CEA-N-616, pp 106-44)
corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
corrosive effects on molybdenum and molybdenum--titanium alloys, mechanism of, 22:38517
corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
corrosive effects on niobium--titanium alloys, factors affecting, 22:19484
corrosive effects on stainless steel, effects of graphite coupling on, 22:28732 (CEA-N-816, pp 102-39)
corrosive effects on tungsten, 22:43530 (BM-RI-7169)
corrosive effects on TZM molybdenum alloys, 22:43530 (BM-RI-7169)
diffusion in water at 25°C, 22:10158 (UCRL-17768)
dissolution of uranium dioxide by, mechanism of, 22:33362
effects on absorption spectra of plutonyl nitrates in aqueous solutions, 22:27650
effects on actinophages, mutagenic, 22:49295
effects on activity coefficients of diluents in systems with TBP--water and TBP--uranyl nitrate--water, 22:6405
effects on complexometric determination of zirconium in zircon and zirconium oxides using EDTA, 22:23
effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
effects on decomposition of tridodecylamine, effects of temperature on, 22:27845 (CEA-N-816, pp 150-276)
effects on determination of uranium by coulometric titration, 22:10171 (CNEA-192)
effects on dissolution of plutonium, 22:25452 (CEA-N-616, pp 154-214)
effects on hydroxamic acid formation in degraded kerosene and 2-methylundecane, 22:27557
effects on irradiated polyethylene, 22:14515(R) (COO-1614-1)
effects on oxidation and reduction of plutonium in processing of irradiated fuels, 22:47224
effects on polarographic determination of uranium in presence of small amounts of tributyl phosphate, 22:48822
effects on reactions of aqueous salt solutions in pores of carbon of high surface area, 22:4066(R) (COO-1354-13)
effects on separation of cesium from fission products by sorption on ammonium phosphomolybdate, 22:27880
effects on separation of rare earth isotopes by ion exchange in alcohol--water solutions, 22:35905
effects on solvent extraction of americium from lithium nitrate using dodecylmethylammonium nitrate, 22:6410
effects on solvent extraction of niobium-95 and zirconium-95 from uranyl nitrate using organic phosphorus compounds, 22:25467 (UJV-1912)
effects on solvent extraction of plutonium, uranium, and zirconium using TBP, 22:6409
effects on Solvesso 100, 22:16684
nitrogen-15 exchange between nitric oxide and, 22:42838
nitrogen-15 exchange between nitrogen oxides and, 22:47210
properties in tributyl phosphate--water systems, 22:154
radiolysis of aqueous solutions of, EPR studies on free radicals formed by alpha, 22:2101
reactions of dilute, with plutonium-238, kinetics of, 22:40148
reactions with amorphous boron, degree of oxidation of boron in, 22:2676
reactions with molybdenum oxides, effects of acidity on polymerization, 22:10350
reactions with plutonium, oxidation, 22:25452 (CEA-N-616, pp 154-214)
reactions with urea, mechanism of, 22:25452 (CEA-N-616, pp 154-214)
recovery system for, design of off gas cooler for, 22:25589
separation by solvent extraction using amides, spectral studies on, 22:6412
separation by solvent extraction using methylenebis[di-n-hexylphosphine oxide] in carbon tetrachloride, 22:6402
separation from aqueous solutions by solvent extraction using butyl phosphinates, butyl phosphonates, and trialkylphosphine oxides, 22:21158 (UJV-1148)
separation from fission product solutions by solvent extraction using trioctylamine, 22:21166
separation from uranium nitrate solutions, equipment design for, 22:14643
separation from water by solvent extraction using tridodecylamine, 22:27620 (CEA-N-816, pp 481-8)
separation of Arsenazo III complexes of uranium from solutions of, by solvent extraction using benzyl alcohol, 22:27882
separation of cerium from, by solvent extraction using phosphinates, phosphonates, or phosphine oxides, 22:42817 (UJV-1924)
separation of cesium from, by solvent extraction using nitrobenzene, mechanism of, 22:6415
separation of fission products or thorium from, by solvent extraction using triododecylamine, effects of plutonium on, 22:37862
separation of neptunium from solutions of, by solvent extraction using 4-benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one, 22:45174
separation of protactinium from, by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33493
separation of thorium and uranium from, by solvent extraction using phosphonates and TBP, comparison of, 22:33489
separation of uranium from aqueous solutions of, by solvent extraction using bis(2-ethylhexyl) phosphate, mechanism of, 22:33497
separation of uranium from solutions of, by solvent extraction using bis(2-ethylhexyl) orthophosphate, 22:2179
separation of uranyl ions from, by solvent extraction using phosphoorganic compounds, 22:6413
separation of uranyl nitrate from, by solvent extraction using carbon tetrachloride--TBP, spectral studies on competition in, 22:30674
separation of zirconium from solutions of, by solvent extraction using di-p-tolyl phosphate, 22:35897
separation of zirconium from, by solvent extraction using TBP, composition of solvate in, 22:12419
separation of zirconium from, by solvent extraction using TBP, 22:16662
solubility in dioctylarsinic acid, 22:22901(R) (ORO-2733-13)
solvent properties for aluminum, catalytic effects of mercury ions on, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for aluminum--uranium alloys, 22:27850 (CEA-N-816, pp 80-9)
solvent properties for antimony and lead, effects of hydrofluoric acid on, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for beryllium, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for EBR-II fuel elements, 22:48896 (IN-1192)
solvent properties for irradiated plutonium dioxide--uranium dioxide fuels, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for molybdenum--uranium dioxide fuels, 22:12408(T) (EURFNR-319)
solvent properties for molybdenum--uranium dioxide fuels, 22:2174 (KFK-573)
solvent properties for plutonium dioxide, catalytic effects of sodium dicyanamide on, 22:1956(R) (MLM-1405)
solvent properties for plutonium-bearing ashes, slags, and sweepings, 22:18867 (RFP-890)
solvent properties for TBP, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for thorium and uranium, mechanism of, 22:21167
solvent properties for thorium dioxide--uranium dioxide fuels, (E), 22:47702(R) (BAW-3809-3)
solvent properties for uranium dioxide, 22:8057
solvent properties for uranium dioxide, effects of crystallographic orientation on, 22:17180
solvent properties for uranium trioxide, kinetics of diffusion-controlled, 22:4091
spectra of americium in, 22:23003 (IA-1128, pp 97-146)
spectrophotometric studies at 25 to 250°C of aqueous, 22:42578 (ORNL-4279)
strontium distribution in, 22:25479
strontium-90 leaching from sandy clay soils by, effects of high-level waste salts on, 22:21298 (DP-1124)
use for extraction of calcium-45, strontium-90, and yttrium-90 from crushed bone in vitro, 22:49204
use in etching of electron-irradiated melt- or solution-crystallized polyethylene, 22:12380
1-butanol--HNO_3, effects on chromatographic behavior of actinides, 22:50974
$AgNO_3$--HNO_3, solvent properties for biological samples containing radioiodine, 22:22953
butyl dibutylphosphinate--HNO_3--H_2O, phase studies on solubility in, 22:6407
dioxane--HNO_3, use in thin-layer chromatographic separations of rare earths, scandium, thorium, uranium, and yttrium, 22:45176
DNO_3--HNO_3--H_2O, molecular state and thermodynamics of, 22:45029 (UCRL-18043, pp 7-105)
dodecane--HNO_3--Pu--tridodecylamine, phase studies of, 22:40154 (CEA-R-3478)
dodecane--HNO_3--TBP, work regions in horizontal pulse extractor for, 22:25468 (UJV-1929)
ethanol--HNO_3, effects on chromatographic behavior of actinides, 22:50974
$Fe(NO_3)_3$--HNO_3, solvent properties for molybdenum--uranium dioxide fuel, 22:2174 (KFK-573)
$Fe(NO_3)_3$--HNO_3, solvent properties for molybdenum--uranium dioxide fuel, 22:12408(T) (EURFNR-319)
H_2O--HNO_3--TBP--$UO_2(NO_3)_2$, effects of nitric acid on activity coefficients of diluents in, 22:6405
HCl--HNO_3--$HClO_4$, solvent properties for fissium--uraniu alloys, 22:43629(R) (LA-3933)
HF--HNO_3, effects on electrolytic dissolution of

plutonium, 22:30508 (RFP-1136)
HNO_3--H_2O_2, solvent properties for cerium oxide, 22:16652
HNO_3--H_2O_2, solvent properties for neptunium compounds with hydrogen peroxide, 22:30580
HNO_3--H_2O--TBP, effects of nitric acid on activity coefficients of diluents in, 22:6405
HNO_3--H_2O--TBP, solvent properties for cerium, lanthanum, thorium, yttrium, and zirconium nitrates, chromatographic studies on effects of diluents on, 22:6405
HNO_3--H_2SO_4, separation of protactinium from, by solvent extraction using tridodecylamine, 22:25455 (CEA-N-616, pp 295-368)
HNO_3--H_2SO_4, solvent properties for plutonium in tridodecylamine, 22:27845 (CEA-N-816, pp 150-276)
HNO_3--H_2SO_4--H_3PO_4, solvent properties of aqueous, for clad ceramic fuels, 22:19670 (BNWL-624, pp 6.1-20)
HNO_3--methanol, effects on chromatographic behavior of actinides, 22:50974
HNO_3--oxalic acid, solvent properties for neptunium oxalates, 22:30580
HNO_3--$Pu(NO_3)_4$--TBP, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--$PuO_2(NO_3)_2$--TBP, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--TBP--$Th(NO_3)_4$, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--TBP--$UO_2(NO_3)_2$, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--tetrabutyl hypophosphate--tetrabutyl pyrophosphate, solvent properties for rare earths and transuranium elements, 22:27853 (INP-591/C)
HNO_3--tetrahydrofuran, use in ion exchange--solvent extraction separation of uranium from its fission products, 22:21152 (ANL-7401)
HNO_3--Th, compound formation in, ion exchange studies on stability constants for, 22:35822
HNO_3--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
ITRIDATION
method for surface protection of magnesium and magnesium alloys, 22:28751(P)
methods for A-286 alloy surfaces, 22:19477 (NASA-SP-5090)
methods for surfaces of stainless steels, 22:19477 (NASA-SP-5090)
ITRIDES
see also Actinide Nitrides
see also Aluminum Nitrides
see also Beryllium Nitrides
see also Boron Nitrides
see also Calcium Nitrides
see also Cerium Nitrides
see also Cesium Nitrides
see also Hafnium Nitrides
see also Iron Nitrides
see also Lanthanum Nitrides
see also Lithium Nitrides
see also Magnesium Nitrides
see also Niobium Nitrides
see also Nitridation
see also Oxynitrides
see also Plutonium Nitrides
see also Rare Earth Nitrides
see also Silicon Nitrides
see also Sulfur Nitrides
see also Tantalum Nitrides
see also Thorium Carbide Nitrides
see also Thorium Nitrides
see also Thulium Nitrides
see also Titanium Nitrides
see also Transition Metal Nitrides
see also Uranium Nitrides
see also Vanadium Nitrides
see also Zirconium Nitrides
book: Evaporation of Refractory Compounds, 22:34060
book: Interstitial Alloys, 22:19643
cohesion of transition metal, effects of valence on, 22:8828
crystal structure of, 22:25345
crystal structure of refractory, neutron diffraction method for, 22:36498
deposition of coatings of, from chemical vapors, 22:43636
formation during ammonia synthesis, 22:25345
mechanical properties for high temperature reactor applications, 22:4880
production of, review of methods for, 22:25345
properties of plasma-sprayed, 22:47704
radiation effects on, ESR studies of unstable intermediates in, 22:25405
radiolysis of solid, EPR spectral studies on mechanism of γ, 22:51041
sintering of, effects of, on chemical reactivity, 22:25345
thermodynamics of, 22:25345
uses of refractory coatings of, on graphite, 22:38607
ITRILES
see also Benzonitrile
see also Cyanides
see also Succinonitrile

electron drift velocity and scattering cross sections in, (E), 22:43859 (ORNL-TM-2257)
radioprotective effects of sulfur-containing derivatives of, testing in mice of x, 22:51853
radioprotective effects of, on nucleoproteins, 22:31143
synthesis of sulfur-containing derivatives of, 22:51853
NITRITES
see also Sodium Nitrites
determination by reaction with p-nitroaniline and azulene, effects of various elements on spectrophotometric, 22:29
determination of trace amounts of, in deuterium oxide, spectrophotometric method for, 22:22970
effects of ions of, on yields in gamma radiolysis of frozen aqueous solutions of perchloric acid and sodium perchlorate, 22:16578
effects on γ-radiolysis of sodium ruthenate, 22:27830
effects on reduction of cerium(IV) ions in aqueous nitric acid solutions, 22:23003 (IA-1128, pp 97-146)
nitrogen isotope exchange and fractionation between nitrate ions and, 22:18760
nitrogen isotope fractionation between nitric oxide and ions of, 22:18763
oxidation rates of, measurements of, 22:8733 (ORNL-4170, pp 45-8)
radiation effects on content of, in soil, mechanism for γ, 22:10731
radiation effects on, ESR studies of unstable intermediates in, 22:25405
radioinduced production in soils, gamma, 22:42865
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
reactions with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
reactions with plutonium ions, 22:33293 (ARH-SA-12)
yields in γ, solar, and uv radioinduced reduction of nitrates in pure and seawater, 22:23078
yields in radiolysis of concentrated nitrate ion solutions, effects of cations and oxygen on, 22:23034 (IA-1128, pp 78-96)
NITROCELLULOSE
see also Celluloid
characteristics as solid-state particle track detector, 22:33631 (AD-666543)
radiation effects on, track formation from charged particle, (T), 22:31953
use in alpha autoradiography for determining plutonium distribution in reactor fuel elements, 22:44942
use of thin films of, to record alpha particles from emitters in irradiated alloys, 22:40320 (CEA-R-3426)
Nitroform
see Methane, Trinitro-
NITROGEN
see also Nitrogen Fixation
abundance in A/sub m/ stars, (E), 22:29147
abundance in atmospheres of cool stars, (T), 22:43774
abundance in α Per and β Aqr, (E), 22:870
abundance in carbon stars, (E), 22:8919
abundance in carbon stars, (T), 22:11157
abundance in chondrites, 22:2727
abundance in envelope of P Cygni, (E), 22:810
abundance in G and K stars, (T), 22:13179
abundance in galactic cosmic rays, (T), 22:17431
abundance in globular cluster stars, (T), 22:29015
abundance in HD 30353, (T), 22:868
abundance in helium stars, (T), 22:4952
abundance in M and S giant stars, (E), 22:23974
abundance in nuclei of M81 and M51, (E), 22:52388
abundance in photosphere, (E), 22:23956
abundance in primary cosmic radiation, (T), 22:21962
abundance in solar corona, (T), 22:849
abundance in solar flare of Sept. 2, 1966, (E), 22:36561 (N-68-10375)
abundance in supergiants HD 96248 and 14443, (E), 22:848
abundance of atomic, in nighttime auroral zone, (T), 22:19871
abundance of molecular, in lower thermosphere, (E), 22:15422
abundance of, solar, (T), 22:13206
activation analysis of total body, in man, neutron, 22:31007
activation of FFTF coolant cover-gas, 22:42164(R) (BNWL-775)
alpha differential elastic scattering cross section for, calculations using Akhieser--Pomeranchuk--Blair model, (T), 22:22548
alpha particle reactions at 30 keV to 40 MeV, electron capture cross sections for, 22:5075
alpha particle reactions with, ion pair production in, (E), 22:21861
alpha reactions at 800 MeV/c in nuclear emulsions, (E), 22:26804
alpha reactions at 82 to 98 MeV, cross sections for production of A greater than or equal to 6 fragments in, (E), 22:35221
analysis for methane and oxygen, high-pressure mass spectrometric method for, 22:9(R) (NBS-TN-425)
analysis for oxygen-18 by neutron time-of-flight spectrometry, 22:25256
argon ion (Ar^+) reactions at 0.1 to 10 eV with,

temperature variation of interchange and charge transfer in, (E), 22:29292
argon ion reactions with molecular, charge transfer cross sections for, 22:38792
atomic weight of, based on carbon-12 = 12, 22:42698
boiling burnout heat flux for, in subcooled forced-convection systems, 22:51174
burning in degenerate helium cores of low-mass red giants, (T), 22:26141
cesium reactions with, sensitized fluorescence in energy level mixing and quenching for, (E/T), 22:36728
charged-particle reactions with, cross-section data compilation for, 22:1600
chemistry of singly ionized molecular, in lower ionosphere, (T), 22:22066
compounds of, reactions of recoil carbon-14 in neutron-irradiated, 22:12339(R) (COO-1620-2)
compounds, isotopic frequency shifts in, calculation of reduced partition function ratios from, 22:33337
compression of liquid, by shock waves at 75°K, Hugoniot data on, 22:27624 (LA-3915)
concentration in vanadium exposed to 700°C sodium, 22:22653(R) (ANL-7419)
content as contaminant in plutonium carbide--uranium carbide fuels, 22:45806(R) (WARD-3791-21)
content in reduced steel, effects of rare earth additions, 22:19527
content of γ-irradiated soils, effects of, on plant growth, 22:52038
content of plants and zooplankton in Puerto Rico, 22:22904 (PRNC-104, pp 90)
content of serum of beagle dogs, 22:28622 (ANL-7278, pp 95-131)
content of shells of mollusks in relation to γ-radiosensitivity of shell color, 22:10855
content of soil, nitrogen-15 tracer study of, 22:6766
content of yeast cells, relation of, to postradiation recovery, 22:31290
contents in tantalum and tungsten foils, after heat treatment in vacuum, 22:43572 (UCRL-71029)
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
density variations of, upper atmosphere, 22:36834
detection of atomic, at 120 to 280 km, (E), 22:36854
determination as impurity in carbon dioxide, gas chromatographic, 22:33258
determination by activation methods, bibliography on, 22:33210 (SC-R-68-1723)
determination by gamma activation methods, 22:27
determination by gamma activation methods, 22:1975
determination by gamma spectrometry, quantitative, 22:33226
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination in 1300°F liquid sodium, development of methods for, 22:50735(R) (GEAP-5648)
determination in aluminum-killed steel by isotope dilution method using nitrogen-15-labeled aluminum nitride, 22:21045
determination in blue copepod Pontella mimocerami, 22:21024 (PRNC-104, pp 75-82)
determination in ceramic uranium compounds, 22:38635(T) (ORNL-tr-1918)
determination in ceramic uranium compounds, 22:50904(T) (NP-tr-1687)
determination in ceramic uranium compounds, 22:42589 (JUL-517-RW)
determination in FFTF fuel materials, 22:5 (BNWL-SA-1388, pp 10.1-14)
determination in food products, activation, 22:1961 (ORO-2980-17)
determination in frittered uranium dioxide, colorimetric, 22:27530 (CEA-N-816, pp 9-65)
determination in gases by deuteron activation and time-of-flight spectrometry, 22:27587
determination in gases by neutron time-of-flight spectrometry, 22:42612
determination in gases using deuteron activation with neutron time-of-flight spectroscopy, 22:11948(R) (NP-17216)
determination in gluten by gamma spectrometry, quantitative, 22:33226
determination in metals and steel, fusion method for, 22:27530 (CEA-N-816, pp 9-65)
determination in metals by inert-gas fusion, 22:22930(R) (NBL-242)
determination in metals, methods for, 22:25236 (CEA-N-616, pp 20-71)
determination in niobium by neutron activation methods, 22:6283
determination in niobium by spark-source mass spectrography, 22:25273
determination in nuclear metals, gas chromatographic, 22:33258
determination in organic and organometallic compounds by combustion and gas chromatography, 22:48813 (DP-1150)
determination in organic compounds, computer-controlled system for, 22:30436(R) (UCRL-50006-68-1)
determination in plutonium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in plutonium dioxide using α-reaction γ spectra, 22:18704
determination in plutonium--uranium nitrides by Kjeldahl procedure, 22:28777(R) (BMI-1837)
determination in radioactive alloys by remote combustion and inert gas fusion, 22:22983
determination in refractory metals, spectrophotometric, 22:16448
determination in silicon carbide by proton activation methods, 22:27585
determination in sodium reactor coolant cover gases, development of analyzer for, 22:43629(R) (LA-3933)
determination in sodium, survey of methods in U.S. laboratories for, 22:22927 (BNWL-690)
determination in solids by neutron activation methods, 22:12
determination in solids, graphite resistance furnace for use in inert gas diffusion method of, 22:44971 (AERE-R-5763)
determination in titanium by proton-beam activation, microscale, 22:30427 (BNL-50083, pp 192-202)
determination in tungsten and molybdenum, vacuum-degassing method for, 22:10974
determination in uranium mononitride by modified vacuum-fusion and wet-chemical methods, 22:33263
determination in vanadium, method for, 22:27530 (CEA-N-816, pp 9-65)
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of combined, in tungsten powder, method for spectrophotometric, 22:31
determination of trace amounts of, by photon activation methods, 22:16388 (CEA-R-3307)
determination of trace amounts of, in uranium dioxide, 22:12256
determination of traces of, in aluminum, activation methods for, 22:50907
determination of weight ratio to fluorine in fossil bones and teeth by photon activation methods, 22:27592
determination of, state-of-the-art review on, 22:50903 (BNWL-821)
deuteron reactions using recoil deuterons, average cross sections for, (E), 22:11910
diffusion from sol-gel thorium dioxide and thorium dioxide--uranium dioxide particles, 22:35778 (ORNL-TM-2268)
diffusion in niobium alloys, 22:8737 (ORNL-4170, pp 65-79)
diffusion in synthetic graphite at high temperatures, porosity measurements from, 22:34112
diffusion in tungsten at 1800 to 2600°C, kinetics of, 22:38558
diffusion in uranium nitrides, neutron activation methods for studying, 22:12
dissociation in ionosphere, 22:26318
distribution and lifetime of, between 100 and 280 km, (T), 22:13357
effect on corrosion of beryllium, 22:4748
effect on photoluminescence spectra of cadmium sulfides, 22:1317
effects of atmosphere of, on gamma radiosensitivity of proteins, 22:45133
effects of dissolved, on mechanical properties of niobium, 22:644 (AD-647889)
effects of solid, on ir spectra of heavy water at 5°K, 22:12315
effects of solid-solution, on radioinduced embrittlement of steel, 22:11010
effects on activation analysis of petroleum for sulfur, 22:48831
effects on amino acid content of γ-irradiated RNAase, 22:28378
effects on α-radiosensitivity of Escherichia coli, 22:25873
effects on boron hardenability of low-carbon structural steel, 22:49745
effects on combustion of aluminum droplets, 22:16367 (SC-DC-67-2295)
effects on crystallinity of heat-treated, γ-irradiated polytetrafluoroethylene, NMR spectral studies on, 22:51000
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on ductility of niobium and niobium--zirconium alloy wires, 22:19554
effects on effectiveness of radiation processing of seafoods, 22:26017(R) (TID-23835)
effects on electric conductivity of cold-worked tantalum at 300 to 800°K, 22:34062
effects on electron-radiosensitivity of ovaries in mice, 22:43418
effects on emission spectra and work function of rhenium, 22:41046
effects on frequency of x-radiosensitivity of mutagenesis in fruit flies in, 22:14987
effects on γ- and x-radiosensitivity of life span of wasps, 22:40860
effects on γ-radiosensitivity of DNA, 22:45397
effects on γ-radiosensitivity of Escherichia coli,

22:21569
effects on hardness and nitride precipitation in niobium and niobium--zirconium alloys, 22:677
effects on hardness of niobium and niobium--zirconium alloy wires, 22:19554
effects on high-temperature properties of chromium, 22:6986
effects on isotopic oxygen exchange on platinum powders, 22:18753
effects on mechanical and physical properties of niobium, 22:683
effects on mechanical properties of Zircaloy-2, 22:21663
effects on mutagenic x-radiosensitivity of silkworm spermatids, 22:47501 (NP-17136)
effects on pitting corrosion of stainless steels, 22:31332
effects on properties of niobium alloys, 22:23706 (BM-RI-7116)
effects on radiation embrittlement sensitivity of steel, 22:19577 (BNWL-455, Paper 9.1-34)
effects on radiation recovery of spermatids of Drosophila melanogaster, 22:521
effects on radioinduced embrittlement of A302-B steel, 22:43615(R) (BNWL-710)
effects on radioinduced luminescence of rare gases, 22:95 (AD-646604)
effects on radiosensitivity of poplars, 22:4700(R) (TID-24146)
effects on radiosensitivity of sperm of Drosophila, 22:40615(R) (EUR-3889)
effects on repair of radiation damage in sperm of Drosophila, 22:25821
effects on slip in iron and iron alloys, 22:38595
effects on Snoek damping in tantalum, 22:13567
effects on stability of alloys and metals at 3500°F, 22:37775 (BNL-50082, pp 40-78)
effects on storage of sperm in spermatheca of fruit flies, 22:14987
effects on stress corrosion cracking of Type 304 stainless steel, 22:43531(R) (TID-24567)
effects on superconducting properties of niobium--titanium alloys, (E), 22:34563
effects on tensile properties of hafnium, interstitial, 22:23769
effects on tensile properties of titanium, interstitial, 22:23769
effects on tensile properties of zirconium, interstitial, 22:23769
effects on x-irradiation of uracil, 22:14530
effects on x-radiosensitivity of chemoluminescence of oleic acid, 22:28343
effects on x-radiosensitivity of chromosomes in Drosophila melanogaster, combined effects of dose fractionation on, 22:28411
effects on x-radiosensitivity of chromosomes in HeLa cells, 22:36245
effects on x-radiosensitivity of spermatids and spermatozoa in Drosophila, 22:25821
effects on x-radiosensitivity of sunflower seedlings, 22:43478
effects on Zircaloy-2 corrosion by water, 22:21663
electric conductivity of sodium-seeded plasma of, 22:37775 (BNL-50082, pp 40-78)
electric conductivity of, effects of suspended lanthanum boride powder on, 22:47877
electric discharges in, analysis of Townsend, 22:9371
electric discharges in, boundary conditions in wall-stabilized arcs, (E/T), 22:48121
electric discharges in, ion drift velocities and reactions in, 22:5077
electric discharges in, ionization waves in, (E/T), 22:38780
electric discharges in, temperature profiles of arc, (T), 22:9360
electron beam interactions with, collision wave structure in, 22:9377
electron beam interactions with, rotational temperature measurements from, 22:9038
electron collisions with, radiative lifetime using phase-shift method, 22:41331
electron diffusion and drift velocity in, time-of-flight measurement of, 22:5105
electron drift motion and resonance scattering in gaseous, (T), 22:38756
electron drift velocities at 273 to 473°K in, (E), 22:15328 (ORNL-TM-1444)
electron emission from metastable molecules of, in low-pressure discharges, secondary, (E), 22:9378
electron energy distributions and transport coefficients in, in electric fields, (T), 22:26253
electron impact spectra at 33 to 100 eV and scattering angles up to 16°, (E), 22:43881
electron reaction with molecular at 1 to 12 eV, excitation in, (E), 22:34255
electron reactions at 10 to 50 keV with molecules of, quasi-elastic ejection of valency electrons in, (T), 22:50036
electron reactions at 250 to 2200 eV with, energy dependence of single- and double-ionization cross sections for, (E), 22:17407
electron reactions at high energies with, calculation of ionization cross sections for, 22:7170
electron reactions near excitation threshold with, detection of triplet and temporary negative ion states from, 22:17399
electron reactions with atomic, elastic scattering cross sections and polarization for 5.5 and 10 eV, (T), 22:38757
electron reactions with atomic, ionization cross sections for, (T), 22:17363
electron reactions with atoms of, effects of isotropic thermal motion on s-wave scattering phase for slow, (T), 22:41351
electron reactions with diatomic molecules of, rotational transitions and excitation cross sections for 0- to 25-eV, (E/T), 22:41293 (NP-17519)
electron reactions with molecular, excitation cross sections for, 22:11194 (LA-3783)
electron reactions with molecular, oscillatory energy and cross-section dependence of resonant, (T), 22:43929
electron reactions with molecular, rotational and vibrational excitation in, (T), 22:21905
electron reactions with, cross sections for production of singly charged ions in, (T), 22:45932
electron reactions with, cross sections for simultaneous excitation and ionization of, (E), 22:21872
electron reactions with, formation of highly excited atoms in, 22:47820
electron reactions with, production and detection of metastable excited states in, (E), 22:24027 (UCRL-18032)
electron reactions with, production of long-lived excited states from, (E), 22:29275
electron resonant scattering by, angular distribution for, (T), 22:52547
electron scattering at 10 to 40 eV, spectra from, 22:5061
electron scattering by, accuracy of measurements using photographic recording, 22:5113
electron scattering by, low-energy, 22:48872(R) (CALT-532-37)
electron scattering on $1s^22s^22p$/sup q/ level of, cross section for, 22:7132 (ORNL-4168, pp 119-82)
electron scattering on molecular, theory of, 22:5060
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electron-excited luminescence in, (E), 22:2840
electron-impact excitation of, in aurorae, secondary, 22:13327
energy exchange at 298°K with tungsten filaments at high temperatures, 22:45799 (UCRL-18043, pp 155-82)
energy exchange at low pressures with tungsten filaments at 700 to 2800°K, 22:28815
energy level lifetime of, atomic, 22:5081
energy level lifetimes of, measurement of electronic, 22:13221
energy level transitions in molecular, forbidden electronic, 22:11193 (CALT-532-20)
equilibrium constants with uranium and uranium nitride at 1300 to 1500°C, 22:21764
equilibrium pressures over niobium--nitrogen solid solutions as function of temperature, 22:41100(T) (ORNL-tr-1942)
equilibrium pressures over nitrogen--tantalum solid solutions as function of temperature, 22:41100(T) (ORNL-tr-1942)
excitation of metastable molecular, many gases for de-, (E), 22:29296
excitation time of $B^3\pi$/sub g/ state of, at high temperature, 22:2802
fission fragment reactions with, excitation along entire track in, (E), 22:5106
gamma dose distributions in liquid, from fast neutron absorption, (E), 22:26759 (GA-8485)
gas accumulation of, effects of burnup on Yankee Power Reactor fuel elements, 22:24978 (WCAP-6087)
heavy particle reactions with diatomic molecules of, dissociation cross sections for, (E/T), 22:41293 (NP-17519)
helium atom reactions with, close-coupling calculations for inelastic, 22:29281
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
helium ion reactions with gaseous, ionization cross sections for 0.2- to 1.8-MeV, (E/T), 22:38738
helium ion reactions with molecular, charge transfer cross sections for, 22:38792
helium-3 ion reactions at 7.7 to 166 keV with, cross sections for single and double electron capture in, (E), 22:944 (UCRL-17756)
helium-3 reactions with, 22:14433 (ORNL-4196, pp 66-89)
helium-ion reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
helium-ion reactions at 7.7 to 166 keV, electron capture cross sections for, 22:13230
helium-ion reactions with molecular in upper atmosphere, cross sections for, 22:29365
helium-ion reactions with molecular, charge exchange in, 22:5063
helium-ion reactions with molecular, rate constants for, (E), 22:50010
helium-ion reactions with vibrationally excited molecular, afterglow, (E), 22:29243

hydrogen atom reactions at 60 to 150 keV with, cross sections for excitation in, (E), 22:8997
hydrogen atom reactions with, optical spectra from, 22:5071
hydrogen ion scattering in, intensity distribution of band structure in, (E), 22:2797
hydrogen reactions with molecular, optical emission from, (E/T), 22:13260
hydrogen--ion reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
hydrogen-ion range in, at 5 to 50 keV, (E/T), 22:999
hyperfine constants of ^4S ground state, 22:9099
iodine ion reactions at 13.7 to 64 MeV in, cross sections for electron loss in, (E), 22:52508
iodine-ion reactions at 19 and 55 MeV, electron capture cross sections for, (E), 22:31629
ion reactions with molecular, transfer of rotational and vibrational energies in, (E), 22:21895
ion stopping below 200 keV in, electronic cross sections for Z equals to or less than 10, (E), 22:26225
ion stopping powers at 5 to 90 MeV in, (E), 22:43920
ionization limits for $^3P_2$, $^3P_1$, and $^3P_0$ ground levels of N II, calculation of, 22:34258
ionization of, isotope effects on transition probabilities for, 22:35820
iron atom reactions with, ionization ratios from, (E), 22:961
isotopic exchange between molecules of, in single-pulse shock tube, 22:4120
isotopic exchange reactions catalyzed by molybdenum, mass spectrometric study of, 22:37747
lead-206 recoil reactions with, ionization, energy loss, and particle range in, (E), 22:29225
mesic deuterium atom reactions with, muon transfer in, 22:9024
meson (π^-) absorption and scattering cross sections at 0.6 to 1.6 MeV, optical model analysis of, (E/T), 22:48455
meson (π^-) absorption by atoms of, meson (π^0) yields in, (E), 22:13929
meson (π^-) absorption by, lithium-8 production in, (E), 22:13952
metabolism by apple trees, 22:10725
metabolism in wheat, tracer studies of, 22:51445
metal atom resonance radiation quenching in gaseous, cross sections for, (E), 22:29289
molecular beams of, production and properties of, 22:19781
neutron cross sections for, effects on fast neutron penetration in air, (T), 22:7614 (LA-3810)
neutron cross sections for, error analysis using perturbation theory, (T), 22:32448
neutron dose distributions and spectra in liquid, from 14-MeV source, (E), 22:26759 (GA-8485)
neutron scattering cross sections for molecules of, thermal and epithermal, (T), 22:29869
nitrogen ion reactions at 100 to 1000 eV with, cross sections for charge exchange in, (E), 22:21884
nitrogen reactions at 20 to 200 eV, cross sections for molecular, (E), 22:19773
nitrogen-15 enrichment of, by photolysis of nitric oxide, 22:8184
nitrogen-ion reactions with molecular, cross sections for, (E), 22:5059
nitrogen-ion reactions with, resonance charge exchange cross sections for, 22:45960
oxygen ion (O^+) reactions at 0.1 to 10 eV with, temperature variation of interchange and charge transfer in, (E), 22:29292
oxygen ion reactions with molecular, temperature dependence of rate coefficients for, (E), 22:24163
oxygen-ion reactions with molecular, rate coefficients for molecular ion formation in, 22:9022
oxygen-ion reactions with molecular, rate coefficients for molecular ion formation in, 22:9023
oxygen-ion reactions with molecular, rate constants for, (E), 22:50010
oxygen-ion reactions with vibrationally excited molecular, afterglow, (E), 22:29243
performance as atmosphere for failed fuel element examination, 22:4413
performance as working fluid, in closed-loop Brayton cycle turbocompressors, 22:2270 (NYO-3237-9)
permeation and solution in molybdenum and tungsten, 22:34756
photo-ionization cross sections for, 150-A, 22:31613
photoelectric cross sections for gaseous molecular, measurement of, 22:19148
photoionization of atomic, cross sections for, (E), 22:36752
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
plasma jet of, microwave interferometry for electron density measurements of, 22:34612
plasma jets of, heat transfer in circular tubes, 22:7280
plasma jets of, self-compression of, 22:39095
plasma jets of, spectroscopic determination of local temperatures in, (E), 22:34601
plasma jets of, temperature determination from electric conductivity measurements, 22:36896
plasma of, collision processes in, 22:34642 (AD-666946)
plasma of, diffusion and surface catalysis effects in decay of, (E), 22:19980
plasma of, effect of collisions on production of harmonics in, 22:39106
plasma of, electric conductivity in potassium-seeded, (T), 22:39126
plasma of, electric conductivity of potassium-seeded, 22:52769 (AD-672249)
plasma of, electric conductivity of shock-heated potassium-seeded, 22:5359
plasma of, electron density and temperature from spectra line intensities in, (T), 22:41544 (INR-859)
plasma of, electron velocity distribution in, non-Maxwellian form of, (E), 22:11443
plasma of, energy level kinetics in afterglow, 22:31827
plasma of, generator for, 22:44187
plasma of, interactions with beams in beam-generated systems, (T), 22:22166
plasma of, Langmuir probe measurement of electron density in, 22:34615
plasma of, modes of screw instability in positive column, 22:5388
plasma of, population of excited levels in, 22:31824
plasma of, spectra of laser-heated, (E), 22:9346
plasma of, temperature effects on electron--ion recombination in afterglow, 22:5344
plasma of, thermal conductivity and viscosity of thermal-equilibrium, (T), 22:26414
plasma of, thermal conductivity in electric arcs, 22:9332
potassium atom reactions with molecular, excitation transfer and quenching in, (E), 22:13242
potassium ion diffusion at low energies in, drift velocities from, (E), 22:29293
production in radiolysis of acetonitrile, mechanism of, 22:37775 (BNL-50082, pp 40-78)
properties in electric arc heaters, 22:11473
properties of, computer code for thermodynamic and transport, 22:42965 (WANL-TME-1753)
proton and hydrogen atom reactions with, charge transfer cross sections for, 22:38794
proton reactions at .25 to 4.50 MeV, electron capture cross sections for, 22:11215
proton reactions at 0.15 to 1.0 MeV, excitation cross sections for molecular, 22:9064
proton reactions at 0.15 to 1.00 MeV with, formation of excited states in, (E), 22:5042(R) (ORO-2591-33)
proton reactions at 20 keV to 100 MeV with, cross sections for electron capture in, (T), 22:43943
proton reactions at 30 keV to 40 MeV, electron capture cross sections for, 22:5075
proton reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
proton reactions at 440 keV to 13.75 MeV with, cross sections for electron capture and loss in, (E), 22:2816
proton reactions at 5 to 120 keV, electron capture cross sections for, 22:5089
proton reactions at 5 to 45 keV with molecular gases of, fragmentation from, (E), 22:29267
proton reactions at 60 to 400 keV with, cross sections for excitation in, (E), 22:8997
proton reactions on stellar, production of beryllium, boron, and lithium in, (T), 22:811
proton reactions using recoil protons, average cross sections for, (E), 22:11910
proton reactions with atomic, Born estimates for electron capture from, 22:29263
proton reactions with atomic, ionization cross sections for, (T), 22:17363
proton reactions with molecular, electron capture into n = 3 states from 10- to 35-keV, 22:41371
proton reactions with molecular, excitation spectra for, (E/T), 22:41310
proton reactions with, optical spectra from, 22:5071
proton spallation of, solar production of lithium, beryllium, and boron isotopes from, (T), 22:19732
radiation chemistry in water-cooled reactors, 22:27768
radiation effects on adsorption by tungsten, electron, 22:11012
radiation effects on content of ammonium- and nitrate-, in soils, γ, 22:23450
radiation effects on content of, in black-eyed pea seedlings, effects of seed exposure on fission neutron and γ, 22:21638
radiation effects on content of, in erythrocyte stroma i rabbits, x, 22:40824(T) (JPRS-44070, pp 19-23)
radiation effects on content of, in liver of rats, acute x, 22:25969
radiation effects on content of, in liver of rats, effects of fasting on x, 22:12917
radiation effects on content of, in shoots of corn and radishes, effects of dose on x, 22:33977
radiation effects on distribution of, in mice, effects o homologous or isologous bone marrow on, 22:19277
radiation effects on excretion of, in large intestine of rats, whole-body γ, 22:33922
radiation effects on metabolism of, in rats, γ and x, 22:51775
radiation effects on release of, from soils, effects of moisture content on γ, 22:26021
radiation effects on total volatile, in fillets of Bomba

duck, 22:4722
radiation effects on, in liver of rats, effects of dose on x, 22:442
radioinduced fixation by diphenylmethane, effects of iodine on yields in electron, 22:30630
radioinduced fixation in aqueous solutions, 22:27768
radioinduced fixation in soils, gamma, 22:42865
radioinduced fixation of atmospheric, review on, 22:23063
radioinduced fixation of, yields in homogeneous γ, 22:37775 (BNL-50082, pp 40-78)
radioinduced ion pair production in, measurement of energy required for α, 22:36199
radioinduced isotopic exchange in gaseous, effects of oxygen and rare gases on, 22:10310
radioinduced luminescent processes in, proton and electron, (E), 22:5044(R) (ORO-3349-3)
radioinduced spectra in solid rare gases, 22:35829(R) (CALT-383-5)
radioinduced trapping in vanadium, fast neutron, 22:43615(R) (BNWL-710)
radioprotective effects of post-exposure soaking in water saturated with, on pea seeds, γ, 22:33863
radioprotective effects of, on potato seedlings, γ, 22:19397
radioprotective effects of, on spermatozoa of rabbits, cobalt-60 γ, 22:19376
radioprotective effects of, on wheat seeds, γ, 22:36405
reactions of excited molecules of, with argon, ionization cross sections for, (E), 22:26245
reactions of excited molecules of, with gold surfaces, secondary electron emission coefficient for, (E), 22:26245
reactions of plasma of, with tantalum for production of tantalum nitride, 22:15237(T) (MLM-1475(tr))
reactions with aluminum and uranium tetrachloride, preparation of uranium nitride by, 22:19612
reactions with argon, effect of molecular orientation on vibrational--translational energy transfer in, 22:5118
reactions with argon--potassium, nonequilibrium ionization from metastable, 22:34680
reactions with carbon monoxide, molecular-beam measurement of cross sections for, 22:935 (AGARD-CP-12(Vol.1), pp 363-76)
reactions with defects in fast neutron-irradiated iron alloys, 22:36510(R) (EURAEC-2037)
reactions with gases at 20 to 200 eV, cross sections for, (E), 22:19773
reactions with helium-3, calculation of interference, optimum bombarding energy, and sensitivity for, 22:8022
reactions with liquid sodium, 22:36543 (ANL-7450, pp 39-74)
reactions with molybdenum catalyst in synthesis of ammonia, 22:37747
reactions with nitrogen ions, 22:14513 (BNL-50057, pp 60-78)
reactions with nitrogen molecules, calculation of vibrational energy transfer probability in, 22:13210 (CALT-532-19)
reactions with nitrogen molecules, effect of molecular orientation on vibrational--translational energy transfer in, 22:5118
reactions with oxygen, ionization cross sections in slow, 22:2801
reactions with plutonium carbide at 400°C, 22:52259 (CEA-R-3536)
reactions with plutonium or plutonium hydride to prepare nonpyrophoric plutonium nitride, 22:15249(P)
reactions with thorium phosphides, thermodynamics of, 22:45044
reactions with titanium-metal sponge, use of kinetics of, for design of gettering system, 22:4065 (ANL-7167)
reactions with uranium carbide at 400°C, 22:52259 (CEA-R-3536)
reactions with uranium carbide at room temperature to 1000°C, kinetics of, 22:6300
reactions with uranium hexafluoride to form uranium nitride, 22:8686 (ORNL-4170, pp 108-14)
reactions with uranium monocarbide at 700 to 1200°C, kinetics of, 22:42649 (CEA-R-3398)
relaxation of gaseous, mechanism for vibrational, (T), 22:29279
removal from sodium, efficiency of cold traps for, 22:23194 (MSAR-67-203)
scattering by holmium-165, reduced magnetic dipole transition probabilities from inelastic, (E), 22:9866
scattering of molecular beams of, by nickel and stainless steel, flux and speed distributions in, (E), 22:47829
scattering of molecules of, by helium atoms at low energies, calculation of cross sections for rotational excitation in, 22:24032
scattering on atomic and molecular nitrogen at 4 keV, small-angle, 22:2804
separation from helium to be used as reactor cover gas using molecular sieve at low temperatures, 22:14558 (CEA-R-3366)
shock wave reflection in, microwave measurement of electron temperature in, 22:36890
shock waves in, calculation of gas parameters behind, 22:46181
solid, melting phenomena in, (T), 22:1123
solubility in cerium--nickel alloy at 298°K and 760 mm Hg, 22:19533
solubility in iron and iron--lanthanum alloys, 22:2561
solubility in liquid sodium, 22:647(R) (BNL-50077)
solubility in liquid sodium, 22:36543 (ANL-7450, pp 39-74)
solubility in molybdenum, effects of temperature and pressure on, 22:19536
solubility in sodium, 22:52257 (ANL-7425, pp 94-129)
solubility in tantalum at 1600 to 2300°K, 22:13019
solubility in Type 384 stainless steel at 538 to 982°C, 22:45746(R) (EURAEC-2026)
solubility in Types 304, 308, and 384 stainless steel, temperature dependence of, 22:43531(R) (TID-24567)
solubility in water, 22:4084
sorption by titanium films, development of ultrahigh vacuum system to study, 22:23253
sorption on (001) and (110) surfaces of molybdenum monocrystals, 22:32063
sorption on tungsten surfaces, electron diffraction analysis of, 22:15192
sorption on tungsten, field-emission, microscopic study of second-layer migration with trapping on first-layer sites, 22:46289
spectra in auroral, vibrational development of second positive system, (T), 22:24157
spectra in type-B red aurorae, 22:52628
spectra of solid, infrared, (T), 22:3175 (UCRL-70723)
spectra of, effects of trace methane on mass, 22:96(R) (RRL-2310-214)
spectra of, ionization states of unidentified lines in, 22:36716
spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
spectrum in aurorae, (E), 22:31703
spectrum in night airglow of neutral, 22:34373
spectrum of molecular, in aurorae, (E), 22:31703
spectrum of molecular, in day airglow, (E), 22:38886 (N-68-17332)
Stark effect constants for, quadratic, (T), 22:26204
temperature in ionospheric E region, vibrational, (T), 22:24155
thermodynamic properties of solid, (T), 22:3175 (UCRL-70723)
trace element content of organisms in relation to organic, 22:43311(R) (PRNC-85)
trace element content per gram of, in marine food chains, 22:43311(R) (PRNC-85)
trapping at radioinduced defects in vanadium, time--internal friction study of, 22:31427 (ORNL-4246, pp 51-5)
trapping of interstitial solute, in neutron irradiated and quenched iron, 22:34791
triton reactions up to 3 MeV with, LET for, 22:10761 (MIT-952-4, pp 132-201)
use as bearing lubricant in Brayton cycle turbocompressor, 22:2269(R) (NYO-3237-8)
use of liquid, to cool welding electrodes, 22:41015
x-ray absorption coefficients for, in 2- to 200-A region, 22:11199
x-ray spectra from π- and μ-mesic atoms of, (E), 22:20482
yields from gamma radiolysis of nitrous oxide, 22:47176
yields from radioinduced hydroxylation of 4-nitrophenol, 22:16585
yields from radiolysis of ammonia, effects of scavengers on, 22:2127
yields from radiolysis of nitrogen oxides, 22:4200
yields in gamma radiolysis and uv photolysis of liquid nitroethane, 22:10298
yields in gamma radiolysis and uv photolysis of liquid nitromethane, 22:10297
yields in gamma radiolysis of alkaline aqueous solutions of sodium hypobromites, effects of acidity and nitrous oxide on, 22:30628
yields in gamma radiolysis of alkane or alkene and nitrous oxide systems, 22:2117
yields in gamma radiolysis of ammonia, effects of density and carbon tetrachloride, ethane, and nitrous oxide on, 22:18839
yields in gamma radiolysis of liquid alkanes, effects of nitrous oxide and propene on, 22:18824
yields in gamma radiolysis of liquid ammonia, 22:2114
yields in gamma radiolysis of methanol solutions containing nitrous oxide, effects of solutes on, 22:10281
yields in γ radiolysis of liquid and solid nitrogen tetroxide, 22:33426
yields in photolysis and radiolysis of nitrous oxide in alcohol solutions, effects of potassium hydroxide on, 22:23034 (IA-1128, pp 78-96)
yields in radiolysis of benzene vapor containing nitrous oxide, 22:30591(R) (RRL-2310-231)
yields in radiolysis of gaseous benzene--nitrous oxide mixtures, 22:96(R) (RRL-2310-214)
yields in radiolysis of nitrous oxide adsorbed on molecular sieve and silica gel, 22:37775 (BNL-50082, pp 40-78)
yields in radiolysis of nitrous oxide--propane mixture, effects of methyl bromide on, 22:96(R) (RRL-2310-214)
CO_2--He--N_2, plasma of, infrared emission from

electrically excited, (E), 22:1229
CO_2--N_2, plasma of, infrared emission from electrically excited, (E), 22:1229
NITROGEN DEUTERIDES
spectra of, determination of rotational constants for emission, 22:27661
spectra of, rotational analysis of band, 22:27662
NITROGEN FIXATION
radiation effects on capacity for, in Azotobacter, γ, 22:21428
NITROGEN HYDRIDES NH
spectra of, determination of rotational constants for emission, 22:27661
spectra of, effects of deuterium on emission, 22:10233
Nitrogen Hydrides NH_3
see Ammonia
NITROGEN IONS
abundance in exosphere, (E), 22:47962
abundance of N_2^+, in twilight atmosphere, 22:34433
acceleration of triply ionized, in Kyoto cyclotron, 22:35191
airglow emission from, altitude distribution of daytime, (T), 22:52624 (N-68-21756)
atomic and molecular ion abundances in beams of, (E), 22:21883
atomic and molecular ion abundances in beams of, (E), 22:21884
collisions with monovalent oxygen ions, superimposed-beam technique for neutralization cross section of, (E), 22:26240
drift velocity measurements in air, 22:31617
effects on biological materials at 5 to 100 keV from recoil, (E), 22:29271
effects on surface properties of silicon at 50 keV, (E), 22:34771
effects on zinc-activated zinc oxides, deterioration depth, energy loss, and light output in, (E), 22:13586
electron impact excitation of molecular, at 80 to 1500 eV, (E), 22:15369
electron reactions with molecular at 10, 15, and 500 eV, dissociation cross sections for, (E), 22:965
electron reactions with molecular, excitation at 5 to 30 eV from, (E), 22:38749
energy distributions of recoil, in radiation chemistry, 22:25403
excitation by protons of molecular, in auroras, (E), 22:13341
excitation of beams of, by thin carbon target foil, (E), 22:26237
excitation of positive molecular, electron impact cross section for, (E), 22:17423
fluorescence from N_2^+ in electron bombardment of air, 22:11195 (LA-3793)
formation of molecular, oscillatory energy and cross-section dependence of resonance electron--molecule scattering in, (T), 22:43929
identification of N IV in solar spectrum, (E), 22:8877
implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
implantation in silicon crystals, distribution profiles for, (E), 22:26481
implantation in silicon single crystals at 2 MeV, (E), 22:37017
line strengths in $2p^2$--$2p3s$ arrays in chromospheric spectrum of, intermediate-coupling, (T), 22:43827
photo-ionization cross sections for, (T), 22:49920
photon reactions with negative, photodetachment cross sections for, (T), 22:38757
production and density in ionosphere, 22:38807
production by pulsed duoplasmatron, 22:9724(T) (ANL-Trans-535)
production from electron reactions with oxygen, long-lived excited states in, (E), 22:29275
radiation effects on pulse-height defects in thin-window surface-barrier silicon detectors, 22:28088
range in methane, at 5 to 50 keV, (E/T), 22:999
range in methane, biological effects from, (E), 22:29271
reaction of N_2^+ with H_2, D_2, and HD, product energy and angular distribution from, (E), 22:34290
reaction with oxygen molecules, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
reactions and drift velocities in nitrogen discharges, 22:5077
reactions N_2^+ + O_2^- at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions N^+ + O^- at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions of molecular, with argon, carbon dioxide, and nitrogen at 100 to 1000 eV, cross sections for charge exchange in, (E), 22:21884
reactions of molecular, with deuterium, deuterium hydride, and hydrogen, dynamics of, 22:52517
reactions of molecular, with deuterium, deuterium hydride, and hydrogen at 25 to 135 eV, angular and energy distributions of products from, (E), 22:50049
reactions with acetylene at 0.5 to 1,200 keV, mass spectrometric studies on, 22:27800
reactions with carbon foils, radiative lifetimes from, 22:5081
reactions with clean and gas-coated molybdenum surfaces, electron ejection in, (E), 22:11560
reactions with clean molybdenum at 30 to 400 eV, effects of electronically excited ions on Auger electron emission in, (E), 22:29223
reactions with clean molybdenum at 30 to 400 eV, effects of angle of incidence on Auger electron emission in, (E), 22:29224
reactions with deuterium and hydrogen at 6 to 30 eV, velocity spectra of product ions from, (E), 22:19745
reactions with deuterium molecules, kinetics of, 22:40068
reactions with deuterium of molecular, crossed-beam studies of, (E/T), 22:34285
reactions with hydrogen, lifetime measurements of molecular excited states from, 22:34247
reactions with methane, dynamics of scattering in, 22:45029 (UCRL-18043, pp 7-105)
reactions with molecular nitrogen, cross sections for, (E), 22:5059
reactions with molecular oxygen at 0.05 to 1 eV, charge exchange cross sections for, (E), 22:13216
reactions with molecular oxygen, rate constants for, (E), 22:50010
reactions with molybdenum, secondary electron production in, (E), 22:21883
reactions with nitrogen, 22:14513 (BNL-50057, pp 60-78)
reactions with nitrogen oxide of atomic and molecular, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
reactions with nitrogen, resonance charge exchange cross sections for, 22:45960
reactions with thin celluloid films, lifetimes of metastable states produced in, (E), 22:34249
reactions with titanium at 3 to 9 keV, sputtering in, 22:15332
scattering of sunlight by molecular, resonance, (T), 22:17493
scattering on pure and alloyed copper and gold at 30 to 100 keV, structure analysis from, 22:17786
spectra of N V in OB supergiant stars, uv, (E), 22:4957
spectra of, from Penning-type ion source, 22:3567
spectra on passage through thin carbon targets, (E), 22:24039
spectral line broadening in high-voltage condensed discharges, (E), 22:43922
spectrum in auroral, (T), 22:17535
spectrum of molecular, in auroral, (E), 22:17515
stopping in argon and nitrogen below 200 keV, electronic cross sections for, (E), 22:26225
transition probabilities for triplet--singlet transitions in N VI, (E), 22:50022
use for doping silicon by ion implantation at 1 to 2.5 MeV, 22:16862
x-ray emission by N VII in solar spectrum, (E), 22:34137 (AD-663415)
x-ray emission from N VII, measurements of solar, 22:34230
NITROGEN ISOTOPES
abundance ratio of, x-ray spectrometer for measuring, 22:21393
determination in biological materials by optical spectrometry, 22:37644 (CEA-R-3410)
determination of variations in ratios of, instruments for, 22:6262
exchange and fractionation of, between nitrate and nitrite ions, 22:18760
exchange between nitrogen molecules in single-pulse shock tube, 22:4120
exchange between oxynitrogen compounds, 22:45147(R) (NYO-3462-4)
exchange between potassium cyanide and rhenium chloride amine complexes, 22:33357
exchange in nitrogen oxide mixtures and nitric acid--nitrogen monoxide systems, 22:45147(R) (NYO-3462-4)
exchange reactions catalyzed by molybdenum, mass spectrometric study of, 22:37747
fractionation between nitric oxide and nitrite ions, 22:18763
separation by carrier diffusion, 22:8182
separation by ion exchange in acetone and water solutions of ammonia, 22:16659
separation by thermal diffusion, 22:4364
separation by thermal diffusion, column coefficients for, 22:8302 (MLM-1439)
separation of, effects of temperature and flow rate of ammonia complexes in column on, 22:16655
separation of, interpretation of experimental results on ion exchange method for, 22:51058
separation on synthetic zeolites, 22:33491
spectra in deuterium-labeled ammonium ions, relative signs of NMR coupling constants and shifts in, 22:18758
NITROGEN ISOTOPES N-12
energy levels from boron-10 (He-3,n) reactions, (E), 22:26932(R) (NP-17434)
energy levels from boron-10 (He-3,n) reactions, (E), 22:48465
energy levels of, isobaric analog, (E), 22:37292 (UCRL-18263)
energy-level compilation, 22:35230
mass of, determination using boron-10 (He-3,n) reaction Q-value, (E), 22:48465

nuclear magnetic moment of, measurement using nuclear magnetic resonance with recoil polarization, (E), 22:46724
production in photon reactions (γ,π−) with carbon-12, partial transitions in, (T), 22:26605
ITROGEN ISOTOPES N-13
content of air, calculations of maximum permissible, 22:49338
energy level at 15.07 MeV from carbon-12 (p,γ) reactions, spin-parity assignment and multipole mixing ratio for, (E), 22:26841
energy levels from boron-11 (He-3,n) reactions up to 13.5 MeV, T = 3/2, (E), 22:11915
energy levels from carbon-12 (p,γ) reactions and proton elastic scattering, (E), 22:26989
energy levels from carbon-12 proton elastic and inelastic scattering, T = $^3/_2$, (E), 22:26909
energy levels from carbon-12 proton elastic and inelastic scattering, (E), 22:27051
energy levels from carbon-12 proton elastic scattering, spin-parity assignments and widths for, (E), 22:50537
energy levels from carbon-12 proton inelastic scattering, isobaric analog, (E), 22:30048(R) (PUC-937-307)
energy levels from carbon-13 (He-3,t) reactions, (E), 22:37292 (UCRL-18263)
energy levels from nitrogen-14 (d,t) reactions at 52 MeV, (E), 22:7651
energy levels from nitrogen-14 (He-3,α) reactions, (E), 22:26905
energy levels from nitrogen-14 (p,d) reactions, spectroscopic factors for, (E), 22:20484
energy levels from nitrogen-15 (p,t) reactions at 43.7 MeV, (E), 22:20494
energy levels from nitrogen-15 (p,t) reactions, spins and parities of, (E), 22:1599 (UCRL-17790)
energy levels from nitrogen-15 (p,t) reactions, spin--parity assignments for, (E), 22:53098
energy levels from proton scattering by carbon-12, widths of T = 3/2, (E), 22:20486
energy levels of, lifetimes of isobaric analog, (E), 22:26870
energy-level transitions from nitrogen-14 (He-3,α) reactions, (E/T), 22:18137
half life of, measurement of, 22:53099
photoproduction from oxygen-16 at 25 to 55 MeV, cross sections for, (E), 22:1601
production and discharge in Franscati linac tunnel calculation of, 22:47528(T) (NRC-TT-1332)
production by carbon-12 (d,n) reactions at 3 MeV, method for, 22:53099
production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
proton decay in carbon-12 (He-3,d) reactions, (E), 22:39629 (CONF-670970-, pp 229-42)
reactions of recoil, in irradiated aqueous solutions, 22:27768
use for determining lung function, 22:45631
ITROGEN ISOTOPES N-14
abundance in Population-II main-sequence stars, (T), 22:47760
alpha differential elastic scattering cross section at 104 MeV, diffraction pattern in angular distribution for, (E), 22:39594
alpha inelastic scattering at 22 MeV, γ Doppler shifts in, (E), 22:24848
alpha reactions (α,α'p) and (α,α'd) at 23 MeV, α--p and α--d coincidence spectra for, (E), 22:46716 (BMwF-FBK-68-06)
alpha reactions (α,d) at 8 to 10 MeV, detailed balance in, (E), 22:35293(R) (ORNL-4230)
alpha reactions (α,d) with, differential cross sections for, (E), 22:35238
alpha reactions (α,d) with, testing time-reversal invariance by detailed balance in, (E), 22:48471
alpha reactions (α,γ) at 1.0 to 1.7 MeV, cross sections and resonance widths for, (E), 22:50531
alpha reactions at 82 to 98 MeV, cross sections for, (E), 22:35239
boron-11 reactions (B-11,Be-10) and (B-11,B-10) at 116 MeV, cross sections and energy spectra for, (E), 22:9792
charged-particle reactions with, cross-section data compilation for, 22:1600
detection and identification of, use of plastic track detectors for, 22:10558
determination in agricultural samples of low nitrogen-15 content by optical spectrometry, 22:14443
determination of ratio of, to nitrogen-15 in labeled nitrates, method for spectral, 22:33291
deuteron differential elastic scattering cross section at 28 MeV, angular distribution for, (E), 22:53100
deuteron differential elastic scattering cross section at 28 MeV, optical-model analysis of angular distribution for, (T), 22:35234
deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
deuteron elastic scattering at 2 to 4 MeV, cross-section excitation function for, (E), 22:11911
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron reactions (d,α) at 2.3 to 5.8 MeV, angular distributions and excitation functions for, (E), 22:11911
deuteron reactions (d,α) at 28.5 MeV, differential cross sections for, (E), 22:3632
deuteron reactions (d,He-3) at 52 MeV, angular distributions for, (E), 22:27008
deuteron reactions (d,He-3) at 52 MeV, energy spectra and angular distribution of helium-3 from, (E), 22:7651
deuteron reactions (d,n) at 2.9 and 3.7 MeV, distorted-wave calculations of neutron polarization in, (E), 22:35247
deuteron reactions (d,n) at 3 MeV with, oxygen-15 production by, 22:53099
deuteron reactions (d,n) at 3.1 to 3.7 MeV, angular distributions of neutron polarization from, (E), 22:3611
deuteron reactions (d,p) at 1 to 2.2 MeV, spectroscopic factors from, (E), 22:20469
deuteron reactions (d,p) at 1.0 to 3.2 MeV, angular distributions of differential cross sections for, (E), 22:13948
deuteron reactions (d,p) at 12 MeV, angular distributions of differential cross sections for, (E), 22:9782
deuteron reactions (d,p) at 2 to 4 MeV, cross-section excitation functions for, (E), 22:11911
deuteron reactions (d,p) at low energies, theory for analyzing, (E/T), 22:9918 (CEA-R-3305)
deuteron reactions (d,p) with, angular distributions for, (E), 22:26888
deuteron reactions (d,t) and (d,He-3) at 28 MeV, angular distributions for, (E), 22:26931 (LYCEN-6789)
deuteron reactions (d,t) and (d,He-3) at 28 MeV, differential cross sections for, (E), 22:53100
deuteron reactions (d,t) at 52 MeV, energy spectra and angular distribution of tritons from, (E), 22:7651
effects on cultured mammalian cells, equipment and methods for studying, 22:26752
effects on high resolution spectra of nitric oxide, rotational, spin-orbit, and vibrational constants for, 22:33308
effects on ionization of nitrogen and its oxides, transition probabilities for, 22:35820
effects on near infrared spectra of nitrogen dioxide, molecular constants for, 22:33309
effects on spectra of nitrogen dioxide, 22:33349
electron inelastic scattering at 35 to 58 MeV, excitation of states at 8.90, 9.17, 10.43, and 11.01 MeV by, (E), 22:35220
electron inelastic scattering by, (E), 22:53095 (BMwF-FBK-68-11)
energy level at 8.49 MeV from carbon-13 (p,γ) reactions, spin-parity assignment for, (E), 22:32513(R) (ANU-P-400)
energy level calculations using velocity-dependent interactions, (T), 22:30105
energy levels at 8.90, 9.17, 10.43, and 11.01 MeV, excitation by electron inelastic scattering, (E), 22:35220
energy levels from α inelastic scattering, lifetime measurements using γ Doppler shift attenuation, (E), 22:24848
energy levels from carbon-12 (He-3,p) reactions, lifetimes and spins of, (E), 22:37300
energy levels from carbon-12 (He-3,p) reactions, lifetime measurements using Doppler- shift method, (E), 22:37281(R) (NYO-72-191)
energy levels from carbon-12 (He-3,p) reactions, spin-parity assignments for, (E), 22:44613
energy levels from carbon-12 (He-3,p) reactions, spin-parity assignments for, (E), 22:50550
energy levels from carbon-12 (He-3,pγ) reactions at 3.0 and 3.5 MeV, spin-parity assignments for, (E), 22:48468
energy levels from carbon-13 (He-3,d) reactions, (E), 22:11950(R) (ORO-3624-1)
energy levels from carbon-13 (He-3,d) reactions, low-lying, (E/T), 22:5783
energy levels from electron inelastic scattering, (E), 22:53095 (BMwF-FBK-68-11)
energy levels from nitrogen-14 (α,α'p) and (α,α'd) reactions, (E), 22:46716 (BMwF-FBK-68-06)
energy levels from oxygen-16(d,α) reactions, (E), 22:11913
energy levels from proton elastic and inelastic scattering at 15 MeV, (E), 22:26904
energy levels from proton inelastic scattering, (E), 22:29924
energy levels in giant resonance region, from carbon-13 (p,γ) reactions, (E), 22:26914
energy levels of, calculation of odd-parity, (T), 22:35382
energy levels of, calculations using deformed potentials, (T), 22:26860
energy levels of, calculations using deformed single-nucleon Hartree--Fock orbitals, (T), 22:44610
energy levels of, calculations using shell model with correlations in core, (T), 22:9954
energy levels of, calculations using shell model with Tabakin potential, (T), 22:50556

energy levels of, for charge dependence of nuclear forces from wave functions of low-lying, (T), 22:29934
energy levels of, lifetime measurements using Doppler shift attenuation, 22:14803
energy levels of, lifetimes and electromagnetic transition strengths for, (E), 22:44617
energy levels of, reduced α and triton widths for low-lying, (T), 22:15951 (JINR-P4-3681)
energy-level lifetimes and spins from carbon-12 (He-3,p) reactions, (E), 22:5762 (JINR-P6-3463)
energy-level spins and transitions from carbon-12 (He-3,pγ) reactions, (E), 22:9790
energy-level transitions in, matrix elements for E2 and M1, (T), 22:44612
energy-level transitions in, precision measurement of gamma energies from, (E), 22:15955
helium-3 differential inelastic scattering cross sections at 45 MeV, angular distributions for, (E), 22:37292 (UCRL-18263)
helium-3 reactions (He-3,α) at 14 MeV, differential cross sections for, (E/T), 22:18137
helium-3 reactions (He-3,α) at 14 MeV, DWBA analysis of differential cross sections for, (E), 22:26905
helium-3 reactions (He-3,α) with, α-p angular correlations from, (E), 22:41971
helium-3 reactions (He-3,d) at 11 MeV, angular distributions from, (E), 22:32502
helium-3 reactions (He-3,n) with, neutron time-of-flight spectra and Q-values for, (E), 22:48465
helium-3 reactions (He-3,t) at 45 MeV, angular distributions for, (E), 22:37292 (UCRL-18263)
meson (μ) capture by, gamma--neutrino correlations in polarized, (T), 22:14117
meson (μ^-) capture by, angular correlations for unique, (T), 22:7638 (JINR-E2-3600)
meson (μ^-) capture by, correlations of neutrinos and photons in, (T), 22:7649
meson (π^+) reactions (π^+,np) and (π^+,pp) at 40 and 100 MeV, excitation functions for, (T), 22:24829
meson (π^+) reactions (π^+,π^0) at 180 MeV, mechanism for single-charge exchange in, 22:39599
meson (π^-) reactions with, helium-8 production by, (E), 22:22551
neutron capture by, γ spectra and Q-value for, (E), 22:44616
neutron capture by, γ spectra from, (E), 22:20578 (WASH-1079)
neutron differential elastic scattering cross section at 14.8 MeV, (E), 22:18141
neutron elastic and inelastic scattering at 4.0 to 6.5 MeV, resonances in, (E), 22:53125
neutron inelastic scattering and nonelastic cross sections at 13 to 15 MeV, 22:20578 (WASH-1079)
neutron inelastic scattering at 5.8 to 8.6 MeV, differential cross sections and γ spectra for, (E), 22:20576 (ORNL-TM-2159)
neutron inelastic scattering at 5.8 to 8.6 MeV, γ spectra and production cross sections for, (E), 22:37291 (ORNL-TM-2267)
neutron inelastic scattering at 6.0 to 8.4 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
neutron reactions (n,α) and (n,p) at 5.8 to 8.6 MeV, differential cross sections and γ spectra for, (E), 22:20576 (ORNL-TM-2159)
neutron reactions (n,α) and (n,p) at 5.8 to 8.6 MeV, γ spectra and production cross sections for, (E), 22:37291 (ORNL-TM-2267)
neutron reactions (n,α) at 14 MeV, angular correlations and energy spectra for, (E), 22:35261
neutron reactions (n,α) at 14 MeV, differential cross sections and spectra for, (E), 22:20454
neutron reactions (n,α) at 14.1 MeV, angular distributions for, (E), 22:46721
neutron reactions (n,α) at 15 MeV, angular distributions for, (E), 22:44626
neutron reactions (n,α) at 6.0 to 8.4 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
neutron reactions (n,d) at 14.4 MeV, differential cross sections for, (E), 22:5798
neutron reactions (n,γ) with, use of lithium-drifted germanium gamma spectrometers for measurement of, 22:354
neutron reactions (n,p) and (n,np) at 14 MeV, cross sections for, (E), 22:35261
neutron reactions (n,p) with, carbon-14 production near sea level in cosmic, (E), 22:15964
neutron reactions (n,p) with, in nitrides, production of carbon-14 by, 22:4183
neutron total cross section at 2.0 to 4.2 MeV, (E), 22:20449 (CONF-680307-15)
neutron total elastic and nonelastic cross sections at 4 to 7 and 14 to 21 MeV, (E), 22:11949(R) (ORO-2972-47)
nitrogen-14 reactions (N-14,N-13) at 12, 14, 16, and 18 MeV, analysis using finite-range distorted-wave Born approximation, (T), 22:26880
nitrogen-14 reactions (N-14,N-13) at 6 MeV, Coulomb stripping in, (T), 22:27344
nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear electric quadrupole interaction in phenothiazine, 22:46199 (UCRL-18043, pp 183-98)
nuclear magnetic moment of, calculations using spin-orbit and tensor forces, (T), 22:44612
nuclear magnetic resonance of, Larmor frequency of, (E), 22:17792
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
nucleon potential from wave functions of low-lying levels of charge-dependent two-body, (T), 22:29934
photon reactions (γ,2n) and (γ,2p) at 29, 36, 46, and 54 MeV endpoint energy, (E), 22:53095 (BMwF-FBK-68-11)
proton capture at 0.97 to 1.96 MeV, gamma spectra from, (E), 22:11916
proton differential elastic and inelastic scattering cross sections at 3.7 to 5.7 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
proton differential elastic and inelastic scattering cross sections at 3.7 to 5.7 MeV, angular distributions for, (E), 22:37303
proton elastic and inelastic scattering at 15 MeV, angular distributions for, (E), 22:26904
proton elastic and inelastic scattering at 155 MeV, analysis using optical model and plane-wave impulse approximation, (E/T), 22:44606
proton elastic and inelastic scattering at 6 to 12 MeV, cross sections and spectra for, (E), 22:11949(R) (ORO-2972-47)
proton elastic and inelastic scattering by, resonances in, (E), 22:53125
proton inelastic scattering by, DWBA analysis with two-body tensor forces and central forces, (T), 22:50560(R) (RLO-1062-681)
proton reactions (p,α) and (p,He-3) at 30 MeV, spectra for, (E), 22:13927(R) (USC-136-132)
proton reactions (p,α) and (p,He-3) at 6 to 12 MeV, cross sections and spectra for, (E), 22:11949(R) (ORO-2972-47)
proton reactions (p,α) at 38 MeV, differential cross sections for, (E), 22:26893
proton reactions (p,α) at 40 MeV, angular distributions and cross sections for, (E), 22:24849
proton reactions (p,α) at 40 MeV, differential cross sections for, (E), 22:1598(R) (COO-1265-49)
proton reactions (p,α) at 5.0 to 5.6 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
proton reactions (p,α) from fast neutron reactions, average cross sections for, (E), 22:26932(R) (NP-17434)
proton reactions (p,d) at 156 MeV, angular and energy distributions for, (E), 22:20484
proton reactions (p,γ) at 2 to 3 MeV, γ spectra from, (E), 22:32513(R) (ANU-P-400)
proton reactions (p,γ) with, resonances in, (T), 22:20451 (JINR-P4-3674)
proton reactions (p,γ) with, resonances in, (T), 22:41948(T) (BNL-tr-218)
proton reactions (p,He-3) at 40 MeV, analysis using diffraction model, (T), 22:20728
proton reactions (p,n) at 180 MeV, mechanism of single-charge exchange in, 22:39599
proton reactions (p,n) from fast neutron reactions, average cross section for, (E), 22:26932(R) (NP-17434)
proton reactions (p,n) with, threshold energy and Q-value for, (E), 22:39597
proton reactions and scattering at 6 to 9 MeV, charged-particle yields and angular distributions for, (E), 22:29924
proton reactions at 125 MeV in emulsions, cross sections for, (E), 22:41976
proton reactions at 125 MeV in nuclear emulsions, isotope formation cross sections for, (E), 22:37301
proton reactions at 156 MeV, (E), 22:29918
proton reactions at 156 MeV, cross section for production of lithium-9 by, (E), 22:29912
proton reactions at 6 to 12 MeV, angular distributions and integrated cross sections for, (E), 22:39586
proton reactions with, spallation cross sections from, (T), 22:19733
reactions (N-14, N-13) with boron-10 and calcium-40, analysis using distorted-wave Born approximation, (T), 22:44773
reactions (N-14,3n) with indium-115 at 52 MeV, conversion-electron spectra from, (E), 22:30027
reactions (N-14,5n) with osmium-178, conversion-electron and gamma spectra from, (E), 22:30027
reactions (N-14,5n) with tantalum-181, conversion-electron and gamma spectra from, (E), 22:30027
reactions (N-14,α), (N-14,d), and (N-14,p) with silver-107 and silver-109 at 74 MeV, analysis using evaporation theory with angular momentum effects, (E/T), 22:44702
reactions (N-14,C-11) with boron-10, angular distributions for, (E), 22:3637
reactions (N-14,C-11), (N-14,F-18), and (N-14,N-13) with rhodium-103 at 140 MeV, effective interaction in, (T), 22:27339
reactions (N-14,C-13) with boron-10 at 8 to 18 MeV, cross sections for, (E), 22:42140
reactions (N-14,f) with gold-197 at 102 and 110 MeV,

fission-fragment angular distributions from, (E), 22:18215(T) (BNL-tr-192)
reactions (N-14,f) with gold-197, fission-fragment angular distributions from, (E), 22:1669
reactions (N-14,n) with deuterium at 30 MeV, oxygen-15 energy-level lifetimes from, (E), 22:3634
reactions (N-14,N-13) with boron-10 and calcium-40, angular distributions for, (E), 22:3637
reactions (N-14,N-13) with boron-10, optical-model analysis of, (T), 22:27334
reactions (N-14,N-13), (N-14,N-15), (N-14,O-15), and (N-14,O-16) with carbon-12 at 148 MeV, angular distributions and energy spectra for, (E), 22:20470
reactions (N-14,N-16) and (N-14,N-17) with gold-197 and tantalum-181, differential cross sections for, (E), 22:27196
reactions (N-14,p) and (N-14,Be-8) with deuterium and beryllium-9 at 30 MeV, nitrogen-15 energy-level lifetimes from, (E), 22:3634
reactions (N-14,xn) with tin isotopes at 60 to 110 MeV, production of lanthanum-128 isomer by, (E), 22:30007
reactions of 115-MeV ion beams of, with benzene or cyclohexane, LET effects in, 22:30593
reactions with lutetium-175 at 92 MeV, spectra of K x-rays from, (E), 22:30022
reactions with nitrogen-15 molecules, molecular-beam measurements of cross sections for, 22:935 (AGARD-CP-12(Vol.1), pp 363-76)
reactions with samarium-152 at 104 MeV, proton transfer in, (E), 22:24880
scattering by bismuth-209, gold-197, and uranium-238, angular distributions for elastic, (E), 22:18215(T) (BNL-tr-192)
vapor pressure of mixture of, with nitrogen-15, significant structure theory of, 22:4155
x-ray spectra of π-mesic atoms of, (E), 22:26924
ITROGEN ISOTOPES N-15
alpha reactions (α,Li-6) at 42 MeV, DWBA analysis of angular distributions for, (E), 22:37296
alpha reactions (α,Li-7) at 42 MeV, DWBA analysis of angular distributions for, (E), 22:37296
boron-11 reactions (B-11,Be-10) and (B-11,B-10) at 116 MeV, cross sections and energy spectra for, (E), 22:9792
charged-particle reactions with, cross-section data compilation for, 22:1600
concentration by exchange between nitric acid and nitric oxide, 22:42838
concentration by fractional distillation of mixture of methane and nitric oxide, 22:37865(P)
concentration in nitrogen in ammonia formed in electric discharges, 22:4254
concentration of, dual-temperature process for, 22:45147(R) (NYO-3462-4)
determination by activation analysis, review of, 22:31008
determination in agricultural samples of low nitrogen-15 content by optical spectrometry, 22:14443
determination in ammonia by proton activation and time-of-flight spectrometry, 22:27587
determination in enriched compounds, mass spectrometric, 22:35756
determination in potassium nitrate by infrared spectrometry, 22:12232
determination in solids by neutron activation methods, 22:12
determination of ratio of, to nitrogen-14 in labeled nitrates, method for spectral, 22:33291
determination using organic compounds, method for ir spectrophotometric, 22:40060
deuteron reactions (d,α) at 21 MeV, differential cross sections for, (E), 22:18133
deuteron reactions (d,n) at 2.5 to 4.0 MeV, polarization angular distributions for, (E), 22:22560(R) (ORO-1067-2)
deuteron reactions (d,n) at 3.1 to 3.8 MeV, angular distribution of neutron polarization from, (E), 22:44607
deuteron reactions (d,n) at 6 MeV, neutron time-of-flight spectrum from, (E), 22:5770
effects on high resolution spectra of nitric oxide, rotational, spin-orbit, and vibrational constants for, 22:33308
effects on infrared spectra and force constants of nitrosyl fluoride, 22:4110
effects on ionization of nitrogen and its oxides, transition probabilities for, 22:35820
effects on near infrared spectra of nitrogen dioxide, molecular constants for, 22:33309
effects on spectra of nitrogen dioxide, 22:33349
effects on thermal decomposition of azo compounds, 22:8079
electron differential inelastic scattering cross sections at 50, 53, and 57 MeV, (E), 22:22557
electron inelastic scattering by, (E), 22:53095 (BMwF-FBK-68-11)
energy level at 12.54 MeV, spin-parity assignment for isobaric analog, (E), 22:44621
energy level at 6.32 MeV from electron inelastic scattering, E2 and M1 radiative widths for, (E), 22:22557
energy level at 9.15 MeV from nitrogen-14 (n,γ) reactions, doublet, (E), 22:44616
energy levels and transitions from proton capture in carbon-14 at 352, 527, and 634 keV, (E), 22:1597(R) (COO-1120-68)
energy levels from beryllium-9 (Li-6,p) reactions, widths for, (E), 22:9798
energy levels from carbon-13 (He-3,p) reactions, branching ratios and spins of, (E), 22:9796
energy levels from carbon-14 (p,γ) reactions, (T), 22:20451 (JINR-P4-3674)
energy levels from carbon-14 proton elastic scattering, spin-parity assignments and widths for, (E), 22:41959
energy levels from electron inelastic scattering, (E), 22:53095 (BMwF-FBK-68-11)
energy levels from nitrogen-14 (d,p) reactions, (E), 22:9782
energy levels from nitrogen-14 (d,p) reactions, (E), 22:11911
energy levels from nitrogen-14 (d,p) reactions, isobaric analog, (E), 22:13948
energy levels in giant resonance region from oxygen-16 (γ,p) reactions, decay modes for, (E), 22:26919
energy levels of, calculations using coupling of collective states with particle and hole states, (T), 22:39595
energy levels of, core polarization effects on, (T), 22:26839
energy levels of, reduced α and triton widths for low-lying, (T), 22:15951 (JINR-P4-3681)
energy levels of, wave functions for, (T), 22:35235
energy-level doublet at 9.16 MeV, branching ratios for, (E/T), 22:35222
energy-level lifetimes from deuterium (N-14,p) and beryllium-9 (N-14,Be-8) reactions at 30 MeV, (E), 22:3634
energy-level transition probabilities for, calculation using shell model with intermediate coupling, (T), 22:15952 (JINR-P4-3684)
energy-level transitions from even-parity states in, sum rules for E1, (T), 22:53106
energy-level transitions from nitrogen-14 (d,p) reactions, (E), 22:26888
energy-level transitions from oxygen-16 (γ,p) reactions, (E), 22:26918
energy-level transitions in, precision measurement of gamma energies from, (E), 22:15955
enrichment in nitrogen by photolysis of nitric oxide, 22:8184
exchange between nitrogen oxides, 22:45147(R) (NYO-3462-4)
exchange between substituted benzamides and ammonia, 22:16485(R) (ORO-3234-6)
exchange equilibria in oxynitrogen compounds, effects of temperature on, 22:27735
helium-3 differential inelastic scattering cross sections at 40 MeV, angular distributions for, (E), 22:37292 (UCRL-18263)
helium-3 reactions (He-3,d) with, angular distributions for, (E), 22:39604 (CONF-670970-, pp 179-228)
helium-3 reactions (He-3,n) up to 11.88 MeV, fluorine-17 T = 3/2 energy levels from, (E), 22:11915
helium-3 reactions (He-3,p) with, angular distributions for, (E), 22:39604 (CONF-670970-, pp 179-228)
helium-3 reactions (He-3,t) at 40 MeV, angular distributions for, (E), 22:37292 (UCRL-18263)
incorporation into constituents of wheat kernels, 22:14968
meson (μ) capture by, gamma--neutrino angular correlation on, 22:53132
neutron binding energy from nitrogen-14 neutron capture, (E), 22:20578 (WASH-1079)
nuclear magnetic moment of, deviations from Schmidt lines in calculations with nonlocal two-body potentials, 22:44795
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
nucleon clustering in, from (α,Li-6) and (α,Li-7) reactions at 42 MeV, (E/T), 22:18157
photoabsorption cross section for, resonances in, (T), 22:41948(T) (BNL-tr-218)
photon reactions (γ,n) and (γ,p) with giant resonance excitation, total cross section for, (T), 22:53106
photon reactions (γ,n), (γ,p), and (γ,np), resonances in, (T), 22:20451 (JINR-P4-3674)
photon reactions (γ,p) in giant dipole resonance region, cross sections and proton spectra for, (T), 22:41948(T) (BNL-tr-218)
preparation by chemical exchange between nitrogen oxides in solvent carrier system, 22:136 (CU-755-4, Paper IV)
proton reactions (p,α) at 0.4 to 1.9 MeV, cross section for, (E), 22:32507
proton reactions (p,γ) at 0.4 to 1.9 MeV, gamma coincidence spectra from, (E), 22:32507
proton reactions (p,γ) at 1.16 MeV, γ--γ coincidence spectra for, (E), 22:50532
proton reactions (p,γ) with, giant resonances in, (E), 22:26914
proton reactions (p,He-3) and (p,t) at 44 MeV, differential cross sections and spectra for, (E), 22:1599 (UCRL-17790)
proton reactions (p,n) with, shell-model calculation of,

  (T), 22:29908
  proton reactions (p,t) and (p,He-3) at 43.7 MeV, carbon-13 and nitrogen-13 energy levels from, (E), 22:20494
  proton reactions (p,t) and (p,He-3) at 44 MeV, cross-section analysis using distorted-wave Born approximation, (E/T), 22:13947
  proton reactions (p,t) and (p,He-3) with, angular distributions for, (E), 22:53098
  proton reactions at 156 MeV, (E), 22:29918
  proton reactions at 156 MeV, cross section for production of lithium-9 by, (E), 22:29912
  reactions (N-15,N-16) and (N-15,N-17) with gold-197 and tantalum-181, differential cross sections for, (E), 22:27196
  reactions (N-15,N-17) with zirconium-90, -92, and -94, differential cross sections for, (E), 22:27196
  reactions with nitrogen-14 molecules, molecular-beam measurement of cross sections for, 22:935 (AGARD-CP-12(Vol.1), pp 363-76)
  separation by isotopic exchange between nitric acid and nitrogen oxides, equipment for, 22:47210
  separation from isotopes during synthesis of nitric oxide by high-frequency electrode-free discharge, 22:16657
  separation from nitric oxide by gas chromatography, column packings for, 22:138 (CU-755-4, Paper VI)
  uptake by apple trees, effects of previous nitrogen nutrition on, 22:10725
  use for determining DNA repair synthesis in uv-irradiated Escherichia coli, 22:52036 (ORO-3596-7)
  use of solid phase, for argon determination, 22:40213
  vapor pressure of mixtures of, with N-14, significant structure theory of, 22:4155
NITROGEN ISOTOPES N-16
  beta decay of, internal pair formation in, (E/T), 22:5806
  beta decay of, internal pair formation in, (T), 22:35397
  beta transitions to 0^+ states in oxygen-16, branching ratios for, (T), 22:30048(R) (PUC-937-307)
  determination in swimming pool reactor water, method for, 22:35760
  energy levels from carbon-14 (He-3,p) reactions, T = 2, (E), 22:20459
  energy levels from oxygen-18 (d,α) reactions, spin-parity assignments for, (E), 22:41970
  production in photon reactions (γ,π^+) with oxygen-16, partial transitions in, (T), 22:26605
  production in reactors, 22:16356 (KR-116)
  reactions of recoil, in irradiated aqueous solutions, 22:27768
NITROGEN ISOTOPES N-17
  beta decay with delayed neutron emission, neutron spectra for, (E), 22:24788 (IA-1128, pp 55-77)
  production in proton reactions with light-weight nuclei at 156 MeV, cross sections for, (E), 22:29912
NITROGEN ISOTOPES N-19
  production in proton reactions with gold-197 at 3 GeV, (E), 22:53169(R) (PPAD-647-D)
NITROGEN MUSTARDS
    see also Triethylamine, 2,2',2''-Trichloro-
  effects on activity of enzymes and mitosis in ascites hepatoma of rats, effects of sulfhydryl content on, 22:31272
  effects on amyloidosis induction in mice, 22:33720
  effects on chromosomes in roots of Vicia faba, combined effects of hydroxyurea on aberrant, 22:47505
  effects on chromosomes of Vicia faba, effects of hydroxyurea on mutagenic, 22:31022
  effects on development of mosaic eggs of Tubifex, 22:8610
  effects on Escherichia coli, injurious, 22:36413
  effects on replication of DNA in Escherichia coli, 22:19309(R) (SU-326-P-7-194)
  effects on retroperitoneal hematosarcomas of man, combined effects of iodine-131-labeled Lipiodol F on therapeutic, 22:51831
  effects on transport of sodium and water in intestines of rats, 22:10824 (BNWL-480, pp 1-19)
NITROGEN OXIDES
  chemistry in ionosphere, 22:26318
  chemistry of singly ionized, in lower ionosphere, (T), 22:22066
  decomposition of, shock tube studies of kinetics of, 22:4146
  decontamination by evaporation, 22:6552
  density variations of, upper atmosphere, 22:36834
  determination in reactor loop cover gas by gas chromatography, 22:1 (AECL-2770)
  determination of content of, in air of pharmacies during use of ultraviolet bactericidal devices, 22:33996(T) (JPRS-41315, pp 36-43)
  distribution and lifetime of, between 100 and 280 km, (T), 22:13357
  distribution in ionospheric D region, 22:41499
  effects on ESR of free radicals in x-irradiated trypsin, 22:10703
  effects on gamma-induced precipitation of metallic gold from aqueous solutions of gold chloride, 22:40133
  effects on γ-induced luminescence from phosphors in cyclohexane, 22:27759
  effects on γ-radiolysis of ethanol, 22:18818
  effects on γ-radiolysis of ferricyanides and ferrocyanides, 22:10304
  effects on γ-radiolysis of gaseous benzene, 22:18816
  effects on γ-radiolysis of pentane, 22:33405
  effects on hydrogen yields from γ-radiolysis of 2-propanol, 22:18819
  effects on hydrogen yields from γ-radiolysis of methylcyclopentane, 22:33438
  effects on steady-state γ- and pulse-electron-radiolysis of N,N-dimethyl-p-nitrosoaniline, 22:23067
  effects on yields from electron-irradiation of ethane an ethylene, 22:14552
  effects on yields from γ-radiolysis of argon--methane liquid solution, 22:21122
  electron impact spectra at 33 to 100 eV and scattering angles up to 16°, (E), 22:43881
  hydroxide (OH^-) reactions with, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
  muonium reactions with, cross sections for, (E), 22:514
  muonium reactions with, depolarization cross sections for, 22:5136
  nitrogen ion (N^+ and N_2^+) reactions with, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
  nitrogen-15 exchange between nitric acid and, 22:47210
  oxygen ion (O^+ and O_2^+) reactions with, energy dependenc of charge transfer at thermal and low energies for, (T), 22:34268
  oxygen ion (O^-, O_2^-, and O_3^-) reactions with, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
  paramagnetic resonance spectra of, in γ-irradiated potassium nitrate, 22:105
  plasma of, electron recombination, attachment, and diffusion in afterglow of, (E), 22:39130
  production and density in ionosphere of ions, 22:38807
  production of radicals of, by alpha radiolysis of aqueou nitric acid solutions, 22:2101
  radioinduced formation in technical and liquefied gases, neutron, 22:42797
  radioinduced formation of, in nasal mucosa of monkeys, effects of, on ability to detect exposure, x, 22:4948 (ORO-2903-39)
  radioinduced incorporation of, into cyclohexane and toluene, electron and γ, 22:2157
  radiolysis of liquid, effects of dose on yields from γ, 22:23048
  reactions of gaseous, with irradiated amide crystals, products of, 22:37775 (BNL-50082, pp 40-78)
  reactions with hexavalent plutonium, catalytic effects o iron on, 22:27845 (CEA-N-816, pp 150-276)
  reactions with hydrogen, shock tube studies of kinetics of, 22:4146
  reactions with technetium hexafluoride, magnetic properties and infrared spectra of compounds from, 22:16419
  solvent properties for uranium in TBP solutions containing dodecane, 22:27845 (CEA-N-816, pp 150-276)
  yields in γ radiolysis of liquid and solid nitrogen tetroxide, 22:33426
  cyclopentane--N_2O, radiolysis of, yields from γ, 22:23048
NITROGEN OXIDES NO
  argon ion (Ar^+) reactions at 0.1 to 10 eV with, temperature variation of interchange and charge transfer in, (E), 22:29292
  content of atmosphere at Hanford site, 22:6793 (BNWL-564)
  drift velocity of ionized, in air, (E), 22:31617
  effects on γ radioinduced surface activity of octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine, 22:40111
  effects on radioinduced isotopic exchange of gaseous nitrogen, 22:10310
  effects on radiolysis of 2-methylpropene, 22:8143
  effects on secondary reactions in radiolysis of gaseous and liquid cyclohexane, 22:35835
  effects on Wilzbach tritiation of crystalline polycyclic hydrocarbons, 22:65
  effects on yield in photolysis of deuterated and normal propane, 22:35869
  effects on yields in radiolysis of gaseous cyclohexane, 22:35836
  electron reactions at 250 to 2200 eV with, energy dependence of single- and double-ionization cross sections for, (E), 22:17407
  electron reactions with, production of long-lived excite states from, (E), 22:29275
  electron recombination, attachment, and diffusion studie in, 22:45927
  electron resonant scattering by, angular distribution for, (T), 22:52547
  energy exchange at low pressures with tungsten filaments at 700 to 2800°K, 22:28815
  energy level abundances in beams of NO^+, (E), 22:50005
  hydrogen atom reactions at 60 to 150 keV with, cross sections for excitation in, (E), 22:8997
  ion dissociation--recombination rate coefficients for, temperature effects on, (T), 22:21849
  ionization of, isotope effects on transition probabilities for, 22:35820
  nitrogen isotope fractionation between nitrite ions and, 22:18763

- photoionization of, mass spectral studies on concentration of ions in, 22:45029 (UCRL-18043, pp 7-105)
- photolysis of, isotopic enrichment of nitrogen by, 22:8184
- plasma of, electron energy relaxation in magneto-, 22:41576
- preparation by high-frequency electrode-free discharge, nitrogen-15 enrichment during, 22:16657
- production of positive ionic, from electron reactions with oxygen, (E), 22:29275
- proton reactions at 60 to 400 keV with, cross sections for excitation in, (E), 22:8997
- radioinduced desorption by tungsten, electron, 22:11011
- radioinduced spectra in solid argon and krypton, 22:35829(R) (CALT-383-5)
- radiolysis of aqueous solutions of, effects of pH on, 22:4200
- reactions in mesosphere, effects on electron densities, (T), 22:13333
- reactions $NO^+ + O_2^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
- reactions of positively ionized, with clean molybdenum at 30 to 400 eV, effects of electronically excited ions on Auger electron emission in, (E), 22:29223
- reactions of positively ionized, with clean molybdenum at 30 to 400 eV, effects of angle of incidence on Auger electron emission in, (E), 22:29224
- reactions with free radicals produced by radiolysis of polymers of high molecular weight, 22:37779(T) (ORNL-tr-1969)
- reactions with hydrogen and methyl radicals, 22:2152
- separation of nitrogen-15 and oxygen-18 from, by gas chromatography, column packings for, 22:138 (CU-755-4, Paper VI)
- solvent properties for plutonium, 22:25452 (CEA-N-616, pp 154-214)
- spectra of nitrogen-14- or -15- and oxygen-16-labeled, rotational, spin-orbit, and vibrational constants from high resolution, 22:33308
- yields from gamma radiolysis of nitrous oxide, 22:47176
- yields in gamma radiolysis and uv photolysis of liquid nitroethane, 22:10298
- yields in gamma radiolysis and uv photolysis of nitromethane, 22:10297
- cyclopropane--NO, photolysis of gaseous, 22:47198
- cyclopropane--NO, radiolysis of gaseous, 22:47198
- H_2O--methanol--NO, radiation effects on binding energy in solutions of, γ, 22:12389
- H_2O--NO, radiation effects on binding energy in solutions of, γ, 22:12389
- iodomethane--NO, photolysis of, termolecular recombination of iodine atoms in uv, 22:35779 (SC-RR-68-162)
- methane--NO, distillation at 106 to 109°K to concentrate carbon-13, nitrogen-15, oxygen-17, and oxygen-18, fractional, 22:37865(P)
- N_2O--NO, radiolysis of aqueous solutions of, 22:4200
- NO--N_2O_3, exchange reactions between, solvent carrier system for preparation of nitrogen-15 by, 22:136 (CU-755-4, Paper IV)

ITROGEN OXIDES NO_2 OR N_2O_4
- content of atmosphere at Hanford site, 22:6793 (BNWL-564)
- determination in atmosphere, colorimetric, 22:21029 (SC-M-67-3044)
- determination of desorbed, during shrinkage of thoria gels, chromatographic, 22:21055 (TID-24336)
- effects on γ radioinduced surface activity of octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine, 22:40111
- effects on photoinduced reaction between hydrogen and oxygen, time-of-flight mass spectrometric study of, 22:35779 (SC-RR-68-162)
- effects on radioinduced isotopic exchange of gaseous nitrogen, 22:10310
- fluorescence lifetime of, 22:45029 (UCRL-18043, pp 7-105)
- photolysis of, role of oxygen in uv, 22:10298
- production and discharge in Frascati linac tunnel calculation of, 22:47528(T) (NRC-TT-1332)
- production of ionized, in atmosphere, (E), 22:17346
- production of, economics of chemical-nuclear complex for, 22:45099
- radiation and thermal effects on decomposition of flowing, 22:23064
- radiolysis in one-dimensional flow, energy and mass transfer in, 22:23064
- radiolysis of liquid and solid, at -196 to 45°C, yields in γ, 22:33426
- reactions in mesosphere, effects on electron densities, (T), 22:13333
- reactions with deuterated and normal formic acid, autocatalysis and isotope effects in, 22:79
- reactions with deuterium-labeled formic acid, autocatalysis and isotope effects in, 22:2022(R) (COO-1142-77)
- reactions with free radicals produced by radiolysis of polymers of high molecular weight, 22:37779(T) (ORNL-tr-1969)
- spectra of nitrogen-14- or -15-labeled, molecular constants from near infrared, 22:33309
- spectra of, effects of nitrogen-14 and nitrogen-15 on, 22:33349
- viscosity of, 22:28013 (MLM-1430)
- yields in gamma radiolysis and uv photolysis of nitroethane, 22:10298
- yields in gamma radiolysis and uv photolysis of nitromethane, 22:10297
- HF--N_2O_4, solvent properties for thorium, uranium, zirconium, and their compounds, 22:10320 (CEA-R-3205)

NITROGEN OXIDES NO_3
- nitrogen-15 exchange between nitric acid and, 22:42838
- production of ionized, in atmosphere, (E), 22:17346

NITROGEN OXIDES N_2O
- decomposition on tungsten wire at 1400 to 1800°K, 22:28826
- effects on gamma radiolysis of methanol solutions with and without solutes, 22:10281
- effects on γ-radiolysis of aqueous eosin, 22:47164
- effects on γ-radiolysis of aqueous thymine solutions, 22:12382
- effects on γ-radiolysis of cyclohexane, 22:2156
- effects on γ-radiolysis of ethanol--water mixture, 22:16592
- effects on γ-radiolysis of solid cyclohexane, 22:12345
- effects on γ-radiosensitivity of DNA, 22:45397
- effects on luminescence of ionic processes in x-irradiated p-terphenyl in cyclohexane, 22:35872
- effects on mechanism of gamma radiolysis of 1,4-cyclohexadiene, 22:8114
- effects on pulsed electron-radiolysis of cysteamine, 22:2166
- effects on radioinduced crosslinking and degradation of hydrocarbon polymers, 22:6344
- effects on radioinduced polymerization of styrene, 22:8125
- effects on radioinduced polymerization of styrene, 22:42710(T) (AEC-tr-6937, pp 75-83)
- effects on radioinduced polymerization of styrene under anhydrous conditions, 22:8099(T) (AEC-tr-6908, pp 79-96)
- effects on radioinduced production of dicarboxylic acids, 22:21137(P)
- effects on radiolysis of aliphatic alcohols, 22:2156
- effects on x-radiolysis of water vapor containing methanol, 22:35853
- effects on yields from γ-radiolysis of liquid methanol, 22:37796
- effects on yields from x-radiolysis of water vapor, 22:27798
- effects on yields in gamma radiolysis of ammonia, 22:18839
- effects on yields in gamma radiolysis of water, 22:122
- effects on yields in radiolysis of tetrachloroethylene in dilute pentane solutions, mechanism of, 22:23034 (IA-1128, pp 78-96)
- effects on yields in radiolysis of vaporous methylcyclohexane, 22:102
- electron drift velocity and scattering cross sections in, (E), 22:43859 (ORNL-TM-2257)
- electron reactions with, production and detection of metastable excited states in, (E), 22:24027 (UCRL-18032)
- energy exchange at low pressures with tungsten filaments at 700 to 2800°K, 22:28815
- ion--molecule reactions at 0.3 to 10 torr in, negative, (E), 22:29290
- photolysis in methanol solutions, effects of carbon tetrachloride and potassium hydroxide on gaseous yields in uv, 22:23034 (IA-1128, pp 78-96)
- production of, mechanism for electrolytic, 22:23003 (IA-1128, pp 97-146)
- radioinduced decomposition of, kinetics of, 22:10310
- radiolysis in 2-propanol solutions, effects of potassium hydroxide on yields in, 22:23034 (IA-1128, pp 78-96)
- radiolysis of, adsorbed on molecular sieve and silica gel, yields in, 22:37775 (BNL-50082, pp 40-78)
- radiolysis of, adsorbed on silica gel or zirconia, γ, 22:35851
- radiolysis of, ionic processes in γ, 22:47176
- radiolysis of, rate constant for electron attachment in pulse, 22:30591(R) (RRL-2310-231)
- reactions with excited molecules from photolysis and radiolysis of alkanes, 22:16620
- sorption by tungsten wire at room temperature, 22:28826
- 1-butene--N_2O, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- 1-butene--N_2O--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- acetylene--N_2O, flame of, for use in atomic absorption spectroscopy, 22:37662
- acetylene--N_2O, flame of, for use in emission spectroscopy, 22:37663
- acetylene--N_2O, use of separated flames of, in analytical flame spectroscopy, 22:37664
- benzene--N_2O, radiolysis of gaseous, effects of carbon dioxide or sulfur hexafluoride on formation of nitrogen and phenol from γ, 22:42765
- benzene--N_2O, radiolysis of gaseous, yields of nitrogen and phenol in, 22:96(R) (RRL-2310-214)
- benzene--N_2O, radiolysis of, mechanism of nitrogen and phenol production by, 22:30591(R) (RRL-2310-231)
- butane--N_2O, radiolysis of gaseous, effects of alcohols

- on yields from γ, 22:10285
- CO_2--N_2O, effects on γ-radiolysis of liquid cyclohexane, 22:12346
- cyclohexane--N_2O, radiolysis of, effects of solutes and phosphors on nitrogen yields from γ, 22:27759
- ethane--N_2O, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- methane--N_2O, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- methylcyclohexane--N_2O, radiolysis of vaporous, effects of deuterioiodic acid and sulfur hexafluoride on yields in, 22:103
- N_2O--NO, radiolysis of aqueous solutions of, 22:4200
- N_2O--O, radiolysis of, yields in pulse, 22:30591(R) (RRL-2310-231)
- N_2O--propane, radiolysis of gaseous, effects of alcohols on yields from γ, 22:10285
- N_2O--propane, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- N_2O--propane, radiolysis of, effects of methyl bromide on methane and nitrogen yields in, 22:96(R) (RRL-2310-214)
- N_2O--propane--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- N_2O--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- N_2O--SiO_2, radiolysis of, effects of electron scavengers on yields from γ, 22:35851
- N_2O--ZrO_2, radiolysis of, effects of electron scavengers on yields from γ, 22:35851

NITROGEN OXIDES N_2O_3

- NO--N_2O_3, exchange reactions between, solvent carrier system for preparation of nitrogen-15 by, 22:136 (CU-755-4, Paper IV)

Nitrogen Sulfides

- see Sulfur Nitrides

NITROGEN SYSTEMS

- Ar--N, shock wave interactions with, radiation processes from nitrogen, 22:41610
- phase diagrams of, 22:11072 (ORNL-TM-2015)
- acetylene--N, electric discharge in, deuterium isotope effects on laser action from, 22:50982
- air--N, ultra-high-temperature measurement in plasma of, 22:46122 (N-68-24571)
- Ar--N, electric conductivity of sodium-seeded plasma of, effects of oxygen on, 22:37775 (BNL-50082, pp 40-78)
- C--Cr--Mn--Mo--N--Ni--Si--steel, transformations in TRIP alloy II, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
- C--Cr--Mn--Mo--N--Ni--Si--steel--V, transformations in TRIP alloy III, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
- C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38523(R) (N-68-13630)
- C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38522(R) (N-68-13625)
- C--N--Nb--steel, composition and crystal structure of delta- and epsilon-phase, 22:41120
- C--N--O--U, phase studies, 22:49680(R) (USBM-RC-1347)
- C--N--Pu, phase diagram, 22:52259 (CEA-R-3536)
- C--N--U, phase diagram, 22:52259 (CEA-R-3536)
- C--N--U, phase diagrams at 1500 to 1800°C, 22:48790
- C--N--U, phase studies of, 22:17140
- Cr--Mn--N--steel, transformations TRIP alloy I, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
- Cr-base--N, brittle-ductile transition properties of, effects of heat treatment and nitrogen content on, 22:17167 (IS-T-147)
- D--He--N, electric discharges in flowing, emission spectra of ND from, 22:10233
- ethanol--N, electric discharge in, deuterium isotope effects on laser action from, 22:50982
- ethyl ether--N, electric discharge in, deuterium isotope effects on laser action from, 22:50982
- ethylene--N, radiolysis of, yields of hydrogen cyanide from γ, 22:47177
- Fe--N, radiation effects on rate processes in, 22:15230
- Fe-base--N, tensile properties of, (E), 22:19575 (BNWL-455, Paper 5.1-10)
- H--He--N, electric discharges in flowing, emission spectra of NH from, 22:10233
- H--N, purification for deuterium enrichment process, 22:25488(P)
- H--N--O, cesium emission properties in various mixtures of, 22:27573
- H--N--Ti, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
- H--N--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
- He--N, collision processes in plasma of, 22:34642 (AD-666946)
- He--N, hydrogen ion scattering in, intensity distribution of band structure in, (E), 22:2797
- methane--N, electric discharge in, deuterium isotope effects on laser action from, 22:50982
- methane--N, ion currents in, mass spectral studies on, 22:30591(R) (RRL-2310-231)
- methanol--N, electric discharge in, deuterium isotope effects on laser action from, 22:50982
- N_2--Xe, light output of, as phosphor in proportional scintillation detector, 22:40427
- N--methane, electric discharges in, mass-spectrometric investigations of, 22:18810(R) (RRL-2310-223)
- N--Nb, thermodynamics of interstitial, 22:10984 (COO-1676-3)
- N--Nb--Ta, preparation and superconducting properties o wires of, (E), 22:17559
- N--Nb--Ti, preparation and superconducting properties o wires of, (E), 22:17559
- N--Nb--Ti, superconducting properties of reactively sputtered thin film, 22:29428
- N--Nb--Zr, preparation and superconducting properties o wires of, (E), 22:17559
- N--Nb--Zr, superconducting properties of reactively sputtered thin film, 22:29428
- N--O, effects on HT yields from recoil tritium reaction with hydrocarbons, 22:45125
- N--O, measurements on radiating, luminosity-temperature 22:37775 (BNL-50082, pp 40-78)
- N--O, radiation effects on reactions of carbon-11 recoi atoms in, reactor, 22:33453
- N--O, radiation emission from, spectral studies on, 22:37775 (BNL-50082, pp 40-78)
- N--O, radiolysis of gaseous, nitrogen fixation in fissi fragment and γ, 22:37775 (BNL-50082, pp 40-78)
- N--O, radiolysis of, computer solutions of reaction rat equations for ions from electron, 22:33370 (AD-66206
- N--propyl ether, electric discharge in, deuterium isoto effects on laser action from, 22:50982
- N--Pu, phase relations in, 22:2699
- N--PuC--UC, phase diagram, 22:52259 (CEA-R-3536)
- N--Ta, thermodynamics of interstitial, 22:10984 (COO-1676-3)
- N--Th--U, crystal structure of, 22:11072 (ORNL-TM-2015
- N--Th--U, fabrication by powder metallurgy, 22:11072 (ORNL-TM-2015)
- N--Th--U, phase diagram at 1000°C, 22:48790
- Nb--Ni--O, phase precipitation from supersaturated soli solutions of, effects of aging on, 22:11069

Nitromin

- see Diethylamine, 2,2'-Dichloro-N-methyl-, N-oxide

NITROPRUSSIDES

- see also Sodium Pentacyanonitrosylferrate

NITROSO COMPOUNDS

- (Organic compounds are entered here; for inorganic nitroso compounds see Nitrosyl Compounds.)
- see also Nitrosyl Compounds

NITROSYL CHLORIDES

- radiation effects on binding energy in gaseous, visible 22:12389

NITROSYL COMPOUNDS

- (Inorganic compounds are entered here; for organic nitroso compounds see Nitroso Compounds.)
- complexes with chromium, cobalt, iron, and manganese, bonding and structure in, 22:4138

NITROSYL FLUORIDES

- force constants in, effects of nitrogen-15 and oxygen-1 on, 22:4110
- isotopic exchange equilibria between other oxynitrogen compounds and, 22:45147(R) (NYO-3462-4)
- reactions with technetium hexafluoride, magnetic properties and infrared spectra of compounds from, 22:16419
- spectra of, effects of nitrogen-15 and oxygen-18 on infrared, 22:4110

NITROSYL PERCHLORATES

- radiation effects on, effects of temperature on radical formation in γ, 22:30626

Nitrosyl Ruthenium Nitrates

- see Ruthenium Nitrosyl Nitrates

NITROUS ACID

- effects on bacteriophages Ec9 and T6, inactivating, 22:49645
- effects on Escherichia coli, effects of strain on, 22:36414
- effects on Escherichia coli, injurious, 22:36413
- effects on fertility of Escherichia coli populations, 22:49650
- effects on mutant of Aspergillus nidulans, determinatio of sensitivity to, 22:28708
- effects on Neurospora crassa, mutagenic, 22:17018
- effects on oxidation and reduction of plutonium in processing of irradiated fuels, 22:47224
- effects on Schizosaccharomyces pombe, combined effects caffeine on lethal and mutagenic, 22:28416
- effects on transforming DNA of Bacillus subtilis, combined effects of deoxyribonuclease, dimethylsulfat and uv radiation on, 22:30971
- efficiency as backwashing agent for actinide-bearing solvents, 22:16689
- reactions with hexavalent plutonium, catalytic effects iron on, 22:27845 (CEA-N-816, pp 150-276)
- reactions with hydrazine or sulfamic acid in nitric aci rate of, for use in plutonium--uranium separations, 22:40061

NITROXIDE

- photochemical formation of, review of electron transfer processes in, 22:2150

NITROXIDE, DI-tert-BUTYL-

- light-induced oxidation of, in spinach chloroplasts, 22:30418 (UCRL-17852)

NITRYL FLUORIDES

(NO_2F)
reactions with technetium hexafluoride, magnetic properties and infrared spectra of compounds from, 22:16419
ITRYL TETRAFLUOROBORATES
effects on nitration of bromobenzene and chlorobenzene in tetrahydrothiophene 1,1-dioxide solutions, deuterium isotope effects on, 22:18800
effects on nitration of mixtures of benzene, alkylbenzenes, and halobenzenes in tetrahydrothiophene 1,1-dioxide solutions, 22:18800
IUE ISLAND
radioactivity of bones, plants, rocks, and soils on, 22:2215
OBELIUM
see also Actinides
bibliography on, 22:24860 (TID-3317)
chemical behavior in solutions, 22:27090 (UCRL-17907)
chemical properties of, 22:30579
chemistry of, ion exchange, precipitation, and solubility studies in, 22:23006 (UCRL-17996)
chromatographic behavior of, effects of oxidizing agent on, 22:30579
determination of, methods for, 22:23114
oxidation states of, 22:23006 (UCRL-17996)
preparation and properties, 22:21059
production and properties of, review on, 22:30035
production and separation of, review of, 22:6363
properties of, 22:18747
separation from element one hundred and four, 22:18747
separation of, methods for, 22:23114
OBELIUM CHLORIDES
volatility of, 22:18747
OBELIUM ISOTOPES
decay properties of, tables and charts on, (E), 22:7723
production and properties of, 22:27090 (UCRL-17907)
production and properties of, review on, 22:30035
production by heavy ion-induced reactions, effects of N = 152 subshell on, (E), 22:18210 (JINR-D7-3548, pp 65-70)
production using oxygen-16 and oxygen-18 reactions with plutonium-239 and plutonium-242, effects of N = 152 subshell in, (E), 22:46760(T) (ANL-Trans-636)
production using oxygen-16 and oxygen-18 reactions with plutonium-239 and plutonium-242, effects of N = 152 subshell in, (E), 22:46760(T) (ANL-Trans-636)
OBELIUM ISOTOPES No-251
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
OBELIUM ISOTOPES No-252
alpha decay of, α energies and half-life for, (E), 22:3696 (JINR-P7-3556)
alpha decay of, α energy and half-life for, (E), 22:39646
fission of, half-life for spontaneous, (E), 22:39646
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
OBELIUM ISOTOPES No-253
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
OBELIUM ISOTOPES No-254
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
OBELIUM ISOTOPES No-255
alpha decay of, α energies and half-life for, (E), 22:3696 (JINR-P7-3556)
alpha decay of, α energy and half-life for, (E), 22:39646
half-life and type of decay of, 22:42698
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
production by irradiation of plutonium with oxygen-16 ions, 22:30579
OBELIUM ISOTOPES No-256
alpha decay of, α energy and half-life for, (E), 22:24865
fission of, half-life for spontaneous, (E), 22:24865
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
OBELIUM ISOTOPES No-257
production by carbon-12 and carbon-13 reactions with curium-244, -246, and -248, excitation functions for, (E), 22:44740
oble Gases
see Rare Gases
OISE
see also Sound
book: Noises and Parametric Phenomena in High-Frequency Electron Devices, 22:21398
conference on reduction of electronic, 22:36122 (CONF-680303)
effects on radiosensitivity of space flight personnel, 22:6922
measurement of acoustic, for detection of mechanical equipment failure, 22:14606 (CONF-671011-, pp 284-313)
measurement of acoustic, for failure detection in machinery, 22:14738 (CONF-671011-, pp 247-55)
measurement of acoustic, for failure detection in electronic components, 22:14738 (CONF-671011-, pp 247-55)
measurement of F89 aircraft, at 100 percent power with afterburners, 22:6222 (SC-DR-67-803)
propagation of airport, methods for minimizing, 22:40235 (AECL-2787, pp 292-306)
reduction of probe shot, in plasma by electron--neutral atom collisions, 22:44096
reduction of spurious, in seismic arrays, 22:14600
rejection of spurious counts arising from electrical, in radiation detectors, 22:43054
suppression in building, use of acoustical tile for, 22:3970 (IDO-12016)
use of statistical properties of, for curve smoothing, 22:25705
Nomenclature
see Glossaries
NOMOGRAPHS
air pressure drop through constant-area heated passages, 22:4343 (PWAC-218)
design for energy and matrix correction of α measurements, 22:18974
materials stress-rupture, 22:270 (GEMP-555)
NONANAL
radioinduced production of, in beef, effects of, on flavor, γ, 22:8672
NONANE
effects on separation of strontium from sodium solutions by solvent extraction using bis(2-ethylhexyl) phosphate, synergistic, 22:35899
radioinduced oxidation of, at -78 to 140°C, mechanism of hydroperoxide formation by, 22:2120
radiolysis of liquid, ESR spectral studies on transient free radicals produced by electron-beam pulse, 22:42746
radiolysis of, free radical yields in, 22:42711(T) (AEC-tr-6937, pp 84-95)
radiolysis of, free radical yields in, 22:8126
NONANE, 1-PHENYL-
radiolysis of, yields of hydrogen from γ, 22:25393
1,9-NONANEDIAMINE
radioprotective effects of, on DNA, properties affecting x, 22:38379
NONANOIC ACID
effects on ion exchange separation of metals, 22:4087
Nondestructive Testing
see Materials Testing, Nondestructive
n-Nonyl Aldehyde
see Nonanal
NORBORNANE
stereochemistry of 2,3-dihalo derivatives of, 22:40055
NORBORNANE, 2,3-DIBROMO-
dehydrobromination of, effects of deuterium on, 22:40055
2-NORBORNANOL, 2-PHENYL-
p-nitrobenzoates, solvolysis of exo- and endo-, effects of deuterium on, 22:40082
2-NORBORNANONE
reactions with borohydride ions, secondary kinetic deuterium isotope effects in, 22:27667
2-NORBORNENE
stereochemistry of 5,6-dihalo derivatives of, 22:40055
5-NORBORNENE-2,3-DICARBOXYLIC ACID, ALLYL ESTER
radioinduced polymerization with chloroethylene, 22:45120(P)
radioinduced solid-state polymerization of binary eutectic of, with N-vinyl succinimide, 22:51036
NORTH AMERICA
cesium-137 content of milk in, during 1966, 22:28522
radioactivity content of airborne particulates and surface waters in, during 1966, 22:28495
radioactivity content of airborne particulates, precipitation, and surface waters in, during 1966, 22:28502
radioactivity content of atmosphere and precipitation in, during 1966, 22:28519
radioactivity content of atmosphere and precipitation in, during 1966, 22:28508
radioactivity content of atmosphere and precipitation in, during 1966, β, 22:23518
radioactivity content of atmosphere and precipitation in, during April 1967, 22:28510
radioactivity content of atmosphere in, during 1966, γ, 22:23520
radioactivity content of atmosphere in, during February 1967, 22:40697
radioactivity content of atmosphere in, during January 1967, 22:40690
radioactivity content of atmosphere, precipitation, and surface waters in, during 1966, 22:25850
radioactivity content of atmosphere, precipitation and surface waters in, during 1966, gross, 22:23522
radioactivity content of milk in, during 1966 to 1967, 22:40690
radioactivity content of milk in, during 1966 to 1967, 22:40697
radioactivity content of milk in, during 1967, 22:40693
radioactivity content of precipitation in, during 1966, β, 22:36257
radioactivity monitoring of atmosphere in, during April

1967, 22:40693
  radioisotope content of milk in, during 1966, 22:28526
  radioisotope content of milk in, during 1966, 22:23520
  radioisotope content of milk in, during 1966, 22:23518
  radioisotope content of milk in, during 1966, 22:25850
  radioisotope content of milk in, during 1966, 22:28458
  radioisotope content of milk in, during 1966, 22:28508
  radioisotope content of milk in, during 1966, 22:23522
  radioisotope content of milk in, during 1966, cesium-137 and strontium-90, 22:36257
  radioisotope content of milk in, during 1967, 22:28510
  radioisotopes content of milk in, during 1966, 22:28495
  radioisotopes content of milk in, during 1966, 22:28502
  strontium-89 content of milk in, during 1966, 22:36257
  strontium-90 content of atmosphere in, during July to Dec. 1966, 22:23515
  strontium-90 content of milk in, during 1966, 22:28522
  strontium-90 content of milk in, during 1966, 22:36257
NORTH CAROLINA
  radiation protection program of Board of Health of, 22:51603
Northern Universities Reactor (Risley)
    see Reactors, Research
NORWAY
  cesium-137 content of aviation personnel in, during 1964 to 1966, 22:45532
  cesium-137 content of beer in, during 1962 to 1967, effects of brewing process on, 22:40666 (NYO-3364-44)
  cesium-137 content of diet of cattle in, effects of fallout on, 22:6801 (NYO-3364-37)
  cesium-137 content of food and man in, during 1963 to 1967, 22:38259 (NYO-3364-42)
  cesium-137 content of lamb and sheep meat in, during 1964 and 1965, 22:51649
  cesium-137 content of milk in, during 1963 to 1967, 22:33813 (NYO-3364-43)
  cesium-137 content of milk in, during 1967, 22:4607 (NYO-3364-36)
  cesium-137 content of potatoes in, during 1964 to 1965, 22:494 (NYO-3364-29)
  civilian defense in, organization for total, 22:16734
  nuclear energy research in, 22:30424
  strontium-90 content of foods in, 22:31077
Norwegian-Dutch Heavy Water Reactor
    see JEEP Reactor
NOSE CONES
  fabrication of TZM, by shear spinning, 22:6939
  structures for, preparation of graphite, 22:23876(P)
NOVADRAL
  effects on radioinduced hypertension in man following therapy for malignant tumors, 22:31128
NOVAS
    see also Supernovas
  brightness fluctuations of Nova Delphini, (T), 22:34177
  composition of envelope of Nova Herculis 1963, (E), 22:45889
  distribution in Andromeda Nebula and Milky Way, (E), 22:52445
  electron density and temperature of envelope of Nova Herculis 1963, (E), 22:45889
  identification of Cen XR-2 as, (T), 22:8865
  mechanism for, featuring accreting white dwarfs, (T), 22:41145
  MHα 328-116, four-color photometry of, (E), 22:17254
  model for high-temperature component of Cen XR-2, (T), 22:49951
  model for, (T), 22:24016
  model for, (T), 22:26134
  model for, (T), 22:837
  models for, instantaneous-ejection, (T), 22:52377
  Nova Del 1967, velocities of permitted and forbidden lines in, (E), 22:47766
  Nova Delphini 1967, upper limit to radio emission from, (E), 22:34194
  Nova Herculis 1960, spectrophotometry of, (E), 22:13108
  Nova Jerculis 1960, spectra between March 22 and Sept. 5, 1960 of, (E), 22:36610
  nuclear reactions in, bibliography on, 22:15324
  observations of Delphini 1967, photometric and spectrophotometric, (E), 22:26107
  observations of Delphini, (E), 22:8954
  occurrence of, role of helium shell-burning stars in, (T), 22:862
  origin of, hydrogen flicker at white dwarfs as, (T), 22:26105
  photoelectric observations of Nova Delphini (1967), (E), 22:26115
  photoelectric observations of Nova Delphini (1967), (E), 22:26116
  properties of Cen XR-2, (T), 22:8865
  properties of, (T), 22:15280
  RS Ophiuchi, spectrum during recent outburst, (E), 22:19692
  spectra of Delphini and Vulpecula, (E), 22:36595
  spectra of Nova Delphini, (E), 22:13082
  spectra of pre-outburst of Nova Delphini 1967, (E), 22:49884
  spectral intensities of Balmer lines in moving envelopes of, (T), 22:43706
  spectrophotometric study of Nova Herculis, (E), 22:8983
  spectroscopy of v 603 Aql, (E), 22:43709
  spectrum analysis of Nova Herculis 1963, (E), 22:45889
  spectrum of Delphini, (E), 22:8954
  spectrum of Nova Delphini 1967, evolution of, (E), 22:23924
  x-ray emission from Cen X-2 analogous to, (E), 22:2911
NOVO VORONEZH POWER REACTOR, UNIT 1
  description of, 22:42193(T) (JPRS-45814)
  fuel burnup calculations for, three-dimensional method of, (E/T), 22:22739
Novocaine
    see Procaine
NOZZLES
    see also Rocket Motor Nozzles
  analytical and experimental testing of pressure vessel, 22:7816(R) (ORNL-TM-2057)
  cooling throats of, hypersonic, 22:234 (ORNL-TM-1975)
  description of dual-purpose entrance and exit coolant, for boiling water reactors, 22:10039(P)
  design and gas dynamics of supersonic radial, for MHD converters, 22:2884(T) (CEA-tr-R-1902)
  design and operation of supersonic hydrogen jet, for producing charge-exchange target in accelerator, 22:48391(T) (NP-tr-1669)
  design for microspheroidization of ceramics using radiofrequency plasma, 22:45799 (UCRL-18043, pp 155-82)
  design for tubular element in heat exchanger, 22:227(P
  design of convergent-divergent, for controlling coolant flow in fuel channels, 22:4333(P)
  design procedures for radial, in cylindrical and spherical pressure vessels, (E/T), 22:30347 (TID-24342)
  development of NERVA rocket reactor regeneratively-cooled, description of, 22:39867 (N-68-21402)
  effects of radially attached, on stress in attachment region of hemispherical shells, (E), 22:273 (TID-24103)
  effects on stress in spherical shells, 22:27977
  effects on stresses in thin-walled pressure vessels, 22:2317 (TID-24106)
  elastic properties of radial and oblique, mounted in spherical shells, 22:51155
  fabrication using hot-pressed ceramics, 22:15257
  failure testing of pressure vessel through and flush-type, analysis of high stress and low cycle, 22:5346
  fatigue testing of Hastelloy X tube-bundle, for Rover rocket, 22:8745 (ORNL-4170, pp 238-44)
  fatigue testing of pressure vessel, high-stress low-cycle, 22:6174
  flexibility of radial, in cylindrical and spherical pressure vessels, (E/T), 22:30347 (TID-24342)
  hydrogen flow in axially symmetrical, numerical calculation of two-dimensional, 22:12521(T) (ANL-Trans-557)
  materials for tundish-type, testing for use in continuo casting of steel, 22:23892
  performance in air and steam--air of Nuclear Safety Pil Plant spray, for iodine vapor removal, 22:35604 (ORN 4253)
  performance of MHD converging-diverging, (T), 22:26287
  shielding requirements for FFTF cover, 22:22804(R) (BNWL-685)
  stresses in radial, in cylindrical and spherical pressu vessels, (E/T), 22:30347 (TID-24342)
  stresses on, comparison of theoretical and experimental 22:27416(R) (ORNL-4228)
  testing for use in sol dispersion, 22:17160 (ORNL-4075 pp 43-61)
  testing half-scale steel pressure vessel, fracture, 22:42997 (SwRI-1228-P-5-46)
  two-phase flow through, development of equations for, (T), 22:10494
  use for water jet circulation in pressurized-water reactor cooling system, 22:37494(P)
  use of electrolytic, in fabrication of very small holes in metal plates, 22:10166(T) (ORNL-tr-1827)
NPD REACTOR
    (pressure tube reactor; sometimes referred to as NPD-
  coolant in, fission product concentrations during 1962 1967 in, 22:35417 (AECL-3085)
  coolant leak location in, methods for heavy water, 22:14120 (AECL-2755)
  design parameters and layout for, 22:16146 (GA-8075)
  emergency cooling systems for, description of, 22:3285
  fuel element cladding for, analysis of, hydridation and oxidation in, 22:32895
  fuel elements for, fabrication and testing of wire-wrapped, 22:35418 (AECL-3089)
  heavy water leakage from, 22:16106 (AECL-2795)
  loading system for, description of on-power, 22:46921 (TID-24679(Vol.2))
  loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
  operation history of, summary of, 22:16106 (AECL-2795)
  operation performance during 1962 to 1968, description of, 22:30224
  operations of, review of, 22:42149 (AECL-3067, pp 1-19
NPD-2 Reactor
    see NPD Reactor
NPR (New Production Reactor)
    see Hanford Production Reactors (N)
NRL RESEARCH REACTOR

use in nonnuclear fields of science and technology, review of present and potential, 22:42362 (NRL-6709)

NRTS
see National Reactor Testing Station

NRU REACTOR
coolant in, performance of Santowax OM and HB-40, 22:47003 (AI-CE-75)
core vessel in, preparations for replacement of aluminum, 22:24991
decontamination of, remote equipment for, 22:4409
fuel assemblies in, radiation effects on Zircaloy 4-clad uranium oxide (UO_2) and SAP-clad uranium carbide (UC), 22:47003 (AI-CE-75)
in-pile loop operation in, coolant chemistry during U-3 organic, 22:50789(R) (AECL-3070(Pt.1))
loading system for, description of on-power, 22:46921 (TID-24679(Vol.2))
loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
neutron flux spectrum analysis for irradiations in, (T), 22:46729(R) (AECL-3157)
pressure vessel sealing headers for, description of remote-controlled grinding and polishing machine for, 22:44902

NRX REACTOR
radioisotope production in, economic potential for, 22:8261

NRX Reactors (NERVA Reactor Experiment)
see Rocket Reactors (NERVA)

NTA
see Acetic Acid, Nitrilotri-

NUCLEAR ACOUSTIC RESONANCE
review of, 22:32003

NUCLEAR AUXILIARY POWER SYSTEMS
(Devices utilizing either fission or radioisotope decay heat. For the USAEC SNAP program, see Systems for Nuclear Auxiliary Power (SNAP).)
alternators using liquid metal Rankine cycle for, design parameters of 0.25 to 10 MW(e) inductor, 22:30281 (SAN-679-6)
components for 0.25 to 10.0 MW, design and performance of electric, 22:25575 (SAN-679-7)
configuration of out-of-pile thermionic, analysis of optimum conceptual design, 22:53405
configuration of Rankine-cycle 400 kW(e) SPR-4, description of reference design, 22:44876(R) (UCRL-50004-68-1(Pt.1))
configuration of SPR-6 reactor, reference design, 22:42344(R) (UCRL-50004-67-3(Pt.1))
conversion systems for space vehicles, application of Brayton cycle in, 22:7880
coolant pump motors for 0.25 to 10.0 MW(e), design of canned ac induction, 22:32935 (SAN-679-5)
criticality calculations for small high-temperature lithium-cooled space reactors, 22:37512 (N-68-15792)
description of 1 MW(e) in-pile thermionic space powerplant, 22:7887
description of MPRE boiling potassium system, 22:7882
description of technology during 1967, 22:22925
description of US, 22:24990
design and operation of RIPPLE, review of developments in, 22:33608
design and performance of radioisojet, for space propulsion, 22:33612
design and testing of thermionic double-diode fueled converter module, 22:7888
design characteristics of 100 to 1000 mW, for specialized applications, 22:10514
design concept for space, with heat pipe-connected thermionic diodes, 22:39850 (N-68-12426)
design for intact reentry, environmental effects on, 22:42978 (SC-RR-68-351)
design parameters for 0.25 to 10.0 MW, analysis of optimum, 22:35572 (SAN-679-4)
design requirements for reactor, for Orbital Research Laboratory (ORL) missions, 22:1842 (N-67-17520)
design, fabrication, and testing of undersea radioisotope, 22:23217 (CONF-670445-, pp 18.33-54)
development and operation of RIPPLE marine light offshore at Dungeness, England, 22:12552
development and use of RIPPLE, UK program for, 22:8319
development and uses of RIPPLE, conference on, 22:23227
development by USAEC, JCAE hearings on, 22:10168
development by USAEC, JCAE hearings on, 22:10169
development for marine power sources, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
development for space applications, 22:7874
development of European, description of programs for, 22:49033
development of reactor-powered multiple-stage cesium thermionic converter module, 22:7886
development of RIPPLE, for Danish marine light, review of, 22:28025
development of undersea radioisotopic, 22:25205 (CONF-670445)
development program for U. S. space, description of, 22:32944
economics and performance for land and submarine use, 22:42990
economics and performance of radioisotope, in commercial aviation, 22:42992
economics of RIPPLE, for use as power source for marine warning light, 22:21292
heat pipe for 50 to 300 kW(e) and 1 to 10 MW(e) Rankine-cycle, design of optimum, (T), 22:42347 (UCRL-71004)
heat sources for, design and fabrication of tantalum alloy T-111 capsules for, 22:47290(R) (AI-AEC-12713)
heat sources for, design and fabrication of tantalum alloy T-111 capsules for, 22:47289 (AI-AEC-12712)
heat sources for, development of capsules for large radioisotope, 22:23216(R) (AI-AEC-12642)
heat sources for, development of fibrous-type thermal insulation for, 22:12533 (ALO-3633-5)
heat sources for, development of fibrous-type thermal insulation for, 22:21284 (ALO-3633-7(Vol.1))
heat sources for, heat protection techniques and vehicle configurations for safe reentry of, 22:30791
jet-condenser for 1 to 15 kW(e) organic Rankine-cycle, design of optimum 0.5 to 0.1 psia turbine exhaust, (E/T), 22:42339 (AGC-3484)
kinetics for SPR-4 reactor, use of ZOOM computer code for calculation of, 22:42344(R) (UCRL-50004-67-3(Pt.1))
kinetics for SPR-6 reactor, use of ZOOM computer code for calculation of, 22:42344(R) (UCRL-50004-67-3(Pt.1))
operation and performance in marine navigational aids, 22:42991
operation and performance of RIPPLE, 22:45250
physics measurements for SPR-5 reactor, description of optimum, 22:42344(R) (UCRL-50004-67-3(Pt.1))
physics measurements for SPR-8 reactor, description of optimum, 22:42344(R) (UCRL-50004-67-3(Pt.1))
physics measurements in uranium carbide (UC)--zirconium carbide (ZrC) and 0.05 MW(e) molybdenum--uranium oxide (UO_2) thermionic reactors, analysis of, (T), 22:32946
physics parameters for generic thermionic reactor, description of, 22:22791 (GA-8309)
power conversion systems for space, conceptual design for liquid metal Rankine cycle, 22:42345 (UCRL-70863)
power conversion systems for space, design parameters of heat-pipe out-of-core thermionic, 22:42346 (UCRL-70984)
power sources for, performance characteristics of, 22:19051
power supply system for space, with liquid metal magnetohydrodynamic converter, 22:47001
power system electrical components for 0.25 to 10 MW(e) space, conceptual design analysis for high-temperature potassium Rankine cycle, 22:42342 (SAN-679-8)
power system for Manned Orbital Research Laboratory, design and vehicle integration of plutonium-238 Brayton, 22:19054
pumps for cesium and potassium Rankine cycle space, design comparison of boiler feed, 22:47000 (ORNL-TM-2086)
pumps for Medium Power Reactor Experiment, performance analysis of jet, 22:24972 (ORNL-3745)
radioisotope heat sources for, review of developments in, 22:14733
shielding calculations for, description of GEISHA-2 computer code for, 22:42344(R) (UCRL-50004-67-3(Pt.1))
shielding for TRIKT-50, description of optimum, design for, 22:25064 (DLR-MITT-66-07, pp 101-10)
shielding of plutonium-238, for artificial heart, (T), 22:31907
thermal integration with life support systems of manned space vehicles, 22:7878
thermoelectric materials for, development and testing of, 22:21285 (ALO-3633-7(Vol.2))
use in plasma accelerator, 22:31862
use of reactor and radioisotopic, in space vehicles, 22:27527

NUCLEAR BATTERIES
see also Photoelectric Cells
see also Radioactive Voltage Generators
see also Systems for Nuclear Auxiliary Power (SNAP)
description of cylindrical coiled multi-layer dielectric separated emitter and collector, with metal enclosed krypton-85 emitter, 22:28026(P)
design of plutonium-238 fueled, for cardiac pacemakers, 22:33616
design of radioisotope-powered fuel cell, 22:11298(P)
design of strontium-fueled, 22:23219 (DLR-MITT-66-07, pp 73-82)
design of tube-type, 22:50069(P)
development using radioisotopes, 22:14729
use in energy conversion, review of present status of, 22:29320

NUCLEAR CHEMISTRY
(See also specific elements, isotopes, and compounds.)
see also Radiation Chemistry
see also Radiochemistry
see also Tracer Techniques
book: Handbook of the Physicochemical Properties of the Elements, 22:16560
book: Isotopes in Chemistry, 22:12266
conference on, Warsaw, Poland, Feb. 10 to 12, 1964, 22:4211
index to UCRL annual report, 1967, 22:33380 (UCRL-17989(Suppl.))
research at Puerto Rico Nuclear Center, 1967, 22:48807(R) (PRNC-121)
research in, development of electron-ring accelerator for, 22:46591 (UCRL-18103, pp 120-6)

  - research programs in, use of TRIGA-2 Pavia for, 22:50835
  - research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
  - research progress in, 22:21092(R) (ORO-1797-11)
  - research progress in, review of Soviet, 22:12343(T) (JPRS-44048)
  - research progress in, summaries of off-site USAEC, 22:18811 (TID-4005(Pt.2A)(3rd Ed.))
  - research progress on, 22:37781(R) (UCRL-17989)
  - research progress on, 22:27534 (NBS-TN-421)
  - research progress on, review of, 22:6313 (HMI-B-53)
  - thesaurus in, development of, 22:35747
  - threshold reactions, research in Sweden on, 22:14525
  - transuranium element production in, review of, 22:40121
- Nuclear Data
  - see Data Tabulations
- Nuclear Dipole Moments
  - see Moments
- NUCLEAR ELECTRIC MOMENTS
  - see also Nuclear Magnetic Moments
  - book: Numerical Data and Functional Relationships in Science and Technology, Group I, Vol. 2, Nuclear Radii, 22:32699
  - calculation for 2s1d-shell nuclei using projection of Hartree--Fock deformed state wave functions, (T), 22:37304
  - calculation for even-even vibrational nuclei, including anharmonic effects, (T), 22:5858
  - calculation for light nuclei, using Hartree--Fock method, (T), 22:20766
  - calculation for rare-earth nuclei using pairing + quadrupole model, (T), 22:20692
  - calculation of quadrupole effective charge using shell model with core polarization, (T), 22:30099
  - calculation of quadrupole, for even-even nuclei, (T), 22:39689 (ITF-68-13)
  - calculation of quadrupole, for even-even nuclei, (T), 22:26792
  - calculation of quadrupole, for first 2^+ states of deformed even-even nuclei, (T), 22:22605
  - calculations for even--even 2p1f-shell nuclei, self-consistent, (T), 22:53249
  - calculations for odd-A nuclei with A near 190 using shell and unified models, 22:1624
  - calculations of intrinsic quadrupole, for heavy nuclei using liquid-drop model with curvature and shell-energy corrections, (T), 22:53228
  - calculations of quadrupole, for 2s1d-shell nuclei using Hartree--Fock approximation with Coulomb and center-of-mass corrections, (T), 22:50694
  - calculations of quadrupole, for spherical even-even nuclei, (T), 22:35411
  - effect of static quadrupole, on internal conversion, (T), 22:50665
  - effects of quadrupole, on charged-particle elastic scattering by polarized nuclei, (T), 22:53229
  - effects of quadrupole, on Coulomb excitation cross sections, (T), 22:18327
  - measurement and theory of, survey of developments in, 22:46832
  - measurement for short-lived excited states using γ resonance scattering, (T), 22:35384
  - measurement of quadrupole, by reorientation effect, (E/T), 22:22649
  - measurement of quadrupole, research program on, (E/T), 22:48509(R) (BMwF-FBK-68-22)
  - measurement of quadrupole, using multiple Coulomb excitation, (T), 22:27260
  - measurement of quadrupole, using μ-mesic x-ray spectra, (E/T), 22:46834
  - measurement of quadrupole, using repolarization of nuclear spins in magnetic fields, (T), 22:7743 (NYO-2028-2, pp 106-20)
  - measurement of static quadrupole, for excited states of light and medium-weight nuclei, (E), 22:32513(R) (ANU-P-400)
  - measurement of static quadrupole, using Coulomb excitation, (E/T), 22:46830
  - measurement of, review of methods for, (E/T), 22:3746 (BNL-11746)
  - measurement of, survey of methods for, 22:39681 (BNL-12628)
  - measurement using hyperfine structure effects, 22:18309 (UCRL-17951)
  - measurement using Moessbauer effect following Coulomb excitation, (E), 22:5875
  - measurement using Moessbauer effect following Coulomb excitation, (E), 22:7696 (NYO-2028-2, pp 18-23)
  - measurement using Moessbauer effect, review of, 22:46833
  - measurement using multiple Coulomb excitation, equipment development for, 22:46731(R) (COO-1746-8)
  - measurement using reorientation effect in Coulomb excitation, corrections to, (T), 22:24922
  - systematics of quadrupole, for vibrational states of even-even spherical nuclei, (T), 22:48520 (JAERI-1158, pp 90-5)
  - systematics of static quadrupole, for 2^+ first excited states of rotational and vibrational nuclei, (T), 22:27276
  - theory of quadrupole, for first 2^+ states of even-even nuclei, (T), 22:1706 (ITF-67-14)
- NUCLEAR EMULSIONS
  - see also Photographic Emulsions
  - see also Photographic Film
  - analyzing power on polarized protons from $\Sigma^+ \to p + \pi^0$ decay, 22:41727
  - antiproton elastic scattering at 3 GeV/c by complex nuclei in, small-angle distribution of, (E), 22:320
  - antiproton interactions anti p + N at 5 GeV/c in, preliminary results for, (E), 22:39261
  - antiproton reactions with nuclei at 3 GeV/c in, annihilation radiation evaluation for, (E), 22:2012
  - cascade shower production at 0.1 to 100 TeV in H-quant existence in method for, 22:32157
  - charged-particle identification in, photometer for, 22:19111
  - composition of BR NIKFI, BK NIKFI, and G-5 Ilford, 22:4477
  - conference on, 22:40369
  - cosmic meson (π) reactions with nuclei at 100 to 900 Ge in, corrections to energy estimates using Castagnoli method for, (E), 22:3267 (INR-828/VI/PH)
  - cosmic nuclei peripheral reactions in, baryon resonanc production from, (E), 22:15671 (INR-P-816/VI/PH)
  - cosmic nuclei reactions at 0.010 to 1 TeV/nucleon in, fragmentation without visible particle production fr (E), 22:3236 (INR-792/VI/PH)
  - cosmic nuclei reactions in, fragmentation parameters f heavy, 22:21976
  - cosmic nucleon interactions at 2 to 3 TeV in, π^0 production with large energy transfer in, (E), 22:22307
  - cosmic nucleon interactions at greater than or equal t 10^{12} eV in, (E), 22:13269
  - cosmic particle interactions at high energies at 2900 in, photon spectrum in cascade production in, (E), 22:22286
  - cosmic particle interactions in, azimuthal angular distributions of secondaries from, 22:24677
  - cosmic particle interactions in, with low energy trans into soft component, 22:24534
  - cosmic particle reactions with nuclei at high energies in, effect of connected stars in, (E), 22:39263
  - cosmic proton reactions with complex nuclei at 17 and GeV in, diffraction in, (E/T), 22:39262
  - cosmic ray interactions in TeV range in, (E), 22:3237
  - cosmic-ray stars in, at 7100 m, (E), 22:15383
  - description of combination spark chamber--, for 15-GeV cosmic photons, 22:10559
  - design and performance for personnel neutron dosimetry 22:19168
  - detector design for particle asymmetry measurements in inner radiation belt, (E), 22:47894(R) (N-68-23790)
  - development for electron autoradiography, 22:40367
  - development for electron microscopic autoradiography, 22:33638
  - development for use in dosimetry of cosmic radiation, 22:12848(T) (JPRS-42730, pp 59-65)
  - edge effects in, milling techniques for minimizing, 22:19106
  - elementary particle interactions at energies above 1.0 TeV in, method for measuring angular distributions o 22:4471 (INR-794/VI/PH)
  - hadron reactions with nuclei at 1 to 100 TeV in, fireb model for N* production in, 22:41810 (INR-P-915)
  - hadron reactions with nuclei at 3.0 to 25 GeV/c in, helium-8 production from, (E), 22:3255
  - hyperon (Σ^-) capture at rest in, hyperfragment product from, (E), 22:40366
  - images in, at 4.2 to 1.5°K, regression of latent, 22:33639
  - images in, effects of electric fields on destruction o latent, 22:33641
  - images in, latent, 22:16871
  - interactions anti p + N at 3 GeV/c in, K and π emissio in annihilation, (E), 22:46332
  - meson (K^-) absorption at rest by nuclei in, $\Sigma\pi$ pair emission, (E), 22:29641
  - meson (K^-) reactions with bromine and silver nuclei at 800 MeV/c in, heavy hyperfragment production and dec in, (E), 22:24564
  - meson (K^-) reactions with heavy nuclei at 800 MeV/c, spallation model for hyperfragment production in, (T 22:27253
  - meson (K^-) reactions with nuclei at 1.5 GeV/c in, hamm tracks of helium-8 fragments from, (E), 22:15688
  - meson (K^-) reactions with nuclei at 3.0 to 10.1 GeV/c double hyperfragment production and decay from, (E), 22:13664
  - meson (K^-) reactions with nuclei at 6 GeV/c in, spallation model for hypernuclei production from, (E/T), 22:5508
  - meson (K^-) reactions with nuclei at 800 MeV/c in, heav hyperfragment production from, (E), 22:50288 (JEN-1 DF/I-57)
  - meson (K^-) reactions with nuclei at rest in, Λ-He^5 hyperfragment decay mode determination from, (E), 22:34848 (NP-17481)
  - meson (K^-) reactions with nuclei at rest in, productio of (Σ^-n) bound state from, (E), 22:7450
  - meson (K^-) reactions with nuclei in, hyperfragment and lithium-8 fragment production in, (E), 22:24548
  - meson (K^-) scattering in, cross sections for cosmic, (

22:22299
meson (K^+) scattering in, cross sections for cosmic, (T), 22:22299
meson (μ) interactions at 5 GeV/c in, cross section for π production in, 22:22289
meson (μ) scattering by nuclei in, cross sections for cosmic, (E), 22:52915
meson (μ) single scattering at 5 GeV/c in, distribution of small-angle, (E), 22:24516
meson (π) interactions above 200 GeV in, review of multiple production from, 22:9509 (INR-P-826/VI/PH)
meson (π) interactions at 16.2 GeV/c in, production of fast deuterons and tritons in, (E), 22:34846
meson (π) interactions π + N at 17.2 GeV/c in, charged particle and single slow recoil proton production in, (E), 22:34984
meson (π) interactions π + N at high energies in, multiplicity and angular distribution of secondaries in, (T), 22:32060
meson (π) multi-prong interactions π + N at 17 GeV in, analysis of, 22:34863
meson (π) reaction with nuclei below 18 GeV in, multiple production from, (E), 22:7439
meson (π) reactions with nuclei at 200 GeV in, intranuclear cascade model for, 22:34980 (JINR-P4-3800)
meson (π) reactions with nuclei at high energies in, frequency distribution of heavy prongs from, (E), 22:7438
meson (π) reactions with nuclei at very high energies in, energy estimation in, 22:24546
meson (π^-) capture at 15 MeV by nuclei in, double charge exchange in, (E), 22:46335 (JINR-P1-3946)
meson (π^-) coherent reactions with bromine and silver at 17 GeV/c in, (E), 22:13663
meson (π^-) interactions at 16.2 GeV/c in, cross sections for direct production of electron--positron pairs in, 22:26570
meson (π^-) interactions at 200 GeV in, intranuclear cascade model for, 22:46449
meson (π^-) interactions at 210 to 375 MeV in, cross sections for π production and double charge exchange in, (E), 22:48228 (JINR-P1-3947)
meson (π^-) interactions π^- + N at 50 to 175 MeV in, π^+ energy and angular distributions for, (E), 22:50307
meson (π^-) interactions π^- + p at 17.2 GeV/c in emulsions, angular distribution of secondary pions in, (E), 22:34864
meson (π^-) interactions π^- + p at 17.2 GeV/c in, resonances in distribution of residual effective mass in, (E), 22:39294
meson (π^-) interactions with nucleons at 17.2 GeV/c in, 22:44336
meson (π^-) reactions at 3.5 GeV/c in, heavy short-range hyperfragment production from, (E), 22:5500
meson (π^-) reactions with nuclei at 17 GeV/c in, electron pair production from, (E), 22:5488
meson (π^-) reactions with nuclei at 200 GeV in, incoherent multiple production of particles in cosmic, (E), 22:32068
meson (π^+) scattering in, cross sections for cosmic, (T), 22:22299
meson (π^-) scattering in, cross sections for cosmic, (T), 22:22299
mesons (K^+) elastic scattering at 240 to 300 MeV in, optical model analysis of, 22:18323
mesons (K^-) reactions at 1.5 GeV/c in, very short-range hyperfragment production in, (E), 22:32066
mesons (π^-) interactions at 17.2 GeV/c in, Σ and K production in secondary and primary, (E), 22:32069
neutron scattering in, cross sections for cosmic, (T), 22:22299
nuclear spallation in, high-energy helium-3 and t emission from, (T), 22:13778
nucleon interactions above 200 GeV in, review of multiple production from, 22:9509 (INR-P-826/VI/PH)
nucleon interactions N + N at 1000 TeV in, inelasticity of jets in, (E), 22:29622
nucleon interactions N + N at high energies in, multiplicity and angular distribution of secondaries in, (T), 22:32060
nucleon reactions above 1 TeV in, shower production in, (E), 22:39254(T) (ORNL-tr-1956)
nucleon reactions with nuclei above 10 TeV in, fireball model for, 22:5597 (INR-813/VI/PH)
particle track analysis in, for neutron spectroscopy, random-drift method using automatic microscope for, 22:16895
particle track data from, computer programs for processing of, 22:6646
particle track distortion in, correlation function for spurious scattering from, 22:8387
particle track lengths in, use for studying multiple proton scattering, 22:21323
particle track measurements in, development of automatic systems for, 22:40367
particle tracks in Ilford G-5, method for measuring width of primary cosmic heavy ion, 22:38047
particle tracks in L4, charge identification from, 22:38046
particle tracks in, analysis of hammer, 22:16874
particle tracks in, cross-wire digitized eyepiece for measuring, 22:49168
particle tracks in, electronic equipment for counting, 22:28169
particle tracks in, method for statistical analysis of data on, 22:370
particle tracks in, method for studying, (T), 22:43101
performance for autoradiography, 22:33769
performance for fast neutron dosimetry of personnel, 22:21530
performance for measurement of radiation dose in environs of synchrocyclotrons, 22:21529
performance in measuring α activity of natural environment samples, 22:2211
photon reactions at 845 to 2000 GeV in, angular and lateral structure of electromagnetic cascade production from, (E), 22:3242
pion interactions π + N at 17 GeV in, angular momentum and momentum transfer squared in, (E), 22:44324
preparation of plates of electron-sensitive, 22:45305
preparation of, for fast neutron dosimetry, use of synthetic hydrophilic polymers for, 22:16911
preparation of, theoretical aspects of, 22:40368
preparation, uses, and processing of, review of Soviet, 22:23287
processing of, 22:40368
processing of, methods development for, 22:5809(R) (ANL-7354)
proton energy loss at 5 to 24 GeV/c in, 22:11575
proton fission of bromine and silver nuclei at 20 GeV/c, (E), 22:53162
proton inelastic scattering by nuclei in G-5, absorption mean free paths for, (E), 22:29621
proton interactions at 6.2 and 28 GeV/c in, production of fast deuterons and tritons in, (E), 22:34846
proton interactions p + n at 19.8 GeV/c in, N*(5000) production in, (E), 22:39259
proton interactions p + N at 20 GeV in, analysis of asymmetric separation of charged secondary particles from, (E), 22:32052
proton reactions at 10 GeV with nickel in, fragmentation parameters for, 22:21976
proton reactions at 20 GeV/c in, heavy short-range hyperfragment production from, (E), 22:5500
proton reactions at 28 GeV in G-5, along-the-track scanning method for total cross section for, (E), 22:29624
proton reactions at high energies, frequency distribution of heavy prongs from, 22:7438
proton reactions with bromine and silver at 13.8 GeV/c in, particle production in, (E), 22:24531 (JEN-174-DF/I-52)
proton reactions with bromine and silver at 24 GeV in, models for analysis of fission-like disintegrations from, (E/T), 22:20126
proton reactions with heavy nuclei at 24 GeV/c in, complete disintegration, (E), 22:22298
proton reactions with heavy nuclei at 9 GeV in, fast deuteron emission in, (E), 22:7436
proton reactions with nuclei at 20 to 23 GeV in, diffraction production of particles in, (E), 22:44322
proton reactions with nuclei at 20.8 GeV/c in, distributions of transverse momenta of secondary particles in, (E), 22:32053
proton reactions with nuclei at 21 and 24 GeV in, resonance production in, (E), 22:44321
proton reactions with nuclei at 24 GeV/c in, double emission of Z > 3 fragments in, (E), 22:44326
proton reactions with nuclei at 25 GeV/c in, azimuthal angular distribution of secondary particles in diffractional generation in, (E), 22:32051
proton reactions with nuclei at 3 GeV/c at small angles in, computer test progtams for, 22:20690
proton reactions with nuclei at 9 GeV in, yield of slow π^- and π^+ from, (E), 22:39260
proton reactions with nuclei below 28 GeV in, multiple production from, (E), 22:7439
proton reactions with nuclei in, at 24 and 27 GeV/c, (E), 22:1687
proton reactions with silver and bromine in, production of fast helium nuclei in, 22:22301
proton scattering at 5 to 24 GeV/c in, multiple Coulomb, (E), 22:46331
proton scattering in, cross sections for cosmic, (T), 22:22299
proton track measurements in, use of photographic scanning techniques for, 22:36082
scanning proton-recoil tracks in, determination of sampling biases of, 22:25860 (UCLA-12-668, pp 29-36)
sensitivity of, 22:40368
use for autoradiographical analysis of submicron aerosol particles, 22:28061 (AERE-R-5715)
use for detecting fission fragments, 22:40363
use for determining neutron spectra from alpha reactions (α,n) with beryllium-9, 22:22553
use for determining proton dose to Gemini astronauts, 22:31241
use for fast neutron personnel dosimetry, 22:38100 (KFKI-12/1968)
use for fast neutron spectral measurements in beam port of Triga Mark-II, 22:30332
use for fission fragment detection, 22:40368

  use for fission fragment spectra analysis, (E), 22:30019
  use for hyperfragment studies, 22:40366
  use for measurement of cosmic radiation dose to tissues, 22:25842
  use for measuring anisotropic fast neutron spectra, by proton recoil tracks, 22:16898
  use for measuring energy of mesons (π) and protons, 22:6645
  use for measuring fast neutron spectra from IRT (Sofia) reactor, 22:24821
  use for measuring scattered neutron spectra near synchrocyclotron, 22:33653
  use for neutron spectra measurements using lithium-6 (n,t) reaction, 22:40363
  use in dosimetry of ionizing particles, 22:40680
  use in fast neutron spectrum measurements, 22:4435
  use of boron-loaded, in spherical water moderators for neutron dosimetry, 22:12655
  use of, technical problems in, 22:49069 (JEN-194-IFIC/I-58)
  use with magnetic spectrometer for recording spectra of charged particles, 22:8375
  use with superconducting magnets for determining charge, mass, and moments of elementary particles, 22:21353
  uses in high-energy research, 22:40365
NUCLEAR ENGINEERING
  activities at BNL during 1967, 22:39950(R) (BNL-50082)
  book: Nuclear Reactor Materials, 22:15137
  computers for use in, analog and digital, 22:40488
  data file for reactor applications, ENDF/B, 22:3586 (BNL-50066)
  definition and terminology of, 22:37635
  development status at end of 1967, review of, 22:35746
  education in, social responsibilities of, 22:12061
  radiological quantities and units for shielding in, use of ICRU, 22:52840 (ORNL-RSIC-16)
  research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
  research progress on, summaries of off-site USAEC, 22:18811 (TID-4005(Pt.2A)(3rd Ed.))
  safety in, systems engineering approach to, 22:12062
  thesaurus in, development of, 22:35747
  training program for college, use of time-sharing computers in, 22:33106
  training program for University of California, description of, 22:33103
  training program for University of Washington, description of televised seminar, 22:33102
  training program in physics measurements, description of college course for, 22:33104
Nuclear Engineering Test Reactor (USAF)
    see Air Force Engineering Test Reactor
NUCLEAR EXPLOSIONS
    see also Thermonuclear Explosions
  blast and fallout environments from, civil engineering in, 22:37963 (AD-664479)
  blast and fallout from, civilian defense against, 22:42930
  blast and fallout from, economics of shelters for protection against, 22:16791 (ORNL-TM-2041)
  blast and fallout from, protective measures against, 22:12467(T) (UCRL-Trans-10197)
  blast and radiation effects of, guides for planning shelters against, 22:278
  book: Nuclear Weapons, 22:10425
  book: The Constructive Uses of Nuclear Explosives, 22:25562
  carbon-14 from, study of carbon dynamics in soils using, 22:6457
  carbon-14 production by US and USSR, use as tracer in atmospheric mixing studies, 22:16716
  casualties from multiple, analytical method for assessement of urban, 22:35968
  characteristics of ionospheric, (T), 22:34362 (AD-664034)
  cloud formation from, computer program for describing thermodynamic processes during, 22:12440 (FOA-4-4329-28)
  contamination of environment by, 22:513
  contamination of ground-level atmosphere and soils near Moscow from, 1963 to 1965, 22:21195 (A-AC-82/G/L-1201)
  contamination of materials and personnel by, design of vehicle and equipment to remove, 22:6522(P)
  damage to urban areas from, prediction of fire, 22:33579 (AD-661851)
  detection of fallout from, in upper atmosphere, use of balloon-borne gamma-ray spectroscopy for, 22:28447 (ANL-7278, pp 304-13)
  detection of June 1967 Chinese, in Aberdeen, Scotland, 22:194
  detection of, performance of Gauribidanur seismic arrays for, 22:48970 (BARC-309)
  detection of, seismological investigation of P times to Australian stations for, 22:10413
  detection of, seismological methods for, 22:10414
  detection with seismic arrays, reduction of spurious noise during, 22:14600
  earth motion from Dumont and Vulcan, measurements of, 22:4298 (UCRL-13322)
  effect of Chinese, on radioactivity in Japanese rainwater, 22:14589
  effect on carbon-14 and tritium content in atmosphere ar ocean waters, 22:6505
  effect on carbon-14 content in atmosphere and in barley spirits, 22:6491
  effect on electron loss rate from F2 region of Starfish, (E/T), 22:9205
  effects of high-yield, on anomalous D layer partial reflections, (E), 22:36855
  effects of low-altitude, ionospheric, (E), 22:15420
  effects on antibody production in Hiroshima and Nagasaki survivors inoculated with Asian influenza vaccine, 22:571
  effects on blood-forming organs, gastrointestinal tract, reproductive organs, and skin of man, 22:47548
  effects on bone marrow of man in Japan, histological, 22:40930
  effects on carbon-14 content of plants in Japan and southeast Asia from 1948 to 1965, 22:40710
  effects on chromosomes in bone marrow cells of human populations, aberrant, 22:8577
  effects on chromosomes of human population exposed to atomic bombings of Hiroshima and Nagasaki, 22:12868
  effects on content of radioactive fallout in Czechoslovakia during 1964 to 1967, 22:45517
  effects on cytogenetics of second generation of humans surviving, 22:51827
  effects on development of amphibian larvae at Bikini and Nevada Test Site, teratogenic, 22:15049
  effects on ecology of animals at National Reactor Testin Station and Nevada Test Site, 22:8495 (COO-1355-17)
  effects on ecology of animals at Nevada Test Site, 22:19306
  effects on ecology, review of, 22:28395 (TID-23939)
  effects on fallout at Leningrad from 1954 to 1965, 22:12453
  effects on gas and electric utility systems of cities, analytical study of repair of, 22:37623 (AD-665307)
  effects on human population at Hiroshima and Nagasaki, latent, 22:45613
  effects on human populations of Hiroshima and Nagasaki, report of ABCC on, 22:51670(R) (ABCC-66-67)
  effects on human populations of Hiroshima and Nagasaki, review of carcinogenic, genetic, and pathological, 22:15048
  effects on human populations of Hiroshima and Nagasaki, carcinogenic, 22:8560 (ABCC-TR-16-63)
  effects on incidence of carcinomas in breasts and skin c human population exposed to atomic bombings of Hiroshima and Nagasaki, 22:10787
  effects on incidence of diseases in human population of Hiroshima, 22:10804
  effects on incidence of leukemia in human population of Hiroshima and Nagasaki, 22:10808
  effects on incidence of leukemia in man, 22:4688
  effects on incidence of lymphoma in human populations, 22:8578
  effects on incidence of malignant diseases in human population of Hiroshima and Nagasaki, 22:10788
  effects on incidence of mental retardation in human population exposed in utero, 22:10809
  effects on incidence of myeloma nephrosis in human populations, 22:8580
  effects on iodine-131 content of thyroid in mule deer in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
  effects on ionosphere D region, (E), 22:15446
  effects on lens of human population of Hiroshima and Nagasaki, review of pathological, 22:36376
  effects on leukemia incidence in offspring of man in Hiroshima and Nagasaki, 22:23568
  effects on leukocyte chromosomes of man at Hiroshima, aberrant, 22:28558
  effects on livestock, 22:38301
  effects on lymph system of man in Japan, survey of tumorigenic, 22:4649
  effects on man at Hiroshima, neoplastic, 22:51840
  effects on man exposed to atomic bombings of Hiroshima and Nagasaki, genetic and pathological, 22:8579
  effects on man, medical classification of, 22:4612
  effects on man, review of, 22:10795
  effects on man, traumatic, 22:28681
  effects on man, treatment of thermal, 22:49390
  effects on masses of man, system for medical examinatior of, 22:28564
  effects on retinal blood vessesl of man, pathological, 22:49573
  effects on secondary succession on a flood plain six years after exposure, 22:23480(R) (ORO-2412-7)
  effects on skin of man, methods for treatment of, 22:4653
  effects on soil and groundwater contamination in The Netherlands, 22:21185 (N-66-21731)
  effects on traveling ionospheric disturbances, acoustic- and gravity-wave modes associated with, (E/T), 22:24153
  effects on tritium content in atmospheric hydrogen from Soviet Union, 22:16714
  effects on vision of human infants following parental exposure, 22:4655
  effects on visual accomodation of man exposed at Hiroshima and Nagasaki, 22:51816
  fallout and debris formation following, 22:45186 (NYO-

3756-2, Sect. B)
fallout contamination of drinking water by, 22:6828
fallout contamination of milk by, during 1965, 22:31091
fallout deposition and distribution from, use of model to estimate, 22:179(R) (NYO-3654-3)
fallout deposition at sites distant from, calculation of radiation dose to man from, 22:23511 (UCRL-70788)
fallout deposition in Chiba, Japan from third Chinese, 22:40266
fallout deposition in Niigata City, Japan, from Chinese, 1965 to 1966, 22:40270
fallout deposition in Niigata City, Japan, from Chinese, 1963 to 1964, 22:40271
fallout deposition on earth's surface in Leningrad District from, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
fallout formation in, exploding-wire studies of, 22:45187 (NYO-3756-2, Sect. C)
fallout formation in, nucleation processes in, 22:45188 (NYO-3756-2, Sect. D)
fallout from 1966 Chinese, radioactivity in atmosphere and rainwater from, 22:12439 (AERE-R-5575)
fallout from 1966 French, monitoring in South Africa, 22:21210
fallout from China IV and V, analysis by autoradiography and microscopy of, 22:10416 (FOA-4-4327-28)
fallout from Chinese and Russian, plutonium content of, 22:42879
fallout from Chinese, composition of, 22:20975(R) (BMwF-FBK-67-89)
fallout from Chinese, effects of, on radioactivity content of atmosphere in United States during 1966, 22:28505
fallout from Chinese, measurement of gamma spectra of, 22:36259
fallout from Chinese, measurements in Japan of, 22:42848 (NP-17492)
fallout from Chinese, monitoring in Stuttgart--Hohenheim, 22:35947
fallout from fifth Chinese, particle size of, 22:33572
fallout from four Chinese, characteristics and analysis of, 22:27921
fallout from June 17, 1967 and Dec. 24, 1967 Chinese, monitoring of over-Atlantic Ocean, 22:48954
fallout from May 1966 Chinese, significance of symmetric fission in studies of, 22:16720
fallout from May 9, 1966 Chinese, monitoring in Fayetteville, Arkansas ground-level atmosphere, 22:30716
fallout from test, in U. S. during 1952 to 1956, effects of, on radiation dose to thyroids in human children, 22:23510 (UCRL-70787)
fallout from third Chinese, gamma spectrometer determination of, 22:12469
fallout from third Chinese, measurement of specific gravity of, 22:40263
fallout from third Chinese, measurements of atmospheric radioactivity from, 22:18975
fallout from third Chinese, radiochemical and physical properties of particles from, 22:12452
fallout from third Chinese, radioisotope fractionation in, 22:4284
fallout from third, fourth, and fifth Chinese, activity and decay characteristics of, 22:27924
fallout from, effects on radioactivity of world's oceans and seas, 22:51122
fallout from, model for identifying radiochemical composition of, 22:25534 (UCRL-70782)
fallout from, monitoring at Japanese weather station, 22:48945
fallout from, radioactivity of French rainwater, soils, and plants from, 22:25538
fallout in atmosphere from, cleaning action of clouds and precipitation for, 22:23171
fallout in Uzbekistan region of USSR from, ratio of dry to moist, 22:45198
fallout monitoring from second Chinese, 22:25535(T) (NSJ-tr-98)
fallout monitoring in Berlin from fifth Chinese, Jan. 1967, 22:12446
fallout monitoring near Milan, Italy from seventh Chinese, 22:27922
fallout monitoring of Swedish atmosphere following June 1967 Chinese, 22:51094 (FOA-4-4369)
fallout particles from Chinese and Soviet, uranium content in, 22:27920
fallout particles in northeast Pacific Ocean from, measurement of sinking rate of, 22:2255
fallout transport from Smoky Burst of Plumbbob Operation, meteorological analysis of, 22:18956 (BNWL-481-1, pp 68-73)
fire hazards from, methods for combating, 22:47305 (CONF-680527-1)
fission product content in atmosphere from, use of model to determine, 22:4286
gamma doses in single-compartment above-ground concrete structures from, calculation of, 22:31889
gravity waves from, effects of winds on acoustic--, (T), 22:26302
ground motion from simulated, AFSWC instrumentation for measuring HEST, 22:40478 (AD-668451)
hazards to man from exposure to, 22:496 (UCRL-50163(Pt.3))
hazards to man, estimation of, 22:51639
incidence of leukemia and malignant tumors in human populations exposed to, in Hiroshima, 22:6836
neutron flux from, calculation of, 22:8224
occurrence at air field, postattack standards for aviation and medical personnel for, 22:4642
occurrence of bone diseases in human hands following exposure to, 22:4683
occurrence of multiple myelomas in survivors of, in Nagasaki, 22:4643
peaceful applications of, 1965 JCAE hearings on, 22:10424
photodiodes used in Nougat, linearity of, 22:21318 (UCRL-50176)
pressure wave generated by, atmospheric, (T), 22:11337
program for postattack countermeasures, 22:2258 (AD-646627)
radiation dose to man following, management aspects of internal, 22:31058 (BNWL-SA-1511)
radiation dose to man following, methods of estimating, 22:40669 (UCRL-70894)
radiation effects on survival of burros following exposure to, whole-body γ and neutron, 22:40829 (ORO-657, pp 18-34)
radiation environments from, neutron--gamma Monte Carlo transport code for determining, 22:40280 (AD-667933)
radiation from, shielding ground-based weapons from, 22:4392
radiation injuries from, etiology of, 22:6861
radiation protection from, concrete shelter shielding thickness requirements for, 22:4393
radiation wave propagation from, self-similar, (T), 22:9231
radioactive contamination of aquatic environments by excavation-type, 22:10740 (BNWL-480, pp 153-93)
radioactive contamination of food and human populations following, 22:38304
radioactive fallout from, calculation of γ field in air from, 22:45519
radioactivity monitoring of, associated with aerospace activities and weapons testing, off-site, 22:51570 (NP-17401)
radioinduced tumors in uterus of swine following exposure to, whole-body γ and neutron, 22:40829 (ORO-657, pp 18-34)
radioisotope uptake by cattle following, effects of distance on, 22:51310 (SAN-509-2)
recovery of man exposed to, at Hiroshima and Nagasaki, effects of spleen shielding on, 22:21559
research at Institute for Experimental Physics of Lajos Kossuth University, 22:38001
research at Institute of Nuclear Research of Hungarian Academy of Sciences, review of, 22:38001
safety analysis of, preshot and postshot, 22:23511 (UCRL-70788)
sea-level-canal excavation by, studies of, 22:10421
seismic waves from Bikini and Eniwetok, analysis of travel times of, 22:8235
seismic waves from, amplification by low-velocity surface layers of, 22:14599 (NVO-1163-130)
seismic waves from, PcP travel times of, 22:48971
shock waves and flow fields from ocean surface-located, propagation of, 22:21220
shock waves from Russian, earth crust model synthesis from, 22:35970
shock waves from, design of shelter to withstand, 22:6550 (NP-17183)
shock waves from, effects on cabinet-housed electronic equipment in steel-frame buildings, 22:51197
strontium-90 deposition in Japan from, seasonal variations in, (E), 22:23167
strontium-90 deposition on global soils from, 1961 to 1967, 22:27917 (TID-24341)
test ban on, conferences and treaties on, 22:1943
tests in China and Soviet Union during 1966, 22:28495
thermal pulses of, computer calculation of temperatures in plates subjected to, 22:2259(R) (AD-646858)
tungsten-185 from Hardtack, distribution and stratospheric transport processes of, 22:12447
use for mining, research at Puerto Rico Nuclear Center, 22:48807(R) (PRNC-121)
use for propulsion of space vehicles, 22:51128
use in improvement of agricultural water supply, 22:23131 (CONF-680112-1)
use with time-of-flight method for measuring neutron cross sections, 22:37280 (LA-3478(Pt.1))
uses by industry, review of potential, 22:30739
uses in excavation and underground nuclear engineering projects, review of, 22:27949
uses in mining and public works, 22:45209 (UCRL-7870)
vortex ring of, theory of motion of, 22:2915

NUCLEAR EXPLOSIONS, ATMOSPHERIC

blast effects on shock-protected contents of cylindrical buildings at 10 to 50 psi overpressures, 22:51196
blast-induced water waves from, near surface shorelines, 22:35960 (AD-661453)
detection of, effects of weather on optical, 22:25545
detection of, recent developments in methods for, 22:27948
detonation force of, computational disc method for visual

- determination of, 22:30741
- effects on failure of granodiorites from Nevada Test Site, 22:16702
- electromagnetic emissions from, stability of new Radio Code for calculating, 22:18998 (LA-3864)
- fallout distribution from, effects of meridional circulation and eddy diffusion on, 22:40261
- fallout from Chinese and Soviet Union, physicochemical properties of, 22:18970
- fallout from Chinese, Fayetteville, Arkansas, 1967, 22:8222(R) (ORO-2529-15)
- fallout from Chinese, of May, Oct., and Dec., 1966, iodine-131 content of, 22:27919
- fallout from June 1967 Chinese, 22:42877
- fallout from May 1962, 1965, and 1966, iodine-131 content in midwest US atmosphere and milk from, 22:25541
- fallout from May 1966 Chinese, 22:10380
- fallout from third Chinese, May 9, 1966, 22:12451
- fallout from third Chinese, radioisotope fractionation in, 22:12450
- fallout from third Chinese, radioisotope fractionation in particles of, 22:16719
- fallout from tower, fractionation of, 22:35941 (FOA-4-4351-28)
- fallout in Niigata, Japan from third Chinese, effect of atmospheric currents on, 22:6486
- fallout monitoring in Australia from French, in Polynesia, June to July 1967, 22:14592
- fallout particles from, density measurements of, 22:2229
- fallout particles from, separation and analysis of, 22:42873 (UCRL-50428)
- gamma-radiation output from, (T), 22:13363
- generation of radio waves in ionosphere, (E), 22:13369
- ground pressure wave generation by low altitude, effects of winds on, 22:47248
- iron-55 and strontium-90 fallout from 1961 and 1962, measurement of global, 22:48953
- microbarographic oscillations induced by, in Great Britain and Ireland, 22:42883
- pressure waves from, effects of winds on, 22:30725
- radio signal generation by, (T), 22:13363
- radio signals from, development of, (T), 22:52640
- radioactive contamination of terrain following, 22:8529(T) (JPRS-42929, pp 293-330)
- shock waves from, propagation at large distances of, (E/T), 22:47259 (SC-DC-2342)
- strontium-90 contents in stratosphere and troposphere from, implications of changes in, 22:186
- testing in China, effects of, on cesium-137 and strontium-90 content of milk in Japan during 1966 and 1967, 22:23540
- tests at Moruroa France during 1966, 22:25850

NUCLEAR EXPLOSIONS, HIGH-ALTITUDE
- acoustic waves from, effects of atmospheric wind structure on, (T), 22:13360
- amplitude perturbations of vlf in Antarctic due to July 9, 1962, (E), 22:13362
- detection of deep space, optical system for, 22:2260 (CONF-671022-1)
- effects on air conductivity, 22:38929
- effects on geomagnetic field, data analysis, (T), 22:22004 (CONF-661204-(Vol.1), pp 6.1-12)
- effects on ionosphere, (E), 22:34371
- effects on ionospheric D region, 22:50085
- electron fluxes from pre- and post-Starfish data, inner-zone, 22:34519
- electron measurements from Starfish, Oct. 1963--Oct. 1965, 22:34514
- fallout from October 1966 Chinese, in Niigata, Japan, 22:10382
- fallout from, use of cadmium-109 as tracer of, 22:4283
- gamma scattering from, Monte Carlo calculation for exponential atmosphere, 22:38875 (LA-3944)
- generation of magnetohydrodynamic waves by, model for, (T), 22:41480
- ionospheric absorption properties in, technique for detecting, 22:47956
- magnetic storm induction by, (E), 22:24151
- phase anomaly induced by June 17, 1967, vlf, (E), 22:24137
- plasma production in, effects on radar, 22:27946
- radiation belt decay from Starfish Burst, artificial electron, (E), 22:50083 (N-68-11826)
- radiation effects on reproduction of Drosophila melanogaster following, 22:36335

NUCLEAR EXPLOSIONS, SURFACE
- blast effects on shock-protected contents of cylindrical buildings at 10 to 50 psi overpressures, 22:51196
- clouds produced by, particle size distributions as function of time within, 22:45357(R) (UCRL-50007-68-1)
- crater formation by, scaling laws for, 22:40285
- detection of Chinese, analysis of fallout particles for, 22:2246
- detonation force of, computational disc method for visual determination of, 22:30741
- effects on motion of ground water table, 22:35960 (AD-661453)
- fallout and debris formation in, soil melting and vaporization in, 22:45186 (NYO-3756-2, Sect. B)
- fallout from Chinese and Soviet Union, physicochemical properties of, 22:18970
- fallout from Chinese, radioisotope fractionation in, 22:42881
- fallout from Small Boy, effects of particle type on activity of, 22:35957 (AD-660655)
- fallout from, fractionation of, 22:35941 (FOA-4-4351-28
- fallout particles from, methods for simulation of, 22:47244
- fallout particles from, separation and analysis of, 22:42873 (UCRL-50428)
- ground motion from large yield, prediction of air blast-induced, (E/T), 22:27941
- radiation damage to ports and ships from, 22:47262
- radioactive contamination of terrain following, 22:8529(T) (JPRS-42929, pp 293-330)
- water wave production by nearby over-land, model of, 22:35958 (AD-661451)

NUCLEAR EXPLOSIONS, UNDERGROUND
- actinide recovery following, 22:6382
- announcement by Atomic Energy Commission at Nevada Test Site during July 1967, 22:40693
- carbon-14 release from, permissible limits for, 22:1246 (UCID-15251)
- cavities formed by, methods for arresting detonations in gas mixtures in, 22:12458 (MSAR-67-187)
- cavity and chimney formation by, in granite rock, 22:23187 (UCRL-50385)
- cavity formation by, analysis using three-zone model, 22:12460 (NVO-1163-78)
- cavity formation by, economics of natural gas storage in 22:42926(R) (UCRL-13354)
- cavity formation by, equation for determination of radiu of, 22:4299(T) (UCRL-Trans-10145)
- cavity formation by, use in natural gas storage, 22:14602
- cavity formation in alluvium by, pressure and temperatur measurements in, 22:200
- cavity formation in Piledriver Event, effects of returning tensile waves on, 22:19001 (UCRL-50373)
- cavity formation in Project Gasbuggy, postshot investigation of, 22:45210 (UCRL-50425)
- chemical reactions in, 22:35969
- chemicals production by, industrial, 22:35969
- chimney formations from, methods for purging radioactive gases from, (E), 22:21228 (UCID-15259)
- civilian applications of, public health aspects of, 22:2261 (CONF-671029-1)
- contamination of ground water by, plans for research on, 22:21182 (HNS-9)
- contamination of ground waters by, methods for monitoring, 22:23185 (HNS-1229-43)
- copper mining by, description of Project Sloop for, 22:4297 (PNE-1300)
- copper ore and shale oil processing using, feasibility study of, 22:45208(R) (ORNL-TM-2298)
- crater excavation in Palanquin Event, engineering and geologic properties studies for, 22:51124 (PNE-905)
- crater excavations by, hydrologic distribution of radioisotopes around, 22:21226 (NVO-1229-87)
- crater formation in dry desert alluvium and dry basaltic and rhyolitic rocks by, 22:37898 (PNE-5012-I)
- craters from, ground water flow through nuclear, 22:168 (CBA-1229-F-4)
- craters from, photogrammetric technique for measurement of, 22:12462 (SC-DC-67-2330)
- craters produced by, engineering properties of, 22:6508 (PNE-5010)
- damage to structures from, spectral matrix method for prediction of, 22:23243 (NVO-99-33)
- damage to surface building structures from Salmon, 22:2262
- damage to surface structures from Salmon Event, survey of, 22:37899 (VUF-1029)
- damage to surface structures from Salmon, complaints of seismic, 22:37896
- decoupling of seismic waves from, review of Salmon experiment on, 22:4300
- decoupling of, in salt domes, construction of large diameter cavity for, 22:42925 (TID-24625)
- decoupling theory for, construction of large diameter cavity in Tatum Salt Dome to test, 22:42922 (CONF-680908-3)
- decoupling theory for, construction of large diameter cavities in salt domes to test, 22:42921 (CONF-680908 2)
- decoupling theory for, stability of large diameter cavities in salt domes to test, 22:42920 (CONF-680908 1)
- deep hole casings for, design of cylindrical, 22:207 (NVO-193-3)
- design of Project Bronco, for fracturing and in place retorting of oil shales, 22:8244 (UCRL-50339)
- detection and identification of, capabilities of Yellowknife seismic array for, 22:8237
- detection and identification of, development of seismic array data analyzer for, 22:196
- detection instrumentation for Wishbone, electrical environment of, 22:10637 (UCID-15210)
- detection of, performance of large aperture seismic arrays for, 22:33578 (AD-662632)
- detection of, recent developments in methods for, 22:27948
- detection of, Salmon event ground motion studies for,

22:35967 (VUF-3012)
detection of, use of cavity wall sheathing for seismic wave decoupling to prevent, 22:51129
detection using seismic wave propagation data in Longshot experiment, 22:10415
detonation of test, at Nevada Test Site during April 1966, 22:28458
detonation of test, at Nevada Test Site during June 1966, 22:28522
detonation of test, at Nevada Test Site during May 1966, 22:36257
detonation of, stress wave propagation and terminal response from, 22:47257 (UCRL-13357)
economic feasibility for development of water resources, 22:8245 (UCRL-70762)
effects of Marvel and Piledriver, 22:8243(R) (UCRL-50008-67-4)
effects of radiation pulse from, on radiolysis of chloroform, 22:40132
effects of, summary of, 22:47261
effects on ecology of animals at Nevada Test Site, 22:19306
effects on ecology of animals in vicinity of Amchitka Island, Long Shot, 22:23482 (TID-24291)
effects on home range of pocket mice at Nevada Test Site, 22:33776 (COO-1336-6)
effects on immediate and long-term movements of small mammals, 22:33776 (COO-1336-6)
electromagnetic emissions from, stability of new Radio Code for calculating, 22:18998 (LA-3864)
engineering applications of, lecture notes on civil aspects, 22:199 (TID-23748)
engineering applications of, review of, 22:12466(T) (UCRL-Trans-10152)
engineering uses for, review of developments in, 22:45211
fallout from Dec. 1966 USSR, radioactivity in Swedish ground air and precipitation in, 22:12441 (FOA-4-4494-28)
fallout from Projects Danny Boy, Palanquin, and Sedan, fractionation of ground level, 22:27944 (UCRL-50409)
fallout monitoring in northern Sweden from Dec. 18, 1966, Soviet Union, 22:6482 (FOA-4-4296-23)
feasibility of Gasbuggy, review of, 22:30738
fission products from low-yield, tunnel decontamination of, 22:25830 (SC-RR-68-110)
gas pressures in chimneys created by, 22:30436(R) (UCRL-50006-68-1)
Gasbuggy site analysis, 22:8239 (PNE-1001)
ground motion from simulated, AFSWC instrumentation for measuring HEST, 22:40478 (AD-668451)
ground motion from Sterling event, predictions and evaluations of, 22:25558 (VUF-1035)
ground motion from, damage to multistory buildings from, 22:12459 (NVO-99-30)
ground motion predictions for, empirical methods and equations for, 22:37897 (NVO-1163-49(Rev.1))
ground motion velocity from, equipment and methods for recording, 22:10412 (NVO-1163-93)
ground shock from, prediction of damage to structures and equipment from, 22:27943 (TID-24483)
ground velocity data from, amplitude relation between pseudo relative velocity and band-pass filter spectra from statistical analysis of, 22:10418 (NVO-1163-88)
grout development and placement for, 22:10420 (TID-24191)
hazards from Sterling Event, off-site surveillance program on radiological, 22:30737 (VUF-1036)
instrumentation with miniature superconducting cables for, 22:47412
kinetics of large-yield, mathematical model for calculation of, 22:35971
krypton-85 release from, permissible limits for, 22:12463 (UCID-15251)
natural gas production using, procedures for conducting Project Gasbuggy experiments for, 22:12464 (UCRL-50334)
neutron cross sections from, semiconductor detectors for measuring, 22:47320 (LA-DC-9709)
oil recovery from oil shales using, 22:12468(T) (UCRL-Trans-10200)
performance of Gasbuggy, summary of, 22:30740
radiation dose to man from test, at Nevada Test Site, program for documentation of, 22:23511 (UCRL-70788)
radiation dose to population from, use in construction of canals, computer codes for estimation of, 22:51568 (K-1752)
radiation doses from proposed, for construction of Atlantic—Pacific interoceanic canal, 22:6436 (ORNL-4168, pp 1-60)
radiation effects on materials and assemblies, prompt sample recovery system for determining, 22:30749 (UCID-15307)
radioactive contamination of terrain following, 22:8529(T) (JPRS-42929, pp 293-330)
radioactive material release from, air sampler arrays for close-in monitoring of, 22:45357(R) (UCRL-50007-68-1)
radioactivity induced in rocks by, effects of trace elements on, 22:21187
radioactivity release by, methods for monitoring unplanned, 22:497 (UCRL-70608)
radioisotopes produced by, diffusion through geologic media of gaseous, 22:35964 (NVO-1229-85)
radionuclide production by neutrons from, calculation method for, 22:21225 (HNS-1229-54)
radionuclides from, calculation of long-lived, 22:21224 (HNS-22)
recovery of oil from oil shales using, 22:30745(P)
reflection signals from, in Tatum salt dome from Salmon event, 22:8246
rock stresses at Morrow Point underground power plant from, elastic vibration method for calculation of, 22:25557 (SA-6)
safety of Sterling Event, preshot and postshot survey of, 22:25559 (VUF-1041)
seismic phenomena of decoupled, measurements during Sterling Event, 22:25560 (VUF-3025)
seismic wave decoupling by cavity detonated, Sterling experiment for, 22:47260
seismic wave decoupling from, by cavities, Sterling experiment for, 22:25561 (VUF-3026)
seismic wave travel times from Bilby and Shoal, 22:8236
seismic waves from cavity-detonated, effects of frequency on decoupling of, 22:25558 (VUF-1035)
seismic waves from Greeley, travel times of P, 22:37895
seismic waves from Logan, effects of wave attenuation on change in direction of, 22:8234
seismic waves from, analysis of surface-foci travel times of, 22:195
seismic waves from, damage to masonry structures from, 22:12470
seismic waves from, Love wave theory for amplification of, (E/T), 22:12457 (NVO-1163-80(Rev.))
seismic waves from, uphole survey method for measuring source and velocity of, 22:40279
stress waves from Hardhat Event, measurement of dynamic, 22:19000 (UCID-15283)
test, by AEC during Aug. 1967, announcement of, 22:23515
testing at Nevada test site during Feb. 1967, 22:28508
testing at Nevada test site during Jan. 1967, 22:28526
testing at Nevada test site during March 1967, 22:28519
testing by AEC at Nevada Test Site during July 1967, 22:28510
tests at Nevada Test Site during 1966, 22:25850
tests at Nevada Test Site during 1966, 22:28502
tests at Nevada Test Site during 1966, 22:23522
tests at Nevada Test Site during 1966, 22:23520
tests at Nevada test site during 1966, 22:23518
tests at Nevada test site during April 1967, 22:28517
tests at Nevada Test Site during May 1967, 22:28514
tests at Nevada Test Site during Sept. 1967, 22:28506
tests by AEC at Nevada Test Site during April 1967, 22:40690
tests by AEC at Nevada Test Site during May 1967, 22:40697
thermal effects of Salmon experiment, in salt domes, 22:33580
use for blasting, leaching, and open-cast mine techniques, 22:40287
use for excavating transisthmian sea-level canal, feasibility study of, 22:48974
use for fracturing copper deposits, economics of, 22:16732 (BM-RI-6996)
use for natural gas production stimulation, Project Gasbuggy test results for, 22:18999 (PNE-1003)
use for neutron cross section measurements, techniques for, (E), 22:32616
use for oil and gas production, 22:51130
use for producing shale oil, economics of, 22:48973
use in construction of sea-level canal, 22:42932
use in development of water resources, 22:8245 (UCRL-70762)
use in fracturing and retorting oil shales in Project Bronco, 22:6507 (PNE-1400)
use in petroleum production from oil shale, 22:10422
use in Project Sloop for copper ore mining, 22:27947
use in water resource development, 22:42929
use to create underground cavities for disposal of radioactive wastes, 22:40286
uses for creation of nuclear cavities for storage of natural gas and wastes, feasibility study of, 22:27942 (PNE-3008)
uses for industrial production of natural gas and oils, 22:4301
uses in Australia, feasibility study of peaceful, 22:48975
uses in civil engineering, 1967 Puerto Rican conference on, 22:12461 (PRNC-110)
uses in industry, review of, 22:42928
uses in industry, review of peaceful, 22:48972
uses in natural gas and oil recovery, 22:27945(T) (JPRS-44486)
uses in natural gas production and storage, 22:42927
uses in production of copper and shale oils, 22:23186(R) (ORNL-TM-2198)
uses in US Plowshare Program, review of, 22:30742
uses in water resource development, feasibility study of, 22:27942 (PNE-3008)
uses of, review of peaceful, 22:30744
water wave damage from, used for interoceanic canal excavation, 22:30736 (NVO-99-24)

NUCLEAR EXPLOSIONS, UNDERWATER
radiation damage to ports and ships from, 22:47262

use for sea bed mining, feasibility study of, 22:47258 (AERE-R-5500(Vol.2), pp 371-86)
water waves from, effects of shoreline rise on inundation by, 22:35959 (AD-661452)
water waves from, prediction of propagation and run-up of, 22:35958 (AD-661451)
water waves from, run-up of nonbreaking, 22:10417 (NVO-289-1)
Nuclear Forces
see Nuclear Theory
Nuclear Fusion Reactions
see Thermonuclear Reactions
NUCLEAR HEATING PLANTS
see also Nuclear Power Plants
see also Reactors, Power
NUCLEAR ISOMERS
description of spontaneously fissioning, as two-quasiparticle states with large deformations, (T), 22:20644
energy levels of, three- and four-quasiparticle, (E/T), 22:1693
formation in thermal neutron capture, relative probabilities for, (T), 22:42095(T) (ANL-Trans-644)
gamma stability of, shape theory for, (T), 22:53251
half lives in millisecond range, fast pulse data storage system for determining, 22:47402 (NYO-3664-10)
half lives of, measurement by time interval analysis, 22:23369
half-lives of, tables of, 22:48464
lifetime of, bibliographic review of high-speed methods for measuring, 22:36045
lifetime of, description of equipment for measuring, 22:32381
lifetime of, produced in (particle, xn) reactions, method for measuring nanosecond, 22:28097
lifetimes of metastable states, approximate methods for calculating, (T), 22:53238
lifetimes of, with oblate deformation, (T), 22:48583 (JAERI-1158, pp 118-19)
magnetic resonance of, detection using angular correlation and Moessbauer techniques, (E/T), 22:46232
magnetic resonance of, detection using γ angular correlations and distributions, (T), 22:46731(R) (COO-1746-8)
neutron reactions (n,p) with A near 45 and 90, cross-section calculations using statistical theory, (T), 22:20677 (UCRL-50359)
production by (n,2n) reactions at 14.8 MeV, spin distribution parameter for, (E), 22:32539
production by gamma inelastic scattering, review of, 22:32703
production by neutron inelastic scattering in reactors, (E/T), 22:7705
production by thermal neutron capture, relative probabilities for, (T), 22:14113
production by thermal neutron capture, relative probabilities for, (T), 22:20666 (FEI-79)
production in neutron-capture reactions, analysis and interpretation of ratios of, (T), 22:32690
production of, selection rules for, (E/T), 22:48573 (JAERI-1158, pp 1-9)
production with half-lives of 30 to 3000 μsec, (E), 22:32610
properties of spontaneously fissioning, (E), 22:27198
properties of spontaneously fissioning, in transuranium region, (T), 22:48632
use of Cornell University TRIGA reactor for research on short-lived, description of, 22:33022
NUCLEAR MAGNETIC MOMENTS
see also Nuclear Electric Moments
book: Numerical Data and Functional Relationships in Science and Technology, Group I, Vol. 2, Nuclear Radii, 22:32699
calculation for 2^+ and 3^- states of even-even spherical nuclei, using BCS theory, (T), 22:22579 (IPNO/TH-114)
calculation for 2s1d-shell nuclei using projection of Hartree--Fock deformed state wave functions, (T), 22:37304
calculation for deformed A = 150 to 190 nuclei, (T), 22:24904
calculation for excited states, (T), 22:14091
calculation for light nuclei, using Hartree--Fock method, (T), 22:20766
calculation for light nuclei, using velocity-dependent potentials, (T), 22:22542
calculation for nuclei with closed j--j shells plus or minus one nucleon, (T), 22:1717
calculation for rare-earth nuclei, using pairing + quadrupole model, (T), 22:20692
calculation of dipole, for strongly deformed nuclei, (T), 22:1747
calculation of Horie--Arima first-order corrections for f/sub 7/2/ nuclei, (T), 22:30048(R) (PUC-937-307)
calculation using exactly solvable model with parity deformation and pairing interaction, 22:20671 (NP-17228, pp 25-55)
calculation using velocity-dependent nucleon--nucleon potentials, (T), 22:11981
calculations for even--even 2p1f-shell nuclei, self-consistent, (T), 22:53249
calculations for excited states of even-A nuclei with single closed shell, using shell model with quasiparticle formalism, (T), 22:46828
calculations for odd-A nuclei with A near 190 using shel
and unified models, 22:1624
calculations for odd-A spherical nuclei, near magic regions, (T), 22:39708
calculations using Tamm--Dancoff method in deformed nuclei, (T), 22:46817 (JINR-P4-3934)
charge distributions in nuclei, description using theory
of finite Fermi systems, (T), 22:32685
corrections for nuclei near closed shells, first- and second-order, (T), 22:3755 (PUC-937-169)
effects on Coulomb energies of isobaric multiplet states
(T), 22:20678
measurement and theory of, survey of developments in, 22:46832
measurement by atomic-beam techniques, (E/T), 22:15336
measurement for excited states using ion implantation, methods of, (E), 22:46840
measurement for excited states using Moessbauer effect with Coulomb excitation recoil implantation, 22:46269
measurement for excited states using perturbed γ angular correlations, review on, 22:32724
measurement for excited states, using γ-γ angular correlations with magnetic resonance, (T), 22:18315
measurement for excited states, using perturbed γ-γ directional correlations, (T), 22:39711
measurement for medium-weight and heavy nuclei using angular correlation methods, dissertation summary on, (E), 22:39660
measurement for millisecond isomeric states, method for, 22:30048(R) (PUC-937-307)
measurement for radioisotopes, method for, 22:30048(R) (PUC-937-307)
measurement for short-lived β emitters using nuclear magnetic resonance with recoil polarization, (E), 22:46724
measurement for short-lived excited in states using γ-γ angular correlations in internal magnetic fields of magnetized foils, 22:30116
measurement for short-lived excited states using γ resonance scattering, (T), 22:35384
measurement for short-lived nuclei using atomic-beam techniques, (E), 22:29943
measurement of g-factor for excited states using ion implantation in ferromagnetic materials, review of, (E/T), 22:46839
measurement of g-factors for short-lived excited states, using nuclear precession in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)
measurement of, method for, (E/T), 22:48573 (JAERI-1158
pp 1-9)
measurement of, review of methods for, (E/T), 22:3746 (BNL-11746)
measurement of, survey of methods for, 22:39681 (BNL-12628)
measurement using atomic-beam magnetic resonance, beam focusing system for, 22:30048(R) (PUC-937-307)
measurement using atomic-beam magnetic-resonance technique, 22:16054 (BMwF-FBK-67-80)
measurement using hyperfine structure effects, 22:18309 (UCRL-17951)
measurement using ion implantation techniques, research program on, (E), 22:32573 (MIT-2098-422, pp 69-94)
measurement using Moessbauer effect following Coulomb excitation, (E), 22:7696 (NYO-2028-2, pp 18-23)
measurement using Moessbauer effect, review of, 22:4683
measurement using nuclear orientation by optical pumping
(E), 22:18272
measurement using nuclear recoil implantation, (E), 22:27003
measurement using perturbed angular correlations, review on, 22:32709
measurement using perturbed β-γ angular correlations in magnetized foils, (E), 22:46802
measurement using pulsed beam technique with resonance c
perturbed angular correlation, (E/T), 22:44797
measurement using repolarization of nuclear spins in magnetic fields, (T), 22:7743 (NYO-2028-2, pp 106-20
measurements for excited states of medium-weight and heavy nuclei, dissertation summary on, (E), 22:39659
systematics for isospin doublets of light odd A less tha
or equal to 39 nuclei, (T), 22:44769
systematics for odd-even isotope pairs with I = 3/2, Schmidt correlations for, (E), 22:48493
systematics of, deviations from Schmidt lines in calculations with nonlocal two-body potentials, (T), 22:44795
theory of octupole, for light nuclei, (T), 22:26912
NUCLEAR MAGNETIC RESONANCE
see also Nuclear Quadrupole Resonance
bibliography on, of inorganic fluorides, 22:16482 (LA-3871)
book: Free Radicals in Radiation Chemistry, in Polish, 22:47182
book: Magnetic Resonance Spectroscopy, 22:22255
book: NMR Band Handbook, 22:37058
book: Nuclear Magnetic Resonance in Moving Objects, 22:31993
book: Nuclear Magnetic Resonance in the Earths Field, 22:15480
book: Progress in Nuclear Magnetic Resonance

Spectroscopy, Volume 3, 22:20094
book: Radiospectroscopy of Solids, 22:3218
chemical shifts in high-resolution, isotope effects on, 22:50986
correlation and relaxation times in, definition of, 22:17748
design of whole-body spectrometer for detection of signals from protein, 22:45279 (LA-3966)
detection between excited states, methods for, (T), 22:30045 (CEA-Bib-107)
detection for isomeric states using angular correlation and Moessbauer techniques, (E/T), 22:46232
detection for isomeric states using γ angular correlations and distributions, (T), 22:42103 (UUIP-583)
detection for isomeric states using γ angular correlations and distributions, (T), 22:46731(R) (COO-1746-8)
detection in oriented nuclei, (E), 22:7354 (UCRL-17854)
detection in oriented nuclei, methods of, (E/T), 22:46233
detection in radioisotopes, angular correlation- and Moessbauer-, 22:50224 (UCRL-17877)
detection of nuclear quadrupole resonance and, in solids, method for, 22:46199 (UCRL-18043, pp 183-98)
detection of, design of automatic control system for, 22:2456 (UCRL-17715)
developments in, review on, 22:25363
display technique for, linear timebase, 22:19210
electric field acting on electrons from, Stark effect and, 22:13254
equipment for measuring, design of helium Dewar, 22:29409
equipment for measuring, gaseous thermostat control system for spin-echo spectrometer, 22:47419
equipment for studying, design of high-speed current regulator, 22:28248
equipment for studying, design of large Watson permanent magnet, 22:11512
field inhomogeneity correlation effects on detection of small spin-coupling constants in, 22:7382
free induction decay and spin diffusion in, (T), 22:17736
free induction decay in system of several species, (T), 22:52880
in metals, review of research on, 22:9459
line shape for two-spin nonresonant-dipole system, (T), 22:17783
magnetic equivalence of nuclei in high-resolution, 22:52863
magnets for, design of homogeneous-field superconducting, 22:10650
matrix elements of spin-coupling Hamiltonia,n, computer method for evaluating, 22:17751
measurement of nuclear spin relaxation in paramagnetic solutions, 22:31961
measurement of ratio of free electron cyclotron frequency to NMR frequency of protons, 22:32016
measurement of, cryogenic equipment for, 22:2030(R) (NYO-3783-3)
measurement of, design of 40-MHz spectrometer for, 22:24473
measurement of, design of broadband dispersion detector for, 22:4528
measurement of, design of high temperature furnace for use in, 22:27982
measurement of, design of parametric probe for, 22:47417
measurement of, development of low-frequency spectrometer for, 22:51277 (LA-3848, pp 97-107)
measurements in nuclear decay, use of perturbed angular correlations in, 22:9982
measurements, sampling mounting facility for, 22:24408 (IA-1128, pp 21-54)
method and apparatus for double resonance measurements, 22:44217 (UCRL-18278)
method for resolution of chemical shift in, calculations concerning, 22:3187
method using demagnetization for measurement of spin--lattice relaxation, 22:37057
methods for high resolution in, in solids, (E/T), 22:20047
modulation distortion effects on signal of, low-frequency, 22:41689
nuclear polarization effects on, in polycrystalline materials having anisotropic ESR centers, 22:24460
nuclear spin--lattice relaxation measurements by tone-burst modulation, 22:25693
probe for use in 10 to 50 kG fields produced by superconducting solenoids, 22:23381
proton frequency in, relation to cyclotron frequency of free electrons in same magnetic field, (E), 22:5428
pulse sequences in, effects of complex multiple, (T), 22:17799
quadrupole structures in dynamic nuclear polarization with broadened ESR line, (T), 22:31963
quantum mechanical analysis of high-resolution, 22:3213
radiation effects on, of sulfur-containing amino acids, uv, 22:10720
radiative detection of, review, 22:52853 (UCRL-18315)
relaxation of multispin systems in, 22:15561 (INP-508-PL, pp 6-17)
research on, 22:48149(R) (COO-1488-13)
review of, spectroscopy, 22:46282
spectra at varying temperatures, digital computation of moments from, 22:32015
spectra for weak rf fields, theory of triple, 22:20080
spectra from system with two approximately equal spins, 22:34785
spectra in rotating solids, review of, 22:32002
spectra in solids, effects of electric-field-gradient inhomogeneity on quadrupolar satellite intensities in, (T), 22:17810
spectra of nucleosides and nucleotides, effects of deuterium ion concentration on, 22:28309
spectra of, instruments for obtaining double irradiation, 22:39195
spectra, dual representation of energy level diagrams for, 22:13564
spectral broadening in, corrections to, (T), 22:17729
spectral line shape and width in Overhauser effect, (T), 22:39183
spectral line shape in solids of saturated, modulation and cross-relaxation effects in, (E/T), 22:17805
spectral line shapes for triple, in weak rf fields, (T), 22:29589
spectrometer for studying, at 100 MHz, description of Pound--Watkins marginal oscillator-type, 22:33695
spectrometer for, description of whole-body low-frequency, 22:23380
spectrometer for, performance of Du Pont high-resolution superconducting, 22:32017
spectrometers for, design of frequency sweep, field-frequency stabilized, double resonance, 22:28222
spectroscopic techniques for double, developments in, 22:31998
spectroscopy, review of, 22:44223
spectroscopy, review of methods of detection, analysis and applications in, 22:44222
spin echoes in alloys, (E/T), 22:1347
spin response to coherent train of 90º rf pulses in, (T), 22:22238
spin--lattice relaxation time in, effects of translational-diffusion mechanism on, (T), 22:24439
temperature controller for studies of, design of, 22:13544
theory of periodically pulsed double, 22:24461
theory of single-shot passage in solids in, 22:22241
theory of, review of, 22:15572(T) (AD-663931)
use in measuring the geomagnetic field, (E), 22:24110 (CEA-R-3121)
use in study of hyperfine interactions in magnetic and metallic solids, 22:9103
use of acoustic, for detection of dynamically oriented nuclei, (T), 22:26497
use of extremely narrowed, in solids, 22:29548
use to determine purity of organic compounds, 22:46236
use with recoil polarization for measurement of magnetic moments of short-lived states, (E), 22:46724
uses in industry, 22:31993
NUCLEAR MATERIALS MANAGEMENT
accountability procedures for source and special nuclear materials at NRTS Station JAC, 22:6204 (IDO-17246)
analysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
analytical procedures in, 22:37639(T) (ANL-Trans-610, pp 1-56)
conference on, 22:604 (CONF-661011)
control and inventory at Dow Chemical Co, 22:610 (CONF-661011, pp 146-59)
control at station JWC, manual for, 22:19086 (IN-1150)
control procedures for plutonium, at Battelle Memorial Institute, 22:608 (CONF-661011, pp 74-9)
detection of plutonium production, description of cobalt target with aluminum pulling safing wire for, 22:16305(P)
determination of plutonium and its isotopes in plutonium compounds, program for, 22:6 (CONF-661011, pp 135-45)
fuel analysis for, nondestructive methods of, 22:18705
fuel costs for reactors, description of accurate analysis of, 22:37616
fuel services for U. K. reactors, description of, 22:47045 (NP-17599, pp 41-4)
gamma counting method for uranium values in production scrap, 22:609 (CONF-661011, pp 92-103)
inventory verification procedures for, 22:47073 (CONF-680506-2)
methods for fuel procurement and supply, 22:51108
methods in Eurochemic fuel reprocessing plant for, 22:30649 (NP-17368)
methods in fuel reprocessing plant, 22:51047 (KFK-801)
methods in fuel reprocessing plant, 22:39983 (KR-126, pp 143-52)
methods of surveillance and control in, at Idaho Chemical Processing Plant, 22:2322 (IN-1119)
operation of Capenhurst diffusion plant in United Kingdom, description of fuel production, 22:30361
operation of CVTR fuel cycle, analysis of, 22:35427 (CVNA-287)
operation of steam-generating heavy water-moderated power reactors, design parameters for, 22:35495
plutonium fuel control and procurement at FFTF, 22:1851 (BNWL-SA-1388, Suppl.)
plutonium fuel control and procurement at FFTF, 22:1852

(BNWL-SA-1388, pp 7.1-8)
plutonium fuel procurement at FFTF, 22:1853 (BNWL-SA-1388, pp 8.1-7)
power reactor fuels, analysis of regulations on government and private ownership of, 22:27422
production of enriched uranium-235 in Europe, legal aspects of, 22:30209
program for USA fuels, computer simulation of, 22:25042
regulation of possession and use of nuclear materials, 22:37634
safeguard procedures in the U.S. Atomic Energy Commission, 22:605 (CONF-661011, pp 1-7)
safeguards for, analysis of fuel cycle instrumentation and systems, 22:53289
safeguards inspection procedures for unirradiated MTR-type fuel elements, 22:42393 (RISO-M-732)
safeguards program for, 22:22925
standards for controls and safeguards procedures of, guide for preparation of, 22:53462 (TID-24744)
supply agreements in, implementation of, 22:611 (CONF-661011, pp 200-12)
system for international control of reactor produced fissile materials, standards for, 22:37445 (KFK-800)
system for safeguarding fissile material for, development of instrumented, 22:40301
techniques for tritium in aqueous wastes of fuel processing, 22:25444 (ANL-7375, pp 180-9)
training course for, description of, 22:33105
uranium scrap classification, guide for, 22:25469 (Y-MA-777)

NUCLEAR MATTER
binding energy and density of, calculations using Thomas-Fermi formalism with density-dependent central forces, (T), 22:44768
binding energy and saturation density of, calculations using velocity-dependent one-boson-exchange potential, (T), 22:37384
binding energy of, calculation using four-body correlations, (T), 22:7749
binding energy of, calculations using Brueckner theory with soft-core nucleon-nucleon potentials in momentum space, (T), 22:3786
binding energy of, density dependence of, (T), 22:35398
binding energy of, hole line expansion method for calculations of, (T), 22:53250
binding energy of, use in determining effective force operator for random phase approximation, (T), 22:39692 (JINR-P4-3849)
binding energy of, variational calculations of, (T), 22:44644
binding energy of, variational calculations using two-body cluster expansion, (T), 22:27294
binding energy per particle and saturation density of, calculation using separable potentials, (T), 22:3794
book: Introduction to Nuclear Theory, 22:48590
book: Nuclear Matter and Nuclear Reactions, 22:24924
density and energy of, effective nucleon--nucleon potentials for Hartree--Fock calculations of, (T), 22:32718
density of, inverse relation to shell-model potential, (T), 22:24902
description as low-density Fermi gas, (T), 22:32687
description of, using superfluid model, 22:1624
description using alpha-particle model, (T), 22:39732
deuteron scattering by, optical-model potential for, (T), 22:39705
distribution by meson (π) scattering method, (T), 22:48594
distributions from eight-parameter optical model using nucleon-nucleon forces, (T), 22:27362
effective interaction in, density-dependent, 22:27309
electron inelastic scattering by, calculations using perturbation theory with separable potential, (T), 22:35370
four-body correlations in, Day approximation in solution of Bethe--Faddeev equation for, (T), 22:53256
four-body forces from interactions of virtual π mesons, long-range, (T), 22:50695
hyperon (Λ) decay in, nonmesic, (T), 22:20738
hyperon (Λ) interactions in, potentials for, (T), 22:5809(R) (ANL-7354)
many-body problem in, rearrangement energy for, (T), 22:3783
mass distribution beyond charge distribution in, from optical model analysis of neutron elastic scattering, (T), 22:50679
nucleon bound states in, two- and three-body, (T), 22:35398
nucleon interactions in, empirical model for, (T), 22:3749 (INP-555/PL/PH, pp 137-45)
nucleon pairing correlations in, calculations using self-consistent model, (T), 22:50693
nucleon scattering in, effect of repulsive core on, (T), 22:39724
nucleon scattering in, effects of tensor forces on, (T), 22:44798
nucleon--nucleon interaction in, nonstatic, (T), 22:44793
nucleon--nucleon potentials for, formulation using meson theory, 22:30092
nucleon--nucleon potentials for, soluble nonlocal, (T), 22:30048(R) (PUC-937-307)
nucleon--nucleon potentials in, soft core and velocity-dependent for $^1S_0$, 22:30079
nucleon--nucleon tensor force in, approximation by local central density-dependent potential, (T), 22:35376
nucleon-nucleon interactions in, time-retarded, (T), 22:14103
nucleon-nucleon potential for, hard core in, (T), 22:27249
properties of ground state of, calculations using Λ_{11} approximation, (T), 22:27275
properties of, calculations using meson exchange forces, (T), 22:53245
radii of, from reformulated optical model, (T), 22:4211
symmetry energy of, calculation using Gammel--Thaler phenomenological potential, (T), 22:27251
theory of compressibility, rearrangement energy, and symmetry energy, (T), 22:20756
theory of superfluid, using statistical mechanics, (T), 22:5879
theory of, (T), 22:1713
theory of, (T), 22:1722
theory of, approximations in, (T), 22:22622
theory of, Green's function formalism for, (T), 22:3739
theory of, lectures on, 22:16058 (MATSCIENCE-57)
theory of, method of unitary transformations in, (T), 22:50690
theory of, recent developments in, (T), 22:16083
theory of, research progress on, (T), 22:5809(R) (ANL-7354)
theory of, three-body problem in, (T), 22:1714
theory of, using alpha-particle cluster model, (T), 22:11999
theory of, using density-dependent short-range effective interaction, (T), 22:18328
theory of, using one-boson exchange forces, (T), 22:27282
theory of, using three-body cluster expansion, (T), 22:27293
theory using reaction-matrix formalism, three-body correlations in, (T), 22:9972
theory using velocity-dependent nucleon-nucleon potentials from one-boson exchange formalism, (T), 22:20752
three-body correlation effects in, calculations using Martin--Schwinger--Puff Green function formalism of quantum statistical mechanics, (T), 22:53254
three-body forces in, implications of PCAC theory for long-range, (T), 22:42141
three-body forces in, long-term, (T), 22:30048(R) (PUC-937-307)
three-body forces in, π-mesic, (T), 22:44761
zero sound in, observation using π^- radiative capture, (T), 22:53224

NUCLEAR MODELS
alpha cluster, superfluid phase transition in, (T), 22:11999
alpha-cluster, α-α interaction in argon-36 and calcium-40, (T), 22:29942
alpha-cluster, formalism for A = 19, 20, and 21 nuclei, (T), 22:26972
alpha-cluster, low-lying 0^+ levels of carbon-12, (T), 22:53107
alpha-cluster, molecular structure in rotational bands o light nuclei, (T), 22:53235
alpha-deuteron cluster, testing for lithium-6 using lithium-6 (p,2p) reaction, (T), 22:32497
alpha-deuteron cluster, testing for lithium-6 using lithium-6 (p,2p) reaction, (T), 22:26885
alpha-nucleon cluster, for A = 6 isobaric triplet, (T), 22:48466
anharmonic effects in even--even nuclei of transition region, (T), 22:46816 (JINR-P4-3898)
anharmonic vibrational states in spherical nuclei, (T), 22:27320
asymmetric rotator, testing for even-even nuclei using Coulomb excitation, (E), 22:29985 (ORNL-TM-2121)
asymmetric rotor, effects of nuclear shape and deformation in, (T), 22:27323
asymmetric rotor, for rotational states of deformed even even nuclei, (T), 22:3707
asymmetric-rotor, blocking effects in, (T), 22:1732
book: Fundamentals in Nuclear Theory, 22:9925 (STI/PUB-145)
book: Intermediate Structure in Nuclear Reactions, 22:48595
book: Introduction to Nuclear Theory, 22:48590
book: Nuclear Forces, 22:24923
book: Nuclear Many Body Problems, 22:32672
book: The Spatial Quantum Mechanical Axial and Shell Structure of the Atomic Nucleus, 22:27395
boson representations for description of fermion systems (T), 22:53231
Brueckner theory in oscillator basis, (T), 22:53244
classification of, lectures on, 22:16058 (MATSCIENCE-57
cluster, bound states in alpha and deuteron clusters, (T), 22:26859
cluster, development and testing of, 22:14067(R) (BMwF-FBK-67-81)
cluster, for bound states and reactions in light nuclei, (T), 22:26857
cluster, methods for describing bound states and nuclear

reactions, (T), 22:24889 (BMwF-FBK-67-93)
cluster, nucleon-nucleon spin-orbit potential for light nuclei, (T), 22:1704 (BMwF-FBK-67-69)
cluster, recoupling coefficients of symmetric group for, (T), 22:50685
cluster, structure of nuclear surface, (T), 22:20667 (INR-830/I/PL)
cluster, testing for light nuclei using reactions at high energy, (E/T), 22:14116
cluster, theory for heavy nuclei, (T), 22:22628
cluster, theory of finite-range knock-out reactions, (T), 22:20712
cluster, three-problem with non-zero momentum and nonlocal factorizing potential, (T), 22:30085
cluster, unified theory of nuclear reactions and structure, (T), 22:14068 (BMwF-FBK-67-82)
cluster, wave function for ground state of lithium-6, (T), 22:18119
coefficients of fractional parentage with parity mixing in single-particle orbitals, (T), 22:30083
collective and two-particle isomeric states in spherical even--even nuclei, (T), 22:35404
collective excitations in deformed nuclei, 0^+, (T), 22:27329
collective excitations in even-even nuclei, purity of, (T), 22:24901
collective excitations in, description using quasi-boson approximation, 22:27314
collective excitations of giant dipole type in heavy nuclei, $\Delta T_3 = 1, 0, -1$, (T), 22:27225
collective oscillations in even spherical nuclei, effect of Pauli principle on, 22:27315
collective oscillations of even spherical nuclei, anharmonic effects on, (T), 22:27322
collective states of even-even rare-earth nuclei, (T), 22:48517 (JAERI-1158, pp 39-46)
collective vibrations in terms of boson expansions, (T), 22:46825
collective, anharmonic effects of quadrupole forces on two-phonon states of spherical nuclei, (T), 22:35320
collective, anharmonic vibrations in even-even spherical nuclei, (T), 22:48520 (JAERI-1158, pp 90-5)
collective, calculation of low-lying states in even--even 1f/sub 7/2/ nuclei, (T), 22:48603
collective, centrifugal stretching effect on equilibrium deformation, (T), 22:48581 (JAERI-1158, pp 113-14)
collective, centrifugal stretching of classical rotator, (T), 22:39709
collective, core polarization and effective interaction in collective vibration, (T), 22:27311
collective, decomposition of irreducible representations of R(5) group into irreducible representation of R(3), (T), 22:53234
collective, deformation calculations using surface delta interaction, (T), 22:20743
collective, description of rotational excitations in spherical nuclei using extended random phase approximation, (T), 22:48577 (JAERI-1158, pp 84-9)
collective, dipole states in deformed even--even rare-earth nuclei, (T), 22:53176
collective, E1 energy-level transition probabilities in vibrational bands of deformed nuclei, (T), 22:27324
collective, E2 and M1 transition probabilities for odd-odd spherical nuclei, (T), 22:39707
collective, E2 transition probabilities for rotational bands of A = 150 to 190 nuclei, (T), 22:13993 (IIAE-LR-19)
collective, E2 transitions between rotational states in deformed odd-A nuclei, 22:39706
collective, energy levels of deformed odd-A nuclei with A = 153 to 187, (T), 22:20649
collective, formalism for odd-A nuclei using vector coupling of single nucleons to rotational excitations, (T), 22:5873
collective, formalism for spherical nuclei, lectures on, (T), 22:20670 (NP-17228, pp 3-24)
collective, formalism for vibrational states of deformed nuclei using adiabatic and Hartree-Fock approximations, (T), 22:9966
collective, formalism using projection operators for discrete and continuum regions, (T), 22:44794
collective, $K = 0^+$ states in deformed nuclei, (T), 22:48580 (JAERI-1158, pp 106-12)
collective, lifetimes of shape isomers with oblate deformation, (T), 22:48583 (JAERI-1158, pp 118-19)
collective, major shell mixing in deformed p-shell nuclei, (T), 22:20768
collective, matrix elements for generators of R(5) group in arbitrary irreducible representation, (T), 22:53233
collective, microscopic formalism using concept of ideal collective coordinate, (T), 22:42112
collective, molecular aspects of, (T), 22:48579 (JAERI-1158, pp 99-105)
collective, neutron strength functions for Z = 42 to 92 nuclei, (T), 22:35337
collective, non-adiabaticity of β vibrations in even--even rare-earth nuclei, (T), 22:13992 (IIAE-LR-18)
collective, octupole deformations and excitations in, (T), 22:48578 (JAERI-1158, pp 96-8)
collective, phenomenological formalism using concept of ideal collective coordinate, (T), 22:42111
collective, phenomenological theory of excited states, 22:30109
collective, quadrupole excitations of even-even nuclei, (T), 22:39689 (ITF-68-13)
collective, renormalization of force strength in random phase approximation, (T), 22:20748
collective, research progress on, (E/T), 22:30047(R) (ORO-2434-4)
collective, review of phenomenological, (T), 22:9936
collective, review of, (T), 22:50663
collective, rotation-projected expectation values for energy of deformed nuclei, (T), 22:53225
collective, rotational motions in, (T), 22:37383
collective, status of, (T), 22:20739
collective, testing for even-even nuclei using Coulomb excitation, 22:29985 (ORNL-TM-2121)
collective, transition probabilities for rotational bands of heavy deformed nuclei, (T), 22:39670
collective, two-parameter formalisms for description of rotational states in even--even nuclei, (T), 22:35387
collective, two-phonon states in spherical nuclei from quadrupole-octupole interaction, (T), 22:35319
collective, vibrational states of even-even nuclei, (T), 22:48576 (JAERI-1158, pp 71-83)
core polarization and quasi-particle formalisms for vibrational nuclei with realistic nucleon-nucleon forces, (T), 22:29996
core polarization effects in A = 15 and 17 nuclei, (T), 22:35235
core--particle coupling, theory of self-consistent, 22:42122
core-particle interaction in odd-A nuclei with ground-state spin $^{1}/_{2}$, (T), 22:24835(R) (BARC-305)
corrections to particle-hole Green's function, higher-order, (T), 22:27319
correlation energy of many-fermion system, testing random phase approximation for, (T), 22:44763
Coulomb interaction in two-particle wave functions with configuration mixing, state dependence of, (T), 22:53247
coupling between quadrupole and octupole phonon states, (T), 22:46814 (IFA-FT-68)
cranking, band mixing of rotational and $K = 0^+$ excited states in deformed even-A nuclei, (T), 22:20741
cranking, derivation of variational equations for deformed even nuclei, (T), 22:53225
cranking, moments of inertia for ground-state bands of light nuclei, (T), 22:53246
cranking, solution of Hartree-Fock-Bolgolyubov equations for rotational states, (T), 22:27326
Davydov, E2 transition probabilities for rotational bands of deformed A = 150 to 190 nuclei, (T), 22:22595
Davydov, energy levels of asymmetric even nuclei from rotations and β and γ vibrations, (T), 22:39682 (CNEA-207)
Davydov, non-adiabaticity of beta vibrations in even-even rare-earth nuclei, (T), 22:37375 (AD-664798)
deformations in light nuclei, (T), 22:27303
deformations of ground states and excited states of strongly deformed nuclei, equilibrium, (T), 22:24894 (JINR-E4-3703)
description of microscopic empirical, 22:3749 (INP-555/PL/PH, pp 137-45)
development of, review of, 22:30054
diffraction, angular distributions for (He-3,α) reactions on light nuclei, (T), 22:22560(R) (ORO-1067-2)
diffraction, coherence effects in (p,He-3) reactions, (T), 22:20728
diffraction, for deuteron elastic scattering, (T), 22:15989
diffraction, formalism for elastic scattering, with surface absorption, (T), 22:14112
diffraction, integral cross sections for particle scattering by nuclei, (T), 22:18318
effective force for random phase approximation renormalization of, (T), 22:39693 (JINR-P4-3873)
effective force operator for random phase approximation, (T), 22:39692 (JINR-P4-3849)
effective interaction for Hartree--Fock calculations, nuclear matter criterion for, 22:50670
effective interaction from canonical transformation of two-body potential into Hermitian Brueckner matrix, 22:48616
effective mass near Fermi surface in medium-weight and heavy nuclei, (T), 22:27259
energy gap for deformed nuclei, calculations using Migdal theory of finite Fermi systems with pair correlations, (T), 22:48606
energy levels of even-even nuclei, systematics of, 22:27332
equilibrium deformations of even-even nuclei with N = 50 to 82 and Z = 50 to 82, (T), 22:32568 (JINR-E4-3816)
equilibrium deformations of ground and excited states, (T), 22:53220 (INR-P-920)
evaporation, angular momentum distributions in compound-nucleus reactions, (T), 22:27371
evaporation, beryllium-8 emission in high-energy reactions, 22:35367
evaporation, correlations of products from nuclear disintegration with fragments, (T), 22:24908
excitation energy correlation with neutron-proton exchange energy in isobaric nuclei, (T), 22:35372

Fermi gas, level densities and spacings in intermediate and heavy nuclei, (T), 22:1712
Fermi gas, surface waves in, (T), 22:27277
Fermi, effects of degenerate single-particle states on density of states, (T), 22:44771
Fermi, vibrational states of heavy even--even nuclei with filled proton shell, (T), 22:35316
formalism for anharmonic corrections in even-even and odd spherical nuclei, using boson approximation with quasiparticle antisymmetry, 22:3766
formalism for collective excitations using gauge invariance of nucleon interactions, 22:27313
formalism for collective excitations, using number-projected wave functions, 22:27318
formalism for deformed odd-A nuclei using Saxon--Woods single-particle potential with ΔN = 2 mixing, (T), 22:27242
formalism for description of rotational states, 22:22643
formalism for energy levels of fluorine-18, fluorine-19, neon-18, neon-19, oxygen-16, and oxygen-18 using 1p hole coupling with ground-state neon-20, (T), 22:46719
formalism for even spherical nuclei, using random phase approximation, 22:27316
formalism for even-even nuclei, with quasi-β and -γ vibrational bands, 22:27331
formalism for finite nuclei using Hartree--Fock method with angular momentum projection, (T), 22:32555
formalism for medium-weight nuclei, using two- and four-quasiparticle Tamm-Dancoff theory, (T), 22:22635
formalism for rotational states of neutron-excess nuclei, using stretch scheme, (T), 22:27308
formalism for spherical nuclei using pairing approximation, 22:5880
formalism for spherical nuclei using pairing approximation, 22:5881
formalism for states of high angular momentum in odd-odd nuclei, 22:20697
formalism for supermultiplet of giant resonances, using realistic forces, (T), 22:20758
formalism for translationally invariant description of particle-hole states with continuum, (T), 22:44796
formalism for Z = 28, 50, and 82 even--even nuclei, (T), 22:48592
formalism of exactly solvable, for resonance scattering, 22:44751 (JINR-E4-3837)
formalism of independent quasi particle for single-closed-shell nuclei, (T), 22:1734
formalism using density-dependent short-range effective interaction, (T), 22:18328
formalism using Hartree--Bogoliubov theory with antilinear operators, 22:46836
formalism using quasiparticle second Tamm--Dancoff approximation, (T), 22:26975
formalism using two-body harmonic oscillator potentials with group theory, (T), 22:9960
formalism with pair oscillator interaction, exactly solvable, (T), 22:39727
formalism with pairing plus monopole interactions, (T), 22:20749
formalism with pairing plus quadrupole forces, using boson expansions of fermion pair operators, (T), 22:20750
formalism with parity deformation and pairing interaction, (T), 22:20671 (NP-17228, pp 25-55)
formalisms for many-body problems, lectures on, 22:9945
formalisms for nuclear structure of spherical nuclei, review of, (T), 22:9955
formalisms using generator-coordinate method and random phase approximation, relation of, (T), 22:22641
formulation for giant resonance states, lectures on, (T), 22:53221 (NRL-6729)
formulation of, review of, 22:32722
formulation using analogy with elementary particle models, (T), 22:20737
four-body correlations in light closed-shell nuclei, (T), 22:27296
ground-state energy of N-fermion system, lower limit of, (T), 22:44283
ground-state properties of light-weight nuclei from, using Brueckner--Hartree--Fock calculations, (T), 22:3791
Hartree--Bogolyubov theory with projection method, rotational and pairing correlation corrections for, (T), 22:50680
Hartree--Fock--Bogolyubov projected spectra for finite nuclei, (T), 22:37392
Hartree-Fock equations including second-order and rearrangement effects, (T), 22:37340(R) (EANDC(E)-89(U))
hydrodynamic, A/sup -1/6/ dependence of giant dipole resonance energy in, (T), 22:50673
hydrodynamic, coupling of giant multipole resonances to surface quadrupole oscillations, (T), 22:30058
hydrodynamic, for nuclear quadrupole oscillations, (T), 22:22638
hydrodynamic, nonlinear surface vibration effects on density distributions in nuclei, (T), 22:11989
hydrodynamic, zero sound in finite nuclei, (T), 22:32682
independent-particle, deuteron width in, (T), 22:39704
independent-particle, formalism for equilibrium shapes of light nuclei, (T), 22:9946
independent-particle, formalism using Hartree-Fock approximation, lectures on, (T), 22:3756 (TID-24142)
independent-particle, LS-coupling formalism for electron quasielastic scattering, (T), 22:50676
interaction region, Hilbert space properties of, (T), 22:42101 (UCD-CNL-95)
isospin formalism for, survey of, 22:9937
level density of light A less than or equal to 70 nuclei, (T), 22:18171
liquid drop, formulation for nuclear fission, (T), 22:5820
liquid drop, stability of spheroidal super-heavy nuclei in, (T), 22:46826
liquid-drop, collective deformation from saddle point to scission, (T), 22:48631
liquid-drop, deformation and rotation in, 22:24910
liquid-drop, effects of Coulomb distortion in heavy-ion reactions, (T), 22:14083
liquid-drop, effects of deformation on Coulomb barrier, (T), 22:53169(R) (PPAD-647-D)
liquid-drop, electron inelastic scattering in Born and distorted-wave Born approximations, (T), 22:20681
liquid-drop, fission stability of elongated nuclei with high angular momenta, (T), 22:35293(R) (ORNL-4230)
liquid-drop, flattening of colliding nuclei, 22:27340
liquid-drop, formalism for discrepancies in spectroscopic data on masses of light nuclei, 22:32681
liquid-drop, formalism for fission using two-parameter equations, (T), 22:30046 (LA-3774)
liquid-drop, formalism for ground-state and saddle-point properties of heavy nuclei including curvature and shell-energy corrections, (T), 22:53228
liquid-drop, formalism for symmetric fission, (T), 22:39726
liquid-drop, formalism with core for fission asymmetry, (T), 22:27338
liquid-drop, lectures on, (T), 22:16058 (MATSCIENCE-57)
liquid-drop, mass equation in, (T), 22:18335
liquid-drop, modification using variables for deviations in neutron and proton densities for description of average nuclear properties, (T), 22:50658 (UCRL-18214
liquid-drop, review for fission, (T), 22:35369
liquid-drop, shell corrections to deformation energies of transuranium and superheavy nuclei, (T), 22:46813(T) (ANL-Trans-634)
liquid-drop, shell effects on saddle point in fission, (T), 22:42127
liquid-drop, use for calculating isotope effects in spectra of elements with Z = 38 to 95, (T), 22:7765
moments of inertia at high rotational frequencies, 22:27327
monopole-monopole pairing and deformation in solvable, (T), 22:53232
neutron--proton interaction in odd--odd nuclei, effective, (T), 22:48587 (JAERI-1158, pp 138-44)
Nilsson intrinsic states in odd-A nuclei, (E/T), 22:53215
Nilsson, computer program for diagonalization for axial symmetry in, 22:24891 (INR-854/VII/PL)
Nilsson, ΔN = 2 configuration mixing in, (T), 22:27330
Nilsson, ΔN = 2 mixing of states from different principal harmonic-oscillator shells, (E/T), 22:9881
Nilsson, transitions in medium-weight odd-A nuclei, (T), 22:48516 (JAERI-1158, pp 31-8)
Nilsson, Y_{40} deformation in heavy nuclei, (T), 22:48584 (JAERI-1158, pp 120-2)
nuclear pairing correlations in, isospin- and number-conserving formalism for, (T), 22:30073
nucleon pairing Hamiltonian for, linearization of, (T), 22:30075
nucleon pairing Hamiltonian in R_5 group representation, matrix elements of, 22:18325
nucleon pairing interaction in even-even N = Z nuclei, weak, (T), 22:27304
nucleon--nucleon pairing force Hamiltonian in, isospin invariance of, (T), 22:37391
octupole vibrations of deformed heavy nuclei, description using pairing + state-independent octupole force, (T), 22:44757
one-boson exchange, review of, (T), 22:11994
optical formalism for elastic scattering of polarized spin-1/2 and -1 particles, (T), 22:7742 (LYCEN-6752)
optical, adequacy for alpha-particle and deuteron scattering by nuclei, (T), 22:9933
optical, alpha scattering by medium-weight even-even nuclei at low energy, (E), 22:20551
optical, analysis for neutron elastic scattering using pole representations, (T), 22:32712
optical, analysis of 52-MeV deuteron elastic scattering by Z = 1 to 92 nuclei by, (E), 22:46711 (BMwF-FBK-68-16)
optical, analysis of fast neutron elastic scattering using pole representation, (T), 22:32711
optical, analysis of meson (π^-) elastic scattering by carbon at 69.5, 80, and 87.5 MeV by, (T), 22:20496
optical, anomalies in deuteron elastic scattering by N = 50 nuclei, (E/T), 22:48501
optical, α-α potential using two-nucleon amplitudes in impulse approximation, (T), 22:26826
optical, barrier penetration for diffuse Woods--Saxon potential with strong interaction, (T), 22:48621
optical, calculations for intermediate resonances using

k-matrix formalism, (T), 22:46820 (UCSD-10-P-11-75)
optical, calculations of form factor for symmetry potential using microscopic model of isobaric analog resonances, (T), 22:53237
optical, collective-model generalization for proton inelastic scattering by medium-weight nuclei, (T), 22:48497
optical, criterion for fitting oscillatory data, (T), 22:42097 (IPNO/TH-117)
optical, deformation effects on neutron total cross sections, (E/T), 22:32648
optical, deformed spin-dependent potential for proton inelastic scattering, (T), 22:22639
optical, deuteron potential for nuclear matter, (T), 22:39705
optical, deuteron potential formulation using neutron and proton potentials, (T), 22:50686
optical, deuteron potential in, (T), 22:20727
optical, doorway state theory for neutron reactions below 10 MeV, (T), 22:46848
optical, DWBA formalism for one-nucleon transfer reactions, (T), 22:53219 (CEA-R-3574)
optical, effects of spin-orbit and spin-spin interactions on potentials in, (T), 22:24899
optical, effects of surface wave on absorption in, (T), 22:27277
optical, eight-parameter formulation using real central and spin-orbit potentials from nuclear matter distribution and nucleon-nucleon forces, (T), 22:27362
optical, energy dependence of deuteron diffuseness parameter, (T), 22:9978
optical, energy dependence of deuteron potential parameters, (T), 22:20713
optical, energy dependence of empirical potential for, (T), 22:20708
optical, energy dependence of phenomenological potentials for proton scattering, (T), 22:27262
optical, energy-level shifts in π-mesic atoms, (T), 22:27390
optical, failure of chi square criterion in curve fitting, (T), 22:35400
optical, five-parameter nucleon potential in, (T), 22:24909
optical, for elastic backscattering, 22:32723
optical, for neutron elastic scattering by medium-weight and heavy nuclei, (T), 22:18300
optical, formalism for calculating neutron cross sections, (T), 22:18347
optical, formalism for deuteron elastic scattering using perturbation theory for description of tensor and spin-orbit interactions, (T), 22:44800
optical, formalism for direct nuclear reactions and scattering, survey of, (T), 22:9935
optical, formalism for inelastic scattering of spin-$^1/_2$ particles by spin-0 targets, (T), 22:7750
optical, formalism for neutron inelastic scattering, (T), 22:3658
optical, formalism using central and spin-orbit potentials from nuclear matter distribution, (T), 22:1598(R) (COO-1265-49)
optical, formalism using square-well potential for collective excitation in neutron interactions with even-even nuclei, (T), 22:18352
optical, four-parameter deuteron potential in, (T), 22:39729
optical, generalized formalism for analysis of uranium-238 neutron cross sections at 0.05 to 15 MeV, (T), 22:50605
optical, generalized formalism for nucleon inelastic scattering, (T), 22:44772
optical, generalized potential in, for proton elastic and quasi-elastic scattering, (T), 22:1729
optical, helium-3 spin—orbit potential in, (E), 22:48607
optical, imaginary isospin term in nucleon potential, (T), 22:27360
optical, imaginary part of potential for neutron scattering by heavy nuclei, (T), 22:30069
optical, isospin dependence of potential in, (E/T), 22:5894
optical, isospin dependence of potential in, from neutron total cross sections, (E/T), 22:14057
optical, isospin dependence of potentials in, (T), 22:46734
optical, lectures on, (T), 22:16058 (MATSCIENCE-57)
optical, local spherical potential for calculating neutron cross sections of heavy nuclei, (T), 22:35349
optical, mass distribution beyond charge distribution in nuclei, (T), 22:50679
optical, method for measuring real potential of, (T), 22:26832 (ORNL-4105)
optical, neutron absorption and capture in transuranium elements, (T), 22:32569 (JINR-P2-3738)
optical, neutron forward scattering amplitude and cross sections for A = 56 nuclei, (T), 22:20668 (LA-DC-9179)
optical, neutron strength functions for heavy even-even rotor nuclei, (T), 22:27093
optical, neutron strength functions for heavy even-even rotor nuclei, 22:18211 (NAA-SR-Memo-12538)
optical, neutron strength functions for Z = 42 to 92 nuclei, (T), 22:35337
optical, non-Hermitian Hamiltonians for, (T), 22:35403
optical, nonlocal potentials for deuteron and alpha-particle scattering, (T), 22:35293(R) (ORNL-4230)
optical, normalization of zero-range DWBA cross sections for (t,d) reactions, (E/T), 22:50624
optical, nucleon transmission coefficients for (n,p) reactions on A = 45 and 90 nuclei, (T), 22:20677 (UCRL-50359)
optical, parameter estimation from small-angle antiproton elastic scattering at 3 GeV/c in emulsions, (E), 22:46855
optical, polarization calculations for neutron elastic scattering using local potential, (T), 22:16013 (LA-3788)
optical, polarization in deuteron elastic scattering, (E/T), 22:27029
optical, potential calculation to second order in two-nucleon scattering amplitudes, (T), 22:27250
optical, potential calculations for central two-body force in nucleon scattering at 90 to 310 MeV, (T), 22:50668
optical, potential calculations for nucleon scattering, (T), 22:44782
optical, potential for neutron elastic scattering, (T), 22:53243
optical, potential for nucleon scattering by helium-4, (T), 22:26802
optical, potential formulation for high-energy scattering of strongly interacting composite particles, (T), 22:48610
optical, potential formulation using nuclear-matter distributions and nucleon—nucleon forces, (T), 22:42113
optical, potential in, derivation of imaginary, (T), 22:1715
optical, potential parameters for (α,t) and (α,He-3) reactions, (E/T), 22:26985
optical, potential parameters for (d,p) reactions on A = 170 to 175 nuclei, (E/T), 22:27148
optical, potential parameters for (p,2p) reactions, (T), 22:27243
optical, potential parameters for 18.6-MeV proton scattering by medium-weight nuclei, (T), 22:16088
optical, potential parameters for A > 40 nuclei at nucleon energies below 50 MeV, (T), 22:1598(R) (COO-1265-49)
optical, potential parameters for alpha elastic scattering by sulfur-32, (E/T), 22:27019
optical, potential parameters for alpha inelastic scattering by sd-shell nuclei, (E/T), 22:20534
optical, potential parameters for alpha reactions with A approximately 60 nuclei, (E/T), 22:3645 (INP-558/PL)
optical, potential parameters for alpha reactions with cobalt-59, (E/T), 22:26956
optical, potential parameters for alpha scattering by deformed and spherical rare-earth nuclei, (T), 22:14081
optical, potential parameters for aluminum-27 deuteron elastic scattering and silicon-28 proton elastic scattering, (E/T), 22:9812
optical, potential parameters for aluminum-27 deuteron elastic scattering and silicon-28 proton elastic scattering, (E/T), 22:9800(R) (COO-535-571)
optical, potential parameters for beryllium-9 proton elastic scattering, (E/T), 22:11949(R) (ORO-2972-47)
optical, potential parameters for calcium-48 (t,p) reactions, (T), 22:5799
optical, potential parameters for carbon-12 (α,t) and (α,He-3) reactions, (E/T), 22:13932 (LYCEN-6747)
optical, potential parameters for carbon-13 + d interactions, (T), 22:15957
optical, potential parameters for deuteron elastic scattering by neodymium isotopes, (E), 22:42083
optical, potential parameters for deuteron elastic scattering by nuclei, (T), 22:26971
optical, potential parameters for deuteron elastic scattering by A = 54 to 124 nuclei, (E/T), 22:44639
optical, potential parameters for deuteron elastic scattering by N = Z nuclei, (T), 22:35234
optical, potential parameters for deuteron stripping in distorted-wave approximation, (T), 22:22642
optical, potential parameters for elastic scattering of polarized protons by carbon-12, (E), 22:37290 (ANU-P-406)
optical, potential parameters for fast neutron inelastic scattering, (E/T), 22:27159
optical, potential parameters for fast neutron scattering by light nuclei, (T), 22:30051
optical, potential parameters for fast neutron scattering by lead isotopes, (T), 22:39627 (BNL-50082, pp 19-24)
optical, potential parameters for heavy ion-induced neutron transfer, (T), 22:27334
optical, potential parameters for helium-3 and triton elastic scattering, (E/T), 22:39686 (CONF-670970-, pp 41-96)
optical, potential parameters for helium-3 elastic scattering, (E/T), 22:9800(R) (COO-535-571)
optical, potential parameters for helium-3 elastic scattering on carbon-12, (E/T), 22:26843
optical, potential parameters for helium-3 elastic scattering by neon-22, (E), 22:37313 (ANU-P-405)
optical, potential parameters for helium-3 elastic

scattering by neon-22, (E/T), 22:32513(R) (ANU-P-400)
optical, potential parameters for helium-3 elastic scattering by beryllium-9, (T), 22:50554
optical, potential parameters for helium-3 elastic scattering by nickel-62, (E/T), 22:9811
optical, potential parameters for helium-3 elastic scattering by cobalt-59, (T), 22:7666
optical, potential parameters for lead-206 (d,p) reactions, (E/T), 22:7733
optical, potential parameters for lithium-6 elastic scattering by carbon-12, (E/T), 22:9787
optical, potential parameters for meson (π^-) scattering at 0.6 to 1.6 GeV, (E/T), 22:48455
optical, potential parameters for neutron elastic scattering by Z = 27, 28, and 29 nuclei, (E/T), 22:13954 (AE-303)
optical, potential parameters for proton elastic scattering at 9.6 MeV, (T), 22:50662
optical, potential parameters for proton elastic scattering by light nuclei, 22:26907
optical, potential parameters for proton elastic scattering at 1 GeV, (E/T), 22:29907 (ORO-1316-57)
optical, potential parameters for proton elastic scattering by 1p-shell nuclei, (T), 22:35236
optical, potential parameters for proton inelastic scattering, (T), 22:22576
optical, potential parameters for proton scattering by zinc isotopes, (E/T), 22:27027
optical, potential parameters for proton scattering by nickel-58 and -60, (E/T), 22:1598(R) (COO-1265-49)
optical, potential parameters for triton elastic scattering by A = 9 to 20 nuclei, (T), 22:26883
optical, potential parameters for xenon-136 (d,p) reactions, (E/T), 22:11949(R) (ORO-2972-47)
optical, potential parameters for zirconium-90 (He-3,2p) reactions, (T), 22:11949(R) (ORO-2972-47)
optical, potential parameters from neutron elastic scattering, (E/T), 22:24840
optical, potential parameters from nitrogen-14 (d,α) reactions, (E/T), 22:3632
optical, potential parameters from silicon-30 deuteron elastic scattering, (E/T), 22:22560(R) (ORO-1067-2)
optical, potential well depth for oxygen-16 elastic scattering by magnesium-24, (E/T), 22:50581
optical, potentials for complex particles, (T), 22:9800(R) (COO-535-571)
optical, potentials for composite particles, (T), 22:3801
optical, potentials for composite particles, lectures on, (T), 22:20675 (NP-17228, pp 130-60)
optical, potentials for description of scattering and transfer reactions of composite particles in magnesium region, (T), 22:53227
optical, potentials for deuteron reactions and scattering, linked-cluster expansion for, (T), 22:7779
optical, potentials for helium-3 and triton elastic scattering, (T), 22:48615
optical, potentials for helium-3 elastic scattering and reactions, (E/T), 22:39685 (CONF-670970-, pp 13-39)
optical, potentials for low-energy reactions, (T), 22:7778
optical, R-matrix formulation using wave functions from, (T), 22:50666
optical, radial distribution of single-particle wave functions of captured nucleons in stripping reactions, (T), 22:30100
optical, real central part of proton potential, (T), 22:30087
optical, real part of potential in proton scattering, (T), 22:44774
optical, real potential well depth for proton elastic scattering at 11 MeV, (T), 22:14082
optical, resonance parameters of isobaric analog states from proton elastic scattering, (T), 22:27368
optical, review on, (T), 22:20721
optical, s-wave neutron strength function and potential scattering radius for A = 40 to 200 nuclei, (T), 22:35314
optical, spin-orbit potential for helium-3 elastic scattering, (E), 22:39596
optical, symmetry dependence of potential for A = 3 particles, (T), 22:27364
optical, symmetry of nonlocal potential, (T), 22:42121
optical, symmetry term in neutron potential, (E/T), 22:27278
optical, symmetry term in proton potential at 50 MeV, 22:27361
optical, tensorial potential for deuteron elastic scattering, (T), 22:18326
optical, testing collective-model extension for proton inelastic scattering, (E/T), 22:35292 (ORNL-4217, pp 1-81)
optical, testing Perey proton optical potential for nuclei with A less than or equal to 31, (E/T), 22:32513(R) (ANU-P-400)
optical, three-body model for deuteron potential, (T), 22:46823
optical, use for analysis of neutron elastic scattering and polarization by nuclei, (T), 22:24918
optical, use for analysis of nucleon reactions with nuclei, 22:11980(R) (UCLA-10-P-18-4)
optical, use for calculating neutron cross sections, (T), 22:32468
pairing + monopole, validity of BCS and random phase approximations in, (T), 22:44755
pairing + phonon, configuration mixing effects on l-forbidden M1 transition rates, (T), 22:44764
pairing + quadrupole, deformations in, (T), 22:20691
pairing + quadrupole, odd-even staggering of nuclear radii in, (T), 22:27191
pairing + quadrupole, potential energy of deformation for nuclei with N = 82 to 126 and Z = 50 to 82, 22:20692
pairing + quadrupole, testing for even-even nuclei using Coulomb excitation, (E), 22:29985 (ORNL-TM-2121)
pairing interaction in, 8-dimensional quasispin formalism for, (T), 22:48593
pairing interaction in, iterative method for calculations using number-conserving treatment of, (T), 22:48620
pairing, formalism for deformed nuclei, (T), 22:20672 (NP-17228, pp 56-69)
pairing-force, self-consistent formulation of, (T), 22:44802
particle--hole amplitudes of excited states in spherical nuclei, (T), 22:48617
phonon--quasiparticle interactions in deformed odd-A nuclei, (T), 22:27328
phonon-quasiparticle interaction in deformed nuclei, (T), 22:39694 (JINR-P4-3903)
potential, review of, (T), 22:11992
potentials for Hartree--Fock calculations on finite nuclei, equivalent nonlocal, 22:35385
potentials for, solution of Schroedinger equation for nonlocal, (T), 22:42138
potentials in, equivalent local, 22:24890 (IAE-1316)
potentials in, equivalent local, (T), 22:14094
potentials in, separable approximation to nonseparable, 22:50560(R) (RLO-1062-681)
quadrupole vibration in spherical even--even nuclei, effective mass and stiffness parameter for, (T), 22:35390
quasi-particle coupling to pairing vibrations, (T), 22:16065
quasiparticle, low-energy 1^+ states in even-A single-closed-shell nuclei, (T), 22:37398
random-matrix, testing for level densities, (T), 22:27378
reaction matrix for doubly magic nuclei, solution of Bethe--Goldstone equation for, (T), 22:32683
research at MIT, 10/66--10/67, (T), 22:32074 (MIT-2098-422, pp 106-42)
residual interaction in, (T), 22:3752 (INP-555/PL/PH, pp 147-53)
rigid-rotator, nuclear polarization in μ-mesic atoms, (T), 22:22590 (PUC-937-291)
rotation-vibration, E2 transition probabilities for γ band states, 22:39712
rotation-vibration, E2 transition probabilities for vibrational bands of deformed even-even nuclei, (T), 22:27139
rotation-vibration, for rotational states of deformed even-even nuclei, (T), 22:3707
rotation-vibration, predictions for deformed even-even nuclei, (T), 22:39647
rotational and vibrational excitations of four-particle systems, (T), 22:39690 (ITF-68-14)
rotational and vibrational, unified perspective of, (T), 22:3793
rotational energies of deformed even-A nuclei in ground-state bands, (T), 22:48619
rotational motion in, microscopic description of, 22:27317
rotator, derivation of cranking equations from Kerman--Klein formalism, (T), 22:30060
rotor, deformation parameters and neutron strength functions for even-even nuclei, (T), 22:27093
schematic, for quasiparticle description of 2^+ and 3^- states of even-even spherical nuclei, (T), 22:22579 (IPNO/TH-114)
schematic, residual interactions in finite nuclei, (T), 22:32667 (NP-17478)
seniority mixing and γ vibrational bands in nuclei near A = 90, (T), 22:48582 (JAERI-1158, pp 115-17)
shell effects in transuranium elements, (T), 22:18307 (JINR-D7-3548, pp 51-8)
shell SU(3) classification for 1p-1h states of A = 18 nuclei, (T), 22:48467
shell, alpha decay rates in heavy nuclei, (T), 22:35393
shell, application to nuclear reactions, derivation of DWBA in, (T), 22:5895
shell, approximations and potentials for, (T), 22:22627
shell, asymptotic behavior of eigenfunctions with harmonic-oscillator potential, (T), 22:20711
shell, calculation of low-lying states of oxygen-16 by, (T), 22:37302
shell, calculation of odd-parity particle-hole states in the A = 6 and A = 14 systems, (T), 22:35382
shell, calculations for A = 14 to 18 nuclei using Tabakin potential, (T), 22:50556
shell, calculations for A = 20 to 28 nuclei with 1d/sub 5/2/-2s/sub 1/2/ scheme, (T), 22:32521
shell, calculations for energy levels and transition rates of nuclei in A = 40 region using admixtures of collective states in, (T), 22:46755

shell, calculations for neutron closed-shell nuclei using BCS approximation, (T), 22:48602
shell, calculations using realistic interactions with core excitation, (T), 22:41966
shell, center-of-mass motion in excited states of final nuclei from (π^+,2p) reactions on light nuclei, (T), 22:53131
shell, central interaction in irreducible form, (T), 22:20679
shell, conservation laws for Bethe--Salpeter equation for, 22:5877
shell, core excitation in low-lying states in, (T), 22:32717
shell, core polarization contribution to effective interactions in A = 10 nuclei, (T), 22:53253
shell, core polarization effects in proton inelastic scattering at 155 MeV, (T), 22:27270
shell, corrections to deformation energy of transuranium nuclei with, (T), 22:46813(T) (ANL-Trans-634)
shell, Coulomb and center-of-mass corrections to Hartree--Fock calculations for 2s1d-shell nuclei, (T), 22:50694
shell, Coulomb displacement energies in the 1f/sub 7/2/ shell, (T), 22:37382
shell, Coulomb energies for 1f/sub 7/2/-shell, (T), 22:30048(R) (PUC-937-307)
shell, Coulomb energy systematics for A = 22 to 40 nuclei, (E/T), 22:9845
shell, coupling schemes for light nuclei, (T), 22:27300
shell, deformed oscillator formalism for, (T), 22:46729(R) (AECL-3157)
shell, density of nuclear matter, (T), 22:24902
shell, description of intermediate coupling states using nonorthogonal states of submodels, (T), 22:48609
shell, development of, (T), 22:5809(R) (ANL-7354)
shell, doorway interpretation of intermediate structure, (T), 22:44724
shell, E2 transition probabilities for A = 18 to 22 sd-shell nuclei, (T), 22:35293(R) (ORNL-4230)
shell, E2 transition probabilities for sd-shell nuclei with A = 18 to 22, (T), 22:29927
shell, E2 transition rates in, (T), 22:44765
shell, effect of Coulomb potential on ΔT = +-1 Fermi transitions, (T), 22:9953
shell, effect of Pauli principle on electric quadrupole effective charge, (T), 22:30099
shell, effective forces for 2s1d-shell nuclei, (T), 22:46729(R) (AECL-3157)
shell, effective neutron--proton interaction in pf-shell nuclei, (T), 22:48586 (JAERI-1158, pp 133-7)
shell, effective two-body matrix elements for sd shell, (T), 22:20696
shell, effects of correlation in core on motion of outer two nucleons, (T), 22:9954
shell, effects of degeneracy on solution of Bethe--Goldstone equation, (T), 22:26862
shell, effects of mixed parity in Hartree--Fock orbitals in, (T), 22:48604
shell, eigenpotential problem for, (T), 22:39714
shell, electromagnetic transition rates with and without shell admixing, (T), 22:7782
shell, electron elastic scattering as test of, (T), 22:16076
shell, elimination of spurious center-of-mass motion in, (T), 22:46729(R) (AECL-3157)
shell, elimination of spurious center-of-mass motion in, (T), 22:32512(R) (AECL-3108)
shell, energy gaps in level density near closed shells, (T), 22:39640 (UCRL-17989, pp 127-57)
shell, energy levels with nonnormal parity in 1p-shell nuclei, (T), 22:26861
shell, energy-level classification using group theory, (T), 22:1744
shell, expansion for generalized seniority breaking of two-body interactions in, 22:24892 (IPNO/TH-121)
shell, expressions for Coulomb energies in, (T), 22:37381
shell, form factors for pickup and stripping reactions, (T), 22:27353
shell, formalism for 1p-, 2s1d-, and 2p1f-shell nuclei using pairing plus quadrupole, spin-orbit, and long-range tensor interactions, (T), 22:35362 (AD-662219)
shell, formalism for 2s1d-shell nuclei using projected Hartree--Fock wave function, (T), 22:27302
shell, formalism for 2s1d-shell nuclei using realistic interactions with SU(3) classification of wave functions, (T), 22:30048(R) (PUC-937-307)
shell, formalism for A = 39 to 48 nuclei with deformed states, (T), 22:11919 (PUC-937-264)
shell, formalism for alpha decay, with pairing and quadrupole interactions, 22:20673 (NP-17228, pp 70-103)
shell, formalism for configurations with high spin, (T), 22:27307
shell, formalism for deformed harmonic oscillator, (T), 22:32512(R) (AECL-3108)
shell, formalism for deformed nuclei, using pairing interaction, (T), 22:3798
shell, formalism for description of alpha decay, 22:3799
shell, formalism for description of nuclear reactions, lectures on, (T), 22:9948
shell, formalism for description of rotational states, (T), 22:20744
shell, formalism for dipole resonance in magic nuclei, (T), 22:7748
shell, formalism for even-even nuclei using boson approximation, (T), 22:32694
shell, formalism for even-even nuclei using Hartree--Fock method with harmonic oscillator potential and truncated wave functions, (T), 22:26792
shell, formalism for fission theory, (T), 22:35371
shell, formalism for fluorine, neon, and oxygen isotopes, (T), 22:11908
shell, formalism for harmonic oscillator, potential using semidirect-product group K/sub n/ = A/sub n/:S/sub n/, (T), 22:44783
shell, formalism for N = 29 nuclei with configuration mixing, (T), 22:27305
shell, formalism for nonorthogonal basis states using intermediate coupling approximation, 22:20497(R) (AECL-3009)
shell, formalism for nuclei around A = 90, using effective interactions, (T), 22:27135
shell, formalism for odd-A sd-shell nuclei using U_3 group representation, (T), 22:14110
shell, formalism for particle-hole calculations with translational invariance, (T), 22:42142
shell, formalism for sd-shell nuclei with configuration mixing, (T), 22:27301
shell, formalism for sd-shell nuclei, (T), 22:20745
shell, formalism for states with intermediate coupling, (T), 22:11944(R) (AECL-2780)
shell, formalism for vibrating nuclei, using intermediate coupling approximation, (T), 22:27321
shell, formalism using equations-of-motion method, (T), 22:16089
shell, formalism using pairing interaction and parity deformation of single-particle orbitals, (T), 22:3797
shell, formalism using phenomenological, review of, (T), 22:9980
shell, formalism using projected Hartree--Fock wave functions with realistic two-body forces, (T), 22:26973
shell, four-body correlations in light nuclei, (T), 22:50682
shell, four-body correlations in light nuclei, (T), 22:7669
shell, G-matrix interaction in 1p-shell nuclei, (T), 22:27295
shell, G-matrix interaction in, (T), 22:7773
shell, Galilean and translationally invariant field operator formalism using harmonic oscillator potential, (T), 22:3771
shell, generalized seniority breaking of two-body interactions, (T), 22:24921
shell, hexadecapole equilibrium deformations in actinide and rare-earth nuclei, (T), 22:20607
shell, isospin and number-conserving formalism for pairing correlations, (T), 22:14071 (IPNO/TH-110)
shell, isospin formalism for deformation effects in light nuclei, (T), 22:48627
shell, iterative method for variational truncation of bases, (T), 22:32512(R) (AECL-3108)
shell, lectures on effective interactions in finite nuclei, (T), 22:48628
shell, lectures on methods for calculations by, (T), 22:27235 (COO-1051-18)
shell, lectures on, (T), 22:16058 (MATSCIENCE-57)
shell, lower-bound formalism for calculating ground-state energy of many-body system with pairing interactions, (T), 22:48622
shell, many-body states of definite angular momentum and isospin, with mixed single-particle orbits, (T), 22:18306 (AECL-3007)
shell, many-body theory of nuclear reactions, (T), 22:53241
shell, many-particle formalism for, (T), 22:32684
shell, mass equation and mass table for, (T), 22:18335
shell, mass formulas in, (T), 22:30090
shell, matrix elements in senority scheme for, five-dimensional quasispin for n, T-dependent parts of, 22:1703 (AD-648531)
shell, matrix representation for orbital irreducible operators, (T), 22:20680
shell, matrix-element statistics in, (T), 22:20695
shell, method for calculating Slater integrals, (T), 22:22619 (AECL-3041)
shell, method for calculation of reaction matrix elements for closed-shell nuclei, (T), 22:46852
shell, method for diagonalization of matrices for calculations on continuum states, (T), 22:32512(R) (AECL-3108)
shell, neutron and proton single-particle states at the same mass number, (T), 22:46824
shell, neutron potential for A = 208 nuclei, (E/T), 22:20625
shell, nitrogen-15 (p,n) calculation using, (T), 22:29908
shell, nuclear mass formulas from, (T), 22:30076
shell, nucleon-nucleon interaction matrix elements for, sign determination using silicon-28(t,p) reactions, (T), 22:7783
shell, nucleon-pair momentum distribution in ground

states of light nuclei, (E/T), 22:22547
shell, numerical calculations for 1P shell nuclides using a central potential and proper exchange functions, (T), 22:32706
shell, pairing approximation for, (T), 22:7751
shell, potential parameters for description of Z = 114 and 126 nuclei, (T), 22:18266
shell, potentials and shell closure for N > 126 and Z > 82 nuclei, (T), 22:14092
shell, potentials for heavy nuclei, (T), 22:9800(R) (COO-535-571)
shell, proton hole states of odd parity in 2s1d-shell nuclei, (T), 22:20699
shell, reaction matrix elements for 0f-1p shell nuclei, (T), 22:37378
shell, reaction matrix elements for 0f1p-shell nuclei, (T), 22:30048(R) (PUC-937-307)
shell, reaction matrix theory of single-particle potentials in, (T), 22:42104
shell, realistic nucleon-nucleon potentials for, (T), 22:32714
shell, recoupling coefficients of symmetric group for, (T), 22:50685
shell, reduction of U(6) representations into SU(3) irreducible components, (T), 22:35391
shell, relation of two-body effective interaction to nucleon-nucleon scattering, (T), 22:39698 (UR-875-234)
shell, research progress on sd-shell nuclei with A = 19 to 28, (T), 22:35366 (ORNL-4217, pp 82-95)
shell, research progress on, (E/T), 22:30047(R) (ORO-2434-4)
shell, residual two-body force in, (T), 22:20742
shell, review as single-particle model, 22:32721
shell, review for fp-shell nuclei, (T), 22:48585 (JAERI-1158, pp 125-32)
shell, review of correlation effects in, (T), 22:50663
shell, review of SU_3 submodel of, (T), 22:22650
shell, self-consistent Hartree--Fock solutions for even--even 2p1f-shell nuclei, (T), 22:53249
shell, single-particle proton states in, (T), 22:48572 (IAE-1447)
shell, soft-core potentials for, (T), 22:3682
shell, solution of Hartree--Fock equations with realistic effective two-body forces for A = 16 to 208 nuclei, (T), 22:30068
shell, space scaler approximation to particle--hole interactions in 2s-1d, (T), 22:53223
shell, spectroscopic factors for pickup reactions on calcium-40, (T), 22:9838
shell, stability of Hartree-Fock states against four-body correlations, (T), 22:42135
shell, structure in photonuclear cross sections for sd-shell nuclei, (E), 22:18162
shell, SU(3) algebra in mixed shell space, (T), 22:27297
shell, SU(3) coupling coefficients in the 2s-1d shell, (T), 22:18346
shell, SU_3 coupling coefficients for 1p and 2s1d shells, (T), 22:11944(R) (AECL-2780)
shell, surface shape of isotopic term of shell potential for nearly magic nuclei, (T), 22:13985
shell, symmetry in the effective interaction of Kuo and Brown, (T), 22:1730
shell, T = 0 effective interaction in sd shell, (T), 22:37380
shell, T = 1 effective interaction in sd-shell nuclei, (T), 22:42126
shell, t-matrix formalism for closed-shell nuclei using harmonic oscillator representation, (T), 22:7740 (JINR-E2-3543)
shell, table of intrinsic matrix elements for the s-d shell, (T), 22:16080
shell, tables of central-force geometrical coefficients of Talmi integrals for calculating two-body matrix elements using harmonic oscillator wave functions, (T), 22:46819 (NRL-6733)
shell, testing by knockout reactions, (E/T), 22:22624
shell, testing by nucleon correlation effects in π absorption, 22:39700
shell, transformation brackets for expressing matrix elements in terms of Talmi integrals, tables of, (T), 22:14119
shell, trapezoidal and modified Gaussian radial density in, (T), 22:11988
shell, two-quasiparticle low-energy 1^+ states in even-A nuclei with single closed shell, (T), 22:37398
shell, use for calculating the splitting of resonance multiplets, (T), 22:30091
shell, use for nuclei in lead region, (T), 22:53252
shell, use of single-particle wave functions with undefined parity in, (T), 22:48596
shell, use to calculate energy-level schemes of 39 < A < 49 nuclei, (T), 22:7770
shell, use with realistic single particle Hamiltonians to predict new magic regions and masses for super-heavy nuclei, (T), 22:32701
shell, validity of exponential alpha decay law in, (T), 22:46822
shell, validity of Hartree-Fock method without angular momentum projection, (T), 22:27045
shell, wave functions for intrinsic motion of nucleons, (T), 22:37340(R) (EANDC(E)-89(U))
shell, wave-functions for low-lying states of even-even nuclei, (T), 22:42094 (ANL-7439)
shell, widths of 2p-1h doorway states in spherical nuclei, (T), 22:46820 (UCSD-10-P-11-75)
single particle levels of finite deformed potential, method for calculating, (T), 22:39691 (JINR-P2-3857)
single-particle wave functions for, computer program for fitting with Woods--Saxon eigenfunctions, (T), 22:53222 (ORNL-TM-2342)
single-particle, formalism for 2s1d-shell nuclei using projected Hartree-Fock wave functions, (T), 22:9968
single-particle, projection of spurious center-of-mass and rotational states from many-body wave functions, (T), 22:50681
single-particle, sum rules for single-particle strengths in deuteron stripping, (T), 22:9963
solution of cranking, using projections, 22:1731
spin systematics for odd-A = 135 to 151 nuclei with $(2f/sub\ 7/2/)^{+-3}$ ground-state configurations, 22:39668
statistical, application to fission of excited nuclei, (E/T), 22;46815 (JINR-E7-3942)
statistical, compound-nucleus structure in neutron elastic and inelastic scattering, (T), 22:27379
statistical, cross sections for (n,3n) reactions, (T), 22:50642
statistical, cross sections for fast neutron-induced reactions, (E), 22:32530
statistical, effective moments of inertia of heavy nuclei at saddle point, (E/T), 22:18215(T) (BNL-tr-192)
statistical, energy--density formalism for finite nuclei, (T), 22:42118
statistical, exact distributions of compound-nucleus level widths, (T), 22:20764
statistical, excitation energy of fission fragments, (T), 22:35392
statistical, formalism using Thomas-Fermi method with local-density approximation, (T), 22:18329
statistical, interference effects in sequential decays of compound nuclei, (T), 22:22644
statistical, level densities from neutron spectra for alpha particle- and proton-induced reactions, (T), 22:9800(R) (COO-535-571)
statistical, level density and width at 20-MeV excitation energy, (E/T), 22:30101
statistical, nearest-neighbor spacing distribution for ensembles of random matrices with nonrandom bias, (T), 22:46851
statistical, nuclear temperatures in (α,n) reactions, (T), 22:37377
statistical, perturbation of nuclear states and transitions by time-reversal-odd interactions, (T), 22:20578 (WASH-1079)
statistical, perturbation of Porter-Thomas distribution by interactions odd under time reversal, (T), 22:27375
statistical, quasistatic character of fission, (T), 22:35408
statistical, relative probabilities of isomeric excitation in thermal neutron capture, (T), 22:20666 (FEI-79)
statistical, testing for (n,p) and (n,np) reactions, (E/T), 22:22561(T) (ORNL-tr-1850)
statistical, testing for description of fission, (T), 22:13991 (IAE-1389)
statistical, use for calculating neutron capture cross sections, (T), 22:9938
statistical, use for calculating neutron cross sections, (T), 22:32468
statistical, validity for description of population of ground-state rotational levels, (T), 22:39710
statistical, verification using recoil range technique, (E/T), 22:32666 (KFK-693)
statistical, yields for triton photoproduction, (T), 22:26921
super-multiplet, fractional parentage decomposition of nuclear wave function, 22:39728
superconductivity, level densities in, (T), 22:27376
superconductivity, vanishing energy gap in deformed nuclei from Coriolis interaction, (T), 22:1719
superfluid, dependence of potential energy on quadrupole and octupole deformation parameters, (T), 22:27239
superfluid, energy gap in nuclear matter, (T), 22:50693
superfluid, formalism for deformed nuclei, (T), 22:1741
superfluid, formalism for nuclear matter using statistical mechanics, (T), 22:5879
superfluid, pairing correlations without violation of conservation laws, (T), 22:9950
superfluid, pairing energies for A = 100 to 256 nuclei, (T), 22:14065
superfluid, pairing energies for deformed and spherical A = 100 to 256 nuclei, (T), 22:7741 (JINR-P4-3584)
superfluid, potential energy of A = 218 to 232 nuclei, dependence on octupole and quadrupole deformation parameters, (T), 22:14074 (JINR-E4-3629)
superfluid, projected BCS-type solutions for charge-independent pairing interaction, (T), 22:18320
superfluid, quadrupole pairing force in, (T), 22:20740
superfluid, three-quasiparticle states in deformed rare-earth nuclei, (E/T), 22:27177
superfluid, validity of random phase approximation for pairing vibrations of closed-shell nuclei, (T), 22:18353
superfluid, X-representation of nucleon--nucleon

interaction in, (T), 22:1709 (JINR-P4-3505)
supermultiplet, testing SU(4) symmetry for A = 40 to 254 nuclei, 22:22632
symmetries of quantum oscillator systems, (T), 22:44289
testing for even-even spherical nuclei, (E/T), 22:30063
testing for K = 2 states of deformed even-A nuclei, (T), 22:42059
testing of, review of method of numerical analysis of time spectrum of delayed coincidences for, 22:40495
testing using two-neutron transfer reactions, (T), 22:20746
theory of collective motion in, variational principles for self-consistent, 22:42123
theory of heavy ion-induced particle transfer, using Feynman diagram techniques, (T), 22:9965
Thomas--Fermi, formalism for average nuclear properties, (T), 22:50658 (UCRL-18214)
transition probabilities for rotational bands of deformed even-even nuclei, E2, (T), 22:39630 (ITF-68-7)
two-body t-matrix from hard-core potential, separable expansion for, (T), 22:53239
unified, calculation of core polarization effects using Thomas--Fermi formalism, (T), 22:39718
unified, collective states of even--even spherical nuclei, (T), 22:44799
unified, formalism for odd-A nuclei using intermediate-coupling approximation, (T), 22:11977
unified, formalism for odd-A nuclei with particle coupling to excited core, (T), 22:35373
unified, intermediate-coupling approximation for odd-A iodine isotopes, (T), 22:48529
unified, lectures on, (T), 22:16058 (MATSCIENCE-57)
unified, self-consistent microscopic formalism of collective Hamiltonian for, (T), 22:53255
unified, testing for deformed odd-odd nuclei, (T), 22:30110
unified, use for energy-level calculations in intermediate coupling, (T), 22:1684
uniform, perturbation methods for calculating level densities in, (T), 22:27377
uniform, shells in deformed nuclei, (T), 22:27325
vibrational motion of even--even spherical nuclei, quadrupole--octupole anharmonicity in, (T), 22:44749 (IFA-FT-69)
vibrational properties of N = 50 isotones, effects of core polarization on, (T), 22:53135
vibrational states of even--even tin isotopes in two- and four-quasiparticle Tamm--Dancoff approximations, (T), 22:50614
wave functions for many-body fermion systems without spin-orbit coupling, projection operator for constructing antisymmetric, (T), 22:52913
wave functions for many-body systems of nucleons, (T), 22:44770

Nuclear Moments
see Moments

NUCLEAR ORIENTATION
effects on NMR of polycrystalline materials having anisotropic ESR centers, 22:24460
effects on slow-neutron scattering from solids, (T), 22:20430
method for, paramagnetic impurity, 22:9436
methods based on thermal mixing for dynamic, in solids, 22:15554 (CEA-R-3290)
nuclear magnetic resonance detection during, (E), 22:7354 (UCRL-17854)
paramagnetic crystal, in phonon thermal conductivity, (T), 22:5423
polarization of silicon-29 nuclei in silicon by optical electronic saturation and optical pumping, (E), 22:20072
polarization of thulium-169 nuclei in calcium fluoride crystals by optical pumping, (E), 22:20073
proton, in neodymium-doped yttrium ethyl sulfate, 22:1357
quadrupole structures in dynamic nuclear polarization, NMR, (T), 22:31963
''solid-effect'' method in dynamic nuclear polarization, review of, 22:31999
spin polarization by strong electric current in quantizing magnetic field, (E/T), 22:17753
spin-temperature model of dynamic, in solids containing free radicals, 22:20087
theory of dynamic nuclear polarization, 22:34749
use in hyperfine interaction studies, (E/T), 22:9110

NUCLEAR PARTICLES
(See also the specific particles.)
see also Elementary Particles
see also Nucleons
see also Radiation
book: Semiconductor Detectors of Nuclear Particles and Their Applications, 22:2384
identification of, description of computer on-line with semiconductor detector system for, 22:28073
scattering by nuclei, cross-section calculations using complex angular momentum method with vibrational state mixing, (T), 22:35405
scattering of heavy, by thick absorbers, energy loss corrections for multiple, 22:29804
theory of, Bach--Tamaid formalism for, (T), 22:48448

NUCLEAR PHYSICS
book: Advanced Level Atomic Physics, 22:43902
book: Advances in Nuclear Physics, Volume 1, (E/T), 22:22648
book: Electronic Digital Spectrometers in Experimental Nuclear Physics, 22:30854
book: Experimental Methods in Nuclear Physics I, 22:30846
book: Handbook of Physics (2nd Ed.), 22:9116
book: International Nuclear Physics Conference, 22:20722
book: Introduction to Nuclear Physics, 22:3804
book: Introduction to Nuclear Techniques, 22:23303
book: Mass Spectrometry in Science and Technology, 22:40505
book: Multichannel Analyzers in Nuclear Physics, 22:30922
book: Physics Pocket Book, 22:1374
book: Recording and Data Processing Techniques in Nuclear Physics and Technology, 22:49160
book: Resonance Scattering of Gamma Rays on Nuclei, (E/T), 22:12001
book: The Basic Theory of Atomic Nuclei, (T), 22:16102
book: The Interplay Between Chemistry and Nuclear Energy, in Dutch, 22:23079
book: The Spatial Quantum Mechanical Axial and Shell Structure of the Atomic Nucleus, 22:27395
computer programs for, bibliography on, 22:3585 (AED-C-34-02)
computers for use in, analog and digital, 22:40488
conference, 22:32653
conference on, Santiago, 7/67, 22:39974
data acquisition and analysis using on-line computers, review on, 22:50691
data analysis using optical model, failure of chi square distribution in, (T), 22:35400
data library tapes of UKAEA Nuclear Data Library, format of, 22:1558 (AEEW-M-774)
data processing for multiparameter experiments, computer programs for, 22:20497(R) (AECL-3009)
data processing in, use of computers for, 22:16949
data reduction for, use of PDP-7 for on-line, 22:30902
detectors for research in, development of semiconductor, 22:14763
development trends in, review of, 22:39721
equipment for, conference on use of photo-electronic image device, 22:4539
experimental methods in, review of, (E), 22:1634
experimental techniques in, review of, 22:8376
experiments in, review of statistical methods for, 22:17829 (JINR-P1-3612)
index to UCRL Nuclear Chemistry Division Annual Report, 1967, 22:33380 (UCRL-17989(Suppl.))
instruments and techniques for, bibliography on, 22:33635 (AED-C-06-18)
lectures, 22:20669 (NP-17228)
lectures, 22:3795
lectures on theoretical, 22:3289 (INP-555/PL/PH)
methods for, use in metallurgy, 22:19053
programs and centers for, description of Yugoslav, 22:27972
radiation physics and measurement techniques in, 22:25911
relation between particle and, 22:48203
research, 22:9924(R) (NP-17186)
research, 22:3559(R) (LAL-1176)
research, 22:15659 (BNL-50057, pp 3-36)
research at CERN, 1967, review of, 22:50491(R) (NP-17628)
research at Hahn--Meitner Institute, review of, (E/T), 22:9801(R) (HMI-B-50)
research at Hebrew Univ. of Jerusalem, 1965-66, 22:6210(R) (NP-17097)
research at Israel AEC, Jan.--Dec. 1967, 22:48806(R) (IA-1168)
research at SUNI 5.5-MeV Van de Graaff accelerator, 1967, 22:26932(R) (NP-17434)
research implications for industry and science in Soviet Union, survey of, 22:44969
research in low-energy, conference on use of small accelerators for, 22:50487 (CONF-680411)
research in low-energy, programming and systems for on-line computer in, 22:28239
research in Pakistan, review of, 22:16093
research in, design of isochronous cyclotron for, 22:29800
research in, large associative memory devices for use in, 22:16928 (CEA-R-3394)
research in, programming of computer-based data acquisition system for, 22:28240
research on, review of AEC, 22:21017
research on, review of, (E/T), 22:24570(R) (UCRL-17876)
research program and progress, (E), 22:41949 (ISS-67/44)
research programs and progress at Inst. of Nuclear Sciences, New Zealand, 22:10135(R) (NP-17190)
research programs in, use of TRIGA-2 Pavia for, 22:50835
research progress in, status of, 22:20773
research progress in, summary of, 22:7629(R) (COO-7-0440)
research using neutron-induced reactions, survey of, 22:39565
spectroscopy of atomic nuclei after neutron capture, β and γ, 22:14525
studies in upper atmosphere, low-energy, (E), 22:15411

(NP-17106)
tables of Clebsch--Gordan coefficients and spherical harmonics, 22:42102 (UCID-2823)
theory for, conference on, 22:5526
theory of, general introduction to, 22:44954 (NTO-T-0026)
thesaurus in, development of, 22:35747
training programs at Puerto Rico Nuclear Center, 22:23481(R) (PRNC-102)

NUCLEAR POWER
see also Nuclear Power Plants
see also Reactors, Power
applications for multi-purpose agro-industrial complexes, analysis of optimum, 22:44881 (ORNL-4291)
applications of, review of European Nuclear Energy Agency actions for peaceful, 22:20836
book: Energy in Europe, 1945-1980, 22:14222
book: Long-Range Program for the Development and Utilization of Atomic Energy, 22:18659
codes and standards for industry, 22:30156 (ORNL-NSIC-43)
consumption in Netherlands to year 2000, 22:6029
development activities of ENEA during 1967, 22:14382(R) (NP-17231)
development analysis to year 2000, 22:12050
development in Belgium and Netherlands, 22:23080
development in Europe, effects on uranium supply and demand, 22:16727
development in Norway of, description of, 22:18479
development in United States of, description of, 22:18479
development in USA in 1967, summary of, 22:18681
development of British, review of present organization and status of, 22:14221
development of German, 22:30194
development of Spanish, 22:1787
development of, future prospects for, 22:20843
development of, history of Norway--Netherlands cooperative project for, 22:1794
development program in Sweden during 1970 to 1980, description of, 22:30172
development, growth, and state of U. S. industry, JCAE hearings on, 22:10026
economic analyses of, JCAE report on, 22:20878
economic analysis of U. S. technology, JCAE hearings on, 22:14220
economic analysis of, (T), 22:1770 (ORNL-4172)
economics analysis to year 2000, 22:12050
economics for waste water treatment, feasibility study of, 22:30691 (ORNL-TM-2160)
economics in France of, 22:12051
economics of, 22:27427
economics of European, 22:3866
economics of German, effects on political, 22:30154 (KFK-675)
economics of Great Britain and United States, comparison of, 22:14223
economics of Japan, description of, 22:14168
economics of, analysis of competitive, 22:25132 (LA-DC-9519)
economics of, analysis of EURATOM and USA, 22:24980
economics using nuclear transformation system for disposal of long-lived radioactive wastes, 22:51199 (BNL-11915)
effects on air pollution, 22:2230
effects on international economics and trade policies, 22:30204
effects on non-nuclear science and industry, review of, 22:50899
fuel management program for USA, computer simulation of, 22:25042
fuel requirements for anticipated growth in Canadian, 22:42157 (AECL-3136)
Japanese AEC report for 1965-1966, 22:3973(R) (NP-17017)
performance in space systems of, capability analysis of, 22:25071
prediction for 1970-1985 of installed, 22:24984
predictions for needs of 1970s, effects on uranium demands of, 22:32832
production during 1967 to 1980 of, analysis of USA estimates in, 22:27429
production in Finland from 1965 to 1980, estimate of economics of, 22:30201
production in Germany, economic comparison with conventional plants of, 22:30194
production in Sweden in 1975 and 1985, estimates of, 22:10009 (NP-17084)
production in U. S. and Western Europe, predictions to 1980 of, 22:27439
production of electricity in Sweden prediction to 1985, 22:20818 (NP-17271)
production of free world, predictions to 1985 of, 22:27431
production requirements for 1970 to 1980 of, use of enriched uranium-235 for, 22:30209
production requirements for Japan, description of, 22:14168
production requirements of USA-built enriched uranium fueled power reactors, during 1960 to 1973, 22:24976 (WASH-1084)
production, effects of, on estimates of krypton-85 content of environment, 22:28499
report to British Select Committee on Science and Technology on, 22:14221
requirements and development of European, past and future, 22:14222
requirements for Western Europe, discussion of forecast of future, 22:48697
uranium for production of world, comparison of forecast need with availability of, 22:32831
use in chemical processing industry, possible future, 22:27427
use in production of iron by electrolysis and electroreduction, feasibility of, 22:16748
uses in aerospace technology, 22:25061 (DLR-MITT-66-07)
uses in marine power supplies, discussion of, 22:1823
uses in public utilities, discussion of, 22:1823
uses in space, discussion of, 22:1823
waste from generation of, economic effects of processing and use of, 22:40152 (CEA-R-3449)

Nuclear Power Demonstration Reactor
see NPD Reactor

NUCLEAR POWER PLANTS
see also Reactors, Power
boilers for, welding methods for fabrication of, 22:25578
carbon dioxide purification in, use of porous metal filters in, 22:7015
components and coolants for, development of materials for, 22:49739
construction and equipment data for BN-350, 22:7828
construction and fabrication of, development of standards and codes for, 22:44852
construction and operation of, development of guidelines and standards for, 22:22722
construction and planning in Southern Interstate Nuclear Board region, report to President on, 22:7810(R) (NP-17142)
construction descriptions of, 22:18474
construction in Germany, effect of hard coal subsidies on, 22:50770
construction in United Kingdom, national program for, 22:6042
construction of steel structures for, capability of Swiss industry for, 22:37456
construction of, computer programs for planning of, 22:46900 (JUL-521-RG)
construction of, use of concrete in, 22:48665
containment and siting for, summary of third IAEA symposium on, 22:20858
containment and siting of, conference on, 22:18423 (STI/PUB-154)
containment systems for French, program for development of, 22:18456
containment systems for, detailed analysis of earthquake resistant designs for, 22:37440 (HN-192)
containment systems for, systems approach to design of, 22:18440
control of, method for transient digital, 22:18481
control systems for, description of automatic, 22:48686
control systems using digital computers in, bibliography on, 22:32784 (RISO-M-725)
cooling systems for, detailed failure effect analysis for, 22:37440 (HN-192)
cost comparisons with conventional, in Argentina, 22:3839 (NP-16986)
costs for, description of CAPCOST computer program for determining escalated capital, 22:42167 (BNWL-822)
description of Japanese, 22:22717
description of planned Spanish, 22:25028
description of US, 22:24990
description with fossil-fuel superheaters, 22:12069(P)
design criteria and economics of, for electric power production and seawater desalination, 22:14624
design criteria for, comments on AEC proposed, 22:12064
design criteria for, revisions to 10 CFR Part 70 for general, 22:7832
design including MHD generator using reactor coolant as working fluid, 22:13307(P)
design of, tornado effects on reliability of, 22:5959
design parameters for gas cooled U. S. central, 22:32912
design parameters for USSR, 22:7829
development and economics in EURATOM community, 22:24953 (EUR-3561)
development and economics of, for desalting seawater, IAEA role in, 22:14628
development and economics of, for electric power production and seawater desalination, 22:14627
development and operation of, for electric power production and seawater desalination, 22:14622
development and operation of, for electric power production and seawater desalination, 22:14626
development aspects of, 22:18486
development by USAEC, JCAE hearings on, 22:10047
development for meeting electric power needs in U.S, 22:190
development in Canada, economic aspects of, 22:6030
development in Germany, 22:8536
development in Soviet Union, review of, 22:14148(T) (JPRS-43842)
development in U.S.S.R., review of, 22:39805
development in Yugoslavia of, economics for, 22:24995
development of Czechoslovak, 22:3850 (ZJE-1-67)

development of dual-purpose 1300 MW(e) steam-producing water-cooled, description of, 22:35512
development of Euratom, 22:1800
development of free world, description for 1985, 22:27431
development of future, based on experience in the U. K, 22:18477
development of German, description of, 22:24981
development of Japanese fast breeder reactor, economics for, 22:35485
development of Swedish, 22:14198
development of world-wide, projections to the year 2010 of, 22:42271
development of Yugoslav, 22:16167(T) (JPRS-44180)
development of, discussions on, 22:18499
development of, future, 22:14199
development of, technical and economic factors influencing worldwide, 22:46931
development program for Canadian, description of, 22:32902
development program for U. S. Pacific Northwest, analysis of economics of, 22:39818
development program for USSR, description of, 22:35480
development program in Sweden during 1970 to 1980, description of, 22:30172
development programs for American, survey of, 22:37474
development prospects of Western European, 22:46965
development status in United Kingdom, 22:6043
development trends in, using carbon dioxide-cooled reactors, 22:6062
earthquake-resistant concept for, description of floating breakwater, 22:32793
economic analysis of Argentina, detailed, 22:3839 (NP-16986)
economic aspects in Argentina, 22:3840 (NP-16988)
economic comparison to fossil-fueled plants, 22:14152
economic comparison with coal-fired plants, 22:16210
economic considerations for Yugoslav, 22:16167(T) (JPRS-44180)
economic effects of large, on power generation in India, 22:42236
economic evaluation of European, 22:25000
economics in Argentina, analysis of, 22:3838 (NP-16985)
economics of, 22:14199
economics of back-pressure desalination, comparison of fossil-fuel plants with, 22:35584
economics of conventional and, comparison of, 22:14201
economics of dual-purpose, for production of electricity and desalted water, 22:23204
economics of EURATOM and USA, analysis of, 22:24980
economics of fast-thermal and thermal reactors for, comparison of, 22:18482
economics of fission and fusion, 22:25132 (LA-DC-9519)
economics of fusion, analysis of, 22:24989
economics of future, DAEDALUS code for linear programming simulation of, 22:42165 (BNWL-796)
economics of heavy water moderated-natural uranium fueled, 22:14164
economics of heavy water-moderated, 22:3811 (AECL-2946)
economics of high-temperature gas-cooled reactor, analysis of, 22:12047
economics of large units, 22:50766
economics of mobile, low-power, for water desalination, 22:14630
economics of plutonium recycle, 22:10449
economics of pressurized-water, optimization of, 22:14195
economics of Swedish, 22:14198
economics of various types of reactor, comparison of, 22:24996
economics of, comparison of United Kingdom and USA, 22:20881
economics of, symposium on international extrapolation of, 22:16169
economy of, DAEDALUS-code for determining linear programming simulation of, 22:42166 (BNWL-796(App.))
electrical output capacity of, survey of installed world, 22:25029
electrical power production from U. S., evolution of, 22:1801
electricity production from European, summary of 1967, 22:37451
electricity production from fast reactor, prediction of, 22:1802
electricity production from Italian, economic analysis of, 22:1814
electricity production from world, summary of, 22:46932
electricity production from, survey of world-wide needs for, 22:1813
emergency power systems for, design and performance of, 22:33593
engineered safeguards for, detailed failure effect analysis for, 22:37440 (HN-192)
equipment and machinery for, lubrication problems in, 22:8265
export of British, economic factors affecting, 22:14153
feasibility study for Argentina, 22:3841 (NP-16989)
feedwater purification for, effect of oxygen on, 22:10443
fission product release from, computer program for radiological safety analysis of, 22:42866 (IDO-17261)
fuel cycle performance estimates for oxide-fueled, 22:32734 (ANL-7310, pp 137-248)
fuel cycles for, effects of fuel fabrication on economics of, 22:14161
fuel management for, procedures used in, 22:53284
fuel processing requirements for future, 22:27974
fuel requirements for, effects on uranium prospecting, 22:10398
fuel requirements for, estimates to 1985, 22:48958
fuel requirements to 1985 for, estimate of free world, 22:27420(T) (ORNL-tr-1825)
fuel-cycle and operating economics for future, prediction of, 22:1804
fuels for, economics of, 22:6166
fuels for, economics of uranium, 22:47251
gas turbines for, operation efficiency of, (T), 22:16179
generation of steam for electric power, economics of, 22:4309 (TID-24102)
German program for future, 22:12043
helium circulators for, design of water lubricated thrust bearings for, 22:8273
Idaho Nuclear Corporation, operation of safeguard review committee at, 22:19329 (IN-1041)
indemnification of, discussion on amended Price-Anderson Act for, 22:44851
installation in Euratom nations of, complete survey of factors affecting, 22:12021 (EUR-3639)
legal aspects of Argentina, 22:3840 (NP-16988)
license-application records of, 22:12065
licensing of, changes in 10 CFR Part 50 simplifying, 22:16178
licensing of, discussion of problems in, 22:22745
list of world, 1966, 22:24984
operation and performance characteristics of USSR, 22:7829
operation by small electrical utilities, JCAE hearings on, 22:35516
operation of EURATOM, personnel training programs for, 22:20809 (EUR-3662)
operation of, applicability of digital computer systems to, 22:12058
operation of, plan for efficient and safe, 22:7982
operations descriptions of, 22:18474
operations experience with world, summary of, 22:53304
participation of small electrical utilities in power from, JCAE hearings on, 22:53316
performance during 1980 to 2000 of, economic comparison of USA and worldwide, 22:27428
performance of U.S.S.R., review of, 22:30210
performance optimization analysis of, use of hybrid computer for, 22:50768
pipe and pressure vessel failures in, bibliography on, 22:3816 (CEA-Bib-79)
pipe failures in, effects of stress intensity on, 22:27952 (GEAP-5557)
piping systems for, ASME Standard Code for design, fabrication, assembly, and testing of, 22:40298
power cycles for, alternate hybrid fossil--nuclear fueled MHD, 22:43952 (BNL-12569)
power production during 1967 to 1980 of USA, estimates of, 22:27429
power production from European, calculation of fuel cycle costs during, 22:27438
power production to 2000 of U. S. and EURATOM, analysis of, 22:35513
power production to 2000 of U. S., analysis of, 22:35508
power production using combination conventional power plant and, economics of, 22:25020
power supply systems for BWR and PWR, design of emergency, 22:18484
pressure vessels for, elastic--plastic analysis for design of, 22:42936 (RD/B/N-1105)
protective instrumentation systems for commercial, description of, 22:18485
protective systems for, reliability analysis of, 22:10000(R) (HN-190)
pumps for coolant circulation in, design and performance of, 22:47263 (AECL-2713)
radiation monitoring of, in United Kingdom, 22:45545
radioactive contamination of environment by, surveillance programs for, 22:19348
radioactive waste from, processing of, 22:2178 (UJV-1899)
radioactive wastes from US, developments in and plans for disposal of, 22:21299
radioactive wastes from, storage of, 22:36016 (RISO-M-735)
reactivity control for space electric-, use of liquid, 22:6087
role in scientific research and development in Canada, 22:25612 (AECL-2782)
safeguards and inspection for, description of IAEA system for, 22:42262
safety aspects of Buenos Aires area for, 22:3835 (NP-16982)
safety assessment using computer techniques, data store requirements for, 22:14121 (AHSB(S)R-138)
safety engineering concepts for, discussion of, 22:25022
safety of, public relations aspects of, 22:12048
safety systems for, description of scram portion of, 22:25024
site criteria for, proposal for international acceptance

  of uniform, 22:18432
  site for, evaluation of concept of standard, 22:18438
  site selection for, effect of ground surface faulting on, 22:8207 (TID-24124)
  site selection for, meteorological aspects of, 22:25546
  sites for first Spanish, description of, 22:18430
  siting criteria for first Argentine, 22:18431
  siting criteria for Japanese, analysis of, 22:14151
  siting criteria for United Kingdom, 22:6056
  siting criteria for, economic and safety, 22:14157
  siting in metropolitan areas, method for fission product dispersion calculations for, 22:18465
  siting of British, numerical evaluation of risk in, 22:18433
  siting of Canadian, requirements for, 22:18429
  siting of French, safety considerations in urban, 22:18444
  siting of Japanese, analysis of problems in, 22:18427
  siting of Japanese, factors affecting, 22:18426
  siting of Mexican, problems in, 22:18437
  siting of U.S., effects of reactor design and engineered safeguards on, 22:18428
  siting of Yugoslav, factors affecting, 22:18435
  siting of, effects of containment and engineered safeguards on, 22:18447
  siting of, effects of containment on safety factors in, 22:18439
  siting of, engineering safety evaluation of characteristics of, 22:18445
  siting of, environmental effects on, 22:18466
  siting of, factors affecting U.S, 22:18425
  siting of, modifications in British policy toward metropolitan, 22:44853
  siting of, proposed quantitative criterion for, 22:18436
  siting of, radioecological factors in, 22:18442
  siting policy for British, results of application of practical, 22:18434
  standardization effects on bid evaluation by utilities, 22:35489
  status of world, tabular summary by country of, 22:22714
  steam expansion diagrams for, method for determination of, (T), 22:37458
  steam generators for, design of shell and tube, 22:6524(P)
  steam systems for, method of condensate treatment in, 22:24983
  structural design of, construction factors in, 22:10013(T) (AEC-tr-6722)
  structures for, preparation of graphite, 22:23876(P)
  survey of French, general, 22:10017
  technological and economic aspects of, 22:1799
  testing of, discussion of methods for on-line, 22:22748
  thermal pollution from, computer program for calculating effects on rivers of, 22:18467
  turbomachinery for, use of process-fluid lubrication in, 22:8266
  use for electricity production, summary and economics of future, 22:48649 (NEB-SS-21)
  use of molten salt reactors for, 22:14173
  use with associated chemical process and metallurgical industries, 22:10054
  waste disposal from proposed, economics of salt formations for, 22:2323(R) (ORNL-TM-1887)
  waste heat from, use to prevent freezing in the St. Lawrence seaway, 22:30770
Nuclear Proof Test Facility (NPTF)
    see Critical Assemblies
Nuclear Quadrupole Moments
    see Moments
NUCLEAR QUADRUPOLE RESONANCE
  book: Radiospectroscopy of Solids, 22:3218
  detection of NMR and, in solids, method for, 22:46199 (UCRL-18043, pp 183-98)
  electric field acting on electrons from, Stark effect and, 22:13254
  equipment for measuring quadrupole spin echo at 150 to 300 MHz, 22:47416
  spectra of chlorine-35 in potassium chlorate for measuring temperatures at 12 to 297°K, 22:23382
  spectrometer for, field effect transistors for, 22:23374
Nuclear Radiation
    see Radiation
NUCLEAR REACTIONS
    see also Fission
    see also Nuclear Reactions (Direct)
    see also Spallation
    see also Thermonuclear Reactions
  alpha emission in bombardment of heavy elements with alpha particles, (E), 22:39639 (UCRL-17989, pp 43-99)
  alpha-particle emission in spallation, cross sections for, (T), 22:16085
  amplitude for (He-3,d), effect of t . T interaction on DWBA, (T), 22:14104
  amplitude of, formulas for exchange effects in, (T), 22:32680
  amplitude singularities in two-particle, use of Feynman diagram to determine position of, (T), 22:18337
  amplitudes for nucleon inelastic scattering, knockout-exchange, (T), 22:42143
  analysis of single-nucleon-transfer, application of multipole sum rules to, (T), 22:16099
  angular correlation measurements using Doppler-broadene gamma transitions, (E), 22:1597(R) (COO-1120-68)
  angular correlations with gas targets, calculation of effective solid angle for, 22:50508
  angular distributions for (He-3,α) reactions on light nuclei, J dependence of, (T), 22:22560(R) (ORO-1067-
  angular distributions for alpha inelastic scattering, energy dependence of phase rule for, (E/T), 22:20533
  angular distributions for deuteron elastic scattering, analysis using Akhieser-Pomeranchuck-Blair model, (T), 22:15989
  angular distributions for heavy ion-induced transfer, (E), 22:26851
  angular distributions for l = 1 nucleon-transfer, spin dependence of, (T), 22:7781
  angular distributions for l = 3 transitions in (d,p), spin dependence, (E), 22:20522
  angular distributions of (d,He-3), spin dependence of, (E/T), 22:20625
  angular momentum distribution in evaporation from excite nuclei, (T), 22:27371
  angular momentum distributions of residual nuclei in compound-nucleus, (T), 22:30052
  angular momentum effects in, research program on, (E), 22:39636(R) (ORO-3398-12)
  angular momentum effects on compound-nucleus, (E), 22:53150
  asymmetry in electron scattering by nuclei, azimuthal, (T), 22:39720
  beryllium-8 emission in high-energy, (E), 22:35367
  bibliography on photonuclear, 22:20676 (STI/PUB-21/27)
  binding-energy shift and recoil corrections in Feynmann-diagram approach to tunnelling, (T), 22:48600
  book: Advances in Nuclear Physics, Volume 1, (E/T), 22:22648
  book: Fundamentals in Nuclear Theory, 22:9925 (STI/PUB-145)
  book: High-energy Nuclear Reactions in Astrophysics. A Collection of Articles, 22:19727
  book: Intermediate Structure in Nuclear Reactions, 22:48595
  book: Introduction to Nuclear Theory, 22:48590
  book: Kinematics of Nuclear Reactions, 22:5913
  book: Nuclear Forces, 22:24923
  book: Nuclear Many Body Problems, 22:32672
  book: Nuclear Matter and Nuclear Reactions, 22:24924
  book: Nuclear Tables, Part II, Nuclear Reactions, Vol. 22:29977
  book: Photodisintegration of Nuclei in the Giant Resonance Region, 22:7784
  book: Resonance Scattering of Gamma Rays on Nuclei, (E/T), 22:12001
  book: The Application of Group Theory in Physics, 22:39448
  book: The Basic Theory of Atomic Nuclei, (T), 22:16102
  book: The Theory of Neutron Resonance Reactions, 22:32700
  book: Transmutations of Nuclei, 22:44778
  charge exchange in nucleon transfer, (T), 22:27351
  charge exchange in, research progress on, (T), 22:50560(R) (RLO-1062-681)
  charged particles from, PDP-8--detector interface for analyzing, 22:344 (ORNL-TM-2013)
  charged-particle cross sections for p-shell nuclei, rectangle diagram method for calculating, (T), 22:50683
  charged-particle emission in proton-induced indirect, with medium and heavy nuclei, (E/T), 22:7703(T) (ORN tr-1831)
  charged-particle evaporation spectra from, analysis for nuclear level densities, (T), 22:9957
  charged-particle motion in Coulomb field, formalism usi theory of functions of complex variables, (T), 22:16055 (ITF-67-15)
  charged-particle production in, magnetic spectrometers for analysis of, 22:6636
  charged-particle scattering by short-range central potential, Levinson theorem and quantum defect for, (T), 22:53230
  chemical effects in solids from, 22:48888
  cluster representation of resonance, (T), 22:14088
  collision lifetime matrix studies of, (T), 22:24916
  collision matrix for elastic and inelastic scattering with overlapping compound-nucleus resonances, unitary (T), 22:50672
  collision matrix formalism for low-energy compound-nucleus, using unitary pole-resonance expansion, (T), 22:37386
  collision theory for, lectures on, 22:9940
  compound-nucleus decay in heavy ion-induced, with multiple particle transfer, (E), 22:16009 (JINR-P7-3630)
  computer measurement of excitation functions for, (E), 22:18150
  conference, 22:17890
  corrections to electron inelastic scattering, Coulomb, (T), 22:20578 (WASH-1079)
  Coulomb barriers for, effect of deformation on, (T), 22:53169(R) (PPAD-647-D)
  Coulomb excitation in deformed doubly even nuclei, corrections to reorientation effect in, (T), 22:7759
  cross section for particle exchange in three-particle

collisions at high energy, (T), 22:16064
cross sections for (p,d), effect of deuteron d-state on J-dependence of, (T), 22:27367
cross sections for (p,t) and (p,He-3), equality of absolute, (T), 22:32510
cross sections for compound-nucleus, calculations using statistical collision matrix, (T), 22:9969
cross sections for compound-nucleus, computer program for calculating, (T), 22:9923 (NAA-SR-Memo-12530)
cross sections for Coulomb scattering, effects of excited states on, (T), 22:18327
cross sections for deuteron diffraction disintegration and scattering with excitation of one-phonon states, (T), 22:35406
cross sections for diffraction interactions of light nuclei, (T), 22:53130
cross sections for diffraction scattering, calculation using complex angular momentum method with mixing of vibrational states, (T), 22:35405
cross sections for dipole photoabsorption, effects of velocity-dependent nucleon--nucleon potential on integral, (T), 22:44779
cross sections for elastic scattering, mean square deviation of, (T), 22:35377
cross sections for electron inelastic scattering in Born and distorted-wave Born approximations, (T), 22:20681
cross sections for electron inelastic scattering, sum rule for, (T), 22:20734
cross sections for electron quasielastic scattering, calculations using independent-particle model with L--S coupling, (T), 22:50676
cross sections for excitation of particle-unstable states in particle transfer, resonant and nonresonant contributions to, (T), 22:42137
cross sections for excited nuclei, effect of excitation energy on, (E), 22:3652
cross sections for fast neutron-induced, energy dependence of, (T), 22:20667 (INR-830/I/PL)
cross sections for heavy-ion inelastic scattering with collective excitation, (T), 22:18333
cross sections for high-energy quasielastic (p,2p), in impulse approximation with proton single-particle wave functions, (T), 22:42128
cross sections for neutron capture, calculation using statistical model, (T), 22:9938
cross sections for neutron-induced, effects of unresolved resonances on, (T), 22:18108
cross sections for photo-, calculations using sum rules, (T), 22:27236 (NP-17348)
cross sections for photo-, calculations using Tchebycheff polynomials in integral equations, (T), 22:48571 (CEA-R-3427)
cross sections for quasielastic (p,2p), calculation using t-matrix formalism with local and nonlocal p-p effective interactions, (T), 22:27243
cross sections for resonance scattering, time-dependent formalism for calculating, (T), 22:50684
cross sections for scattering of particles with arbitrary spin, asymptotic equality of differential, (T), 22:39723
cross sections for two-neutron transfer, (T), 22:1598(R) (COO-1265-49)
cross sections for zirconium-90 isobaric analog resonance production, calculation using eigenchannel theory, (T), 22:7732
cross sections for, effect of mutual shielding of resonances of different isotopes on, (T), 22:7766
cross sections for, effects of 2p-1h states on energy-averaged, (T), 22:53243
cross sections in continuum region, statistical theory of effects of incident beam polarization, (T), 22:42129
cross sections of photo-induced, theory of, (T), 22:5883
cross-section calculations using spherical optical model, computer program for, (T), 22:1562 (NAA-SR-Memo-12531)
cross-section fluctuation analysis using random matrix formalism with time reversal violation in nuclear forces, (T), 22:39627 (BNL-50082, pp 19-24)
cross-section fluctuations in continuum region, analysis using method of random matrices, (T), 22:20763
cross-section fluctuations in indirect, from statistical interference effects in sequential decays of compound nuclei, (T), 22:22644
cross-section fluctuations in, effects of experimental resolution on width of, (T), 22:30061
data acquisition and control systems for, (E), 22:1597(R) (COO-1120-68)
data compilation and evaluation for neutron-induced, 22:29828 (BNL-12417)
data summaries for experimental studies of, 22:50522 (ORNL-4317-1)
decay probabilities for, compound and precompound, (T), 22:27070
description of elastic and inelastic scattering using phenomenological methods, survey of, (T), 22:9935
description using shell model, lectures on, (T), 22:9948
detection of rare processes of, centrifugal spinner detector for, 22:21341
detection of, statistical model for timing inaccuracies in scintillation spectrometer, 22:28156
deuteron disintegration by diffraction, effect of deuteron internal structure on, (T), 22:39722
dispersion relations for nucleon--nucleus scattering, forward, (T), 22:53085
distributions of compound-nucleus level widths, exact, (T), 22:20764
Doppler broadening in two-body, nonrelativistic calculation of, 22:11998
Doppler effect in resonant neutron capture, (T), 22:32696
effects on chemical reactions, review on, 22:23063
electron elastic scattering by arbitrary charge density distribution, method for calculating cross sections in high-energy approximation, (T), 22:46818 (JINR-P4-3941)
electron scattering at high energy, second-order corrections to DWBA calculations for, (T), 22:50689
excitation functions for silicon-29 compound nucleus, statistical fluctuation analysis of, (T), 22:37340(R) (EANDC(E)-89(U))
excitation functions for, peak-counting method for, (T), 22:22634
excitation of isomeric states in thermal neutron capture, relative probabilities for, (T), 22:42095(T) (ANL-Trans-644)
form factors for (t,p), calculation using Woods-Saxon potential, (T), 22:27354
form factors for deuteron stripping, Hartree--Fock calculations of, (T), 22:20682
form factors for electron inelastic scattering, effects of continuum structure on, (T), 22:27271
form factors for electron inelastic scattering, in giant dipole resonance region, method for calculating, (T), 22:20733
form factors for inelastic scattering, calculation using projected Hartree--Fock wave functions, (T), 22:48588 (N-68-24661)
form factors for two-nucleon transfer, calculations using configuration-mixed shell-model states, (T), 22:30048(R) (PUC-937-307)
gamma angular correlations from pick-up, calculations using distorted-wave Born approximation, 22:14085
gamma angular distributions from aligned nuclei in, tables of coefficients for, 22:3787
gamma angular distributions from heavy ion-induced, (T), 22:27335
gamma de-excitation outside reaction plane in α inelastic scattering, (T), 22:39719
gamma Doppler-shift attenuation factors and line shapes at low recoil velocities, (T), 22:1716
gamma energies for calibration of high-resolution spectrometers, tables of, 22:35386
gamma production cross sections and spectra for neutron-induced, formalism for calculating, 22:30067
gamma spectra from neutron capture, (E/T), 22:16100
gamma spectra from proton capture, resonance energy separation in, (E), 22:18123(R) (RLO-1925-11)
gamma spectroscopy of, review on, (E/T), 22:16097
giant dipole resonance in neutron radiative capture at 14 MeV, E/T), 22:35251 (NIJS-P-213)
giant resonance coupling to surface quadrupole oscillations in photon-induced, (T), 22:30058
heavy-ion induced, decay of high angular momentum states populated in, (T), 22:30117
heavy-ion induced, identification of short-lived activity produced in, (E), 22:30007
interaction region model for, Hilbert space properties of, (T), 22:42101 (UCD-CNL-95)
interference between collective and direct nucleon radiative capture, (T), 22:42132
interference effects in nucleus-nucleus, (T), 22:7761
intermediate structure in the two-channel model of, (T), 22:30070
intranuclear cascades, Monte Carlo simulation of, (T), 22:16079
isomer ratios for, analysis for level densities and transition strengths, (T), 22:27370
isomer ratios in neutron-capture, analysis and interpretation of, (T), 22:32690
isospin mixing in deuteron-induced stripping, (T), 22:11949(R) (ORO-2972-47)
isospin mixing in deuteron-induced, semidirect mechanism for, (T), 22:50667
kinematic calculations of two-body, computer program for, in FORTRAN for IBM System/360 Model 75, (T), 22:5870 (ORNL-4179)
kinematic parameters for, computer program for relativistic calculations of, (T), 22:14070 (EUR-3668)
kinematics at relativistic energies, (T), 22:37394
kinematics for proton-induced cascades at 660 MeV, (T), 22:22629
kinematics for two- and three-body final state, (T), 22:26929(R) (COO-1420-139)
kinetics of, computer program for converting angles in lab and center-of-mass systems for analyzing, 22:16930 (INP-565/PL)
level densities of compound nuclei in slow neutron-induced, (T), 22:42091
level density and width in compound nucleus near 20-MeV excitation energy, (E/T), 22:30101
mechanism for, review of research at Physikalisches Staatsinstitut on, 22:48202(R) (BMwF-FBK-68-01)
mechanisms for, research on, 22:1375(R) (BMwF-FBK-67-55)
mechanisms of, review on, (T), 22:20693

model for high-energy, in solar flares, (T), 22:19731
neutron elastic scattering by Hartree-Fock field, potential, (T), 22:29941 (IPNO/TH-118)
neutron elastic scattering by square-well potential, theory using solutions of time-dependent Schroedinger equation, (T), 22:12000
neutron emission and fission width ratios for heavy compound nuclei, (T), 22:14079 (UCRL-16348)
neutron resonance parameters for $I = {}^1/_2$ and ${}^3/_2$ nuclei, spin systematics of s-wave, (E/T), 22:53166 (CEA-R-3385)
neutron strength functions in scattering length approximation, S-matrix s-wave, (T), 22:44760
neutron tunneling theory for low-energy, (T), 22:22640
neutron tunnelling in heavy ion-induced, (T), 22:44773
nucleon elastic scattering by one-level nuclei, generalized Hartree--Fock approximation for, (T), 22:27252
nucleon scattering at 90 to 310 MeV, optical potential calculations for central two-body force, (T), 22:50668
nucleon transfer in, finite-range effects in DWBA calculations for, 22:18317
nucleon tunneling below Coulomb barrier in heavy ion-induced, (T), 22:50560(R) (RLO-1062-681)
nucleon--nucleon scattering lengths from Watson-Migdal theory of final-state interactions in, (T), 22:35366 (ORNL-4217, pp 82-95)
nuclides from, stability of short-lived, 22:14525
occurrence in living tissues, 22:28509
optical-model analysis of nucleon--nucleus interactions, (T), 22:20721
orbital rearrangement energy in nucleon-transfer, (T), 22:16067
particle emission by highly excited compound nuclei with high angular momentum, successive, (E/T), 22:37376 (JINR-P4-3814)
particle emission rates of highly excited nuclei, (T), 22:35368
particle scattering by nuclei at high energy, theory using Dirac equation with optical potential, (T), 22:9920 (JINR-P4-3568)
particle spectra from statistical analysis of, (T), 22:3782
particle transfer in heavy nuclei, (T), 22:46729(R) (AECL-3157)
photodisintegration of three-particle nuclei, use of Majorana exchange forces in calculating, (T), 22:5902
photon scattering by nuclei, generalized formalism for, (T), 22:50687
photon-induced at low energies, calculations using single-particle wave functions with undefined parity on odd-A nuclei, (T), 22:48596
polarization measurements for separation of compound and direct effects in, (T), 22:1718
polarization of elastically scattered beams, average, (T), 22:42129
possibility of (n,α), with thermal neutrons, (T), 22:11953
potential barrier penetration for diffuse Woods--Saxon potential with strong interaction, (T), 22:48621
potential scattering using generalized R-matrix formalism, 22:9981
potentials for composite particles, optical-model, (T), 22:3801
potentials for low-energy, optical-model, (T), 22:7778
potentials for nucleon elastic scattering, spin dependence of one-body, (T), 22:20772
production of superheavy nuclei by fusion of heavy ions, (T), 22:44712
products from chemo-, decontamination of, 22:6552
products from nonrelativistic, method for determining energy as function of angular distribution in lab system for, 22:16084
proton polarization in (d,p), below the Coulomb barrier energy, (T), 22:20704
proton transfer in heavy ion-induced, below Coulomb barrier, (T), 22:42140
proton transfer in heavy ion-induced, potential-energy effects in, (E), 22:24880
proton widths of analog states in heavy nuclei, (T), 22:39702
Q-values for nuclei with A = 142 to 145, evaluated data compilation on, (E), 22:3735
Q-values for three-particle, tables of, (T), 22:24888 (BMwF-FBK-67-91)
Q-values for, tables of, (E/T), 22:3768
R-matrix theory for, inhomogeneous, (T), 22:42133
R-matrix theory of, correspondence with theory of resonators and waveguides, (T), 22:18319
R-matrix theory of, extension of, (T), 22:50666
rates in stellar surface layers, (T), 22:836
recoil charge-state distributions from, research progress on, (E/T), 22:18122(R) (NYO-2771-25)
research on, 22:7346 (NYO-2028-2)
research program and progress using fast neutrons, (E), 22:9802(R) (NYO-1082-9)
research program on photo-, with heavy fragment emission, (E), 22:39552 (RPI-328-123, pp 64-72)
research progress on charged-particle-induced, at low energy, (E), 22:14069(R) (COO-238-51)
research progress on direct and nucleon-transfer, (E/T), 22:1644(R) (AD-647902)
research using recoil range technique, survey of, (E/T), 22:32666 (KFK-693)
research using recoil spectrometry, (E), 22:18122(R) (NYO-2771-25)
residual-nuclei spin determination in type A(x,yz)B, using polarized targets, (T), 22:5909
resonance Doppler broadening in neutron-induced, (T), 22:32444
resonance interference in neutron scattering, (T), 22:50657 (ANL-7467)
resonance parameters for a potential with strongly diffuse boundary, (T), 22:11982
resonance parameters for, statistical theory for determining, (T), 22:27246
resonance pole expansion of low-energy collision matrix, multichannel unitary, (T), 22:24920
resonance spacings and widths in resonance-pole expansio of collision matrix, averages and distributions of, (T), 22:42117
resonance states in, (T), 22:32705
resonance structure in neutron-induced subthreshold fission, intermediate, (T), 22:50659
resonance structure in, doorway-state theory of intermediate, (T), 22:50688
resonance widths in proton elastic scattering by nuclei of fixed spin, isobaric analog, (T), 22:27369
resonances in $(p,n\gamma)$ reactions, isobaric analog, (E/T), 22:9939
resonances in low-energy neutron- and proton-induced, analysis for level density parameters, (T), 22:27274
resonances in low-energy neutron-induced, with high angular momentum, (T), 22:32707
resonances in neutron scattering, widths of intermediate, (T), 22:27372
resonances in neutron- and proton-induced, analysis for nuclear level density parameters, (T), 22:11986
resonances in neutron-induced, Doppler broadening of p-wave, (T), 22:32439
resonances in nucleon scattering, intermediate, (T), 22:50560(R) (RLO-1062-681)
resonances in proton elastic scattering, fine structure of isobaric analog, (T), 22:44777
resonances in proton scattering, model for analysis of fine structure of analog, (T), 22:35285(R) (AERE-PR/NP-13)
resonances in, analysis of isobaric analog, (E/T), 22:20729
resonances in, damping widths for isobaric analog, (T), 22:37393
resonances in, external mixing in isobaric analog, (T), 22:7780
resonances in, threshold and penetration factors in parametrization of, (T), 22:27349
review of stellar, (T), 22:19728
review on neutron capture, (E/T), 22:53236
S-matrix for resonance, sum rules for pole-residue matrices of, 22:1720
S-matrix for, comparison of eigenchannel and R-matrix methods for calculating, (T), 22:37385
S-matrix theory of resonance, channel transmission coefficients and resonance parameters in, (T), 22:20765
S-matrix theory of resonance, lectures on, (T), 22:9943
S-matrix theory of resonance, lectures on, (T), 22:9942
scattering amplitude at high energy, impact-parameter representation for, (T), 22:53240
scattering amplitude for proton elastic scattering with isobaric analog resonance excitation, (T), 22:7690 (JINR-E2-3551)
scattering amplitude for, Euclidean expansion of, (T), 22:35407
scattering amplitudes for inelastic, calculations using statistical collision matrix, (T), 22:9969
scattering amplitudes for spin-1/2 particles on spinless nuclei in presence of three-particle channel, (T), 22:35409
scattering amplitudes in, angular momentum dependence of off-shell partial-wave, (E), 22:3760
scattering and reaction amplitudes, use of resonant states in eigenfunction expansion of, 22:16068
scattering matrix elements for, with three-particle channels, (T), 22:14098
scattering theory for, with three outgoing particles, (T), 22:48630
shell-model method for calculating the splitting of resonance multiplets, 22:30091
silicon-29 energy-level spacing in compound-nucleus, (T) 22:5874
spectroscopic factors for (p,2p), on 1p-shell nuclei, (E/T), 22:26864
spectroscopic factors for heavy ion-induced two-particle transfer, formula for, (T), 22:24895 (JINR-E4-3742)
spectroscopic factors for neutron scattering, (T), 22:27272
spectroscopic factors for two-neutron transfer, in vibrational nuclei, 22:30093
spectroscopic factors for two-nucleon transfer, using Tamm--Dancoff methods, (T), 22:27263
spin cut-off parameter for (n,2n), with isomeric excitation, (E/T), 22:24872
spin cut-off parameters for (n,2n), at 14 MeV on A = 134

to 208 nuclei, (T), 22:39701
spin cutoff parameters for neutron capture, energy dependence of, (E/T), 22:48498
spin fractionation in decay of highly excited compound nuclei, (E), 22:37316(R) (UR-3591-9)
spin selection rule for, 2I + 1, (T), 22:27366
spin structure of 1 + 1 → 0 + 0, M-matrix formalism for, (T), 22:50660
statistical theory of, review, (T), 22:22652
stellar, bibliography on, 22:15324
strength functions for neutron-induced, R-matrix and S-matrix, (T), 22:44759
studies in upper atmosphere, low-energy, (E), 22:15411 (NP-17106)
theories of, review, (T), 22:16095
theory for deformed nuclei, using shell model, 22:3616
theory for doorway state formation in neutron-induced, (T), 22:46848
theory for electron elastic and inelastic scattering, eigenchannel formalism for, (T), 22:35375
theory for fast neutron scattering by uranium-238, (T), 22:18204 (BMwF-FBK-67-90)
theory for meson (μ) capture, Migdal formalism for, (T), 22:48625
theory for population of ground-state rotational states, validity of statistical, (T), 22:39710
theory for proton elastic scattering by A less than or equal to 31 nuclei, testing of, (E/T), 22:32513(R) (ANU-P-400)
theory for single-particle states, using distorted-wave t-matrix approximation, (T), 22:20723
theory for stripping and transfer, (T), 22:27350
theory for weak, analogy with elementary particle interactions in, 22:18314
theory for, conservation laws for Bethe--Salpeter equation in, 22:5877
theory for, non-Hermitian Hamiltonians in, (T), 22:35403
theory of (α,n), statistical, (T), 22:37377
theory of (n,p) and (n,np), statistical, (E/T), 22:22561(T) (ORNL-tr-1850)
theory of (t,d) stripping, (T), 22:3765
theory of angular momentum in inelastic scattering, formalism using diagram technique, (T), 22:14076 (LYCEN-6743)
theory of antisymmetric scattering, research progress on, (T), 22:50560(R) (RLO-1062-681)
theory of breakup effects on elastic scattering of composite particles, (T), 22:42116
theory of breakup of few-nucleon systems, spectator poles in, (E), 22:20769
theory of compound and precompound particle decay in (n,p), (T), 22:24835(R) (BARC-305)
theory of compound-nucleus, perturbation of Porter-Thomas distribution by interactions odd under time reversal, (T), 22:27375
theory of compound-nucleus, review of, (T), 22:20761
theory of core polarization effects in shell-model formalism for proton inelastic scattering, (T), 22:27270
theory of Coulomb polarization of closed-shell nuclei, (T), 22:27343
theory of Coulomb stripping in heavy ion-induced, (T), 22:27344
theory of deuteron interactions with nuclei at high energy, (T), 22:32668(T) (ORNL-tr-1907)
theory of deuteron production in high-energy proton-induced, (T), 22:30048(R) (PUC-937-307)
theory of deuteron stripping, BHMM method supported for, (T), 22:46850
theory of deuteron stripping, errors in BHMM formulation, (T), 22:46849
theory of deuteron stripping, formalism for, (T), 22:9918 (CEA-R-3305)
theory of deuteron stripping, using distorted-wave method with adiabatic approximation, (T), 22:14096
theory of dispersion effects in high-energy electron scattering, (T), 22:20698
theory of effective interaction in heavy ion-induced transfer, (T), 22:27339
theory of elastic scattering of polarized spin-1/2 and -1 particles, using spin-orbit coupling, (T), 22:7742 (LYCEN-6752)
theory of elastic scattering, using diffraction model with surface absorption, (T), 22:14112
theory of elastic scattering, using time-dependent wave formalism, (T), 22:3772
theory of electron scattering, lectures on, (T), 22:53221 (NRL-6729)
theory of exchange terms in microscopic DWBA formalism for proton inelastic scattering, (T), 22:32697
theory of excitation effects on Coulomb scattering, (T), 22:27342
theory of finite-size effects in two-nucleon transfer, (T), 22:27359
theory of finite-size effects on two-nucleon transfer, (T), 22:18340
theory of heavy ion scattering, statistical formalism using nuclear matter calculations, (T), 22:50674
theory of heavy ion-induced neutron transfer, (T), 22:27334
theory of heavy ion-induced, review of, (T), 22:48629
theory of heavy ion-induced, statistical, (T), 22:53114
theory of heavy ion-induced, using finite-range distorted-wave Born approximation, (T), 22:26880
theory of high-energy scattering of strongly interacting composite particles, formulation using geometrical optics, (T), 22:48610
theory of high-energy, review of, (T), 22:16090
theory of high-energy, statistical equilibrium of excited nuclei in, (T), 22:14107
theory of inelastic scattering of strongly absorbed spin-$^1/_2$ particles by spin-0 targets, (T), 22:7750
theory of inelastic scattering, coupled-channel formalism using microscopic nuclear models, (T), 22:44788
theory of inelastic scattering, exchange and microscopic formalism for, (T), 22:35293(R) (ORNL-4230)
theory of intermediate structure in, shell-model formalism for, (T), 22:24896 (LA-DC-8192)
theory of intermediate structure in, with core excitation in residual nuclei, (T), 22:27373
theory of isobaric analog resonances in, (T), 22:7762
theory of low-energy (n,p), for nuclei near A = 45 and 90, statistical, (T), 22:20677 (UCRL-50359)
theory of low-energy (t,d), for spectroscopic research, (T), 22:27365
theory of monopole and quadrupole excitations in electron inelastic scattering at low momentum transfer, (T), 22:42115
theory of multi-nucleon transfer, on deformed nuclei, (T), 22:42134
theory of multichannel scattering and threshold effects, lectures on, (T), 22:9941
theory of multiple particle transfer, using finite-range interaction for deformed and spherical nuclei, (T), 22:14073 (JINR-E4-3624)
theory of neutron-induced, model for comparison of Hauser-Feshbach and Moldauer, (T), 22:44775
theory of neutron-induced, review of, (T), 22:27393
theory of nuclear flattening in head-on collisions, (T), 22:27340
theory of nucleon capture by collective and direct mechanisms, (T), 22:37340(R) (EANDC(E)-89(U))
theory of nucleon scattering, effects of exchange and Pauli principle in, (T), 22:5896
theory of nucleon scattering, formalism using random phase approximation, (T), 22:37388
theory of photo-, A/sup -1/6/ dependence of giant dipole resonance in, (T), 22:50673
theory of photo-, lectures on, (T), 22:53221 (NRL-6729)
theory of polarization in quasielastic scattering with excitation of isobaric analog states, (T), 22:24899
theory of polarization phenomena in deuteron stripping, DWBA, (T), 22:27352
theory of potential restoration by Coulomb scattering phases, (T), 22:1721
theory of precompound and compound particle emission in, using exciton model, (T), 22:32731
theory of proton inelastic scattering with excitation of non-normal-parity states, (T), 22:22576
theory of proton inelastic scattering, using deformed spin-dependent optical-model potential, (T), 22:22639
theory of proton radiative capture from analog states, (T), 22:7661(R) (NYO-3525-26)
theory of quantal effects in multiple Coulomb excitation, coupled-channel formalism for, (T), 22:27260
theory of quasi-elastic charge-exchange, (T), 22:7757
theory of quasi-three-body, nonlocal t-matrix formalism for, (T), 22:50696
theory of rearrangement, coupled-channel formalism for, (T), 22:30057
theory of rearrangement, formulation with symmetrization of interactions using generalized Fourier transformations, (T), 22:24897 (LYCEN-6784)
theory of rearrangement, Pauli exclusion principle in unified, (T), 22:35374
theory of resonance scattering by central potential with decaying states, (T), 22:27345
theory of resonance scattering, lectures on, (T), 22:9944
theory of resonance, lectures on, (T), 22:9949
theory of resonance, lectures on, (T), 22:48624
theory of resonances and virtual states in, (T), 22:44758
theory of scattering with rearrangement, unified, (T), 22:22626
theory of single nucleon transfer, between complex nuclei, (T), 22:32710
theory of spin-orbit interaction in nucleon radiative capture, (E), 22:9977
theory of strong absorption and direct effects in compound-nucleus, (T), 22:27374
theory of three-nucleon stripping, using distorted-wave Born approximation, (T), 22:3785
theory of transfer-type, (T), 22:7768
theory of two-neutron transfer, (T), 22:27022
theory of two-nucleon transfer, (T), 22:39696 (UCRL-18225)
theory of two-nucleon transfer, (T), 22:11949(R) (ORO-2972-47)
theory of two-nucleon transfer, using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
theory of two-nucleon transfer, with pairing potential, (T), 22:44787

theory of two-nucleon-transfer stripping, (T), 22:14097
theory of two-particle transfer, using two-level model, (T), 22:27358
theory of, asymptotic channel states and matrix equations in unified, (T), 22:30053
theory of, coupled-channel formalism for unified, (T), 22:32684
theory of, coupled-channel formalism for, (T), 22:50560(R) (RLO-1062-681)
theory of, derivation of DWBA in shell-model, (T), 22:5895
theory of, formalism using cluster model, (T), 22:14068 (BMwF-FBK-67-82)
theory of, formalism using cluster model, (T), 22:14067(R) (BMwF-FBK-67-81)
theory of, formalism using K matrix, 22:3758
theory of, graphical approach to, (T), 22:27347
theory of, isospin formalism for, (T), 22:9937
theory of, lectures on unified, 22:48623
theory of, lectures on, (T), 22:16058 (MATSCIENCE-57)
theory of, localization of composite projectiles in many-body, (T), 22:53241
theory of, many-body, (T), 22:27255
theory of, quasiparticle formalism for, (T), 22:37397
theory of, review of new developments in, (T), 22:11978 (HMI-B-51)
theory of, three-body scattering amplitude in modified distorted-wave Born approximation, (T), 22:9975
theory of, use of projection operators in, (T), 22:20716
theory of, using second-quantization formalism, (T), 22:9974
theory of, using second-quantization formalism, (T), 22:27291
theory of, with time reversal violation, (T), 22:14106
theory using cluster model, (T), 22:24889 (BMwF-FBK-67-93)
theory using constant and one-level resonating amplitudes, statistical, (T), 22:27245
theory using coupled-channel formalism, development of, (T), 22:9800(R) (COO-535-571)
theory using shell model with K-matrix formalism resonance fine structure in, (T), 22:3757 (TID-24143)
time determination using shadow effect in charged-particle reactions with single crystals, (T), 22:42146
transfer functions for neutron-emission, effect of neglecting energy--angle correlation in, (T), 22:32695
transformation matrix T^{-1} for differential scattering cross sections, method for calculating, (T), 22:9922 (NAA-SR-Memo-12489)
transition matrix elements for two-nucleon transfer, (T), 22:42131
transitions in single-nucleon transfer, spectroscopic factors for forbidden, (T), 22:20767
transmission coefficients for low-energy compound-nucleus, calculation using pole-resonance form of unitary matrix, (T), 22:35377
unitarity conditions in diffraction, (E), 22:30088
use of heavy ion-induced, for production of element 114, (T), 22:18209 (JINR-D7-3548, pp 39-47)
use of meson (π) induced, for study of nuclear structure, (T), 22:3802
use of radiative capture, in giant resonance research, (E), 22:5897
use of recoil, in production of hot atoms, 22:4173
use of transfer, in structure research, (E/T), 22:20724
use of two-neutron transfer, for testing nuclear models, (T), 22:20746
wave functions for three-body final states in, (T), 22:3221 (ORNL-TM-2008)
weak interaction processes in highly evolved stars, (T), 22:38684
widths for resonance neutron capture, correlations of partial, (T), 22:20578 (WASH-1079)
widths of 2p-1h doorway states in, (T), 22:46820 (UCSD-10-P-11-75)

NUCLEAR REACTIONS (DIRECT)
amplitudes for deuteron stripping near Butler pole in DWBA formalism, (T), 22:48591
analysis of deuteron stripping with correlation between spectroscopic factors for discrete states and continuum matrix elements, (T), 22:27273
angular distributions for boron-11 (p,α), analysis using plane-wave pickup and exchange formalism, (T), 22:35240
bound states of deformed nuclei in, (T), 22:27355
charge exchange in deuteron stripping, (T), 22:42130
charged-particle emission in proton-induced, with medium and heavy nuclei, (E/T), 22:7703(T) (ORNL-tr-1831)
computer program for analysis of pickup and stripping, using optical model with distorted-wave Born approximation, (T), 22:14078(R) (TID-24250)
conference on helium-3-induced, Tokyo, Sept. 6, 1967, 22:39683 (CONF-670970)
configuration mixing effects in, (T), 22:32726
configuration mixing effects on forward-angle J dependence in l = 3 pickup and stripping, (E/T), 22:37387
correlation of virtual nucleon pairs in, (T), 22:20719
cross sections for (t,d), normalization of zero-range DWBA, (E/T), 22:50624
cross sections for deuteron stripping on deformed nuclei below Coulomb barrier, (T), 22:39716
cross sections for heavy ion-induced, with multiple neutron transfer, (E), 22:27196
cross sections for j-forbidden deuteron stripping, calculations using core-excitation model, (T), 22:42008
cross sections for, research on nuclear level densities using energy dependence of average, (T), 22:20762
cross-section reciprocity for rearrangement, testing time reversal invariance by, (T), 22:32719
description using phenomenological methods, survey of, (T), 22:9935
detailed balance violation in, from time reversal violation, (T), 22:32688
deuteron elastic scattering and stripping, optical model and distorted wave formalisms for, 22:32674
Feynman diagrams for, calculation of three-ray apical parts for, (T), 22:35401
finite-range effects in, at low energy, (T), 22:44766
form factors for DWBA analysis of triton-induced two-nucleon transfer, (T), 22:39687 (CONF-670970-, pp 97-9)
form factors for pickup and stripping, calculations using shell model, (T), 22:27353
form factors for pickup and stripping, method for calculation using distorted-wave Born approximation, (T), 22:9952
form factors for stripping, methods for calculating, (T), 22:27268
gamma angular correlations in pickup, effect of spin-spin interaction on, (T), 22:27357
isospin mixing in deuteron-induced, semidirect mechanism for, (T), 22:50667
mechanism for formation of three particles in, method for identifying, 22:3789
mechanisms of, identification using complex singularities, (T), 22:27346
neutron photoproduction from odd-A nuclei, (T), 22:5873
polarization effects in deuteron stripping, calculations using Butler--Hewitt--McKellar--May theory, (T), 22:42114
research progress on, (E), 22:1644(R) (AD-647902)
resonance interference in deuteron stripping at low energy, (T), 22:26896
spectral averages in transfer, on targets with single active shell, (T), 22:42109
spectroscopic factors for (p,n), with isobaric analog resonance excitation, (T), 22:20730
spectroscopic factors for deuteron stripping, from Butler-Born approximation, (T), 22:42110
spectroscopic factors for one-neutron transfer, calculations using Tamm--Dancoff quasiparticle approximations with Tabakin potential for tin isotopes, (T), 22:50607
spectroscopic factors for pickup and stripping, single-particle sum rules for, (T), 22:32689
spectroscopic factors for stripping, determination using distorted-wave Born approximation, (T), 22:30100
spectroscopic factors from deuteron stripping, (T), 22:42145
spectroscopy of odd--odd nuclei with, (E/T), 22:32551
structure amplitudes for (p,t), on A = 4 to 224 nuclei, (T), 22:53078 (UCRL-18268)
sum rules for single-particle strengths in deuteron stripping, (T), 22:9963
theory and spectroscopic uses of deuteron pickup and stripping, (E), 22:5871 (UJV-1870)
theory for 2s1d-shell nuclei, reduced width calculations using projected Hartree-Fock wave functions, (T), 22:9968
theory of (t,d), below Coulomb barrier, (T), 22:44767
theory of deuteron stripping at low energy, Butler formalism using sudden approximation for, 22:48611
theory of deuteron stripping near 10 MeV, j-dependence for 2p neutron transfer in, (T), 22:22642
theory of deuteron stripping on even-A rare-earth nuclei, using modified Nilsson orbitals, (T), 22:32649
theory of deuteron stripping, approximations for exactly solvable model in, (T), 22:27348
theory of deuteron stripping, nonlocal effects in distorted-wave, (T), 22:20726
theory of deuteron stripping, testing by boron-11 (d,p) reaction, (E), 22:26928
theory of deuteron stripping, using coupled-channel formalism, (T), 22:27356
theory of deuteron stripping, using sudden approximation, (T), 22:20725
theory of deuteron stripping, with intermediate trapping states, (T), 22:9961
theory of deuteron- and proton-induced, with isobaric analog resonance excitation, (T), 22:7661(R) (NYO-3525-26)
theory of finite-range effects in knockout, (T), 22:11949(R) (ORO-2972-47)
theory of finite-range knock-out, (T), 22:20712
theory of four- and many-body, using second-quantization formalism, (T), 22:9919 (IPNO/TH-102)
theory of intermediate excitations in deuteron stripping, (T), 22:42099 (JINR-P4-3872)
theory of knock-out, research progress on, (T), 22:11950(R) (ORO-3624-1)
theory of knockout, with polarized incident beams,

formalism using distorted-wave Born approximation, (T), 22:35399
theory of one-nucleon transfer, DWBA formalism for, (T), 22:53219 (CEA-R-3574)
theory of stripping, testing using pickup reactions with deuteron singlet state, (T), 22:18321
theory of, decay amplitudes and overlap integrals in, (T), 22:27257
theory of, lectures on, (T), 22:3800
theory of, lectures on, (T), 22:20674 (NP-17228, pp 104-29)
theory of, review, (T), 22:16095
theory of, three-body, (T), 22:1727
theory of, using semiclassical model for distorted-wave calculations, (T), 22:1711
time reversal invariance testing using detailed balance for inverse, (T), 22:14084
use in determination of nuclear wave functions for chlorine and sulfur isotopes, (E/T), 22:3684
use of helium-3-induced, in nuclear spectroscopy, (E), 22:39688 (CONF-670970-, pp 139-43)
use of helium-3-induced, in research on nuclear structure, 22:39684 (CONF-670970-, pp 3-12)
use of particle transfer, in research on particle unstable states, (T), 22:27244
uclear Reactions (Indirect)
see Nuclear Reactions
uclear Rockets (Radioisotope-fueled)
see Nuclear Auxiliary Power Systems
UCLEAR SAFETY PILOT PLANT
containment systems for, iodine vapor removal from, 22:32796
containment vessel for, behavior of airborne iodine in, 22:27416(R) (ORNL-4228)
fission product behavior during meltdown of Zircaloy-2 clad uranium dioxide in, 22:10012 (ORNL-TM-1908(Pt.1))
iodine behavior in, analysis of elemental, 22:1772(R) (ORNL-TM-1986)
methyl iodide removal using spray cooling in, 22:25098(R) (ORNL-TM-2164)
removal of iodine vapor from air and steam--air in, analysis of spray, 22:35604 (ORNL-4253)
spray system in, half-life measurements for iodine and iodomethane cleanup of, 22:20909(R) (ORNL-TM-2095)
spray systems performance in, effects of drop size distribution on, 22:7816(R) (ORNL-TM-2057)
uclear Spallation
see Spallation
UCLEAR SPIN
determination for excited states using systematics for l = 3 transitions in (d,p) reactions, (E), 22:20522
determination for excited states, using average γ spectra from resonance neutron capture, (E/T), 22:42049
determination from γ decay systematics, theory for, (T), 22:37340(R) (EANDC(E)-89(U))
determination of upper state for isotropic gamma decay to final state of spin $^3/_2$, (T), 22:30071
distribution parameter for isomer production by (n,2n) reactions at 14.8 MeV, (E), 22:32539
measurement by atomic-beam techniques, (E/T), 22:15336
measurement for radioisotopes, method for, 22:30048(R) (PUC-937-307)
measurement for short-lived nuclei using atomic-beam techniques, (E), 22:29943
measurement of, review of methods for, (E), 22:3746 (BNL-11746)
measurement program for fissile nuclei, (E), 22:37340(R) (EANDC(E)-89(U))
measurement using Moessbauer effect, review of, 22:46833
measurement using proton elastic and inelastic scattering from analog state resonances, polarimeter for, 22:32516 (MIT-2098-422, pp 43-68)
neutron scattering by coherent parametrically excited spin waves, slow, (E), 22:44258
orientation of, system for selecting metastable atoms by, 22:32483
polarization in gases, liquids, and solids, review of methods for, 22:46838
selection rule for nuclear reactions, 2I + 1, (T), 22:27366
systematics for 1 + 1 → 0 + 0 nuclear reactions, M-matrix formalism for, (T), 22:50660
systematics for odd-A = 135 to 151 nuclei with (2f/sub 7/2/)$^{+-3}$ ground-state configurations, (T), 22:39668
UCLEAR STRUCTURE
see also Binding Energy
see also Nuclear Models
analysis by electron scattering, 22:3574
anharmonic effects in even--even nuclei of transition region, (T), 22:46816 (JINR-P4-3898)
book: Fundamentals in Nuclear Theory, 22:9925 (STI/PUB-145)
book: Intermediate Structure in Nuclear Reactions, 22:48595
book: Introduction to Nuclear Physics, 22:3804
book: Nuclear Many Body Problems, 22:32672
book: Structure of Complex Nuclei. Summer School for Specialists in Physics, 22:1739
book: Structure of the Atomic Nucleus, 22:1748
book: The Spatial Quantum Mechanical Axial and Shell Structure of the Atomic Nucleus, 22:27395
boson expansion method for two-level systems, comparison with exact solution, 22:20683
calculations for even--even 2p1f-shell nuclei, self-consistent, (T), 22:53249
calculations for neutron closed-shell nuclei using BCS approximation, (T), 22:48602
calculations using Bressel--Kerman and Reid potentials, matrix elements for, (T), 22:50560(R) (RLO-1062-681)
calculations using Hartree-Fock method for closed-shell nuclei, computer program for, (T), 22:39697 (UCRL-50430)
collective behavior in even--even 1f/sub 7/2/ nuclei, (T), 22:48603
compilation of energy levels of A = 11 to 12 nuclei, 22:35230
conference, 22:17890
conference on low-lying states in medium-weight and heavy nuclei, 22:48512 (JAERI-1158)
conference on, 1966 Tokyo, 22:27279
conference on, proceedings of 1967 Tokyo, 22:44776
Coulomb interaction in two-particle wave functions with configuration mixing, state dependence of, (T), 22:53247
data acquisition and processing using on-line computer, 22:22560(R) (ORO-1067-2)
data summaries for experimental studies of, 22:50522 (ORNL-4317-1)
deformation effects in light nuclei, lectures on shell-model formalism for, (T), 22:48627
deformation parameters for rare-earth nuclei from alpha elastic and inelastic scattering, (E/T), 22:22593
description for 2s1d-shell nuclei using Hartree--Fock method, Coulomb and center-of-mass corrections for, (T), 22:50694
description of intermediate coupling states using nonorthogonal states of submodels in shell model, (T), 22:48609
description using group theory, lectures on, (T), 22:9947
description using single-particle shell model, review of, 22:32721
determination from electron reactions, review of, 22:22272 (CONF-670923-, pp 156-95)
determination from K-mesic atoms, review of research on, 22:18110
determination from mesic atom studies, (T), 22:18311
Dirac equations for electron-nucleus processes in light nuclei, scattering solutions of, (E), 22:9979
effective interaction in sd shell, T = 0, 22:37380
effects of Hartree--Bogoliubov transformation on nuclear ground-state symmetries, (T), 22:48597
effects on internal conversion coefficients for E1 transitions, (T), 22:20732
energy gap for deformed nuclei, calculations using Migdal theory of finite Fermi systems with pair correlations, (T), 22:48606
energy levels for A = 14 nuclei, Hartree--Fock calculations of, 22:16062
energy levels of 1p-shell nuclei, effects of Feingold three-body vector operator on, (T), 22:30108
energy levels of even--even nuclei with I/sup π/ = 1^-, (T), 22:18316
equilibrium deformations of ground and excited states, (T), 22:53220 (INR-P-920)
formalism for nuclear many-body problem using linked-cluster expansions, 22:1722
giant resonances in closed-shell nuclei, calculations using realistic forces, (T), 22:41962
Hartree--Fock problem in, relation between random phase approximation and, 22:35383
isotope shift of the nuclear potential radius, (T), 22:30074
isotopic variation of nuclear dimensions by alpha elastic scattering, (E/T), 22:16052
lectures on, 22:16092
lectures on, 22:22620 (ISS-67/23)
level density in nuclei, (T), 22:5876
many-body problems in, lectures on, (T), 22:9945
mass relations from O_8 symmetry, (T), 22:30055
measurement of charge and matter distributions in nuclei, (T), 22:48594
microscopic theory of nuclear collective motion, (T), 22:30078
neutron and proton distribution in nuclei, (T), 22:32686
neutron and proton single-particle states at the same mass number, similarity between, (T), 22:46824
numerical calculations for 1P shell nuclides using a central potential and proper exchange parameters, 22:32706
octupole vibrational levels in deformed even nuclei, Bohr--Mottelson hydrodynamic calculations of K = 1, 2, 3, (T), 22:20705
odd-parity states in the A = 6 and A = 14 systems, 22:35382
one-particle states of deformed nuclei, accuracy of calculation of, 22:30050
proton pairing energies in even-even nuclei, 22:22594
reaction matrix elements for the 0f-1p shell nuclei, (T), 22:37378
research at MIT, 10/66--10/67, (T), 22:32074 (MIT-2098-422, pp 106-42)
research on highly excited states using monoenergetic

neutron capture γ beams, (E), 22:48511 (IA-1163)
research on light nuclei using proton scattering at high energy, (T), 22:53088
research on medium-weight nuclei using isobaric analog resonance excitation, (T), 22:48575 (JAERI-1158, pp 64-7)
research on particle unstable states using particle transfer reactions, (T), 22:27244
research on sd-shell nuclei, using photonuclear reactions, (E), 22:18162
research on, high-energy physics applications in, (E), 22:17891
research on, review of, 22:53226
research on, review of, 22:1376(R) (NYO-2171-233)
research on, review of experiments using CERN 600-MeV synchrocyclotron for, (E), 22:18310
research on, use of AVF cyclotrons for, 22:15885
research program using electron scattering at Stanford Mark III linear accelerator, lectures on, 22:37628 (ISS-68/1)
research using (p,2p) reactions at medium energies, 22:33187 (ISS-66/50)
research using (p,t) reactions, tables of structure amplitudes for, (T), 22:53078 (UCRL-18268)
research using (t,d) reactions at low energy, (T), 22:27365
research using alpha inelastic scattering, (T), 22:16082
research using alpha scattering, (E/T), 22:32708
research using angular correlation and spectroscopic methods, dissertation summary on, (E), 22:39660
research using beta decay and neutron capture, 22:32727
research using chemical effects on nuclear transitions, lectures on, 22:42096 (BNL-50100)
research using compound-nucleus reactions, review of, (T), 22:20761
research using deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
research using electron and proton elastic scattering at high energies, review of, 22:50675
research using electron elastic and inelastic scattering, survey of, (E), 22:27380
research using electron elastic and inelastic scattering, review of, 22:18312
research using electron inelastic and quasielastic scattering, (E/T), 22:27381
research using electron scattering with nucleon emission, (T), 22:9964
research using electron scattering, (T), 22:16063
research using electron scattering, review of, 22:20731
research using elementary particle reactions at 100 to 600 MeV, (T), 22:48614
research using epithermal neutron capture, (E), 22:3686 (BNL-11903)
research using excitation of isomeric states, method for, (E/T), 22:48573 (JAERI-1158, pp 1-9)
research using fast neutron inelastic scattering, (E), 22:27159
research using fast neutron-induced reactions, survey of, 22:39565
research using γ angular distributions from heavy ion-induced reactions, (T), 22:27335
research using helium-3-induced direct reactions, (E), 22:39688 (CONF-670970-, pp 139-43)
research using helium-3-induced reactions and scattering, conference on, 22:39683 (CONF-670970)
research using helium-3-induced reactions, conference on, 22:39684 (CONF-670970-, pp 3-12)
research using isobaric analog resonance excitation, (E/T), 22:9927
research using isobaric analog resonances, (T), 22:7762
research using meson (π) reactions at low energy, survey of, (E/T), 22:18313
research using meson (π) reactions, review of, (E/T), 22:20736
research using μ-mesic x-ray spectra, (E/T), 22:46834
research using μ-mesic x-ray spectra, survey of, 22:20735
research using neutron capture γ resonance fluorescence, (E), 22:30043
research using neutron capture, (E), 22:26999
research using neutron elastic and inelastic scattering, (T), 22:27379
research using neutron spectroscopy, lectures on, 22:9951
research using neutron-induced reactions with charged-particle emission, survey of, (E), 22:14077 (NYO-1082-10)
research using proton elastic scattering at 1 GeV, (E), 22:24826 (BNL-12342)
research using proton reactions and scattering at 1 GeV, (E), 22:26831 (BNL-12344)
research using proton reactions and scattering at 1 GeV, 22:29907 (ORO-1316-57)
research using resonance neutron capture, equipment for, 22:20578 (WASH-1079)
research using resonance scattering of neutron capture γ radiation, (E), 22:48510 (IA-1097)
research using resonance scattering, (T), 22:27345
research using resonance scattering, lectures on, (T), 22:9944
research using second- and third-order shell-model mass differences, (T), 22:18335
research using transfer reactions, (E/T), 22:20724
research using triton-induced reactions, survey of, (E/T), 22:1745
review on, 22:41762
selection rules in structure of d--s shell states, SU(6) and SU(3), 22:7769
separable non-local two-nucleon potential for odd-parity triplet states, 22:1728
shell effects in transuranium nuclei, (T), 22:46813(T) (ANL-Trans-634)
shell-model calculation of low-lying states of oxygen-16, 22:37302
shells in deformed nuclei, (T), 22:27325
single-particle proton states in, 22:48572 (IAE-1447)
single-particle wave functions for, computer program for fitting with Woods--Saxon eigenfunctions, (T), 22:53222 (ORNL-TM-2342)
spectral distributions in nuclei, (T), 22:16098
spin--orbit interactions in nuclei with large momentum, 22:5900
spin--orbit splitting, Hartree--Fock calculations of, (T), 22:16086
stability of Hartree-Fock states against four-body correlations, (T), 22:42135
study by meson reactions (π,γ) with light nuclei, 22:3802
supermultiplet theory of, ground-state wave functions in, (T), 22:39695 (UCRL-17989, pp 101-25)
theory for 2sld-shell nuclei, formalism using group representation, (T), 22:27296
theory for 2sld-shell nuclei, using shell model, (T), 22:5809(R) (ANL-7354)
theory for deformed excited states of closed-shell nuclei, (T), 22:14102
theory for deformed nuclei, using superfluid model, (T), 22:1741
theory for fp-shell nuclei, review of, (T), 22:48585 (JAERI-1158, pp 125-32)
theory for odd-A spherical nuclei, with quasiparticle coupling to quadrupole moment of 2^+ phonon, (T), 22:18240
theory for spherical nuclei, review of models in, (T), 22:9955
theory for spontaneously fissioning isomers, (T), 22:20644
theory for, quark model in, 22:20215
theory of dipole resonance in magic nuclei, (T), 22:7748
theory of many-body nucleon systems with two-body harmonic oscillator potentials, 22:9960
theory of molecule-like effects in rotational bands of light 4n nuclei, (T), 22:53235
theory of nuclear matter, Brueckner--Goldstone, (T), 22:1713
theory of, formalism using cluster model, (T), 22:14068 (BMwF-FBK-67-82)
theory of, formalism using group theory, 22:1744
theory of, formalism using quasiparticle second Tamm--Dancoff approximation, (T), 22:26975
theory of, formulation of realistic nucleon-nucleon potentials for, (T), 22:32714
theory of, formulation without physical models using solution of Schroedinger equation by integration of differential forms over simplices in higher dimensional differentiable manifolds, (T), 22:48605
theory of, isospin formalism for, (T), 22:9937
theory of, molecular aspects of, (T), 22:48579 (JAERI-1158, pp 99-105)
theory of, phenomenological potential parameters for, (T), 22:32713
theory of, review of collective and shell model formulations of, (T), 22:50663
theory of, review of, (E/T), 22:20693
theory of, review of, (T), 22:50664
theory of, using density-dependent central forces, (T), 22:44768
theory of, using quasiparticle method, (T), 22:1742
theory using elementary particle models, (T), 22:20737
three-body problem in nuclear matter, (T), 22:1714
three-body problem in, case of two nucleons outside a closed-shell core, 22:11984
transitions between seniority-4 and seniority-2 states compared to 2-phonon-1-phonon transitions, 22:35381
triton potentials and wave functions, 22:32693
wave functions for low-lying states of even-even nuclei, BCS, (T), 22:42094 (ANL-7439)
wave functions for many-body fermion systems without spin-orbit coupling, projection operator for constructing antisymmetric, (T), 22:52913
Nuclear Technology
see Nuclear Engineering
Nuclear Test Gage
see Exponential Piles
NUCLEAR THEORY
see also Binding Energy
see also Nuclear Models
analog and isobaric spin formalism for, 22:3747 (CONF-660306-31)
anharmonic effects and deformation energy in even--even nuclei, 22:3751 (INP-555/PL/PH, pp 125-36)
application of Goldstone perturbation theory to the many body problem using Hamada--Johnston potential in,

22:44752 (JINR-E4-3927)
Bethe--Salpeter equation in, conservation laws for, 22:5877
binding energies of even-even A = 4 to 40 nuclei, Hartree--Fock calculations of, 22:20483
binding energies of N-body fermion systems with two-body interactions, 22:7410
binding energy formula using monopole model, 22:20747
binding energy per particle and saturation density of nuclear matter, calculation using separable potentials, 22:3794
binding energy systematics in bach--tamaid particle formalism, 22:48448
blocking effects in asymmetric-rotor model, 22:1732
book: Advances in Nuclear Physcis, Volume 1, 22:22648
book: Electromagnetic Transitions in Nuclei, 22:42136
book: Fundamentals in Nuclear Theory, 22:9925 (STI/PUB-145)
book: International Nuclear Physics Conference, 22:20722
book: Introduction to Nuclear Physics, 22:3804
book: Introduction to Nuclear Theory, 22:48590
book: Nuclear Forces, 22:24923
book: Nuclear Many Body Problems, 22:32672
book: Quasiparticle Method in Nuclear Theory, 22:16103
book: Structure of Complex Nuclei. Summer School for Specialists in Physics, 22:1739
book: Structure of the Atomic Nucleus, 22:1748
book: The Basic Theory of Atomic Nuclei, 22:16102
book: The Spatial Quantum Mechanical Axial and Shell Structure of the Atomic Nucleus, 22:27395
boson expansion method for two-level systems, comparison with exact solution, 22:20683
bound states and Levinson's theorem for nonlocal s-wave potentials, 22:32692
central interactions, Wigner--Eckart theorem applied to SU(3) matrix elements of, 22:7772
charge dependence of nuclear forces, 22:29934
charge-independent pairing interactions for nondegenerate j-levels, 22:5908
coefficients of nonadiabaticity for rotational levels, 22:16074
collective behavior in even--even 1f/sub 7/2/ nuclei, (T), 22:48603
collective monopole vibrations in closed-shell nuclei, 22:1725
collective motion in spherical nuclei, lectures on, 22:20670 (NP-17228, pp 3-24)
collective oscillations in even spherical nuclei, effect of Pauli principle on, (T), 22:27315
collective oscillations of even spherical nuclei, anharmonic effects on, (T), 22:27322
collective particle--hole excitations, higher-order corrections using Green functions, 22:18342
collective rotations in nuclei, 22:37383
collective vibrations in terms of boson expansions, 22:46825
construction of many-nucleon wave functions with given Young tableau, 22:1724
core polarization processes and effective interactions in nuclei, higher-order effects, 22:14089
core-excitation effects on the energy spectra of pairs of nuclei, 22:9931
correlation energy of many-fermion system, testing random phase approximation for, 22:44763
Coulomb displacement energies and isobaric analog resonances in heavy nuclei, 22:3753 (INP-555/PL/PH, pp 155-61)
Coulomb displacement energies in the 1f/sub 7/2/ shell, 22:37382
Coulomb displacement energies of isobaric analog states, 22:20678
Coulomb effects in three-body systems, calculations using T-matrix formalism, 22:44753 (NP-17557)
Coulomb energy systematics for A = 22 to 40 nuclei, (E/T), 22:9845
coupling scheme for odd-even vibrational nuclei, 22:5858
decay of high angular momentum states populated in heavy-ion reactions, 22:30117
deformabilities in the rare-earth, actinide, and super-heavy regions, (T), 22:30081
deformability parameters for neutron-rich fission fragments, calculation of, 22:30059
deformation and rotational properties of nuclei, 22:24910
deformation energies of nuclei, microscopic calculations of shell effects in, 22:30077
deformation regions, calculation of, 22:30080
deformations of ground states and excited states of strongly deformed nuclei, equilibrium, (T), 22:24894 (JINR-E4-3703)
deformed binding fields, use in calculating energy levels of light-weight nuclei, 22:3780
density matrix approach to, 22:16075
density matrix in two-particle function method, 22:5886
development of, review of, 22:30054
deviations from the I(I + 1) law in deformed nuclei, 22:20717
dispersion relations in, review of, 22:11995
effective force for random phase approximation, renormalization of, 22:39693 (JINR-P4-3873)
effective force operator for random phase approximation, 22:39692 (JINR-P4-3849)
effective interaction for Hartree--Fock calculations, nuclear matter criterion for, 22:50670
effective interaction from canonical transformation of two-body potential into Hermitian Brueckner matrix, 22:48616
effective interaction in sd shell, T = 0, 22:37380
effective interaction in, density-dependent, 22:27309
effective interactions in A = 18 nuclei, higher-order core polarization contributions to, 22:53253
effective interactions in finite nuclei, lectures on, 22:48628
effective interactions in, relation to nucleon-nucleon scattering, 22:39698 (UR-875-234)
effective mass near Fermi surface in medium-weight and heavy nuclei, 22:27259
effective two-body force from DWBA analysis of (p,n) reactions, 22:27363
electric quadrupole moments of first 2+ states of even-even nuclei, 22:1706 (ITF-67-14)
electromagnetic radii and Coulomb energy of helium-3, perturbation calculation of, 22:3776
energy levels and wave functions for systems of 3 and 4 particles in the 2s--1d shell, SU(3) calculation of, 22:14087
energy levels for A = 14 nuclei, Hartree--Fock calculations of, 22:16062
energy levels from rotation--particle coupling, 22:16096
energy levels of closed-neutron-shell nuclei, isobaric analog, 22:7690 (JINR-E2-3551)
energy levels of deformed even-even nuclei, rotational, (T), 22:3712
energy levels of deformed nonaxial nuclei, calculation of one-particle, 22:1708 (JINR-E4-3453)
energy levels of deformed nuclei, 22:1746
energy levels of even-even nuclei, systematics of, 22:27332
energy levels of light mirror nuclei, displacement of corresponding, 22:7763
energy levels of light-weight nuclei from Slater determinants using angular momentum projection, (T), 22:27267
energy levels of spherical even-even nuclei, effect of Pauli principle on collective vibrational, (T), 22:3736
energy of ground state of three-body system, variational calculations of, 22:44603
energy--density formalism for, statistical, 22:42118
energy-level densities and spacings in intermediate and heavy nuclei, calculations using Fermi gas model, 22:1712
energy-level electromagnetic transition rates in, corrections due to ground-state correlations, (T), 22:16091
energy-level transition densities for dipole excitations of N > Z nuclei, 22:1723
energy-level transitions in heated nuclei, partial widths for radiative, 22:5899
equilibrium deformations of ground and excited states, (T), 22:53220 (INR-P-920)
force strength in random phase approximation, renormalization of, 22:20748
forces for four-nucleon systems, realistic, 22:26817
forces from Tabakin and Yale potentials, effective, 22:22617
forces in A = 14 nuclei, evidence for tensor, 22:44612
forces in nuclear matter, repulsive, (T), 22:32687
forces in superconducting nuclei, quadrupole pairing, 22:20740
forces in three-nucleon systems, (T), 22:20770
forces in three-nucleon systems, three-body, (T), 22:27289
forces in, boson--exchange theory of, 22:17977
forces in, boundary-condition model in, 22:27285
forces in, charge symmetry of, 22:48466
forces in, density-dependent, 22:44768
forces in, determination of two-body, (T), 22:39699
forces in, Hamiltonian operator for velocity-dependent, 22:42107
forces in, meson exchange theory of, 22:53245
forces in, momentum space calculations for repulsive-core, 22:17960
forces in, one-boson exchange, (T), 22:27282
forces in, pairing and quadrupole, 22:20497(R) (AECL-3009)
forces in, parity and time-reversal invariance of, 22:46837
forces in, parity violation by, 22:46854
forces in, parity-nonconserving, 22:35380
forces in, parity-violating, 22:9655
forces in, potential models for short-range, 22:32716
forces in, repulsive core of, 22:27284
forces in, research using isobaric analog resonance excitation, (E/T), 22:9927
forces in, review of phenomenological, 22:9980
forces in, review on, 22:39956 (ISS-67/30)
forces in, search for parity nonconservation of, (E), 22:22591 (RISO-167)
forces in, search for parity nonconservation of, (E), 22:27382
formalism for A = 3 nuclei using perturbation theory to inverse powers in interaction parameters, 22:14072

(ITF-67-12)
formalism for anharmonic corrections in even-even and odd spherical nuclei, using boson approximation with quasiparticle antisymmetry, 22:3766
formalism for closed-shell nuclei using harmonic oscillator representation, t-matrix, 22:7740 (JINR-E2-3543)
formalism for collective effects in spherical nuclei, 22:3796
formalism for collective excitations in even spherical nuclei, using random phase approximation, 22:27316
formalism for collective excitations using gauge invariance of nucleon interactions, 22:27313
formalism for collective excitations, using number-projected wave functions, 22:27318
formalism for collective excitations, using quasi-boson approximation, 22:27314
formalism for collective excited states of even-even nuclei, review of, 22:1648 (ITF-67-9)
formalism for deformed excited states in closed-shell nuclei, 22:14102
formalism for equilibrium shapes of light nuclei, 22:9946
formalism for even-even nuclei, with quasi-β and -γ vibrational bands, 22:27331
formalism for nuclear many-body problem using linked-cluster expansions, 22:1722
formalism for nuclear matter, Brueckner--Goldstone, 22:1713
formalism for spherical nuclei using pairing approximation, 22:5881
formalism for spherical nuclei using pairing approximation, 22:5880
formalism for three nucleon systems, using separable nonlocal potential with hard-shell repulsion, 22:26814
formalism for three-body correlations in reaction-matrix calculations for nuclear matter, 22:9972
formalism for vibrating nuclei, using intermediate coupling approximation, 22:27321
formalism using coupling model with orbital motion, 22:1745
formalism using density-dependent short-range effective interaction, (T), 22:18328
formalism using Hartree--Bogoliubov theory with antilinear operators, 22:46836
formalism using Hartree-Fock approximation, lectures on, 22:3756 (TID-24142)
formalism using quasiparticle method, lectures on, 22:1742
formalism using Thomas-Fermi method with local-density approximation, 22:18329
formalism using weak interaction theory, lectures on, 22:48625
formalisms for many-body problems, lectures on, 22:9945
formalisms using generator-coordinate method and random phase approximation, relation of, (T), 22:22641
four-body forces in nuclear matter, long-range, (T), 22:50695
G-matrix interaction in the 1p shell, 22:7773
generalized optical model for proton elastic and quasi-elastic scattering, 22:1729
giant resonance coupling to surface quadrupole oscillations, 22:30058
group-symmetry breaking in nuclei, measures for, 22:14090
gyromagnetic ratios of deformed nuclei, cranking-model calculations of, 22:20684
Hartree--Fock calculations for deformed light nuclei, review of, 22:22651
Hartree--Fock problem in, relation between random phase approximation and, 22:35383
inner-product integral for resonant state and shell-model applications in, 22:46821
instability of spheroidal super-heavy nuclei, 22:46826
interactions in the d--s shell, SU(3) reduction of, 22:7774
interactions in the p, sd, and pf shells, 22:7754
interactions in, Moessbauer test of time reversal invariance of strong, 22:50678
interactions in, optimization of phenomenological parameters of effective, 22:9929
intermediate structure in the two-channel model of nuclear reactions, 22:30070
isospin formalism in, survey of, 22:9937
isospin mixing in ground states and Fermi beta decays, 22:16094
isotope shift of the nuclear potential radius, 22:30074
isotope shifts from neutron addition, description using Hartree--Fock formalism with density-independent nucleon--nucleon potential, 22:30049 (PUC-937-314)
lectures, 22:3795
lectures, 22:20669 (NP-17228)
level density parameter in the range A = 24 to 48, 22:20686
local energy and Perey--Buck approximations in, simulation of nonlocal shell-model calculations by, 22:20685
magic regions and masses for super-heavy nuclei, predictions of new, 22:32701
magnetic dipole interactions in deformed nuclei, 22:46817 (JINR-P4-3934)
many-body approach to nuclear reactions, 22:27255
many-body interactions in, group classification of, (T) 22:3759
many-body nucleon systems with two-body harmonic oscillator potentials, 22:9960
many-body problem in, antisymmetric projection operator without spin-orbit coupling for constructing wave functions for, 22:52913
many-body problem in, group-theoretical description of, 22:9947
many-body problem in, lower-bound shell model for, 22:48622
many-body problem in, rearrangement energy for, (T), 22:3783
many-body problem in, scattering formalism for, (E), 22:14109
many-body problem in, two-body potentials for bound states in, 22:30104
many-body problem in, variational calculations using tw body cluster expansion, 22:27294
many-body problem with attractive delta function interactions, bound-state solutions of one-dimensiona 22:46731(R) (COO-1746-8)
many-body problem with harmonic interactions, 22:46731(R) (COO-1746-8)
many-body problem with pair oscillator interaction, 22:39727
mass formula for deformed nuclei, development of semiempirical, 22:30089
mass formulas in, calculation of properties of super-heavy nuclei using revised, 22:30021
mass formulas in, shell-model approach to, 22:30090
mass formulas, approaches to, 22:30072
mass formulas, approaches to, 22:30065
mass formulas, microscopic approach to semi-empirical, 22:30076
mass relations from O_8 symmetry, 22:30055
matrix elements for the s-d shell, table of intrinsic, 22:16080
matrix elements of Coulomb field, operator derivation o recursion relations between radial, 22:32715
microscopic, of nuclear collective motion, 22:30078
model for ground-state helium-4, single-particle, 22:27248
model for helium-3 using separable interactions, 22:20718
moments of inertia at high rotational frequencies, 22:27327
neutron and proton separation energies of nuclei, shell independent systematics of, 22:35396
neutron pairing energies in, mass and spin systematics of, 22:5882
neutron separation energies for even-even nuclei, systematics of, 22:20714
neutron--proton interaction in odd--odd nuclei, effective, 22:48587 (JAERI-1158, pp 138-44)
neutron--proton interactions in N = 29 nuclei, effectiv 22:27306
nonadiabaticity of beta vibrations in the Davydov model 22:16081
nonstatic nuclear potential, review of, 22:11993
nuclear dynamics from muonic x-ray spectra, 22:20700
nuclear masses, anomalies in, 22:32702
nuclear separation energies, calculation of, 22:30082
nucleon effective interaction and effective charge in collective vibration with core polarization, 22:2263
nucleon four-body correlations in nuclear matter, 22:7749
nucleon interactions in nuclear matter, nonlocal separable potentials for, 22:35398
nucleon pairing correlations in, isospin and number-conserving formalism for, 22:14071 (IPNO/TH-110)
nucleon pairing Hamiltonian for, linearization of, (T), 22:30075
nucleon pairing Hamiltonian in R_5 group representation, matrix elements of, 22:18325
nucleon potentials in, strength of repulsive, 22:5878
nucleon scattering in nuclear matter, effects of tensor forces on, 22:44798
nucleon--nucleon interaction in superfluid model, X-representation of, 22:1709 (JINR-P4-3505)
nucleon--nucleon interactions in finite nuclei, effective, 22:27310
nucleon--nucleon interactions in, effective, 22:27312
nucleon--nucleon interactions in, effects of core polarization on effective, 22:27311
nucleon--nucleon interactions in, generalized seniority breaking of two-body, 22:24921
nucleon--nucleon interactions in, one-boson-exchange potentials for, (T), 22:27286
nucleon--nucleon pairing force Hamiltonian in, isospin invariance of, 22:37391
nucleon--nucleon potential in boson exchange theory, 22:44451
nucleon--nucleon potential in, spin-isospin-independent part of, 22:42113
nucleon--nucleon potential parameters for, phenomenological, 22:32713
nucleon--nucleon potentials for, formulation using meso theory, 22:30092
nucleon--nucleon potentials for, realistic one-boson-exchange, 22:53248

ucleon--nucleon potentials in, density-dependent, (T), 22:42087
ucleon--nucleon potentials in, equivalent nonlocal, 22:26855
ucleon--nucleon potentials in, nonstatic, 22:44793
ucleon--nucleon potentials in, one-boson-exchange, 22:27283
ucleon--nucleon potentials in, separable, (T), 22:5809(R) (ANL-7354)
ucleon--nucleon potentials in, soft-core, 22:27287
ucleon--nucleon potentials in, soft-core and velocity dependent, 22:9971
ucleon--nucleon potentials in, soft-core Hamada-Johnston, 22:44801
ucleon--nucleon potentials in, solution of Lovelace--Faddeev equations for local, 22:27290
ucleon--nucleon potentials in, T-matrix formalism including Coulomb effects, (T), 22:37287
ucleon--nucleon potentials with hard cores, off-energy-shell t-matrix elements for local, 22:42108
ucleon--nucleon potentials with higher-order momentum-dependent terms, 22:9967
ucleon--nucleon tensor force in nuclear matter, approximation by local central density-dependent potential, 22:35376
ucleon-nucleon interactions in nuclear matter, nonlocal separable potential with repulsive core for, 22:39724
ucleon-nucleon interactions in, one-boson-exchange potentials for, (T), 22:27281
ucleon-nucleon interactions in, pole models for, 22:20751
ucleon-nucleon interactions in, research using charge-exchange reactions, 22:27009
ucleon-nucleon potential in, separable, 22:44762
ucleon-nucleon potentials for many-body bound states, 22:39730
ucleon-nucleon potentials for, field-theoretical, 22:20755
ucleon-nucleon potentials for, using one-boson exchange formalism, (T), 22:20752
ucleon-nucleon potentials in, phenomenological, 22:39703
ucleon-nucleon potentials in, review on, (E/T), 22:20693
umerical calculations for 1P shell nuclei using a central potential and proper exchange parameters, 22:32706
dd-parity states in the A = 6 and A = 14 systems, 22:35382
ne-particle states of deformed nuclei, accuracy of calculation of, 22:30050
rthogonality and completeness of the rotation matrices, 22:5889
air conversion in E0 transitions, 22:5885
airing interaction in, 8-dimensional quasispin formalism for, 22:48593
arity and time-reversal invariance in, possible tests of, 22:30084
erturbation of statistical properties of nuclear states and transitions by interactions with time-reversal violation, 22:11945(R) (ANL-7384)
erturbation of statistical properties of nuclear states and transitions by interactions that are odd under time reversal, 22:16070
hase shift for a soft hard-core potential, s-wave, 22:14101
honon--quasiparticle interactions in deformed odd-A, (T), 22:27328
honon-quasiparticle interaction in deformed nuclei, 22:39694 (JINR-P4-3903)
otential model approach, review of, 22:11992
otential scattering using generalized R-matrix formalism, 22:9981
otentials for A = 3 nuclei, local and nonlocal, (T), 22:18114
otentials for Hartree--Fock calculations, 22:20753
otentials for Hartree--Fock calculations on finite nuclei, equivalent nonlocal, 22:35385
otentials for light nuclei, density-dependent central, 22:20759
otentials for three-nucleon systems in, local and nonlocal, 22:26813
otentials in, equations for calculating equivalent local, 22:42105
otentials in, equivalent local, 22:24890 (IAE-1316)
otentials in, equivalent local, (T), 22:14094
otentials in, reaction matrix theory of, 22:42104
otentials in, separable approximation to nonseparable, 22:50560(R) (RLO-1062-681)
otentials in, solution of Schroedinger equation for nonlocal, 22:42138
otentials in, velocity-dependent one-boson-exchange, 22:37384
roperties of s-d shell nuclei, from Hartree--Fock calculations using a realistic two-body force, 22:5890
roton pairing energies in even-even nuclei, 22:22594
seudo nuclei, spectroscopy of, 22:16076
ulse approximation in multiple Coulomb excitation, 22:27265
uadrupole vibration in spherical even--even nuclei, effective mass and stiffness parameter for, 22:35390
uasi-particle coupling to pairing vibrations, (T), 22:16065
quasi-particle description of 2+ and 3- states of even--even spherical nuclei, 22:37379
quasiparticle formalism for, 22:37397
random-phase approximation and Hartree--Fock theory, extension to include ground-state correlations, 22:16087
reaction matrix elements for closed-shell nuclei, calculation using realistic forces, 22:32506
reaction matrix elements for few-body systems, 22:26816
reaction matrix elements for the 0f-1p shell nuclei, 22:37378
reaction matrix for doubly magic nuclei, solution of Bethe--Goldstone equation for, (T), 22:32683
research at MIT, 10/66--10/67, 22:32074 (MIT-2098-422, pp 106-42)
research in Japan, history and underlying philosophy of, 22:11991
research on, lectures on, (T), 22:48250
research on, review of, 22:15696 (NP-17252)
research progress in, status of, 22:20773
residual interaction in nuclei, 22:3752 (INP-555/PL/PH, pp 147-53)
residual interactions in finite nuclei, 22:32667 (NP-17478)
resonance parameters for a potential with strongly diffuse boundary, (T), 22:11982
review of Japanese research on nuclear forces, 22:11990
review of new developments in nuclear reaction theory, 22:11978 (HMI-B-51)
rotational band spectra, description by collective variable method, 22:7756
rotational energies of deformed even-A nuclei in ground-state bands, two-parameter formalism for, 22:48619
scattering and reaction amplitudes, use of resonant states in eigenfunction expansion of, 22:16068
Schroedinger equations in, solution using integration of differential forms over simplices in higher dimensional differentiable manifolds, 22:48605
selection rules in structure of d--s shell states, SU(6) and SU(3), 22:7769
self-consistent core--particle coupling models, 22:42122
separable non-local two-nucleon potential for odd-parity triplet states, 22:1728
shell effects in transuranium nuclei, (T), 22:46813(T) (ANL-Trans-634)
shell-model application to nuclear reactions, derivation of DWBA in, (T), 22:5895
shell-model calculation of low-lying states of oxygen-16, 22:37302
shell-model expressions for Coulomb energies, 22:37381
shell-model method for calculating the splitting of resonance multiplets, 22:30091
shells in deformed nuclei, 22:27325
short-range correlations in the trinucleon, 22:20687
single-particle proton states in, 22:48572 (IAE-1447)
spectral distributions in nuclei, 22:16098
spin--orbit interactions in nuclei with large momentum, 22:5900
spin--orbit splitting, Hartree--Fock calculation of, 22:16086
spin--quadrupole forces and collective levels in deformed nuclei, 22:30096
spin--quadrupole interactions in, and effects on collective 0+ states, 22:9932
stability of nuclei against pear-shaped deformations, 22:3779
SU(3) coupling constants in the 2s-1d shell, 22:18346
superconductivity effects in nuclear level density, 22:20707
superfluid nuclei, determination of effective external fields in, 22:9930
surface depth and energy for, self-consistent field calculation for, 22:20757
surface vibration effects on density distributions in nuclei, hydrodynamic model for nonlinear, 22:11989
survey, 22:1740
symmetric S- and D-state components of the triton wave function, 22:5892
symmetry in the effective interaction of Kuo and Brown, 22:1730
symmetry in, internal multiplicity structure and Clebsch--Gordan series for G(2), 22:20293
T-matrix perturbation theory, application to the Faddeev equations, 22:20720
three-body correlation function for dilute boson gas with hard-sphere interaction, ground-state, (T), 22:5872
three-body forces in, implications of PCAC theory for long-range, 22:42141
three-body forces in, π-mesic, 22:44761
three-body problem in nuclear matter, 22:1714
three-body problem in, bound state in, 22:39731
three-body problem in, case of two nucleons outside a closed-shell core, 22:11984
three-body problem in, method for solution of Faddeev equation, 22:46731(R) (COO-1746-8)
three-body problem in, review on, 22:32670 (SLAC-PUB-409)
three-body problem in, separable nonlocal hard-core potential for, (T), 22:20771
three-body problem in, single attractive and repulsive

- separable potential for, 22:53242
- three-body problem in, solution of Faddeev's equations with local potentials for, 22:22621 (SLAC-79)
- three-body problem in, tensor force for, 22:44756
- three-body problem with non-zero momentum, solution of Faddeev equations with nonlocal factorizing potential, 22:30085
- three-nucleon system, 22:7758
- time reversal invariance of nuclear forces, study by gamma cascades in chlorine-36, 22:15997
- transitions between seniority-4 and seniority-2 states compared to 2-phonon-1-phonon transitions, 22:35381
- triton potentials and wave functions, 22:32693
- two-body forces in, research using (He-3,t) reactions, (E/T), 22:53112
- two-body problem with factorizable nonlocal potential, 22:35410
- two-body t-matrix from hard-core potential, separable expansion for, 22:53239
- two-nucleon transfer and pairing phase transition, 22:7753
- unitarity conditions in diffraction reactions, (T), 22:30088
- use of Hartree--Bogoliubov method in, 22:48597
- variational equations for stationary and time-dependent states, 22:7755
- variational principles for self-consistent, of nuclear collective motion, 22:42123
- velocity-dependent potentials for use in large nuclei, 22:30062
- wave function for deformed axially symmetric nuclei, calculation solving Schroedinger equation with scattering potential, 22:5907
- wave functions for deformed odd-odd nuclei, 22:30110
- wave functions for ground states of A = 3 nuclei, 22:26815
- wave functions for many-body systems of nucleons, 22:44770

Nuclear Vapotron
- see Reactor Fuel Elements

NUCLEAR WEAPONS
- see also Nuclear Explosions
- see also Thermonuclear Weapons
- accidents, code of practice for medical support of, 22:28479
- bibliography on effects of, Atomic Bomb Casualty Commission, 22:51868 (ABCC-TR-0-67)
- book: Manhattan Project: The Untold Story of the Making of the Atomic Bomb, 22:19002
- book: Nuclear Weapons, 22:10425
- book: Nuclear Weapons Safety and the Common Defense, 22:42931
- cavities for testing of, cooling and ventilation of large diameter conventionally mined, 22:42923 (NVO-38-14)
- components for, use of rolamite geometry in production of, 22:14395 (SC-PR-67-656-A)
- delivery systems for, US program for development of, 22:33199
- design of fission-type, 22:35961(T) (AD-661893)
- design principles and utilization of, 22:12467(T) (UCRL-Trans-10197)
- detection of undetonated, scintillation detector system for, 22:47352(P)
- detonation of, protective measures against accidental, 22:42931
- development by USAEC, JCAE hearings on, 22:10169
- development program for, 22:22925
- development programs for, 1964 JCAE hearings on, 22:12218
- effects on man, review of, 22:8518 (CONF-670305-, pp 143-54)
- explosion of, protection from blast and fallout from, 22:10425
- gamma and neutron shielding calculations for, methods for, (T), 22:32424 (DASA-1892-3)
- neutron propagation in atmosphere, research program on, (E), 22:26759 (GA-8485)
- production, deployment, and use of low-yield, review of, 22:23188
- prohibition in Latin America, United Kingdom signing of treaty for, 22:51642
- proliferation problems of, JCAE hearings on, 22:14414
- protection against, methods for, 22:8528(T) (JPRS-42929, pp 208-65)
- shielding ground-based, from nuclear attack, 22:4392
- testing by Soviet Union and United States during 1961 to 1962, effects of, on iron-55 content of human food chains in Finland, 22:43306 (NYO-3446-11(App.))
- testing in China, effects of, on fallout content of beagle dogs in California, 22:10827(R) (UCD-472-114)
- testing of, development and placement of grouts for underground, 22:10420 (TID-24191)
- testing of, radiological hazards from, 22:30743
- testing, radioactive contamination from, during 1945 to 1962, 22:40699
- use in warfare, treatment of wounded survivors in, 22:6822
- yield of, computational disc method for determination of, 22:30741

Nucleation
- see Phase Studies

NUCLEI
- (Nuclear Physics)
- abundance anomalies in peculiar A stars, from alpha reactions in stellar surface layers, (T), 22:915
- abundance in primary cosmic radiation, (E), 22:11283
- abundance in primary cosmic radiation, (T), 22:5167
- abundance of 28 to 62, during silicon burning in stella interiors, (T), 22:11140
- abundance of, heavier than iron in cosmic radiation, (E 22:19802
- acceleration in solar cosmic radiation of heavy, preferential, (T), 22:23913
- alpha and deuteron clustering in heavy, (T), 22:22628
- alpha decay below A = 200, boundaries for, (E/T), 22:30107
- alpha decay from excited states of, (E), 22:27204
- alpha decay from highly excited states, half-lives for delayed, (T), 22:48474
- alpha decay of, non-Hermitian Hamiltonians for, (T), 22:35403
- alpha decay properties for Z > 50, N < 126, table of, (E), 22:29995
- alpha decay properties, table arranged according to energy, (E), 22:7724
- alpha decay rates in heavy, (T), 22:35393
- alpha decay systematics for A = 142 to 204, (E/T), 22:35323
- alpha differential elastic scattering cross sections fo light, calculations using Akhieser-Pomeranchuk--Blair model, (T), 22:22548
- alpha elastic scattering by, resonances in, (E/T), 22:20499 (INP-577/PL)
- alpha inelastic scattering by, γ de-excitation outside reaction plane in, (T), 22:39719
- alpha particle reactions with emulsion, preliminary results for intranuclear cascade mechanism for inelastic, (E), 22:44650
- alpha particle scattering at high energies, algebraic simplification for calculations in quantum electrodynamics for, 22:20317
- alpha scattering by, research using, (E/T), 22:32708
- alpha scattering by, validity and limits of diffraction theories for, 22:17926
- alpha transitions in odd--odd deformed nuclei, effect o phonon-quasiparticle residual interaction on, (T), 22:35395
- antineutrino and neutrino elastic scattering by, relati between cross sections for, 22:44395
- antiproton elastic scattering at 3 GeV/c in emulsions, nuclear optical model parameters from small-angle, (E 22:46855
- antiproton elastic scattering at 3 GeV/c in emulsions, small-angle distribution of, (E), 22:32061
- antiproton reactions at 3 GeV/c in emulsions, annihilation radiation evaluation for, 22:20129
- beta decay half-life systematics for A > 90, (E/T), 22:1736
- beta decay induced by superweak interactions, neutrinoless double, 22:26623
- beta decay of 1p-, 2s1d-, and 2p1f-shell, half-life calculations using modelistic and realistic interactions, (T), 22:35362 (AD-662219)
- beta decay of, calculation of electromagnetic radiative correction for spin-averaged nonspin-flip, 22:39346
- beta decay of, meson exchange effects in, (T), 22:2661
- beta decay of, radiative corrections to, 22:48264
- beta decay of, review of elementary particle theory for, 22:18314
- beta decay of, role of strong interactions and W in radiative corrections to, 22:26590 (IC-68/28)
- beta decay of, status of Cabibbo theory for, 22:41794
- beta decay of, table of function for analysis of positr spectra in, (T), 22:9928
- beta decay of, theory for, 22:9557 (JEN-186-DF/I-57)
- beta spectra of, average energy for, (T), 22:14111
- beta transition probabilities for deformed odd-A, with = 150 to 190, (E/T), 22:1692
- beta transition rates in deformed rare-earth, review of data on fast, allowed, (E/T), 22:30038
- beta transitions between K-mixed states in, first-forbidden, (T), 22:9976
- beta transitions between odd-A deformed, N-forbidden, (T), 22:39713
- beta transitions in 2s1d-shell, ft-value calculations using projected Hartree-Fock wave functions, (T), 22:9968
- beta transitions in A = 144, first-forbidden, (T), 22:27232
- beta transitions in A = 90 to 140 spherical, allowed, (T), 22:32570 (JINR-P6-3785)
- beta transitions in deformed rare-earth, N-forbidden, (T), 22:48563
- beta transitions in deformed, hindrance factors for allowed, (T), 22:27387
- beta transitions in odd-odd vibrational, matrix element for first-forbidden, (T), 22:27388
- beta transitions in, corrections to coupling constants and ft-values for $0^+ \rightarrow 0^+$, (T), 22:27386
- beta transitions in, effect of Coulomb potential on ΔT +-1 Fermi, (T), 22:9953
- beta transitions with anomalously large log-ft values, allowed, (T), 22:48574 (JAERI-1158, pp 26-30)

beta-gamma circular polarization in, system for measuring, 22:26929(R) (COO-1420-139)
binding energies and particles separation energies for Z = 22 to 120, tables of, 22:1710 (LA-3751)
binding energies of closed-shell, second-order corrections to Hartree--Fock calculations using Tabakin potential, (T), 22:20760
binding energies of even-even A = 4 to 40, calculations using Hartree--Fock method with Tabakin and Yale--Shakin forces, (T), 22:20483
binding energies of T/sub z/ = 0 and 1/2 A less than or equal to 61, systematics of, 22:44646
binding energies of, calculations using bach--tamaid particle formalism, (T), 22:48448
binding energies of, systematics including excited states, (E/T), 22:11950(R) (ORO-3624-1)
binding energies of, tables of, 22:3769
binding energies of, tables of, (E/T), 22:3768
binding energies of, variational calculations of, (T), 22:44644
binding energy and charge form factors for, comparison of Hartree--Fock and limited Hartree--Fock methods for calculating, (T), 22:50692
binding energy and charge radii of A = 3, calculations using separable two-body potentials, (T), 22:32482
binding energy distribution in, description using realistic two-body potential and realistic kinetic energy operator, (T), 22:39590
binding energy formula for, using monopole model, (T), 22:20747
binding energy of A = 3, calculation using perturbation theory in inverse powers of interaction parameters, (T), 22:14118
binding energy of A = 3, calculation using perturbation theory to inverse powers of interaction parameters, (T), 22:14072 (ITF-67-12)
binding energy of ground state of A = 3, method for calculating lower bound to, (T), 22:39574
binding energy of light, calculation using shell model with central interaction in irreducible form, (T), 22:20679
binding energy of, separable potential for N + N interactions below 350 MeV for, 22:7527
book: Advances in Nuclear Physics, Volume 1, (E/T), 22:22648
book: Electromagnetic Structure of Nuclei and Nucleons, 22:3346
book: Electromagnetic Transitions in Nuclei, 22:42136
book: Nuclear Data for Reactors, Vol. 1, 22:18078 (STI/PUB-140(Vol.1))
book: Numerical Data and Functional Relationships in Science and Technology, Group I, Vol. 2, Nuclear Radii, 22:32699
book: Resonance Scattering of Gamma Rays on Nuclei, (E/T), 22:12001
book: Structure of Complex Nuclei. Summer School for Specialists in Physics, 22:1739
book: The Basic Theory of Atomic Nuclei, (T), 22:16102
book: Transmutations of Nuclei, 22:44778
bound states of deformed, in direct reactions, (T), 22:27355
charge and energy spectra in cosmic radiation, 22:2861
charge and energy spectra of heavy, during solar minimum, 1965, 22:2860
charge and energy spectra of low-energy heavy primary cosmic, (E), 22:21978
charge composition of heavy, in solar flare of Sept. 2, 1966, (E), 22:52408
charge distribution in A = 3, (T), 22:20433 (JINR-P2-3705)
charge distribution in deformed, for analysis of μ-mesic x-ray spectra, (E/T), 22:20640
charge distribution in, measurement using electron scattering, (T), 22:16063
charge distributions and binding energy for A = 3, calculations using Ohmura hard-core wave function with admixture of S' and S states, (T), 22:50527
charge distributions for light, model-independent method for determination of, (T), 22:50530 (NP-17610)
charge distributions in Z = 14 to 50, measurements using K/sub α/, isotope shifts in μ-mesic atoms, (E), 22:50565
charge distributions in, analysis of electron scattering and muonic x-ray spectra for, (T), 22:22636
charge distributions in, isomer shifts from Moessbauer measurements, (E/T), 22:53095 (BMwF-FBK-68-11)
charge distributions of light, measurement using x-ray spectra of μ-mesic atoms, (E), 22:26924
charge distributions of Z = 5 to 17, measurement using μ-mesic x-ray spectra, (E), 22:5778
charge distributions of, measurement using electron elastic scattering, (E), 22:27380
charge radii from K x-ray spectra, isotope shifts of, (E), 22:27190
charge radii of, effects of collective excitations on, (E), 22:27192
charge radii of, even-odd staggering of, (T), 22:27191
charge spectra in Sept. 2, 1966, solar particle event, (E), 22:38654 (N-68-17252)
charge spectrum of very heavy cosmic primaries, (E), 22:1025
charged particle scattering by Coulomb field of, Fredholm theory for, 22:24893 (ITF-67-44)
charged-particle elastic scattering by polarized, effect of quadrupole moment on, (T), 22:53229
charged-particle reactions with light, at low energy, (E), 22:14069(R) (COO-238-51)
charged-particle reactions with p-shell, cross-section calculations using rectangle diagrams, (T), 22:50683
charged-particle scattering at high energies, dynamic symmetry with continuous spectrum for, 22:44471
charged-particle scattering by, higher-order effects in Coulomb excitation from, (T), 22:16101
charged-particle scattering by, potential restoration by scattering phases for Coulomb, (T), 22:1721
chemical environment cf, Moessbauer spectroscopy for determining, 22:2396 (ORNL-IIC-10(Vol.1), pp 18-35)
collective monopole vibrations in closed-shell, (T), 22:1725
collective motion in, variational principles for self-consistent theory of, (T), 22:42123
content of space environment, hazards of, to manned missions, 22:6919
conversion electron-γ and γ-γ angular correlations in crystals, perturbation by strong magnetic fields, (T), 22:42062
core polarization contribution to effective interactions in A = 18, perturbation theory calculation for higher-order, (T), 22:53253
core polarization effects in A = 15 and 17, (T), 22:35235
cosmic meson (μ) reactions with, spark chamber and Cherenkov counter study of μ pair production from, (E), 22:17850
cosmic particle reactions at high energies in emulsions, effect of connected stars in, (E), 22:39263
cosmic proton reactions above 10 TeV in atmosphere, singularities in π^0 production in, (E), 22:44323
cosmic proton reactions at 17 and 24 GeV in emulsions, diffraction in, (E/T), 22:39262
cosmic-nucleon reactions with, many-particle mechanism in, (T), 22:21929
Coulomb displacement energies and isobaric analog resonances in heavy, (T), 22:3753 (INP-555/PL/PH, pp 155-61)
Coulomb displacement energies in the 1f/sub 7/2/ shell, 22:37382
Coulomb displacement energies of Z = 82 and 83, isotope shift in, (E/T), 22:20630
Coulomb displacement energy for A = 36, (E), 22:27030
Coulomb energies of 1f/sub 7/2/ shell, calculations using Carlson--Talmi model with seniority mixing, (T), 22:30048(R) (PUC-937-307)
Coulomb energies of A = 42 to 50, (E/T), 22:26982
Coulomb energies of closed-shell, computer program for Hartree-Fock calculations of, (T), 22:39697 (UCRL-50430)
Coulomb energies of, simple shell-model expressions for, (T), 22:37381
Coulomb energy systematics for A = 22 to 40, (E/T), 22:9845
Coulomb interaction in, state dependence of, (T), 22:53247
decay modes of, chemical effects on, 22:42096 (BNL-50100)
decay of very heavy, (T), 22:1691
decay of, detection of NMR through product angular distributions in, 22:52853 (UCRL-18315)
decay of, dual, 22:18251
decay of, multi-scintillation detector arrangement for linear polarization correlation measurements of γ--γ cascades in, 22:6608
decay properties and energy levels for A = 21 to 228, bibliography on, (E), 22:1664
decay schemes of A = 59, 60, and 61, data sheets for, 22:29958
decay schemes of deformed odd-A, dissertation review cn, (E), 22:39657
decay schemes of medium-weight and heavy, dissertation summary of research on, (E), 22:39654
decay schemes of medium-weight and heavy, dissertation summary of research using electron spectroscopy, (E), 22:39655
decay studies using fast-slow e⁻-e⁻ coincidence techniques, dissertation review on, 22:42075
deformability parameters for neutron-rich even--even, calculations of, (T), 22:30059
deformation and moments of inertia of deformed even-even, (E), 22:7712
deformation effects in light, lectures on shell-model formalism for, (T), 22:48627
deformation energies of super-heavy, (T), 22:30081
deformation energies of transuranium and superheavy, shell corrections to, (T), 22:46813(T) (ANL-Trans-634)
deformation energies of, microscopic calculations of shell effects in, (T), 22:30077
deformation energy of even--even, (T), 22:3751 (INP-555/PL/PH, pp 125-36)
deformation in head-on collisions, (T), 22:27340
deformation of even-even, quadrupole, (T), 22:39689 (ITF-68-13)
deformation of ground and excited states of, equilibrium, (T), 22:53220 (INR-P-920)

deformation of heavy, Y_{40}, (T), 22:48584 (JAERI-1158, pp 120-2)
deformation of light, calculations using Hartree--Fock method, (T), 22:20766
deformation of rare-earth, measurement using α inelastic scattering, (E), 22:3700 (UCRL-17547(Exp.))
deformation of, centrifugal stretching effect on equilibrium, (T), 22:48581 (JAERI-1158, pp 113-14)
deformation of, effects of spin-orbit interaction on, (T), 22:32732
deformation of, measurement and theory of, (E/T), 22:7760
deformation of, research using proton quasielastic scattering, (T), 22:3784
deformation regions for, calculation of, (T), 22:30080
deformations in light, (T), 22:27303
deformations of ground states and excited states of strongly deformed, equilibrium, (T), 22:24894 (JINR-E4-3703)
deformations of heavy, hexadecapole, (T), 22:20607
deformations of light, quadrupole, (T), 22:20497(R) (AECL-3009)
deformations of N = 50 to 82 with Z = 50 to 82, equilibrium, (T), 22:32568 (JINR-E4-3816)
deformations of rare-earth, in pairing + quadrupole model, (T), 22:20692
deformations of, calculations using surface delta interaction, (T), 22:20743
deformations of, in pairing + quadrupole model, (T), 22:20691
delayed neutron emission by, studies of, (E/T), 22:29949
description of 1p-shell, using Hartree--Fock and Hartree--Fock--Bogolyubov formalisms, (T), 22:29915
description of 1p-shell, using shell model, (T), 22:5809(R) (ANL-7354)
description of 2s1d-shell, Saxon--Woods potential parameters for, (T), 22:11944(R) (AECL-2780)
description of 2s1d-shell, using Hartree--Fock method with Coulomb and center-of-mass corrections, (T), 22:50694
description of 2s1d-shell, using projected Hartree--Fock wave functions, (T), 22:27302
description of 2s1d-shell, using realistic interactions with SU(3) classification of wave functions, (T), 22:30048(R) (PUC-937-307)
description of A = 3, review of methods for, (T), 22:39731
description of A = 3, using Faddeev formalism with local potentials, (T), 22:22621 (SLAC-79)
description of A = 39 to 48, using shell model with deformed states, 22:11919 (PUC-937-264)
description of A = 6 isobaric triplet, using three-body model, (T), 22:48466
description of closed-shell, using t-matrix formalism with harmonic oscillator representation, (T), 22:7740 (JINR-E2-3543)
description of collective motion in spherical, lectures on, (T), 22:20670 (NP-17228, pp 3-24)
description of collective oscillations in even spherical, (T), 22:27322
description of deformed even-even, using Donner--Greiner rotation-vibration model, (T), 22:39647
description of deformed odd-A, using Saxon--Woods single-particle potential with ΔN = 2 mixing, (T), 22:27242
description of deformed odd-odd, wave functions for, (T), 22:30110
description of deformed rare-earth and tranuranic, using pairing + state-independent octupole force, (T), 22:44757
description of deformed, using pairing model, (T), 22:20672 (NP-17228, pp 56-69)
description of deformed, using projection of spurious center-of-mass and rotational states from many-body wave functions, (T), 22:50681
description of deformed, using shell model with pairing interaction, (T), 22:3798
description of deformed, using superfluid model, (T), 22:1741
description of dipole resonance in magic, (T), 22:7748
description of even--even 2p1f-shell, using self-consistent Hartree--Fock calculations, (T), 22:53249
description of even-even and odd-even vibrational, including anharmonic effects, (T), 22:5858
description of even-even, using boson approximation, (T), 22:32694
description of even-even, using Hartree--Fock method with harmonic oscillator potential and truncated wave functions, (T), 22:26792
description of finite, using Hartree--Fock method with projected wave functions, (T), 22:32555
description of heavy, shell-model potentials for, (T), 22:9800(R) (COO-535-571)
description of light sd-shell, using four-body ground-state correlations, (T), 22:50682
description of light, density-dependent central force for, (T), 22:20759
description of light, using self-consistent Hartree-Fock method, 22:1743
description of light, using shell model with j-j and l-s coupling approximations, (T), 22:27300
description of medium-weight, using two- and four-quasiparticle Tamm-Dancoff theory, (T), 22:22635
description of N > 126 and Z > 82, using shell model, (T), 22:14092
description of N = 29, using shell model with configuration mixing, (T), 22:27305
description of N = Z = 2, using single-particle model, (T), 22:5809(R) (ANL-7354)
description of neutron closed-shell, using BCS approximation, (T), 22:48602
description of odd-A sd-shell, using shell model with U group representation, (T), 22:14110
description of odd-A, using vector coupling of single nucleons to rotational excitations, (T), 22:5873
description of sd-shell, using shell model, 22:20745
description of spherical, using pairing approximation, (T), 22:5880
description of spherical, using pairing approximation, (T), 22:5881
description of spontaneously fissioning isomeric, as tw quasiparticle states with large deformations, (T), 22:20644
description using analog and isobaric spin formalism, (T), 22:3747 (CONF-660306-31)
description using cluster model, (T), 22:24889 (BMwF-FBK-67-93)
description using elementary-particle formalism, testin using helium-3 (n,p) reactions, (E), 22:11897
description using extended shell model with equations-o motion method, (T), 22:16089
description using Hartree--Fock method, potentials for, (T), 22:20753
description using phenomenological collective models, review of, (T), 22:9936
description using shell model with group theory, (T), 22:1744
description using shell model with harmonic oscillator potential in Galilean and translationally invariant field operator formalism, (T), 22:3771
description using shell model with pairing interaction and parity deformation of single-particle orbitals, (T), 22:3797
description using SU(4) supermultiplet theory, testing of, (T), 22:22632
description using two-body harmonic oscillator potentia with group theory, (T), 22:9960
detection of light, by track analysis in cellulose nitrate and cellulose acetate, 22:16887
deuteron diffraction disintegration and scattering with excitation of one-phonon states, (T), 22:35406
deuteron elastic scattering at 52 MeV by Z = 1 to 92, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron elastic scattering by, analysis using Akhieser Pomeranchuck-Blair model, (T), 22:15989
deuteron elastic scattering by, exactly solvable model for, (T), 22:27348
deuteron elastic scattering by, optical model and distorted-wave formalisms for, (T), 22:32674
deuteron elastic scattering by, optical-model potential for, (T), 22:50686
deuteron elastic scattering by, tensorial part of optical-model potential for, (T), 22:18326
deuteron elastic scattering cross sections for N = 50, anomalies in, (E), 22:48501
deuteron inelastic scattering by A = 12 to 64, angular distributions for, (E), 22:27008
deuteron reactions (d,He-3) with A = 12 to 64, angular distributions for, (E), 22:27008
deuteron reactions (d,n) and (d,p) with deformed, theor using distorted-wave method with adiabatic approximation, (T), 22:14096
deuteron reactions (d,n) and (d,p) with, charge exchang effects in, (T), 22:7661(R) (NYO-3525-26)
deuteron reactions (d,n) and (d,p) with, exactly solvab model for, (T), 22:27348
deuteron reactions (d,n) and (d,p) with, isospin mixing in, (T), 22:11949(R) (ORO-2972-47)
deuteron reactions (d,n) and (d,p) with, optical model and distorted-wave approximation for, (T), 22:32674
deuteron reactions (d,np) with, angular and energy distributions for, (T), 22:14115
deuteron reactions (d,p) at low energies, theory for analyzing, (E/T), 22:9918 (CEA-R-3305)
deuteron reactions (d,p) below Coulomb barrier, spectroscopic factors from, (E/T), 22:20469
deuteron reactions (d,p) with 1p-shell, angular distributions for, (E), 22:5809(R) (ANL-7354)
deuteron reactions (d,p) with deformed, intermediate excitations in, (T), 22:42099 (JINR-P4-3872)
deuteron reactions (d,p) with even-A rare-earth, analys using modified Nilsson orbitals, (T), 22:32649
deuteron reactions (d,p) with, coupled-channel formalis for, (T), 22:27356
deuteron reactions (d,p) with, differential cross sections and polarization in sudden approximation, (T 22:20725
deuteron reactions (d,p) with, DWBA formalism for, (T), 22:53219 (CEA-R-3574)
deuteron reactions (d,p) with, lectures on, (T), 22:38
deuteron reactions (d,p) with, polarization effects in, (T), 22:42114
deuteron reactions (d,p) with, spectroscopic factors fr

Butler-Born approximation, (T), 22:42110
deuteron reactions (d,p) with, spectroscopic factors from, (T), 22:42145
deuteron reactions (d,t) and (d,He-3) with N = Z, angular distributions for, (E), 22:26931 (LYCEN-6789)
deuteron reactions at high energy, (T), 22:32668(T) (ORNL-tr-1907)
deuteron reactions in emulsions, prong distribution in, (E), 22:44650
deuteron reactions with, theory and spectroscopic uses of pickup and stripping, (T), 22:5871 (UJV-1870)
deuteron scattering by, three-body model of optical potential for, (T), 22:46823
deuteron stripping reactions with, Faddeev three-body formulation of transition amplitude for, 22:5666
disintegration of highly excited heavy, (T), 22:35368
effective interaction in sd shell, T = 0, 22:37380
effects of low-energy heavy cosmic-ray, on surfaces of meteorites, 22:833
effects on enzymes, 22:12819
electric field gradient tensor in, effect of Karyagin distortion on, 22:3171 (ORNL-IIC-10(Vol.1), pp 59-84)
electric quadrupole moments of, reorientation-effect measurements of, (E/T), 22:22649
electromagnetic interactions in, description using effective operators from realistic nucleon-nucleon potentials, (T), 22:32720
electromagnetic radii of A = 3, effects of Coulomb repulsion on, (T), 22:5756
electromagnetic transition rates for, calculation using shell model with and without shell admixing, (T), 22:7782
electromagnetic transitions in, effects of parity violation on, (T), 22:30106
electromagnetic transitions in, testing using perturbed gamma angular correlations, (T), 22:3761
electron and meson (μ) elastic scattering by, quantum electrodynamics test from, 22:5636
electron and meson (μ^-) inelastic scattering by, radiative corrections for, (T), 22:18345
electron differential inelastic scattering cross sections for, effects of continuum structure on, (T), 22:27271
electron elastic and inelastic scattering by, eigenchannel formalism for, (T), 22:35375
electron elastic and inelastic scattering by, structure research using, (E/T), 22:18312
electron elastic scattering by arbitrary charge density distribution, method for calculating cross section of, (T), 22:46818 (JINR-P4-3941)
electron elastic scattering by light, method with nucleon--nucleon correlations for calculation of, 22:46712 (LNF-68/27)
electron elastic scattering by, conservation laws for Bethe--Salpeter equation for, 22:5877
electron elastic scattering by, to test shell-model theory, (T), 22:16076
electron energy levels in field of two fixed, WKB method for determining, 22:41288 (JINR-P4-3842)
electron inelastic scattering at high energies, review of experiments on, 22:22271 (CONF-670923-, pp 128-55)
electron inelastic scattering at high energies, study of nuclear collective states from, (T), 22:3803
electron inelastic scattering at low momentum transfer, monopole and quadrupole excitations in, (T), 22:42115
electron inelastic scattering below 30 MeV, energy-loss analyzer for studying, 22:49107
electron inelastic scattering by light, spin-parity assignments from, (E/T), 22:37299
electron inelastic scattering by Z = 3 to 26, comparison of Born and distorted-wave Born approximations for, (T), 22:20681
electron inelastic scattering by, computer program for differential and total cross sections for, 22:16066
electron inelastic scattering by, Coulomb corrections to, (T), 22:20578 (WASH-1079)
electron inelastic scattering by, form-factor calculations using Helm model, (T), 22:3762
electron inelastic scattering by, sum rules for, (T), 22:5868 (INP-566/PL)
electron inelastic scattering cross sections for, calculation using Woods-Saxon potential with spin-orbit coupling, (T), 22:5888
electron inelastic scattering cross sections for, sum rule for, (T), 22:20734
electron inelastic scattering in giant dipole resonance region, form factors for, (T), 22:20733
electron inelastic scattering in giant resonance region of spherical, partial-wave analysis of, (T), 22:27072
electron inelastic scattering with giant resonance excitation in medium-weight and heavy spherical, partial-wave analysis of, (T), 22:18330
electron quasielastic scattering at high energy, calculations using independent-particle model with L--S coupling, (T), 22:50676
electron reactions (e,e'n) at 600 MeV/c, neutron detection in, 22:21313 (ISS-67/18)
electron reactions (e,e'N) at high energy, calculations using independent-particle model with L--S coupling, (T), 22:50676
electron reactions (e,e'p) at 300 to 600 MeV, Monte Carlo calculations for parameters of, (T), 22:7739 (ISS-67/9)
electron reactions (e,e'p) with, annular scintillation detector system for studying, 22:6561 (ISS-67/17)
electron reactions (e,e'p) with, calculation of Coulomb distortion effects in, (T), 22:24914
electron reactions at low energies, cross section for W production in Coulomb field in, (T), 22:34926
electron reactions in white dwarf stars, neutrino pair production in, (T), 22:39331
electron reactions up to 2 GeV, installation for analysis of, 22:44567
electron reactions with light, scattering solutions of Dirac equations for, (T), 22:9979
electron scattering at 180 degrees by, equipment for measuring, 22:16945
electron scattering at 50 to 180 keV, polarized bremsstrahlung from, 22:9081
electron scattering at high energies, dynamic symmetry for, 22:44471
electron scattering at high energies, second-order corrections to DWBA calculations for, (T), 22:50689
electron scattering at high energy, (T), 22:9920 (JINR-P4-3568)
electron scattering at high energy, dispersion effects on, (T), 22:20698
electron scattering at high energy, second Born corrections to cross section for bremsstrahlung production in, (T), 22:50669
electron scattering at low momentum transfer, model-independent evaluation of inelastic, (T), 22:32691
electron scattering at very high energies by light, 22:3309 (INP-555/PL/PH, pp 113-15)
electron scattering by, 22:39956 (ISS-67/30)
electron scattering by 2s1d-shell, form-factor calculations using projected Hartree--Fock wave functions, (T), 22:9968
electron scattering by corrections for effects of intermediate states in, (T), 22:27237
electron scattering by light, M3 form factors for, (T), 22:26912
electron scattering by, asymmetry in, (T), 22:39720
electron scattering by, design of magnet system for elastic and inelastic 180-degree, 22:16959
electron scattering by, Dirac formalism for amplitudes and cross sections for, 22:48268
electron scattering by, effects of energy loss on longitudinal depolarization from, 22:34287
electron scattering by, nuclear structure analysis by, 22:3574
electron scattering by, nucleon emission from, (E), 22:3638
electron scattering by, review of nuclear structure from experiments on, 22:22272 (CONF-670923-, pp 156-95)
electron scattering from magnetic moments of, calculations using Born approximation for polarized, (T), 22:3775
electron scattering using polarized beams, triple scattering experiment on polarization vector change in large-angle, (E/T), 22:42139
electron scattering with nucleon emission, 22:9964
electron-capture decay of, formulas for internal bremsstrahlung probability following K-shell, (T), 22:32678
elementary particle interactions in medium and heavy, theory of coherent and incoherent production of particles in, 22:39429
elementary particle reactions at high energies, method for sampling inelastic π + N and N + N interactions in cascade theory calculations for, 22:7525 (JINR-P2-3561)
elementary particle reactions at high energies, specific character of cascade calculations for strange particle production from, 22:7488 (JINR-P2-3562)
elementary particle reactions at super high energies, specific character of cascade calculations for, 22:7488 (JINR-P2-3562)
elementary particle reactions with light, review of coherent, 22:32120
elementary particle scattering at high energies, multiple diffraction theory for, (T), 22:17974
elementary-particle interactions with, analysis of mechanism of secondary particle production in, (T), 22:22413
emission of heavy fragments from highly excited states, (T), 22:14513 (BNL-50057, pp 60-78)
emission of heavy, from Sun, (E), 22:21805
energy gap for deformed, calculations using Migdal theory of finite Fermi systems with pair correlations, (T), 22:48606
energy level decay of aligned, computer analysis of gamma--gamma angular correlations in, 22:5817(R) (NYO-GEN-72-28)
energy level density in, (T), 22:5876
energy level transitions in odd-A spherical, probabilities of l-forbidden M1, (T), 22:39708
energy levels and wave functions of deformed, accuracy of calculation of one-particle, 22:30050
energy levels at 5 to 9 MeV, method for production of variable-energy beams of gamma radiation for resonance fluorescence analysis of, 22:18199
energy levels for A = 14, Hartree--Fock calculations of, (T), 22:16062

energy levels from (He-3,t) reactions with quasielastic scattering, isobaric analog, (T), 22:9962
energy levels from argon-40-induced reactions, collective, (E), 22:5860
energy levels from deuteron stripping, single-particle strengths for, (T), 22:9963
energy levels from pickup reactions, isospin mixing in, (T), 22:18321
energy levels from proton elastic scattering, polarization experiments on isobaric analog, (E), 22:27369
energy levels from proton elastic scattering, resonance parameters for, (T), 22:27368
energy levels in 1f/sub 7/2/ even--even, calculations using asymmetric rotor--vibrator model for, (T), 22:48603
energy levels in deformed even, Bohr--Mottelson hydrodynamic calculations of K = 1, 2, 3 octupole vibrational, (T), 22:20705
energy levels in f(7/2) region, isobaric analog, (E/T), 22:9939
energy levels in giant dipole resonance region of heavy, collective, (T), 22:27225
energy levels in giant resonance region from electron inelastic scattering, (T), 22:27072
energy levels in giant resonance region, lectures on, (T), 22:53221 (NRL-6729)
energy levels in ground-state rotational bands of deformed even, description using two-parameter formula from experimental level systematics and nuclear hydrodynamics, (T), 22:48619
energy levels in γ vibrational bands of deformed, (T), 22:48582 (JAERI-1158, pp 115-17)
energy levels in quasi-β and -γ bands of even-even, (T), 22:27331
energy levels in rotational bands, mean square radii of, (E/T), 22:50600 (MIT-2098-479)
energy levels near neutron binding energy, research using resonance scattering of neutron capture γ rays, (E), 22:48477 (JAERI-1158, pp 17-20)
energy levels of 1p-shell, effects of Feingold three-body vector operator on, (T), 22:30108
energy levels of 1p-shell, research using (d,p) reactions, (E), 22:9782
energy levels of 1p-shell, spectroscopic factors from (p,d) reactions, (E), 22:20484
energy levels of 2s/sub 1/2/1d/sub 3/2/-shell, calculations using shell model with jj-coupling approximation, (T), 22:27241
energy levels of 2s-1d shell, space scalar approximation to particle--hole interaction in, (T), 22:53223
energy levels of 2s1d-shell, classification using group representation, (T), 22:27298
energy levels of 2s1d-shell, description using projection of Hartree--Fock deformed state wave functions, (T), 22:37304
energy levels of 2s1d-shell, proton hole, (T), 22:20699
energy levels of 39 < A < 49, shell-model calculations of, (T), 22:7770
energy levels of A = 11 to 12, compilation of, 22:35230
energy levels of A = 13, 21, and 37, T = 3/2 quartet, (E), 22:53129
energy levels of A = 14, deformed T = 0 and 1, (T), 22:7661(R) (NYO-3525-26)
energy levels of A = 15 and 17, calculations using shell model with Saxon-Woods potential, (T), 22:39714
energy levels of A = 150 to 174 deformed, effects of spin-quadrupole force on collective 2^+, (E/T), 22:39664
energy levels of A = 18, calculations using Hartree--Fock method using Hamada--Johnston and nonlocal factorizable potentials, (T), 22:1608
energy levels of A = 18, calculations using shell model with SU(3) classification for 1p-1h, (T), 22:48467
energy levels of A = 19 to 21, calculations using α-cluster model, (T), 22:26972
energy levels of A = 20 to 28, calculations using 1d/sub/5/2/-2s/sub 1/2/ shell model, (T), 22:32521
energy levels of A = 25 and 29, isobaric analog, (E), 22:18163
energy levels of A = 33 to 41, 1f(7/2) and 2p(3/2), (T), 22:1631
energy levels of A = 4, calculation using Brueckner--Gammel--Thaler potential, (T), 22:26817
energy levels of A = 4, calculations using K-harmonics method, (T), 22:1595
energy levels of A = 4, compilation of data on, (E), 22:18115
energy levels of A = 4, rotational and vibrational, (T), 22:39690 (ITF-68-14)
energy levels of A = 5, search for T = 3/2 isobaric analog, (E), 22:13930
energy levels of A = 59, 60, and 61, data sheets for, 22:29958
energy levels of A = 6, description using method of deformed orbits, (T), 22:24828
energy levels of A = 7, 8, 10, and 13, lifetimes of isobaric analog, (E), 22:26870
energy levels of A = 9, 12, and 13, isobaric analog, (E), 22:37292 (UCRL-18263)
energy levels of asymmetric even, from rotations and β and γ vibrations, (T), 22:39682 (CNEA-207)
energy levels of closed-neutron-shell, isobaric analog, (T), 22:7690 (JINR-E2-3551)
energy levels of closed-shell, deformed excited, (T), 22:14102
energy levels of closed-shell, translationally invarian description of particle-hole, (T), 22:44796
energy levels of deformed A = 150 to 186, from deuteron inelastic scattering, collective, (E), 22:27149
energy levels of deformed even--even, dipole, (T), 22:53176
energy levels of deformed even-A, band mixing of rotational and K = 0^+, (T), 22:20741
energy levels of deformed even-A, testing Davydov-Filippov and Bohr-Mottelson models for K = 2, (T), 22:42059
energy levels of deformed even-even, electric quadrupol moments of first 2^+, (T), 22:22605
energy levels of deformed even-even, octupole vibrational, (T), 22:48478 (JAERI-1158, pp 68-70)
energy levels of deformed even-even, rotational, (T), 22:3712
energy levels of deformed even-even, rotational, (T), 22:3707
energy levels of deformed nonaxial, calculation of one-particle, (T), 22:1708 (JINR-E4-3453)
energy levels of deformed odd-A, from thermal neutron capture, (E), 22:3698 (KFK-616)
energy levels of deformed odd-A, with A = 150 to 190, (E/T), 22:1692
energy levels of deformed odd-A, with A = 153 to 187, collective, (T), 22:20649
energy levels of deformed rare-earth, wave functions fo single-particle, (T), 22:9852 (JINR-P4-3607)
energy levels of deformed, (T), 22:1746
energy levels of deformed, collective 0^+, (T), 22:2732
energy levels of deformed, cranking-model solution of rotational, (T), 22:1731
energy levels of deformed, description using adiabatic and Hartree-Fock approximations for vibrational, (T), 22:9966
energy levels of deformed, effects of spin--quadrupole interactions on collective 0^+, (T), 22:9932
energy levels of deformed, K = 0^+, (T), 22:48580 (JAER 1158, pp 106-12)
energy levels of deformed, structure and transition probabilities of 0, (T), 22:9851 (JINR-P4-3576)
energy levels of even--even A = 90 to 150 and 186 to 20 spherical, quasi-particle description of 2^+ and 3^-, (T), 22:37379
energy levels of even--even rare-earth, admixtures of one- and two-phonon states in, (T), 22:46816 (JINR-P 3898)
energy levels of even--even rare-earth, non-adiabaticit of β-vibrational, (T), 22:13992 (IIAE-LR-18)
energy levels of even--even spherical, collective, (T), 22:44799
energy levels of even--even spherical, effects of quadrupole--octupole anharmonicity on vibrational motion in, (T), 22:44749 (IFA-FT-69)
energy levels of even--even, matrix elements of R(5) group representation for description of, (T), 22:532
energy levels of even--even, two-parameter models for description of rotational, 22:35387
energy levels of even--even, with I/sup π/ = 1^-, (T), 22:18316
energy levels of even-A single-closed-shell, quasiparticle-model calculations for 1^+, (T), 22:373
energy levels of even-A, collective, (T), 22:27323
energy levels of even-A, systematics of collective, (T) 22:39638 (UCRL-17989, pp 1-41)
energy levels of even-even N = 80, (E), 22:27175
energy levels of even-even N = Z sd-shell, calculations using deformed Hartree--Fock method with configuratio mixing, (T), 22:32522
energy levels of even-even rare-earth, systematics of collective, (T), 22:48517 (JAERI-1158, pp 39-46)
energy levels of even-even spherical, anharmonic effect in quadrupole vibrational, (T), 22:48520 (JAERI-1158 pp 90-5)
energy levels of even-even spherical, calculations usin shell model with tensor forces, (T), 22:7716
energy levels of even-even spherical, description using BCS theory, (T), 22:22579 (IPNO/TH-114)
energy levels of even-even spherical, magnetic moments collective, (E), 22:13994 (JINR-P4-3611)
energy levels of even-even, BCS and two-quasiparticle approximations for low-lying, (T), 22:42094 (ANL-743
energy levels of even-even, classification of collectiv (T), 22:3694 (INSJ-105)
energy levels of even-even, classification of collectiv (T), 22:1648 (ITF-67-9)
energy levels of even-even, description of vibrational, (T), 22:48576 (JAERI-1158, pp 71-83)
energy levels of even-even, electric quadrupole moments of first 2^+, (T), 22:1706 (ITF-67-14)
energy levels of even-even, purity of collective, (T), 22:24901
energy levels of even-even, systematics of, (T), 22:27332
energy levels of finite, calculations using projected Hartree--Fock--Bogolyubov wave functions, (T),

22:37392
energy levels of fp-shell, isobaric spin splitting in, (E), 22:26985
energy levels of heavy even--even, description using finite Fermi formalism for vibrational, (T), 22:35316
energy levels of heavy, collective, (T), 22:9921 (JUL-Conf-1)
energy levels of heavy, nearest-neighbor spacing distribution for ensembles of random matrices with nonrandom bias for calculating, (T), 22:46851
energy levels of heavy, proton widths of isobaric analog, (T), 22:39702
energy levels of heavy, self-consistent microscopic theory of collective Hamiltonian for, (T), 22:53255
energy levels of isomeric spherical even--even, properties of collective and two-particle, 22:35404
energy levels of light closed-shell, in modified Tamm--Dancoff approximation, 4p-4h, (T), 22:7669
energy levels of light mirror, displacement of corresponding, (T), 22:7763
energy levels of light, from electron inelastic scattering, 22:53095 (BMwF-FBK-68-11)
energy levels of light, proton-hole, (T), 22:26864
energy levels of light, research methods using γ spectroscopy, 22:41978 (BNL-12621)
energy levels of matrix elements of R(5) group representation for description of vibrational, (T), 22:53234
energy levels of medium-weight and heavy even-even, phenomenological description of high-spin, (T), 22:30018
energy levels of medium-weight and heavy, conference on low-lying, 22:48512 (JAERI-1158)
energy levels of medium-weight and heavy, dissertation summary of research using electron and γ spectroscopy, (E), 22:39654
energy levels of medium-weight and heavy, dissertation summary of research using electron spectroscopy, (E), 22:39655
energy levels of N = 50, effects of core polarization on vibrational, (T), 22:53135
energy levels of neutron-excess, calculations using stretch scheme for rotational, (T), 22:27308
energy levels of odd--odd, use of (d,α) reactions to determine, (E/T), 22:32551
energy levels of odd-A spherical, description with quasiparticle coupling to quadrupole moment of 2^+ phonon, (T), 22:18240
energy levels of odd-odd spherical, (E/T), 22:1693
energy levels of odd-odd, with high angular momentum, (T), 22:20697
energy levels of odd-odd, with large angular momentum, (T), 22:14020
energy levels of rare-earth A = 150 to 190, E1 transition probabilities for single-particle, (T), 22:44710
energy levels of sd-shell, description using shell model with configuration mixing, (T), 22:27301
energy levels of sd-shell, from proton inelastic scattering, (E), 22:27016
energy levels of sd-shell, from spin-flip proton inelastic scattering, (E), 22:27014
energy levels of sd-shell, low-lying, (E), 22:26992
energy levels of sd-shell, research using photonuclear reactions, (E), 22:18162
energy levels of slightly deformed odd, calculation of quadrupole, (T), 22:16041
energy levels of spherical even-even, effect of Pauli principle on collective vibrational, (T), 22:3736
energy levels of spherical, anharmonic effects of quadrupole forces on two-phonon, (T), 22:35320
energy levels of spherical, lectures on collective, (T), 22:3796
energy levels of spherical, particle-hole amplitudes for, (T), 22:48617
energy levels of spherical, quadrupole-octupole interaction formalism for two-phonon, (T), 22:35319
energy levels of spherical, with anharmonic vibrations, (T), 22:27320
energy levels of three-nucleon, Faddeev equations with local potentials for, 22:37162 (UCSD-10-P-10-36)
energy levels of Z = 17 to 20, data tables for, 22:29977
energy levels of, algebraic calculation of, 22:13870
energy levels of, calculation of coefficients of nonadiabaticity for rotational, (T), 22:16074
energy levels of, classification using group theory, (T), 22:9947
energy levels of, Coulomb displacement energies of isobaric analog, (T), 22:20678
energy levels of, coupling between quadrupole and octupole vibrational, (T), 22:46814 (IFA-FT-68)
energy levels of, data summaries for experimental studies of, 22:50522 (ORNL-4317-1)
energy levels of, decomposition of Kronecker square of irreducible representations for selection rules for, 22:20287
energy levels of, description of rotational, by collective variable method, (T), 22:7756
energy levels of, determination of isospin impurities using β decay experiments, (E/T), 22:27082
energy levels of, determination of spectroscopic factors using continuum wave functions for neutron scattering, (T), 22:27272
energy levels of, equipment and methods for coincidence measurements of lifetimes of excited, 22:27240
energy levels of, excitation of isobaric analog, by quasi-elastic charge-exchange reactions, (T), 22:7757
energy levels of, g-factor measurements using ion implantation in ferromagnetic materials, (E/T), 22:46839
energy levels of, g-factor measurements using sum-coincidence technique for short-lived, (E/T), 22:9848 (INP-569/PL)
energy levels of, higher-order effects in Coulomb excitation of, (T), 22:16101
energy levels of, isobaric analog, (E/T), 22:9927
energy levels of, isomer shift and moment measurements using γ resonance scattering, (T), 22:35384
energy levels of, K = 1/2 rotational, (T), 22:20664
energy levels of, lifetime measurements for short-lived, (E), 22:26929(R) (COO-1420-139)
energy levels of, lifetime measurements using Doppler shift attenuation, (E), 22:5809(R) (ANL-7354)
energy levels of, lifetime measurements using Doppler-shift method, (E/T), 22:37281(R) (NYO-72-191)
energy levels of, lifetime measurements using γ Doppler-shift attenuation, (T), 22:1716
energy levels of, lifetime measurements using γ Doppler-shift method, (E), 22:13955(R) (COO-1468-2)
energy levels of, lifetime measurements using perturbed γ angular correlations in ferromagnetic materials, (T), 22:46841
energy levels of, lifetime measurements using twin-target Doppler shift attenuation method, 22:39527
energy levels of, many-body theory for ground state, 22:20703
energy levels of, meson theory for nucleon retarded interactions in many-fermion systems for, 22:11979 (IPNO/TH-100)
energy levels of, methods development for measuring lifetimes of short-lived, (E), 22:46731(R) (COO-1746-8)
energy levels of, methods for calculating lifetimes of metastable, (T), 22:53238
energy levels of, monograph on phenomenological theory of excited states, (T), 22:30109
energy levels of, near magic numbers, single-particle, (T), 22:13985
energy levels of, neutron spectroscopic factors from isobaric analog resonance excitation, (T), 22:50671
energy levels of, nonisotropic oscillators in SU(n) symmetry for, 22:20286
energy levels of, nuclear resonance fluorescence techniques using neutron-capture gamma rays for measuring parameters of, 22:32673
energy levels of, perturbation of statistical properties by interactions with time reversal violation, (T), 22:11945(R) (ANL-7384)
energy levels of, relation between random phase approximation and Hartree--Fock problem for, 22:35383
energy levels of, research on isobaric analog, (E/T), 22:20729
energy levels of, research progress on isobaric analog, (E), 22:1644(R) (AD-647902)
energy levels of, research using neutron capture γ resonance fluorescence, (E), 22:30043
energy levels of, research using neutron-induced reactions with charged-particle emission, (E), 22:14077 (NYO-1082-10)
energy levels of, review on collective octupole, (T), 22:48578 (JAERI-1158, pp 96-8)
energy levels of, shell-model description of rotational, (T), 22:20744
energy levels of, spectroscopic factors from (d,p) reactions below Coulomb value, (E/T), 22:20469
energy levels of, spectroscopic factors from isobaric analog resonances in proton elastic scattering, (T), 22:18336
energy levels of, spin determination using neutron capture data, (E), 22:3689(R) (GA-7820)
energy levels of, sum-coincidence method for g-factor measurements of short-lived, 22:10580
energy levels of, use of multipole sum rules to study vibrational, (T), 22:16099
energy levels of, use of resonance fluorescence analysis by Compton scattering for measuring lifetimes of, 22:18198
energy levels of, with single closed shell or single hole in closed shell, (E), 22:1667
energy levels with nonnormal parity in 1p-shell, calculations using shell model, (T), 22:26861
energy of deformed, rotation-projected expectation values for, (T), 22:53225
energy of ground state of A = 3, calculation using harmonic oscillator function with pair correlation function and soft-core nucleon--nucleon potential, (T), 22:46729(R) (AECL-3157)
energy spectra and composition of superheavy, in primary cosmic radiation, (E), 22:21946
energy spectra of high-energy cosmic, in atmosphere, (T), 22:21931
energy spectra of pairs of, effect of core excitation on, (T), 22:9931
energy spectra of primary cosmic, (E), 22:11282

energy spectra of Z greater than or equal to 2 to 21, in primary cosmic radiation, (E), 22:21947
energy-level classification of doubly even, (E/T), 22:3793
energy-level densities and spacings in intermediate and heavy, calculations using Fermi gas model, (T), 22:1712
energy-level densities and transition strengths from analysis of isomer ratios, (T), 22:27370
energy-level densities from charged-particle evaporation spectra, (T), 22:9957
energy-level density of, formulation of, (T), 22:5809(R) (ANL-7354)
energy-level electromagnetic transition rates in, corrections due to ground-state correlations, (T), 22:16091
energy-level lifetime measurements in nanosecond region, using neutron inelastic scattering with intense pulsed beams, 22:32728
energy-level parameters for Z = 11 to 21, data compilation for, (E), 22:9819
energy-level positions and widths from charged-particle spectra, effects of final-state Coulomb interactions on, (E/T), 22:32500
energy-level schemes and decay properties for A = 142-to-145, evaluated data compilation on, (E), 22:3735
energy-level shifts in light, from meson (π) capture, (T), 22:27390
energy-level spacing distributions in heavy, finite-sample effects on, (T), 22:5809(R) (ANL-7354)
energy-level spacings in, effect of time-reversal violation on, (T), 22:5615
energy-level transition densities for dipole excitations of N > Z, (T), 22:1723
energy-level transition matrix elements for monopole Coulomb excitation, research using μ-mesic x-ray spectra, (T), 22:35378
energy-level transition multipolarities from internal pair formation data, (T), 22:20709
energy-level transition probabilities for A = 18 to 22 sd-shell, (T), 22:35293(R) (ORNL-4230)
energy-level transition probabilities for actinide and rare-earth, systematics of K-forbidden, (E/T), 22:18236
energy-level transition probabilities for deformed heavy, (T), 22:39670
energy-level transition probabilities for even-even, E2, (T), 22:32694
energy-level transition probabilities for γ vibrational bands, E2, (T), 22:39712
energy-level transition probabilities for isomeric, with oblate deformation, (T), 22:48583 (JAERI-1158, pp 118-19)
energy-level transition probabilities for odd-A rare-earth, (T), 22:42100 (JINR-P4-3935)
energy-level transition probabilities for odd-odd spherical, E2 and M1, (T), 22:39707
energy-level transition probabilities for rotational bands of deformed even-even, E2, (T), 22:39630 (ITF-68-7)
energy-level transition probabilities for rotational bands of deformed A = 150 to 190, E2, (T), 22:22595
energy-level transition probabilities for rotational bands of A = 150 to 190, calculations using Davydov model, (T), 22:13993 (IIAE-LR-19)
energy-level transition probabilities for sd-shell A = 18 to 22, shell-model calculations of E2, (T), 22:29927
energy-level transition probabilities for vibrational bands of deformed, E1, (T), 22:27324
energy-level transition probabilities for vibrational bands of deformed even-even, E2, (T), 22:27139
energy-level transition probabilities of deformed even-even, ratios of E2, (T), 22:16043
energy-level transition rates for, methods development for calculating, (T), 22:50560(R) (RLO-1062-681)
energy-level transition rates in medium-weight and heavy, (E), 22:22587 (NP-17386)
energy-level transition rates in, effects of configuration mixing on l-forbidden M1, (T), 22:44764
energy-level transition strengths in keV neutron capture, (E), 22:27100
energy-level transitions from β vibrational states of odd-A deformed, conversion coefficients and E0/E2 mixing ratios for, (T), 22:42056
energy-level transitions from meson (π) and proton reactions in GeV range, excitation cross sections for, 22:35412
energy-level transitions in 1p-shell, (E), 22:26888
energy-level transitions in A = 15, E2/M1 mixing ratio for, (T), 22:35235
energy-level transitions in A = 3, electromagnetic, (T), 22:26793
energy-level transitions in deformed even-even, systematics of E2, (E), 22:7713
energy-level transitions in deformed heavy, dissertation summary on research using spectroscopic methods, (E), 22:39661
energy-level transitions in deformed odd-A, hindered E1, (E/T), 22:48515 (JAERI-1158, pp 21-5)
energy-level transitions in even-Z, pair-conversion for E0, (T), 22:5885
energy-level transitions in excited, radiative widths for, (T), 22:32679
energy-level transitions in ground-state rotational ban of deformed odd-A, E2, (T), 22:39706
energy-level transitions in heated, partial widths for radiative, (T), 22:5899
energy-level transitions in heavy, atomic corrections t E2, (T), 22:7637(R) (COO-1573-33)
energy-level transitions in medium-weight odd-A, (T), 22:48516 (JAERI-1158, pp 31-8)
energy-level transitions in odd-A, E2, (E/T), 22:14038
energy-level transitions in odd-A, K-conversion coefficients for, (E/T), 22:18351
energy-level transitions in self-conjugate, attenuated magnetic, (T), 22:13949
energy-level transitions in Z = 1 to 46, from thermal neutron capture, 22:9820
energy-level transitions in, calculations using anisotropic Saxon--Woods potential, (T), 22:22630
energy-level transitions in, dissertation summary on research using directional correlation methods, 22:39658
energy-level transitions in, lectures on unified theory for electromagnetic, (T), 22:48623
energy-level transitions in, M2, (T), 22:5809(R) (ANL-7354)
energy-level transitions in, shell-model calculations of E2, (T), 22:44765
energy-level transitions in, spin dependence of probabilities for, (T), 22:14114
energy-levels of medium-weight, research using isobaric analog resonance excitation, (T), 22:48575 (JAERI-1158, pp 64-7)
equilibrium shapes of light, calculations using independent-particle model, (T), 22:9946
excitation in high-energy reactions, with approach to statistical equilibrium, (T), 22:14107
excitation of, pulse approximation in multiple Coulomb, (T), 22:27265
fission at moderate excitation energies, α emission in, (E), 22:3720
fission by thermal and 14-MeV neutrons, mass and charge distributions from, 22:20975(R) (BMwF-FBK-67-89)
fission of even--even, moment of inertia at saddle point of low-energy, (T), 22:50661
fission of very heavy, spontaneous, (T), 22:1691
fission of, one-particle aspect of spontaneous, 22:3750 (INP-555/PL/PH, pp 123-4)
fluorine-18 reactions (F-18,O-16) with light, spectroscopic factors for, (T), 22:24895 (JINR-E4-3742)
flux of solar, at activity minimum of 1964--1965, (E), 22:13105
flux of Z greater than or equal to 3 primary cosmic, (E) 22:24081
forces in A = 14, tensor, (E/T), 22:44612
form factors for, effect of short-range correlations on, (T), 22:30048(R) (PUC-937-307)
four-body correlations in light closed-shell, (T), 22:27296
fragmentation of heavy primary cosmic, in the Galaxy, (T), 22:19807
gamma angular correlation coefficients for, tables of, 22:3774
gamma angular correlations for, selection rules for interference in perturbed, (T), 22:46842
gamma angular correlations from aligned, coefficients for, 22:3788
gamma angular correlations from dipole and quadrupole transitions in, coefficients for calculating, (T), 22:44750 (ITEF-564)
gamma angular correlations from, effects of electron magnetic relaxation on, (T), 22:5866 (BNL-11884)
gamma angular correlations from, review of methods for measuring and interpreting perturbed, (E/T), 22:32709
gamma angular correlations from, zero-field resonance from isotropic hyperfine interaction in perturbed, (T) 22:46843
gamma angular distributions from aligned nuclei, tables of coefficients for, 22:3787
gamma inelastic scattering with isomeric excitation, review of, 22:32703
gamma perturbed angular correlations (PAC) from, measurements using, 22:9982
gamma radiation diffraction from, in crystals, resonance 22:38740
gamma radiation scattering from, in crystals, theory of resonance, 22:38736
gamma reactions (γ,^{3}He) and (γ,^{4}He) with, equipment for measuring cross sections for, 22:27534 (NBS-TN-421)
gamma resonance absorption and fluorescence of, (E/T), 22:46853
gamma resonance scattering by, research program on, 22:37340(R) (EANDC(E)-89(U))
gamma resonance scattering using liquid and solid sources, (T), 22:44786
gamma spectra from proton capture, resonance energy separation in, (E), 22:18123(R) (RLO-1925-11)
gamma spectra of, least square analysis of, 22:33634 (AD-665666)
gamma-gamma angular correlations for, effect of magnetic resonance on, (T), 22:18315

generation of heavy, on the Sun, (E), 22:2734
giant dipole resonance in, isospin splitting of, (E), 22:7685
giant resonances in closed-shell, calculations using realistic forces, (T), 22:41962
gyromagnetic ratios of deformed, cranking-model calculation of, (T), 22:20684
hadron reactions at 1 to 100 TeV in emulsions, fireball model for N* production in, 22:41810 (INR-P-915)
hadron reactions at 3.0 to 25 GeV/c in, helium-8 production from, (E), 22:3255
hadron scattering at low and high energies, peripheral models for, 22:17927
half-life measurements for short-lived, using modulated excitation source, (E/T), 22:32677
half-life of intrinsic states in deformed odd-A, (E), 22:53215
half-lives of isomeric, tables of, 22:48464
half-lives of, methods for accurate measurement of, 22:29990
half-lives of, use of prediction analysis in designing experiments for measuring, 22:18338
helium-3 elastic scattering by, optical-model analysis of, (E/T), 22:39686 (CONF-670970-, pp 41-96)
helium-3 elastic scattering by, optical-model analysis of, (E/T), 22:39685 (CONF-670970-, pp 13-39)
helium-3 elastic scattering by, optical-model analysis of, (T), 22:48615
helium-3 reactions (He-3,α), (He-3,d), and (He-3,p) with, DWBA analysis of, (E/T), 22:39685 (CONF-670970-, pp 13-39)
helium-3 reactions (He-3,n) with, calculations using pairing potential, (T), 22:44787
helium-3 reactions (He-3,t) with quasielastic scattering, angular distributions of differential cross sections for, (T), 22:9962
helium-4 elastic scattering by, calculation of angular distributions for, with account for inelasticity, (T), 22:16073
hyperfine interaction of excited states in, research using pulsed beam technique with resonance of perturbed angular correlation, (E/T), 22:44797
hyperfine magnetic fields in crystal lattices, dissertation summary on research using γ angular correlations, (E), 22:39659
hyperon (Λ) binding energy in, effect of two-pion-exchange ΛNN force on, 22:3459
hyperon (Λ) binding energy in, from hyperfragment decay, (E/T), 22:5508
hyperon (Λ) binding energy in, Λ--N potentials for, 22:52991
hyperon (Σ^-) capture at rest in emulsions, model for hyperfragment production from, (E/T), 22:7437
interactions in nuclear emulsion of cosmic primary, (E), 22:29314
interactions of secondary, emitted from relativistic heavy primary reaction in emulsion, (E), 22:24074
interactions with nuclei as quasi-free nucleons in nuclear emulsions, search for excited baryons in, 22:11585
internal conversion coefficients and particle parameters for Z = 60, 64, 68, 72, 76, 80, 84, 88, 92, and 96, tables of, (T), 22:7738 (COO-1420-137)
internal conversion coefficients for heavy even-even, measurement program on, (E), 22:32573 (MIT-2098-422, pp 69-94)
internal conversion coefficients for Z = 30 to 103, tables of K-, L-, and M-, 22:24919
internal conversion coefficients for Z = 6 to 95, at gamma threshold energies, (T), 22:3773
internal conversion coefficients for, comparison of theoretical predictions on, (T), 22:44789
internal conversion coefficients for, method for determining cascade gamma ray, 22:7776
internal conversion electron particle parameters for E2 transitions in deformed rare-earth, (E), 22:27185
internal conversion M/L and (N + O)/M ratios for E2 transitions in Z = 56 to 78, (E), 22:7730
ion inelastic scattering with collective excitation, (T), 22:18333
ion reactions in nuclear emulsions at very high energy, multiply charged particle emission in, (E), 22:18334
ion reactions with, description using Feynman diagram techniques for particle transfer, (T), 22:9965
isomeric transitions in, multipolarity assignment using L x-ray patterns, (E), 22:48541
isomeric transitions with half-lives of 10^{-4} to 10^{-1} sec in Z = 63 to 83, research on, (E), 22:35285(R) (AERE-PR/NP-13)
isotope shifts from neutron addition, description using Hartree--Fock formalism with density-independent nucleon--nucleon potential, (T), 22:30049 (PUC-937-314)
kinematics for proton-induced cascades at 660 MeV, (T), 22:22629
level densities in, perturbation methods for calculating, (T), 22:27377
level densities in, research using energy dependence of average cross sections for direct reactions, (T), 22:20762
level densities in, shell effects in, (T), 22:39640 (UCRL-17989, pp 127-57)
level densities of neutron deficient, (T), 22:42091
level densities of, determination using reaction excitation functions for isolated levels, (E), 22:39635(R) (NYO-3938-1)
level densities of, effects of degenerate single-particle states on, (T), 22:44771
level densities of, energy dependence of, (E/T), 22:27217
level density distributions in, testing random-matrix model for, (T), 22:27378
level density of light A less than or equal to 70, (T), 22:18171
level density parameters from analysis of neutron and proton resonances, (T), 22:27274
level density parameters from analysis of neutron and proton resonances, (T), 22:11986
lifetime analysis of, correction of moment method for finite range of integration for, 22:46847
lifetime predictions for super-heavy, with Z = 104 to 115, (T), 22:7775
lithium-6 reaction (Li-6,p) with, finite-range calculations using Gaussian two-particle residual interaction, (T), 22:14073 (JINR-E4-3624)
lithium-6 reactions (Li-6,α) with light, spectroscopic factors for, (T), 22:24895 (JINR-E4-3742)
lithium-6 reactions (Li-6,d) with light, at low energy, (T), 22:15951 (JINR-P4-3681)
magic regions and masses for super-heavy, predictions of new, (T), 22:32701
magnetic charge distributions in, description using theory of finite Fermi systems, (T), 22:32685
magnetic dipole moments and transition probabilities for strongly deformed, (E/T), 22:1747
magnetic fields in solids, review of methods for determining internal, 22:35402
magnetic hyperfine anomaly, classical derivation of, 22:7169
magnetic moments for excited states of, (T), 22:14091
magnetic moments of deformed A = 150 to 190, (T), 22:24904
magnetic properties of, effects of spin polarization on, (T), 22:46829
mass difference for A = 40, (E), 22:13973
mass distribution beyond charge distribution in, from optical model analysis of neutron elastic scattering, (T), 22:50679
mass formulas for, approaches to, (T), 22:30072
mass formulas for, approaches to, (T), 22:30065
mass formulas for, microscopic approach to semi-empirical, (T), 22:30076
mass law for, formalism using liquid drop model with deformation, pairing-energy, and shell corrections, 22:1710 (LA-3751)
mass numbers of, from heavy ion-induced reactions with multiple neutron emission, determination from excitation functions, (T), 22:16056 (JINR-P7-3657)
mass of light, nuclear drop model for formula for discrepancies in spectroscopic data for, 22:32681
mass relations from O_8 symmetry, (T), 22:30055
masses of deformed, development of semiempirical formula for, (T), 22:30089
masses of, shell-model approach to formulas for, (T), 22:30090
masses of, theory of anomalies in, (T), 22:32702
mean square radii of, determination from proton elastic scattering using optical model, (T), 22:30100
meson (K) reactions with, properties of, 22:18110
meson (K^0) regeneration on, spin effects in, 22:13714 (JINR-P2-3621)
meson (K^-) capture by, approximations in calculation of rates of, 22:44442
meson (K^+) elastic scattering at 240 to 300 MeV in emulsions, optical model analysis of, 22:18323
meson (K^-) reactions at 1.5 GeV/c in emulsions, binary hyperfragment production from, (E), 22:17877
meson (K^-) reactions at 1.5 GeV/c in emulsions, very short-range hyperfragment production from, (E), 22:32066
meson (K^-) reactions at 1.5 GeV/c in nuclear emulsions, hammer tracks of helium-8 fragments from, (E), 22:15688
meson (K^-) reactions at 3.0 to 10.1 GeV/c in emulsions, double hyperfragment production and decay from, (E), 22:13664
meson (K^-) reactions at 6 GeV/c in emulsions, spallation model for hypernuclei production from, (E/T), 22:5508
meson (K^-) reactions at rest in emulsions, Λ-He^5 hyperfragment decay mode determination from, (E), 22:34848 (NP-17481)
meson (K^-) reactions at rest in emulsions, production of (Σ^-n) bound state from, (E), 22:7450
meson (K^-) reactions in nuclear emulsions, spallation model for hyperfragment production in, (T), 22:27253
meson (K^-) reactions with light, pair absorption model for, 22:29721
meson (μ) capture by, elementary-particle theory of, 22:3351
meson (μ) capture by, gamma--neutrino correlations in polarized, (T), 22:14117
meson (μ) capture by, induced pseudoscalar form factor in, (T), 22:5898

meson (μ) capture by, lectures on Migdal formalism for, (T), 22:48625
meson (μ) capture by, two-particle correlation function in Fermi gas model for, 22:24913
meson (μ) energy levels in mesic atoms, perturbation calculations for, (T), 22:48618
meson (μ^-) capture at high energies, relativistic effects on, (T), 22:13728
meson (μ^-) capture by complex, coupling constants and nuclear structure from, (T), 22:16077
meson (μ^-) capture by heavy, independent-particle shell model for systematics of, (T), 22:30098
meson (μ^-) capture by light, universal V--A theory for, 22:5577
meson (μ^-) capture by nuclei, interaction constants for, (T), 22:13717
meson (μ^-) capture by, angular correlations in, 22:11987
meson (μ^-) capture by, description using Migdal theory, (T), 22:27389
meson (μ^-) capture by, method for measuring neutrino--gamma angular correlations in, 22:7764
meson (μ^-) capture by, neutron angular distribution from, (T), 22:27256
meson (μ^-) capture by, neutron asymmetry from $\mu^- + p \to n + \nu$ interactions in, (T), 22:13716
meson (μ^-) capture by, review of elementary particle theory for, 22:18314
meson (μ^-) capture by, review of weak interaction theory for, 22:15739
meson (μ^-) capture by, Siegert theorem for, 22:9568
meson (μ^-) capture rates for, calculation using shell model, (T), 22:27394
meson (μ^-) reactions at 53 MeV in nuclear emulsions, search for conserved-vector-current mechanism in, (E), 22:14034
meson (π) and nucleon reactions below 10 TeV, Monte Carlo method for intranuclear cascade with many-particle interactions from, 22:13770 (JINR-P2-3604)
meson (π) coherent dissociation $\pi \to 2\pi$ in field of, possible measurement of $\gamma + \pi \to 2\pi$ interaction cross sections from, (T), 22:32084
meson (π) energy level transitions in medium-weight, study of 2p-level shifts and widths for 3d--2p, (E), 22:27040
meson (π) reactions (π,γ) with light, nuclear structure from, (T), 22:3802
meson (π) reactions above 1 GeV, Monte Carlo method for multiparticle production in, 22:46424
meson (π) reactions and scattering at low energy, structure research using, (E/T), 22:18313
meson (π) reactions at high energies in emulsions, frequency distribution of heavy prongs from, (E), 22:7438
meson (π) reactions in emulsions at 200 GeV, intranuclear cascade model for, 22:34980 (JINR-P4-3800)
meson (π) reactions in GeV range, excitation cross sections for energy-level transitions from, 22:35412
meson (π) reactions in, properties of many-particle interactions from cascade production in, 22:29700(T) (ORNL-tr-1800)
meson (π) reactions with heavy, cross section for A_1 production in, 22:41809
meson (π) reactions with nuclei below 18 GeV in emulsions, multiple production, (E), 22:7439
meson (π) reactions with, in atmosphere, (T), 22:21934
meson (π) reactions with, use in research on nuclear structure, (E/T), 22:20736
meson (π) reactions, method for deriving angular correlations for rho production in, 22:41774 (NP-17531)
meson (π^0) interactions with heavy, energy transfer in, (E), 22:21938
meson (π^-) absorption by light, (E), 22:9781
meson (π^-) absorption by light, effects of nuclear distortion on nucleon emission in, (T), 22:18350
meson (π^-) absorption by light, with two-nucleon emission, (E), 22:13945
meson (π^-) absorption with emission of two nucleons, (T), 22:27238
meson (π^-) capture at 15 MeV in emulsions, double charge exchange in, (E), 22:46335 (JINR-P1-3946)
meson (π^-) capture by compound, pole model for, (T), 22:32676
meson (π^-) capture by, use for observing volume collective excitations in nuclear matter, (T), 22:53224
meson (π^+) reactions (π^+,2p) with 1p-shell, (T), 22:48475
meson (π^+) reactions (π^+,π^0) with complex, effects of p--n correlations on, 22:3460
meson (π^-) reactions (π^-,π^0) with complex, effects of p--n correlations on, 22:3460
meson (π^-) reactions at 16 GeV/c with, coherent production of $\pi^-\pi^0\pi^0$ final states in, (E), 22:44331
meson (π^-) reactions at 16 GeV/c, A_1 and rho production in 3π final states from, (E), 22:24565
meson (π^-) reactions at 17 GeV/c in emulsions, electron pair production from, (E), 22:5488
meson (π^-) reactions at 3.5 GeV/c in emulsions, heavy short-range hyperfragment production from, (E), 22:5500
meson (π^-) reactions at 600 to 1600 MeV, absorption and diffraction cross sections for, (E), 22:15681 (PPAD-630-F)
meson (π^+) reactions at 80 to 280 MeV, activation cross sections for, (E), 22:24834
meson (π^-) reactions at high energies in heavy-liquid bubble chamber, review of coherent production of multipion final states in, 22:39270 (CERN-68-7(Vol.1) pp 537-55)
meson (π^-) reactions with light, at 3.86 GeV/c in freon bubble chamber, production of K^0antiK^0(1280) in, (E), 22:34852
meson (π^-) reactions with, existence of isonuclei and mechanism of double charge exchange in, (T), 22:32155
meson (π^+) reactions with, existence of isonuclei and mechanism of double charge exchange in, (T), 22:32155
meson (π^+) reactions with, mechanism for double charge exchange in, (T), 22:32675
meson (π^-) reactions with, mechanism for double charge exchange in, (T), 22:32675
meson (π^-) reactions with, review of rho^0 production from, (E), 22:22311 (CONF-670923-, pp 452-83)
meson (π^{+-}) reactions in nuclear emulsion at 40 to 176 MeV, angular and energy distributions for charge-exchange, (E), 22:14024
meson interactions in Coulomb field of, pseudoscalar meson photoproduction on mesons from, 22:41823
meson reactions at high energies, Regge pole model for, 22:1450 (AD-648017)
meson reactions at high energies, specific character of cascade calculations for double charge exchange in, 22:7488 (JINR-P2-3562)
meson(π^-) interactions at 16 GeV/c, coherent production at three and five pion final states in, 22:9519
mesons (π^-) radiative absorption and meson (μ^-) capture by, relation between, 22:5552
Moessbauer effect for two transitions in, interference effects in, (T), 22:48608
moments of inertia at high rotational frequencies, 22:27327
moments of inertia for 2s1d-shell, method for calculating, (T), 22:9970
moments of inertia for ground-state bands of light, (T), 22:53246
moments of inertia of heavy, at saddle point, (E/T), 22:1669
moments of inertia of, solution of Hartree-Fock-Bolgolyubov equations in cranking model for, (T), 22:27326
neutrino (anti ν/sub e/) absorption by, with resonance electron capture, (T), 22:24898(T) (BNL-tr-203)
neutrino and antineutrino elastic scattering by, relatio between cross sections for, 22:44395
neutrino reactions at high energies, predictions of PCAC hypothesis for cross sections of inelastic, 22:11631
neutrino scattering by, current commutation relations fo cross section sum rules for, 22:9531
neutron absorption and fission cross sections for A = 24 to 252, in thermalized reactor spectrum, (E), 22:2056 (DP-MS-67-111)
neutron absorption resonance integrals for, measurement using Advanced Reactivity Measurement Faciltiy, 22:35198 (IN-1195)
neutron and proton density distribution in, (T), 22:48606
neutron and proton distribution in, (T), 22:32686
neutron and proton separation energies of, shell-independent systematics of, 22:35396
neutron capture above 1 MeV by A = 70 to 170, statistica analysis of cross sections for, (T), 22:46749
neutron capture and fission cross sections and resonance integrals for Z = 88 to 106, method for estimating thermal, (T), 22:24852 (BNL-12353)
neutron capture and fission cross sections and resonance integrals for Z > 88, method for calculating thermal, (T), 22:20565 (CONF-680307-18)
neutron capture by medium-weight and heavy, research program on fast, (E/T), 22:39606(T) (LA-tr-68-18)
neutron capture by Z = 1 to 46, compilation of γ spectra from, 22:9820
neutron capture by, angle measuring device for Cauchois gamma spectrometer for measuring, 22:14827
neutron capture by, compilation of γ spectra from thermal, 22:39648
neutron capture by, pair formation spectrometer for studying gamma transitions in, 22:10590
neutron capture by, review of theory and experimental methods for studying, (E/T), 22:53236
neutron capture cross sections for A = 27 to 197, at 3 MeV, (E), 22:3683
neutron capture cross sections for A = 45 to 243, statistical estimation of thermal, (T), 22:14026
neutron capture in stars, heavy-element synthesis by, (T), 22:5905
neutron capture in stars, models for synthesis of heavy elements, (T), 22:18205 (FEI-64)
neutron capture with isomeric excitation, relative probabilities for, (T), 22:20666 (FEI-79)
neutron cross sections and resonance parameters for, MUF calculations of Doppler-broadened, (T), 22:18087
neutron cross sections and resonance parameters for, calculation with resonance-resonance interference, (T

22:3588 (GA-8203)
neutron cross sections for heavy even-even, computer program for calculation using deformed-nucleus optical model, (T), 22:1563 (NAA-SR-Memo-12532)
neutron elastic and inelastic scattering by deformed A less than or equal to 40, (T), 22:37340(R) (EANDC(E)-89(U))
neutron elastic and inelastic scattering cross sections for A = 48 to 238, effects of compound-nucleus structure on fast, (T), 22:27379
neutron elastic scattering angular distributions for, computer programs for analysis of, (T), 22:3745 (ANL-7306)
neutron elastic scattering at 0 to 16 MeV, polarization calculations using local optical-model potential, (T), 22:16013 (LA-3788)
neutron elastic scattering at 4 MeV, optical-model analysis of, (T), 22:24918
neutron elastic scattering by A = 23 to 238, optical-model analysis of fast, (E/T), 22:24840
neutron elastic scattering by A = 27 to 209, optical-model potential for fast, (E/T), 22:27278
neutron elastic scattering by doubly closed-shell, (E), 22:20578 (WASH-1079)
neutron elastic scattering by light, optical-model analysis of fast, (T), 22:30051
neutron elastic scattering by medium-weight and heavy, optical-model analysis of, (T), 22:18300
neutron elastic scattering by square-well potential, theory using solutions of time-dependent Schroedinger equation, (T), 22:12000
neutron elastic scattering by, criterion for weak perturbing systems for, (T), 22:13865
neutron elastic scattering by, intermediate resonances from excitation of 2p-1h doorway states in, (T), 22:46820 (UCSD-10-P-11-75)
neutron elastic scattering by, time-dependent wave formalism for, (T), 22:3772
neutron fission cross sections at low energy, interpretation of, (T), 22:18349
neutron fission cross sections for alpha-emitting and spontaneously fissioning, method for measuring, (E/T), 22:20571 (LA-DC-9188)
neutron fission cross sections for, computer programs for calculation from raw experimental data, (T), 22:9759 (EUR-3652)
neutron fission of, quasiclassical correlation for angular anisotropy in, (T), 22:9926(T) (ANL-Trans-548)
neutron fission of, quasiclassical relation for angular anisotropy in, (T), 22:5903
neutron forward scattering amplitudes and cross sections for A = 56, (T), 22:20668 (LA-DC-9179)
neutron inelastic scattering at 2.75 MeV, method for studying gamma spectra from, (E), 22:32561
neutron inelastic scattering by 2sld-shell, DWBA analysis using SU(3) model, (T), 22:20497(R) (AECL-3009)
neutron inelastic scattering by even--even, effects of exchange interaction on, (T), 22:44675
neutron inelastic scattering cross sections for, calculation of fast, (T), 22:18081
neutron pairing energies of, mass and spin systematics of, (T), 22:5882
neutron reactions (n, charged particle) with, telescope arrangement of radiation detectors for charged particles from, 22:43065
neutron reactions (n,2n) at 14 MeV and in fission spectrum, cross sections for, (T), 22:3596
neutron reactions (n,2n) with A = 134 to 208, spin cut-off parameters for fast, (T), 22:39701
neutron reactions (n,2n) with, Monte Carlo scatter corrections for cross sections of, 22:14788
neutron reactions (n,3n) in fission spectrum, cross sections for, (T), 22:3596
neutron reactions (n,α) and (n,p) at 14 MeV with A = 28 to 210, analysis of statistical spectra from, (T), 22:3782
neutron reactions (n,α) at thermal energies, possibility of, (T), 22:11953
neutron reactions (n,α) with, cross sections for, (T), 22:11985
neutron reactions (n,α) with, use of ionization chambers with scintillation detectors for measurements in fast, 22:38009
neutron reactions (n,γ) at 15 keV to 15 MeV, gamma spectra from, (E/T), 22:16100
neutron reactions (n,γ) with, double-focusing beta spectrometer for measuring conversion electron spectra from thermal, 22:6633
neutron reactions (n,γ) with, scintillation detectors for measuring total number of resonance captures in, 22:19095 (IAE-1349)
neutron reactions (n,p) at 14 MeV with Z = 8 to 33, cross sections for, (E/T), 22:32729
neutron reactions (n,p) with A near 45 and 90, cross-section calculations using statistical theory, (T), 22:20677 (UCRL-50359)
neutron reactions at 14 MeV with, ΔE--E semiconductor telescope detector for studying, 22:23263 (CEA-R-3378)
neutron reactions at 2.062 to 2.573 GeV/c in propane bubble chamber, Λp resonances in, (E), 22:46322 (JINR-E1-4022)
neutron reactions at 27 GeV/c, spark chamber study of total cross sections for, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)
neutron reactions below 10 MeV, doorway state theory of, (T), 22:46848
neutron reactions with even-even, with collective excitation, square-well optical-model potential for, (T), 22:18352
neutron reactions with light and medium-weight nuclei, computer program for cross-section calculations using spherical optical model, 22:1562 (NAA-SR-Memo-12531)
neutron reactions with, counter telescope for measuring angular distribution and energy of charged particles produced in, 22:6638
neutron resonance densities in rare-earth, effects of nuclear deformation on, (T), 22:42015 (JINR-P4-3925)
neutron resonance parameters for, corrections for self-indication method for determining, (T), 22:24911
neutron resonance parameters for, correlations of, (T), 22:14066
neutron resonance parameters for, methods for resolution corrections to, (E/T), 22:41917 (CNAEM-51)
neutron resonance parameters for, self-indication method for determining, (T), 22:24912
neutron resonance parameters of fissionable, correlations of, (T), 22:18214(T) (BNL-tr-187)
neutron resonance parameters of I = $^1/_2$ and $^3/_2$, spin dependence of s-wave, (E/T), 22:53166 (CEA-R-3385)
neutron resonance self-shielding factors for fast reactor materials, (T), 22:53066 (KFK-770)
neutron resonance spins for fissionable, methods for determining, (E), 22:18294
neutron scattering by heavy, imaginary part of optical potential for, (T), 22:30069
neutron scattering by oriented, cross section and spin-flip probability for, (T), 22:44791
neutron scattering by, Monte Carlo computer program for finite-geometry and polarized multiple-scattering corrections to polarization data from, 22:7625
neutron scattering by, resonance interference in, (T), 22:50657 (ANL-7467)
neutron scattering by, use of analytical and Monte Carlo methods for determining multiple scattering corrections in analysis of, 22:1579
neutron scattering by, widths of intermediate resonances in, (T), 22:27372
neutron scattering cross sections for, effects of 2p-1h states on, (T), 22:53243
neutron scattering cross sections of non-fissionable, measurement using time-of-flight method, (E/T), 22:16000 (CEA-R-3360)
neutron separation energies for even-even, systematics of, 22:20714
neutron separation energies of ground states of, calculation using supermultiplet theory, (T), 22:39695 (UCRL-17989, pp 101-25)
neutron strength function and potential scattering radius for A = 40 to 200, s-wave, (T), 22:35314
neutron strength functions and scattering radii for A = 50 to 200, energy dependence of, (E), 22:18285
neutron strength functions for heavy even-even rotor, calculation using deformed nuclear optical model, (T), 22:27093
neutron strength functions for heavy even-even, effect of nuclear deformation, (T), 22:18211 (NAA-SR-Memo-12538)
neutron strength functions for medium-weight and heavy, (T), 22:16017(T) (BNL-tr-189)
neutron strength functions for, R-matrix and S-matrix, (T), 22:44759
neutron strength functions in scattering length approximation, S-matrix s-wave, (T), 22:44760
neutron total cross sections for Z = 12 to 83, search for intermediate structure in fast, (E), 22:20537
neutron--proton interaction in odd--odd, effective, (T), 22:48587 (JAERI-1158, pp 138-44)
neutron--proton interaction in pf-shell, effective, (T), 22:48586 (JAERI-1158, pp 133-7)
neutron--proton interactions in N = 29, effective, (T), 22:27306
nuclear magnetic resonance structures in dynamic polarization of, with broadened ESR line, 22:31963
nuclear reaction cross sections for, effect of excitation energy on, (E), 22:3652
nucleon binding energy in, one-meson-exchange potentials for N + N interactions at 0 to 400 MeV for, (T), 22:11694
nucleon capture by, spin-orbit interaction in, (T), 22:9977
nucleon cluster structure in light, research using (Li-6,α) reactions, (T), 22:26879
nucleon clusters in light, research using reactions at high energy, (E), 22:14116
nucleon distribution in, calculation using Fermi-gas theory, (T), 22:14093
nucleon elastic scattering by, generalized Hartree--Fock approximation for, (T), 22:27252
nucleon inelastic reactions with, conservation laws in elementary act for intranuclear cascade calculation of, 22:22410 (JINR-P4-3714)
nucleon inelastic scattering by, antisymmetry in distorted-wave calculations of, (T), 22:1726
nucleon inelastic scattering by, knockout-exchange

amplitudes for, (T), 22:42143
nucleon interactions in sd-shell, effective two-body matrix elements for, (T), 22:20696
nucleon pairing approximation for shell model, (T), 22:7751
nucleon pairing correlation functions for, determination of, (T), 22:48614
nucleon pairing correlations in, isospin and number-conserving formalism for, (T), 22:14071 (IPNO/TH-110)
nucleon pairing correlations in, without violation of conservation laws, (T), 22:9950
nucleon pairing energies for A = 100 to 256, calculations using superfluid model, (T), 22:14065
nucleon pairing energies for deformed and spherical A = 100 to 256, calculations using superfluid model, (T), 22:7741 (JINR-P4-3584)
nucleon pairing interaction in even-even N = Z, weak, (T), 22:27304
nucleon pairing interaction in, (T), 22:1741
nucleon pairing interactions for non-degenerate j levels in, charge-independent, (T), 22:5908
nucleon potential for n-nucleon system of, S-matrix for two-, 22:35363 (AD-665366)
nucleon potentials in, strength of repulsive, (T), 22:5878
nucleon reactions above 1 GeV, Monte Carlo method for multiparticle production in, 22:46424
nucleon reactions above 1 TeV in emulsions, shower production in, (E), 22:39254(T) (ORNL-tr-1956)
nucleon reactions above 10 TeV in emulsions, fireball model for, 22:5597 (INR-813/VI/PH)
nucleon reactions above 100 GeV, Monte Carlo method for many-body interactions in, 22:1379 (JINR-P2-3508)
nucleon reactions at 25 to 400 MeV, computer program for cascade calculations, (T), 22:16059 (ORNL-4220)
nucleon reactions at high energies, cross sections for coherent and incoherent particle production in, (T), 22:22419
nucleon reactions at high energies, model for production of two angular distribution maxima in, 22:46461
nucleon reactions at high energies, Regge pole model for, 22:1450 (AD-648017)
nucleon reactions in, properties of many-particle interactions from cascade production in, 22:29700(T) (ORNL-tr-1800)
nucleon reactions with, angular distributions in cosmic, (T), 22:21932
nucleon reactions with, research on, 22:11980(R) (UCLA-10-P-18-4)
nucleon scattering at 90 to 310 MeV, optical potential calculations for central two-body force, (T), 22:50668
nucleon scattering at very high energies by light, 22:3309 (INP-555/PL/PH, pp 113-15)
nucleon scattering by light, analysis using multiple scattering optical model potential, (T), 22:27250
nucleon scattering by, calculation of s-wave phase shift for, (T), 22:14101
nucleon scattering by, effects of exchange and Pauli principle, (T), 22:5896
nucleon scattering by, formalism using random phase approximation, (T), 22:37388
nucleon two-body interactions in, generalized seniority breaking of, (T), 22:24892 (IPNO/TH-121)
nucleon--nucleon correlations in, short-range, (T), 22:11944(R) (AECL-2780)
nucleon--nucleon interactions in, generalized seniority breaking of two-body, 22:24921
nucleon--nucleon interactions in, π and meson resonance exchange contribution to nuclear forces in, (T), 22:39431
nucleon--nucleon potentials for Hartree--Fock calculations of, (T), 22:32718
orientation of, review of, 22:46566 (CERN-68-32)
parity and time-reversal invariance in, possible tests of, (T), 22:30084
particle diffraction scattering by, integral cross sections for, (T), 22:18318
particle reactions at relativistic energies, kinematic broadening in, 22:37394
particle scattering by, exactly solvable model for compound resonance in, 22:44751 (JINR-E4-3837)
particle scattering by, time dependence of resonance, (T), 22:50684
particle transfer reactions in heavy, (T), 22:46729(R) (AECL-3157)
phonon--quasiparticle interactions in deformed odd-A, (T), 22:27328
phonon-quasiparticle interaction in deformed, (T), 22:39694 (JINR-P4-3903)
photoabsorption cross sections for deformed even--even, (T), 22:53176
photoabsorption cross sections for, effects of velocity-dependent nucleon--nucleon potential on integral dipole, (T), 22:44779
photodisintegration in giant resonance region, 22:7784
photodisintegration of A = 3, cross sections for, (T), 22:7631
photodisintegration of three-particle, use of Majorana exchange forces in calculating, (T), 22:5902
photodisintegration of, theory of, (T), 22:13931
photon absorption cross section for oriented, in polarized beams, (T), 22:42125
photon absorption cross sections for, calculations using sum rules, (T), 22:27236 (NP-17348)
photon absorption cross sections for, effects of exchang
Majorana forces on, (T), 22:24903
photon absorption with giant resonance excitation, research using radiative capture, (E), 22:5897
photon Compton scattering on, total-cross-section sum rule for, 22:15720
photon cross sections for Z = 1 to 100, at 0.001 to 100 MeV, tables of, 22:5869 (LA-3753)
photon elastic scattering by, conservation laws for Bethe--Salpeter equation for, 22:5877
photon reactions (γ,n) at 22 MeV with Z = 23 to 82, neutron angular distributions from, (E), 22:44656
photon reactions (γ,p) with Z < 80, at 20 MeV, yield curves for, (E), 22:35313
photon reactions at 1 to 2 GeV, differential cross sections for $\pi^+\pi^-$ production in, (E), 22:22287
photon reactions at 10 GeV, test of linearity of quantum electrodynamics equations from cross section of, (T), 22:48360
photon reactions at high energies with, Regge amplitude for absorption in antinucleon production in, (T), 22:20194
photon reactions at high energies, unstable particle + nucleon cross sections from rho^0 production in, (T), 22:22419
photon reactions near threshold, cross sections for heavy-meson production in, 22:7471
photon reactions with A = 6 to 209, at 20 MeV, activatio
data for, (E), 22:22614
photon reactions with complex, amplitude of rho^0 coheren
production in nonforward, (T), 22:29653 (DESY-68/15)
photon reactions with giant dipole resonance excitation, A/sup -1/6/ dependence of, (T), 22:50673
photon reactions with modified fermion propagator in quantum electrodynamics, asymmetric lepton pair production in, 22:46495 (DESY-68/36)
photon reactions with spinless, Primakoff effect for eta production in, (T), 22:39317 (JINR-P2-3845)
photon reactions with, boson production with S = T = 0 from, (T), 22:3319
photon reactions with, conservation laws for Bethe--Salpeter equation for, 22:5877
photon reactions with, review of rho^0 production from, (E), 22:22311 (CONF-670923-, pp 452-83)
photon reactions with, use of sum rules for integrated cross sections for, 22:17833
photon reactions with, W-meson pair production from, 22:13724
photon scattering amplitude at low energy, in Thomson limit, (T), 22:9959
photon scattering by, (T), 22:18343
photon scattering cross sections for, generalized formalism for, (T), 22:50687
photon scattering in giant resonance region, cross sections for, (T), 22:14108
physical constants for, methods for determining, 22:15339
polarization by optical pumping in solids, techniques for, (T), 22:5906
polarization from quasielastic scattering with excitatio
of isobaric analog states, (T), 22:24899
polarization in gases, liquid, and solids, review of methods for, 22:46838
polarization of closed-shell, Coulomb, (T), 22:27343
potential energy of A = 218 to 232, dependence on octupole and quadrupole deformation parameters, (T), 22:14074 (JINR-E4-3629)
potential energy of A = 218 to 232, effects of quadrupol
and octupole deformation parameters on, (T), 22:27239
production and properties of highly neutron-deficient, (E), 22:30025
production and properties of ultra-neutron-deficient, (E), 22:30026
production and study of highly unstable spherical and magic, (T), 22:30095
production of delayed-neutron emitting, (E), 22:29912
production of heavy, by multiple neutron capture in thermonuclear explosions, 22:1654 (LA-3738)
production of heavy, in Cyclamen thermonuclear explosion
(E), 22:32619
production of heavy, in supernovae, (T), 22:29165
production of heavy, in thermonuclear explosions, (E), 22:29844
production of heavy, neutron emission and fission width ratios for compound nuclei in, (T), 22:14079 (UCRL-16348)
production of highly unstable, comparison of methods for
22:30113
production of isomeric, by thermal neutron capture, (T),
22:42095(T) (ANL-Trans-644)
production of isomeric, by thermal neutron capture, (T),
22:14113
production of superheavy, by fusion of heavy ions, (T), 22:44712
production of superheavy, with Z = 126, A = 310, (T), 22:1690
production of unstable, by photonuclear reactions, (E), 22:30114
production of Z = 114, using heavy ion-induced reactions

(T), 22:18209 (JINR-D7-3548, pp 39-47)
production of Z = 126, methods proposals for, 22:39673
production of Z greater than or equal to 3, in antiproton reactions with silver and bromine at 5.0 GeV/c, 22:35279
properties of beta-emitting, for recoil polarization measurements, 22:7744 (NYO-2028-2, pp 121-7)
properties of cosmic-ray, 22:52553
properties of heavy, dissertation summary of spectroscopic studies on, (E), 22:50648
properties of odd-A, with A near 190, systematics of, 22:1624
properties of s-d shell, from Hartree--Fock calculations using a realistic two-body force, (T), 22:5890
properties of super-heavy, from revised mass formula, (T), 22:30021
properties of, determination from hyperfragment decay, (E), 22:17853
properties of, modified liquid-drop and Thomas-Fermi models for average, (T), 22:50658 (UCRL-18214)
proton (anti p) reactions at 5 GeV/c in emulsions, beryllium-8 emission in, (E), 22:20513
proton elastic scattering at 11 MeV, real potential well depth for, (T), 22:14082
proton elastic scattering at 20 GeV, computer program for cross sections for, 22:13780
proton elastic scattering by A = 32 to 120, correlation of differential cross sections and polarizations for, (E/T), 22:24900
proton elastic scattering by spin-zero, formula for polarization in, (T), 22:27264
proton elastic scattering by, fine structure of isobaric analog resonances in, (T), 22:44777
proton elastic scattering by, isobaric analog resonances in, (E/T), 22:27254
proton elastic scattering with excitation of isobaric analog resonances in, neutron spectroscopic factors from, (T), 22:50671
proton inelastic scattering at 17.5 MeV by, semiconductor detector system for measuring small-angle, 22:16884
proton inelastic scattering at 20 GeV in emulsions, absorption mean free paths for, (E), 22:29621
proton inelastic scattering at medium energy, method for measuring small-angle, 22:30048(R) (PUC-937-307)
proton inelastic scattering by, deformed spin-dependent optical-model potential for, (T), 22:22639
proton inelastic scattering by, intermediate structure in, (T), 22:24896 (LA-DC-8192)
proton inelastic scattering on atmospheric, cosmic, (E), 22:2830
proton pairing energies in even-even, (T), 22:22594
proton reactions (p,2p) at 0.16 to 1 GeV, description using distorted-wave impulse approximation with proton single-particle wave functions, (T), 22:42128
proton reactions (p,2p) at medium energies, nuclear structure research from, 22:33187 (ISS-66/50)
proton reactions (p,2p) with deformed, with quasielastic scattering, (T), 22:3784
proton reactions (p,2p) with, cross-section calculations using distorted-wave t-matrix approximation, (T), 22:50696
proton reactions (p,d) with 2s1d-shell N = Z, angular distributions and spectroscopic factors for, (E), 22:44664
proton reactions (p,n) with isobaric analog resonance excitation, spectroscopic factors for, (T), 22:20730
proton reactions (p,n) with isobaric analog resonance excitation, (T), 22:7661(R) (NYO-3525-26)
proton reactions (p,n) with light and medium-weight, effective two-body force from DWBA analysis of, (T), 22:27363
proton reactions (p,p) at 19.7 MeV, phase-shift analysis for high-precision polarization data from, 22:3256
proton reactions (p,pd) at 1 GeV, short-range correlations in, (T), 22:20280
proton reactions (p,t) with A = 4 to 224, tables of structure amplitudes for, (T), 22:53078 (UCRL-18268)
proton reactions at 20 GeV/c in emulsions, heavy short-range hyperfragment production from, (E), 22:5500
proton reactions at 20 to 23 GeV in emulsions, diffraction production of particles in, (E), 22:44322
proton reactions at 20.8 GeV/c in emulsions, distributions of transverse momenta of secondary particles in, (E), 22:32053
proton reactions at 21 and 24 GeV in emulsions, resonance production in, (E), 22:44321
proton reactions at 21 and 24 GeV/c in nuclear emulsions in strong magnetic fields, particle diffraction production in, (E), 22:7679
proton reactions at 24 and 27 GeV/c, in nuclear emulsions, (E), 22:1687
proton reactions at 24 and 28 GeV in bubble chambers and emulsions, methods of primary energy determination for jet production from, (T), 22:20133
proton reactions at 24 GeV/c in emulsions, complete disintegration in, (E), 22:22298
proton reactions at 24 GeV/c in emulsions, double emission of Z > 3 fragments in, (E), 22:44326
proton reactions at 25 GeV/c in emulsions, azimuthal angular distribution of secondary particles in diffractional generation in, (E), 22:32051
proton reactions at 25 GeV/c, diffractional production of mesons (π) in, (E), 22:22625
proton reactions at 28 GeV in emulsions, along-the-track scanning method for total cross section for, (E), 22:29624
proton reactions at 3 GeV/c at small angles in emulsions, computer test programs for, 22:20690
proton reactions at 400 to 660 MeV, mean number of secondary neutrons evaporated from, (E), 22:20127
proton reactions at 450 MeV, meson (π) production in, (T), 22:35388
proton reactions at 9 GeV in emulsions with heavy, production of π^+ and π^- (< 11 MeV) in, (E), 22:1384
proton reactions at 9 GeV in emulsions, fast deuteron emission in, 22:7436
proton reactions at 9 GeV in emulsions, yield of slow π^- and π^+ from, (E), 22:39260
proton reactions at high energies, frequency distribution of heavy prongs from, 22:7438
proton reactions below 28 GeV in emulsions, multiple production from, (E), 22:7439
proton reactions in GeV range, excitation cross sections for energy-level transitions from, (T), 22:35412
proton reactions with A = 11 to 27, cross sections for production of carbon-16, lithium-9, and nitrogen-17 by, (E), 22:29918
proton reactions with Z = 12 to 92, at 400 MeV, sodium-22 and -24 production cross sections for, (E), 22:9816
proton scattering at 20 GeV, N + N interactions in, (E/T), 22:5499 (INP-567/PL/PH)
proton scattering by medium and heavy zero-spin, polarization and differential cross section measurements of, (E/T), 22:36154
proton scattering by, approximations in Bethe formula for Coulomb--nuclear interference in, 22:3464
proton scattering by, theory of isobaric analog resonances in, (T), 22:5893
proton scattering by, validity and limits of diffraction theories for, 22:17926
proton total cross sections at 10, 16, 17, and 28 MeV, effect of Z = 28 shell closure on, (E/T), 22:13927(R) (USC-136-132)
quadrupole moments of even--even, in the range A = 148 to 192, (E/T), 22:11957
quadrupole moments of odd deformed, in the range A = 153 to 191, (E/T), 22:11957
quantum mechanical description of system of complex-spin, 22:17387
quasiparticle approximation for, fluctuation-dissipation theorem from, 22:26583
radioactivity growth-decay data from, least square analysis of, 22:33634 (AD-665666)
reaction matrix for doubly magic, solution of Bethe--Goldstone equation for, (T), 22:32683
reactions in nuclear emulsions at >1 TeV, nucleon isobar production by N + N interactions from, 22:24533
reactions of cosmic, at 0.010 to 1 TeV/nucleon in emulsions, fragmentation without visible production from, (E), 22:3236 (INR-792/VI/PH)
reactions of heavy cosmic, with emulsion nuclei, fragmentation parameters for, 22:21976
reactions of high-energy, astrophysical implications of, (T), 22:29102
reactions with identical nuclei, interference effects in, (T), 22:7761
reactions with nuclei in emulsions, baryon resonance production from peripheral, (E), 22:15671 (INR-P-816/VI/PH)
research on short-lived beta-emitting, 22:30112
research on short-lived beta-emitting, conference on, 22:30111
research on short-lived, using on-line isotope separator, (E), 22:20646
research on, review of, (E/T), 22:24570(R) (UCRL-17876)
resonances in, external mixing in isobaric analog, (T), 22:7780
rotational transition in muonic atoms, asymmetric doublet from magnetic hyperfine splitting of, (T), 22:43897
scattering by, theory based on optical model, 22:5152
search for neutron-deficient, research program on, (E), 22:37316(R) (UR-3591-9)
search for Z = 114, using argon-40 reactions with curium-244 and curium-248, (E), 22:39640 (UCRL-17989, pp 127-57)
selection rules for, hypothesis of commutative super-, 22:34868 (JINR-E2-3799)
spallation in emulsions, high-energy helium-3 and t emission from, (T), 22:13778
spallation in nuclear emulsions, (E), 22:40365
spallation with alpha-particle emission, cross sections for, (T), 22:16085
spectra of, research on, 22:1375(R) (BMwF-FBK-67-55)
spectroscopic information on, from excitation of isobaric analog states, (E/T), 22:30094
spin--orbit interactions in, with large momentum, (T), 22:5900
spin--quadrupole forces and collective levels in deformed, (T), 22:30096
spin-orbit interaction and spin-wave resonance in heavy, (T), 22:24866
stability against pear-shaped deformations, (T), 22:3779
stability of light, limits of, 22:30048(R) (PUC-937-307)

- stability of spheroidal super-heavy, liquid drop model for, (T), 22:46826
- stability of superheavy, (T), 22:22583 (JINR-P7-3733)
- stability of superheavy, (T), 22:39640 (UCRL-17989, pp 127-57)
- sum rules for, single-particle, (T), 22:32689
- surface depth and energy for, self-consistent field calculation for, 22:20757
- surface properties from π production in p + N interactions at 600 MeV, 22:24665
- surface properties of heavy, calculations using Thomas-Fermi formalism with density-dependent central forces, (T), 22:44768
- surface vibration effects on density distributions in, hydrodynamic model for nonlinear, (T), 22:11989
- symmetry for, book on, 22:7465
- symmetry for, computer program for Clebsch--Gordan coefficients for, 22:22329 (INP-559/PL)
- symmetry for, eigenvalues of Casimir operators in, 22:24574
- synthesis of Z = 126 and N = 184, calculation of cross sections for, (T), 22:30097
- theory for very light, kinetic energy as perturbation in many-body problem in, 22:14100
- theory of three-nucleon, (T), 22:7758
- thermonuclear reactions at high density in medium and heavy, (T), 22:15319
- three-body forces in, π-mesic, (T), 22:44761
- triton elastic scattering by A = 9 to 20, optical-model analysis of, (E/T), 22:26883
- triton elastic scattering by, optical-model analysis of, (T), 22:48615
- triton elastic scattering by, optical-model analysis of, (E/T), 22:39686 (CONF-670970-, pp 41-96)
- triton reactions (t,d) below Coulomb barrier, (T), 22:44767
- triton reactions (t,d) with, differential cross section for, (T), 22:3765
- triton reactions (t,p) with, amplitude for, (T), 22:14097
- triton reactions (t,p) with, calculations using pairing potential, (T), 22:44787
- triton reactions (t,p) with, form factor for DWBA analysis of, (T), 22:39687 (CONF-670970-, pp 97-9)
- triton reactions (t,p) with, two-nucleon transfer in, (T), 22:39696 (UCRL-18225)
- wave functions for A = 14, determination using β and γ matrix elements, (E/T), 22:44612
- wave functions for A = 3, (T), 22:48450
- wave functions for deformed axially symmetric, calculation solving Schroedinger equation with scattering potential, (T), 22:5907
- wave functions in shell model, testing by knockout reactions, (E/T), 22:22624

NUCLEI, ANTI-
- abundance in primary cosmic radiation, (E), 22:29314
- interactions in nuclear emulsion of cosmic primary, (E), 22:29314

NUCLEI (CELLS)
- see also Chromosomes
- see also Genes
- activity of RNA nucleotidyltransferase in hepatic, of rats, inhibition of, by nickel carbonyl, 22:6216(R) (ORO-3461-9)
- content of DNA in, of γ-radioinduced mutants of wheat, 22:17050(R) (EUR-3606)
- development of tritium-labeled, in lens of chick embryo, use of autoradiography to study, 22:28283 (ORNL-4100, pp 75-96)
- effects on cell systems, 22:30938 (UCRL-17751, pp 27-40)
- isolation of oocyte, from Rana pipiens, 22:28283 (ORNL-4100, pp 75-96)
- karyotype changes in, of callus cultures of Haplopappus gracilis, effects of grafting and media supplements on, 22:12180(R) (ORO-3348-2)
- metabolism of RNA in, of ascites cells, 22:12173(R) (NYO-3621-5)
- radiation effects on, 22:6711 (BARC-287)
- radiation effects on activity of acid and alkaline phosphatases in, of liver and spleen cells in rats, whole-body x, 22:6730
- radiation effects on activity of enzymes in, of brain in rats, x, 22:23447
- radiation effects on chemical and physical properties of, in brain of rats, x, 22:23447
- radiation effects on cholinesterase activity of, from brain, x, 22:51375
- radiation effects on content of amino acids in, of brain in rats, x, 22:23447
- radiation effects on division of, in yeast, effects of malt-agar medium on, 22:31290
- radiation effects on DNA content of, in animal cells, microbeam uv, 22:8449
- radiation effects on DNA content of, in lymphocytes of liver and spleen in rats, x, 22:21433
- radiation effects on DNA content of, uv, 22:19249
- radiation effects on enzymes in, of liver and spleen of rats, whole-body ionizing, 22:40589
- radiation effects on metabolic processes associated with division of, in synchronous cultures of slime mold, γ, 22:25713 (COO-78-163, pp 64-125)
- radiation effects on morphology of, in cultured animal cells, uv, 22:19249
- radiation effects on morphology of, in epidermal rat cells, uv, 22:49253
- radiation effects on morphology of, in liver cells of mice, whole-body γ, 22:28386
- radiation effects on morphology of, KB cells, electron microscopic study of localized uv, 22:40541
- radiation effects on number of nucleolar organizers in, of Nigella, γ, 22:49297
- radiation effects on phosphorylation in, of cotton, effects of dose on γ, 22:19294
- radiation effects on production of lipid peroxide by, from liver cells of rats, electron, 22:454
- radiation effects on properties of polydeoxyribonucleotides in, of lymph tissues of mice, x, 22:23445
- radiation effects on pycnosis in, of lymphocytes of mice protective effects of cysteamine against x, 22:25887
- radiation effects on sarcolemma-cell- and schwann-cell-, of mice, tritium tracer study of x, 22:38221
- radiation effects on segmentation of, in granulocytic leukocytes in blood of man, effects of dose on γ, 22:40907
- radiation effects on size and ratio of, to cytoplasm in epithelium of axolotl, effects of RNA on latent x, 22:51362
- radiation effects on size of, in bone marrow in rats, internal β, 22:51937
- radiation effects on structure of, in thymocytes of rats effects of phosphates on γ, 22:21581
- radiation effects on susceptibility of, to degradation b endogenous deoxyribonuclease, x, 22:25760
- radiation effects on synthesis and utilization of ATP i of thymus in rats, whole-body x, 22:30951
- radiation effects on synthesis of DNA in, of Paramecium caudatum, effects of temperature adaptation on x, 22:21608
- radiation effects on synthesis of DNA, nucleoprotein, an RNA in, of germ cells of male rats, x, 22:51418
- radiation effects on synthesis of protein by, of cells from liver of partially hepatectomized rats in vitro, whole-body γ, 22:43431
- radiation effects on thiol content of, of liver from rats, effects of dose on electron, 22:19247
- radiation effects on ultrastructure of, of duodenal cryp cells of mice, x, 22:33963
- radiation effects on uptake of tritium-labeled thymidine by, in small intestine of mice, protective effects of mixtures of AET, glutathione, and serotonin against x, 22:21557
- radiation effects on volume of, in roots of wheat, γ, 22:587
- radiation effects on, following uptake of tritium-label thymidine by cultured mammalian cells, β, 22:45382 (EUR-3290f-e, pp 73-7)
- radiation effects on, in bone marrow of monkeys, latent γ, 22:21609
- radiation effects on, in cerebellum of mice, deuteron, 22:4691
- radiation effects on, in gastrointestinal tract of mice comparison of fast neutron and x, 22:40935
- radiation effects on, in heart of rabbits, x, 22:28682
- radiation effects on, in liver cells of mice, laser, 22:51965
- radiation effects on, in solar plexus of rats, effects dose on x, 22:10723
- radiation effects on, of adrenal cortical cells of rats electron microscopy of x, 22:45395
- radiation effects on, of algae, laser, 22:12783
- radiation effects on, of cultured cells, comparison of laser and x, 22:6736
- radiation effects on, of cultured mammalian cells, tritium β, 22:43456
- radiation effects on, of Ehrlich carcinoma cells in mic x, 22:49191
- radiation effects on, of fish embryos, x, 22:51353
- radiation effects on, of hepatoma ascite cells, combine effects of phytohemagglutinin on, 22:33942
- radiation effects on, of lymphocytes and thymocytes of rats, effects of dose and incubation time on, 22:337
- radiation effects on, of nerve cells in rats, combined effects of crush injury on x, 22:31221
- radiation effects on, of rat liver, chemiluminescence a ESR studies of, 22:51401
- radiation effects on, uv, 22:427
- radiation injuries to, protective effects of AET, methylallylisothiourea, thioacetamide, and thiourea against α and γ, 22:49388
- radioinduced changes in, of rat thyroid during development of neoplasms, β, 22:2534(R) (COO-1243-8)
- radioinduced decomposition of, of glial and nerve cells of rats, effects of dose on, 22:51361
- radioinduced deformation and displacement of, in TMV-infected tobacco cells, in vitro, γ, 22:40961
- radioinduced degeneration of, in neoplastic cells of mouth, γ, 22:36196
- radioinduced inactivation of, in Neurospora crassa, accelerated particle and x, 22:12835
- radioinduced ionization in, in relation to RBE, 22:310
- radioinduced pycnosis in, of oocytes of fish, x, 22:10870

radioinduced pyknosis in, of kidney cells, effects of dose on uv, 22:49210
radioinduced pyknosis of, in thymocytes of rats, effects of respiration on x, 22:21437
radiolysis in embryos of hybrids of fish, 22:21584
radioprotective effects of, on DNA, ionizing, 22:23564
radiosensitivity in L cells, uv, 22:49507
radiosensitivity of Colletotrichum gloeosporoides spore, comparison of uv and x, 22:36406
radiosensitivity of Netrium, light and uv, 22:52023
reconstruction of, effects of stage of, on x-radiosensitivity of Paramecium caudatum, 22:21607
role in growth of Paramecia, genetic communication, 22:53495(R) (COO-235-49)
sedimentation from slime molds, use of alkaline sucrose gradients for, 22:28288 (ORNL-4100, pp 166-77)
synthesis of DNA in, of Tetrahymena, 22:12744 (BL-207)
synthesis of polyriboadenylate by, of sea urchin embryos, 22:53498 (LA-3848, pp 11-20)
toxicity of tritium-labeled water to, 22:51459
tritium labeling of, in fetus of rats, 22:40601
volume in wheat cells in relation to radiosensitivity, 22:43477
volume of gymnosperm seeds in relation to γ-radiosensitivity, 22:45725
volume of plant cells, in relation to x-radiosensitivity, 22:14905 (BNL-50057, pp 111-22)
volume of plants, effects of, on γ- and fission neutron-radiosensitivity, 22:19456

NUCLEIC ACID
see also Nucleotides
binding to 3,4-benzpyrene, 22:25716(R) (NYO-3538-7)
conformation and interaction of, effects of hydrophobic-stacking force on, 22:25716(R) (NYO-3538-7)
distribution in embryos of Vanda sp, 22:40953(R) (UH-235-P-6-5)
effects on γ-radiosensitivity of bacteriophages, 22:597
energy potential of chemical bonds in, computer calculation of, 22:12202 (UCRL-17966)
inhibition of synthesis of, in Chinese hamster cells, effects of, on radiation repair, 22:25785
lectures, 22:37628 (ISS-68/1)
radiation effects on content of, in hepatic cells of rabbits and rats, iodine-131 β and γ, 22:45435
radiation effects on metabolism of compounds of, in rats, review of prolonged γ, 22:23653
radiation effects on metabolism of, in barley during ontogenesis, γ, 22:52022
radiation effects on metabolism of, in Escherichia coli, x, 22:19266
radiation effects on metabolism of, in liver of rats, γ and x, 22:49259
radiation effects on precursors of, in yeast, β and γ, 22:45723
radiation effects on pyrimidine bases of, in Escherichia coli, comparison of, to effects of ozone and sodium hypochlorite, 22:51389
radiation effects on synthesis of, in Chinese hamster cells, effects of age on x, 22:25786
radiation effects on synthesis of, in seeds of barley, γ, 22:28709
radiation effects on thymine in, of Streptococcus faecalis, protective effects of azathymine and azauracil against uv, 22:519
radiation effects on, in mammalian cells, review of early, 22:40552
radiation effects on, in relation to excited electronic states, 22:30937 (UCRL-17751, pp 1-26)
radiation effects on, of bacteria and bacteriophages, review of, 22:14916
radiation effects on, of cells, effects of dose on, 22:30966
radiation effects on, review of, 22:49224
radiation effects on, x, 22:421(R) (NYO-910-57)
radiation-induced linkage of, to 3,4-benzpyrene, photo-, 22:25716(R) (NYO-3538-7)
radioinduced free radicals in, charged particle, 22:28368
radioinduced increase of, in corn and radishes, effects of seed exposure on x, 22:38499(T) (JPRS-44845)
radioprotective effects of, on axenic mice, x, 22:4659
radiosensitivity in relation to base composition, 22:47478
reaction mechanisms of, in vitro protein synthesis, 22:40615(R) (EUR-3889)
replication errors in RNA polymerase system in, 22:25716(R) (NYO-3538-7)
separation by ligand-exchange chromatography, 22:14429 (ORNL-4196, pp 44-54)
synthesis during mitotic cycle of slime mold, electrophoretic and tracer study of, 22:25713 (COO-78-163, pp 64-125)
synthesis in polytene chromosomes of Rhynchosciara, 22:28399 (ORNL-4100, pp 40-7)
use to restore radioinduced damage in cells and organisms, review of, 22:40552

NUCLEIC ACID, DEOXYRIBO-
analysis of priming activity of, in chromosomes of amphibia, 22:28402 (ORNL-4100, pp 62-9)
analysis of transforming, of Hemophilus influenzae, biochemical and genetic, 22:25715(R) (NYO-1371-51)
chain configuration of, effects of heat and hydrogen peroxide on, 22:23448
characterization of cytoplasmic symbiont, of Paramecium, 22:53495(R) (COO-235-49)
characterization of satellite, of slime mold, 22:25712 (COO-78-163, pp 39-63)
complexes with histone, analysis of irradiated, for histone, using 8-anilinonaphthalene-1-sulfonic acid or uv spectrophotometry, 22:51056
complexes with histone, radiation effects on dissociation of histone from, γ, 22:51056
complexes with histone, separation of dissociated histone from irradiated, by precipitation or sedimentation with dilute sodium chloride solutions, 22:51056
content of algae, effects of, on x-radiosensitivity, 22:31280
content of ascites tumor cells, effects on x-radiosensitivity, 22:40781
content of bacteriophage following infection of Escherichia coli, repair of, 22:30414 (ORNL-4100, pp 148-51)
content of bacteriophages, effects of, on uv- and x-radiosensitivity, 22:49645
content of bones of rabbits, effects of plutonium-239 uptake on, 22:25971
content of cell nuclei in γ-radioinduced mutants of wheat, 22:17050(R) (EUR-3606)
content of chromosomes in slime molds, calculation of, 22:28288 (ORNL-4100, pp 166-77)
content of endonuclease from phage-infected Escherichia coli, 22:30414 (ORNL-4100, pp 148-51)
content of gymnosperm seeds in relation to γ-radiosensitivity, 22:45725
content of Haplopappus gracilis, effects of, on sensitivity to radiomimetic compounds, 22:31139
content of Micrococcus radiodurans, determination of rate of increase in, 22:23410(R) (NYO-3319-17)
content of nucleus in wheat cells in relation to radiosensitivity, 22:43477
content of pea seedlings, effects of cesium-137 toxicity on, 22:10739 (BNWL-480, pp 127-51)
content of satellite, in Crustacea, 22:28288 (ORNL-4100, pp 166-77)
content per chromosome in barley in relation to rate of radioinduced mutations per roentgen, 22:36230
defects in structure of, in microorganisms, repair of, conference on, 22:40582
degradation in Escherichia coli by decay of tritium-labeled compounds, 22:19250
denaturation in deuterium oxide, thermal, 22:28274 (ANL-7278, pp 250-82)
density in mitochondria of Tetrahymena, 22:12744 (BL-207)
detection in kinetosomes of Paramecia, evaluation of methods for, 22:53495(R) (COO-235-49)
determination of chain length of, from chromosomes of hamster cells using electron microscopy and computer techniques, 22:16974(R) (ORO-2832-56)
deuterium effects on synthesis of, in amphibian eggs, 22:43448
effects on development of megakaryocytes in bone marrow of rats, 22:28284 (ORNL-4100, pp 127-34)
effects on DNA of γ-irradiated pea seeds, homologous, 22:15113
effects on Drosophila following ingestion, mutagenic, 22:51490(R) (ORO-3014-3)
effects on γ-radiosensitivity of Staphylococcus aureus, 22:15125(R) (RLO-1730-2)
effects on moths, mutagenic, 22:6211(R) (NYO-2902-10)
effects on moths, mutagenic autologous, 22:3974(R) (NYO-2902-11)
effects on radiation injuries and sickness of rats, therapeutic, 22:25898
effects on reactions of hydrated electrons with metachromatic dyes, 22:42783
effects on reactions of polycations with hydrated electrons, 22:42783
effects on recovery of Vicia faba chromosomes from x-radioinduced injuries, 22:47524
effects on spleen-nodule count in x-irradiated mice, 22:556
effects on uv- and x-radiosensitivity of Escherichia coli, 22:36412
fate of heterologous and homologous, during transformation of pneumococcus, 22:14905 (BNL-50057, pp 111-22)
function and structure in animal and bacterial viruses, relation between, 22:40615(R) (EUR-3889)
incorporation of 5-bromouracil, effects of, on uv-radiosensitivity of bacteria, 22:33787
infectivity of Hemophilus temperate H1C1 phage and prophage, 22:25715(R) (NYO-1371-51)
interactions with Daunomycin, 22:14906 (BNL-50057, pp 123-37)
isolation from Bacillus subtilis, procedure for, 22:49185(R) (YALE-2653-33)
labeling with thymidine-incorporated tritium, effects of, on replication kinetics of ileal cells in rats, 22:45660
metabolism in mammary tumors of mice, iodine-125 tracer study of, 22:23412 (NYO-3924-1)
modification by chemotherapeutic agents, effects of, on

radiosensitivity of cells, 22:12873
neutron activation of phosphorus in, 22:462
nucleotide content of, of radioinduced mutants of cotton, comparison of, to initial form, 22:43284
phosphorus-32 content of, in Drosophila, 22:23463
photolysis of, excited states and transient species in, 22:2099(R) (TID-24136)
photoreactivation of pyrimidine dimers of, in Paramecium aurelia, 22:28399 (ORNL-4100, pp 40-7)
purification of polymerase of, by acrylamide gel electrophoresis, 22:7953(R) (NYO-910-61)
radiation effects on 5-bromouracil substituted, from bacteriophages, mechanism for uv, 22:31000
radiation effects on activity of, in liver, lymph nodes, and spleen of rats, γ, 22:51867
radiation effects on antigenicity of, uv, 22:49197
radiation effects on aqueous solutions of, lytic γ, 22:30984
radiation effects on aqueous solutions of, role of hydroxyl radicals in γ, 22:45397
radiation effects on bacteriophage, effects of wavelength on physicochemical uv, 22:30942
radiation effects on base content of, in rabbit bone marrow, x, 22:33737
radiation effects on base pairing in, of pea seeds, 22:51399
radiation effects on biological activity of, in cells in relation to degree of radiation injuries, uv, 22:38234
radiation effects on biosynthesis of, in mice, early x, 22:19243
radiation effects on chemical and physical properties of, x, 22:25713 (COO-78-163, pp 64-125)
radiation effects on components of, chemical analysis of uv, 22:19286
radiation effects on content of, in adrenal glands of rats, x, 22:14957
radiation effects on content of, in ascites tumor cells, effects of repeated exposure on, 22:6741
radiation effects on content of, in bone marrow of rabbits, x, 22:28665
radiation effects on content of, in cell nuclei, 22:19249
radiation effects on content of, in Escherichia coli, γ, 22:26008
radiation effects on content of, in frog embryos, uv, 22:25996
radiation effects on content of, in hypertrophic kidney of rats, γ, 22:40920
radiation effects on content of, in intestine of mice and rats, γ, neutron, and x, 22:49552
radiation effects on content of, in intestines of rats, x, 22:40595
radiation effects on content of, in kidney of mice, x, 22:43422
radiation effects on content of, in leaves of salvia, phosphorus-32 β, 22:36410
radiation effects on content of, in nuclei of animal cells, microbeam uv, 22:8449
radiation effects on content of, in nuclei of lymphocytes in liver and spleen of rats, x, 22:21433
radiation effects on content of, in rat brain, in utero x, 22:49249
radiation effects on content of, in seeds of barley, γ, 22:28709
radiation effects on content of, in shoots of corn and radishes, effects of dose on x, 22:33977
radiation effects on content of, in spleen of mice, protective effects of bone marrow transplants against x, 22:19251
radiation effects on content of, in tissues of rats, method for measuring x, 22:8441
radiation effects on degradation of, by DNAase, 22:2485
radiation effects on degradation of, by DNAase in carbon-14- and tritium-labeled cells, β, 22:464
radiation effects on distribution of, in pituitary gland of mice, effects of dose on uv, 22:6732
radiation effects on excision of pyrimidine dimers from, effects of bacterial extracts on uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on HeLa cell, effects of bromouracil substitution on uv, 22:51838
radiation effects on heterologous, effects of, on genetics of Drosophila following ingestion, γ and x, 22:12831
radiation effects on host cell, repair of uv, by infecting T_4 bacteriophage, 22:51541
radiation effects on incorporation of nucleotide precursors into, of splenic lymphocytes from hamsters, x, 22:23604
radiation effects on incorporation of thymidine by, in human lymphocytes, uv, 22:16991
radiation effects on infectivity of phage, combined effects of heat on γ, 22:38504
radiation effects on inhibitory activity of, in transformation of Bacillus subtilis, x, 22:15120
radiation effects on macromolecular organization of, ionizing, 22:14955
radiation effects on metabolism of, by protozoa, γ, 22:25712 (COO-78-163, pp 39-63)
radiation effects on metabolism of, in bone marrow and intestine of mice, ionizing, 22:25766
radiation effects on metabolism of, in embryos of barley, phosphorus-32 tracer study of effects of developmental stage and tissue differentiation on x, 22:28360
radiation effects on metabolism of, in Escherichia coli, effects of mutants of bacteriophages T3 and T7 on uv, 22:14937
radiation effects on metabolism of, in human tumor cell cultures, x, 22:43211
radiation effects on metabolism of, in isolated perfused rat intestine, x, 22:49227
radiation effects on metabolism of, in L cells, uv, 22:49507
radiation effects on metabolism of, in man and rats, ionizing, 22:51478
radiation effects on metabolism of, in rats, effects of fat content of diet on, 22:45444
radiation effects on metabolism of, neutron, 22:33919
radiation effects on molecular structure of, from Escherichia coli, lytic uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on molecular structure of, in liver and thymus of rats, effects of dose on, 22:23435
radiation effects on molecular structure of, of phage T2 and T4, 22:40559
radiation effects on paramagnetic centers in, EPR study of, 22:28292
radiation effects on phosphorus-32 uptake by, of ascites hepatoma cells in rats, combined effects of carcinostatics on cobalt-60 γ, 22:31025
radiation effects on priming ability of, in chick fibroblasts, x, 22:45427
radiation effects on priming activity of, for DNA-nucleotidyltransferase, x, 22:25713 (COO-78-163, pp 64-125)
radiation effects on properties of, in liver of kangaroo rats, tritium β and γ, 22:49184 (UCRL-50461)
radiation effects on protein moiety of, effects of, on type of mutation induced in genes, uv, 22:25784
radiation effects on ratio of, to protein and RNA in slime molds, 22:43480
radiation effects on reaction between, and furocoumarins, uv, 22:16995
radiation effects on reaction of psoralen with, role of thymine in uv, 22:47454
radiation effects on reactions of, with carbon-14-labeled 5-methoxypsoralen, 22:4578
radiation effects on repair replication of, of HeLa cells, uv, 22:51410
radiation effects on replication of, by host cell and lambda bacteriophage, uv, 22:28362
radiation effects on replication of, in cultured leukocytes from swine, γ, 22:40830 (ORO-657, pp 35-45)
radiation effects on replication of, in Escherichia coli, effects of oxygen on x, 22:31294
radiation effects on replication of, in hamster cells, correlation of, with chromosome duplication, x, 22:33781
radiation effects on replication of, in HeLa cells, effects of dose on x, 22:6742
radiation effects on role of, in septum formation of Escherichia coli uv, 22:23432
radiation effects on stability of, in bacteriophage, x, 22:23476
radiation effects on stability of, in nuclei of thymocytes of rats, 22:21437
radiation effects on staining reactions of, to Feulgen and methyl green in amoebae, x, 22:49189
radiation effects on structure and synthesis of, mechanisms of ionizing, 22:40568
radiation effects on structure of recombinant region of, in transformation heterozygotes of pneumococci, repair mechanisms for, 22:28353
radiation effects on structure of, from bacteriophage T_7, argon ion, 22:30952
radiation effects on structure of, in bacteriophage phi X 174, γ, 22:21412
radiation effects on structure of, in sperm of Drosophila, β, 22:28426
radiation effects on structure of, ionizing, 22:23448
radiation effects on structure of, of Micrococcus radiodurans, effects of content of cytosine and guanine on γ, 22:40580
radiation effects on structure of, protective effects of DNP and cell nuclei on ionizing, 22:23564
radiation effects on structure of, x, 22:2502 (AECL-2665)
radiation effects on synthesis of by Escherchia coli, effects of radiosensitivity on uv, 22:33727
radiation effects on synthesis of hybrid RNA-, in pea embryos, tracer study of γ, 22:43237
radiation effects on synthesis of RNA on templates of, from bacteriophages, γ, 22:38193(R) (EUR-3912)
radiation effects on synthesis of, at various sites in HeLa cells, uv microbeam, 22:36217
radiation effects on synthesis of, by Bacillus subtilis, uv, 22:14943
radiation effects on synthesis of, by cells of cervical neoplasms in man, use of tritium-labeled thymidine and autoradiography to study γ and x, 22:40943
radiation effects on synthesis of, by cells of thymus gland of mice, whole-body x, 22:4572
radiation effects on synthesis of, by Chinese hamster

cells, uv, 22:47521
radiation effects on synthesis of, by Escherichia coli, effects of glucose, histidine, thymine, or uracil starvation on uv, 22:47451
radiation effects on synthesis of, by L cells, uv, 22:45438
radiation effects on synthesis of, by lambda bacteriophage, uv, 22:51426
radiation effects on synthesis of, by mammalian cells, relation of, to cell phase, x, 22:28676
radiation effects on synthesis of, by Saccharomyces vini, γ, 22:47640
radiation effects on synthesis of, by seeds of peas, tracer study of ionizing, 22:28388
radiation effects on synthesis of, by tumors of rats, effects of dose fractionation on x,, 22:2481
radiation effects on synthesis of, combined effects of endoxan on x, 22:43436
radiation effects on synthesis of, during meiosis in Chlamydomonas reinhardi, effects on recombination of genes on cobalt-60 γ, 22:49310
radiation effects on synthesis of, in bacteria, uv and x, 22:4712
radiation effects on synthesis of, in bone marrow and lymphocytes of mice in relation to duration of mitosis, x, 22:21481
radiation effects on synthesis of, in bromouracil-substituted mammalian cells, protective effects of cysteamine against uv, 22:8588
radiation effects on synthesis of, in cells, uv, 22:33933
radiation effects on synthesis of, in Chlorella vulgaris, uv, 22:21631
radiation effects on synthesis of, in Chlorella, effects of dose and life cycle stage on γ, 22:45412
radiation effects on synthesis of, in corneal epithelial cells of dogfish, effects of iododeoxyuridine on γ and uv, 22:12769
radiation effects on synthesis of, in corneal epithelium of rats, strontium-90 β, 22:45411
radiation effects on synthesis of, in cultured Chinese hamster cells in relation to incidence of chromosome aberrations, uv, 22:21467
radiation effects on synthesis of, in cultured diploid cells from human amnion, x, 22:43214
radiation effects on synthesis of, in developing eggs of sea urchins, uv and x, 22:28337
radiation effects on synthesis of, in duodenal crypt cells in mice, γ and x, 22:12745 (CONF-671120-1)
radiation effects on synthesis of, in eggs of Bombyx mori, γ, 22:28373
radiation effects on synthesis of, in Ehrlich ascites cells, γ, 22:14917
radiation effects on synthesis of, in embryos of Misgurnus fossilis, comparison of, with radiotoxin effect, 22:23423
radiation effects on synthesis of, in epithelial cells of intestine in silver salmon, effects of temperature on x, 22:10740 (BNWL-480, pp 153-93)
radiation effects on synthesis of, in Escherichia coli, repair of uv and x, 22:8493
radiation effects on synthesis of, in Escherichia coli, photoinduced reversal of combined effects of acriflavine on uv, 22:8664
radiation effects on synthesis of, in excised pea roots, effects of carbohydrate supply on x, 22:28390
radiation effects on synthesis of, in first postirradiation life cycle of cultured mammalian cells, 22:40587
radiation effects on synthesis of, in germ cell nuclei of male rats, x, 22:51418
radiation effects on synthesis of, in gut epithelial cells of man in relation to thymine excretion patterns, x, 22:45508(R) (PG-Report-826)
radiation effects on synthesis of, in hamster cells, uv, 22:23397(R) (COO-1704-4)
radiation effects on synthesis of, in hamster cells, x, 22:28274 (ANL-7278, pp 250-82)
radiation effects on synthesis of, in HeLa cell cultures, effects of cell stage at exposure on uv, 22:6753
radiation effects on synthesis of, in HeLa cells, x, 22:36212
radiation effects on synthesis of, in HeLa cells, carbon-14 and tritium β, 22:6719 (UCSF-10-P-2-33)
radiation effects on synthesis of, in HeLa cells, combined effects of uv and x, 22:36402
radiation effects on synthesis of, in HeLa cells, effects of cell cycle on, 22:40603
radiation effects on synthesis of, in human kidney cells in vitro, x, 22:51457
radiation effects on synthesis of, in intestinal cells of mice, recovery mechanisms for γ, 22:36203
radiation effects on synthesis of, in intestine and tongue epithelium of mice, combined effects of Endoxan on, 22:36315
radiation effects on synthesis of, in intestine and liver of rats, x, 22:12814
radiation effects on synthesis of, in intestine and melanomas of mice, x, 22:49219
radiation effects on synthesis of, in L cells of mice, effects of tritium-labeled thymidine on β, 22:19274
radiation effects on synthesis of, in L cells, effects of cell phase on x, 22:36202
radiation effects on synthesis of, in L cells, theoretical calculation of uv, 22:31005
radiation effects on synthesis of, in liver of rats, γ, 22:31211
radiation effects on synthesis of, in lung cells of mice, combined effects of influenza virus on x, 22:31012
radiation effects on synthesis of, in macronucleus of Paramecium caudatum, effects of temperature adaptation on x, 22:21608
radiation effects on synthesis of, in mammalian cells, uv, 22:21426
radiation effects on synthesis of, in meristem cells of pea roots, γ, 22:40962
radiation effects on synthesis of, in nerve cells of rabbits, tritium tracer study of x, 22:43455
radiation effects on synthesis of, in rabbit nerve cells, whole-body x, 22:36183
radiation effects on synthesis of, in regenerating liver of rats, effects of iodine-125-labeled IUDR on whole-body x, 22:28621 (ANL-7278, pp 1-94)
radiation effects on synthesis of, in regenerating cells of injured spinal cord in rats, x, 22:40926
radiation effects on synthesis of, in Tetrahymena, uv and x, 22:12744 (BL-207)
radiation effects on synthesis of, in thyroid gland of rats, β, 22:2534(R) (COO-1243-8)
radiation effects on synthesis of, in tissues of rat eye, strontium-90 β, 22:45655
radiation effects on synthesis of, in yeast cells in relation to fluctuations in DNA polymerase, x, 22:40605
radiation effects on synthesis of, in yeast, uv and x, 22:426
radiation effects on synthesis of, review of mechanisms of, 22:40612
radiation effects on synthesis of, use of, for selective destruction of neoplasms, β, 22:17030
radiation effects on T4 bacteriophage, effects of host cell radiosensitivity on repair of uv, 22:51367
radiation effects on the incorporation of tritium-labeled thymidine into, of splenic lymphocytes from hamsters, x, 22:23603
radiation effects on thymine-containing dimers of, effects of light and yeast photoreactivating enzymes on uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on transformation activity of bacterial, effects of 5-bromouracil substitution on uv, 22:49185(R) (YALE-2653-33)
radiation effects on transforming ability of, from vegetative cells and spores of Bacillus subtilis, electron, 22:16984
radiation effects on transforming ability of, in Hemophilus influenzae, uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on transforming activity of, in Bacillus subtilis system, x, 22:25713 (COO-78-163, pp 64-125)
radiation effects on transforming, combined effects of deoxyribonuclease, dimethylsulfate, and nitrous acid on uv, 22:30971
radiation effects on transforming, of Micrococcus radiodurans, uv, 22:51443
radiation effects on viscosity of sodium chloride solutions of, effects of addition of calcium chlorides and iron sulfates, ionic strength of solution, and temperature on uv, 22:28382
radiation effects on, chemical and physical factors affecting ionizing, 22:40615(R) (EUR-3889)
radiation effects on, degradation by mutants of Salmonella typhimurium, uv, 22:40650
radiation effects on, demonstration of sytem for repair of uv, 22:25822
radiation effects on, effects of altitude on cosmic, 22:14951
radiation effects on, effects of pyrimidine dimer formation on photoreactivation of uv, 22:21424
radiation effects on, ESR study of protective effects of cysteamine against acute x, 22:49463
radiation effects on, from bacteriophage T-2 and rat thymus, effects of hydrodynamic forces following, 22:49198
radiation effects on, from crabs, uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on, from reconstituted nucleohistones, x, 22:16974(R) (ORO-2832-56)
radiation effects on, in animals, review of ionizing and uv, 22:51495
radiation effects on, in bacteria and viruses, 22:21410(R) (YALE-2653-30)
radiation effects on, in bacteria, repair of uv, 22:19309(R) (SU-326-P-7-194)
radiation effects on, in brain of rats, effects of enzymes on x, 22:25723 (UCLA-12-668, pp 71-84)
radiation effects on, in cells of developing palate of mice, β, 22:40902
radiation effects on, in Escherichia coli, review of aberrant, 22:40622
radiation effects on, in liver of rats, chemicophysical, 22:51450
radiation effects on, in lymphoma cells from mice,

effects of dose on tritium β, 22:6719 (UCSF-10-P-2-33)
radiation effects on, in mammalian cells, review of early, 22:40553
radiation effects on, in mammals, mechanism of repair by enzymes, ionizing and uv, 22:38409
radiation effects on, in normal and denervated muscles of rabbits, whole-body x, 22:49217
radiation effects on, in relation to production of antibodies in rabbits, uv, 22:14928
radiation effects on, in Tetrahymena, repair of uv and x, 22:21587
radiation effects on, lethal and mutagenic photoproducts of uv, 22:25792
radiation effects on, mechanisms of repair of uv and x, 22:38200 (UCSF-10-P-2-41)
radiation effects on, mechanisms of x, 22:12824
radiation effects on, of Bacillus subtilis, mutagenic x, 22:45496
radiation effects on, of bacteria and bacteriophages, review of ionizing and uv, 22:49251
radiation effects on, of bacteriophage, repair of uv, 22:51321
radiation effects on, of bacteriophage, uv, 22:45497
radiation effects on, of cultured mammalian cells, dark repair of, uv and x, 22:31217
radiation effects on, of epidermal rat cells, biochemical uv, 22:49253
radiation effects on, of Escherichia coli B, method for analysis of excision-repair of uv, 22:14942
radiation effects on, of Escherichia coli strain deficient in excision-repair of pyrimidine dimers, mutagenic uv, 22:33792
radiation effects on, of Escherichia coli, effects of 5-fluorouracil on repair of uv, 22:40969
radiation effects on, of Escherichia coli, effects of caffeine and 8-chlorocaffeine on dark repair of uv, 22:51435
radiation effects on, of Escherichia coli, mechanisms of recovery from uv, 22:12806
radiation effects on, of Escherichia coli, repair synthesis of uv, 22:52036 (ORO-3596-7)
radiation effects on, of Escherichia coli, sensitizing effects of N-ethylmaleimide on γ, 22:21569
radiation effects on, of Escherichia coli, use of cesium chloride for analysis of x, 22:31293
radiation effects on, of Hartmannellid amoeba, effects of dose on γ, 22:40914
radiation effects on, of lymphosarcoma cells, ionizing, 22:36177
radiation effects on, of mammalian cell cultures, tritium β, 22:43456
radiation effects on, of microorganisms, 22:14916
radiation effects on, of phage α, relation of, to synthesis of α messenger RNA, 22:25783
radiation effects on, of phi X 174 phage following treatment with 5-bromouracil, uv, 22:47558
radiation effects on, of Salmonella typhimurium, uv, 22:49653
radiation effects on, of sand dollar zygotes, effects of, on cell division, uv, 22:43432
radiation effects on, of Schizosaccharomyces pombe, mutagenic uv, 22:10747
radiation effects on, of Serratia bacteriophage, photoreactivational repair of uv, 22:36422
radiation effects on, of Serratiaphage kappa, combined effects of incorporated bromouracil on mutagenic uv and x, 22:40637
radiation effects on, of Streptococcus, dark repair of uv, 22:23689
radiation effects on, photoproduct formed from uv, 22:33768
radiation effects on, photoreactivation and repair of uv, 22:49223
radiation effects on, protective effects of calcium ions and histones against, 22:45408
radiation effects on, protective effects of normal aliphatic diamines, cystamine and β,β'-diaminodiethylsulfide against x, 22:38379
radiation effects on, repair of, 22:6711 (BARC-287)
radiation effects on, review of HCR-initiated release of thymine dimers following uv, 22:25793
radiation effects on, review of ionizing, 22:23629
radiation effects on, review of radiotoxins role in recovery from γ or x, 22:25910
radiation effects on, uv fluorescence spectra of ionizing, 22:36176
radioinduced breakage of molecules of lambda phage, in Escherichia coli mutants, repair of uv, 22:40629
radioinduced breaks in chains of, in Polyoma virus, γ, uv, and x, 22:21640
radioinduced breaks in molecules of, in Escherichia coli, effects of oxygen on, 22:33793
radioinduced breaks in single-stranded, of T4 bacteriophage, effects of host enzymes on repair of uv, 22:30953
radioinduced breaks in strands of, from Bacillus subtilis, γ, 22:28290(R) (NYO-2653-29)
radioinduced breaks of, in Escherichia coli, target theory interpretation of, 22:36218
radioinduced cleavage of circular single-stranded, of phiR bacteriophages, uv, 22:12806
radioinduced degradation of, from Escherichia coli, density gradient studies in vitro and in vivo of tritium β, 22:33709(R) (COO-1603-2)
radioinduced degradation of, in Escherichia coli, effects of caffeine on photoreactivability of lambda phage for uv, 22:40965
radioinduced degradation of, in Escherichia coli, γ, 22:52060
radioinduced degradation of, in Escherichia coli, effects of bacteriophage infection on, γ, 22:36211
radioinduced degradation of, in mutant of Escherichia coli, mechanisms for uv, 22:49268
radioinduced degradation of, in uv-radiosensitive mutants of Escherichia coli, 22:40628
radioinduced degradation of, protective effects of chemical agents against γ, 22:2525
radioinduced denaturation of, from hydras and sponges, effects of, on uv absorption curves, x, 22:51407
radioinduced dimerization of pyrimidines in, of Paramecium, photoreactivation of uv, 22:8445
radioinduced dimers in thymine of, structure of uv, 22:36216
radioinduced excited states in, ESR spectra of uv, 22:12823
radioinduced formation of cyclobutyl dimers and thymine photoproducts in, uv, 22:23409(R) (NYO-2798-32)
radioinduced formation of radicals in, effects of physical state on, 22:47480
radioinduced formation of thymine dimers in, effects of drying on uv, 22:23398 (IA-1128, pp 147-55)
radioinduced formation of thymine photoproducts in, uv, 22:23409(R) (NYO-2798-32)
radioinduced formation of thymine products in, mechanism for uv, 22:25715(R) (NYO-1371-51)
radioinduced formation of trans-synthymine dimers in, identification and photoreactivation of uv, 22:47464
radioinduced free radical formation in, of bacteriophage phi X 174, effects of pH on protective effects of cysteamine against cobalt-60 γ, 22:25782
radioinduced free radicals in constituents of, uv, 22:43256
radioinduced free radicals in, use of tritium-labeled hydrogen iodide and hydrogen sulfide to label, γ, 22:25759
radioinduced inactivation of phage, effects of wavelength on uv, 22:21420
radioinduced inactivation of transforming, in Haemophilus influenzae, shape of curves for uv, 22:43490
radioinduced inactivation of transforming, of Rhizobium bacteriophage, effects of frequency on reversal of uv, 22:4580
radioinduced inactivation of transforming, tritium β, 22:47463
radioinduced inactivation of, role of strand scission in, 22:45463
radioinduced inhibition of phosphorus-32 uptake by, of rat thymus, ionizing, 22:45447
radioinduced inhibition of synthesis of, effects of, on mitotic cycle of mammalian cells, uv, 22:30988
radioinduced inhibition of synthesis of, in Escherichia coli, effects of, on cell division, 22:36188
radioinduced inhibition of synthesis of, in uv-irradiated HeLa cells, x, 22:43209 (UCSF-10-P-2-39, pp 2-51)
radioinduced lesions in, of Serratia marcescens, uv and visible light, 22:51554
radioinduced linkage of, to 3,4-benzpyrene, x, 22:25716(R) (NYO-3538-7)
radioinduced low molecular weight, in bacteria in relation to radiosensitivity, x, 22:45410
radioinduced luminescence in, mechanisms for uv, 22:49199
radioinduced mutation of single- and double-stranded, calculation of, 22:36225
radioinduced mutations affecting repair mechanisms of, in Escherichia coli, effects of low temperature on uv, 22:483
radioinduced photochemical lesions in, of lambda phage, determination of, using electron microscopy, uv, 22:40560
radioinduced photoproducts of thymine in, of Escherichia coli, effects of low temperature on uv, 22:51447
radioinduced production of atomic hydrogen in, of bacteriophage, γ, 22:45415
radioinduced production of single-strand breaks of, in Escherichia coli, relation of, to survival, x, 22:49231
radioinduced pyrimidine dimers in, of cultured human cells, loss of uv, 22:51957
radioinduced pyrimidine dimers in, of Escherichia coli in relation to mutagenesis, uv, 22:23457
radioinduced replication of, in Escherichia coli mutant, effects of temperature on γ, 22:23455
radioinduced scission in, of Escherichia coli, protective effects of cysteamine against x, 22:25780
radioinduced scissions in, of Escherichia coli, effects of purine or thymidine starvation on x, 22:25780
radioinduced single-strand breaks of, in dilute solutions, method for detection of, γ, 22:36187
radioinduced strand breaks in, effects of oxygen enhancement ratio on, 22:51396
radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)

radiolysis in human amnion cells, x, 22:49212
radiolysis in small intestine of mice, 22:12906
radiolysis of actively synthesizing, in Escherichia coli, fast proton, 22:40598
radiolysis of aqueous solutions of, effects of chloride ion on, 22:25723 (UCLA-12-668, pp 71-84)
radiolysis of aqueous solutions of, yields of hydrogen from γ, 22:47167
radiolysis of bacterial, in Bacillus subtilis, combined effects of actinomycin D on γ, 22:40591
radiolysis of bacterial, repair of x, 22:28288 (ORNL-4100, pp 166-77)
radiolysis of, chemical study of γ, 22:47456
radiolysis of, effects of nucleotide sequence on γ, 22:12801
radiolysis of, excited states and transient species in, 22:2099(R) (TID-24136)
radioprotective effects of injections of heterologous, on rats, γ, 22:36328
radioprotective effects of solution content of, against γ-induced single strand breaks, in DNA, 22:36187
radioprotective effects of, against chromosome aberrations in calf liver cells, x, 22:36327
radioprotective effects of, on liver of rats, γ, 22:10783
radioprotective effects of, on lymph system in rats, γ, 22:51867
radioprotective effects of, on rats, γ, 22:6849
radioprotective effects of, on transfecting and transforming activity of bacteriophage phi 29, γ, 22:432
rate of synthesis of, in Escherichia coli, tracer study of using tritium-labeled thymidine, 22:16974(R) (ORO-2832-56)
reaction sites of, for furocoumarin photoreaction, 22:25917
reactions with hydrogen, ESR spectra of, 22:27396(R) (AI-AEC-12638)
reactions with hydroxide radicals, rate constant for, 22:2167
reactions with hydroxyl radical, determination of, by pulse radiolysis, 22:25723 (UCLA-12-668, pp 71-84)
reactions with hydroxyl radicals, determination of, by pulse radiolysis, 22:49202
repair mechanism of, in Micrococcus radiodurans, effects of N-methyl-N'-nitro-N-nitrosoguanidine and combined effects of radiation on, 22:49309
replication in Physarum polycephalum, biochemical analysis of, 22:25713 (COO-78-163, pp 64-125)
role in genetic transformation of bacteria, 22:39951 (BNL-50101)
sedimentation coefficient of, in deuterium oxide, determination of, 22:28274 (ANL-7278, pp 250-82)
separation from mixed tRNA feed by isopropanol precipitation, 22:27864 (ORNL-4204, pp 16-21)
stability during alcohol extraction, effects of uranyl acetates on, 22:49255
staining of sea urchin egg, evaluation of methods for, 22:25712 (COO-78-163, pp 39-63)
structure in pneumococci, repair of effects of mitomycin C on, 22:28353
structure of yeast, effects of, on uv- or x-radiosensitivity, 22:31292
structure of, effects of solvents and temperature on changes in, 22:14905 (BNL-50057, pp 111-22)
synthesis by HeLa cells, effects of hydroxyurea on, 22:8436(R) (NYO-910-58)
synthesis by transferred nuclear nodes from Stentor polymorphus in cytoplasm of Stentor coeruleus, 22:33718 (UCLA-12-640, pp 61-80)
synthesis during conjugation of Escherichia coli, 22:28404 (ORNL-4100, pp 97-103)
synthesis during development of chick lens, 22:28283 (ORNL-4100, pp 75-96)
synthesis in animal cells, 22:12173(R) (NYO-3621-5)
synthesis in barley roots, in relation to γ-radioinduced chromosome aberrations, 22:40630
synthesis in cultures of Escherichia coli in relation to mitotic cycle, 22:28397 (ANL-7278, pp 144-69)
synthesis in eggs of Arbacia, effects of pressure on, 22:434
synthesis in grasshopper neuroblast, effects of actinomycin D on, 22:28407(R) (ORO-2575-41)
synthesis in HeLa cells, effects of inhibitors of, on survival of x-irradiated cells, 22:36185
synthesis in mitochondria and nuclei of Tetrahymena, 22:12744 (BL-207)
synthesis in mitochondria of Tetrahymena, mechanisms of, 22:1926(R) (NYO-3588-6)
synthesis in radioresistant mutants and wild types of Escherichia coli, effects of p-fluorophenylalanine on, 22:45733
synthesis in roots of Vicia faba, inhibition of, 22:47505
synthesis in uv-irradiated bacteria, effects of acriflavine on, 22:49644(R) (NYO-3893-1)
synthesis in Vicia faba, effects of, on frequency of x-radioinduced chromosome aberrations, 22:14988
synthesis of, combined effects of chloramphenicol and 5-fluorodeoxyuridine on, 22:30414 (ORNL-4100, pp 148-51)
synthesis time in human mucosa cells, measurements of, in vitro using tritium-labeled thymidine, 22:51453
tautomeric interconversion in A-T and G-C base pairs of, solution of time dependent equations for, 22:44964 (UCRL-50412)
thorium-232 uptake by, in rat liver, 22:51371
transfer of carbon-14-thymidine-labeled, to minicells of Escherichia coli, 22:28404 (ORNL-4100, pp 97-103)
uptake by bacteria during transformation, effects of EDTA on, 22:49185(R) (YALE-2653-33)
uptake of tritium-labeled thymidine by, effects of, on survival of cultured mammalian cells, 22:45382 (EUR-3290f-e, pp 73-7)
uptake of tritium-labeled thymidine by, effects of histones on, 22:439
use to restore radioinduced damage in cells and organisms, review of, 22:40766
viscosity of, effects of free radicals on, 22:25764
volume of plant cells in relation to x-radiosensitivity, 22:14905 (BNL-50057, pp 111-22)

NUCLEIC ACID, RIBO-
activation of arginine and glutamine enzymes by, 22:20982(R) (COO-1498-4)
analysis by thin-layer chromatography, 22:14428 (ORNL-4196, pp 33-44)
analysis of pulse-labeled, in bovine lens, 22:28283 (ORNL-4100, pp 75-96)
analysis of transfer, 22:14429 (ORNL-4196, pp 44-54)
binding of transfer, to amino acids during synthesis of proteins, catalytic effects of synthetases on, 22:51302(R) (HUX-2643-42)
binding to phenylalanyl-RNA synthetase, 22:28286 (ORNL-4100, pp 153-9)
chain configuration of, effects of heat and hydrogen peroxide on, 22:23448
characterization and function of enzymes methylating ribosomal, 22:40615(R) (EUR-3889)
complexes with ribosomes during synthesis of proteins, 22:51302(R) (HUX-2643-42)
conformation of, calculation of potential energies for, 22:12202 (UCRL-17966)
content of aminoacyl, in normal and virus-infected mammalian cells, 22:28289 (ORNL-4100, pp 178-201)
content of bones of rabbits, effects of plutonium-239 uptake on, 22:25971
content of cells in pancreas of mice, effects of actinomycin D on, 22:14910(R) (COO-1244-12)
content of cytoplasm and mitochondria, from Neurospora, comparison of, 22:28286 (ORNL-4100, pp 153-9)
content of Micrococcus radiodurans, determination of rate of increase in, 22:23410(R) (NYO-3319-17)
content of nucleosides in, of bacteria and yeasts, analysis of, 22:30413 (ORNL-4100, pp 146-7)
content of nucleotides in, analysis of sequence for, 22:30414 (ORNL-4100, pp 148-51)
content of pea seedlings, effects of cesium-137 toxicity on, 22:10739 (BNWL-480, pp 127-51)
content of plastids in corn leaves, 22:28288 (ORNL-4100, pp 166-77)
content of reticulocytes in rats, 22:12750(R) (RLO-1377-3)
content of ribosomes in lens cells, 22:28283 (ORNL-4100, pp 75-96)
content of TMV-infected tobacco plants, 22:28289 (ORNL-4100, pp 178-201)
content of transfer, in mitochondria of Neurospora, 22:30414 (ORNL-4100, pp 148-51)
determination by ligand-exchange chromatography, 22:14429 (ORNL-4196, pp 44-54)
determination of leucine- , phenylalanine- , and valine-accepting transfer, 22:14429 (ORNL-4196, pp 44-54)
determination of transfer, automated method for, 22:14429 (ORNL-4196, pp 44-54)
effects on growth of Physarum polycephalum, 22:43475(R) (COO-1432-4)
effects on γ-radiosensitivity of Staphylococcus aureus, 22:15125(R) (RLO-1730-2)
effects on repair of uv-irradiated genetic information in Escherichia coli, 22:40970
effects on size of nucleus and nucleus-cytoplasm ratio in cells of epithelium of x-irradiated axolotl, 22:51362
effects on x-radiosensitivity of division delay of ovarian cells of hamsters, synthesis of, 22:49519
extraction from brains of trained rats, effects of, on behavior of untrained rats, 22:20977 (COO-825-35)
function and structure of ribosomal, from liver, 22:14906 (BNL-50057, pp 123-37)
injections of γ-irradiated, into mice, effects of, on pigmentation of hair, 22:25735
isolation and characterization of, from mitochondria of Tetrahymena, methods for, 22:1926(R) (NYO-3588-6)
isolation by zonal centrifugation, method for, 22:48809 (UCRL-50414)
isolation from brain of trained rats, effects of, on behavior of controls, 22:20976 (COO-825-34)
isolation from Rous sarcoma virus, 22:7953(R) (NYO-910-61)
labeling with carbon-14 tritium by in vitro methylation, method for, 22:461
metabolism in Nicotiana glutinosa, effects of, on photoreactivation of tobacco mosaic virus, 22:4706(R) (RLO-1952-2)
metabolism in nuclei of Ehrlich ascites cells,

22:12173(R) (NYO-3621-5)
metabolism in oocyte nucleoli of Triturus, 22:28283 (ORNL-4100, pp 75-96)
methylation of transfer, effects of uv-induction on enzymes for, 22:38214
molecular structure of, use of optical rotary dispersion to determine, 22:28286 (ORNL-4100, pp 153-9)
nucleotide content of, of radioinduced mutants of cotton, comparison of, to initial form, 22:43284
optical density of, effects of salt content on, 22:14428 (ORNL-4196, pp 33-44)
phosphorus-32 content of, in Drosophila, 22:23463
preparation of labeled, methods for, 22:12746 (EUR-3669)
preparation of leucine transfer and phenylalanine transfer, from mixtures of tRNA from E. coli, 22:12747 (ORNL-4094, pp 14-18)
production of phenylalanine transfer, 22:14563 (ORNL-4139, pp 19-22)
production of transfer, 22:14563 (ORNL-4139, pp 19-22)
radiation effects on acceptor function of, specific to different amino acids, 22:23421
radiation effects on activity of transfer, uv, 22:51442
radiation effects on adaptive function of, in Azotobacter, x, 22:19259
radiation effects on biological activity of transfer, of Escherichia coli, liver, and yeast, x, 22:51421
radiation effects on biological activity of, in cells in relation to degree of radiation injuries, uv, 22:38234
radiation effects on components of, chemical analysis of uv, 22:19286
radiation effects on composition of, in loach embryos, 22:51388
radiation effects on content of, in adrenal glands of rats, x, 22:14957
radiation effects on content of, in Escherichia coli, γ, 22:26008
radiation effects on content of, in frog embryos, uv, 22:25996
radiation effects on content of, in hypertrophic kidney of rats, γ, 22:40920
radiation effects on content of, in leaves of salvia, phosphorus-32 β, 22:36410
radiation effects on content of, in rat brain, in utero x, 22:49249
radiation effects on content of, in shoots of corn and radishes, effects of dose on x, 22:33977
radiation effects on content of, in spleen of mice, protective effects of bone marrow transplants against x, 22:19251
radiation effects on degradation of, by RNAase, β, 22:2485
radiation effects on distribution of, in pituitary gland of mice, effects of dose on uv, 22:6732
radiation effects on infectivity of, from foot-and-mouth disease virus, cobalt-60 γ, 22:52045
radiation effects on infectivity of, of tobacco mosaic virus, uv, 22:28321
radiation effects on messenger, uv, 22:43223
radiation effects on metabolism of, in crown gall tissue cultures, phosphorus-32 tracer study of x, 22:8482
radiation effects on metabolism of, in embryos of barley, phosphorus-32 tracer study of effects of developmental stage and tissue differentiation on x, 22:28360
radiation effects on metabolism of, in PHA-transformed lymphocytes, x, 22:28629 (ORNL-4100, pp 104-9)
radiation effects on metabolism of, in rats, effects of fat content of diet on, 22:45444
radiation effects on nature of catabolism of, by Escherichia coli, x, 22:23475
radiation effects on phosphorus-32 uptake by, of ascites hepatoma cells in rats, combined effects of carcinostatics on cobalt-60 γ, 22:31025
radiation effects on pulse-labeling of, with phosphorus-32, correlation of, with catalase activity in yeasts, γ, 22:19252
radiation effects on ratio of, to DNA in slime molds, 22:43480
radiation effects on reaction of psoralen with, role of uracil in uv, 22:47454
radiation effects on structure of, ionizing, 22:23448
radiation effects on synthesis of hybrid DNA-, in pea embryos, tracer study of γ, 22:43237
radiation effects on synthesis of, at various sites in HeLa cells, uv microbeam, 22:36217
radiation effects on synthesis of, by ascites hepatoma cells of rats, in vitro and in vivo x, 22:30957
radiation effects on synthesis of, by Pisum, cesium-137 β and γ, 22:47469
radiation effects on synthesis of, by Saccharomyces vini, γ, 22:47640
radiation effects on synthesis of, by seeds of peas, tracer study of ionizing, 22:28388
radiation effects on synthesis of, by synchronous HeLa and human leukemic cells, tracer study of x, 22:8436(R) (NYO-910-58)
radiation effects on synthesis of, in cotyledons of peanut seeds, x, 22:31014
radiation effects on synthesis of, in cultured HeLa cells, γ, 22:28310
radiation effects on synthesis of, in eggs of Bombyx mori, γ, 22:28373
radiation effects on synthesis of, in Escherichia coli, effects of glucose, histidine, thymine, or uracil starvation on uv, 22:47451
radiation effects on synthesis of, in Escherichia coli, effects of acriflavine on uv, 22:49263
radiation effects on synthesis of, in germ cell nuclei of male rats, x, 22:51418
radiation effects on synthesis of, in granular cells of human epidermis, uv, 22:10726
radiation effects on synthesis of, in hamster cells, x, 22:28274 (ANL-7278, pp 250-82)
radiation effects on synthesis of, in HeLa cells, carbon-14 and tritium β, 22:6719 (UCSF-10-P-2-33)
radiation effects on synthesis of, in L cells of mice, effects of tritium-labeled thymidine on β, 22:19274
radiation effects on synthesis of, in liver of Triturus viridescens, effects of hypoxia on x, 22:47489
radiation effects on synthesis of, in lung cells of mice, combined effects of influenza virus on x, 22:31012
radiation effects on synthesis of, in nucleolus of HeLa cells, autoradiographic study of uv, 22:28314
radiation effects on synthesis of, in rabbit nerve cells, whole-body x, 22:36183
radiation effects on synthesis of, in radiosensitive mutants of Saccharomyces, uv and x, 22:38240
radiation effects on synthesis of, in regenerating liver of rats, x, 22:45388
radiation effects on synthesis of, in seeds of peas, cobalt-60 γ, 22:23470
radiation effects on synthesis of, in slime mold, ionizing, 22:25713 (COO-78-163, pp 64-125)
radiation effects on synthesis of, on templates of bacteriophage DNA, γ, 22:38193(R) (EUR-3912)
radiation effects on synthesis of, review of mechanisms of, 22:40612
radiation effects on transcription of messenger, from specific genes in Escherichia coli, phosphorus-32 β, 22:28376
radiation effects on transfer, ionizing, 22:40568
radiation effects on transfer, of macrophages in relation to antibody synthesis, γ and uv, 22:28391
radiation effects on, in bacteriophages, effects of, on infectivity and replication in Escherichia coli, uv, 22:33989
radiation effects on, in fish embryos, x, 22:51353
radiation effects on, in mammalian cells, review of early, 22:40553
radiation effects on, in normal and denervated muscles of rabbits, whole-body x, 22:49217
radiation effects on, in relation to production of antibodies in rabbits, uv, 22:14928
radiation effects on, of bacteria and bacteriophages, review of ionizing and uv, 22:49251
radiation effects on, of Euglena, effects of dose and temperature on γ, 22:33771
radiation effects on, of mammalian cell cultures, tritium β, 22:43456
radiation effects on, of viruses, effects of riboflavin and vitamin A on light and uv, 22:4708
radiation inactivated, from tobacco mosaic virus, multiplicity reactivation of uv, 22:51529
radioinduced changes in conformation and inactivation of transfer, in Escherichia coli, uv, 22:33746
radioinduced inactivation of synthesis of, for phenylalanyl, effects of log dose on γ, 22:30946
radioinduced inactivation of transforming, of tobacco mosaic virus, effects of frequency on reversal of uv, 22:4580
radioinduced mutation for distribution of methylated bases in, of Saccharomyces cerevisiae uv and x, 22:8502
radioinduced phosphorescence of, uv, 22:51302(R) (HUX-2643-42)
radiolysis of transfer, in air-saturated solutions, x, 22:33460
radioprotective effects of, on cancerous tissues, review of in vivo, 22:33875
radioprotective effects of, on intestine of chicken embryos in culture, x, 22:40733
radioprotective effects of, on rats, γ, 22:6849
radiosensitivity of tobacco mosaic virus, effects of coat protein on uv, 22:49266
reactions with phenylalanine RNA synthetase from Neurospora, 22:28286 (ORNL-4100, pp 153-9)
reactions with phenylalanine, effects of methylation on, 22:28286 (ORNL-4100, pp 153-9)
role in production of antibodies in rats, 22:40518(R) (RT/BIO-(68)3)
separation of crude mixtures of transfer, by column chromatography, 22:12747 (ORNL-4094, pp 14-18)
separation of DNA and ribonuclease from mixed feed of, 22:27864 (ORNL-4204, pp 16-21)
separation of transfer, 22:14563 (ORNL-4139, pp 19-22)
separation of transfer, stability of column packing in chromatographic, 22:16646 (ORNL-4075, pp 22-3)
species in liver of rats, effects of ethionine on, 22:28289 (ORNL-4100, pp 178-201)
stability in Escherichia coli following chloramphenicol inhibition, carbon-14-labeled methionine tracer study of, 22:12158 (BNWL-480, pp 107-26)
synthesis during immune reactions in rats, 22:28286 (ORNL-4100, pp 153-9)

  synthesis in brain of rabbits, 22:38193(R) (EUR-3912)
  synthesis in cells from regenerating rat liver, 22:51302(R) (HUX-2643-42)
  synthesis in cultured neuroblasts, effects of chromatin condensation on, 22:49178(R) (ORO-3546-6)
  synthesis in erythroblasts of chickens, effects of deuterium oxide on, 22:12802
  synthesis in Escherichia coli, effects of content of immature ribosomes on, 22:12158 (BNWL-480, pp 107-26)
  synthesis in grasshopper neuroblast, effects of actinomycin D on, 22:28407(R) (ORO-2575-41)
  synthesis in host cell, effects of uv-radiosensitivity of encephalomyocarditis virus in inhibition of, 22:8659
  synthesis in lens epithelial cells, effects of actinomycin D on, 22:28283 (ORNL-4100, pp 75-96)
  synthesis in liver of rats, effects of insulin on, 22:28287 (ORNL-4100, pp 160-4)
  synthesis in mitochondria of Tetrahymena, mechanism of, 22:1926(R) (NYO-3588-6)
  synthesis in phytohemagglutinin-treated hepatoma ascite cells, effects of, on radiosensitivity, 22:33942
  synthesis in regenerating lens of Triturus, 22:28283 (ORNL-4100, pp 75-96)
  synthesis in relation to mitosis in cultured mammalian cells, 22:53498 (LA-3848, pp 11-20)
  synthesis in relation to oral regeneration in Stentor coeruleus, 22:53498 (LA-3848, pp 11-20)
  synthesis in tobacco and tobacco mosaic virus, effects of actinomycin D, cytochrome C, and kinetin on, 22:4706(R) (RLO-1952-2)
  synthesis in uv-irradiated bacteria, effects of acriflavine on, 22:49644(R) (NYO-3893-1)
  synthesis in uv-irradiated Escherichia coli, effects of 5-fluorouracil on, 22:40969
  synthesis of leucine-containing, in phage-infected Escherichia coli, 22:28289 (ORNL-4100, pp 178-201)
  synthesis of phage α messenger, relation of x radiation effects on phage DNA to, 22:25783
  synthesis of, effects of chloramphenicol on, 22:30414 (ORNL-4100, pp 148-51)
  synthesis of, lectures on, 22:37628 (ISS-68/1)
  thorium-232 uptake by, in rat liver, 22:51371
  uptake of tritium-labeled uridine for effects of, on survival of cultured mammalian cells, 22:45382 (EUR-3290f-e, pp 73-7)
  use to restore radioinduced damage in cells and organisms, review of, 22:40766
  chondroitinsulfuric acid—ribonucleic acid, radiolysis at 77°K, EPR studies on protective effect of polyanions in x, 22:2143
  cysteine—ribonucleic acid, radiolysis at 77°K, EPR studies on protective effect of cysteine in x, 22:2143
Nuclenor Reactor (440 MWe)
    see Santa Maria de Garona Power Reactor
NUCLEOGENESIS
  abundance distributions during silicon burning, (T), 22:11140
  abundance of elements produced by slow-neutron capture in kappa Pavonis, (T), 22:29099
  alpha-particle capture reactions at 1 to 5 x 10^{9}°K, (T), 22:13088
  bibliography, 22:15324
  book: High-Energy Astrophysics. Vol. II, 22:15315
  book: High-Energy Astrophysics. Vol. III, 22:15318
  book: Introduction to Space Science, 22:19898
  book: Principles of Stellar Evolution and Nucleosynthesis, 22:47724
  book: Stellar Physics. Vol. 1, 22:29172
  effects of mixing of protons with products of stellar helium burning, (T), 22:11150
  element formation in interiors of late-type stars, heavy, (T), 22:24002
  element formation in Large Magellanic Cloud and Milky Way, heavy, (T), 22:31568
  elemental abundances in explosive, (T), 22:19688
  energy generated by CNO cycle on Sun, (T), 22:41246
  heavy element production by s process in 9- and 15-solar-mass stars, (T), 22:52403
  mechanisms for stellar, (T), 22:5033
  model for r-process, qualitative, (T), 22:31543
  neutron capture reactions in supernova explosions, rapid, (T), 22:19710
  neutron tunneling in ^{3}He(^{3}He,2p)^{4}He reactions, (T), 22:49929
  neutron-capture cross sections for stellar, (T), 22:4976
  nuclear statistical equilibrium in, (T), 22:15319
  primordial, in spatially homogeneous universe, (T), 22:43788
  production of heavy nuclei in, (T), 22:29165
  proton production of beryllium, boron, and lithium, (T), 22:811
  review of, (T), 22:15317
  stability and limitation of thermal runaways, (T), 22:34175
  synthesis of technetium-97 in red giants, (T), 22:31586
  theories of, review of big- and little-bang, 22:17199
  thermodynamic conditions in stellar interiors, 22:17196
  ultraviolet spectral lines important in, (T), 22:41219
NUCLEOLUS
  radiation effects on morphology of, of KB cells, electron microscopic study of uv, 22:40541
  radiation effects on RNA synthesis in, of HeLa cell cultures, autoradiographic study of uv, 22:28314
  radiation effects on, in cells of regenerating liver in rats, x, 22:10733
  radioinduced pycnosis in, of oocytes of fish, x, 22:10870
NUCLEONS
    see also Neutrons
    see also Protons
  absorption of primary cosmic, in iron, 22:2823
  binding energies of N-body systems with two-body interactions, (T), 22:7410
  book: Electromagnetic Structure of Nuclei and Nucleons, 22:3346
  capture by lead-208, cross-section calculations using collective and direct formalisms, (T), 22:37340(R) (EANDC(E)-89(U))
  capture by nuclei, spin-orbit interaction in, (T), 22:9977
  cosmic-ray yield functions, Gross transformation, and mean free paths, (E), 22:13283
  coupling constant for πN from analysis of p + p interactions at 0 to 400 MeV, 22:35003
  coupling constants for γNN*, test of N(1400) dominance of nucleonic form factors from, 22:15733
  coupling constants for KN, use of meson—nucleon dispersion relations for determination of, 22:15802
  coupling constants for NΛK and NΣK systems from KN forward dispersion relations, (T), 22:1448
  coupling constants for πN and πNN* from current algebra, 22:24632
  coupling constants for πN, approximate bounds from analyticity, crossing, and unitarity on, 22:44439
  coupling constants for πN, radiative corrections to, 22:52987
  coupling constants for rhoNN and rhoNN*, current-algebra sum rules for, 22:24597
  coupling constants ΛKN and ΣKN from energy-dependent finite-energy sum rule for K^{+} + p interactions, prediction for, 22:22404
  coupling constants rho NN, dispersion theoretic calculation of two-π effects on amplitudes of forward N + N → N + N and anti N + N → anti N + N interactions for determination of vector, 22:39383
  coupling of rho NN for saturation of π + N superconvergence sum rules, 22:46451
  coupling shifts for πNN and πNN*, Dashen—Frautschi method for calculating, 22:9614
  coupling to mesons, static SU(6) for, 22:46491
  coupling to Regge poles, field-theoretic model for, 22:20252
  coupling with γ and Δ(1236), current algebra calculation of, 22:3323
  coupling with mesons, N + N forward dispersion relations for, 22:24683
  couplings of πNN and πNN* in Chew—Low model, electromagnetic perturbations on, 22:46440
  couplings of πNN and πNN* in Chew—Low model, electromagnetic perturbations on, 22:46441
  decay N → N* + γ (virtual), superconvergent sum rule and SU(6)/sub W/ symmetry for M1 form factor for, 22:15729
  decay of, baryon conservation in, (E), 22:17851
  decay of, electromagnetic corrections to beta, 22:11636
  decays N → N + ω and N → N + phi, form factors for, 22:37166
  decays of, dispersion-theory version of PCAC hypothesis for weak leptonic, 22:3360
  distribution in nuclei, calculations using Fermi-gas theory, (T), 22:14093
  electric dipole moment of, model for upper limits of, 22:44379
  electromagnetic properties and excited levels of, model of electron excitation for relating, 22:26596
  electromagnetic radii of, use of field—current identities for calculation of, 22:50337
  electromagnetic radius of, sidewise dispersion relations for relation with π electromagnetic radius, 22:32086
  electromagnetic structure of, e + N experiments for determining, (T), 22:13718
  electromagnetic structure of, quark model for, 22:9538
  emission from nuclear meson (μ^{-}) capture, polarization in, (T), 22:16077
  emission from proton reactions with beryllium-9 and helium-4 at 660 MeV, threshold detector study of angular distributions and number of, (E), 22:11582
  emission in electron scattering by nuclei, (T), 22:9964
  energy levels of four-body systems of, (T), 22:1595
  exchange in γ + p → π^{0} + p interactions at 660 to 780 MeV, backward anomaly from, (E), 22:34824 (AD-448108)
  exchange in nuclear reactions, finite-range effects in DWBA calculations for, 22:18317
  exchange in π + N interactions, ladder approximation in partial wave dispersion relations for, 22:24648 (DESY-68/2)
  field-theoretic model for symmetric description of Roper resonance and, 22:15799
  form factor for γNN* from analysis of π^{0} electroproduction, transition, 22:26609
  form factor from amplitude of π + π → N + anti N and anti N + N → π + π interactions, electromagnetic, (T), 22:5530
  form factor from e + N → e + N + π + π interactions using

current algebra and PCAC method, measurement of axial-vector, 22:34903
form factor from e + N interactions below 6 GeV, review of experiments on, 22:22269 (CONF-670923-, pp 59-77)
form factor from multiple quark and analysis of consistency relations among diffraction cross sections for p + p, anti p + p, π + p, and π + π elastic interaction diffraction cross sections, (T), 22:32116
form factor from O(4,2) dynamics, isoscalar, 22:5625
form factor in current algebra models, relation between commutator ambiguities and, 22:29658
form factor of N--anti N bound state, asymptotic behavior of electromagnetic, 22:50365
form factor of, electric, 22:29657
form factor of, rho and rho' dominance in dispersion theory calculation of isovector, 22:34913
form factors above 6 GeV, (E), 22:11569 (SLAC-PUB-372)
form factors for, composite-particle model for electromagnetic, 22:11647
form factors for, current algebra for relations among, 22:3490
form factors for, soft pion summations and chiral cancellation for calculating electromagnetic, (T), 22:50320 (NYO-2262-TA-191)
form factors from antisymmetrical wave function in quark model, 22:3443
form factors from e + N elastic interactions, electromagnetic, 22:3326
form factors from photoproduction sum rules in static approximation, relation for, 22:34915
form factors from π + N dispersion relations, 22:44448
form factors in vector-dominance model, fitting of electromagnetic, 22:37166
form factors of composite, asymptotic behavior of, 22:37108
form factors of, electromagnetic, 22:46362
form factors of, electromagnetic, 22:11626
form factors of, from annihilation and π + π interactions, 22:9583
form factors of, group dynamics predictions for electromagnetic, 22:37173
form factors of, inverse mass approximation to saturation of algebra of vector densities for electromagnetic, 22:7475
form factors of, mixed representations in U(3) x U(3) for electromagnetic, 22:24704
form factors of, quasi-independent quark model for relation between electric and magnetic, 22:22346 (ITF-67-52)
form factors of, Regge-pole model for electromagnetic, 22:13695
form factors of, spectral functions from extrapolation of, 22:3337
form factors of, superconvergent sum rule and SU(6)/sub W/ symmetry for electromagnetic, 22:15729
form factors of, test for N(1400) dominance of nucleonic, 22:15733
form factors of, theory of isovector and isoscalar, 22:11611
form factors of, use of sidewise dispersion relations for electromagnetic, 22:52960
interaction potential induced by weak interactions, parity-violating, 22:50418
interaction π + N → π + Δ(1236), photon--vector meson analogy model for γ + N → vector meson + Δ(1236) interactions relation with, 22:46366
interactions A_1 + N, integral form of PCAC and Weinberg sum rules for coupling constant for, 22:13731
interactions above 10^{14} eV, (E), 22:2821
interactions anti K + N → anti K + N at 0 to 550 MeV/c, scattering lengths for, (E/T), 22:32168
interactions anti K + N → anti K* + N* at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions anti K + N → ω(phi) + Y* at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions anti K + N → π + Σ at 0 to 550 MeV/c, π--Σ scattering lengths from, (E/T), 22:32168
interactions anti K + N → π + Y, Regge poles and SU(3) symmetry for, 22:1439
interactions anti K + N → rho + Y* at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions anti K + N → Σ + π, Λ(1405)--baryon--pseudoscalar meson coupling from dispersion relations for, 22:15809
interactions anti K + N → vector meson + Λ(Σ), photon--vector meson analogy model for γ + N → K + Λ(Σ) interaction relation with, 22:46366
interactions anti K + N at low energies, forward dispersion relation for, 22:3447
interactions anti K + N, current commutators and mass extrapolations for s- and p-wave amplitudes of, 22:44441
interactions anti K + N, K_2^0 → K_1^0 regeneration at high energies for strange baryon resonances in, (T), 22:34932 (JINR-P1-3788)
interactions anti K + N, modified dispersion relations for KNΛ and KNΣ coupling constants for, 22:20257
interactions anti K + N, scattering length for, (T), 22:15680 (ORO-2504-117)
interactions anti N + N → anti N + N, analyticity properties of helicity amplitudes of, 22:9580 (CEA-R-3303)
interactions anti N + N → anti N + N, dispersion theoretic calculation of two-π exchange effects on amplitudes of forward, 22:39383
interactions anti N + N → anti N + N, kinematical singularities, crossing matrix, and kinematical constraints for helicity amplitudes for, 22:29770
interactions anti N + N → N*(Y*) + anti N*(Y*) at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions anti N + N → pseudoscalar + vector mesons, Regge pole model for t-channel, 22:48373
interactions anti N + N → π + ω at high energies, superconvergence relations for, 22:17940 (DESY-67/38)
interactions anti N + N → π + π, nucleon electromagnetic form factor from amplitude of, (T), 22:5530
interactions anti N + N → π + π, Regge poles in forward, 22:7489 (UCSD-10-P-10-29)
interactions anti N + N → π + π, spin-flip coupling constant f^0--N--N from, 22:44448
interactions anti N + N → π + rho at high energies, superconvergence relations for, 22:17940 (DESY-67/38)
interactions anti N + N → π + rho(ω), coupling constant relations from superconvergence relations for, 22:34972
interactions anti N + N → π, axial vector renormalization and Goldberger--Treiman relation for, 22:7498
interactions anti N + N → Y + anti Y at high energies in O(3,1) symmetry, 22:34975
interactions anti N + N → Y + anti Y, conspiracy relation for, 22:29686
interactions anti N + N at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti N + N at 2.6 GeV/c, two-pion-exchange contributions to, 22:46467
interactions anti N + N at high energies, multiple-scattering corrections in quark model for, 22:50366
interactions anti N + N at high energies, Regge pole model for forward charge exchange, (T), 22:13744 (IPNO/TH-108)
interactions anti N + N at high energies, review of multiple production in annihilation, (E), 22:39253(T) (ORNL-tr-1538-A)
interactions anti N + N at high energies, rho' conspiracy for forward charge-exchange, 22:20277
interactions anti N + N to 300 MeV, OBE potential models for, 22:26644
interactions anti N + N, asymptotic behavior of amplitudes for, 22:37167
interactions anti N + N, comparison between on-shell and off-shell calculations for, 22:3456
interactions anti N + N, confluence of Regge trajectories and SU(2)/sub W/ symmetry for, 22:9660
interactions anti N + N, exchange degeneracy and backward superconvergence in, 22:39381
interactions anti N + N, expansion of partial wave amplitudes for, 22:48375
interactions anti N + N, isospin dependence of cross sections for annihilation, (T), 22:24641
interactions anti N + N, O(4) formalism for off-shell, 22:46408
interactions anti N + N, poles in amplitude of, 22:41757
interactions anti N + N, saturation of superconvergence sum rules for, 22:22389
interactions anti N + N, superconvergence sum rules for amplitude of, 22:7499
interactions anti N + N, tests of basic assumptions of complex angular momentum method for helicity amplitudes of, 22:9578
interactions anti N + N, unitary restrictions on dynamical groups for amplitude of, 22:13829
interactions anti ν + N → l^+ + N + π, cross sections for, (T), 22:44393
interactions anti ν + N → l^+ + N, cross sections for, (T), 22:44393
interactions anti ν + N → Δ(1236) + l, differential cross section for lepton polarization in, 22:3358
interactions anti ν + N → N + μ, coupling of nucleonic and muonic currents in, (T), 22:26622
interactions anti p + N at 3 GeV/c in emulsions, K and π emission in annihilation, (E), 22:46332
interactions anti p + N at 5 GeV/c in emulsions, preliminary results for, (E), 22:39261
interactions at 20 to 100 MeV, equations for three-body, (T), 22:7637(R) (COO-1573-33)
interactions at high energies, dynamical statistical model for elastic, 22:1452
interactions at low energies, phase-shift analysis of high-precision (p,p) polarization data at 19.7 MeV for, 22:3256
interactions e + N → Δ(1236), dispersion relations solution for, 22:3328
interactions e + N → e + N + π + π using current algebra and PCAC method, measurement of nucleon axial-vector form factor from, 22:34903
interactions e + N → e + N + π, at threshold energy, current algebra and PCAC hypothesis for, 22:50331
interactions e + N → e + N + π, dispersion relation theory of π production in, 22:24604

interactions e + N → e + π + N, reconstruction scheme for amplitude of, 22:13702
interactions e + N → Λ + K, use of current algebra and PCAC hypothesis for amplitudes of, 22:15715
interactions e + N → N*, form factors and vertex amplitudes for, (T), 22:5534
interactions e + N → π + N at high energies and large momentum transfers, (T), 22:5539
interactions e + N → π + N at low energies, dispersion theory of low-energy limits for, 22:46436
interactions e + N → Σ + K, use of current algebra and PCAC hypothesis for amplitudes of, 22:15715
interactions e + N at high energies and large momentum transfer, one-particle-exchange diagrams for π production from, (T), 22:11628
interactions e + N at high energies, inelastic, (T), 22:22343 (CONF-670923-, pp 109-27)
interactions e + N at high energies, review of experiments on inelastic, 22:22271 (CONF-670923-, pp 128-55)
interactions e + N below 6 GeV, review of experiments on nucleon form factor from, 22:22269 (CONF-670923-, pp 59-77)
interactions e + N up to 2 GeV, installation for analysis of, 22:44567
interactions e + N, asymptotic behavior of N* production in, 22:39319
interactions e + N, effect of electromagnetic structure of nucleons on equivalent photon spectrum for peripheral, 22:26598
interactions e + N, electromagnetic form factors from elastic, 22:3326
interactions e + N, form factors and vertex amplitudes for elastic, (T), 22:5534
interactions e + N, inelastic form factors for nucleon resonance production in, (T), 22:22356
interactions e + N, kinematics and saturation of sum rules for inelastic, 22:22352
interactions e + N, model dependence of form factors for inelastic, (T), 22:39715
interactions e + N, model for excitation of nucleon from, 22:3334
interactions e + N, model for excitation of nucleons in, 22:26596
interactions e + N, nucleon electromagnetic form factors for, 22:46362
interactions e + N, nucleon electromagnetic structure determination from, (T), 22:13718
interactions e + N, nucleon electromagnetic structure from, (T), 22:17900
interactions e + N, π production and form factors from, 22:3326
interactions e + N, quantum electrodynamics test from elastic, 22:5636
interactions e + N, review of nucleon structure from experiments on, 22:22272 (CONF-670923-, pp 156-95)
interactions e + N, review of π production from, 22:1403 (SLAC-PUB-355)
interactions e + N, SU(6)/sub W/ symmetry for higher baryon resonance production in, 22:35058
interactions e + N, superconvergence and current algebra for production amplitude of, 22:50176
interactions γ + N → Δ (1920) → rho^0 + N in vector-meson dominance model, cross sections for, 22:50325
interactions γ + N → Δ(1236), dispersion relations solution for, 22:3328
interactions γ + N → Δ(2420) → rho^0 + N in vector-meson dominance model, cross sections for, 22:50325
interactions γ + N → eta + N at high energies, Regge pole model for eta production in, 22:24607
interactions γ + N → eta + N, phase shift analysis for, 22:1404 (TH-177)
interactions γ + N → γ + N in s- and u-channel, contribution to amplitude for baryon resonance production, (T), 22:22357
interactions γ + N → γ + N, method for derivation of low-energy theorem from amplitude of Compton, 22:44364
interactions γ + N → γ + N, π^0 → 2γ and eta^0 → 2γ decay rates from superconvergence relations of Compton, (T), 22:34907
interactions γ + N → K + Λ (Σ), photon--vector meson analogy model for anti K + N → vector meson + Λ (Σ) relation with, 22:46366
interactions γ + N → Λ + K, use of current algebra and PCAC hypothesis for amplitude of, 22:15715
interactions γ + N → N + 2π, use of PCAC hypothesis and current commutation relations for multiple soft-pion production in, (T), 22:44359
interactions γ + N → N + ω^0, use of linearly polarized photons as parity filter in, 22:37106
interactions γ + N → N + π at low energies, current commutators and mass extrapolation theory for parameters of multipole amplitudes of, 22:39330
interactions γ + N → N + π, current algebra study of low-energy behavior of amplitudes for, 22:9550
interactions γ + N → N + π, currents and current commutators for amplitude of, 22:11706
interactions γ + N → N + π, model for N* production in, 22:3451
interactions γ + N → N + π, nucleon magnetic moment relations from modified PCAC hypothesis for, (T), 22:44358
interactions γ + N → N + π, rho--π--γ vertex calculation from modified PCAC hypothesis for, 22:37121
interactions γ + N → N + π, sum rule for π form factor from, 22:34927
interactions γ + N → N + rho^0, use of linearly polarized photons as parity filter in, 22:37106
interactions γ + N → N + vector mesons, quark model for, 22:20184
interactions γ + N → N* + π^0, test for Regge cuts in angular momentum plane from, (T), 22:22354
interactions γ + N → N*, form factor for γNN* vertex from, 22:26607
interactions γ + N → π + Δ(1236) below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions γ + N → π + Δ(1236), production and decay angular distributions for, (T), 22:7468 (UCRL-17867)
interactions γ + N → π + N + γ + γ, perturbation theory for, 22:39335
interactions γ + N → π + N + γ, perturbation theory for, 22:39335
interactions γ + N → π + N at high energies in O(4) symmetry, conspiracy of Regge poles in, 22:3336
interactions γ + N → π + N at low energies, dispersion theory of low-energy limits for, 22:46436
interactions γ + N → π + N below 6 GeV, models for, (E), 22:22345 (CONF-670923-, pp 337-75)
interactions γ + N → π + N, A-dominance model for, 22:7473
interactions γ + N → π + N, conspiracy test in, 22:5540
interactions γ + N → π + N, dispersion relation theory of π production in, 22:24604
interactions γ + N → π + N, dynamical models for superconvergence sum rules for, 22:39458
interactions γ + N → π + N, finite-energy sum rules and ω Regge pole residue functions for, 22:34898 (NP-17489)
interactions γ + N → π + N, generalized dispersion sum rules for A_2 trajectory and residue function in, 22:44381
interactions γ + N → π + N, kinematic constraints on Regge-pole residues in, 22:11683
interactions γ + N → π + N, method for deriving angular correlations for, 22:41774 (NP-17531)
interactions γ + N → π + N, photon--vector-meson analog model for relations between π + N → rho + N interactions and, 22:39323
interactions γ + N → π + N, pole terms in fixed angle approach for, 22:3325
interactions γ + N → π + N, unitarity condition for matrix elements for, 22:35154
interactions γ + N → π + N, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)
interactions γ + N → π + N, vector dominance in, (T), 22:32085
interactions γ + N → π + N*, low-energy theorem from current algebra for, 22:11620
interactions γ + N → π^0 + N at high energies, test of Regge pole hypothesis from π^0 production from, 22:1414
interactions γ + N → π^0 + N, ω Regge residue functions and finite-energy sum rules for, 22:34921
interactions γ + N → π^0 + N, test for Regge cuts in angular momentum plane from, (T), 22:22354
interactions γ + N → π^+ + n at 2 to 4 GeV, absorption correction in, (T), 22:41776
interactions γ + N → π^+ + N at high energies, π conspiracy residues and trajectories in, 22:37100 (IC-68/40)
interactions γ + N → Σ + K, use of current algebra and PCAC hypothesis for amplitudes of, 22:15715
interactions γ + N → vector meson + Δ(1236), photon--vector meson analogy model for π + N → π + Δ(1236) interactions relation with, 22:46366
interactions γ + N → vector meson + N, conspiracy relations in Regge-pole theory for, 22:34922
interactions γ + N → vector mesons + N in Regge pole theory, kinematic singularities and zeros for, (T), 22:44356
interactions γ + N at 1 to 3 GeV, angular distributions for forward π^+ production, (T), 22:20193
interactions γ + N at 6 GeV, angular-defining counter study of wide-angle μ pair production in, (E), 22:22276 (CONF-670923-, pp 409-51)
interactions γ + n at 60 to 750 MeV, differential cross section for Compton, 22:13705
interactions γ + N at 60 to 750 MeV, nucleon electromagnetic structure from Compton, 22:13705
interactions γ + N at high energies and small momentum transfer, SU(3) symmetry and Regge pole model for pseudoscalar and neutral vector meson production in, 22:48347
interactions γ + N at high energies, sum rules in vector dominance model for vector meson production in, 22:46357 (JINR-E2-3926)
interactions γ + N at high energies, sum rules in vector dominance model for integral of total cross section relation with meson--nucleon interactions, 22:46357 (JINR-E2-3926)
interactions γ + N at high energies, test of CP violation in γ → 2γ transitions in pair production in, (T), 22:24699
interactions γ + N at high energies, test of cross section sum rules for nucleon magnetic moments from

forward Compton, (T), 22:22347 (JINR-E2-3715)
interactions γ + N at low energies, dispersion relation-calculation of scattering amplitude for Compton, 22:20188
interactions γ + N at low energies, equal-time commutation relations and PCAC for total amplitude of 2π production in, 22:29666
interactions γ + N below 1.5 GeV, review of experiments and theory for single π production in, 22:32089
interactions γ + N in O(3,1) symmetry, high-energy behavior of forward Compton, 22:24705
interactions γ + N in Regge pole theory, cross-section relations for π, eta, and K production in, 22:17905
interactions γ + N, angular correlations for pseudoscalar meson production in, (T), 22:24579
interactions γ + N, conspiracy relations for, 22:44406
interactions γ + N, contribution from Compton graph to cross section for lepton pair production in, (T), 22:24588
interactions γ + N, dispersion relation calculation of Δ(1236) resonant partial amplitude for π production in, 22:34906
interactions γ + N, dispersion sum rules in static model for virtual π production from, (T), 22:1449
interactions γ + N, Drell--Herne--Gerasimov sum rules for absorption, 22:3333
interactions γ + N, equal-time commutators of current operators in renormalized perturbation theory for, 22:39332
interactions γ + N, finite-energy sum rules for Compton, 22:26603
interactions γ + N, gauge-invariance constraints on Regge amplitude for π production in, 22:22365
interactions γ + N, generalized Ward--Takahashi identities and current algebra for soft meson production from, 22:13681
interactions γ + N, higher-order low-energy theorems for Compton, 22:26595
interactions γ + N, invariant amplitudes for Compton, (T), 22:50340
interactions γ + N, invariant amplitudes for π production, (T), 22:50340
interactions γ + N, low-energy theorems and invariant amplitudes for Compton, 22:50324
interactions γ + N, low-energy theorems for amplitudes of forward Compton, 22:46358
interactions γ + N, low-energy theorems for Compton, 22:15725
interactions γ + N, low-energy theorems for Compton, 22:34905
interactions γ + N, low-energy theorems in S-matrix theory for π production in, 22:34930
interactions γ + N, low-energy theorems to e^4 order for Compton, 22:48272
interactions γ + N, particle interaction constants from amplitudes of, (T), 22:13698
interactions γ + N, polarization effects in ω^0 production in, 22:15726
interactions γ + N, π conspiracy and residue from finite-energy sum rule for π production in, 22:44365
interactions γ + N, quark model for pseudoscalar meson production from, 22:32125
interactions γ + N, quark model for π production in, 22:50336
interactions γ + N, reconstruction of matrix amplitudes for forward, 22:20245
interactions γ + N, Regge pole conspiracy in π^- and π^+ production in, 22:20197
interactions γ + N, review of experimental data for SU(3) symmetry predictions for neutral vector and pseudoscalar mesons production in, 22:37175 (CONF-670725-, pp 56-73)
interactions γ + N, review of forward peak in inelastic, 22:39265 (CERN-68-7(Vol.1), pp 60-110)
interactions γ + N, review of π and vector meson production from, 22:15713 (DESY-67/43)
interactions γ + N, review of π production from, 22:1403 (SLAC-PUB-355)
interactions γ + N, rho dominance hypothesis for Compton, 22:46358
interactions γ + N, SU(3) symmetry and Regge pole model for meson production with baryon resonances in, 22:48347
interactions γ + N, sum rules for amplitude of Compton, 22:34925
interactions γ + N, sum rules for Compton effect amplitudes for, 22:13700
interactions γ + N, sum rules relating anomalous nucleon magnetic moment and amplitude for π production in, 22:37103
interactions γ + N, superconvergence and current algebra for production amplitude of, 22:20176
interactions γ + N, superconvergence and current algebra relations for Compton, 22:34931
interactions γ + N, superconvergent sum rules for eta^0 production in, 22:50323
interactions γ + N, test of cross-section sum rules for nucleon magnetic moments from, 22:37101
interactions γ + N, test of vector dominance model from π^+ and π^- production in, 22:52964 (DESY-68/44)
interactions γ + N, validity of sum rules and high energy theorem for, 22:9605
interactions γ + N, vector dominance model with polarization for amplitudes of, 22:24582 (DESY-68/4)
interactions in air, mean free path of, (T), 22:2830
interactions in EAS at 10^{13} to 10^{15} eV, analysis of gamma production process in, 22:21922
interactions in nuclear matter, (T), 22:27293
interactions in nuclear matter, empirical model for, 22:3749 (INP-555/PL/PH, pp 137-45)
interactions in nuclear matter, four-body, (T), 22:7749
interactions in nuclear matter, three-body correlations in reaction-matrix calculations, (T), 22:9972
interactions in nuclei, generalized seniority breaking of two-body, 22:24892 (IPNO/TH-121)
interactions in nuclei, isospin and number-conserving formalism for pairing, (T), 22:14071 (IPNO/TH-110)
interactions in nuclei, pairing approximation for, (T), 22:7751
interactions in nuclei, pairing, (T), 22:3798
interactions in nuclei, pairing, (T), 22:1741
interactions in nuclei, pairing, (T), 22:11944(R) (AECL-2780)
interactions in nuclei, repulsive potential for, (T), 22:5878
interactions in nuclei, SU(3) matrix elements for, 22:26679 (NP-17357)
interactions in odd-parity spin triplet states, separable non-local two-nucleon potential for, (T), 22:1728
interactions in three-body systems, (T), 22:20770
interactions in three-body systems, research program on, (E), 22:39636(R) (ORO-3398-12)
interactions in three-body systems, tensor force for, (T), 22:44756
interactions K + N → K + N, factorized Regge amplitudes for superconvergence relations for, 22:34990
interactions K + N → K + N, finite-energy sum rules for crossover problem in, 22:22405
interactions K + N → K + N, finite-energy sum rules for crossover problem in, 22:34982 (NP-17490)
interactions K + N → K + N, superconvergence sum rules for amplitudes of forward elastic, 22:50401
interactions K + N → K + N, superconvergent sum rules for, 22:32161
interactions K + N → K* + Δ, π conspiracy in, 22:5594
interactions K + N → K* + Δ, π trajectory exchange in, 22:11681
interactions K + N → K* + N* at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions K + N → K*(890) + N, B-conspiracy and dips in C = -1 exchange contribution to, 22:26650 (NP-17430)
interactions K + N → vector meson (tensor meson) + N, tests of basic assumptions of complex angular momentum method for, 22:9578
interactions K + N above 5 GeV/c, Regge pole model for, 22:20210 (CERN-67-24(Vol.2))
interactions K + N and anti K + N at low energies, complex singular potential model of, 22:32167
interactions K + N at high energies in Regge-pole model, inconsistency of crossover phenomena for, (T), 22:3310
interactions K + N at high energies, Pomeranchon SU(3) assignment for total cross section of, (T), 22:24653
interactions K + N at high energies, Regge pole model for resonances in, 22:39407(T) (UCRL-Trans-1364)
interactions K + N at high energies, Regge pole model for resonance production from, 22:20244
interactions K + N at low energies, ΛNK and ΣNK coupling constants from sum rules for, 22:15800
interactions K + N at low energies, model for, 22:22409
interactions K + N at low energies, model with effective Lagrangian and vector boson exchange for, 22:13769
interactions K + N at low energies, properties of P and P' trajectories from amplitudes of elastic, 22:41818
interactions K + N in Regge pole model, superconvergence sum rules for, 22:13761
interactions K + N, amplitude superconvergence calculations using perturbation theory and Lee model, 22:50405
interactions K + N, coupling constants from forward dispersion relations for, 22:29698 (AECD/TP-22)
interactions K + N, current commutators and mass extrapolations for s- and p-wave amplitudes of, 22:44441
interactions K + N, currents and current commutators for scattering lengths and low-energy parameters for, 22:11706
interactions K + N, determination of NΛK and NΣK coupling constants from forward dispersion relations for, (T), 22:1448
interactions K + N, finite-energy sum rules from phase shift analysis of, 22:26659
interactions K + N, forward dispersion relations for NKΣ coupling constant for, 22:17963
interactions K + N, K_2^0 → K_1^0 regeneration at high energies for strange baryon resonances in, (T), 22:34932 (JINR-P1-3788)
interactions K + N, KΛN coupling constants from dispersion relations for, 22:1441
interactions K + N, modified dispersion relations for KNΛ and KNΣ coupling constants for, 22:20257
interactions K + N, partial wave analysis for baryon

resonance production in, 22:48313 (CERN-68-23(Vol.2), pp 431-96)
interactions K + N, pΛK and pΣK coupling constants from forward dispersion relations for, 22:9595
interactions K + N, quark model for elastic and inelastic charge-exchange, 22:3419
interactions K + N, Regge amplitude and superconvergence relation for, 22:46450
interactions K + N, Regge-pole parameters from superconvergence relations for, 22:3425
interactions K + N, relations between spin density matrix elements for production of vector and tensor mesons in, (T), 22:37155
interactions K + N, review of forward peak in inelastic, 22:39265 (CERN-68-7(Vol.1), pp 60-110)
interactions K + N, SU(6) invariance in S-wave, 22:48348
interactions K + N, SU(6) invariance model for s-wave, 22:34994
interactions K + N, superconvergence sum rules for combination of elastic π + N, π + π, π + K, and, 22:48297
interactions K + N, tabulation of kinematic quantities for, (E), 22:17858
interactions K + N, unsubtracted dispersion sum rules for, (T), 22:39409
interactions K + N, use of continuous moment sum rule for analysis of Regge-pole parameters for, 22:48321
interactions K^- + N → Λ + π at 1660 to 2215 MeV, partial-wave analysis of Σ(1910) and Σ(2035) production in, (E/T), 22:34854
interactions K^- + N → Λ + π^- + π^0, Σ(1660) production and sequential decay from, (E), 22:48231
interactions K^- + N → Y + meson at 2.24 and 3.00 GeV/c, quark model for amplitudes of, 22:22395
interactions K^- + N at high energies in bubble chamber, (E), 22:34849(R) (NYO-3178-5)
interactions K^+ + N at low energies, Pomeranchuk trajectory for amplitudes of, 22:35151
interactions K^- + N, cross sections for elastic and charge-exchange, 22:17871
interactions K^+ + N, cross sections for elastic, (E), 22:17871
interactions K^+ + N, finite-energy sum rules from phase shift analysis of, 22:26659
interactions K^- + N, finite-energy sum rules from phase shift analysis of, 22:26659
interactions K^+ + N, SU(3) symmetry predictions for, 22:20142
interactions Λ + N → N + N weak and strong interaction amplitudes for, 22:5548
interactions Λ + N in hypernuclei, (T), 22:17973
interactions Λ + N in hypernuclei, energy-dependent potential for, (T), 22:37286
interactions Λ + N in light hypernuclei, (E/T), 22:24526
interactions Λ + N in Λ-He^6--Λ-Li^6 isodoublet, 2π exchange int, (T), 22:39435
interactions Λ + N in ΛΛ--Be^{11}, 2π and K ranges for, (T), 22:5602
interactions Λ + N in nuclear matter, (T), 22:24687
interactions Λ + N in nuclear matter, potentials for, 22:52991
interactions Λ + N, effect on nonmesic decay of light hypernuclei, (T), 22:52992
interactions Λ + N, OBE model for, 22:24682
interactions Λ + N, potentials for, (T), 22:13927(R) (USC-136-132)
interactions Λ + N, potentials from s-shell hyperfragments, (E/T), 22:14105
interactions Λ + Σ at low energies, scattering lengths and phase shifts for, (T), 22:5605
interactions μ + N at high energies, inelastic, (T), 22:22343 (CONF-670923-, pp 109-27)
interactions μ + N, quantum electrodynamics test from elastic, 22:5636
interactions N + anti N* → π + π, superconvergence sum rules for, 22:29694
interactions n + d at low energies, review of nonrelativistic theory for, 22:22415
interactions N + d in GeV region, dispersive impulse approximation for elastic, 22:46473
interactions N + d, capture cross sections for, 22:5140
interactions N + d, elastic and inelastic, (T), 22:27291
interactions N + d, solution of Faddeev equations for, 22:9621
interactions N + meson → N + meson, model for N* production in, 22:3451
interactions N + N → Δ(1236) + Δ(1236), contribution to N--N potential in zero-parameter model, 22:46469
interactions N + N → N + Δ in Regge pole model, π conspiracy in, 22:39369
interactions N + N → N + Δ, production mechanisms of, (T), 22:37155
interactions N + N → N + Δ, production mechanisms of, (T), 22:37155
interactions N + N → N + Δ(1236), contribution to N--N potential in zero-parameter model, 22:46469
interactions N + N → N + N + γ, general form of amplitude of bremsstrahlung production in, (T), 22:39425 (JINR-P2-3803)
interactions N + N → N + N + γ, Low approximation for bremsstrahlung production in, 22:39426 (JINR-P2-3830)
interactions N + N → N + N + π at high energies, formulas for phase shift analysis of, 22:35021
interactions N + N → N + N + π near threshold, soft-pion calculation of, 22:41828
interactions N + N → N + N + rho, absorption peripheral model for, (T), 22:5606
interactions N + N → N + N + W, peripheral one-pion model for cross sections for, 22:35011
interactions N + N → N + N at 0 to 400 MeV, one-meson-exchange potentials for phase shift analysis for, 22:11694
interactions N + N → N + N at 23 to 630 MeV, calculation of amplitudes in T = 0 and T = 1 states for, 22:20272 (JINR-P1-3702)
interactions N + N → N + N at high energies, formulas for phase shift analysis of, 22:35021
interactions N + N → N + N at low energies, relation with high-energy phenomena in theory for, 22:35013
interactions N + N → N + N below 3.0 MeV, theory for one- and two-pion exchange in, 22:39430
interactions N + N → N + N in Regge pole theory, 22:20353
interactions N + N → N + N, dispersion theoretic calculation of two-π exchange effects on amplitudes of forward, 22:39383
interactions N + N → N + N, Lorentz pole and kinematic constraints on helicity amplitudes for, 22:26640
interactions N + N → N + N, modified Born approximation for, 22:44453
interactions N + N → N + N, polarization experiments for T invariance test in, 22:24707 (JINR-P2-3716)
interactions N + N → N + N, strong coupling field mescn theory for phase shift calculations for, 22:29715 (DESY-68/9)
interactions N + N → N + N, tests of basic assumptions of complex angular momentum method for helicity amplitudes of, 22:9578
interactions N + N → N + N, unitarization of Born approximation for, 22:46543
interactions N + N → N + N, velocity-dependent boson exchange potentials in Born approximation for, 22:3467
interactions N + N → N* + N* at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions N + N → π + d at high energies, formulas for phase shift analysis of, 22:35021
interactions N + N above 200 GeV in emulsions, review of multiple production from, 22:9509 (INR-P-826/VI/PH)
interactions N + N above 5 GeV/c, Regge pole model for, 22:20210 (CERN-67-24(Vol.2))
interactions N + N and electromagnetic form factors, O(4,2) model of baryons for, 22:46466
interactions N + N at 0 to 300 MeV, unitary scattering amplitudes for, (T), 22:7637(R) (COO-1573-33)
interactions N + N at 0.17 to 310 MeV, soft-core potentials for, (T), 22:20754
interactions N + N at 100 keV to 1 GeV, bibliography on, (E/T), 22:52937 (LA-4002)
interactions N + N at 1000 TeV in emulsions, inelasticity of jets in, (E), 22:29622
interactions N + N at 2.6 GeV/c, two-pion-exchange contributions to, 22:46467
interactions N + N at 20 MeV, phase-shift analysis using r-criterion for testing phase-shift sets, (T), 22:42098 (JINR-E1-3899)
interactions N + N at 210 MeV, phase-shift analysis of, (T), 22:24681
interactions N + N at 25 to 350 MeV, description using one-boson-exchange potentials with higher-order momentum-dependent terms, (T), 22:9967
interactions N + N at 310 to 740 MeV, review of experiments on polarization from, (E), 22:13646 (UCRL-17408(Rev.))
interactions N + N at 400 GeV, Wilson chamber and ionization calorimeter study of, (E), 22:15672
interactions N + N at 630 MeV, method for discriminating statistical hypotheses at close values of chi^2 for phase shift analysis of, 22:24678
interactions N + N at 630 MeV, phase shift analysis of, 22:39434
interactions N + N at 630 MeV, phase shift analysis for, 22:5598 (JINR-P1-3525)
interactions N + N at high energies in emulsions, multiplicity and angular distribution of secondaries in, (T), 22:32060
interactions N + N at high energies in Regge-pole model, inconsistency of crossover phenomena for, (T), 22:3310
interactions N + N at high energies with large momentum transfer, chiral SU(2) x SU(2) symmetry for, 22:35015
interactions N + N at high energies, asymptotic behavior of amplitudes for forward elastic, 22:29718
interactions N + N at high energies, dynamics from four-momentum transfer in, 22:46460
interactions N + N at high energies, extended structure theory for form factors for, 22:17941
interactions N + N at high energies, multiple-scattering corrections in quark model for, 22:50366
interactions N + N at high energies, quark model for, 22:39367
interactions N + N at high energies, Regge pole model for forward, (T), 22:13744 (IPNO/TH-108)
interactions N + N at high energies, Regge pole theory

and exchange degeneracy for cross section relations with meson--nucleon interactions, 22:46535 (JINR-P2-3944)
interactions N + N at high energies, rho' conspiracy for forward charge-exchange, 22:20277
interactions N + N at high energies, statistical model for π shower production in, 22:39427
interactions N + N at high energies, summation of asymptotics of amplitudes for, 22:46531 (JINR-E2-3917)
interactions N + N at high energies, transversity amplitudes for polarization parameters and resonance decay distributions for, (T), 22:20273
interactions N + N at low energies, charge independence of, 22:52994
interactions N + N at low energies, effective range approximation for Hulthen and Morse potentials for, 22:22416
interactions N + N at low energies, formulas for polarized scattering for phase-shift analysis of, (T), 22:52993
interactions N + N at low energies, Pomeranchuk trajectory for amplitudes of, 22:35151
interactions N + N at low energies, review of resonance production in, 22:32151
interactions N + N at low energies, three-body formalism for, 22:5604
interactions N + N at low energies, two-pion exchange contribution to potential for, 22:1453
interactions N + N at very high energies, model for propagation of cosmic radiation through atmosphere from, 22:46464
interactions N + N below 330 MeV, one-boson-exchange potentials for, (T), 22:27286
interactions N + N below 350 MeV in nuclei, separable potential for, 22:7527
interactions N + N in cascade theory calculations for particle reactions with nuclei at high energies, method for sampling inelastic, 22:7525 (JINR-P2-3561)
interactions N + N in cosmic nucleus--nucleus peripheral collisions in emulsions, resonance production from, (E), 22:15671 (INR-P-816/VI/PH)
interactions N + N in deuterium (p,2p) and helium-3 (p,d) reactions, final-state, (E), 22:26810
interactions N + N in finite nuclei, effective, (T), 22:27310
interactions N + N in intermediate region, three-pion-exchange effects in, 22:13774
interactions N + N in many-body systems, scattering formalism for, (T), 22:14109
interactions N + N in many-body systems, time-retarded, (T), 22:14103
interactions N + N in nuclear emulsions, nucleon isobar production in, 22:24533
interactions N + N in nuclear many-fermion systems, meson theory for, 22:11979 (IPNO/TH-100)
interactions N + N in nuclear matter, hard core in two-body potential for, (T), 22:27249
interactions N + N in nuclear matter, nonlocal separable potential for, (T), 22:35398
interactions N + N in nuclei, boundary-condition model of, (T), 22:27285
interactions N + N in nuclei, determination of two-body potentials for, (T), 22:39699
interactions N + N in nuclei, effective, (T), 22:27312
interactions N + N in nuclei, electron and proton scattering by nuclei for correlations in, (E/T), 22:5499 (INP-567/PL/PH)
interactions N + N in nuclei, equivalent nonlocal potentials for, (T), 22:26855
interactions N + N in nuclei, gauge invariance of, (T), 22:27313
interactions N + N in nuclei, Hamiltonian operator for velocity-dependent, (T), 22:42107
interactions N + N in nuclei, intranuclear cascades with many-particle interactions from, (T), 22:37164
interactions N + N in nuclei, isospin invariance of pairing force Hamiltonian for, (T), 22:37391
interactions N + N in nuclei, isospin- and number-conserving formalism for pairing, (T), 22:30073
interactions N + N in nuclei, nonstatic potentials for, (T), 22:44793
interactions N + N in nuclei, off-energy-shell t-matrix elements for local potentials with hard cores, (T), 22:42108
interactions N + N in nuclei, pairing, (T), 22:18320
interactions N + N in nuclei, phenomenological potentials for, (T), 22:39703
interactions N + N in nuclei, phenomenological potential parameters for, (T), 22:32713
interactions N + N in nuclei, potential models for, (T), 22:32716
interactions N + N in nuclei, properties of many-particle interactions from cascade calculations and, 22:29700(T) (ORNL-tr-1800)
interactions N + N in nuclei, π and meson resonance exchange contribution to nuclear forces in, 22:39431
interactions N + N in nuclei, realistic one-boson-exchange potentials for, (T), 22:53248
interactions N + N in nuclei, realistic potentials for, (T), 22:32720
interactions N + N in nuclei, realistic potentials for, (T), 22:32714
interactions N + N in nuclei, repulsive core in, (T), 22:27284
interactions N + N in nuclei, search for weak, (E), 22:27226
interactions N + N in nuclei, separable potentials for, (T), 22:5809(R) (ANL-7354)
interactions N + N in nuclei, separable potentials for, (T), 22:5758
interactions N + N in nuclei, soft-core Hamada--Johnston potential for, (T), 22:44801
interactions N + N in nuclei, soft-core potential for, (T), 22:3682
interactions N + N in nuclei, spin-orbit potential from cluster model for light nuclei, (T), 22:1704 (BMwF-FBK-67-69)
interactions N + N in nuclei, velocity-dependent potentials for, (T), 22:11981
interactions N + N in Regge pole theory, contribution of two-rho cuts to partial-wave amplitude for, 22:13776
interactions N + N in three-body systems, potentials for, (T), 22:39731
interactions N + N in three-body systems, separable nonlocal hard-core potential for, (T), 22:20771
interactions N + N to 350 MeV, phenomenological phase-parameter fits to, 22:15817
interactions N + N with large momentum transfer, Serber model for, (T), 22:1451
interactions N + N, analytic helicity amplitudes and Regge-pole formulas for differential cross sections for, 22:3448
interactions N + N, analytic properties of Feynman diagrams in quantum field theory for, 22:20218
interactions N + N, analyticity properties and asymptotic behavior of partial-wave amplitudes of, 22:20276
interactions N + N, asymptotic behavior of amplitudes for, 22:37167
interactions N + N, boson-exchange in, (T), 22:17977
interactions N + N, bound on double spectral function for class of Yukawian potentials for, 22:1455
interactions N + N, bounds on πN coupling constant for ghosts in amplitudes for, 22:44439
interactions N + N, comparison between on-shell and off-shell calculations for, 22:3456
interactions N + N, conservation laws for intranuclear cascade calculation for nucleon reactions with nuclei from inelastic, 22:22410 (JINR-P4-3714)
interactions N + N, criterion for weak perturbing systems for elastic, 22:13865
interactions N + N, determination of potentials from partial-wave amplitudes for, 22:9708
interactions N + N, determination of scattering lengths using Watson-Migdal theory of final-state interactions, (T), 22:35366 (ORNL-4217, pp 82-95)
interactions N + N, effect of second-class currents on weak, 22:26670
interactions N + N, effective potential for Hartree--Fock calculations, (T), 22:32718
interactions N + N, electromagnetic effects of, 22:48258
interactions N + N, experiment on weak, (E), 22:35311
interactions N + N, Feynman diagrams for unitary representations of SL(2,C) symmetry for, 22:20284
interactions N + N, field-theoretical potentials for, (T), 22:20755
interactions N + N, formulation of potentials using meson theory, (T), 22:30092
interactions N + N, internucleon potential with parity nonpreservation for weak, 22:13816
interactions N + N, kinematic singularities of transversity amplitudes of, 22:41874
interactions N + N, Levinson theorem and N/D method for partial-wave amplitudes of, 22:20275
interactions N + N, Lorentz group representations for amplitude expansion at vanishing four-momentum transfer in, 22:15794
interactions N + N, meson exchange in, (T), 22:53245
interactions N + N, meson--nucleon coupling constants from forward dispersion relations for, 22:24683
interactions N + N, numerical evaluation of separable potentials for singlet and triplet partial waves of, 22:24676 (LA-DC-8138)
interactions N + N, O(4) symmetry for Regge poles in, 22:39464
interactions N + N, off-shell perturbative method and on-shell Dashen--Frautschi method for scattering-length shifts for, 22:15818
interactions N + N, one-boson exchange model, review of, (T), 22:11994
interactions N + N, one-boson-exchange potential for, 22:9624
interactions N + N, one-boson-exchange potentials for, (T), 22:27281
interactions N + N, one-boson-exchange potentials for, (T), 22:27283
interactions N + N, one-pion-exchange contribution to weak parity violating potential for, 22:13777
interactions N + N, pairing Hamiltonian for, (T), 22:30075
interactions N + N, parity-violating potential for, 22:24680
interactions N + N, parity-violating potential for, 22:50418

interactions N + N, partial-wave spinor amplitudes for, 22:48374
interactions N + N, pole models for, (T), 22:20751
interactions N + N, potential formulation using Coulomb T-matrix, (T), 22:37287
interactions N + N, potentials for many-body bound states, (T), 22:39730
interactions N + N, potentials for, (T), 22:17977
interactions N + N, properties of velocity-dependent potentials for, 22:17975
interactions N + N, quark model for elastic and inelastic charge-exchange, 22:3419
interactions N + N, quark-model inequality for total cross sections for, 22:24688
interactions N + N, reconstruction of matrix amplitudes for forward, 22:20245
interactions N + N, regression and discriminating experiments for, (T), 22:5607
interactions N + N, relation between high- and low-energy phenomena in elastic, (T), 22:26667 (LYCEN-6801)
interactions N + N, review of dispersion relations in, (T), 22:11995
interactions N + N, saturation of sum rules from current algebra and Schwinger terms in quark model for, 22:24679
interactions N + N, scattering matrix from p + p interactions at 350 to 750 MeV, 22:35014
interactions N + N, scattering matrix from p + p interactions at 0 to 400 MeV, 22:35003
interactions N + N, separable potential for, (T), 22:44762
interactions N + N, short- and long-range charge independence in, 22:37165
interactions N + N, short-wave repulsion in, 22:35022
interactions N + N, soft-core and spin-orbit potentials for, (T), 22:14067(R) (BMwF-FBK-67-81)
interactions N + N, soft-core Morse potential and velocity-dependent potentials for, (T), 22:9971
interactions N + N, soft-photon theory of bremsstrahlung production in, 22:37116
interactions N + N, solution of Lovelace--Faddeev equations for local potential, (T), 22:27290
interactions N + N, spin correlation tensor for polarized, (T), 22:11692
interactions N + N, spin-dependent effects in, (T), 22:7505 (UCRL-17903)
interactions N + N, status of experimental studies on, (E), 22:11996
interactions N + N, sum rules connecting multipion production cross sections for, 22:7512
interactions N + N, tabulation of kinematic quantities for, (E), 22:17858
interactions N + N, test for Regge cuts in amplitudes for, (T), 22:44456
interactions N + N, test of quark-model predictions for infinite-energy cross sections for, 22:34948
interactions N + N, tests for Regge cuts in, 22:5608
interactions N + N, theory of, 22:3458
interactions N + N, transformation from O(3) to O(2,1) bases in SL(2,C) for forward, 22:15831
interactions N + N, use of πN and ππ interaction parameters for amplitudes of, 22:1456
interactions N + N, velocity-dependent potential for, (T), 22:20487
interactions N + N, velocity-dependent potentials in one-boson exchange formalism, (T), 22:20752
interactions N + N, zero-parameter model of, 22:46469
interactions N + N*, bootstrap models for, 22:32170
interactions N + p at 14.5 and 23.1 MeV, use of polarized proton target for, 22:5501
interactions N* + N, isovector form factor for electromagnetic coupling constant for, 22:15721
interactions ν + N → baryon resonance + μ, baryon resonance → baryon + π, polarization correlations in, 22:26613
interactions ν + N → baryons + μ, polarization correlations in, 22:26613
interactions ν + N → Δ(1236) + l, differential cross section for polarized lepton production in, (E/T), 22:3358
interactions ν + N → Δ(1236) + l, spin-3/2 polarization in, (E/T), 22:3361
interactions ν + N → l^- + N + π, cross sections for, (T), 22:44393
interactions ν + N → l^- + N, cross sections for, (T), 22:44393
interactions ν + N → leptons + hadrons, high-energy behavior of differential cross section of, 22:50348
interactions ν + N → μ + Δ(1236), Feynman diagram calculation for, 22:44398
interactions ν + N → N + μ, coupling of nucleonic and muonic currents in, (T), 22:26622
interactions ν + N underground, sum rules for W effects on μ spectra from, 22:39346
interactions ν + N, saturation of sum rules for, 22:17913
interactions of correlated pairs with π^- in helium-4, (T), 22:1442
interactions of cosmic, at 2 to 3 TeV in emulsions, π^0 production with large energy transfer in, (E), 22:22307
interactions of cosmic, fireball model for, 22:3452 (INP-555/PL/PH, pp 75-8)
interactions of cosmic, in upper atmosphere layers, (E/T), 22:2822
interactions of greater than or equal to 10^{12} eV cosmic, in nuclear emulsions, (E), 22:13269
interactions of primary cosmic, in atmosphere, (T), 22:2824
interactions of very-high-energy, generation of meson clouds in, (T), 22:2837
interactions of, bootstrap theory and axial vector current for matrix element for, 22:24635
interactions of, four-dimensional unitary relativistic Bialynicki--Birula model of amplitude of, 22:13855
interactions of, single attractive and repulsive separable potential for three-body, (T), 22:53242
interactions of, theory for universal primary, 22:7458
interactions of, velocity-dependent potentials for, (T), 22:30062
interactions ω + N, use of helicity amplitudes in superconvergent sum rules for, 22:3423
interactions p + N at 17 and 24 GeV/c in emulsions, velocity-space images for analysis of, (E), 22:22313
interactions p + N at 20 GeV in emulsions, analysis of asymmetric separation of charged secondary particles from, (E), 22:32052
interactions p + N at 600 MeV in nuclei, isobar model for π production and nuclear shape from, (T), 22:24665
interactions p + N at 70 GeV, meson-focusing device for neutrino beam production from, 22:11629 (NP-17198)
interactions π + N → Δ(1236), method for deriving angular correlations for, 22:41774 (NP-17531)
interactions π + N → eta + Δ(1236) in O(3,1) symmetry, 22:24710
interactions π + N → eta + N, factorized Regge amplitudes for superconvergence sum rules for, 22:34990
interactions π + N → eta + N, NNeta coupling constant from dispersion relation for, 22:50395
interactions π + N → eta + N, phase shift analysis for, 22:1404 (TH-177)
interactions π + N → f^0 + Δ, π conspiracy in, 22:5594
interactions π + N → f^0 + Δ, π trajectory exchange in, 22:11681
interactions π + N → f^0 + Δ(1236), distorted-wave one-pion-exchange prediction for, 22:46467
interactions π + N → K + hyperons, kinematic singularities and threshold relations for amplitudes of, 22:35145
interactions π + N → K + Σ, removal of kinematic singularities from amplitudes of, 22:44427
interactions π + N → K + Σ(1660), Σ(1660) production in $\pi^+ + n \to K^+ + (\Sigma\pi)^0$ interactions at 2.5 GeV/c in deuterium bubble chamber for excitation function for, (E), 22:29639
interactions π + N → K + Y, Regge poles and SU(3) for, 22:1439
interactions π + N → N + e^- + e^+, reconstruction scheme for amplitude of, 22:13702
interactions π + N → N + ω, projections on exchanged systems with well-defined quantum numbers for, 22:13758
interactions π + N → N + π, tight coupling in semiclassical theory for, 22:26661
interactions π + N → N + rho, tight coupling in semiclassical theory for, 22:26661
interactions π + N → N, unitary restrictions on dynamical groups for amplitude of, 22:13829
interactions π + N → N*, quark model for cross section of, 22:5574
interactions π + N → N*(1100) at high energies, equivalent-potential method for amplitude of, 22:11668
interactions π + N → N(1525), method for deriving angular correlations for, 22:41774 (NP-17531)
interactions π + N → ω + Δ Regge pole analysis of, 22:9598
interactions π + N → ω + Δ(1236), Lorentz-pole analysis of, 22:39408
interactions π + N → ω + N*, O(3,1) symmetry and Lorentz states of exchange trajectories for, 22:34985
interactions π + N → ω + N*, projections on exchanged systems with well-defined quantum numbers for, 22:13758
interactions π + N → ω (phi) + N* at high energies, quark model for test of additivity from joint decay distributions from, 22:13735
interactions π + N → π + Δ at 8 GeV/c, production mechanisms of, (T), 22:37155
interactions π + N → π + Δ, kinematic singularities and threshold relations for amplitudes of, 22:35145
interactions π + N → π + N at low energies, Pade approximants for phase shifts of, 22:32146
interactions π + N → π + N, analyticity properties of helicity amplitudes of, 22:9580 (CEA-R-3303)
interactions π + N → π + N* below 1 GeV, partial-wave analyses of angular distribution for, 22:1447
interactions π + N → π + N, crossed-channel unitarity for lower bounds on amplitudes of, 22:26647
interactions π + N → π + N, crossing matrices for fundamental triplet of SU(3) summetry for, 22:20291
interactions π + N → π + N, kinematical singularities, crossing matrix, and kinematical constraints, for helicity amplitudes for, 22:29770

interactions π + N → π + N, MacDowell symmetry for kinematic singularities of, 22:15861
interactions π + N → π + N, numerical solution of unitarity—analyticity equations for, 22:29713
interactions π + N → π + N*, multiple-scattering formalism for, 22:48320
interactions π + N → π + N*, U(6,6) symmetry for superconvergent sum rules for, 22:3430
interactions π + N → π + π + N at 1.25 and 1.59 GeV/c, predictions for π as Regge pole and elementary particle for dipion mass near rho region in, 22:17971
interactions π + N → π + π + N in nuclear emulsions, computer program for processing track data for studying, 22:6646
interactions π + N → π + π + N, amplitudes for current algebra production of π + π interactions, 22:29695
interactions π + N → π + π + N, azimuthal dependence of ππ scattering in, 22:9597
interactions π + N → π + π + N, constraints on phase shift analysis from angular distributions from, (T), 22:13766
interactions π + N → π + π + N, current algebra for coupling-constant sum rules in, 22:44436
interactions π + N → π + π + N, peripheral-model determination of ππ phase shifts from, 22:26652
interactions π + N → π + rho + N, Regge-pole exchange model for πrho mass distributions in, 22:20266
interactions π + N → rho + Δ in Regge pole model, π conspiracy in, 22:39369
interactions π + N → rho + Δ, π conspiracy in, 22:5594
interactions π + N → rho + Δ, π trajectory exchange in, 22:11681
interactions π + N → rho + N and π + N → rho + N*, Regge-pole model for pion-exchange, 22:7494
interactions π + N → rho + N in Regge pole model, π conspiracy in, 22:39369
interactions π + N → rho + N* at high energies, quark model for test of additivity from joint decay distributions from, 22:13735
interactions π + N → rho + N, conspiracies for forward, 22:9603
interactions π + N → rho + N, conspiracy equations for, 22:20222 (INP-555/PH, pp 107-14)
interactions π + N → rho + N, forward and near forward limits in Regge pole theory for, 22:37158
interactions π + N → rho + N* in Regge pole model, decay angular correlations for, 22:24661
interactions π + N → rho + N, kinematic constraints on Regge-pole residues in, 22:11683
interactions π + N → rho + N, photon—vector-meson analogy model for relations between γ + N → π + N interactions and, 22:39323
interactions π + N → rho + N, reaction mechanism for rho production in, 22:9611
interactions π + N → rho + N, vector dominance hypothesis and Regge pole exchange for, 22:48273
interactions π + N → rho + N*, O(3,1) symmetry and Lorentz states of exchanged trajectories for, 22:34985
interactions π + N → rho + N*, Regge pole model for differential cross sections and decay angular correlations in, 22:24658
interactions π + N → rho + N*, Regge recurrences of inelastic resonances in, 22:5580
interactions π + N → rho + π + N, Deck multiperipheral model for A_1 production in, 22:26660
interactions π + N → rho(ω) + N, method for deriving angular correlations for, 22:41774 (NP-17531)
interactions π + N → sigma + N, kinematic constraints on Regge-pole residues in, 22:11683
interactions π + N → vector meson (tensor meson) + N, tests of basic assumptions of complex angular momentum method for, 22:9578
interactions π + N → vector mesons + Δ, conspiracy relations for, (T), 22:22400
interactions π + N → vector mesons + N, conspiracy relations for, (T), 22:22400
interactions π + N → vector mesons + N, Lorentz pole and kinematic constraints on helicity amplitudes for, 22:26640
interactions π + N → W + N, peripheral one-pion model for cross sections for, 22:35011
interactions π + N above 200 GeV in emulsions, review of multiple production from, 22:9509 (INR-P-826/VI/PH)
interactions π + N above 5 GeV/c, Regge pole model for, 22:20210 (CERN-67-24(Vol.2))
interactions π + N at (1236 MeV)², finite-energy sum rules for, (T), 22:52989
interactions π + N at 0 to 700 MeV, Coulomb scattering amplitude and Coulomb and nuclear phase shifts for differential cross sections for, (T), 22:13754 (ORNL-4197)
interactions π + N at 1 to 10 GeV/c, analysis of elastic and charge-exchange, (E/T), 22:9607
interactions π + N at 17 GeV in emulsions, analysis of multi-prong, (E), 22:34863
interactions π + N at 17.2 GeV, central and peripheral inelastic, (E), 22:24549
interactions π + N at 17.2 GeV/c in emulsions, charged particles and single slow recoil proton production in, (E), 22:34984
interactions π + N at 2 to 15 GeV/c, one boson exchange models for, (T), 22:27088(R) (COO-1051-21)
interactions π + N at 2 to 6 GeV/c, validity of interference model for, 22:17968
interactions π + N at 2 to 6 GeV/c, validity of interference model for, 22:46455
interactions π + N at 28 to 1270 MeV, space—time shifts and cross sections for relativistic wave packet collisions for time duration of, 22:15795
interactions π + N at 28 to 1270 MeV/c, time shifts for s-wave elastic, 22:20260
interactions π + N at 4 GeV/c, one-particle exchange model for, 22:9608
interactions π + N at fixed u, superconvergence relations for, 22:9606
interactions π + N at high energies in emulsions, multiplicity and angular distribution of secondaries in, (T), 22:32060
interactions π + N at high energies in Regge-pole model, inconsistency of crossover phenomena for, (T), 22:33100
interactions π + N at high energies, analysis of microcausality for, 22:24571(T) (LA-tr-68-6)
interactions π + N at high energies, conspiracy between Regge trajectories in charge-exchange, 22:3421
interactions π + N at high energies, continuous-parameter sum rules for rho and rho' trajectories for, 22:39398 (IC-68/48)
interactions π + N at high energies, Coulomb interference in, 22:46434
interactions π + N at high energies, determination of P and P' Regge pole parameters for, 22:35002
interactions π + N at high energies, extended structure theory for form factors for, 22:17941
interactions π + N at high energies, gradient-coupling model for soft-neutral-pion emission in, 22:3438
interactions π + N at high energies, impact-parameter representation of amplitudes for, 22:35000
interactions π + N at high energies, multichannel approach for peripheral, 22:3449
interactions π + N at high energies, multiple-scattering corrections in quark model for, 22:50366
interactions π + N at high energies, P and P' Regge pole parameters for, 22:32163
interactions π + N at high energies, Pomeranchon SU(3) assignment for total cross section of, (T), 22:24653
interactions π + N at high energies, Regge pole model for resonance production from, 22:20244
interactions π + N at high energies, Regge pole model for resonances in backward, 22:39391 (CERN-68-7(Vol.1), pp 460-70)
interactions π + N at high energies, Regge pole model for resonances in, 22:39407(T) (UCRL-Trans-1364)
interactions π + N at high energies, spin dependences in forward and Regge poles in backward, (T), 22:24675
interactions π + N at high energies, summation of asymptotics of amplitudes for, 22:46531 (JINR-E2-3917)
interactions π + N at high energies, vacuum exchange amplitudes from family of generalized superconvergent sum rules for, 22:32148
interactions π + N at high energies, vacuum Regge exchange contributions to, 22:48317
interactions π + N at intermediate energies, interference model and finite-energy sum rules for, 22:24630
interactions π + N at low and high energies, dispersion sum rules for, 22:20247
interactions π + N at low energies, chiral dynamics for, (T), 22:9667
interactions π + N at low energies, chiral transformations for, (T), 22:22435
interactions π + N at low energies, dispersion theory of low-energy limits for, 22:46436
interactions π + N at low energies, high-energy contributions to, 22:1440
interactions π + N at low energies, isobar model for explicit amplitude of radiative, 22:29666
interactions π + N at low energies, one-particle-exchange model for phase shifts for, 22:17971
interactions π + N at low energies, parity doubling and asymmetric fermion trajectories for dynamics of, 22:20270
interactions π + N at low energies, PCAC hypothesis for, (T), 22:9592
interactions π + N at low energies, properties of P and P' trajectories from amplitudes of elastic, 22:41818
interactions π + N at low energies, review of resonance production in, 22:32151
interactions π + N at low energies, rho-exchange model for amplitude of charge-exchange, 22:41822
interactions π + N at low energies, self-consistency condition from gauge principle for, 22:46454
interactions π + N at low energies, unitarity corrections to parameters in soft-pion calculations for, 22:20259
interactions π + N at low energy, current commutation relations and PCAC hypothesis for, 22:11672
interactions π + N at vanishing momentum transfer, SU(4) symmetry for amplitudes of, 22:44434
interactions π + N below 1.5 GeV, dispersion relations from phase shift analysis of, 22:34977 (AD-666680)
interactions π + N below 1.6 GeV, phase shift analysis of elastic, 22:15807
interactions π + N in cascade theory calculations for particle reactions with nuclei at high energies, method for sampling inelastic, 22:7525 (JINR-P2-3561)

interactions π + N in cosmic jets, transverse momentum and four-momentum transfer of recoil protons in, 22:7443
interactions π + N in dispersion theory, high-energy limits for charge-exchange, 22:34987
interactions π + N in ladder approximation, use of Pade approximants for Bethe--Salpeter equation for, 22:44428
interactions π + N in nuclei, intranuclear cascades with many-particle interactions from, (T), 22:37164
interactions π + N in nuclei, properties of many-particle interactions from cascade calculations and, 22:29700(T) (ORNL-tr-1800)
interactions π + N in P_{11} state, nucleon dynamical status determination from amplitude of, 22:3450
interactions π + N in π^- reactions with nuclei at 600 to 1600 MeV, optical potential strength for, (E), 22:15681 (PPAD-630-F)
interactions π + N in quantum field theory, partitioning technique for amplitude of, 22:7507
interactions π + N in Regge pole theory, 22:20353
interactions π + N near backward direction, fixed finite-energy sum rules for, 22:34986
interactions π + N to 2 GeV, data compilation for elastic, 22:17864 (CEA-R-3401)
interactions π + N, absorptive corrections in Regge pole model for charge-exchange polarization in, 22:35004
interactions π + N, Adler--Weisberger relation for amplitude of, 22:3483 (CERN-67-24(Vol.1), Paper 2)
interactions π + N, amplitude superconvergence calculations using perturbation theory and Lee model, 22:50405
interactions π + N, analysis of, 22:3427
interactions π + N, analytic helicity amplitudes and Regge-pole formulas for differential cross sections for, 22:3448
interactions π + N, analytic properties of Feynman diagrams in quantum field theory for, 22:20218
interactions π + N, analytical and numerical study of bound-state solutions to Bethe--Salpeter equation for, 22:39414
interactions π + N, analyticity constraints and superconvergence relations for, 22:37140
interactions π + N, Argand diagrams for partial-wave projections of Regge amplitudes of, 22:32147
interactions π + N, axiomatic analyticity domain extension for elastic, 22:3415
interactions π + N, bootstrap models for, 22:32170
interactions π + N, bound-state solutions to Bethe--Salpeter equation for, 22:37154
interactions π + N, causality and analyticity for resonant waves in, 22:3416
interactions π + N, causality violation and nonlocality from dispersion relation analysis of, 22:35001
interactions π + N, classification of N(1400) in multiplet of broken SU(3) from, 22:37179
interactions π + N, conservation laws for intranuclear cascade calculation for nucleon reactions with nuclei from inelastic, 22:22410 (JINR-P4-3714)
interactions π + N, constraints on asymptotic behavior of amplitudes for, 22:48324
interactions π + N, continuous moment sum rules for nonvanishing asymptotic total cross sections for, 22:34998
interactions π + N, coupling constant from spin-flip dispersion relation for, 22:32166
interactions π + N, current algebra and rho + rho'(1600) dominance model for S-wave scattering lengths for, 22:20269
interactions π + N, current-algebra sum rule for spin-flip amplitude of, 22:44435
interactions π + N, currents and current commutators for scattering lengths and low-energy parameters for, 22:11706
interactions π + N, decomposition of Bethe--Salpeter amplitudes for, 22:39417
interactions π + N, determination of f^0 trajectory parameters from superconvergence dispersion sum rules for, 22:26654
interactions π + N, determination of Regge parameters for, 22:32132
interactions π + N, differential cross sections for backward, (T), 22:50389 (KFKI-21/1968)
interactions π + N, dispersion sum rule for amplitude of, 22:9612
interactions π + N, dispersion sum rules for amplitudes of, 22:7523
interactions π + N, dispersion sum rules for N* production from, 22:17952
interactions π + N, dispersion sum rules from modified amplitudes for, 22:44413
interactions π + N, dispersion sum rules in static model for amplitude of elastic, (T), 22:1449
interactions π + N, dispersion theory for, 22:3446
interactions π + N, dispersion-relation calculation of low-energy s-wave, 22:3432
interactions π + N, effect of rhoN and πN* final states on elastic, (T), 22:24670
interactions π + N, effect on partial-wave absorptions in p + p interactions at 1 GeV, 22:32174
interactions π + N, effects of resonance scattering on, 22:52979
interactions π + N, effects on partial-wave p + p interactions at 1 GeV from s-state, (T), 22:7524 (ISS-67/25)
interactions π + N, elastic unitarity and phase equality of amplitudes of, 22:50406
interactions π + N, electromagnetic corrections in dispersion relations for forward, 22:17951 (JINR-P2-3670)
interactions π + N, expansion of partial wave amplitudes for, 22:48375
interactions π + N, experimental test of rising trajectories and falling residues for, 22:7510
interactions π + N, field theory of chiral symmetry for, 22:5628
interactions π + N, forward dispersion relations for energy behavior of d waves in, (T), 22:32144
interactions π + N, generalized potential for partial-wave amplitudes of, 22:20268
interactions π + N, generalized Ward--Takahashi identities and current algebra for, 22:13681
interactions π + N, Gribov--Pomeranchuk phenomenon in N/D method for, 22:20220
interactions π + N, helicity coupling constant for amplitudes of, 22:1436
interactions π + N, isospin invariance violation in, 22:41839
interactions π + N, kinematic singularities of transversity amplitudes of, 22:41874
interactions π + N, ladder approximation in partial wave dispersion relations for Δ(1236) production in, 22:24648 (DESY-68/2)
interactions π + N, low-energy constraints on π production amplitudes in, (T), 22:3434
interactions π + N, method for summing virtual soft pion dependence in, (T), 22:50320 (NYO-2262-TA-191)
interactions π + N, model for P_{11} resonance as bound state of, 22:17964
interactions π + N, model of s- and p-wave, 22:44446
interactions π + N, N* resonances from rho Regge exchange in charge-exchange, (T), 22:20256
interactions π + N, nonforward superconvergence relations for, 22:20262
interactions π + N, nonlinear Lagrangian models invariant under generalized chiral groups SL(4,C) and SL(12,C) for, 22:22425
interactions π + N, one-pion-exchange model for f^0 and S* production in, 22:24668
interactions π + N, P and P' Regge pole parameters from sum rules for elastic, 22:41811
interactions π + N, parity doubling and asymmetric fermion trajectories from N* resonance spectrum in, 22:20270
interactions π + N, partial wave analysis for baryon resonance production in, 22:48313 (CERN-68-23(Vol.2), pp 431-96)
interactions π + N, partial-wave dispersion relations for N^*_{33} production in, (T), 22:29710
interactions π + N, partial-wave spinor amplitudes for, 22:48374
interactions π + N, PCAC hypothesis and P Regge trajectory intercept for consistency condition on isospin symmetric amplitude of, 22:24672
interactions π + N, peripheral models for resonance and kinematical peaks in, 22:24674
interactions π + N, phase contours for amplitude of, 22:17970
interactions π + N, phase contours for amplitude of, 22:37156
interactions π + N, phase contours for amplitudes of, 22:39395 (CERN-68-7(Vol.2), pp 55-73)
interactions π + N, phase contours of amplitudes for, (T), 22:7506 (UCRL-17921)
interactions π + N, phase shift dispersion relation for partial-wave analysis of, 22:22396
interactions π + N, phase shift in P_{33} state for, 22:17959
interactions π + N, phase-shift analysis of, 22:11670
interactions π + N, quark model for elastic and inelastic charge-exchange, 22:3419
interactions π + N, Regge amplitude and superconvergence relation for, 22:46450
interactions π + N, Regge exchange amplitudes for bound state and resonance spectra from, 22:17953
interactions π + N, Regge pole model for superconvergence sum rule for, 22:41815
interactions π + N, Regge pole phenomenology for large argument values of S-matrix elements for, 22:20351
interactions π + N, Regge structure of B^- amplitude at large momentum transfer in, 22:46447
interactions π + N, Regge trajectories with approximate parity degeneracy for N* resonances from, 22:13765
interactions π + N, Regge-pole exchange and direct-channel resonances in models for, 22:20232
interactions π + N, Regge-pole model for partial-wave amplitudes for, 22:24666
interactions π + N, Reggeization of invariant amplitude for, 22:24659
interactions π + N, relations between spin density matrix elements for production of vector and tensor mesons in, (T), 22:37155
interactions π + N, renormalized perturbation series for,

22:24671
interactions π + N, residue function of P and P' trajectory in, 22:44448
interactions π + N, review of forward peak in inelastic, 22:39265 (CERN-68-7(Vol.1), pp 60-110)
interactions π + N, review of superconvergence relations and Regge parameters for, 22:32156
interactions π + N, review of theory for, 22:13751 (COO-264-412)
interactions π + N, rho + rho' Regge-pole model for cross sections and polarization of charge-exchange, 22:37157
interactions π + N, rho exchange for S-wave, (T), 22:32171
interactions π + N, rho NN couplings for superconvergence sum rules for, 22:46451
interactions π + N, rho-dominance model for, 22:7473
interactions π + N, S-matrix of absorptive resonant S_{31} wave, 22:24660
interactions π + N, saturation as approximation to sum rules for, 22:5595
interactions π + N, saturation for sum rule for, 22:3412 (TH-216)
interactions π + N, saturation of superconvergence relations for, 22:32153
interactions π + N, scattering lengths for, (T), 22:27390
interactions π + N, spin-dependent effects in, (T), 22:7505 (UCRL-17903)
interactions π + N, static model parameters for amplitudes of, 22:24673
interactions π + N, static-model parameters for, 22:11677
interactions π + N, strong coupling of SU(2)-symmetric model for, 22:37152
interactions π + N, SU(6) invariance in S-wave, 22:48348
interactions π + N, SU(6) invariance model for s-wave, 22:34994
interactions π + N, subtractions in dispersion relations for symmetric and antisymmetric amplitudes for, 22:15793
interactions π + N, sum rule and singularities in complex J-plane for forward charge-exchange, 22:9596
interactions π + N, sum rule for decoupling of second rho in forward, 22:26665
interactions π + N, sum rule from axial-charge equal-time commutation relations for, 22:11674
interactions π + N, sum rules connecting multipion production cross sections for, 22:7512
interactions π + N, sum rules from dispersion relations for, 22:1432
interactions π + N, sum rules from fixed-t and fixed-u dispersion relations for amplitudes of, 22:34993
interactions π + N, superconvergence relations for spin-flip amplitudes of, 22:3431
interactions π + N, superconvergence sum rules and bootstrap relations in static models for, 22:7503 (LPTHE-TH-217)
interactions π + N, superconvergence sum rules and bootstrap relations in static models for, (T), 22:22407
interactions π + N, superconvergence sum rules for combination of elastic π + π, π + K, K + N, and, 22:48297
interactions π + N, superconvergence sum rules for helicity-nonflip amplitude of, 22:5582
interactions π + N, superconvergence sum rules for rho-Regge-exchange parameters for, 22:44433
interactions π + N, superconvergent dispersion relations and sum rules for, 22:11678
interactions π + N, superconvergent dispersion relations for crossing-even amplitude of forward elastic, 22:26656
interactions π + N, tabulation of kinematic quantities for, (E), 22:17858
interactions π + N, test of quark-model predictions for infinite-energy cross sections for, 22:34948
interactions π + N, tests of saturation in strong-coupling theory for, 22:34995
interactions π + N, U(3,1) model for analytic behavior of amplitude for backward, 22:34997
interactions π + N, unified formulation of effective nonlinear Lagrangian for, 22:11673
interactions π + N, unitary impulse approximation for elastic, 22:26658
interactions π + N, universal vector and axial-vector theory for S- and P-wave scattering lengths for, 22:9613
interactions π + N, unsubtracted dispersion relations from backward, 22:44448
interactions π + N, unsubtracted dispersion sum rules for, (T), 22:39409
interactions π + N, use of daughter pole hypothesis of N(1400) in phase-shift analysis of P_{11}, 22:52988
interactions π + N, use of finite-energy sum rules for Regge analysis of charge-exchange, 22:20254
interactions π + N, use of PCAC for constraint on double-pion-production amplitude in, 22:3439
interactions π + N, use of sidewise dispersion relations for determining magnetic moment of N(1400) from, 22:3322
interactions π + N, use of sum rules for analysis of Regge singularities in forward charge-exchange, 22:29708
interactions π + N, validity and predictions of forward dispersion relations for, 22:15785 (BNL-12058)
interactions π + N, validity of sum rules and high energy theorems for, 22:9605
interactions π + N, vector dominance sum rules for, 22:52981
interactions π + N, weak axial-vector coupling constant in static Chew--Low model for, 22:32162
interactions π + N, zero-mass π for derivations in theory for, 22:20250
interactions π + π + N through bound states, analytic properties of amplitude for, 22:46444
interactions π^- + N → π + π + N, rho and ω production in, (T), 22:17971
interactions π^- + N → π^+ + Δ(1236) in nuclei, production of isonuclei and mechanism for, (T), 22:32155
interactions π^+ + N → π^- + Δ(1236) in nuclei, production of isonuclei and mechanism for, (T), 22:32155
interactions π^- + N at 12 and 18 GeV/c, spark-chamber study of peripheral dipion production in, (E), 22:20150
interactions π^- + N at 17 and 24 GeV/c in emulsions, velocity-space images for analysis of, (E), 22:22313
interactions π^- + N at 17 GeV/c in nuclear emulsions, proton momentum spectra from inelastic, (E), 22:22315
interactions π^- + N at 17.2 GeV, behavior of transverse momentum distribution in, (E), 22:24555
interactions π^- + N at 17.2 GeV/c in nuclear emulsion, (E), 22:44336
interactions π^- + N at 3.85 GeV/c in emulsions, asymmetry of secondaries in angular distributions for three-prong, (E), 22:7442 (JINR-P1-3563)
interactions π^- + N at 3.85 GeV/c in nuclear emulsions, angular distributions of secondaries from, (E), 22:39295
interactions π^- + N at 4 GeV/c in propane bubble chamber, three-pronged, (E), 22:17874
interactions π^- + N at 4.0 GeV/c in propane bubble chamber, cross section for Ξ^- production in, (E), 22:24547
interactions π^- + N at 50 to 175 MeV in emulsions, cross sections for double charge exchange, (E), 22:50307
interactions ππN → ππN, extended one-pion-exchange model S-matrix theory for multiparticle amplitude of, 22:24669
interactions rho + N, amplitude and cross section from γ + ^{4}He → rho^0 + ^{4}He and γ + ^{16}O → rho^0 + ^{16}O interactions, (T), 22:24599
interactions rho + N, γ + ^{4}He → rho^0 + ^{4}He and γ + ^{16}O → rho^0 + ^{16}O interactions for determining amplitudes of, (T), 22:37147 (NP-17497)
interactions rho + N, magnetic-type coupling in, (T), 22:7637(R) (COO-1573-33)
interactions rho + N, Reggeization of invariant amplitude for, 22:24659
interactions rho^0 + N at high energies, unstable particle + nucleon cross sections from, (T), 22:22419
interactions rho^0 + N from photoproduction in medium and heavy nuclei, total cross sections for, (T), 22:39429
interactions with baryons in meson + deuteron → γ + baryon + nucleon interactions, (T), 22:1405 (TH-210)
interactions with hadrons at high and low energies, peripheral models for, 22:17927
interactions with hadrons, conspiracy relations for, 22:44406
interactions with leptons, saturation of sum rules for, 22:17913
interactions with mesons (π) at 100 to 1000 BeV, strong, (E/T), 22:2836
interactions with mesons at high energies, Regge asymptotic behavior of amplitude for, 22:11675
interactions with mesons at high energies, Regge pole theory and exchange degeneracy for cross section relations with N + N interactions, 22:46535 (JINR-P2-3944)
interactions with mesons at high energies, sum rules in vector dominance model for integral of total cross section relation with γ + N interactions, 22:46357 (JINR-E2-3926)
interactions with mesons in quark model, multiple-scattering corrections to Johnson--Treiman relations for, 22:24654
interactions with mesons in static model, superconvergence sum rules and [SU(2)/sub I/ x SU(2)/sub J/] x T, algebra for, 22:39463
interactions with mesons, equal-time commutators of current operators in renormalized perturbation theory for, 22:39332
interactions with mesons, Feynman diagrams for unitary representations of SL(2,C) symmetry for, 22:20284
interactions with mesons, KN coupling constants from dispersion relations for, 22:15802
interactions with mesons, Lorentz group representations for amplitude expansion at vanishing four-momentum transfer in, 22:15794
interactions with mesons, method for measuring spin-flip effect in, (T), 22:24652
interactions with mesons, modified perturbation theory for coupling constant for, 22:26586
interactions with mesons, reconstruction of matrix

amplitudes for forward, 22:20245
interactions with mesons, unitarity condition in static neutral scalar meson model of, 22:11682
interactions with mesons, vacuum fluctuations and self-energies in mesons theory for, 22:32169
interactions with neutral scalar mesons in static limit, 22:22408
interactions with nucleons at high energies, vector dominance model for sum rule connecting cross section for γ + p interaction with parameters of, 22:20173 (JINR-P2-3704)
interactions with particles, Regge pole theory for kinematic constraints, factorization, and kinematic zeros in, 22:34981 (LNF-68/5)
interactions with polarized leptons, quantum electrodynamics test from, 22:5636
interactions with pseudoscalar mesons at very high energies, polarization in, (T), 22:34988
interactions with pseudoscalar mesons in SU(3) x SU(3), vector meson production in, 22:11712
interactions with pseudoscalar mesons, consequences of infinite mass renormalization for, 22:35005
interactions with pseudoscalar mesons, conspiracy relations for vector-meson production in, (T), 22:22400
interactions with pseudoscalar mesons, Regge-pole model with L--S coupling for, 22:20253
interactions with unstable particles, cross sections for, (T), 22:22419
interactions Ξ + N at low energies, scattering lengths and phase shifts for, (T), 22:5605
magnetic moment from γ + N interactions, test of cross-section sum rules for, 22:37101
magnetic moment of, g − 2, (T), 22:13706
magnetic moment of, sum rule from current algebra and Regge pole model for isovector anomalous, 22:3332
magnetic moment of, sum rules relating π photoproduction amplitude and anomalous, 22:37103
magnetic moment relations from modified PCAC hypothesis for $\gamma + N \to N + \pi$ interactions, (T), 22:44358
magnetic moments of, bootstrap calculations in SU(2) model for, 22:37115
mass formula for, empirical, 22:5585
mass of, calculation of, 22:9586
mass of, formula in broken SL(2,C) symmetry for Regge trajectories for, 22:29737 (KFKI-5/1968)
mass of, perturbation theory and indefinite metric for, 22:9593
mass splitting of, inelastic model for electromagnetic, 22:11615
masses of, sum rule for, (T), 22:42144
meson (π) emission from accelerated, (T), 22:27391
nuclear optical-model potential for, five-parameters, (T), 22:24909
nuclear optical-model potential for, imaginary isospin term in, (T), 22:27360
nuclear wave functions for many-body systems of, (T), 22:44770
photon absorption by bound states and constituent, Drell--Herne--Gerasimov sum rule for, 22:3333
potential parameters for A > 40 nuclei, optical-model, (T), 22:1598(R) (COO-1265-49)
potentials for many-body system of, S-matrix for, 22:35363 (AD-665366)
production from electron scattering by nuclei, (T), 22:3638
production in cosmic-proton--proton interactions, (T), 22:21979
production of NN* pseudo-two-body final states in $p + p \to 2p + \pi^+ + \pi^-$ interactions at 6 GeV/c in hydrogen bubble chamber, (E), 22:46324 (UCRL-17707)
production of nucleon--meson cascade in proton reactions with iron at 1 and 3 GeV, Monte Carlo calculations of, 22:46463
reactions at 10^{14} eV of cosmic, in the atmosphere, (E), 22:21935
reactions of cosmic, with atmospheric nuclei, (T), 22:2844
reactions of cosmic, with carbon, iron and lead nuclei, (E), 22:2825
reactions of cosmic, with iron at 100 to 1000 GeV, cross sections for, (E), 22:21911
reactions with nuclei above 1 GeV, Monte Carlo method for multiparticle production in, 22:46424
reactions with nuclei above 1 TeV in emulsions, shower production in, (E), 22:39254(T) (ORNL-tr-1956)
reactions with nuclei above 10 TeV in emulsions, fireball model for, 22:5597 (INR-813/VI/PH)
reactions with nuclei above 100 GeV, Monte Carlo method for many-body interactions in, 22:1379 (JINR-P2-3508)
reactions with nuclei at 25 to 400 MeV, computer program for cascade calculations, (T), 22:16059 (ORNL-4220)
reactions with nuclei at high energies, cross sections for coherent and incoherent particle production in, (T), 22:22419
reactions with nuclei at high energies, model for production of two angular distribution maxima in, 22:46461
reactions with nuclei below 10 TeV, Monte Carlo method for intranuclear cascade with many-particle interactions from, 22:13770 (JINR-P2-3604)
reactions with nuclei of cosmic, angular distributions in, (T), 22:21932
reactions with nuclei, conservation laws in elementary act for intranuclear cascade calculation of inelastic, 22:22410 (JINR-P4-3714)
reactions with nuclei, research on, 22:11980(R) (UCLA-10-P-18-4)
reactions with nuclei, review on optical-model analysis of, (T), 22:20721
reactions with the nucleus, (T), 22:2835
Regge trajectory for, Regge families in broken SL(2,C) for classification of, 22:39392 (CERN-68-7(Vol.1), pp 494-522)
research on Y--N systems, review of, 22:17854
scattering by carbon-12, optical model analysis of inelastic, (T), 22:7637(R) (COO-1573-33)
scattering by deuterium, elastic and inelastic, (T), 22:9974
scattering by helium-3 and tritium, theory using second-quantization formalism, (T), 22:9919 (IPNO/TH-102)
scattering by helium-4 below 20 MeV, optical model potential for, (T), 22:26802
scattering by lead, magnesium, silicon, sulfur, and zinc at 14 MeV, generalized optical model for inelastic, (T), 22:44772
scattering by light nuclei at 142, 210, and 310 MeV, analysis using multiple scattering optical model potential, (T), 22:27250
scattering by light nuclei at very high energies, 22:3309 (INP-555/PL/PH, pp 113-15)
scattering by nuclear matter, effects of tensor forces on, (T), 22:44798
scattering by nuclei at medium energy, difference between polarization and asymmetry in, (T), 22:20706
scattering by nuclei, antisymmetry in distorted-wave calculations of inelastic, (T), 22:1726
scattering by nuclei, calculation of s-wave phase shift for, (T), 22:14101
scattering by nuclei, effects of exchange and Pauli principle on, (E), 22:5896
scattering by nuclei, formalism using random phase approximation, (T), 22:37388
scattering by nuclei, knockout-exchange amplitudes for inelastic, (T), 22:42143
scattering by one-level nuclei, generalized Hartree--Fock approximation for elastic, (T), 22:27252
scattering by spin-1/2 nuclei, one-body potentials for elastic, (T), 22:20772
scattering of, comparison of eigenchannel and R-matrix methods for calculating S-matrix for, (T), 22:37385
scattering on deuterons, wave functions for, (T), 22:3221 (ORNL-TM-2008)
scattering theory for many-body systems with singular potentials, time-dependent, (T), 22:11997
scattering theory for, four-body problem in, (T), 22:27292
structure from e + N experiments, review of, 22:22272 (CONF-670923-, pp 156-95)
structure from p + p, π + p, and K + p elastic scattering, (E/T), 22:22394
structure in bootstrap theory as πN bound state with Δ-resonance and N exchange, 22:1407
structure of, review of research on, 22:53226
superconductivity of, quark model for, 22:34947 (JINR-P2-3819)
theory in SU(2) x SU(2) symmetry, Lagrangian method for, 22:5558
theory of bound state in many-body systems of, using perturbation theory in inverse powers of interaction parameter, (T), 22:14118
theory of many-body systems of, linked-cluster expansions for, (T), 22:1722
theory of many-body systems of, with two-body harmonic oscillator potentials, 22:9960
theory of many-body systems with two-body interactions, ground-state energy in, (T), 22:39730
theory of three-body systems of, using perturbation theory to inverse powers in interaction parameters, (T), 22:14072 (ITF-67-12)
trajectory exchange in backward $\pi^+ + p \to \pi^+ + p$ interactions, (T), 22:32164
NUCLEONS (anti N)
form factor of N--anti N bound state, asymptotic behavior of electromagnetic, 22:50365
interactions anti N + N $\to$ anti N + N, analyticity properties of helicity amplitudes of, 22:9580 (CEA-R-3303)
interactions anti N + N $\to$ anti N + N, dispersion theoretic calculation of two-π exchange effects on amplitudes of forward, 22:39383
interactions anti N + N $\to$ anti N + N, kinematical singularities, crossing matrix, and kinematical constraints for helicity amplitudes for, 22:29770
interactions anti N + N $\to$ N*(Y*) + anti N*(Y*) at high energies, quark model for test of additivity from joint decay distribution from, 22:13735
interactions anti N + N $\to$ pseudoscalar + vector mesons, Regge pole model for t-channel, 22:48373
interactions anti N + N $\to \pi + \omega$ at high energies, superconvergence relations for, 22:17940 (DESY-67/38)
interactions anti N + N $\to \pi + \pi$, nucleon electromagnetic form factor from amplitude of, (T), 22:5530

interactions anti N + N $\to \pi + \pi$, Regge poles in forward, 22:7489 (UCSD-10-P-10-29)
interactions anti N + N $\to \pi + \pi$, spin-flip coupling constant f^0--N--N from, 22:44448
interactions anti N + N $\to \pi$ + rho at high energies, superconvergence relations for, 22:17940 (DESY-67/38)
interactions anti N + N $\to \pi$ + rho(ω), coupling constant relations from superconvergence relations for, 22:34972
interactions anti N + N $\to \pi$, axial vector renormalization and Goldberger--Treiman relation for, 22:7498
interactions anti N + N $\to$ Y + anti Y at high energies in O(3,1) symmetry, 22:34975
interactions anti N + N $\to$ Y + anti Y, conspiracy relation for, 22:29686
interactions anti N + N at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti N + N at 2.6 GeV/c, two-pion-exchange contributions to, 22:46467
interactions anti N + N at high energies, multiple-scattering corrections in quark model for, 22:50366
interactions anti N + N at high energies, Regge pole model for forward charge exchange, (T), 22:13744 (IPNO/TH-108)
interactions anti N + N at high energies, review of multiple production in annihilation, (E), 22:39253(T) (ORNL-tr-1538-A)
interactions anti N + N at high energies, rho' conspiracy for forward charge-exchange, 22:20277
interactions anti N + N to 300 MeV, OBE potential models for, 22:26644
interactions anti N + N, asymptotic behavior of amplitudes for, 22:37167
interactions anti N + N, comparison between on-shell and off-shell calculations for, 22:3456
interactions anti N + N, confluence of Regge trajectories and SU(2)/sub W/ symmetry for, 22:9660
interactions anti N + N, exchange degeneracy and backward superconvergence in, 22:39381
interactions anti N + N, expansion of partial wave amplitudes for, 22:48375
interactions anti N + N, isospin dependence of cross sections for annihilation, (T), 22:24641
interactions anti N + N, O(4) formalism for off-shell, 22:46408
interactions anti N + N, poles in amplitude of, 22:41757
interactions anti N + N, saturation of superconvergence sum rules for, 22:22389
interactions anti N + N, superconvergence sum rules for amplitude of, 22:7499
interactions anti N + N, tests of basic assumptions of complex angular momentum method for helicity amplitudes of, 22:9578
interactions anti N + N, unitary restrictions on dynamical groups for amplitude of, 22:13629
production in photon reactions with nuclei at high energies, Regge amplitude for absorption in, (T), 22:20194
Nucleons, Resonance
see Baryons, Resonance
NUCLEOPROTEINS
binding to 3,4-benzpyrene, 22:25716(R) (NYO-3538-7)
complexes of, formation of, from calf thymus DNA and purified histone fractions, 22:16974(R) (ORO-2832-56)
extraction of newly synthesized DNA from, in x-irradiated mice, comparison to preformed DNA, 22:19243
radiation effects on content of, in leaves of salvia, phosphorus-32 β, 22:36410
radiation effects on enzymatic degradation of, in tissue homogenates from appendix, liver, and thymus of rabbits, γ, 22:43229
radiation effects on properties of polydeoxyribonucleotides released from in cell nucleus of lymphatic tissues in mice, x, 22:23445
radiation effects on stability of, in nuclei of thymocytes of rats, 22:21437
radiation effects on structure of, in lungs and spleen of mice, γ, 22:25768
radiation effects on synthesis of, in germ cell nuclei of male rats, x, 22:51418
radiation effects on, effects of chemical structure of protective agents on, 22:31143
radiation effects on, in neurons of hypothalamus of rats, acute γ, 22:49186
radioprotective effects of, on Escherichia coli, uv, 22:36300
reactions with hydrogen, ESR spectra of, 22:27396(R) (AI-AEC-12638)
separation of polydeoxyribonucleotides from, 22:23445
structure in lungs and spleen of mice, effects of urethanes on, 22:25768
NUCLEOPROTEINS, DEOXY-
radiation effects on formation of oriented quaternary structures by solutions of, protective effects of AET, ethyl alcohol, and mercaptopropylamine against, 22:47565
radiation effects on macromolecular organization of, ionizing, 22:14955
radiation effects on, effects of dose and protein content on x, 22:28389
radiation effects on, protective effects of AET and mercaptopropylamine against x, 22:47566
radiation effects on, protective effects of gallates, AET, and mercaptopropylamine against ionizing, 22:51798
radioprotective effects of, on DNA, ionizing, 22:2356
NUCLEOSIDES
see also Adenosine
see also Cytidine
see also Thymidine
see also Uridine
binding to 3,4-benzpyrene, 22:25716(R) (NYO-3538-7)
nuclear magnetic resonance spectra of, effects of deuterium ion concentration on, 22:28309
properties of, effects of temperature on, 22:12202 (UCRL-17966)
radiation effects on content of, in urine, effects of radium and supervoltage therapy of cervical carcinom on γ and x, 22:28325
radioinduced formation of, in mammalian cells, 22:384
radioinduced free radicals in, magnetic resonance of u 22:43256
radioinduced luminescence in, mechanisms for uv, 22:49199
separation from nucleic acids by ligand-exchange chromatography, 22:14429 (ORNL-4196, pp 44-54)
separation of, use of rapid cation exchange for, 22:30413 (ORNL-4100, pp 146-7)
synthesis of primordial, 22:33734
toxicity of tritium-labeled, in Escherichia coli, 22:51458
use of tritium-labeled pyrimidine, in biology, confere on, 22:45380 (EUR-3290)
NUCLEOTIDES
see also Adenosine Monophosphates
see also Cytidine Monophosphates
see also Guanosine Monophosphates
see also Inosine Monophosphates
see also Thymidine Monophosphates
see also Uridine Monophosphates
binding to 3,4-benzpyrene, 22:25716(R) (NYO-3538-7)
binding to photoreactivating enzyme, 22:28399 (ORNL-4100, pp 40-7)
content of chromosomes in relation to radiosensitivity organisms, 22:49641
content of radioinduced cotton mutants, comparison of, initial form, 22:43284
content of tRNA, use of cetyltrimethylammonium cations determine sequence for, 22:30414 (ORNL-4100, pp 148-51)
determination in lymph tissues, following extraction f nucleoproteins, 22:23445
effects on γ-radiosensitivity of DNA, 22:12801
effects on γ-radiosensitivity of DNA, 22:45397
effects on uv- and x-radioinduced liberation of lambda prophage, 22:40974
fluorescence of reduced pyridine, effects of glucose o 22:25714 (COO-78-163, pp 126-36)
incorporation into nuclei of chick fibroblasts, priming ability of x-irradiated DNA for, 22:45427
interactions of adenine oligo-, with polyuridylic acid, 22:30413 (ORNL-4100, pp 146-7)
interactions with nuclease, model for specific protein-nucleic acid interaction in, 22:25716(R) (NYO-3538-7
neutron activation of phosphorus in, 22:462
nuclear magnetic resonance spectra of, effects of deuterium ion concentration on, 22:28309
phosphorus-32 incorporation into, of pea leaves, effect of temperature on, 22:43258
poly-, binding to RNA nucleotidyltransferase in Escherchia coli, 22:28286 (ORNL-4100, pp 153-9)
polymers of, radioinduced degradation of aqueous solutions of, γ, 22:25723 (UCLA-12-668, pp 71-84)
properties following separation from nucleoproteins in lymph tissues of mice, 22:23445
radiation effects on content of acid-soluble free, in liver of rats, γ and x, 22:49259
radiation effects on content of acid-soluble, in liver rats, effects of dose on γ and x, 22:51914
radiation effects on content of RNA, in tissue cultures of crown gall tumors of Datura, 22:40958
radiation effects on content of, in cells and nuclei o thymus in rats, whole-body x, 22:30951
radiation effects on content of, in lymph tissues in mice, x, 22:23445
radiation effects on content of, in tissues of rats, method for measuring x, 22:8441
radiation effects on origin of, 22:25790
radiation effects on uptake of pyrophosphate by, of Mycobacterium tuberculosis, β, 22:40524
radioinduced formation of, in mammalian cells, 22:384
radioinduced free radicals in, magnetic resonance of u 22:43256
radioinduced luminescence in, mechanisms for uv, 22:49199
radioinduced phosphorescence of, uv, 22:51302(R) (HUX-2643-42)
radiolysis of poly-, of adenine, cytosine, uracil, and hypoxanthine, chemical analysis of γ, 22:30967
radiolysis of, use for estimation of radicals in DNA, 22:28292
radioprotective effects of, against chromosome aberrations in calf liver cells, x, 22:36327

- radioprotective effects of, on mitochondria, uv, 22:28315
- reactions with hydrogen, ESR spectra of, 22:27396(R) (AI-AEC-12638)
- separation from nucleic acids by ligand-exchange chromatography, 22:14429 (ORNL-4196, pp 44-54)
- synthesis in cells from regenerating rat liver, 22:51302(R) (HUX-2643-42)
- synthesis in yeast cells during postradiation recovery, analysis of, 22:31290
- synthesis of deoxyribo-, enzymatic, 22:51304 (LA-3848, pp 21-61)
- synthesis of poly-, primordial, 22:33734
- synthesis of primordial, 22:33734
- tautomeric interconversion in pairs of, in DNA molecule, solution of time dependent equations for, 22:44964 (UCRL-50412)

TRIENTS
- content of soils, effects of, on strontium-90 uptake by plants, 22:19291
- content of soils, methods for measurement of, 22:27526
- distribution in forest leaf litter, effects of stage of decay on, 22:6772 (ORNL-4168, pp 61-118)
- distribution in tropical ecosystem, tracer studies of, 22:23481(R) (PRNC-102)
- effects on deuterium oxide-sensitivity of Penicillium janczewskii, 22:10887
- effects on γ-radiosensitivity of Escherichia coli, 22:21569
- effects on γ-radiosensitivity of Rhizopus spores, 22:17029
- effects on radioisotope sorption by winter rape from soils, 22:51299 (FOA-4-4319)
- effects on x-radiosensitivity of mice, 22:47619
- effects on x-radiosensitivity of sunflower seedlings, 22:43478
- evaluation in forage crops, bibliography on, 22:20997 (ORNL-TM-1973)
- measurement of plant, in Puerto Rico, 22:22904 (PRNC-104, pp 90)
- metabolism in lower plants, review of, 22:12781
- radiation effects on content of plant, in soils, γ, 22:52038
- radiation effects on, in papaya, γ, 22:45737
- radiation effects on, of foods, fast electron, γ and x, 22:15126
- radioprotective effects of content of, in culture media of Saccharomyces vini, 22:19359
- transport through tropical rain forest ecosystem, 22:49282(R) (PRNC-119)
- uptake by infaunal invertebrates, effects of trophic level of, on zinc-65 uptake, 22:43311(R) (PRNC-85)
- uptake from soil by plants, 22:27526

ts
- see Bolts and Nuts

K REACTOR
- description of, 22:37465

lon
- see Amide Polymers

O

K RIDGE
- radioactivity content of environment at, during 1966, 22:23522

K RIDGE AREA (TENN.)
- ecology of Walker Branch watershed in, 22:6772 (ORNL-4168, pp 61-118)
- well logging for radioactive waste disposal at, 22:48916 (ORNL-4259)

k Trees (Quercus)
- see Quercus under Angiospermidae

ts (Avena)
- see Avena under Angiospermidae

RIGHEIM POWER REACTOR (GERMANY)
- construction of, description of, 22:14193
- construction steels for, 22:17093
- control rods for, description guide system and drives for, 22:30220
- control systems for, description of, 22:14191
- coolant channels in, temperature distributions along, 22:14185
- coolant chemistry and volume control system for, description of, 22:14187
- coolant system for, description of, 22:14182
- cooling system for, instrumentation for primary, 22:14190
- cooling system for, stress analyses of primary, 22:14186
- core for, description of, 22:14183
- core for, power density of, 22:14184
- design parameters for, 22:14197
- design parameters for, 22:22712 (STI/PUB-174)
- design parameters for, complete listing of system, 22:14194
- electrical system design for, description of, 22:14192
- feedwater system for, corrosion inhibition in, 22:14189
- fuel elements for, description of, 22:14183
- fuel elements for, fabrication methods for, 22:14188
- neutron instrumentation system for, description of, 22:14190
- power density in, effects of core and coolant inlet temperatures on, 22:14185
- pressure maintenance system for, description of, 22:14182
- process control systems for, description of, 22:14190
- reactivity calculations for, 22:14184
- siting of, description of, 22:14193
- steam-power conversion system for, description of, 22:14189
- ventilation system for, description of, 22:14187

Ocean Water
- see Seawater

OCEANOGRAPHY
- bottom sediment and topography studies in Anasco Bay, Puerto Rico, (E), 22:21216 (PRNC-104, pp 118-20)
- circulation of the world oceans, development of model to predict deep, 22:25556
- conference on technology in, Harwell, England, April 5 to 7, 1967, 22:47253 (AERE-R-5500(Vol.2))
- conference on technology in, Harwell, England, April 5 to 7, 1967, 22:47254 (AERE-R-5500(Vol.3))
- conference on technology in, Harwell, England, April 5 to 7, 1967, 22:47252 (AERE-R-5500(Vol.1))
- current movements and diffusion studies in, 22:18995 (NYO-3109-26)
- current velocity studies in, design of radiometric deep-water flowmeters for, 22:16921
- development of ocean diffusion models in, 22:37893 (SC-CR-68-3532)
- diffusion studies in, dye tracer measurements for, 22:51120 (NYO-3109-35)
- effect of ocean mixing on radiocarbon level of biosphere and atmosphere, 22:6453
- environmental effects on performance of nuclear reactor power systems, underwater, 22:48715 (AERE-R-5500(Vol.2), pp 498-511)
- instrumentation for, design of long period wave-measuring gage, 22:14384 (NVO-280-2)
- instrumentation for, development of long period wave-measuring gage, 22:14383 (NVO-280-1)
- instrumentation for, performance of long period wave-measuring gage, 22:14385 (NVO-280-3)
- interaction of ocean and atmosphere on atmospheric carbon-14 distribution, analytic model for describing, 22:6495
- internal mixing of the ocean, measurement by carbon-14 and tritium profiles, 22:6505
- model of flow between oceans, 22:42891 (CU-2663-9, App.A)
- numerical model of world oceans for studies in, development of equations for description of, 22:22921 (UCRL-50354(Pt.1))
- radioactive elements in marine environments, review of natural, 22:8232 (ORO-2411-8)
- radioisotope research in, 22:51875 (TID-4060(1st Ed.))
- research in Atlantic, Antarctic, and Mediterranean Sea, 22:191(T) (TT-66-51029)
- research on, design of RISE for, 22:16743
- research programs in, review of, 22:42915(R) (NYO-2174-87)
- salinity, nitrate, phosphate, and silicate distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
- salinity, nitrate, phosphate, and silicate distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
- salinity, nitrate, phosphate, and silicate distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
- salinity, nitrate, phosphate, and silicate distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
- salinity, phosphate, silicate, and nitrate distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
- sand movement studies in, chromium-51 labeling method for, 22:19062
- sedimentation studies in, use of gamma spectrometry in, 22:23182
- silt movement measurements in, use of radioactive tracer methods for, 22:19060
- underwater convection currents in, from ocean bottom-located point heat sources, mathematical model for study of, 22:21212 (NYO-3109-28)
- underwater convection currents in, from ocean bottom-located point heat sources, mathematical model for study of, 22:21213 (NYO-3109-29)
- underwater convection currents in, from ocean bottom-located point heat sources, mathematical model for study of, 22:21214 (NYO-3109-30)
- underwater convection currents in, from ocean bottom-located finite heat sources, mathematical model for, 22:21215 (NYO-3109-31)
- use of artificial and natural radioisotopes in studies of physical, 22:51122
- use of gamma spectrometry in, 22:42919
- use of radioisotopes in, bibliography on, 22:2254 (AED-C-25-01)
- wave motion in deep water, design and performance of instrumentation for measurement of low-frequency, 22:22892 (HIG-67-11)

OCTACOSANE

  radioinduced electron pulses in liquid, γ, 22:10266 (TID-24223)
1-OCTADECANETHIOL
  radiolysis at 77°K, EPR studies of γ, 22:37799
Octadecanoic Acid
  see Stearic Acid
1-OCTADECANOL
  clearance of gold-198- and scandium-46-labeled particles of, from lungs of rabbits, effects of sulfur dioxide on, 22:25751
2,6-OCTADIENE, 2,6-DIMETHYL-
  radioinduced isomerization of, 22:25417
2,6-OCTADIEN-1-OL, 3,7-DIMETHYL-
  radiation effects on quality of, 22:23082(P)
OCTANAL, 7-HYDROXY-3,7-DIMETHYL-
  reactions with methyl anthranilate, radiation effects on fragrance of condensation products from, 22:10313(P)
OCTANE
  analysis for oxygen by isotope dilution method, 22:22987
  effects on separation of strontium from sodium solutions by solvent extraction using bis(2-ethylhexyl) phosphate, synergistic, 22:35899
  electron LET at 100 eV to 10 MeV in, (T), 22:38800
  proton LET at 0.5 to 900 MeV in, (T), 22:38800
  radiation effects on ion pair production in, method for measuring mean energy in γ, 22:16601
  radioinduced electron pulses in liquid, γ, 22:10266 (TID-24223)
  radiolysis of liquid, ESR spectral studies on transient free radicals produced by electron-beam pulse, 22:42746
  radiolysis of, free radical yields in, 22:8126
  radiolysis of, free radical yields in, 22:42711(T) (AEC-tr-6937, pp 84-95)
  yields in γ radiolysis of aqueous ethylene solutions, 22:51011
  yields in radiolysis of cyclopentane, 22:50998
OCTANE, 3-METHYL-
  radiation effects on glasses of, ESR studies of trapped electrons and free radicals in γ, 22:27825
  radioinduced trapped electrons in glasses of, at 77°K, ESR and optical studies on γ, 22:30627
OCTANE, 1-PHENYL-
  radiolysis of, yields of hydrogen from γ, 22:25393
Octanedioic Acid
  see Suberic Acid
3,5-OCTANEDIONE, 6,6,7,7,8,8,8-HEPTAFLUORO-2,2-DIMETHYL-
  complexes with rare earths, volatility of, 22:30560
OCTANOIC ACID
  effects on ion exchange separation of metals, 22:4087
  radioprotective effects of sodium salt of, on solutions of human serum albumin, γ, 22:49275
1-OCTANOL
  effects on solvent properties of long-chain alkylammonium nitrates for plutonium, 22:40188 (KR-128)
  solvent properties for hafnium and zirconium, mathematical model for, 22:42845
2-OCTANONE
  mass spectra of, effects of deuterium on low-voltage, 22:10212
3-OCTANONE
  mass spectra of, effects of deuterium on low-voltage, 22:10212
1-OCTENE
  radioinduced addition of triphenylsilanes to, 22:10292
2-OCTENE
  radioinduced isomerization of, 22:25417
Octic Acid
  see Octanoic Acid
Octoic Acid
  see Octanoic Acid
Octopus
  see Mollusca
OCTYLAMINE
  use for plutonium-239 measurements in urine, 22:51468
OCTYLAMINE, N-PHENYL-
  solvent properties for hydrochloric acid and uranyl chloride, mechanism of, 22:33533
Octylic Acid
  see Octanoic Acid
[illegible]
  see also Olfactory Organs
  see also Perfume
  see also Taste
  production in fish inoculated with Clostridium botulinum, 22:4714(R) (COO-1183-23)
  radiation effects on, of bacon, 22:23704
  radiation effects on, of clam and haddock, determination of, by chemical analysis, 22:17066
  radiation effects on, of fillets of Bombay duck, effects of dose on, 22:4722
  radiation effects on, of fish for use in assay of spoilage, 22:4714(R) (COO-1183-23)
  radiation effects on, of fish, effects of pretreatment with sodium polyphosphates on γ, 22:52117
  radiation effects on, of fish, γ, 22:6931
  radiation effects on, of meats following processing, effects of content of hydrocarbons on γ, 22:26016 (NYO-3499-3)
OESTRADIOL 17-β-DEHYDROGENASE
  radioinduced inactivation of, protective effects of NAD and NADP against x, 22:33836 (BMwF-FBK-67-85)
Off-Gases
  see Stack Disposal
Offspring
  see Litters
OGRA
  see Thermonuclear Reactors
OGRA II
  see High Energy Injection Devices
OHIO
  see also Miamisburg Area (Ohio)
  cesium-137 content of man in Cincinnati, during 1964 to 1967, 22:23515
  environs monitoring near Piketon, 1967, 22:18966(R) (GAT-553)
  radiation monitoring at Goodyear Atomic Corporation, 22:18966(R) (GAT-553)
  radioactivity content of environment at Feed Materials Production Center in, during 1965, 22:28502
  radioactivity content of environment of Mound Radiation Laboratory in, during 1965, 22:28458
  reproduction of rabbits in different physiographic regions of, effects of population-dependent factors o 22:25208(R) (COO-1446-2)
OIL DEPOSITS
  (This heading may be modified by location in the form Oil Deposits (Kan.).)
  deuterium exchange between methane and underground wate in, 22:42673
OIL SHALES
  (This heading may be modified by location in the form Oil Shales (Tenn.).)
  distillation of contaminated, for tritium removal, 22:16733(R) (ORNL-TM-2119)
  equation of state for, Ester data summary of Hugoniot dynamic, 22:47256 (UCID-5034)
  exploration of underground Colorado, for fracturing by nuclear explosives, 22:48935
  fracturing and retorting of, description of Project Bronco for using nuclear explosions for, 22:6507 (PN 1400)
  fracturing of subsurface, design of Project Bronco for nuclear, 22:8244 (UCRL-50339)
  oil production from, use of tritiated gas tracer method in, 22:14692
  oil recovery from, use of underground nuclear explosion for, 22:30745(P)
  oil recovery from, use of underground nuclear explosion in, 22:48972
  oil recovery from, using underground nuclear explosions 22:10422
  oil recovery from, using underground nuclear explosions economics of, 22:48973
  oil recovery from, using underground nuclear explosions 22:12468(T) (UCRL-Trans-10200)
  processing of oil from, feasibility study of undergroun nuclear explosions for, 22:45208(R) (ORNL-TM-2298)
  processing of, use of nuclear explosions in, 22:23186((ORNL-TM-2198)
OILS
  see also Croton Oil
  see also Glycerides
  see also Greases
  see also Lipids
  see also Lubricants
  see also Olein
  see also Petroleum
  see also Vacuum Systems
  analysis for contaminants, use of α-excited x rays for, 22:249(R) (NYO-3491-2)
  analysis for copper, iron, and magnesium in used lubricating, spectrochemical, 22:23003 (IA-1128, pp 97-146)
  analysis for heteroatom content, radioactive absorption method for, 22:27602
  analysis for iodine, colorimetric, 22:21029 (SC-M-67-3044)
  analysis for phosphorus by activation methods, 22:3325
  analysis for sulfur by absorption of bremsstrahlung of tritium, 22:37697
  analysis for sulfur by neutron activation, 22:4308 (TI 24029)
  analysis of fish, for arsenic by neutron activation methods, 22:45003
  analysis of fish, plankton, and whale, by neutron activation methods, 22:14444
  analysis of Thuringian Basin samples of, for carbon-13, 22:42634
  calorific values of heavy, use of neutron sources with boron trifluoride proportional detectors for measurin 22:30885
  castor, effects on sorption of vitamin B_{12} by intestine of rats, 22:49545
  consumption in internal combustion engine, tracer metho for continuous measurement of, 22:14700
  content of diet, effects of, on nucleic acid metabolism in x-irradiated rats, coconut and linseed, 22:45444
  determination in vegetable oils, liquid scintillation technique for absolute neutral, 22:38012
  determination of mists of, in atmosphere, spectrophotometric, 22:21029 (SC-M-67-3044)
  effects on populations of microorganisms in rumen of de

and sheep, 22:6774(R) (UCD-34-P-104-8)
leakage from mechanical seals, use of phosphorus-32 in detection of, 22:16781
production from oil shales, use of tritiated gas tracer method in, 22:14692
prospecting and surveying for, review of isotopic tracer method for, 22:19050
quark content in, upper limit for, (E), 22:34841 (COO-1112-155)
radiation effects on chemical and physical properties of cottonseed, γ, 22:21127
radiation effects on desulfurization of, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on immune response of skin of man to commercial sandalwood, uv, 22:38213
radioinduced oxidation of dearomatized diesel, effects of water on, 22:16575
radioinduced thermal cracking of, at 500°C, reactor, 22:2121
radiolysis of coconut, 22:14533
radiolysis of fish, yield of hydrocarbons from γ, 22:26016 (NYO-3499-3)
radioprotective effects of groundnut, on rats, γ, 22:49494
radioprotective effects of growth substance from human skin, during radium therapy, α, 22:28549
reactions with boron fluorides in MSRE pump, 22:14427 (ORNL-4196, pp 15-32)
recovery from oil shales using nuclear explosions, design of Project Bronco for, 22:8244 (UCRL-50339)
recovery from oil shales, use of underground nuclear explosions for, 22:4301
recovery from oil shales, use of underground nuclear explosions for, 22:6507 (PNE-1400)
recovery from oil shales, use of underground nuclear explosions for, 22:30745(P)
recovery from shales, use of underground nuclear explosions for, 22:4295(R) (ORNL-TM-2062)
recovery using underground nuclear explosions, 22:27945(T) (JPRS-44486)
static charge removal from, use of radiation for, 22:14732
transfer in ultrahigh vacuum systems, use of molecular sieves for prevention of, 22:19091
air--oil, combustion with and without potassium seed, thermodynamic properties and equilibrium composition of products from, (T), 22:26275
Ointments
see Protective Ointments
OKLAHOMA
radioisotope content of milk in, during 1966, 22:23520
radioisotope content of milk in, during April to June 1967, 22:28506
OLDBURY REACTORS
(Two units comprising the Oldburg Station.)
alarm analysis and indication system for, 22:48679
design parameters and layout for, 22:16146 (GA-8075)
design parameters for, 22:22712 (STI/PUB-174)
performance of, description of power operation, 22:46907 (NP-17599, pp 7-25)
pressure vessel penetration sealing foil performance in, 22:7859
pressure vessels for, mechanical engineering aspects of concrete, 22:6045
Olefins
see Alkenes
OLEIC ACID
effects on calcium, potassium, and sodium content of rabbit tissues, 22:47611
labeling with iodine-131, method for, 22:23399 (IA-1128, pp 213-19)
oxidized, radiomimetic effects of, on mice and yeasts, protective effects of antibiotics against, 22:19380
radiation effects on metabolism of, by rats, x, 22:43469
radioinduced chemiluminescence of, effects of nitrogen and temperature on x, 22:28343
radioinduced peroxide radicals in, effects of, on carotene, 22:28303
testing of silver-110-labeled, for scanning lymph system, 22:33891
Oleic Acid, Glyceryl Ester
see Olein
OLEIC ACID, METHYL ESTER
radioinduced oxidation of emulsions of, in water, kinetics of γ, 22:16597
radioinduced oxidation of, kinetics of γ, 22:16598
OLEIN
see also Oleic Acid
iodine-131-labeled tri-, evaluation of, for use in fat tolerance tests, 22:51348
labeling with iodine-131, method for, 22:23399 (IA-1128, pp 213-19)
phagocytosis of iodine-131-labeled, effects of heparin, oxygen, pH, and temperature on, 22:10693
radiation effects on metabolism of, by rats, x, 22:43469
radiation effects on, polymerization of, in coconut oil, γ, 22:14533
use of iodine-131-labeled tri-, in functional study of diabetes mellitus in man, 22:36321
Oleum
see Sulfuric Acid--fuming
OLFACTORY ORGANS
effects on x-ray discrimination in monkeys, 22:49487
(ORO-2903-39)
radiation detection by, of rats, x, 22:28625 (NYO-2147-13, pp 181)
radiation effects on neurons of, in rabbits and rats, x, 22:552(R) (COO-1669-1)
radiation effects on response of, of radio and television personnel, microwave, 22:28695
radiation effects on, of rabbits and rats, mechanisms in acute x, 22:51870(R) (COO-1669-4)
radiation effects on, of rats, x, 22:38426(R) (NYO-3698-1)
removal of rat, effects of, on x-radiosensitivity of saccharin avoidance behavior, 22:8646
role in x-ray detection by monkeys, 22:49488(R) (ORO-2903-43)
OLIGOMYCIN
effects on oxidative phosphorylation in comparison to deuterium effects, 22:47477
Oligodeoxyribonucleotide Transferase
see DNA Oligodeoxyribonucleotidyl Transferase
OLIGOSACCHARIDES
see also Amygdalin
see also Lactose
see also Maltose
see also Sucrose
see also Trehalose
OLIVINES
see also Dunites
age of, uranium-238 fission track method for estimation of, 22:51085
iron-57 Moessbauer effect in, measurement using Coulomb excitation with recoil implantation through vacuum, (E), 22:46270
radiation effects at 1.8 and 2 keV on, helium ion and proton, (E), 22:43811
radiation effects at 2 keV on, proton, (E), 22:11186
radiation effects on, 1.8-keV helium ion, (E), 22:11186
OMNITRON SYNCHROTRON
description and operation of, for very heavy ions, 22:27090 (UCRL-17907)
description of, 22:29796
design, 22:1535 (UCRL-17869)
ion source for, design of sputtering-type Penning discharge metallic, 22:46645
vacuum system for, performance and testing of components for, 22:16830
vacuum system for, use of quadrupole mass filter for measuring cryopumping and outgassing in, 22:37965 (UCRL-17845)
OMRE
see Organic-Moderated Reactor Experiment
Onions (Allium)
see Allium under Angiospermidae
ONTARIO
gold ores of, rubidium/strontium method for age estimation of, 22:6435 (MIT-1381-15)
micrometeorology at Chalk River, 22:40242 (AECL-2787, pp 415-25)
operation of fuel plant at Port Hope in, 22:28898
Ontario-Hydro Fairport Station, Unit 1
see Pickering Power Reactor, Unit 1
OOCYTES
see also Ova
chemical composition of microvesicular bodies isolated from, of chickens, 22:33718 (UCLA-12-640, pp 61-80)
development of yolk in, of Limulus polyphemus, 22:28283 (ORNL-4100, pp 75-96)
metabolism of DNA, proteins, and RNA in, of frogs, 22:28407(R) (ORO-2575-41)
metabolism of RNA in, of Triturus, 22:28283 (ORNL-4100, pp 75-96)
organelles of, electron microscopic studies of microvesicular body and transosome, 22:33586 (UCLA-12-640, pp 31-44)
radiation effects on genetic recombination in, of Drosophila melanogaster, uv, 22:10748
radiation effects on number of, in mice, x, 22:43417
radiation effects on survival of, in embryos of frogs, x, 22:40899
radiation effects on survival of, in mice, combined effects of age and hypoxia on electron, 22:43418
radiation effects on, of Artemia salina, effects of ploidy on x, 22:43277
radiation effects on, of Drosophila, effects of dose on repair of dominant lethal x, 22:45673
radiation effects on, of Drosophila, effects of sigma virus on x, 22:33780(R) (NYO-3905-2)
radiation effects on, of silkworms, latent γ, 22:40931
radioinduced autosomal translocations in chromosomes of, of Drosophila melanogaster, 22:23493
radioinduced chromosome aberrations in, of Drosophila, x, 22:51545
radioinduced loss of X chromosomes in, of Drosophila melanogaster, x, 22:51544
radioinduced mutations in, of Drosophila melanogaster, γ, 22:49292
radioinduced mutations in, of mice, effects of dose rate on γ and x, 22:31027
radiosensitivity in fetal and neonatal monkeys, x, 22:28422

radiosensitivity of, in mice, effects of age on x, 22:43416
recombination in Drosophila, effects of temperature on, 22:28401 (ORNL-4100, pp 54-61)
uptake of tritium-labeled uridine by cytoplasm and nucleus of, in mice, 22:28405 (ORNL-4100, pp 110-16)
OOGENESIS
effects on uv-radiosensitivity of germinal plasma of eggs of frogs, 22:10692
radiation effects on fruit fly, x, 22:33967
radiation effects on, of Drosophila, effects of genotype on γ, 22:45498
radioinduced aneuploidy during Drosophila melanogaster, effects of x-ring on γ, 22:485
radioinduced aneuploidy during, in Drosophila, γ, 22:45479
radioinduced aneuploidy during, of Drosophila, effects of genotype on frequency of γ, 22:33789
OPERATIONS AND PROJECTS
see also Argus Operation
see also BREN Operation
see also Dominic Operation
see also Plowshare Project
see also Plumbob Operation
see also Vela Project
see also Wigwam Operation
description of Manhattan, 22:19002
OPIUM
analysis for elements by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
OPOSSUMS
hormone secretion by thyroid of, determination of rate of, 22:21404 (COO-301-150)
OPTICAL MATERIALS
(See also Glass and other specific materials used for optical purposes, e.g., specific halides such as Silver Chlorides.)
radiation effects in, transient, (E), 22:24411 (LA-DC-8636)
Optical Pyrometers
see Pyrometers
Optical Rotation
see Magneto-Optical Rotation
OPTICAL SYSTEMS
(See also instrument using optical systems, e.g., Microscopes.)
see also Image Brightness Intensifiers
see also Infrared Optical Systems
see also Microscopes
see also Remote-Viewing Equipment
applications of 120-inch orbiting telescope, (T), 22:41254
conference on, 22:38167
description of large European hydrogen bubble chamber, 22:12623 (CERN-67-26(Vol.1), pp 341-6)
design and operation of Pockels cells for amplitude modulating light, 22:50896 (UCRL-50463)
design and testing of, for observation of radioactive materials in reactor hot cells, 22:33582 (INR-870/XIV/PS)
design for contour mapping of thin-film surfaces, 22:12183 (SC-CR-67-2509)
design for direction of x-ray beam in patients during therapy, 22:49408
design for inspecting inside of tubes, 22:23385(P)
design for observation and photography in bubble chambers, 22:49119(P)
design for pulsed source of highly-polarized electrons, 22:1536 (YALE-2726-501)
design for wide-field visible and infrared radiation detection systems, 22:21332(P)
design of catadioptric, for focusing wide-angle light in Cherenkov detectors, 22:318
design of telecentric camera lens for bubble chamber photography, 22:19157
design of wide-angle lenses, for Argonne 12-ft bubble chamber, 22:12622 (CERN-67-26(Vol.1), pp 329-40)
development of Fraunhofer holography for bubble chamber photography, 22:38091
development of lead titanate--lead zirconate, 22:6223 (SC-R-67-1219)
development of Lidar, for detection and tracking of clouds and discontinuities in the atmosphere, 22:16739 (SC-DR-67-115)
development of microscopic flying-spot scanner, for use in identification of stained DNA in cells, 22:2502 (AECL-2665)
development of rapid optical shutters, 22:21015(T) (SC-T-68-1507)
fabrication of waveguides for laser, by proton irradiation of fused silica, 22:46203
filter lenses, use for radiation protection of eyes of industrial personnel, 22:40675
geometry and theory of, for detecting nuclear detonations in deep space, 22:2260 (CONF-671022-1)
operation of Mark V ruby lidar, for tracking of NERVA rocket reactor exhaust plume, 22:47241 (UCRL-13358)
transfer properties of digital microdensitometer, 22:6202 (EGG-1183-1330)
use of lenses of, for radiation protection of laser personnel, 22:36281
use of Mark V ruby lidar, for tracking debris clouds f nuclear cratering explosions, 22:47242 (UCRL-13360)
Oral Epithelium
see Epithelium
Oralloy
see Uranium Isotopes
Orange Oxide
see Uranium Oxides UO_3
Ordered Bed Fast Reactor
see Reactors, Pebble-Bed
ORDNANCE MATERIEL
artillery shells for, design of broach for shearing rotating bands from rifle-bore-fired, 22:25213 (LA-3878)
location of mortars, using short baseline detection system, 22:20991 (LA-DC-9286)
propellant level in small arms cartridges, design of gamma radiometric system for measuring, 22:38133
testing of aircraft, neutron radiographic method for, 22:37957
Ore Concentrates
see Feed Materials
Ore Processing Plants
see Uranium Ore Processing Plants
OREGON
cesium-137 content of milk in, during 1965, 22:36257
radiation center at state university of, design of, 22:30758
radioisotope content of milk in, during 1966, 22:23518
radioisotope content of milk in, during Jan. to March 1967, 22:23515
strontium-90 content of milk in, during 1965, 22:36257
ORES
(See also ores of specific metals; see also specific minerals, e.g., Carnotites, and formations such as Chattanooga Shale.)
see also Beryllium Ores
see also Carnotites
see also Copper Ores
see also Feed Materials
see also Gold Ores
see also Iron Ores
see also Lead Ores
see also Manganese Ores
see also Minerals
see also Molybdenum Ores
see also Radioactive Minerals
see also Silver Ores
see also Thorium Ores
see also Tin Ores
see also Titanium Ores
see also Uranium Ores
see also Zinc Ores
analysis by spark-source mass spectrography, 22:22930((NBL-242)
analysis for copper by neutron activation methods, 22:35764
analysis for copper, iron, zinc, and zirconium by x-ray fluorescence methods, 22:33211
analysis for gold by neutron activation methods, 22:42620
analysis for iron, molybdenum, and titanium using portable radioisotope x-ray fluorescence analyzer, 22:48829
analysis for main components by radiometric methods, 22:40048
analysis for metals, photoneutron and x-radiometric, 22:50948
analysis for metals, x-ray fluorescence method for, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
analysis for molybdenum using 2,3-butanedione, thiourea, and tin chloride, spectrometric, 22:33235
analysis for molybdenum, polarographic, 22:33272
analysis for silicon, activation, 22:1961 (ORO-2980-17
analysis for silver by x-ray fluorescence method, 22:1958 (ORNL-IIC-10(Vol.1), pp 442-64)
analysis for uranium using thiobarbituric acid in ethan solutions, spectrophotometric, 22:30572
analysis for various elements by spectrographic method, 22:48810 (AERE-R-5759)
analysis for zirconium, absorptiometric, 22:48826
analysis of barium-containing, for lead by gamma-excite x-ray luminescence, 22:18696(T) (CONF-651090-1)
analysis of copper, for copper and silver by photon activation methods, 22:40045
analysis of low-grade, comparison of x-ray detectors for 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
analysis of, radioactivity methods for, 22:30709
analysis of, use of radioisotopes in, 22:47297
book: 1968 Book of ASTM Standards with Related Material, Part 32, 22:37679
book: Chemical Technology of Rare Metal Ores, in Russia 22:40191
cadmium content in, use of thermal neutron absorption technique for determining, 22:4494
concentration measurement of, using americium-241 in radiometric method, 22:6531
copper content in, use of neutron activation analysis f determining, 22:4494
copper content in, use of x-ray sources for determining, 22:4494
element determination in, use of beta-backscattering

method for, 22:28194
gamma activity in, use of small computers for measurement of, 22:25519
iron content in, use of x-ray sources for determining, 22:4494
lead content in, use of x-ray sources for determining, 22:4494
potassium content in, effects of effective atomic number of mineral deposits on conversion coefficient for gamma well logging method for measuring, 22:35934
prospecting for silver, neutron activation methods in, 22:18694(R) (TID-23668)
radioactivity of natural, from Southern Bulgaria, 22:27906
thorium content in, fission fragment method for determination of, 22:18915
uranium content in, fission fragment method for determination of, 22:18915
x-ray radiometric logging in barium--lead, effect of elemental composition on, 22:14587
zinc content in, use of x-ray sources for determining, 22:4494

RGANIC ACIDS
see also Amino Acids
see also Dicarboxylic Acids
see also Fatty Acids
see also Fumaric Acid
see also Gluconic Acid
see also Glucuronic Acid
see also Glutaric Acid
see also Glyceric Acid
see also Glyoxylic Acid
see also Hydroxamic Acid
see also Isobutyric Acid
see also Lactic Acid
see also Lysergic Acids
see also Nicotinic Acid
see also Nonanoic Acid
see also Peroxybenzoic Acid
acidities of, effects of deuterium on, 22:14504
biosynthesis of four-carbon, in Pseudomonas fluorescens and tomatoes, use of glucose substrate to determine mechanism of, 22:20999(R) (RLO-1387-8)
content of human urine, effects of electromagnetic waves and vibration on aromatic hydroxy, 22:25970
corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
corrosive effects on tungsten, 22:43530 (BM-RI-7169)
corrosive effects on TZM molybdenum alloys, 22:43530 (BM-RI-7169)
efficiency in solvent extraction of metals, 22:16692
radiation effects on content of pyroracemic, in cotton leaves, γ, 22:45416
radioinduced polymerization on polyesters, 22:8161(P)
radioinduced polymerization with polyesters, 22:21141(P)
radiolysis of tritium-labeled, yields of free radicals from auto-, 22:30641
radioprotective effects of 4-hydroxy-2, 2-dimethyltetrahydropyran-4-carboxylic, on Vicia faba cells, 22:49459
rare earth salts, preparation and properties of, 22:23002 (CONF-670502-, pp 392-402)
separation from degraded kerosene--TBP solutions of fission products by ion exchange, 22:21170
separation of trivalent actinides and rare earths from, by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
solvent properties of 7-to-9-carbon monocarboxylic, for thorium and uranium, 22:42839
spectra of monocarboxylic, effects of deuterium, oxygen-18, and other substitutions on far infrared, 22:2067

RGANIC ANALYSIS
(See also specific methods of analysis, e.g., Volumetric Analysis.)
sensitivity of enthalpimetric methods for determining functional groups in, 22:16359 (NYO-2133-48)

RGANIC CHEMISTRY
see also Biochemistry
see also Radiochemistry
see also Reaction Mechanisms
isotope uses in, 22:23019
research at Hebrew Univ. of Jerusalem, 1965-66, 22:6210(R) (NP-17097)

RGANIC COMPOUNDS
see also Alcohols
see also Aldehydes
see also Alkaloids
see also Alkanes
see also Alkenes
see also Amines
see also Carbohydrates
see also Drugs
see also Dyes
see also Fats
see also Heterocyclic Compounds
see also Hydroaromatic Compounds
see also Organic Acids
analysis by neutron activation methods, 22:42643
analysis by potentiometric titrations, review on, 22:25302
analysis for arsenic, 22:22901(R) (ORO-2733-13)
analysis for carbon, hydrogen, and nitrogen by combustion and gas chromatography, 22:48813 (DP-1150)
analysis for carbon, hydrogen, and nitrogen, computer-controlled system for, 22:30436(R) (UCRL-50006-68-1)
analysis for carbon-14 and tritium by radio-gas-chromatography, 22:8036(P)
analysis for carbon-14 and tritium using flow monitoring counter, 22:45005
analysis for carbon-14 by scintillation spectroscopy, effects of gelling agent on, 22:39995
analysis for carbon-14 or tritium, apparatus and method for, 22:27617(P)
analysis for carbon-14, gas chromatograph--combustion--continuous counting system for, 22:37684
analysis for cesium-137, radiochemical, 22:40006
analysis for fluorine by neutron activation methods, 22:14439
analysis for functional groups by enthalpimetric methods, 22:16359 (NYO-2133-48)
analysis for halogens, 22:30436(R) (UCRL-50006-68-1)
analysis for halogens by neutron activation and gas chromatography, 22:42645
analysis for hydrogen by thermalization of neutrons, 22:45000(P)
analysis for phosphorus, 22:37835(T) (JPRS-45458)
analysis for radioisotopes, use of thin-layer chromatography in, 22:16472
analysis for trace elements, review on, 22:25309
analysis for tritium by modified micro combustion method, 22:47107
analysis for tritium using flow monitoring counter, 22:45005
analysis of irradiated, design of injection port for gas--liquid chromatographic, 22:8031
analysis of radioisotope-labeled, use of desktop computer to calculate specific activities from liquid scintillation counter data for, 22:40019
analysis of, low-resolution mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
analysis of, review on gravimetric and volumetric, 22:25303
analysis of, review on ultraviolet spectrometric, 22:25299
book: Action of Ionizing Radiations on Water and Aqueous Solutions, 22:18858
book: Chemistry and Technology of Synthetic High-Molecular-Weight Compounds. Carbon-Chain Polymers, in Russian, 22:18857
book: Europium, 22:27738
carbon-14 specific activity in labeled, procedures for determination of, 22:25242 (TRG-Report-1059)
chemical properties of, isotope effects on, 22:23019
complexes with metals, physical properties of, Solution Laser research program on, 22:40054(R) (NYO-2269-12)
complexes with metals, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with rare earths, preparation and properties of, 22:23002 (CONF-670502-, pp 392-402)
decomposition of, effects of carbon-14 on electrolytic, 22:16531
determination by fluorometry, review on, 22:25306
determination in air, 22:14427 (ORNL-4196, pp 15-32)
determination in aluminum, 22:14428 (ORNL-4196, pp 33-44)
determination in products from pyrolysis of polymers by mass spectroscopy, 22:14401(R) (UCRL-13332)
determination in water by gas chromatography, 22:18738(R) (MLM-1417)
determination of high-molecular-weight, in organic reactor coolants, 22:12224 (NP-17239)
determination of type of, by isotopic exchange in gas chromatographic columns, 22:88
deuteration by gas chromatography, 22:42696
effect on thorium and uranium content of minerals, 22:4293
effects on ion exchange of zirconium from aqueous hydrochloric acid solutions, 22:30680
effects on radioisotope transport in surface waters, 22:42849 (ORO-490-16)
electric properties of, for use as insulation for SNAP-15A, 22:37936 (GA-7976)
energy transfer in, 22:16594
excitation transfer in crystalline, 22:35829(R) (CALT-383-5)
fluorescence of crystalline, triplet-triplet annihilation in, 22:35829(R) (CALT-383-5)
light scattering by aqueous solutions of, effects of deuterium on, 22:16506
molecular structure of, NMR studies of, 22:14428 (ORNL-4196, pp 33-44)
neutron scattering by protons in hydrogen bonds of, double-potential-well-model calculation of slow, 22:46280
neutron--proton interactions in single crystals of, effective cross sections for, (E), 22:9921 (JUL-Conf-1)
photochemical processes in, low-temperature, 22:6328
photolysis of, spectra of intermediates formed during, 22:40112
polarographic behavior of, effects of chemical reactivity and structure in, 22:10123(R) (COO-1148-112)

polarographic behavior of, electrode processes in, 22:10123(R) (COO-1148-112)
polarographic behavior of, review on developments in, 22:25293
positronium annihilation in liquid, correlation with electronic and structural properties, (E), 22:19746
preparation of labeled, by isotopic exchange in gas chromatographic columns, 22:88
preparation of labeled, in Czechoslovakia, 22:16634
preparation of tritium-labeled, gas-chromatographic techniques for, 22:16480(R) (COO-890-9)
properties of, effects of configuration and substituents on, 22:14513 (BNL-50057, pp 60-78)
proton stopping processes in, at 100 keV, 22:25403
purification by gas chromatography, 22:14428 (ORNL-4196, pp 33-44)
purity determination by using NMR to construct melting curve, 22:46236
radiation chemistry of simple, review of, 22:27777
radiation effects on electric insulating, 22:784
radiation effects on glassy, at 4.2°K, ESR spectra of trapped electrons from, 22:2118
radiation effects on liquid, review of, 22:42722 (BNL-50110)
radiation effects on nitrogen, review of, 22:40552
radiation effects on polycrystalline, effects of heat on yields of free radicals from γ, 22:27779
radiation effects on solid, α, 22:14585
radiation effects on, research on, 22:22200(R) (NYO-2962-6)
radiochemical processes in, low-temperature, 22:6328
radioinduced exchange between tritium and hydrogen in, 22:42787
radioinduced formation of volatile, in fruit juices, gas chromatographic analysis of γ, 22:40978(R) (NP-17182)
radioinduced luminescence in, kinetics of prompt and delayed components of, 22:25654
radioinduced rearrangement in molecules of, electron-beam, 22:51034
radioinduced scintillations in, kinetic study of fast component of, 22:11495(T) (UCRL-Trans-10166)
radiolysis by tritium decay in, self-, 22:27699
radiolysis of, 22:40127
radiolysis of aliphatic, protective effects of aromatic compounds on, 22:6337
radiolysis of frozen and liquid aqueous solutions of, review on mechanism of, 22:27744 (NYO-3242-25)
radiolysis of labeled, self-, 22:30638
radiolysis of liquid, formation and reactions of reactive species in, 22:25404
radiolysis of liquid, geminate recombination of ions in, 22:33440
radiolysis of liquid, review on, 22:48883
radiolysis of solid, at −196°C, spectral studies on ionic processes in γ, 22:30608
radiolysis of tritium-labeled, auto-, 22:30641
radiolysis of, fundamental physico-chemical processes in, (E), 22:30155(R) (NAA-SR-12296)
radiolysis of, protective effects of hydroxyaryl-1:3:5-triazine against, 22:33855(P)
radiolysis of, pulse, 22:42799
radiolysis of, spectra of intermediates formed during, 22:40112
radiothermoluminescence of, 22:25413
reactions with hydrated electrons, 22:25408
reactions with hydroxide radicals, rate constant for, 22:2167
separation by ion exchange chromatography, review on, 22:25275
separation of radioactive trace contaminants from, by zone refining, 22:8191
separation of tritium-labeled, from urine, method for, 22:47446 (CONF-680503-3)
solvolysis of, effects of deuterium on, 22:8037(R) (COO-1008-3)
stability and storage of labeled, 22:30638
stability of labeled, for use as tracers, 22:50966
strontium-90 reactions with, in soils, 22:6795(R) (COO-414-6)
structure of, neutron-diffraction studies of, 22:22955
structure of, review on electron paramagnetic resonance studies on, 22:25361
structure of, review on use of Raman spectrometry in studies on, 22:25360
structure of, review on x-ray diffraction studies on, 22:25356
synthesis under primitive earth conditions, 22:25789
Szilard--Chalmers reactions in, research progress on, 22:25376(R) (PRNC-114)
thermodynamic data from shock wave studies, compendium of, 22:18742 (UCRL-50108(Vol.2)(Suppl.1))
tritium exchange between tritium oxide and, effects of internal radiation on rate of, 22:8058
use in ionization chambers, relative responses for, 22:6587
use of germanium-77-labeled, for studies of petroleum product behavior during refining, 22:14709
ORGANIC COMPOUNDS, CHLORO-
radiation effects on electric conductivity of, effects of dose rate on x, 22:8150
radioinduced graft polymerization with vaporous acrylonitrile, γ, 22:42759
ORGANIC COMPOUNDS, FLUORO-
deuterium exchange between ammonia or methanol and aromatic, 22:14491
ORGANIC COMPOUNDS, HALO-
determination by neutron activation and gas-chromatographic separation, 22:12264
determination in air by optical spectroscopy, spark chamber for, 22:30825(R) (UCRL-50007-67-3)
radiation effects on electric conductivity of, effects dose rate on x, 22:8150
reactions with free radicals in aqueous solutions, 22:23034 (IA-1128, pp 78-96)
ORGANIC COMPOUNDS, IODO-
analysis of iodine-131-labeled, for inorganic radioiodine, 22:39979 (CNEA-224)
analysis of iodine-131-labeled, for radioactive inorga iodides, 22:33229
chromatographic analysis of, released from rat thyroid gland, 22:40517(R) (ORO-1643-89)
collection from air using electric spark and ion excha material, 22:48852 (SWRHL-8-r)
ORGANIC COMPOUNDS, METALLO-
analysis by chromatography, 22:37639(T) (ANL-Trans-61 pp 1-56)
analysis for antimony by activation, chemical, and polarographic methods, 22:25318
analysis for carbon, hydrogen, and nitrogen by combust and gas chromatography, 22:48813 (DP-1150)
analysis for trace elements, review on, 22:25309
neutron activation of, research on, 22:23481(R) (PRNC 102)
structure of, review on x-ray diffraction studies on, 22:25356
ORGANIC COMPOUNDS, PHOSPHO-
analysis of, elemental, 22:37835(T) (JPRS-45458)
reactions with chloroform, 22:27860(R) (NYO-1922-43)
solvent properties for metals, effects of formation of third phase on, 22:16693
solvent properties for thorium and rare earths, 22:37873(P)
sorptive properties for sodium and uranyl ions, correlation of density with, 22:33354
ORGANIC-COOLED DEUTERIUM REACTOR
see also Heavy Water Organic-Cooled Reactor
Organic-Cooled Reactors
see Reactors, Organic-Cooled
ORGANIC-MODERATED REACTOR EXPERIMENT
fuel element testing for, 22:49859
operations history of, total, 22:1821
Organic-Moderated Reactors
see Reactors, Organic-Moderated
Organic Solvents
see Solvents
ORGANIC SYNTHESES
see also Biosynthesis
see also Fermentation
see also Friedel-Crafts Reaction
see also Grignard Reagents
see also Reaction Mechanisms
methods for high yield, of insulin, 22:14906 (BNL-500 pp 123-37)
Organic Test Reactor
see Whiteshell Reactor No. 1
Organic Zeolites
see Ion Exchange Materials
ORGANISMS
(See also specific organisms.)
see also Animals
see also Microorganisms
analysis of marine, for aluminum by neutron activation methods, 22:21025 (PRNC-104, pp 91-5)
analysis of marine, for trace elements by neutron activation methods, 22:37642 (BNWL-SA-1776)
content of major- and trace elements in marine, in Pue Rico, 22:43311(R) (PRNC-85)
element contents in, computer program for calculating following analysis of, 22:21023 (PRNC-104, pp 68-74
measurement of specimens of, in biosphere, effects of potassium-40 on, 22:21461
mutations induced by space flight in, 22:12829
occurrence of extraterrestrial, theoretical discussion on, 22:33916
physiology of marine, radioisotope tracer studies of, 22:19237(R) (NYO-1343-17)
radiation effects on genetic components and processes 22:51875 (TID-4060(1st Ed.))
radiation effects on multicellular, in relation to cellular injury, 22:30938 (UCRL-17751, pp 27-40)
radiation effects on somatic aspects of, 22:51875 (TI 4060(1st Ed.))
radiation effects on, energy absorption spectra during incorporation of alpha-emitting nuclides for studying (T), 22:38480
radioisotope metabolism and toxicity to, 22:51875 (TI 4060(1st Ed.))
radioisotope uptake by algal marine, sodium-24, tantalu 182, and zinc-65, 22:43311(R) (PRNC-85)
rare earth content of marine, measurement of, 22:43311(R) (PRNC-85)
selection for indicating radioisotope content of food chain in environs of Savannah River Plant, 22:38253

- (DP-MS-67-99)
- trace element content of, in relation to ash, dry and wet weight, and organic carbon and nitrogen, 22:43311(R) (PRNC-85)
- zinc-65 uptake by algal benthic, effects of bacteria on, 22:43311(R) (PRNC-85)

ORGANS
- (See also specific organs.)
- blood flow in, scintillation detector using radioactive tracer for measuring, 22:45287(P)
- cation uptake by internal, of pelagic fish, 22:2491
- indium-113 scanning of, of man, review of, 22:40760
- irradiation of, radioprotection during, 22:39956 (ISS-67/30)
- localization of human, tracer techniques for, 22:14940
- radiation dosimetry in phantoms of human, γ, 22:23538
- radiation effects on content of taurine in, of rats, 22:28374
- radiation effects on transplants of, in twin cattle, γ, 22:40830 (ORO-657, pp 35-45)
- radiation effects on, of mice and rats, combined effects of natulan on, 22:40838
- radioinduced mutations in, of mice, effects of carbon monoxide on x, 22:19374
- radioisotope content in, design of Anger organ camera for determining, 22:10545
- radioisotope distribution in human, design of scanner for determining, 22:30841(P)
- radioisotope distribution in, design of autofluoroscope for determining, 22:6693
- radioisotope distribution in, linear scanner for determining, 22:6566
- radioisotope scanning of human, design of scintillation detector for, 22:51822
- radioisotope scanning of, in man, 22:38394
- radioisotope spatial distribution in, scanning methods and equipment for determining, 22:49070(T) (JPRS-46486)
- sciniscanning of human, data averaging techniques for, 22:40804
- weights in beagle dogs, relation of, to total body weight, 22:28622 (ANL-7278, pp 95-131)

ORGEL REACTOR
- control elements for 250 MW(e), description of optimum, 22:53272 (EUR-4042)
- coolant channels in, heat transfer of finned Zircaloy, 22:22813 (EUR-3886)
- coolant purification methods in, effects on operation economics of, 22:30271
- coolant studies for prototype, organic, 22:1808
- coolants for, methods for purification of, 22:42809 (CONF-660553-8)
- cooling system testing for burnout, fouling, and heat transfer, 22:52303 (CONF-660553-10)
- description of, 22:30171
- economic aspects of, 22:1808
- fuel channels of, computer program for analysis of thermal performance of, 22:27483 (EUR-3905)
- fuel cycle performance of, analysis of economic thorium oxide (ThO_2), 22:30246
- fuel elements for, description of ultrasonic inspection method for finned-tubes of, 22:39798
- fuel elements of, measurement of thermal and epithermal spectrum indices for, 22:16145 (EUR-3736)
- operations review from 1960, 22:20810 (EUR-3898)
- shutdown system for, description of boric acid in U-tube, 22:32887

Orientation
- see Preferred Orientation

Orientation, Nuclear
- see Nuclear Orientation

ORIFICES
- see also Nozzles
- description of whistle, for fluid flow sound detection control system, 22:16336(P)
- design of Hallam Power Reactor fuel element, 22:32779 (NAA-SR-Memo-11658)
- flow metering by sharp-edged, effects of dryness fraction on steam--water mixture, 22:2280
- plugging meter for liquid sodium systems, operation characteristics of, 22:50841(R) (LA-3993)
- testing of Hallam Power Reactor fuel element, analysis of destructive, 22:32779 (NAA-SR-Memo-11658)
- two-phase flow through, development of equations for, (T), 22:10494

Orion
- see High Energy Injection Devices

Orlon
- see Acrylonitrile Polymers

ORNL FAST BURST REACTOR
- radiation survey, comparison of radiation detectors for, 22:6652 (ORNL-4168, pp 183-230)
- use as source for DOSAR thermal neutron facility, 22:2272 (ORNL-TM-2009)

ORNL Health Physics Research Reactor
- see ORNL Fast Burst Reactor

ORNL HIGH-FLUX ISOTOPE REACTOR
- activation analysis facility at, 22:14433 (ORNL-4196, pp 66-89)
- containment system for, detailed description of ventilation system for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- control plate drives for, drag effects on scram travel and time of flight, 22:47017(R) (ORNL-TM-2243)
- control plate for, characteristics of drive mechanism for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- control plate for, results of strain gage tests under cold flow conditions of, 22:47017(R) (ORNL-TM-2243)
- control plate lugs for, failure of, 22:10061(R) (ORNL-TM-2078)
- control plates for, analysis of problems with, 22:47017(R) (ORNL-TM-2243)
- control plates for, fabrication of aluminum, 22:2591
- control plates for, nuclear characteristics of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- control plates for, radiation effects on tensile properties of, 22:47017(R) (ORNL-TM-2243)
- control plates for, results of testing of, 22:47017(R) (ORNL-TM-2243)
- control rods for, use of rod oscillation technique for on-line calibration of, 22:3894 (ORNL-TM-1961)
- control system for, detailed description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- control system for, operating experience with general coincidence logic for, 22:22851
- control system for, operations performance of, 22:47017(R) (ORNL-TM-2243)
- control systems for, 22:14248 (ANL-7380, pp 170-3)
- coolant burnout heat flux for various water velocities in, 22:51174
- coolant for, summary of analyses of, 22:42364(R) (ORNL-TM-2295)
- cooling system, use of lanthanum for curium removal from, 22:33029
- cooling systems for, detailed description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- cooling systems for, summary of maintenance of, 22:47017(R) (ORNL-TM-2243)
- cooling water for, detection of leaks in target rods by analysis of, 22:14433 (ORNL-4196, pp 66-89)
- core for, coefficients of reactivity for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- core for, design parameters for and description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- core system for, description of hydraulic model studies of, 22:37406 (BNWL-518(Del.))
- corrosion studies for, 22:26029 (ORNL-4229, pp 71-83)
- description of, detailed diagrams for functional, 22:37540 (ORNL-3572(Rev.2)(Vol.1B))
- electrical systems supply for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- fabrication of fuel elements for, description of techniques for, 22:37541 (ORNL-TM-2197)
- fuel assembly development for, 22:632 (ORNL-4108)
- fuel element burnup in, analysis of, 22:35606 (ORNL-TM-2196)
- fuel element fabrication and testing for, 22:8706 (ORNL-4170, pp 173-83)
- fuel element fabrication procedures for, 22:35603 (ORNL-4242)
- fuel elements for, design data for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- fuel elements for, steady state heat transfer analysis for, 22:7899 (ORNL-TM-1904)
- fuel plates for, welding methods for joining, 22:8706 (ORNL-4170, pp 173-83)
- heat transfer analyses of, tabular summary of coefficients for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- instrumentation for, description of process systems, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- neutron density fluctuation analysis in, diagnostic usefulness of, 22:22858 (ORNL-4219, pp 87-109)
- neutron density fluctuations in, detection of anomalous operation using, 22:16275 (CONF-671011-, pp 89-101)
- neutron spectrometers for, computer control of triple-axis, 22:27521(R) (ORNL-4236)
- nuclear characteristics of, tabulation of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- operation history for, 22:47017(R) (ORNL-TM-2243)
- operations history of, 22:10061(R) (ORNL-TM-2078)
- operations history of, Jan. 1--Mar. 31, 1969, 22:42364(R) (ORNL-TM-2295)
- Phoenix fuels for, fabrication of, 22:14289 (BNWL-635)
- Phoenix fuels for, feasibility of use of, 22:14289 (BNWL-635)
- power fluctuations in, theory of, (T), 22:6102
- power spectral density measurement in, use of gamma- and neutron-sensitive ionization chambers for, 22:25096 (ORNL-TM-2144)
- process systems for, maintenance of and changes in, 22:42364(R) (ORNL-TM-2295)
- radioactivity monitoring at, equipment and procedures for, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- reactivity calculations for, on-line, 22:22858 (ORNL-4219, pp 87-109)
- reactivity fluctuations in, effects of coolant flow around control rods on, 22:1860 (ORNL-4149)
- reactivity measurements for, description of pulsed neutron, 22:12114
- reactivity variation detection using an on-line digital computer, 22:16274 (CONF-671011-, pp 61-8)
- safety instrumentation for, procedures for on-line testing of, 22:16273 (CONF-671011-, pp 16-27)

- safety system for, operation and maintenance of module for testing, 22:33685 (ORNL-TM-1638(Pt.30))
- safety systems for, description of spurious single-channel trips from, 22:42364(R) (ORNL-TM-2295)
- shielding for, description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- site for, complete description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- target elements from, analysis of failed, 22:4829
- target irradiation testing in, 22:8744 (ORNL-4170, pp 184-91)
- target rods of, radiation damage to, 22:17148 (ORNL-TM-2138)
- test facilities for, detailed description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- test holes for, results of foil activation for neutron flux and neutron and gamma spectra measurements at exits of, 22:44897 (ORNL-TM-2221)
- use for radiation testing of bonded bed and coated particle fuels, 22:46911(R) (ORNL-4266)
- waste disposal systems for, description of, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
- water radiolysis in, 22:26029 (ORNL-4229, pp 71-83)

ORNL ISOCHRONOUS CYCLOTRON
- beam defocusing for proton irradiation of primates, 22:35174 (ORNL-4217, pp 96-118)
- beam phase probe for, design and performance of, 22:35174 (ORNL-4217, pp 96-118)
- information guide for users of, 22:3561 (ORNL-TM-2004)
- ion source for, description of vacuum system for polarized, 22:35174 (ORNL-4217, pp 96-118)
- ion source for, radiofrequency dissociator for polarized, 22:35174 (ORNL-4217, pp 96-118)
- ion source for, radiofrequency transition magnet parameters for polarized, 22:35174 (ORNL-4217, pp 96-118)
- magnet coils of, magnetic field measurements for trimming, 22:35174 (ORNL-4217, pp 96-118)
- operation, 1967, 22:35174 (ORNL-4217, pp 96-118)

ORNL RESEARCH REACTOR
- auxiliary and emergency systems for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- beam holes of, operation of fused salt convection loops in, 22:7900 (ORNL-TM-1960)
- capsule facility for, high temperature gas cooled reactor nuclear safety tests in poolside, 22:7816(R) (ORNL-TM-2057)
- containment systems for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- control rods for, calibration measurements for, 22:3895(R) (ORNL-TM-2033)
- control systems for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- coolant water for, analysis of cadmium contamination increase in, (E), 22:20910(R) (ORNL-TM-2147)
- cooling system for, layout diagrams for, 22:47016 (ORNL-4169(Vol.1))
- cooling system for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- cooling tower for, block diagram of fan system for, 22:47016 (ORNL-4169(Vol.1))
- core components in, bowing of aluminum and beryllium, 22:24991
- core for, nuclear and heat transfer characteristics of, 22:47016 (ORNL-4169(Vol.1))
- description of, summary, 22:47016 (ORNL-4169(Vol.1))
- electrical systems for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- experimental facilities for fused-salt convection loop in, description of, 22:12035(R) (ORNL-4191)
- experimental facilities for radiation performance of molten salt fuel, description of in-pile loop, 22:48736 (ORNL-4254, pp 174-82)
- fuel assembly configuration during January to March 1968, description of, 22:35608(R) (ORNL-TM-2237)
- fuel elements for, effects of heat treatments on, 22:8686 (ORNL-4170, pp 108-14)
- fuel elements for, nominal design parameters for, 22:47016 (ORNL-4169(Vol.1))
- lattice housing for, bowing measurements on, 22:3895(R) (ORNL-TM-2033)
- maintenance during January to March 1968, description of, 22:35608(R) (ORNL-TM-2237)
- neutron flux variations in, from an in-core cadmium--boron neutron filter, (E), 22:20910(R) (ORNL-TM-2147)
- operation of, Oct. to Dec. 1967, 22:20910(R) (ORNL-TM-2147)
- operation procedure for, criteria for reactor safety of, 22:14261 (ORNL-TM-689)
- operations during January to March 1968, description of, 22:35608(R) (ORNL-TM-2237)
- operations history of, 22:3895(R) (ORNL-TM-2033)
- operations history of, 22:10062(R) (ORNL-TM-2087)
- power fluctuations in, theory of, (T), 22:6102
- pressure vessel penetrations for, tabular summary of, 22:47016 (ORNL-4169(Vol.1))
- radioactive waste handling at, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- reactivity fluctuations in, effects of coolant flow around control rods on, 22:1860 (ORNL-4149)
- reactivity variations in, from an in-core cadmium--boron neutron filter, (E), 22:20910(R) (ORNL-TM-2147)
- reactor building for, summary description of, 22:47016 (ORNL-4169(Vol.1))
- safety analysis of, for operation at 45 MW, 22:20908 (ORNL-4169(Vol.2))
- safety rods in, bowing of aluminum--cadmium shim, 22:24991
- site for, safety analysis of, 22:47016 (ORNL-4169(Vol.1))
- test facilities in, distribution of iodine-131 and cesium-137 in coolant loss accident mockup in, 22:27416(R) (ORNL-4228)
- test facility for, fission gas release from fuel element in poolside, 22:27416(R) (ORNL-4228)
- test holes for, summary description of, 22:47016 (ORNL-4169(Vol.1))
- use for radiation testing of high burnup coated particle fuels, 22:46911(R) (ORNL-4266)

ORNL SEPARATED-ORBIT CYCLOTRON
- description, 22:29796
- development of, 22:41895 (RHEL/M-124, pp 109-32)
- magnet development for, 22:41899 (RHEL/M-124, pp 181-98
- magnets for, design of prototype, 22:35175 (ORNL-4217, pp 119-39)
- radiofrequency system for, design of prototype, 22:3517 (ORNL-4217, pp 119-39)

ORNL SEPARATED-ORBIT CYCLOTRON EXPERIMENT
- description of, 22:41896 (RHEL/M-124, pp 133-44)
- design specifications for, 22:41906 (RHEL/M-124, pp 269-84)
- magnet design and fabrication for, 22:35175 (ORNL-4217, pp 119-39)
- radiofrequency components of, description of, 22:35175 (ORNL-4217, pp 119-39)
- vacuum system design for, 22:35175 (ORNL-4217, pp 119-39)

ORNL Transuranium Processing Plant
- see Transuranium Processing Plant

OROTIC ACID
- effects on γ-radiosensitivity of hemin and yeasts, 22:51771
- radiation chemistry of, 22:52123
- radiation effects on incorporation of tritium-labeled, into DNA of splenic lymphocytes from hamsters, x, 22:23604
- radiation effects on, electronic aspects of uv, 22:33786
- use of carbon-14-labeled, for study of DNA synthesis in HeLa cells, 22:36212

ORR
- see ORNL Research Reactor

Orthophosphoric Acid
- see Phosphoric Acid

OSCILLATORS
- (For electronic oscillators only.)
- see also Microwave Oscillators
- see also Oscillographs
- see also Pulse Generators (Electronics)
- see also Radiofrequency Oscillators
- see also Reactor Oscillators
- circuit for transistorized 400-kHz keyed, 22:21378 (ORNL-4219, pp 18-28)
- design of acoustic, for fluidic temperature sensor based on acoustic resonance technique, 22:21000 (SAN-639-7)
- design of electromechanical, 22:47066 (SC-DC-68-2396)
- design of strip line, with distributed feedback, 22:4551(P)
- design of superconductiving cavity, 22:19199
- development based on silicon carbide and gallium phosphide diodes for production of reference pulses for scintillation spectrometers, 22:2393 (JINR-P13-3523)
- optical parametric, quantum fluctuations in, (T), 22:17842
- optical parametric, quantum fluctuations in, (T), 22:17840
- performance of superconducting, and filters, 22:29415
- sensitivity of macroscopic, for detection of fractionally charged particles and gravitational radiation, 22:3259
- stability of low-Q, effects of harmonic distortion on, 22:21008 (SC-TM-67-3011)

OSCILLOGRAPHS
- (Including oscilloscopes)
- camera for oscilloscope, design of, 22:28255
- circuit for displaying rapid repetitive signals, design of time sampling, 22:49158(P)
- data display as histograms on oscilloscopes, accuracy of multichannel counting, 22:329
- data from sampling oscilloscopes, computer processing of, 22:30897
- design and operation of 12-beam oscilloscope, 22:10630 (LRP-34/67)
- design and performance for investigating martensite formation in iron--nickel alloys, 22:693(T) (UCRL-Trans-10137)
- design of five-ray oscilloscope, for measuring π^+ lifetime, 22:10628 (IFVE-SEF-67-2-k)
- nuclear magnetic resonance display technique for, linear timebase, 22:19210
- synchronizer for delayed trigger of sweep for oscilloscope, in nsec range, design of, 22:10629 (IFVE-SEF-67-12-k)
- testing of accuracy of oscilloscopes, signal generator for, 22:43153 (IPP-1/73)

use for automatic plotting of parametric dependencies of quantities measured in pulsed experiments, 22:45374
use with light pen for spectral analysis, 22:33701
Osiris Reactor
see Saclay Reactors (Osiris)
OSKARSHAMN POWER REACTOR
configuration of, analysis of construction, 22:48690
description of, 22:46946
design parameters for, 22:22712 (STI/PUB-174)
turbines for, description of, 22:50758
OSMIUM
abundance in photosphere, (E), 22:23934
atomic weight of, based on carbon-12 = 12, 22:42698
book: Uncommon Metals, 22:10981
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
content of deep-sea sediments from cosmic origin, 22:42916
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deposition from aqueous solutions, plating method for, 22:18738(R) (MLM-1417)
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination from beta decay of rhenium-187, 22:16458
determination in binary alloys with iron, nickel, and palladium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
determination in carbonaceous and enstatite chondrites, activation, 22:22
determination in chondritic meteorites, activation, 22:15
determination in platinum by neutron activation methods, 22:27570
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination simultaneously with ruthenium, neutron activation method for, 22:27842
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on deuterium exchange reactions with organic compounds, 22:35819
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on titrimetric determination of uranium, 22:22972
isotope shifts in hfs, 22:9101
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
photofission at 300 to 1600 MeV, cross sections and fragment yields for, (E/T), 22:5856
separation from ruthenium by distillation from peroxide--sulfuric acid solution, 22:44990
separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
sorption by manganese dioxide from nitric acid, 22:157
surface friction in vacuum, 22:52177
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640
OSMIUM ALLOY COUPLES
Os--Re/Re--W, radiation effects on electric properties of, 22:612(R) (GEMP-69)
OSMIUM ALLOYS AND SYSTEMS
Al--Os, superconducting transition temperature of monoclinic $Al_{13}Os_4$, effects of iron, cobalt, and ruthenium on, 22:52687
Cr--Os, superconducting transition temperature of, (E), 22:41531
Fe--Os, analysis for osmium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
Ir--Os, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
Ir--Os, superconductivity, susceptibility, and thermal capacity, correlation between, (E), 22:11383
Ni--Os, analysis for osmium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
Os--Pd, analysis of osmium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
Os--Pu, phase studies of, 22:2655
Os--Re, superconducting transition temperature, pressure effects on, 22:11342
Os--Re--W, phase studies of sintered, 22:7023
Os--Re--W, tensile properties of sintered, 22:7023
Os--Tc, phase studies of, 22:4807
OSMIUM FLUORIDES
crystal structure of OsF_6, electron-diffraction study of, 22:33436
OSMIUM HYDRIDES
complexes with cyclopentadiene, Szilard--Chalmers reactions in, 22:25376(R) (PRNC-114)
OSMIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
OSMIUM ISOTOPES
decay of, angular correlation measurements in, sample preparation for, 22:23008
determination from beta decay of rhenium-187, 22:16458
nuclear quadrupole moments, (E/T), 22:11957
production of foils of, for nuclear research, 22:263
OSMIUM ISOTOPES Os-178
conversion-electron and gamma spectra following thulium-169 (N-14,5n) reactions, (E), 22:30027
energy-level transition rotational constants for, (E), 22:30027
OSMIUM ISOTOPES Os-180
electron-capture decay of, conversion-electron spectra from, (E), 22:35356
electron-capture decay of, γ spectra and log-ft values for, (E), 22:42054
electron-capture decay of, half-life for, (E), 22:30041
energy-level transition rotational constants for, (E), 22:30027
OSMIUM ISOTOPES Os-181
beta and electron-capture decay of normal and isomeric, (E), 22:30041
beta and electron-capture decay scheme of, conversion-electron and γ spectra and log-ft values for, (E), 22:27182
electron-capture decay of, conversion-electron spectra from, (E), 22:35356
internal conversion electron spectra for, (E), 22:48507(R) (ANL-7436)
OSMIUM ISOTOPES Os-182
electron-capture decay of, conversion-electron spectra from, (E), 22:35292 (ORNL-4217, pp 1-81)
energy-level transition rotational constants for, (E), 22:30027
OSMIUM ISOTOPES Os-184
energy-level transition rotational constants for, (E), 22:30027
gyromagnetic ratio of, calculation of collective, (T), 22:20684
OSMIUM ISOTOPES Os-185
electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
nuclear spectroscopy, 22:14433 (ORNL-4196, pp 66-89)
OSMIUM ISOTOPES Os-186
alpha inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
content in sulfidic ore deposits, use in age estimation, 22:6475
energy levels from rhenium-186 decay, (E), 22:46812
energy-level transition probabilities from oxygen-16 scattering with Coulomb excitation, E2, (E), 22:27155
energy-level transition probabilities in, ratios of E2, (T), 22:16043
energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
energy-level transition rotational constants for, (E), 22:30027
energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
energy-level transitions from iridium-186 decay, multipolarities of, (E), 22:39636(R) (ORO-3398-12)
energy-level transitions from rotational states, angular anisotropy of conversion electrons for, (E), 22:20645
energy-level transitions in, K/L and K/L_3 internal conversion ratios for E2, (E), 22:53187
gyromagnetic ratio of, calculation of collective, (T), 22:20684
internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
oxygen-16 scattering at 42 to 80 MeV with Coulomb excitation, (E), 22:27155
proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)
OSMIUM ISOTOPES Os-187
content in sulfidic ore deposits, use in age estimation, 22:6475
fission probability in alpha reactions with tungsten-183, (E), 22:39640 (UCRL-17989, pp 127-57)
isomeric transition in, half-life for, (E), 22:32610
magnetic moment, (E), 22:17792
nuclear magnetic moment from hfs measurements, 22:9101
nuclear magnetic moment, (E), 22:39179
nuclear magnetic resonance in osmium oxides, (E), 22:39179
OSMIUM ISOTOPES Os-188
deuteron reactions (d,p) with, spectroscopic factors for, (E), 22:27213
energy level at 633 keV, g-factor measurement using perturbed γ-γ angular correlations, (E), 22:20638
energy levels from rhenium-188 decay, (E), 22:46812
energy levels from rhenium-188 decay, lifetimes of, (E), 22:27125
energy-level transition probabilities from oxygen-16 scattering with Coulomb excitation, E2, (E), 22:27155
energy-level transition probabilities in, ratios of E2, (T), 22:16043
energy-level transition probability rates in, ratios of

- rotational and vibrational, (T), 22:16043
- energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
- energy-level transitions from rhenium-188 decay, (E), 22:18241
- energy-level transitions in, K/L and K/L_3 internal conversion ratios for E2, (E), 22:53187
- fission probability in alpha reactions with tungsten-184, (E), 22:39640 (UCRL-17989, pp 127-57)
- gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
- neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
- nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
- oxygen-16 scattering at 42 to 80 MeV with Coulomb excitation, (E), 22:27155
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
- proton elastic scattering at 10 to 16 MeV, excitation function for, (E), 22:27213
- proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)

OSMIUM ISOTOPES Os-189
- energy level at 69.6 keV, electric quadrupole and magnetic dipole moments of, (E), 22:53214
- energy level at 69.6 keV, half-life and magnetic moment of, (E), 22:53205
- energy-level transition probabilities from iridium-189 decay, (E/T), 22:44713
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- magnetic moment, (E), 22:17792
- Moessbauer effect for 69.6-keV state in various absorbers at 4.2°K, (E), 22:53205
- nuclear electric quadrupole moment from hyperfine structure measurements, (E), 22:20579
- nuclear magnetic resonance of, Larmor frequency of, (E), 22:17792
- nuclear quadrupole moment, (E/T), 22:11957

OSMIUM ISOTOPES Os-190
- analysis for impurities, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
- deuteron reactions (d,p) with, spectroscopic factors for, (E), 22:27213
- energy level transitions from proton inelastic scattering with Coulomb excitation, multipole mixing ratio for, (E), 22:35293(R) (ORNL-4230)
- energy levels of, g-factor measurements using precession in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)
- energy-level transition probabilities from oxygen-16 scattering with Coulomb excitation, E2, (E), 22:27155
- energy-level transition probabilities in, ratios of E2, (T), 22:16043
- energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
- energy-level transition rotational constants for, (E), 22:30027
- energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
- gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- neutron capture by, isomeric cross-section ratio for thermal, (E), 22:44679 (IAN-E-1)
- neutron inelastic scattering by, activation cross section for, (E), 22:20578 (WASH-1079)
- neutron inelastic scattering with isomeric excitation, cross section for fast, (E), 22:7705
- neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
- nuclear deformation energies of, (T), 22:30081
- nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
- oxygen-16 scattering at 42 to 80 MeV with Coulomb excitation, (E), 22:27155
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
- proton elastic scattering at 10 to 16 MeV, excitation function for, (E), 22:27213
- proton inelastic scattering at 4.5 MeV with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
- proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)

OSMIUM ISOTOPES Os-191
- beta decay of, γ spectra from, (E), 22:5822
- production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
- production of isomeric, by osmium-190 thermal neutron capture, (E), 22:44679 (IAN-E-1)

OSMIUM ISOTOPES Os-192
- deuteron reactions (d,p) with, spectroscopic factors fo (E), 22:27213
- energy level at 206 keV, g-factor measurement using γ-- angular correlations in hyperfine fields, (E), 22:46731(R) (COO-1746-8)
- energy level at 206 keV, g-factor measurement using perturbed angular correlations in internal magnetic fields, (E), 22:32573 (MIT-2098-422, pp 69-94)
- energy level transitions from proton inelastic scatteri with Coulomb excitation, multipole mixing ratio for, (E), 22:35293(R) (ORNL-4230)
- energy levels of, g-factor measurements using precessio in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)
- energy-level transition from iridium-192 decay, multipo mixing ratio for 485-keV, (E), 22:46731(R) (COO-1746-8)
- energy-level transition probabilities from oxygen-16 scattering with Coulomb excitation, E2, (E), 22:27155
- energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
- energy-level transitions from iridium-192 decay, multipole mixing ratios for, (E), 22:26929(R) (COO-1420-139)
- energy-level transitions in, K/L and K/L_3 internal conversion ratios for E2, (E), 22:53187
- gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
- neutron reactions with, preparation of samples for, 22:18738(R) (MLM-1417)
- oxygen-16 scattering at 42 to 80 MeV with Coulomb excitation, (E), 22:27155
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
- proton elastic scattering at 10 to 16 MeV, excitation function for, (E), 22:27213
- proton inelastic scattering at 4.5 MeV with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
- proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)

OSMIUM ISOTOPES Os-193
- beta decay of, β and γ coincidence spectra for, (E), 22:9897
- beta decay of, β and γ delayed coincidence measurements on, (E), 22:42078
- beta decay of, β-γ and γ-γ coincidence spectra for, (E), 22:27183
- beta decay of, γ angular correlations and spectra for, (E), 22:29980 (IFA-NS-20)
- beta decay of, half-life for, 22:18738(R) (MLM-1417)
- beta decay of, iridium-193 energy levels and transitions from, (E), 22:37349
- beta decay of, iridium-193 energy levels from, (E/T), 22:44701
- beta decay scheme of, β and γ spectra for, (E), 22:9857 (UJV-1909)
- decay scheme for, 22:20045

OSMIUM OXIDES
- effects on standardization of ceric sulfate solutions by potentiometric titration using arsenious oxide, catalytic, 22:8055
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- osmium-187 nuclear magnetic resonance in, (E), 22:39179

OSMOSIS
- see also Dialysis
- see also Osmotic Pressure
- see also Permeability
- effects on flux ratios of solutes through semi-permeable membranes, 22:50891(R) (RLO-1754-11)
- effects on permeability of cell membranes, tracer study of electrically-induced, 22:10681
- radiation effects on regulation of, in paramecia, effect of increased osmotic pressure and unbalanced salt solutions on uv, 22:15121

OSMOTIC PRESSURE
- radiation effects on, of blood of wax moth, effects of time on x, 22:43462

OSTEICHTHYES
- Acipenser sp., manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
- Acipenser sp., zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
- Acipenser transmontanus, temperature of deep muscle and intestines in, effects of biological stress on, 22:10740 (BNWL-480, pp 153-93)
- Alosa pseudoharengus, radiation effects on thiaminase activity in, effects of dose on γ, 22:52116
- Alosa sapidissima, manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
- Alosa sapidissima, zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
- analysis in Columbia River below Hanford reactors, 22:16999 (BNWL-SA-1451)

Aplodinotus grunniens, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Aplodinotus grunniens, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
bream, radioactivity of Savannah River, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
calcium content of marine, during 1964 and 1965, 22:10772
calcium uptake by, 22:2491
Carassius auratus L., radiosensitivity of, relation of thyroid activity to x, 22:6872
Carassius auratus, production of hybrids of, with loach, 22:21584
Carassius auratus, radiation effects on intestinal epithelium of, effects of temperature on x, 22:49540
Carassius auratus, radiation effects on pituitary and thyroid glands of, effects of dose rate on iodine-131 β and γ, 22:36208
Carassius auratus, radiosensitivity of gametes of, effects of sex on x, 22:51871(T) (JPRS-45744)
cesium-127 content of, in Atlantic and Indian Oceans during 1966, 22:25827 (NP-17204)
cesium-137 content of, in Japan from 1963 to 1966, 22:4605 (NP-17083)
cesium-137 content of, in relation to ecosystem, 22:28447 (ANL-7278, pp 304-13)
conference on commercial production of freshwater, 22:12221
content of yolk proteins in eggs of, analysis of, 22:28283 (ORNL-4100, pp 75-96)
copper uptake by internal organs of pelagic, 22:2491
Cynoscion jamaicensis, content of stable elements in, from coast of Puerto Rico, 22:22903 (PRNC-104, pp 57-67)
Cyprinus carpio, carbon-14 uptake by, effects of source on, 22:25837
Cyprinus carpio, radiation effects on behavior of, cesium-137 and cobalt-60, γ, 22:23663
Cyprinus carpio, radiation effects on reproduction of, chronic low-level, 22:6772 (ORNL-4168, pp 61-118)
Cyprinus carpio, temperature of deep muscle and intestines in, effects of biological stress on, 22:10740 (BNWL-480, pp 153-93)
Cyprinus sp., radiation effects on composition of RNA in embryos of, 22:51388
Dorosoma cepedianum, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Dorosoma cepedianum, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
ecology in vicinity of Amchitka Island, Alaska, following underground nuclear explosion, 22:23482 (TID-24291)
eels, manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
eels, zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
Esomus danricus, iodine-131 uptake by thyroid of, effects of light and seasons on, 22:43248
Fundulus heteroclitus, dispersion of pigments in melanocytes of, combined effects of deuterium, pressure, and temperature on, 22:19273
Gambusia affinis affinis, radiation effects on fecundity of, 22:6772 (ORNL-4168, pp 61-118)
gurnard, radiation effects on synthesis of proteins and RNA in embryos of, x, 22:51353
Heteropneustes fossilis Bloch, radiation effect on liver of, internal γ, 22:6874
Heteropneustes fossilis, radiation effects on connective tissue of gastrointestinal tract of, internal β and γ, 22:33971
Heteropneustes fossilis, radiation effects on FSH response of ovaries of, phosphorus-32, 22:45654
Ictalurus melas, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Ictalurus melas, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Ictalurus punctatus, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Ictalurus punctatus, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
iodine-131 content of, in Wisconsin lakes, 22:38236 (COO-1281-6)
Labroides bicolor, ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Labroides dimidiatus, ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Labroides sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Lampanyctus ritteri, synthesis of wax esters in, 22:33717 (UCLA-12-640, pp 81-90)
Lebistes reticulatus, carbon-14 uptake by, effects of source on, 22:25837
Lebistes reticulatus, radiation effects on survival of, x, 22:28621 (ANL-7278, pp 1-94)
Lepomis macrochirus, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Lepomis macrochirus, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Lepomis macrochirus, strontium-85 metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Lirceus fontinalis, radiation effects on, 22:23480(R) (ORO-2412-7)
manganese uptake by internal organs of pelagic, 22:2491
manganese-54 content of, in relation to ecosystem, 22:28447 (ANL-7278, pp 304-13)
Micropterus salmoides, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Micropterus salmoides, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Micropterus salmoides, radium-226 content of bones of, effects of age on, 22:47498
Misgurnus fossilis, radiation effects on eggs of, production of hybrids with goldfish following, 22:21584
Misgurnus fossilis, radiation effects on synthesis of DNA in embryos of, comparison of, with radiotoxin effect, γ, 22:23423
Misgurnus fossilis, uptake and retention of sulfur-35-labeled cysteamine by sperm of, 22:47488
Mystus vittatus, iodine-131 uptake by thyroid of, effects of light and seasons on, 22:43248
nickel uptake by internal organs of pelagic, 22:2491
Onchorhynchus tschawtscha, growth in Columbia River, effects of Hanford thermal discharge on, 22:50883 (BNWL-SA-1724)
Onchorhynchus tschawtscha, migration in Columbia River, effects of Hanford thermal discharge on, 22:50883 (BNWL-SA-1724)
Onchorhynchus tschawtscha, radiation effects on growth and survival of, γ, 22:10740 (BNWL-480, pp 153-93)
Onchorhynchus tschawtscha, radioisotope uptake by, effects of age and water temperature on, 22:10740 (BNWL-480, pp 153-93)
Onchorhynchus tschawtscha, spawning in Columbia River, effects of Hanford thermal discharge on, 22:50883 (BNWL-SA-1724)
Oncorhynchus kisutch, synthesis of DNA in cells of epithelium in intestine of, effects of temperature on x, 22:10740 (BNWL-480, pp 153-93)
Oncorhynchus kisutch, zinc-65 uptake and distribution in eggs of, effects of dyes, pH, and temperature on, 22:51334
Oncorhynchus sp., zinc-65 content of, off Oregon, effects of diel, geographic location, and season on, 22:31015
Oncorhynchus tshawytscha, growth of, inhibitory effects of reactor heat in Columbia River on, 22:17000 (BNWL-SA-1682)
Oncorhynchus tshawytscha, radiation effects on development of, effects of temperature on x, 22:40832(R) (RLO-2049-1)
Oncorhynchus tshawytscha, radiation effects on, low-dose chronic γ, 22:49489(R) (RLO-2056-3)
Opisthonema oglinum, content of stable elements in, from coast of Puerto Rico, 22:22903 (PRNC-104, pp 57-67)
Oryzias latipes, radiation effects on, effects of dose fractionation, dose rate, and temperature on lethal γ and x, 22:15070
Orzias latipes, radiation effects on ovaries of, histological analysis of x, 22:10870
Osmerus mordax, manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
Osmerus mordax, zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
Paralichthys sp., retention of cerium-144 and cobalt-60 by, following ingestion of labeled food and water, 22:49205
Perca flavescens, radium-266 content of bones of, effects of age on, 22:47498
phosphorus-32 uptake by, in Columbia River, in relation to dose following human consumption, 22:19326 (BNWL-665)
Pleuronectes platessa, respiration in, tracer technique for measuring rate of, 22:10728
Pleuronectes sp., radiation dosimetry of, in United Kingdom, 22:45545
polonium-210 content of, in relation to ecosystem, 22:28447 (ANL-7278, pp 304-13)
Pomolobus pseudoharengus, manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
Pomolobus pseudoharengus, zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
Pomoxis annularis, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Pomoxis annularis, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
Pomoxis sp., cesium-137 content of muscles in, in Colorado during 1965 and 1966, 22:21459(R) (COO-1156-28)
Prosopium williamsoni, temperature of deep muscle and intestines in, effects of biological stress on, 22:10740 (BNWL-480, pp 153-93)
Ptychocheilus oregonensis, temperature of deep muscle and intestines in, effects of biological stress on, 22:10740 (BNWL-480, pp 153-93)
radioisotope content of, in Germany during 1964, cerium-144, cesium-137, manganese-54, strontium-89, strontium-90, and zirconium-95, 22:31076
radioisotope content of, in United Kingdom during 1967, 22:45545
Richardsonius balteatus, radioisotope content of, in Columbia River, effects of reactor shutdown on, 22:10740 (BNWL-480, pp 153-93)
Roccus chrysops, cesium metabolism in, 22:6772 (ORNL-4168, pp 61-118)

- Roccus chrysops, potassium metabolism in, 22:6772 (ORNL-4168, pp 61-118)
- Roccus saxatilus, cerium content of, 22:28350
- Rypticus randii, content of stable elements in, from coast of Puerto Rico, 22:22903 (PRNC-104, pp 57-67)
- Salmo gairdneri, acid phosphatase content of liver in, effects of temperature adaptation on, 22:10740 (BNWL-480, pp 153-93)
- Salmo gairdneri, immune response of, to subcutaneous injections of Chondrococcus columnaris, 22:10740 (BNWL-480, pp 153-93)
- Salmo gairdneri, metabolism of acetate and palmitate in, effects of temperature adaptation on, 22:10740 (BNWL-480, pp 153-93)
- Salmo gairdneri, radiation effects on locomotion of, in relation to light and temperature, γ, 22:2556
- Salmo gairdneri, radiation effects on survival of, effects of sodium halides on γ, 22:33898(R) (COO-1421-3)
- Salmo gairdneri, radiation effects on swimming activity of, design of apparatus for measurement of zinc-65 γ, 22:10740 (BNWL-480, pp 153-93)
- Salmo gairdneri, temperature of deep muscle and intestines in, effects of biological stress on, 22:10740 (BNWL-480, pp 153-93)
- Salmo gairdnerii, radiation effects on development of, effects of temperature on x, 22:40832(R) (RLO-2049-1)
- Salmo gairdnerii, radiation effects on embryos of, morphological x, 22:45685
- Salmo gairdnerii, radioinduced congenital malformations in embryos of, effects of egg and sperm exposure on x, 22:15072
- Salmo gairdnerii, radium-226 content of bones of, effects of age on, 22:47498
- Salmo gairdnerii, toxicity of organic coolant to fry of, 22:53490 (AECL-3116)
- Salmo salar, dysprosium content of bones of, neutron activation methods for determination of, 22:4019
- Salmo salar, manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
- Salmo salar, zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
- Salmo sp., cesium-137 content of muscles in, in Colorado during 1965 and 1966, 22:21459(R) (COO-1156-28)
- Salmo sp., radiation effects on viscosity of DNA in sperm of, protective effects of chemical agents against γ, 22:2525
- Salmo sp., zinc-65 retention by, effects of feeding habits and physiology on, 22:8491
- Salmo trutta, cesium-137 content of, in England in relation to I.C.R.P. minimum dose standards for man, 22:10773
- Salmo trutta, strontium-90 content of, in England in relation to I.C.R.P. minimum dose standards for man, 22:10773
- Salvelinus sp., cesium-137 content of muscles in, in Colorado during 1965 and 1966, 22:21459(R) (COO-1156-28)
- Salvelinus sp., manganese-54 retention by, effects of feeding habits and physiology on, 22:8491
- Sardinia sp., cesium-137 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
- Solea sp., cesium-137 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
- Stenobrachius leucopsarus, synthesis of wax esters in, 22:33717 (UCLA-12-640, pp 81-90)
- strontium uptake by, 22:2491
- strontium-88 content of marine, during 1964 and 1965, 22:10772
- strontium-90 content in Italian freshwater, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
- strontium-90 content of marine, during 1964 and 1965, 22:10772
- strontium-90 content of, from southern Atlantic and northwest Indian Oceans during 1966, 22:25827 (NP-17204)
- strontium-90 content of, in Atlantic and Indian Oceans during 1966, 22:25827 (NP-17204)
- strontium-90 content of, in Black Sea during 1965 and 1966, 22:33805 (A-AC-82/G/L-1194)
- strontium-90 content of, in Japan from 1963 to 1966, 22:4605 (NP-17083)
- strontium-90 content of, of Atlantic and Indian oceans, 22:28535
- Thunnus alalunga, radioisotope content of, from Pacific coast of North America during 1962 to 1966, manganese-54 and zinc-65, 22:51667
- Thunnus sp., radioinduced oxidation of myoglobin from, effects of pH on, 22:49183(R) (UCB-34-P-95-15)
- Tinca tinca, radiation effects on survival of embryos of, effects of dose on strontium-90 and yttrium-90 β and external γ, 22:51954
- Triphoturus mexicanus, synthesis of wax esters in, 22:33717 (UCLA-12-640, pp 81-90)
- uranium and mineral content of, in India in relation to food contamination, 22:51656
- wax esters in, biosynthesis of, 22:25722 (UCLA-12-668, pp 59-69)
- Zebra danio, development and physiology of, effects of rainwater radioactivity on, 22:28671
- zinc uptake by internal organs of pelagic, 22:2491
- zinc-65 content of marine, off Oregon, effects of diel, season, and geographic location on, 22:31015
- zinc-65 content of tissues in, from Columbia River, 22:10740 (BNWL-480, pp 153-93)
- zinc-65 content of, in Columbia River, 22:40614(R) (RLO 2047-2)
- zinc-65 content of, in Columbia River estuary, 22:45469
- zinc-65 content of, in relation to ecosystem, 22:28447 (ANL-7278, pp 304-13)

OTR (Organic Test Reactor)
- see Whiteshell Reactor No. 1

OTTERS
- ecology in vicinity of Amchitka Island, Alaska, followin underground nuclear explosion, 22:23482 (TID-24291)

OTTO HAHN REACTOR
- accidents in, crew radiation exposure following design-basis, 22:53404
- configuration for mockup, description of FDR, 22:46982
- construction of, description of progress during 1966, 22:16248(R) (EUR-3745)
- containment structure for, description of, 22:42336
- containment vessel leak-rate measurements of, 22:53404
- control rod reactivity worth for, description of rod drive method for calculation of, 22:46990
- cooling system for, description and operation of circuit in primary, 22:20896
- description of, 22:20897
- description of, detailed, 22:39847
- design parameters for, 22:42336
- dynamic behavior analysis for, 22:53404
- instrumentation for, description of, 22:16248(R) (EUR-3745)
- neutron flux distribution in, effects of second core configuration on thermal, 22:46996
- neutron flux distribution in, foil activation method for thermal, 22:46983
- neutron flux distribution in, measurement of, (E/T), 22:46988
- neutron flux distribution in, use of 20 semiconductor detectors for measurement of thermal, 22:46987
- noise for zero power range in, calculation of prompt neutron, 22:46986
- physics measurements for, analysis of, 22:46984
- physics measurements for, effects on core configuration of, (E/T), 22:46985
- physics measurements for, use of Geesthacht Reactor for, 22:46997
- pressure vessel for, description of, 22:42336
- pressure vessel for, radiation testing of, 22:37508
- reactivity in, effects of boric acid on pulsed neutron, 22:46989
- safety-design aspects of, review of general, 22:53404
- shielding calculations for, analysis of γ and fast neutron, (E/T), 22:46991
- shielding for, fabrication of cast iron, 22:27452
- startup procedure for, analysis of safety aspects of, 22:53400

OUABAIN
- effects on barium-induced tension changes in smooth muscle of intestine from guinea pigs, 22:51383
- effects on flux ratios of solutes through membranes, effects of hyperosmotic solutions on, 22:50891(R) (RLO-1754-11)

OVA
- see also Oocytes
- radiation effects on immune response of mice to transplants of trophoblast of fertilized, x, 22:51413
- radioinduced mutations in, of Oenothera berteriana, comparison of EMS-induced and x, 22:10746

OVARIES
- americium-241 content of rat, effects of administration route on, 22:47473
- development in fetuses and infants of swine, 22:38427(R (ORO-659)
- effects on iodine-131 metabolism in rat thyroid gland, 22:30977
- iodine content of, of animals and man, effects of infectious disease on, 22:40681
- iodine-131 uptake by follicles of, of chickens following ingestion, 22:25752
- radiation dose to maternal, from radiography during pregnancy, 22:2513
- radiation dose to, during dental radiography, standards for control of, 22:4615
- radiation dose to, of human infants, during therapy for benign diseases of thorax, low-dose x, 22:28556
- radiation dose to, of man during diagnostic examination, x, 22:2510
- radiation effects on development and estrogenic activity of, in rats, x, 22:33959
- radiation effects on development of follicles in, of pre puberal swine, γ, 22:19417
- radiation effects on development of tumors in, of mice, latent γ, 22:49613
- radiation effects on development of, in Hylemyia antiqua γ, 22:4725
- radiation effects on development of, in mice, effects of wavelength on uv, 22:8614
- radiation effects on FSH response of, in Indian catfish, phosphorus-32 β, 22:45654
- radiation effects on function of, in female rats, chroni γ, 22:33960

  radiation effects on human, during therapy, protective effects of displacement and shielding against x, 22:10833
  radiation effects on human, following exposure to abdominal fluoroscopy during childhood, x, 22:40870
  radiation effects on human, following medical sterilization, latent x, 22:51977
  radiation effects on human, in relation to genetic effects, 22:40626
  radiation effects on mitosis of cells of, of Chinese hamsters, x, 22:49519
  radiation effects on rat, effects of progesterones on ionizing, 22:33945
  radiation effects on size of endoplasmic reticulum and mitochondria in cells of, of mice, mathematical method for determining γ, 22:45464
  radiation effects on, combined effects of age on, 22:43421
  radiation effects on, of beetles, effects of egg exposure on x, 22:19433
  radiation effects on, of chickens, x, 22:45696
  radiation effects on, of fish, histological analysis of x, 22:10870
  radiation effects on, of frog embryos, x, 22:40899
  radiation effects on, of Indian desert gerbils, internal γ, 22:6873
  radiation effects on, of man following iodine-131 therapy of thyroid, β and γ, 22:15105
  radiation effects on, of man, effects of, on mortality rate from various diseases following x, 22:40835
  radiation effects on, of mice, effects of embryo exposure on ionizing, 22:17036
  radiation effects on, of mice, following exposure to fractionated or single doses, 22:33938
  radiation effects on, of mice, repair of, by germinal epithelium and thecal tissue, 22:40894
  radiation effects on, of miniature swine, γ, 22:40828 (ORO-657, pp 11-17)
  radiation effects on, of rats, differential counting of follicles for determining chronic γ, 22:45710
  radioinduced carcinomas in, of man, effects of dose on incidence of Thorotrast, 22:10872
  radioinduced sterilization of, of mice, protective effects of AET against γ, 22:45603
  radioinduced tumors in, of mice, effects of dose on, 22:40847
  radioinduced tumors of, in rats, iodine-131, 22:45693
  radiotherapy of cancer of human, complications following gold-198 β, 22:28573
  radiotherapy of cancer of human, effects of pretreatment with L-phenylalanine mustard on x, 22:8572
  radiotherapy of carcinoma of, in man, combined effects of cyclophosphamides on electron, cobalt-60 γ, and x, 22:25913
  radiotherapy of carcinomas of, in man, radium γ and x, 22:31163
  radiotherapy of neoplasms of, use of intracavitary gold-198 colloids following surgery for, β and γ, 22:25925
  radiotherapy of tumors of, development of carcinomas of large intestines following radium γ and x, 22:28639
OVENS
    see also Furnaces
    see also Kilns
  design of constant temperature, for materials compatibility testing, 22:8301(R) (ALO-3634-7)
OVOMUCOID
  effects on plutonium retention by rats, 22:8480
Owens Burst
    see Plumbob Operation
7-OXABICYCLO[4.1.0]HEPTANE
  reactions with trialkyl- and trialkoxyboroxins, mechanism and products of, 22:22898 (MLM-1440)
7-OXABICYCLO[4.1.0]HEPTANE, 1-METHYL-
  reactions with trialkoxy- and trialkylboroxins, mechanism and products of, 22:22898 (MLM-1440)
1,3,4-OXADIAZOLE, 2-(4-BIPHENYL)-5-PHENYL-
  light output of, in oxygen-free toluene solution, 22:40414
  scintillation decay time of, in oxygen-free toluene solution, 22:40414
1,3,4-OXADIAZOLE, 2,5-DIPHENYL-
  2,5-diphenyl-1,3,4-oxadiazole--p-terphenyl, radioinduced luminescence in cyclohexane solutions, effects of scavengers on γ, 22:27759
OXALACETIC ACID
  decarboxylation in presence of deoxycholic acid in absolute ethanol, 22:60(T) (TT-65-50400/4-6)
OXALATES
    see also Actinium Oxalates
    see also Americium Oxalates
    see also Ammonium Oxalates
    see also Ammonium Uranyl Oxalates
    see also Barium Oxalates
    see also Chromium Oxalates
    see also Cobalt Oxalates
    see also Curium Oxalates
    see also Dysprosium Oxalates
    see also Europium Oxalates
    see also Iron Oxalates
    see also Manganese Oxalates
    see also Neodymium Oxalates
    see also Nickel Oxalates
    see also Plutonium Oxalates
    see also Potassium Oxalates
    see also Potassium Uranium Oxalates
    see also Praseodymium Oxalates
    see also Promethium Oxalates
    see also Protactinium Oxalates
    see also Rare Earth Oxalates
    see also Samarium Oxalates
    see also Silver Oxalates
    see also Sodium Magnesium Aluminum Oxalates
    see also Sodium Magnesium Oxalates
    see also Sodium Oxalates
    see also Sodium Rhodium Oxalates
    see also Thorium Oxalates
    see also Uranyl Oxalates
    see also Yttrium Oxalates
  effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
  effects on disproportionation of neptunium, spectral studies on kinetics of, 22:10230
  effects on distribution of americium, curium, and europium in cation exchangers or bis(2-ethylhexyl) phosphate in toluene, 22:37818
  effects on photometric determination of indium, 22:2007
  oxidation by potassium permanganate, 22:27845 (CEA-N-816, pp 150-276)
  reactions with ammonium, potassium, and guanidine dioxopentafluorouranates, 22:33325
  separation of uranium from aqueous solutions of, by extraction using high-molecular-weight amines, 22:33531
  solvent properties for uranium, effects of bicarbonates on, 22:4238
OXALIC ACID
  (Common salts are indexed in the form Iron Oxalates.)
  complexes with polonium, solvent extraction studies on stability constants of, 22:6389
  complexes with uranium, use of cerium in electromigration study of properties of, 22:8075
  compounds with hydrazine, radiation effects on single crystals of, ESR study of hydrazine cation radical from γ, 22:42755
  decomposition in dioxane solution, effects of temperature on carbon-13 intramolecular isotope effect in, 22:2022(R) (COO-1142-77)
  decomposition in glycerol solution at 98 to 1350°C, carbon-13 isotope effects on, 22:2022(R) (COO-1142-77)
  effects of sulfuric acid solutions of, on cathodic behavior of niobium, titanium, and zirconium, 22:52172
  effects on γ-radiolysis of heavy water at various pD, 22:16629
  performance of dosimeters of, effects of dose rate at large absorbed doses on, 22:12649 (RISO-112)
  precipitation of plutonium using, method for continuous, 22:25452 (CEA-N-616, pp 154-214)
  properties for decontamination of steel from cobalt-60, electrolytic, 22:21159
  radiation effects on content of, in cotton leaves, γ, 22:45416
  radiolysis of, kinetics of γ, 22:47168
  radiolysis of, yields from mixed pile and γ, 22:42763
  use in aqueous solutions for chemical dosimetry of multimegarad gamma radiation, 22:51263
  use in determination of thorium by amperometric titration, 22:48825
  HNO_3--oxalic acid, solvent properties for neptunium oxalates, 22:30580
  oxalic acid--$Ti_2(SO_4)_3$, radiation effects on, formation mechanisms of hydrogen peroxide in γ, 22:10303
Oxalohydroxamic Acids
    see Hydroxamic Acids
OXALYL CHLORIDE
  spectra of vapor-phase, at 3680 A, effects of chlorine-37 on absorption, 22:35802
OXAZOLE, 2,2'-p-DIMETHYLPHENYLENEBIS(5-PHENYL-
  2,2'-p-dimethylphenylenebis(5-phenyloxazole)--2,5 diphenyloxazole--1,3,5-trimethylborazine, properties as liquid scintillator for detection of thermal neutrons, 22:28126(P)
OXAZOLE, 2,5-DIPHENYL-
  2,2'-p-dimethylphenylenebis(5-phenyloxazole)--2,5 diphenyloxazole--1,3,5-trimethylborazine, properties as liquid scintillator for detection of thermal neutrons, 22:28126(P)
OXAZOLE, 2,2'-p-PHENYLENEBIS[5-PHENYL-
  2,2'-p-phenylenebis[5-phenyloxazole]--poly (methylstyrene)--terphenyl, use as scintillator for beta detection, 22:10561
  dioxane--2,5-diphenyloxazole--napthalene--2,2'-p-phenylenebis[5-phenyoxazole], use as liquid scintillator in determining tritium content in water, 22:6580
OXAZOLE, 2,2'-p-PHENYLENEBIS[5-TOLYL-
  use as scintillator in radiochemical analysis, 22:45292
4-Oxazolidinone, 2-Imino-5-phenyl-
    see Pemoline
OXETANE
  radioinduced polymerization of substituted, in presence of metals or oxides, γ, 22:35848(P)
OXETANE, 3,3-BIS(CHLOROMETHYL)-
  polymers of, radiation effects on, ESR spectral studies

on, 22:8104(T) (AEC-tr-6908, pp 145-53)
polymers, radiation effects on gel formation in, x, 22:47156
polymers, radiation effects on, x, 22:47154
polymers, use as dosimeter for 4- to 15-keV x rays, 22:379
radiation effects on monocrystals of, ESR spectral studies on, 22:8104(T) (AEC-tr-6908, pp 145-53)
radioinduced polymerization of liquid, under anhydrous conditions, γ, 22:8122
radioinduced polymerization of liquid, under anhydrous conditions, 22:42707(T) (AEC-tr-6937, pp 54-8)

OXIDATION
amino acid analysis of products from limited photo-, of chymotrypsin, 22:43205(R) (COO-894-30)
effects on crystal structure of irradiated graphite, 22:41134
effects on friction index and pressing mechanics of metallic powders, 22:651 (LA-3739)
glucose, in human leukocytes, effects of phagocytosis on, 22:36180
oxidation--reduction, measurement of potential of, in muscle tissues of mice for selection of radioprotective compounds, 22:25867
radiation effects on liver lipid, protective effects of radical reaction inhibitors against cobalt-60 γ, 22:25890
radiation effects on processes of, in cotton plants following seed treatment, γ, 22:33748
radiation effects on stainless steel, neutron, 22:4842
radiation effects on sulfur, by Thiobacillus thiooxidans, uv, 22:23686
radiation effects on, of glucose in human leukocytes during phagocytosis, x, 22:36180
radioinduced, in foods, 22:40990
radioinduced, of sulfur amino acids in meat proteins, review of, 22:52111
rate in fat metabolism, use of carbon-14-labeled palmitate to determine, 22:14905 (BNL-50057, pp 111-22)
rate in sample during dry ashing, effects of temperature on, 22:43301 (AERE-R-5474)
rate of surface, use of kryptonate tracer technique for measurement of, 22:14685
rates of light-induced, of enzymes in buffer and in urea, 22:14907 (COO-875-80)
reaction mechanisms for photosensitized, of chlorophyllous pigments, 22:25794
reactions in rat liver mitochondria, effects of radioprotective compounds on, 22:25893
theory of metallic, under dry conditions, (E/T), 22:10916(T) (SC-T-67-0958)
tritium discrimination during, of glucose via glucose-6-phosphate dehydrogenase, 22:30964

OXIDES
see also Actinide Oxides
see also Alkaline Earth Oxides
see also Aluminum Oxides
see also Americium Oxides
see also Antimony Oxides
see also Arsenic Oxides
see also Barium Oxides
see also Berkelium Bromide Oxides
see also Berkelium Chloride Oxides
see also Berkelium Iodide Oxides
see also Berkelium Oxides
see also Beryllium Oxides
see also Bismuth Oxides
see also Boron Oxides
see also Bromine Oxides
see also Cadmium Oxides
see also Calcium Gadolinium Iron Tin Oxides
see also Calcium Gallium Tin Niobium Oxides
see also Calcium Gallium Tin Oxides
see also Calcium Gallium Tin Tantalum Oxides
see also Calcium Gallium Tin Vanadium Oxides
see also Calcium Iron Yttrium Tin Oxides
see also Calcium Oxides
see also Calcium Zirconium Oxides
see also Carbon Monoxides
see also Carbon Oxides
see also Cerium Oxides
see also Cesium Oxides
see also Chlorine Oxides
see also Chromium Carbide Oxides
see also Chromium Niobium Oxides
see also Chromium Oxides
see also Cobalt Oxides
see also Copper Oxides
see also Curium Oxides
see also Dysprosium Manganese Oxides
see also Dysprosium Oxides
see also Erbium Lanthanum Oxides
see also Erbium Oxides
see also Ethylene Oxide
see also Europium Oxides
see also Gadolinium Oxides
see also Gallium Oxides
see also Germanium Oxides
see also Hafnium Oxides
see also Holmium Lanthanum Oxides
see also Holmium Oxides
see also Holmium Oxides
see also Hydrogen Trioxides
see also Indium Oxides
see also Iodine Oxides
see also Iridium Oxides
see also Iron Fluoride Oxides
see also Iron Oxides
see also Lanthanum Carbide Oxides
see also Lanthanum Lutetium Oxides
see also Lanthanum Oxides
see also Lanthanum Thulium Oxides
see also Lanthanum Ytterbium Oxides
see also Lanthanum Yttrium Oxides
see also Lead Oxides
see also Lead Uranium Fluoride Oxides
see also Lithium Antimony Oxides
see also Lithium Iron Oxides
see also Lithium Niobium Oxides
see also Lithium Oxides
see also Lithium Scandium Oxides
see also Lithium Tin Oxides
see also Lutetium Oxides
see also Magnesium Aluminum Oxides
see also Magnesium Oxides
see also Manganese Oxides
see also Mercury Oxides
see also Molybdenum Carbide Oxides
see also Molybdenum Oxides
see also Neodymium Carbide Oxides
see also Neodymium Oxides
see also Neptunium Bromide Oxides
see also Neptunium Chloride Oxides
see also Neptunium Iodide Oxides
see also Neptunium Oxides
see also Nickel Oxides
see also Niobium Chloride Oxides
see also Niobium Oxides
see also Niobium Uranium Oxides
see also Nitrogen Oxides
see also Osmium Oxides
see also Palladium Oxides
see also Peroxides
see also Phosphorus Oxides
see also Platinum Oxides
see also Plutonium Oxides
see also Polonium Oxides
see also Potassium Oxides
see also Praseodymium Oxides
see also Promethium Oxides
see also Propylene Oxide
see also Protactinium Bromide Oxides
see also Protactinium Chloride Oxides
see also Protactinium Iodide Oxides
see also Protactinium Oxides
see also Rare Earth Oxides
see also Rhenium Chloride Oxides
see also Rhenium Oxides
see also Rhodium Oxides
see also Rubidium Oxides
see also Ruthenium Oxides
see also Samarium Oxides
see also Scandium Oxides
see also Selenium Oxides
see also Silicon Oxides
see also Silver Oxides
see also Sodium Antimony Oxides
see also Sodium Oxides
see also Strontium Iron Uranium Oxides
see also Strontium Oxides
see also Sulfur Oxides
see also Tantalum Carbide Oxides
see also Tantalum Oxides
see also Technetium Oxides
see also Tellurium Oxides
see also Terbium Oxides
see also Thallium Oxides
see also Thorium Bromide Oxides
see also Thorium Chloride Oxides
see also Thorium Iodide Oxides
see also Thorium Oxides
see also Thorium Uranium Oxides
see also Thorium Yttrium Oxides
see also Thulium Oxides
see also Tin Oxides
see also Titanium Oxides
see also Transition Metal Oxides
see also Tungsten Carbide Oxides
see also Tungsten Chloride Oxides
see also Tungsten Oxides
see also Uranium Bromide Oxides
see also Uranium Carbide Oxides
see also Uranium Chloride Oxides
see also Uranium Fluoride Oxides
see also Uranium Iodide Oxides
see also Uranium Nitride Oxides
see also Uranium Oxides
see also Vanadium Carbide Oxides
see also Vanadium Oxides
see also Water
see also Water-d
see also Water-d_2

see also Water-t
see also Water-t_2
see also Xenon Oxides
see also Ytterbium Oxides
see also Yttrium Hydroxide Oxides
see also Yttrium Oxides
see also Yttrium Tungsten Oxides
see also Zinc Oxides
see also Zirconium Oxides
analysis for fluorides using fluoride-sensitive electrodes, 22:30428 (BNWL-SA-1790)
analysis for oxygen, 22:14428 (ORNL-4196, pp 33-44)
analysis of films of, electron probe techniques for, 22:25234 (AERE-R-5756)
analysis of metal, for various elements by spectrographic method, 22:48810 (AERE-R-5799)
bibliography on self-diffusion of, 22:21763
binding with metals in production of cermets, 22:7053
book: Continuous Compilation of New Reference Data on Diffusion Processes in Inorganic Solids and Their Melts, Vol. 1, No. 1, 22:31381
book: Interstitial Alloys, 22:19643
chemical potential of oxygen in liquid, method of measuring, 22:49744
crystal growth of, use of arc-transfer method for, 22:52289
defects in nonstoichiometric, computer program for statistical analysis of, 22:52283 (ANL-7449)
density of sintered, effects of porosity and temperature on, (E/T), 22:31513
deposition of, chemical vapor, 22:6957
determination in molten salt fuels for MSRE, 22:14427 (ORNL-4196, pp 15-32)
diffusion in nuclear metals, data tabulation on, 22:36459
diffusion in, models of, 22:52288
diffusion in, review of existing data and experimental problems concerning, 22:3174 (UCRL-70715)
diffusion path networks in, 22:13065 (UCRL-70149)
effects on fission product retention in high-density impregnated beryllium oxide fuels, 22:15247(P)
effects on radioinduced modification of properties of elastomers, 22:4214
electric conductivity of, review of ionic and electronic components of, 22:52269
electric potential measurements across films of, on zirconium alloys in fused nitrate--nitrite salt, 22:2566 (AECL-2777)
electric properties of ceramic, up to 1750°C, (E), 22:44278
film thickness on metal surfaces, triton activation method for determining, 22:49138
fusion of metal, equipment for electric, 22:36530(P)
ion reactions with ionic crystals of, gas diffusion and lattice defects following, review, 22:26484
mass transport in, NBS conference on, 22:52265
melting points of, tables on, 22:36453 (LMEC-Memo-68-10)
oxidation mechanisms of metals forming n-type semiconducting, 22:8764
performance as high-temperature protective coatings, 22:36469
phase studies of layers on zirconium and zirconium alloys, 22:7068
preparation of microspheres of, equipment and procedures for, 22:17160 (ORNL-4075, pp 43-61)
production of doped single-crystal, 22:52289
production of imperfection-free crystalline, hollow cathode plasma technique for, 22:52289
production of single-crystal, use of epitaxial deposition for, 22:52289
production of single-crystal, use of in-crucible centrifugal zone growth for, 22:52289
properties as oxygen ion-conducting solid electrolyte, 22:10247
purity of research-grade, evaluation of, 22:52289
reactions at 500 to 600°C of sodium impurity, with vanadium-base titanium alloys, 22:45752
reactions with gaseous uranium trioxide, effects of structure on surface, 22:22988 (BARC-307)
reduction by gases, mechanisms of, 22:23893
reduction of metal by hydrogen, mechanisms of, 22:23872
sintering crystalline, reactions of grain boundaries and pores during, 22:31492
sorptive properties for iodine, 22:25333 (ORNL-4229, pp 162-79)
sorptive properties of melts of, for trace fission products, quasi-isopiestic techniques for measuring, 22:45189 (NYO-3756-2, Sect. F)
stability of, effects of apparent density on, 22:45819
structure of films of, formed on niobium-stabilized chromium--nickel steel in carbon dioxide at 750 and 850°C, 22:34123
thermodynamic properties of nonstoichiometric, 22:4882
MeO/sub x/--PuO_2, phase studies of, 22:17168 (STI/DOC-10/79)
OXIDOREDUCTASES
see also Alcohol Dehydrogenase
see also L-Amino-Acid Oxidase
see also Ascorbate Oxidase
see also Catalase
see also Cytochrome Oxidase
see also Glucose 6-Phosphate Dehydrogenase
see also Glutamate Dehydrogenase
see also Glutathione Reductase
see also Glycerolphosphate Dehydrogenase
see also Histidinol Dehydrogenase
see also Hydrogenase
see also 2-Hydroxybutyrate Dehydrogenase
see also Isocitrate Dehydrogenase
see also Lactate Dehydrogenase
see also Malate Dehydrogenase
see also Monoamine Oxidase
see also Oestradiol 17-β-Dehydrogenase
see also Peroxidase
see also Phenylalanine 4-Hydroxylase
see also Pyruvate Dehydrogenase
see also Reduced NAD Dehydrogenase
see also Succinate Dehydrogenase
see also Tryptophan 5-Hydroxylase
see also Tryptophan Oxygenase
see also Urate Oxidase
see also Xanthine Oxidase
dehydrogenases, radiation effects on activity of, in liver homogenates and mitochondria of rats, whole-body γ, 22:51481
dehydrogenases, radioinduced inactivation of, in bacteria in relation to bactericidal effects, γ, 22:43239
malic-lactic transhydrogenase, kinetics in Micrococcus lactilyticus, 22:30415 (ORNL-4100, pp 165)
nitrogenases, effects on deuterium-hydrogen exchange, 22:51381
radioinduced mutations for variation in, of tobacco, effects of seed exposure on β, 22:31017 (BNL-10549)
OXIMES
complexes with nickel or palladium, crystal structure of, effects of alkyl substituents on, 22:12161(R) (COO-582-14)
Oxine
see 8-Quinolinol
OXONIUM IONS
(OH_3^+)
reactions with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
Oxotremorine
see 2-Pyrrolidinone, 1-[4-(1-Pyrrolidinyl)-2-Butynyl]-
Oxyacetates
see Glycolic Acid--salts
OXYCARBIDES
see also Uranium Oxycarbides
OXYCHLORIDES
see also Berkelium Oxychlorides
see also Hafnium Oxychlorides
see also Lanthanum Oxychlorides
see also Niobium Oxychlorides
see also Uranyl Chlorides
see also Zirconyl Chlorides
OXYFLUORIDES
see also Ruthenium Oxyfluorides
see also Uranyl Fluorides
OXYGEN
see also Anoxia
see also Ozone
abundance in A/sub m/ stars, (E), 22:29147
abundance in atmospheres of cool stars, (T), 22:43774
abundance in atmospheres of Rho Per and Mu Gem, (E), 22:24001
abundance in carbon stars, (E), 22:8919
abundance in carbon stars, (T), 22:11157
abundance in chromosphere, (T), 22:17317
abundance in envelope of P Cygni, (E), 22:810
abundance in G and K stars, (T), 22:13179
abundance in galactic cosmic rays, (T), 22:17431
abundance in globular cluster stars, (T), 22:29015
abundance in helium stars, (T), 22:4952
abundance in HI regions, (T), 22:36653
abundance in interstellar space, (E), 22:36628
abundance in lower thermosphere, (E), 22:15422
abundance in M and S giant stars, (E), 22:23974
abundance in NGC 604, (E), 22:17221
abundance in NGC 7027, (E), 22:29073
abundance in of molecular, in geocorona, (E), 22:36836
abundance in photosphere, (E), 22:17280
abundance in photosphere, (E), 22:23956
abundance in prehistoric terrestrial atmosphere, (T), 22:52311 (BNL-50114)
abundance in primary cosmic radiation, (T), 22:21962
abundance in solar corona, (T), 22:8941
abundance in solar corona, (T), 22:849
abundance in solar flare of Sept. 2, 1966, (E), 22:36561 (N-68-10375)
abundance in Sun, (E), 22:26139
abundance in Venus atmosphere, (E), 22:17202
abundance of atomic, in ionospheric D region, (T), 22:52668
abundance of molecular, at 100 to 120 km, (E), 22:47986
abundance of molecular, in lower thermosphere, (E), 22:15422
abundance of, solar, (T), 22:13206
abundance variations of ionospheric atomic and molecular, latitudinal and temporal, (E), 22:34453
addition to niobium, method for precise trace amounts, 22:34101 (ORO-2570-12)
alpha differential elastic scattering cross section for,

calculations using Akhieser Pomeranchuk—Blair model, (T), 22:22548
alpha reactions $(\alpha,x\gamma)$ at 58 MeV, gamma spectra and production cross sections for, (E), 22:32494
alpha reactions at 59 MeV, gamma spectra from, (E), 22:5763 (ORNL-4183)
alpha reactions at 800 MeV/c in nuclear emulsions, (E), 22:26804
alpha reactions with, production of fluorine-18 from, 22:12368
analysis for oxygen isotopes in molecular, development of high-pressure mass spectrometric system for, 22:12226 (UCRL-17866)
analysis for oxygen isotopes, development of modulated molecular-beam mass spectrometer for, 22:45029 (UCRL-18043, pp 7-105)
analysis for oxygen-16 and -18 by helium-3 activation, 22:1965 (UCRL-17812)
analysis for oxygen-18 by neutron time-of-flight spectrometry, 22:25256
argon ion (Ar^+) reactions at 0.1 to 10 eV with, temperature variation of interchange and charge transfer in, (E), 22:29292
argon-ion reactions at 90 keV, characteristic x-ray production in, (E), 22:29215
atomic weight of, based on carbon-12 = 12, 22:42698
binding energies and coordination in rare earth oxides and oxysalts, 22:22999 (CONF-670502-, pp 329-40)
book: Chemistry of Dissociated Water Vapor and Related Systems, 22:25366
boron nitride stability in, effects of firing high-temperature in nitrogen on, 22:8831
burning in pre-supernova models, 22:860
burning in stars, mass necessary for, (T), 22:34208
cerium effects on uptake of, by Escherichia coli, 22:23687
charged-particle reactions with, cross-section data compilation for, 22:1600
chemical potential in liquid metals and liquid oxides, effects of gas phase changes and time on, 22:49744
chemistry of singly ionized molecular, in lower ionosphere, (T), 22:22066
chemistry of singly ionized, in lower ionosphere, (T), 22:22066
concentration in vanadium exposed to 700°C sodium, 22:22653(R) (ANL-7419)
contaminating effects on sodium during fabrication of bonded fuel elements, 22:45806(R) (WARD-3791-21)
content deficiency in uranium monocarboxide prepared at 1600°C in presence of excess uranium, 22:19654
content in Atlantic Ocean waters, effects of mixing on, (E), 22:25552(R) (NYO-3862-7)
content in α-zirconium after oxidation at 850°C for 400 hr, 22:47664
content in liquid sodium, development of on-line electrochemical meter for measuring, 22:19194 (TID-24284)
content in liquid sodium, development of on-line electrochemical meter for measuring, 22:19196 (UNC-5131)
content in liquid sodium, equipment for continuous monitoring of, 22:21401(P)
content in reduced steel, effects of rare earth additions, 22:19527
content of erythrocytes, measurement of, by reflected radiations from lasers, 22:49215
content of γ-irradiated mice, effects of propylamine and derivative on, 22:49391
content of sarcoma tissue, in relation to radiosensitivity, effects of drugs on, 22:33878
content of space vehicle in relation to radiosensitivity of astronauts, 22:12860
content of spleen in γ-irradiated mice, effects of radioprotective compounds on, 22:33848
content of tissues, effects of radioprotective agents on, 22:45606
content of tumors in mice, effects of pressure on, 22:31191
content of yeast cells, effects of, on uv-radiosensitivity of vitamin D, 22:8448
contents in tantalum and tungsten foils, after heat treatment in vacuum, 22:43572 (UCRL-71029)
corrosive effects in sodium on niobium—zirconium alloys at 1200 to 1600°F, 22:31326
corrosive effects in sodium on type 316 stainless steel at 1200 to 1600°F, 22:31326
corrosive effects on carbon steel in high-temperature water, 22:49684 (KR-127)
cosmic radiation reactions with, estimation of ratio of tritium to helium production in, 22:41274
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deficiency effects on charged particle- and x-radioinduced inactivation of lysozyme and ribonuclease in solution, protective effects of cysteine, ethanol, glycerol, and histidine against, 22:25915
density in upper atmosphere, atomic, 22:5226
desorption from tungsten by electron impact, 22:43584
determination by activation methods, 22:7989 (CONF-660905-2)
determination by activation methods, effects of rare earths on, 22:27591
determination by alpha activation methods, 22:27597
determination by deuteron activation methods, 22:27597
determination by fast neutron activation, methods for increasing sensitivity of, 22:6285
determination by gamma activation methods, 22:27
determination by gamma activation methods, 22:1975
determination by helium-3 activation, 22:16413 (IAE-1165)
determination by neutron activation method, 22:30455(P)
determination by neutron activation methods, 22:7992(R) (NBS-TN-428)
determination by neutron activation methods, design for variable-speed dual sample rotating assembly for, 22:22981
determination by neutron activation methods, evaluation of systematic errors in, 22:22980
determination by proton excitation of characteristic x rays, 22:11 (ORNL-IIC-10(Vol.2), pp 587-612)
determination in alloys by neutron activation methods, 22:33269
determination in aluminum and aluminum oxide composites, copper bath-vacuum fusion method for, 22:33240
determination in aluminum by activation methods using α and helium-3 particles, 22:53
determination in aluminum fluoride by triton activation methods, 22:27595
determination in atmosphere, mass spectrometric method for, 22:9(R) (NBS-TN-425)
determination in beryllium, design of neutron activation equipment for, 22:30881(P)
determination in bitumens by activation methods, 22:33250
determination in cesium by vacuum distillation, 22:33254
determination in chromium, iron, and nickel by alpha activation methods, 22:27594
determination in Fermi Fast Breeder Reactor coolant sodium, 22:12974
determination in fluorides and uranium dioxide, method for, 22:27530 (CEA-N-816, pp 9-65)
determination in gases by deuteron activation and time-of-flight spectrometry, 22:27587
determination in gases by neutron time-of-flight spectrometry, 22:42612
determination in gases using deuteron activation with neutron time-of-flight spectroscopy, 22:11948(R) (NP-17216)
determination in germanium and silicon by helium-3 activation methods, 22:6278
determination in germanium by helium-3 activation, 22:3999 (LA-DC-8866)
determination in germanium by helium-3 activation technique, 22:27487(R) (LA-3880)
determination in germanium single crystals by helium-3 activation, 22:1954 (LA-DC-8994)
determination in high-purity silicon by alpha activation methods, 22:27596
determination in iron meteorites, 22:35749
determination in liquid metals, calibration of electrochemical sensors for, 22:12677 (ANL-7380, pp 118-22)
determination in liquid metals, description of electrolytic cell for, 22:28211 (UNC-SPLM-61)
determination in liquid metals, design of electrolytic cell for, 22:45376
determination in liquid metals, electrolytic-type monitor for, 22:43170(P)
determination in liquid sodium, electrochemical meter for, 22:47395 (AI-AEC-12700)
determination in liquid sodium, sampling blanks for, 22:12223 (NAA-SR-12616)
determination in liquid sodium, survey of methods for, 22:7991(R) (MSAR-67-213)
determination in liquids by isotope dilution method, 22:22987
determination in lunar surface, equipment for neutron activation analysis for, 22:4545
determination in magnesium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in manganese steel by isotopic dilution method, comparison of metal bath techniques in vacuum fusion method of, 22:42623
determination in metal oxide surface films by triton activation at 3 MeV, excitation functions for, 22:49138
determination in metals and oxides, 22:14428 (ORNL-4196, pp 33-44)
determination in metals by helium-3 activation, 22:8005
determination in metals by helium-3 activation, 22:12236
determination in metals by helium-3 and helium-4 activation methods, 22:27593
determination in metals by inert-gas fusion, 22:22930(R (NBL-242)
determination in metals by neutron activation methods, 22:14433 (ORNL-4196, pp 66-89)
determination in metals by neutron activation methods, 22:1948 (EUR-3565)
determination in metals, methods for, 22:25236 (CEA-N-616, pp 20-71)
determination in molybdenum samples by neutron activatio methods, 22:45020

determination in niobium and titanium by fast neutron activation methods, 22:6284
determination in niobium by spark-source mass spectrography, 22:25273
determination in nitrogen, high-pressure mass spectrometric method for, 22:9(R) (NBS-TN-425)
determination in nuclear metals, gas chromatographic, 22:33258
determination in organic reactor coolants, 22:12224 (NP-17239)
determination in oxygen-deficient zirconia, methods for, 22:8021
determination in petroleum products by fast-neutron activation methods, 22:51
determination in presence of other elements by neutron activation, 22:30457
determination in radioactive alloys by remote combustion and inert gas fusion, 22:22983
determination in rare gases, mass spectrometric method for, 22:9(R) (NBS-TN-425)
determination in reduced graphite oxide by triton activation methods, 22:27595
determination in seawater, 22:14433 (ORNL-4196, pp 66-89)
determination in seawater, evaluation of equipment for, 22:27524(R) (TID-24358)
determination in sodium oxides, design of plugging meter for, 22:30900
determination in sodium reactor coolant cover gases, development of analyzer for, 22:43629(R) (LA-3933)
determination in sodium, amalgamation method for, 22:39977 (BNL-50118)
determination in sodium, internal friction method using tantalum wire for, 22:43527 (ANL-7299, pp 150-72)
determination in sodium, methods for, 22:38510 (BNL-50082, pp 93-152)
determination in sodium, polarographic, 22:31390
determination in sodium, Rhometer development for, 22:24926(R) (APDA-214)
determination in sodium, survey of methods in U.S. laboratories for, 22:22927 (BNWL-690)
determination in sodium, techniques for, 22:24925(R) (ANL-7427)
determination in solids, graphite resistance furnace for use in inert gas diffusion method of, 22:44971 (AERE-R-5763)
determination in stainless steel and nickel, 22:12223 (NAA-SR-12616)
determination in steel by activation methods, 22:22942
determination in steel, activation, 22:37696
determination in steel, activation, 22:1961 (ORO-2980-17)
determination in titanium and refractory metals, fast-neutron activation method for, 22:37700
determination in titanium and vanadium oxides by neutron activation methods, 22:37686
determination in titanium by proton-beam activation, microscale, 22:30427 (BNL-50083, pp 192-202)
determination in transition metal oxides by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
determination in tungsten and molybdenum, vacuum-degassing method for, 22:10974
determination in uranium by helium-3 activation methods, calculation of sensitivities for, 22:8022
determination in uranium carbide by hot extraction method under vacuum or by carrier gas method, 22:42589 (JUL-517-RW)
determination in uranium dioxide, effects of quenching and molybdenum and tungsten contaminants on, 22:25321 (ANL-7375, pp 95-134)
determination in uranium mononitride by modified vacuum-fusion method, 22:33263
determination in uranium oxides and uranium dioxide--metal oxide composites by inert-gas fusion, 22:7987 (ANL-7264)
determination in uranium oxides, polarographic, 22:35754
determination in uranium tetrafluoride, method for, 22:27530 (CEA-N-816, pp 9-65)
determination in vanadium, method for, 22:27530 (CEA-N-816, pp 9-65)
determination in water, 22:16356 (KR-116)
determination in water, design of portable apparatus for radiochemical, 22:22941
determination in water, use of thallium-204 in radiometric, 22:40034
determination in zirconium by alpha activation, 22:8005
determination in zirconium by alpha activation methods, 22:27593
determination in zirconium by helium-4 activation, 22:12236
determination in zone-refined tungsten, inert gas-fusion and mass spectrographic methods for, 22:25316
determination of composition of, in fritted uranium dioxide by polarography, 22:25236 (CEA-N-616, pp 20-71)
determination of dissolved, by radio-release method using iodine-131, 22:16421
determination of dissolved, in fresh and seawater by radio-release method using thallium-204, 22:16421
determination of dissolved, in seawater, methods for, 22:37911 (TID-24495)
determination of enhancement ratio of, for fast neutrons of different energies for effects on survival of kidney cells, 22:49211
determination of ratio of, with uranium in sintered uranium dioxide pellets and powders, volumetric, 22:12237
determination of ratio of, with uranium in uranium dioxide fuels, method for, 22:42593 (RT/ING-(67)7)
determination of trace amount of, in iron--silicon, neutron activation, 22:8010
determination of trace amounts of, by photon activation methods, 22:16388 (CEA-R-3307)
determination of traces of, in aluminum, activation methods for, 22:50907
determination of, state-of-the-art review on, 22:50903 (BNWL-821)
determination of, using neutron-activation analysis unit ACTIVAC, 22:4514
deuteron reactions using recoil deuterons, average cross sections for, (E), 22:11910
diffusion and mass transfer in liquid sodium, computer analysis of, 22:43629(R) (LA-3933)
diffusion and solubility in copper, 22:31478
diffusion from sol-gel thorium dioxide and thorium dioxide--uranium dioxide particles, 22:35778 (ORNL-TM-2268)
diffusion in α-niobium pentoxide monocrystals, 22:28924
diffusion in calcium, cobalt, magnesium, nickel, and zirconium oxides, 22:52288
diffusion in chromium oxides, 22:52288
diffusion in cobalt oxide, mechanisms of, 22:43628 (ANL-7299, pp 268-79)
diffusion in copper--iron--zirconium-base alloy during corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
diffusion in erbium sesquioxide, 22:52266
diffusion in erbium, neodymium, and samarium sesquioxides at 1000°C, coefficients for self-, 22:35824
diffusion in hypostoichiometric zirconium dioxide, mathematical analysis of, 22:41117
diffusion in hypostoichiometric zirconium oxide at 875 to 1050°C, (E/T), 22:41102
diffusion in liquid and solid metals at high temperatures, electrochemical measurement of, 22:4776(T) (NRC-TT-1295)
diffusion in magnetite at 302 to 550°C, isotopic method for measuring, 22:10957
diffusion in molybdenum and molybdenum alloys at 2000 to 2800°C, 22:45815 (GEMP-439)
diffusion in monoclinic zirconium dioxide at 800 to 1000°C, 22:38628
diffusion in neodymium sesquioxide, 22:52266
diffusion in niobium oxide, mechanisms of, 22:43628 (ANL-7299, pp 268-79)
diffusion in niobium oxides, effects of temperature and pressure on, 22:21766
diffusion in rare earth oxides, 22:42650 (COO-1109-35)
diffusion in rare earth oxides and yttrium oxide, effect of temperature on, 22:2560(R) (IS-RD-11)
diffusion in rare earth sesquioxides, self-, 22:36537
diffusion in rhenium alloys at 2000 to 2800°C, 22:45815 (GEMP-439)
diffusion in samarium sesquioxide, 22:52266
diffusion in tantalum and tantalum alloys at 2000 to 2800°C, 22:45815 (GEMP-439)
diffusion in tungsten and tungsten alloys at 2000 to 2800°C, 22:45815 (GEMP-439)
diffusion in uranium dioxide, 22:19628(T) (WAPD-Trans-83)
diffusion in uranium dioxide in an electric field at 900 to 1100°C, 22:4874
diffusion in zirconium and zirconium oxides, 22:34116(T) (WAPD-Trans-0091)
diffusion in zirconium dioxide and zirconium, coefficient and mechanism of, 22:674
diffusion in zirconium, oxygen-16(d,p) reaction study of, (E), 22:23720
dissociation in ionosphere, 22:26318
dissociation of molecular, by auroral particles, (T), 22:34381
distillation from zirconium, 22:16653
distribution between niobium and sodium at 400 to 900°C, 22:43527 (ANL-7299, pp 150-72)
distribution between sodium and tantalum at 400 to 900°C, 22:43527 (ANL-7299, pp 150-72)
distribution in deep water of Caribbean Sea, 22:192
distribution in materials, neutron activation method for determining, 22:30455(P)
distribution in mesosphere, effects of auroral storms on, 22:29376
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
distribution in uranium oxides, calculations of, 22:45813 (AECL-3072)

distribution of dissolved, in deep north Atlantic Ocean, development of model to predict, 22:25556
effect on corrosion of beryllium, 22:4748
effects in presence of methanol on pulse radiolysis of cysteamine, 22:25420
effects in radiation injury, review of physicochemical basis for, 22:15037
effects of adsorbed, on electrons reactions with copper surfaces, (E/T), 22:22204(R) (ORO-2755-20)
effects of atmosphere of, on gamma radiosensitivity of proteins, 22:45133
effects of atomic, on ionospheric electron concentrations, (T), 22:22045
effects of dissolved, on critical current density in superconducting niobium, (E), 22:44048
effects of dissolved, on radioisotope transfer in surface waters, 22:42849 (ORO-490-16)
effects of dry, on oxidation of alkali metals and potassium--sodium as function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
effects of molecular, on 4.5-MeV electron radiation damage in n-type silicon, (E), 22:9482
effects of residual, on properties of molybdenum and niobium in vacuum, 22:52176
effects of sorbed, on electron scattering from copper (111) surface, 22:50003
effects of sorbed, on thermionic emission by polycrystalline molybdenum, tungsten, and rhenium, 22:46286
effects of sorption and desorption of, on thermionic emission by tungsten single crystals, 22:46285
effects on adsorbed, on electric properties of cadmium sulfide films, (E), 22:13593
effects on annealing of radioinduced defects in niobium, 22:43625
effects on α-radiosensitivity of Escherichia coli, 22:25873
effects on β- and γ-radiosensitivity of tumors in lungs of rabbits, hyperbaric, 22:38416
effects on carbon deposition during γ-radiolysis of methane, 22:6336
effects on charged particle- and x-radiosensitivity of lysozyme and ribonuclease activity, 22:25915
effects on chemi- and electrochemiluminescence of lucigenin, 22:27626 (MIT-905-108, pp 33-62)
effects on chromium inclusions in iron--chromium alloys, 22:22954
effects on color center formation by x irradiation in sodium fluorides, (E), 22:39190
effects on color changes in radiation-processed beef during storage, 22:23703
effects on corrosion of nickel alloys by bromine, 22:15140 (BMI-X-489)
effects on corrosion of Zircaloy-2, 22:21663
effects on corrosive properties of sodium in liquid-metal cooled reactors, analysis of, 22:53315
effects on cracking of steel under static load, 22:52170
effects on crystallinity of heat-treated, γ-irradiated polytetrafluoroethylene, NMR spectral studies on, 22:51000
effects on defect production rate in neutron-irradiated silicon, (E), 22:37041
effects on deformation mechanisms of uranium dioxide, 22:41105
effects on deformation of Zircaloy-2 single crystals, 22:664
effects on delayed fracture in aluminum--titanium--zirconium alloys and welds, 22:6997 (KFK-638)
effects on delayed fracture of titanium--aluminum--zirconium alloy, 22:2630
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on dominant lethality in x-irradiated Drosophila virilis, 22:47526
effects on effectiveness of radiation processing of seafoods, 22:26017(R) (TID-23835)
effects on effectiveness of radiation processing of haddock fillets, 22:26020
effects on electric conductivity of cerium oxide at 300 to 1000°C, 22:3215
effects on electric conductivity of plasma, (E), 22:17636
effects on electric conductivity of sodium-seeded argon--nitrogen plasma, 22:37775 (BNL-50082, pp 40-78)
effects on electron-radiosensitivity of neoplasms, hyperbaric, 22:31274
effects on electron-radiosensitivity of neoplastic and normal tissues in man, high-pressure, 22:19391
effects on electron-radiosensitivity of ovaries in mice, 22:43418
effects on electron-radiosensitivity of transforming ability of DNA, 22:16984
effects on electron-sensitivity of thiols in cellular organelles from liver of rats, 22:19247
effects on embrittlement of copper--zirconium alloys, 22:38593
effects on emission spectra and work function of rhenium, 22:41046
effects on emulsion grafting of styrene on electron-irradiated rayon, 22:12374
effects on energy transfer in γ-radiolysis of liquid hexafluoroethane--rare gas mixture, 22:10287
effects on ESR of free radicals in x-irradiated trypsin, 22:10703
effects on fast neutron- and x-radiosensitivity of Shigella flexneri, 22:28712
effects on fast neutron-, uv-, and x-radiosensitivity of bacteria, effects of LET on, 22:6928
effects on fast neutron-radiosensitivity of cells, 22:33939
effects on formation of x-radioinduced free radicals in proteins, ESR study of, 22:49261
effects on free radical formation in uv-irradiated proteins, 22:47459
effects on frequency of x-radiosensitivity of mutagenesis in fruit flies in, 22:14987
effects on gamma-induced precipitation of metallic gold from aqueous solutions of gold chloride, 22:40133
effects on gamma-radioinduced polymerization of ethylene, 22:8136
effects on grain boundary penetration of niobium bicrystals by lithium, (E), 22:41001
effects on growth of bacteria on radiation-processed beef during storage, 22:23703
effects on growth of Salmonella in γ-irradiated culture media, 22:23411(R) (NYO-3641-2)
effects on γ- and x-radiosensitivity of chromosomes in pollen of Tradescantia, 22:12832
effects on γ- and x-radiosensitivity of cultured human cells, 22:23417 (UCRL-17481, pp 133-7)
effects on γ- or x-radiosensitivity of neoplasms in man, hyperbaric, 22:38413
effects on γ-irradiated solutions of myosin, protective effects of β-alanine and sodium nembutal against, 22:25868
effects on γ-radioinduced formation of free radicals in corn starch, 22:45466
effects on γ-radioinduced oxidation of azo dyes in industrial wastes, 22:51020
effects on γ-radiolysis of aqueous eosin, 22:47164
effects on γ-radiolysis of aqueous thymine solutions, 22:12382
effects on γ-radiolysis of heavy water at various pD, 22:16629
effects on γ-radiolysis of methane, 22:27774
effects on γ-radiolysis of pentane, 22:33405
effects on γ-radioprotective effects of chlorpromazine in mice, 22:8575
effects on γ-radiosensitivity of aqueous solutions of peptides, 22:8675
effects on γ-radiosensitivity of barley seeds, 22:49640
effects on γ-radiosensitivity of DNA, 22:45397
effects on γ-radiosensitivity of electron paramagnetic resonance spectrum of free radicals in pepsin, 22:33860
effects on γ-radiosensitivity of enzymatic activity of pepsin, 22:33860
effects on γ-radiosensitivity of glycolysis in erythrocytes, 22:8489
effects on γ-radiosensitivity of HeLa cells, 22:49477 (CONF-680410-, pp 15.1-20)
effects on γ-radiosensitivity of iron uptake by liver cells, 22:28349
effects on γ-radiosensitivity of milk enzymes, 22:14950
effects on γ-radiosensitivity of potato seedlings, 22:19397
effects on γ-radiosensitivity of potato starch, 22:28320
effects on γ-radiosensitivity of RNAase, 22:45423
effects on γ-radiosensitivity of rootlets of beans and wheat, 22:33978
effects on γ-radiosensitivity of seeds of wheat, 22:587
effects on γ-radiosensitivity of tropocollagen, 22:10711
effects on γ-radiosensitivity of tumors in rabbits, 22:28592
effects on γ-radiosensitivity of uterine carcinoma of man, 22:33868
effects on γ-radiosensitivity of wheat seeds, 22:36405
effects on γ-radiosensitivity survival in Escherichia coli, 22:40967
effects on hardening of calcium fluoride, lithium fluoride, and sodium fluoride crystals, 22:49783
effects on heat transfer from flowing liquid sodium, 22:16756(T) (BNL-tr-184)
effects on heavy water sorption and distribution in maize and sunflower plants, 22:12766
effects on hepatic phagocytosis of colloidal gold-198 and iodine-131-labeled serum albumin and triolein in vitro, 22:10693
effects on inactivation of enzymes by dyes and light, 22:25795
effects on induction of chromosome aberrations, 22:2581
effects on infrared spectra of various monouranates and triuranates, 22:23020
effects on ionizing-radiosensitivity of pyrimidine bases in nucleic acids of Escherichia coli, 22:51389
effects on isotope localization and radiotherapy in man, 22:36312
effects on loss of potassium ions by tissues of barley and maize, 22:21011(R) (UCB-34-P-5-47)
effects on man following mastectomy, combined effects of radiotherapy on, 22:40802
effects on mechanical and physical properties of niobium

22:683
effects on mechanism and yields in gamma radioinduced oxidation of aqueous ethylene, 22:16572
effects on mechanism of radiolysis of organic nitrogen compounds, 22:40123
effects on mechanism of reactions of cobalt-60 recoil atoms in neutron-irradiated hexamminocobalt(III) nitrate, 22:16588
effects on metabolism in bones of rats, 22:14915(R) (TID-24217)
effects on mice, effects of mutations on, 22:28397 (ANL-7278, pp 144-69)
effects on molar free energy of metallic oxides in liquid sodium, 22:1750(R) (APDA-206)
effects on neutron- and x-radiosensitivity of HeLa cells, 22:45430
effects on neutron-induced lifetime degradation in silicon, 22:17826
effects on neutron-radiosensitivity of cultured cells from mammals, 22:19370
effects on nucleation and precipitation of lithium in silicon, 22:27838
effects on oxidative phosphorylation in barley roots, 22:21011(R) (UCB-34-P-5-47)
effects on photoluminescence spectra of thallium-activated sodium iodide crystals, 22:1344
effects on photosensitivity of Yoshida hepatoma ascites cells, 22:25796
effects on pion-radiosensitivity of tissues, 22:8600 (CONF-670305-, pp 368-81)
effects on plugging in liquid sodium loops, 22:8725(R) (MSAR-67-207)
effects on polymerization and decomposition of 2-vinylfuran, 22:4073(T) (LA-tr-67-109)
effects on positron long lifetime in gases and liquids, quenching cross section for, (T), 22:29228
effects on pulsed electron-radiosensitivity of Escherichia coli, 22:49462
effects on radiation embrittlement sensitivity of steel, 22:19577 (BNWL-455, Paper 9.1-34)
effects on radiation recovery of spermatids of Drosophila melanogaster, 22:521
effects on radiation resistance of plastics, 22:48890
effects on radiative recombination in silicon, 22:16968
effects on radioinduced free radicals in lyophilized tissues of rats, 22:28369
effects on radioinduced grafting of monomers on cellulose, 22:33434
effects on radioinduced isotopic exchange in gaseous nitrogen, 22:10310
effects on radioinduced luminescence of rare gases, 22:95 (AD-646604)
effects on radioinduced modification of ethylene oxide polymers, 22:6347
effects on radiolysis of aqueous solutions of benzene, effects of acidity on, 22:27813
effects on radiolysis of aqueous solutions of tyrosine, 22:42773
effects on radiolysis of benzene in sulfuric acid solutions in presence of bivalent iron ions, 22:23076
effects on radiolysis of ethylene, 22:4201
effects on radiolysis of glucose solutions, 22:42752
effects on radiopreservation of fish, 22:2559
effects on radioprotective effects of aminothiols on mice, 22:25889
effects on radiosensitivity of carcinosarcomas in rats, 22:10828
effects on radiosensitivity of carotene in oleic acid, 22:28303
effects on radiosensitivity of cells and man, review of, 22:12786
effects on radiosensitivity of cells at bone-tissue interface, 22:38314
effects on radiosensitivity of crickets, mechanism of, 22:25869
effects on radiosensitivity of DNA molecules in Escherichia coli, 22:33793
effects on radiosensitivity of fetus and placenta of rats, 22:51953
effects on radiosensitivity of human cells, 22:10839
effects on radiosensitivity of human laryngeal cartilage following therapy of laryngeal tumors, hyperbaric, 22:31176
effects on radiosensitivity of human neoplasms, 22:19382
effects on radiosensitivity of human neoplasms, review of hyperbaric, 22:28600
effects on radiosensitivity of human tumors, medical review of, 22:51804
effects on radiosensitivity of malignant tumor cells, 22:47550
effects on radiosensitivity of malignant tumors, 22:45620
effects on radiosensitivity of mammalian cells, 22:21410(R) (YALE-2653-30)
effects on radiosensitivity of mice, hyperbaric, 22:33880
effects on radiosensitivity of neoplasms, 22:10735
effects on radiosensitivity of normal and neoplastic cells, 22:8485
effects on radiosensitivity of organisms, 22:25861(T) (JPRS-39391)
effects on radiosensitivity of pepsin, EPR study of, 22:28367
effects on radiosensitivity of poplars, 22:4700(R) (TID-24146)
effects on radiosensitivity of rats, 22:47547
effects on radiosensitivity of space flight personnel, 22:6922
effects on radiosensitivity of sperm of Drosophila, 22:40615(R) (EUR-3889)
effects on radiosensitivity of tissues, 22:25990
effects on radiosensitivity of tumor cells, 22:28553
effects on radiosensitivity of tumor cells, 22:25916
effects on radiosensitivity of tumors of man, review of, 22:4651
effects on radiosensitivity of tumors of rats, 22:40749
effects on rate of destruction of free radicals in DNA, 22:28292
effects on reaction of recoil chlorine atoms and chloromethane, 22:37785
effects on reactions between uranium and water vapor, equipment and method for studying, 22:14471 (AWRE-O-54/65)
effects on reactions of recoil carbon-11 with saturated hydrocarbons, 22:12393
effects on recovery of γ-irradiated yeasts, 22:25871
effects on rejoining of fast neutron- and x-radioinduced chromosome breaks in barley, 22:14984
effects on repair of electron beam damage to Chlamydomonas following administration of fractionated doses, 22:43483
effects on repair of radiation damage in sperm of Drosophila, 22:25821
effects on repair of radioinduced sublethal damage in Chinese hamster cells, 22:25785
effects on RNA synthesis in liver of x-irradiated newts, 22:47489
effects on selenium uptake by sheep erythrocytes, 22:30940
effects on sodium corrosion of stainless steel loops, 22:12971
effects on steady-state γ- and pulse-electron-radiolysis of N,N-dimethyl-p-nitrosoaniline, 22:23067
effects on strain-aging of niobium, 22:23838
effects on strain-aging of tantalum, 22:23838
effects on strength of titanium--zirconium alloys as alloying impurity, 22:23773
effects on structure and superconducting properties of niobium--zirconium alloys, 22:6994
effects on sulfur radical formation in irradiated lysozyme and RNAase, 22:12820
effects on superconducting properties of niobium--titanium alloys, (E), 22:34563
effects on surface tension and contact angle of lithium, 22:36451(R) (AGN-8284)
effects on surface tension of liquid alkali metals in ultrahigh vacuum, 22:17459
effects on survival of mice, effects of AET, cysteamine, and PAPP on hyperbaric, 22:8561(R) (COO-1223-10)
effects on tensile deformation of zirconium at 77 and 600°K, 22:38529
effects on tensile properties of electron-beam refined niobium, 22:23801
effects on tensile properties of hafnium, interstitial, 22:23769
effects on tensile properties of titanium, interstitial, 22:23769
effects on tensile properties of zirconium, interstitial, 22:23769
effects on toxicity of radioinduced free radicals for yeast, 22:25738
effects on uv photolysis of chlorine, lifetimes and spectra of free radicals produced by, 22:45029 (UCRL-18043, pp 7-105)
effects on uv photolysis of nitrogen dioxide, 22:10298
effects on uv-radioinduced luminescence in serum albumin solutions, 22:28372
effects on x radiosensitivity of ascites tumor cells in mice, 22:40781
effects on x radiosensitivity of bean seedlings, 22:25810
effects on x-irradiation of uracil, 22:14530
effects on x-radioinduced luminescence in isolated brain of rats, 22:40923
effects on x-radioprotective effects of AET on neoplasms of rats, 22:36304
effects on x-radiosensitivity of cells in human spinal cord, hyperbaric, 22:28679
effects on x-radiosensitivity of chromosome replication in Escherichia coli, 22:31294
effects on x-radiosensitivity of chromosomes in Drosophila melanogaster, combined effects of dose-fractionation on, 22:28411
effects on x-radiosensitivity of chromosomes in HeLa cells, 22:36245
effects on x-radiosensitivity of DNA in lambda bacteriophage, 22:23476
effects on x-radiosensitivity of DNA, mechanism of, 22:12824
effects on x-radiosensitivity of eyes, 22:25796
effects on x-radiosensitivity of glycine transport in Ehrlich ascites tumor cells, 22:45640
effects on x-radiosensitivity of growth of vertebrae in

tails of young rats, 22:36355
effects on x-radiosensitivity of hair of mice, 22:19419
effects on x-radiosensitivity of hamster cells in vitro, 22:38489
effects on x-radiosensitivity of mammary carcinomas in mice, 22:12889
effects on x-radiosensitivity of mice, hypobaric, 22:8592(R) (AD-629311)
effects on x-radiosensitivity of mouse ascites tumor cells, effects of cell concentration during exposure on, 22:40913
effects on x-radiosensitivity of neoplasms, hyperbaric, 22:38507
effects on x-radiosensitivity of non-protein sulfhydryl content of Ehrlich ascites tumor cells, hyperbaric, 22:36162
effects on x-radiosensitivity of osteosarcoma cells in mice, effects of dose fractionation on, 22:43273
effects on x-radiosensitivity of sarcoma KHT cells in mice, 22:31161
effects on x-radiosensitivity of skin of mice, effects of dose fractionation on, 22:547
effects on x-radiosensitivity of spermatids and spermatozoa in Drosophila, 22:25821
effects on x-radiosensitivity of spleen cells, 22:38226
effects on x-radiosensitivity of spores of Bacillus megaterium, 22:38507
effects on x-radiosensitivity of squamous cell carcinomas of mice, hyperbaric, 22:4648
effects on x-radiosensitivity of transplanted tumor cells in rats, 22:10797
effects on x-radiosensitivity of trypsin, effects of temperature on, 22:45425
effects on x-radiosensitivity of tumors in animals and man, hyperbaric, 22:38383
effects on x-radiosensitivity of tumors of man, 22:15029
effects on x-radiotherapy of carcinoma of lung of man, combined effects of synkavit on, 22:19385
effects on yield of γ-radiolysis products of RNAase, 22:25767
effects on yields from pulse radiolysis of ammonia, 22:27771
effects on yields from x-irradiated cystamine sulfate, 22:2142
effects on yields in gamma radiolysis of aqueous benzene solutions containing ferric or ferrous sulfate, 22:23072
effects on yields in γ radiolysis of aqueous anisole solutions, 22:37812
effects on yields in γ radiolysis of aqueous benzene solutions, 22:16584
effects on yields in γ radiolysis of aqueous hydrocyanic acid, 22:35850
effects on yields in low conversion radiolysis of methane, 22:35862
effects on yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 78-96)
effects on yields in radiolysis of neutral aqueous cysteine solutions, 22:40117
electric discharge in, ion--molecule reactions at low energies from glow, (E), 22:29303
electron capture by, effects of ethylene and water as stabilizing agents in thermal, (E), 22:5117
electron collisions with, radiative lifetime using phase-shift method, 22:41331
electron collisions with, uv radiation from, 22:9030
electron cooling from scattering on atomic, in upper atmosphere, (T), 22:19884
electron effective cross sections for molecular, slow, (T), 22:15365
electron impact spectra at 33 to 100 eV and scattering angles up to 16°, (E), 22:43881
electron reactions at high energies with, calculation of ionization cross sections for, 22:7170
electron reactions with atomic, ionization cross sections for, (T), 22:17363
electron reactions with diatomic molecules of, rotational transitions and excitation cross sections for 0- to 25-eV, (E/T), 22:41293 (NP-17519)
electron reactions with molecular, excitation cross sections for, (E/T), 22:50009
electron reactions with molecular, high-resolution energy-loss spectrum from 25-keV, 22:43936
electron reactions with, cross sections for production of singly charged ions in, (T), 22:45932
electron reactions with, excitation processes in, (T), 22:21908
electron reactions with, formation of highly excited atoms in, 22:47820
electron reactions with, ionization equilibria calculation from ionization, excitation, and recombination processes in, 22:38722 (N-68-18121)
electron reactions with, production of long-lived excited states from, (E), 22:29275
electron resonant scattering by, angular distribution for, (T), 22:52547
electron scattering by, accuracy of measurements using photographic recording, 22:5113
electron-capture ratio for calculation of L/sub I//K, (T), 22:32496
electron-impact excitation of, in aurorae, secondary, 22:13327
emission from upper atmosphere, infrared and optical, (E), 22:22012
emission lines at 5577 A and 6300 A in night airglow, intensity variations of, (E), 22:22033
emission of 5577 A line of, in night airglow, (E), 22:41465
emission of lambda 5577 line in glow discharge, (E), 22:21865
energy exchange at 298°K with tungsten filaments at high temperatures, 22:45799 (UCRL-18043, pp 155-82)
energy exchange at low pressures with tungsten filaments at 700 to 2800°K, 22:28815
energy levels of, electron energy spectra in autoionizing, (E/T), 22:26256
enhancement ratio for, in relation to uv- and x-radiosensitivity of Escherichia coli B mutants, 22:28715
enhancement ratio of, effects of, on DNA strand breakage, 22:51396
enthalpy and entropy over uranium oxides, effects of lanthanum oxide and yttrium oxide on, 22:11053
enthalpy in sintered uranium dioxide, determination by microcalorimetry, 22:31462
equilibrium pressure over oxygen--niobium and oxygen--tantalum solid solutions, 22:41100(T) (ORNL-tr-1942)
excitation by collisions with ions, 22:23037(T) (AD-660408)
excitation by protons in auroras, (E), 22:13341
excitation of metastable atomic and molecular, many gases for de-, (E), 22:29296
fractionation in reaction of chloroaquotetraamminechromium chloride with divalent chromium ions, 22:37733
gas accumulation of, effects of burnup on Yankee Power Reactor fuel elements, 22:24978 (WCAP-6087)
gettering from liquid sodium, use of thorium and zirconium base alloys for, 22:1749 (AD-648248)
heavy particle reactions with diatomic molecules of, dissociation cross sections for, (E/T), 22:41293 (NP-17519)
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
helium ion reactions at 100 keV with, energy spectra of electrons from, (E), 22:26256
helium ion reactions with molecular, charge transfer cross sections for, 22:38792
helium-ion reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
helium-ion reactions with molecular in upper atmosphere, cross sections for, 22:29365
helium-ion reactions with molecular, charge exchange in, 22:5063
hydrogen reactions with, excitation cross sections for, (T), 22:967
hydrogen--ion reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
hydrogen-ion reactions with, cross sections for, (E), 22:19772
hyperfine constants of ^3P ground state, 22:9099
ignition of uranium in, 22:37716 (RD/B/N-1134)
impurities in sodium, response of meter for measuring, 22:14129(R) (APDA-212)
induced mortality in erythrocyte-depleted dogs, protective effects of glutathione against, 22:15040
infrared spectra of, in dayglow, altitude profile of, 22:29332
inhalation of, effects of, on radiosensitivity of breast tumors in mice, 22:38382
intensity profiles in night airglow, (E), 22:47963
interaction of solar radio waves with tropospheric molecular, (T), 22:19897
ionization coefficients in electric fields at pressures up to atmospheric, secondary, (E), 22:7171
ionization equilibrium at solar temperatures, calculation of, 22:52317
ionization of, isotope effects on transition probabilities for, 22:35820
ionization rates in shock-heated argon at 10,500 to 14,300°K, mass spectrometric studies of, 22:940 (AGARD-CP-12(Vol.2), pp 593-606)
ionospheric scale height of molecular, (T), 22:34372
iron atom reactions with, ionization ratios from, (E), 22:961
isotopic analysis by molecular beam mass spectrometry, 22:44994
isotopic exchange between magnesium, tungsten, and vanadium oxides and molecular, rate of, 22:27675
isotopic exchange between shock-heated molecules of, 22:10206(R) (NYO-3211-6)
isotopic exchange with plutonium-238-enriched plutonium dioxide, 22:33367
luminescence in potassium bromide crystals, isotope effects on, 22:8062
meson (π) elastic scattering by, optical-model analysis of, 22:3465
meson (π^-) absorption and scattering cross sections at 0.6 to 1.6 MeV, optical model analysis of, (E/T), 22:48455
meson (π^-) absorption by, lithium-8 production in, (E), 22:13952
meson (π^-) absorption by, particle energy spectra for,

(E), 22:9781
metal atom resonance radiation quenching in gaseous, cross sections for, (E), 22:29289
molar free energy in uranium dioxide showing small variations from stoichiometry, measurement of partial, 22:50977
monitoring in sodium, response of rhometer and oxygen meter for, (E), 22:47040(R) (APDA-228)
muonium reactions with, cross sections for, (E), 22:5141
muonium reactions with, depolarization cross sections for, 22:5136
neutron elastic scattering by, (T), 22:35211
neutron inelastic scattering at 7 MeV, γ production cross section for, (E), 22:18287
neutron inelastic scattering cross section for molecules of gaseous, magnetic contribution to, (T), 22:44584
neutron reactions and scattering on, gamma production in fast, (E), 22:48463
neutron reactions at 1 GeV, intranuclear-cascade calculations for, (T), 22:7526 (ORNL-TM-1996)
neutron reactions at 1 GeV, intranuclear-cascade calculations for, (T), 22:7526 (ORNL-TM-1996)
neutron reactions at 750 to 2000 MeV, analytic representation of nucleon and pion emission spectra from, 22:46459 (ORNL-TM-2277)
neutron total cross section at 0.25 to 2.5 MeV, (T), 22:1581
neutron total cross section at 0.3 to 30 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 2.37 MeV, feasibility study for measuring, 22:37281(R) (NYO-72-191)
neutron total cross section for, measurement using transmission technique, (E), 22:20450 (COO-7-0456)
neutron transport calculations for infinite medium of, effects of cross-section sets on fission, (T), 22:39545 (ORNL-TM-2252)
neutron transport in, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
nitrogen ion reaction with molecular, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
nitrogen reactions at 20 to 200 eV, cross sections for molecular, (E), 22:19773
nitrogen-ion reactions with molecular, rate constants for, (E), 22:50010
nitrogen-ion reactions zt 0.05 to 1 eV, charge exchange cross sections for, (E), 22:13216
oxygen atom reactions with, at low energies, transitions induced between fine structure levels in inelastic, (T), 22:29276
oxygen ion (O^- and O_2^-) reactions with molecular, at low energies, electron detachment from, (E), 22:29273
oxygen ion (O^+) reactions at 0.1 to 10 eV with, temperature variation of interchange and charge transfer in, (E), 22:29292
oxygen ion reactions with molecular, temperature dependence of rate coefficients for, (E), 22:24163
oxygen-16 exchange between plutonium dioxide and, at 700 and 850°C, 22:27629 (MLM-1462)
oxygen-17 exchange between γ-irradiated magnesium oxide, and, 22:25423
oxygen-18 enrichment in, by thermal diffusion, 22:47300
oxygen-18 enrichment in, in electric discharges, 22:4254
oxygen-ion reactions with molecular, cross sections for, (E), 22:5059
oxygen-ion reactions with molecular, rate coefficients for molecular ion formation in, 22:9022
oxygen-ion reactions with molecular, rate coefficients for molecular ion formation in, 22:9023
oxygen-ion reactions with molecular, rate constants for, (E), 22:50010
photoelectric cross sections for gaseous molecular, measurement of, 22:19148
photoinduced reaction with hydrogen, time-of-flight mass spectrometric study of nitrogen dioxide-sensitized, 22:35779 (SC-RR-68-162)
photoionization cross sections for, 22:9021
photoionization cross sections for molecular, (E), 22:5809(R) (ANL-7354)
photoionization using atomic beams, cross section for, (E), 22:36753
photolysis of, kinetics of ozone formation in flash, 22:25422
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
plasma of, electron density and temperature from spectra line intensities in, (T), 22:41544 (INR-859)
plasma of, population of excited levels in, 22:31824
potassium scattering from differential spin-exchange, 22:7153
pressure in ultrahigh vacuum systems, effect of cesium vapor on partial, 22:16848
pressure in uranium dioxide—uranium monosulfide—uranium oxysulfide system measured by solid-state galvanic cells at 1050 to 1350°K, 22:4161
production by low-cost electricity from large nuclear reactors, 22:16361 (ORNL-TM-1629)
properties in electric arc heaters, 22:11473
proton and hydrogen atom reactions with, charge transfer cross sections for, 22:38794
proton reactions (p,xγ) at 16, 33, 56, and 160 MeV, gamma spectra and production cross sections for, (E), 22:32494
proton reactions at .25 to 4.50 MeV, electron capture cross sections for, 22:11215
proton reactions at 0.15 to 1.0 MeV with, cross sections for formation of excited molecular ions in, (E), 22:21898
proton reactions at 0.15 to 1.00 MeV with, formation of excited states in, (E), 22:5042(R) (ORO-2591-33)
proton reactions at 0.75 to 2 GeV, intranuclear-cascade calculations for, (T), 22:7526 (ORNL-TM-1996)
proton reactions at 1 GeV, excitation of low-lying states in, (T), 22:48626
proton reactions at 1 GeV, small-angle elastic, (T), 22:48626
proton reactions at 100 keV with, energy spectra of electrons from, (E), 22:26256
proton reactions at 16 to 160 MeV, gamma spectra from, (E), 22:5763 (ORNL-4183)
proton reactions at 20 keV to 100 MeV with, cross sections for electron capture in, (T), 22:43943
proton reactions at 30 keV to 40 MeV, electron capture cross sections for, 22:5075
proton reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
proton reactions at 5 to 120 keV, electron capture cross sections for, 22:5089
proton reactions at 660 MeV, helium-3 production by, (E), 22:13953
proton reactions at 750 to 2000 MeV, analytic representation of nucleon and pion emission spectra from, 22:46459 (ORNL-TM-2277)
proton reactions on stellar, production of beryllium, boron, and lithium in, (T), 22:811
proton reactions using recoil protons, average cross sections for, (E), 22:11910
proton reactions with atomic, Born estimates for electron capture from, 22:29263
proton reactions with atomic, ionization cross sections for, (T), 22:17363
proton reactions with interstellar, at 660 MeV, helium production in, (E/T), 22:11267
proton scattering at 24.2 to 40.0 MeV, angular dependence of left—right asymmetry for polarized, (E), 22:15965
proton spallation of, solar production of lithium, beryllium, and boron isotopes from, (T), 22:19732
radiation effects on chemisorption of, by solid titanium oxide, γ, 22:2096 (CU-2791-6)
radiation effects on chemisorption of, on aluminum oxide at 20°C, γ, 22:33413
radiation effects on consumption of, by albino rats, combined effects of heat treatment on ionizing, 22:10883
radiation effects on consumption of, by mice, effects of circadian clock on x, 22:49220
radiation effects on consumption of, by Phycomyces, x, 22:16980
radiation effects on desorption from tungsten single crystals, mechanism of electron, 22:34773
radiation effects on desorption of, by nickel or tungsten, low-energy electron, 22:11015
radiation effects on desorption of, by tungsten, electron, 22:11011
radiation effects on exchange of, between atmosphere and tissues of pears, γ, 22:15130
radiation effects on exchange reactions of oxygen isotopes between gadolinium oxides and, γ, 22:30529
radiation effects on in vitro consumption of, by spleen of mice, whole-body x, 22:49524
radiation effects on outgassing of, from bulk insulators, electron, 22:11095
radiation effects on oxygen-18 exchange between neodymium oxide and, γ, 22:42786
radiation effects on potential current density of electrode of, in presence of platinum catalyst, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on reactions with graphite, neutron, 22:41140
radiation effects on sensitivity of barley seeds to, effects of water content on γ, 22:28542
radiation effects on sorption of, by aluminum oxide, x, 22:42729(T) (RFP-Trans-33)
radiation effects on sorption of, by cotton leaves, γ, 22:6762
radiation effects on sorption of, by nickel oxide, 22:42730(T) (RFP-Trans-34)
radiation effects on uptake of, by larvae of Tenebrio molitor, radio wave, 22:8608
radiation effects on uptake of, by yeast, effects of dose on, 22:26001
radiation effects on uptake of, in cellulose, and ethylene, propene, and vinyl alcohol polymers, 22:8093(T) (AEC-tr-6908, pp 33-41)
radiation emission from, spectral studies on, 22:37775 (BNL-50082, pp 40-78)
radioinduced formation of ozone in, γ, 22:23046
radioinduced reactions of, with hydrocarbons, 22:16575
radioinduced reactions of, with hydrocarbons and sulfur dioxide to yield sulfonic acids, 22:4221(P)
radioinduced reactions with isoeugenol to produce vanillin, 22:23081(P)
radioinduced redistribution in uranium dioxide fuels,

22:38642
radioinduced sorption on nickel oxide surfaces, 22:52301
radioinduced trapping in vanadium, fast neutron, 22:43615(R) (BNWL-710)
radiolysis of, economics of ozone production by, 22:42756
radiolysis of, ion lifetimes in, 22:8151
radiolysis of, kinetics of ozone formation in pulse, 22:25422
radioprotective effects of post-exposure soaking in water saturated with, on pea seeds, γ, 22:33863
radioprotective effects of, on Serratia marcescens, x, 22:43492
reaction rates in moist air with molybdenum, rhenium, and tungsten powders, 22:49686
reaction with graphite surface, de-activation in, 22:21842 (AERE-M-1708)
reaction with zirconium boride at 700 to 1050°C, 22:49781
reactions at neutron-induced point defects in niobium, 22:43615(R) (BNWL-710)
reactions in mesosphere, effects on electron densities, (T), 22:13333
reactions of electrodes of, with zirconium oxide at high temperature, kinetics of, 22:40094
reactions of ground-state atoms of, with condensed films of olefins, effects of deuterium on, 22:16557
reactions with argon, effect of molecular orientation on vibrational--translational energy transfer in, 22:5118
reactions with carbon atoms formed in radiolysis of carbon dioxide, 22:18820
reactions with carbon, kinetics and mechanisms of, 22:11022(R) (NYO-1710-71)
reactions with carbon--uranium systems at high temperature, 22:16495
reactions with deuterium, shock tube studies of kinetics of, 22:4146
reactions with free radicals produced by radiolysis of polymers of high molecular weight, 22:37779(T) (ORNL-tr-1969)
reactions with graphite, effects of carbon tetrachloride and chlorine on, 22:19606
reactions with graphite, effects of halogens, potassium on, 22:41140
reactions with helium-3, calculation of interference, optimum bombarding energy, and sensitivity for, 22:8022
reactions with helium-3, production of fluorine-18 from, 22:12368
reactions with hydrofluoric acid and stainless steel, fuel decladding by, 22:27852(R) (EURAEC-2011)
reactions with hydrogen and uranium hexafluoride to yield uranium dioxide, 22:4160(P)
reactions with hydrogen at 1400 to 2700°K, shock tube studies of kinetics of, 22:4146
reactions with hydrogen in catalytic recombiner of off-gas system of boiling-water reactor, 22:42674
reactions with hydrogen, distribution of isotopes in products of silent-discharge, 22:16507
reactions with irradiated butyramide, isobutyramide, and propionamide crystals, products of, 22:37775 (BNL-50082, pp 40-78)
reactions with lanthanum and praseodymium chlorides, production of chloride oxides by, 22:33353
reactions with lithium and niobium, vacuum distillation technique for recovery of products from, 22:25342
reactions with lithium and tantalum, vacuum distillation technique for recovery of products from, 22:25342
reactions with lithium and vanadium, vacuum distillation technique for recovery of products from, 22:25342
reactions with metals, kinetics of, 22:10914 (SC-DC-67-1632)
reactions with methyl radicals, chemiluminescence produced by, 22:35775(R) (NYO-1158-25)
reactions with niobium and potassium, vacuum distillation technique for recovery of products from, 22:25342
reactions with niobium, tantalum, and zirconium alloys at high temperature and low pressure, 22:2568(R) (N-67-16673)
reactions with niobium--titanium--tungsten alloys at 1000 to 1300°C, 22:52174
reactions with niobium--zirconium alloys at 300 to 500°C, 22:623
reactions with nitrogen, ionization cross sections in slow, 22:2801
reactions with oxygen ions at low energies, from glow discharge in oxygen, (E), 22:29303
reactions with oxygen molecules, effect of molecular orientation on vibrational--translational energy transfer in, 22:5118
reactions with poly(vinyl alcohol) and styrene during graft polymerization, 22:42704(T) (AEC-tr-6937, pp 12-20)
reactions with poly(vinyl alcohol) and styrene during graft polymerization, 22:8118
reactions with poly(vinyl alcohol) during gamma irradiation at 25, 40, and 60°C, 22:42704(T) (AEC-tr-6937, pp 12-20)
reactions with poly(vinyl alcohol) during gamma irradiation at 25, 40, and 60°C, 22:8118
reactions with potassium and tantalum, vacuum distillation technique for recovery of products from, 22:25342
reactions with potassium, vacuum distillation technique for recovery of products from, 22:25342
reactions with radicals from γ-irradiated amides, 22:27749
reactions with rhenium and rhenium--titanium, effects of pressure and temperature on, 22:12977
reactions with terphenyl at 350 to 620°F, 22:35769 (AI-AEC-Memo-12688)
reactions with thin-film aluminum, effects on crystal structure, 22:28744
reactions with thorium-covered tungsten surfaces, low-energy electron diffraction studies of, 22:26028 (NYO-3839-5, Paper 6)
reactions with thulium at 650 to 850°C, kinetics of oxidation, 22:2570
reactions with tin--zirconium alloys, 22:625
reactions with titanium boride at 700 to 1050°C, 22:49781
reactions with triphenylmethyl, 22:14556
reactions with tungsten crystal surfaces, effects of temperature on, 22:15221
reactions with uranium at 250 to 400°C, changes in activation energy and rate of, 22:28742
reactions with uranium carbides and nitrides, 22:7031
reactions with uranium dioxide at 66 to 80°C, 22:47693
reactions with uranyl chloride, thermoanalytical and x-ray diffraction studies of, 22:40088
reactions with Zircaloy-2 at 350 to 500°C, 22:17076
reactions with Zircaloy-2 at 650°C, 22:10922(P)
reactions with zirconium at high temperatures and low pressures, 22:622
reactions with zirconium carbide at 1100 to 1550°C, solubility studies on oxidation, 22:50972
reactions with zirconium, effects of noble metal coatings on, 22:21667
reactions with zirconium, mathematical model for kinetics of, 22:674
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reduction of catalytic effects of rare earth tungsten bronzes and transition metal tungsten oxides on, 22:33298
removal from liquid sodium by cold traps, testing for optimum, (E/T), 22:33153
removal from liquid sodium, effects of Reynolds number and temperature on performance of cold trap for, (E/T), 22:33098 (LA-3936)
removal from sodium coolant systems, performance of cold traps for, 22:6138(R) (LA-3820)
removal from sodium, efficiency of cold traps for, 22:23194 (MSAR-67-203)
removal from sodium, performance of cold traps for, 22:27487(R) (LA-3880)
role in radiosensitivity of neoplastic and normal tissues, effects of, in neutron capture therapy, 22:40780
scattering on platinum at 0.1 to 7.5 keV, target temperature effects on molecular, (E), 22:19765
separation from argon by gas chromatography, 22:33258
separation from gaseous mixtures by catalytic combination with hydrogen, 22:42840(P)
separation from seawater, performance of equipment for, 22:27524(R) (TID-24358)
separation from surfaces in charged-particle activation analysis, etching procedure for, 22:37683
separation of trace amounts of, from alkali metals, method and apparatus for, 22:35907(P)
solid, melting phenomena in, (T), 22:1123
solubility in niobium and tantalum in liquid sodium, 22:10910 (ANL-7335)
solubility in niobium, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
solubility in sodium at 125 to 300°C, 22:27487(R) (LA-3880)
solubility in sodium of, use of vacuum distillation at 125 to 300°C for, 22:50737 (LA-3879)
solubility in sodium, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
solubility in sodium, vacuum-distillation method for analysis of, 22:6138(R) (LA-3820)
solubility in tantalum, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
solubility in uranium carbide lattices, effects of temperature on, 22:28959
solubility in zirconium carbide, spectral studies on electronic band structures in, 22:50972
sorption by graphite at room temperature, 22:11022(R) (NYO-1710-71)
sorption by γ- and neutron-irradiated alkaline earth oxides, 22:12370
sorption by γ-irradiated silica gel, 22:8146
sorption by niobium and tantalum, kinetics at 1100 to 2000°C, (E), 22:29557
sorption by niobium--zirconium alloys, effects on tensile properties, 22:6982 (IS-T-131)
sorption by platinum, 22:12270(R) (COO-1383-1)
sorption by platinum electrode surfaces, electrochemical kinetics of, 22:27626 (MIT-905-108, pp 33-62)
sorption by tungsten, work function of, 22:28828
sorption on (001) and (110) surfaces of molybdenum

monocrystals, 22:32063
sorption on tungsten surfaces, electron diffraction analysis of, 22:15192
sorption on tungsten, low-energy electron diffraction studies of, 22:26056(R) (NYO-3830-5)
sources for nuclear-powered submarines, logistic, reliability, and safety factors involved in determination of, 22:31056(R) (AD-648505)
spectra at lambda 6300 A, effects of geomagnetic activity on emission, (E), 22:22025
spectra in atmosphere, twilight and nightglow, 22:29375
spectra in night airglow, 22:31696
spectra in night airglow, intensity of 6300 A, 22:5246
spectra in night airglow, width of lambda 5577 line in, (E), 22:24166
spectra in nighttime airglow, excitation of line at lambda 5577 in, (E), 22:24158
spectra in VV Cephei, (E), 22:4956
spectra of atmospheric, temperature determination from, 22:52629
spectra of O I lambda 5577 and 6300 in southern auroral zone, nighttime photometry of, (E), 22:24170
spectra of solid, infrared, (T), 22:3175 (UCRL-70723)
spectra of, absorption oscillator strengths for uv, 22:5067
spectra of, oscillator strengths for 1302 to 1306 and 1152 A lines in interstellar, (E), 22:36628
spectra of, techniques for vacuum uv and soft x-ray, 22:9300
spectra, airglow emission, (E), 22:50087
spectral line at 2974 A in quasars, (T), 22:4931
spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
spectrum in aurorae, (E), 22:31703
spectrum in auroral, (E), 22:34434
spectrum in auroral, (E), 22:17515
spectrum in day airglow, (E), 22:38886 (N-68-17332)
spectrum in night airglow of neutral, 22:34373
spectrum in night airglow, (E), 22:17490
spectrum in night airglow, (E), 22:17519
spectrum in Sun of neutral, center-to-limb variations of, (E), 22:17280
spectrum of neutral, in photosphere, (E/T), 22:29074
Stark effect constants for, quadratic, (T), 22:26204
thermodynamic activity in saturated liquid uranium, 22:36543 (ANL-7450, pp 39-74)
thermodynamic properties of solid, (T), 22:3175 (UCRL-70723)
thermodynamic properties of, in uranium oxides, 22:45813 (AECL-3072)
toxicity in acatalasemic mice, 22:45626
transport during oxidation of nickel and zirconium, short circuit diffusion mechanism for, 22:52239
trapping at radioinduced defects in niobium, annealing of, 22:31426 (ORNL-4246, pp 42-51)
trapping at radioinduced defects in vanadium, time--internal friction study of, 22:31427 (ORNL-4246, pp 51-5)
uptake by cotton rats in relation to cesium-134 retention, 22:14914 (ORNL-TM-2069)
uptake by mitochondria, effects of aliphatic alcohols, deuterium oxide, and glycerol on, 22:45452
use in determination of modulation characteristics of Bayard--Alpert ionization gage, 22:16831
use in radiotherapy of human tumors, biological study of, 22:43359
use of charged particle beams from nuclei of, for determining effects on bacteria, 22:23683 (UCRL-17481, pp 138-44)
x-ray absorption coefficients for, in 2- to 200-A region, 22:11199
x-ray absorption cross sections for interstellar, soft, (T), 22:52435
x-ray spectra from μ-mesic atoms of, (E), 22:20482
xenon-ion reactions with molecular, charge transfer in, 22:9061
yields from alpha radiolysis of nitric acid solutions of plutonium, 22:33372 (BNWL-751)
yields from gamma radiolysis of nitrous oxide, 22:47176
yields from radiolysis of carbon dioxide, 22:18820
yields in gamma radiolysis and uv photolysis of liquid nitromethane, 22:10297
yields in gamma radiolysis of carbon dioxide adsorbed on silica gel and synthetic zeolites, 22:10275
yields in gamma-radioinduced decomposition of crystalline barium, potassium, and sodium chlorates, 22:10278
yields in γ radiolysis of liquid and solid nitrogen tetroxide, 22:33426
yields of atomic, from radiolysis of carbon monoxide, 22:18854
O--propane, use in explosive mixtures for driver in four-inch shock tubes, 22:25626 (ORNL-TM-2094)
O--rare gases, combustion of fused zirconium droplets in, 22:42977(R) (SC-PR-68-451)

XYGEN IONS
abundance in exosphere, (E), 22:47962
abundance in planetary nebulae, (T), 22:29073
abundance in solar wind, (E), 22:17340
abundance in the exosphere, (T), 22:29335
abundance in topside ionosphere of positive, thermal diffusion effects on, (T), 22:17532
abundance of OII and OIII in magnetosphere, (T), 22:43990
airglow emission from, altitude distribution of daytime, (T), 22:52624 (N-68-21756)
autoionization and recombination of O IV, V, and VI, in solar corona, (T), 22:897
behavior and state of interstitial, in transition metals, (E), 22:15253(R) (TID-24210)
channeling in gold, tungsten, and uranium dioxide at 2 to 30 MeV, 22:11537
charge distribution for 11.5- to 37.3-MeV, produced by tandem accelerator, 22:11216
collisions with monovalent nitrogen ions, superimposed-beam technique for neutralization cross section of, (E), 22:26240
conductance in solid electrolytes, 22:10247
configuration in erbium phosphates and vanadates, neutron diffraction studies on, 22:30541
density variations of, upper atmosphere, 22:36834
detection in shock-heated ''pure'' argon and xenon up to 30,000°K, 22:29294
detection in spectrum of ultraviolet object associated with GX3 + 1, (E), 22:36683
detection of lines in solar spectrum, (E), 22:41168
detection with energy of 100 MeV/nucleon response of plastic scintillator NE102 for, 22:2354
dissociative recombination of molecular, in aurorae, (E), 22:41450
drift velocity measurements in air, 22:31617
effects of 100-keV, on spacing of crystal lattice planes in germanium, electron microscope observation of, 22:37005
effects on aluminum at 100 keV, 22:21741
effects on biological materials at 5 to 100 keV from recoil, (E), 22:29271
effects on copper at 100 keV, 22:21741
effects on copper single crystals at 10 keV, 22:41137
effects on gold at 100 keV, 22:21741
electron dissociative recombination coefficient for molecular, at 180 to 630°K, 22:52792
electron impact excitation of molecular, at 80 to 1500 eV, (E), 22:15369
electron nuclear double resonance of O_2^- in potassium halides, 22:50225 (UR-3388-10)
electron reactions with molecular at 10, 15, and 500 eV, dissociation cross sections for, (E), 22:965
electron reactions with negative, electron detachment cross sections for, (E), 22:31637
electron recombination with O_2^+ and O_4^+, temperature dependence of coefficient for, (E), 22:47806
emission lines in spectrum of central star of NGC 5189, (E), 22:36675
energy distributions of recoil, in radiation chemistry, 22:25403
energy level abundances in beams of, measurement of, 22:21886
energy level calculations for O V, 22:43862 (UUIP-574)
energy levels of singly ionized, equilibrium population of, (E), 22:5119
energy loss in gold and silver at 10 to 30 MeV, 22:7163
excitation of auroral green line in molecular, dissociative recombination, (E), 22:41443 (N-68-18220)
excitation of forbidden lines of atomic, auroral, (E), 22:17529
fine structure of lines in radio galaxies, (E), 22:5022
identification of O V in solar spectrum, (E), 22:8877
implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
ionization state in solar wind, (T), 22:29126
loss processes of atomic and molecular negative, in the atmosphere, (E), 22:17346
photo-ionization cross sections for O^+, >100-A, 22:31613
photo-ionization cross sections for, (T), 22:49920
photodetachment of electrons from negative, angular dependence of, (E), 22:21868
photodetachment of electrons from, calculated angular distributions of, 22:17398
presence in solar wind, (T), 22:47745
production and density in ionosphere, 22:38807
production by electron impact on sorbed carbon monoxide layer on tungsten, 22:26265
production from electron reactions with oxygen, long-lived excited states in, (E), 22:29275
production of molecular, in D region, (E), 22:22046
production of negative, high-frequency ion source for, 22:22515
production of triatomic, in atmosphere, (E), 22:17346
radii in alkaline earth oxide ionic crystals, 22:52287
reaction with molecular oxygen and nitrogen, temperature dependence of rate coefficients for, (E), 22:24163
reactions $N_2^+ + O_2^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions $N^+ + O^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions $NO^+ + O_2^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions $O_2^+ + O_2^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266
reactions $O^- + O_2$ and $O_2^- + O_2$ at low energies, electron detachment from, (E), 22:29273
reactions $O^+ + O^-$ at 0.1 to 100 eV, superimposed beam technique for neutralization rate of, (E), 22:29266

  reactions with carbon dioxide and molecular nitrogen and oxygen, rate constants for, (E), 22:50010
  reactions with carbon dioxide, ethylene, and acetylene at 25 to 50 keV, ionization in, 22:45941
  reactions with clean molybdenum at 30 to 400 eV, effects of electronically excited ions on Auger electron emission in, (E), 22:29223
  reactions with deuterium at 1.5 to 69 eV, total cross sections for production of OD^- in, (E), 22:47824
  reactions with helium and neon atoms, single electron capture in differential scattering, (E), 22:29269
  reactions with hydrogen at 2.7 to 119 eV, total cross sections for production of OH^- in, (E), 22:47824
  reactions with molecular nitrogen and oxygen, rate coefficients for molecular ion formation in, 22:9023
  reactions with molecular nitrogen and oxygen, rate coefficients for molecular ion formation in, 22:9022
  reactions with molecular oxygen, cross sections for, (E), 22:5059
  reactions with nitrogen dioxide of negative atomic and molecular, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
  reactions with nitrogen oxide of positive atomic and molecular, energy dependence of charge transfer at thermal and low energies for, (T), 22:34268
  reactions with nitrogen, oxygen, and carbon monoxide molecules at 0.1 to 10 eV, temperature variation of interchange and charge transfer in, (E), 22:29292
  reactions with oxygen molecules at low energies from glow discharge in oxygen, (E), 22:29303
  reactions with sodium in merged beams, production of NaO^+ in, (E), 22:45950
  reactions with thin celluloid films, lifetimes of metastable states produced in, (E), 22:34249
  reactions with titanium at 3 to 9 keV, sputtering in, 22:15332
  reactions with vibrationally excited molecular nitrogen, afterglow, (E), 22:29243
  scattering by hydrogen, charge exchange cross sections for, (E), 22:15419
  sorption of molecular, on γ-irradiated magnesium oxide, ESR studies of, 22:25423
  spectra in planetary nebulae, (T), 22:31581
  spectra in quasars, O II and O III forbidden transitions in emission, 22:8966
  spectra in type-B red aurorae, 22:52628
  spectra of O V, theta-pinch discharge study of, (E/T), 22:43862 (UUIP-574)
  spectral fine strengths in $2p^2$--2p3s arrays in chromosphere, intermediate-coupling, (T), 22:43827
  spectral line broadening in high-voltage condensed discharges, (E), 22:43922
  spectrum in auroral, (T), 22:17535
  spectrum of O VI in solar regions, calculations on ionization processes resulting in, 22:52317
  spectrum of O VIII in solar corona, (T), 22:7101
  spectrum of, in NGC 4151, (E), 22:4984
  sputtering on aluminum oxides and titanium oxides, coefficients for, (E), 22:26222
  sputtering on anode surfaces as function of applied voltage, (E), 22:11214
  stopping in argon and nitrogen below 200 keV, electronic cross sections for, (E), 22:26225
  transition probabilities for triplet--singlet transitions in O VII, (E), 22:50022
  x-ray emission by O VII and O VIII in solar spectrum, (E), 22:34137 (AD-663415)
  yields in electron radiolysis of monocrystalline sodium bromates, 22:2112
OXYGEN ISOTOPES
  abundance ratio measurements of, by balance method, mass-spectrometric, 22:6264
  abundance ratios of, in sedimentary rocks and minerals, 22:27913
  abundance variations of, in sulfates in the environment, 22:14466
  determination in carbon monoxide by spectrometry with microwave discharge, 22:27613
  determination in molecular oxygen, development of high-pressure mass spectrometric system for, 22:12226 (UCRL-17866)
  determination in oxygen, development of modulated molecular-beam mass spectrometer for, 22:45029 (UCRL-18043, pp 7-105)
  determination in sulfates, 22:10189
  determination in water by mass spectroscopy, 22:7990 (IS-T-209)
  determination of variations in ratios of, instruments for, 22:6262
  effects on properties of carbon trioxide as function of temperature, 22:30540
  energy levels of, calculations using shell model with T = 1 effective two-body interaction, (T), 22:42126
  exchange between oxygen and plutonium-238-enriched plutonium dioxide, 22:33367
  exchange between oxynitrogen compounds, 22:45147(R) (NYO-3462-4)
  exchange in calcium carbonate--carbon dioxide--water system, fractionation factors for, 22:18752
  fractionation factors in calcite, carbon dioxide, and water, 22:18752
  nuclear charge distribution in, measurement using inelastic scattering from carbon-12, (E), 22:5777
  radiation effects on exchange between gadolinium oxides and, γ, 22:30529
  separation by countercurrent distillation of water, 22:48903
  separation by thermal diffusion, 22:28022
  separation by thermal diffusion, 22:4364
  separation by thermal diffusion, 22:16774(T) (MLM-1485(tr))
  separation by thermal diffusion, column coefficients for, 22:8302 (MLM-1439)
  separation on synthetic zeolites, 22:33491
OXYGEN ISOTOPES O-13
  energy levels of, T = 3/2 quartet, (E), 22:53129
OXYGEN ISOTOPES O-14
  beta decay of, β endpoint energy and ft-value for Fermi, (E), 22:39597
  beta decay of, coupling constants and ft values for, (T), 22:32698
  beta decay of, endpoint energy for, (E), 22:35285(R) (AERE-PR/NP-13)
  beta decay of, Fermi function for superallowed, (T), 22:5891
  beta decay of, matrix elements for, (T), 22:44612
  beta transitions in, ft values for superallowed 0-0, (T), 22:5887
  description using Hartree--Fock and Hartree--Fock--Bogoliubov formalisms, (T), 22:29915
  energy levels from carbon-12 (He-3,n) reactions, spin--parity assignments for, (E), 22:53101
  energy levels of, for charge dependence of nuclear forces from wave functions of low-lying, (T), 22:29934
  nucleon potential from wave functions of low-lying levels of charge-dependent two-body, (T), 22:29934
OXYGEN ISOTOPES O-15
  beta decay of, log-ft value for, (T), 22:35235
  energy levels and spectroscopic factors from nitrogen-14 (He-3,d) reactions at 11 MeV, (E), 22:32502
  energy levels and spectroscopic factors from oxygen-16 (He-3,α) reactions at 11 MeV, (E), 22:32502
  energy levels from carbon-12 (He-3,p) reactions, spins of, (E), 22:5762 (JINR-P6-3463)
  energy levels from carbon-12 (He-3,p) reactions, spins of, (E), 22:37300
  energy levels from nitrogen-14 proton elastic and inelastic scattering, (E), 22:37303
  energy levels from nitrogen-14 proton scattering, (E), 22:35293(R) (ORNL-4230)
  energy levels from oxygen-16 (He-3,α) reactions, (E), 22:48509(R) (BMwF-FBK-68-22)
  energy levels from oxygen-16 (He-3,α) reactions, spins and transition multipolarities for positive-parity, (E), 22:7644
  energy levels from oxygen-16 (p,d) reactions, (E), 22:5766
  energy levels from oxygen-16 (p,d) reactions, spectroscopic factors for, (E), 22:20484
  energy levels from proton elastic and inelastic scattering by nitrogen-14, (E), 22:11949(R) (ORO-2972-47)
  energy levels in giant resonance region from oxygen-16 (γ,n) reactions, decay modes for, (E), 22:26919
  energy levels of, calculations using coupling of collective states with particle and hole states, (T), 22:39595
  energy levels of, calculations using shell model with Tabakin potential, (T), 22:50556
  energy levels of, core polarization effects on, (T), 22:26839
  energy-level lifetimes from deuterium (N-14,n) reactions at 30 MeV, (E), 22:3634
  energy-level spin--orbit splitting in, calculation of Hartree--Fock single-particle, (T), 22:16086
  energy-level transition probabilities for, calculation using shell model with intermediate coupling, (T), 22:15952 (JINR-P4-3684)
  energy-level transitions from oxygen-16 (γ,n) reactions, (E), 22:26918
  energy-level transitions in, branching ratios and widths for, (T), 22:35235
  energy-level transitions in, precision measurement of gamma energies from, (E), 22:15955
  nuclear cluster model for, testing by nitrogen-14 (p,α) reactions, (E), 22:39586
  nuclear magnetic moment of, deviations from Schmidt lines in calculations with nonlocal two-body potentials, 22:44795
  photoabsorption cross section for, resonances in, (T), 22:41948(T) (BNL-tr-218)
  photon reactions (γ,p) in giant dipole resonance region, cross section for, (T), 22:41948(T) (BNL-tr-218)
  photon reactions (γ,p) with, resonances in, (T), 22:20451 (JINR-P4-3674)
  production and discharge in Franscati linac tunnel calculation of, 22:47528(T) (NRC-TT-1332)
  production by nitrogen-14 (d,n) reactions at 3 MeV, method for, 22:53099
  reactions of recoil, in irradiated chromium carbonyl, 22:16611
  use for determining lung function, 22:45631
  use in research from 1963 through 1966, bibliography on,

22:18710

XYGEN ISOTOPES O-16

abundance in Martian atmosphere, (E), 22:7097
abundance in Population-II main-sequence stars, (T), 22:47760
abundance ratio to oxygen-18 in carbon monoxide, spectroscopy using microwave discharge for determination of, 22:33281
alpha differential elastic and inelastic scattering cross sections at 22 to 25 MeV, angular distributions for, (E), 22:26906
alpha differential elastic scattering cross section at 104 MeV, diffraction pattern in angular distribution for, (E), 22:39594
alpha elastic scattering at 18 to 50 MeV, model for backscattering in, 22:32723
alpha elastic scattering at 8.95 to 9.25 MeV, resonances in, (E), 22:32512(R) (AECL-3108)
alpha elastic scattering at 8.99 to 9.02 MeV, high-spin resonance in, (E), 22:46729(R) (AECL-3157)
alpha reactions (α,2a) with quasielastic scattering, differential cross sections for, (T), 22:7643
alpha reactions (α,2α) at 25 MeV, mechanism of, (T), 22:9793
alpha reactions (α,2α) at 29 MeV, angular correlation distributions and coincidence spectra for, (E), 22:26890
alpha reactions (α,2α) near 25 MeV, mechanisms for, (E), 22:53119
alpha reactions (α,d) at 40 MeV, angular distributions for, (E), 22:53108
alpha reactions (α,d) at 40 MeV, angular distributions for, (E), 22:50550
alpha reactions (α,d) with, cross sections for, (T), 22:27359
alpha reactions (α,d) with, cross-section calculations using plane-wave Born approximation with finite-size formalism, (T), 22:18340
alpha reactions at 82 to 98 MeV, cross sections for, (E), 22:35239
alpha-particle capture reactions at 1 to 5 x 10^9°K, (T), 22:13088
binding energy distribution in, description using realistic two-body potential and realistic kinetic energy operator, (T), 22:39590
binding energy of, calculation of reaction matrix elements for, (T), 22:32506
binding energy of, calculation using equivalent nonlocal potentials, (T), 22:26855
binding energy of, calculation using shell model with Hamada-Johnston potential and correlation corrections, (T), 22:5768
binding energy of, calculation using shell model, (T), 22:32512(R) (AECL-3108)
binding energy of, calculation using velocity-dependent nucleon-nucleon potential, (T), 22:20487
binding energy of, calculations using Hamada--Johnston and Brueckner--Gammel--Thaler potentials for, (T), 22:46852
binding energy of, calculations using Hartree--Fock method with effective interaction from nuclear matter criterion, (T), 22:50670
binding energy of, second-order corrections to Hartree--Fock calculations using Tabakin potential, (T), 22:20760
binding energy of, variational calculations using simplified Hartree--Fock theory, (T), 22:44644
boron-11 reactions (B-11,Be-10) and (B-11,B-10) at 116 MeV, cross sections and energy spectra for, (E), 22:9792
charge distribution of 11.5- to 37.3-MeV ions of, in carbon, 22:11216
charged-particle reactions with, cross-section data compilation for, 22:1600
content ratio with oxygen-18 in minerals and rocks, variations in, 22:30714
description using Hartree--Fock and Hartree--Fock--Bogoliubov formalisms, (T), 22:29915
description using Hartree--Fock formalism with realistic effective two-body forces, (T), 22:30068
description using Hartree--Fock method with equivalent nonlocal potentials, (T), 22:35385
description using random phase approximation, (T), 22:18353
description using shell model with low-lying deformed states, (T), 22:3608 (PUC-937-165)
detection and identification of, use of plastic track detectors for, 22:10558
determination in oxygen by helium-3 activation, 22:1965 (UCRL-17812)
determination of ratio of, to oxygen-18 in carbon monoxide by spectrometry with microwave discharge, 22:27613
deuteron differential elastic scattering cross sections at 2 to 3.5 MeV, (E), 22:37293
deuteron differential elastic scattering cross section at 6.0 to 8.5 MeV, angular distribution for, (E), 22:29935
deuteron differential elastic scattering cross section at 28 MeV, angular distribution for, (E), 22:53100
deuteron differential elastic scattering cross section at 28 MeV, optical-model analysis of angular distribution for, (T), 22:35234
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron reactions (d,α) and (d,p) at 6.0 to 8.5 MeV, angular distributions of differential cross sections for, (E), 22:29935
deuteron reactions (d,α) at 3 to 5.2 MeV, detailed balance in, (E), 22:35293(R) (ORNL-4230)
deuteron reactions (d,α) at 4.3 to 4.8 MeV, testing time-reversal invariance by detailed balance in, (E), 22:48471
deuteron reactions (d,α) at 4.41, 4.57, and 4.71 MeV, differential cross sections for, (E), 22:35238
deuteron reactions (d,α) at 5 to 9 MeV, angular distributions of differential cross sections for, (E), 22:11913
deuteron reactions (d,α) at 5 to 9 MeV, differential cross sections for isospin-allowed, (E), 22:26842
deuteron reactions (d,α), (d,n), and (d,p) at 2 to 3.5 MeV, absolute differential cross sections for, (E), 22:37293
deuteron reactions (d,n) at 2.0 to 4.5 MeV, neutron angular distribution and yield curves for, 22:18123(R) (RLO-1925-11)
deuteron reactions (d,n) from fast neutron reactions, average cross section for, (E), 22:26932(R) (NP-17434)
deuteron reactions (d,n) with, excitation function of, 22:27597
deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
deuteron reactions (d,p) at 14.3 MeV, angular distributions for j-forbidden, (E), 22:39589
deuteron reactions (d,p) at 6 to 11 MeV, cross sections for, (E), 22:26846
deuteron reactions (d,p) at low energies, theory for analyzing, (E/T), 22:9918 (CEA-R-3305)
deuteron reactions (d,p) with, (T), 22:24897 (LYCEN-6784)
deuteron reactions (d,p) with, DWBA calculations using core-excitation model, (T), 22:42008
deuteron reactions (d,p) with, oxygen-17 spectroscopic factors for, (T), 22:35235
deuteron reactions (d,p), use to study oxygen diffusion in zirconium, 22:23720
deuteron reactions (d,p_1) with, interference of stripping and compound-nucleus formation in, (T), 22:20464
deuteron reactions (d,t) and (d,He-3) at 20 MeV, differential cross sections for, (E), 22:26869
deuteron reactions (d,t) and (d,He-3) at 28 MeV, angular distributions for, (E), 22:26931 (LYCEN-6789)
deuteron reactions (d,t) and (d,He-3) at 28 MeV, differential cross sections for, (E), 22:53100
effects on cultured mammalian cells, equipment and methods for studying, 22:26752
effects on high resolution spectra of nitric oxide, rotational, spin-orbit, and vibrational constants for, 22:33308
effects on infrared spectra of boroxin, 22:35783
effects on ionization of oxygen molecules and oxides of carbon and nitrogen, 22:35820
effects on neutron generation in plutonium-238-enriched plutonium dioxide, 22:27629 (MLM-1462)
electron elastic scattering by, effects of short-range two-body dynamical correlations on, (T), 22:41951 (ISS-68/10)
electron inelastic scattering around giant resonance region, (E/T), 22:37299
electron inelastic scattering at 0 to 300 MeV/c, E1 and M2 matrix elements for, (T), 22:26926
electron inelastic scattering at 140 MeV with giant resonance excitation, magnetic quadrupole strength in, (E/T), 22:50596
electron inelastic scattering at 60 to 260 MeV/c, form factors and spectra for, (E), 22:3615
electron inelastic scattering by, form factors for excitation of (0+) 6.056-MeV and (3-) 6.135-MeV levels by, (E/T), 22:5780
electron inelastic scattering by, form-factor calculations using Woods-Saxon potential with finite-range residual interaction, (T), 22:5888
electron inelastic scattering cross sections at 33 to 60 MeV, (E), 22:41974
electron reactions (e,eπ^+) at 310 MeV, cross sections for, (T), 22:52959
electron scattering by, analysis using Born approximation with pair correlation effects, (T), 22:20497(R) (AECL-3009)
electron scattering by, giant resonance excitation from, (T), 22:3638
electron scattering in giant resonance region, form factors and cross sections for, (T), 22:35248
energy level at 16.75 MeV from carbon-13 (He-3, Be-8) reactions, spin-parity assignment for, (E), 22:44622
energy level at 19.08-MeV, spin and parity of, (E), 22:3615

energy level at 27.6 MeV, from carbon-13 (He-3,α) reactions, (E), 22:5776
energy level at 6.130 keV from fluorine-19 (n,α) reaction, (E), 22:29930
energy levels and transition rates of, calculation of electric, (T), 22:27266
energy levels at 6.92 and 7.12 MeV, width measurements using nuclear resonance fluorescence, (E), 22:50543
energy levels between 26 to 29 MeV from carbon-13 (^{3}He,αν) reactions, (E), 22:48459
energy levels for, description using 1p hole state coupling to ground state neon-20, (T), 22:46719
energy levels from alpha elastic scattering by carbon-12, (E), 22:9780 (NP-17203)
energy levels from boron-10 (Li-6,α) reactions, widths for, (E), 22:9798
energy levels from carbon-12 (α,Be-8) reactions, 8-particle--8-hole rotational, (E/T), 22:13937
energy levels from carbon-12 alpha elastic scattering, spins and parities of, (E), 22:20453
energy levels from carbon-12 alpha inelastic scattering, (T), 22:32513(R) (ANU-P-400)
energy levels from carbon-12 alpha scattering, (E), 22:39592
energy levels from carbon-13 (He-3,d) reactions, (E), 22:20578 (WASH-1079)
energy levels from carbon-13 (He-3,γ) reactions, isospin mixing in, (E), 22:3636
energy levels from electron inelastic scattering, spin-parity assignments for, (E), 22:37299
energy levels from electron inelastic scattering, widths of, (E), 22:53095 (BMwF-FBK-68-11)
energy levels from fluorine-19 (p,α) and nitrogen-15 (p,γ) reactions, branching ratios and transition probabilities for, (E), 22:50532
energy levels from nitrogen-14 (α,α'd) reactions, (E), 22:46716 (BMwF-FBK-68-06)
energy levels from nitrogen-14 (p,γ) reaction at 0.4 to 1.9 MeV, (E), 22:32507
energy levels from nitrogen-15 (d,n) reactions at 6 MeV, (E), 22:5770
energy levels from nitrogen-15 (He-3,d) reactions, (E), 22:39604 (CONF-670970-, pp 179-228)
energy levels from proton inelastic scattering, (E), 22:3609 (PUC-937-164)
energy levels from proton inelastic scattering, non-normal-parity, (T), 22:22576
energy levels from Slater determinants using angular momentum projection, (T), 22:27267
energy levels in continuum region, calculations using Hartree-Fock method, (T), 22:29941 (IPNO/TH-118)
energy levels in continuum region, description using potential scattering by Hartree--Fock field, (T), 22:24847
energy levels in giant resonance region from carbon-12 (α,n) and (α,p) reactions, (E), 22:44629
energy levels in giant resonance region from electron scattering, (T), 22:35248
energy levels in giant resonance region, calculations using realistic forces, (T), 22:41962
energy levels in giant resonance region, calculations using coupling of collective states with particle and hole states, (T), 22:39595
energy levels in giant resonance region, from (γ,p) reaction, (E), 22:22549
energy levels in giant resonance region, from nitrogen-15 (p,γ) reactions, (E), 22:26914
energy levels in modified Tamm--Dancoff approximation, 4p-4h, (T), 22:7669
energy levels in rotational bands, molecule-like structure in, (T), 22:53235
energy levels near 13 MeV from carbon-12 α elastic scattering, spin-parity assignments and widths for, (E), 22:26845
energy levels of, average lifetimes of, (E), 22:29911
energy levels of, calculation of collective monopole vibrational, (T), 22:1725
energy levels of, calculations using 1p1h-model with velocity-dependent potentials, (T), 22:39583
energy levels of, calculations using 4p-4h weak-coupling shell model, (T), 22:20745
energy levels of, calculations using Brueckner theory in oscillator basis, (T), 22:53244
energy levels of, calculations using equivalent nonlocal potentials, (T), 22:26855
energy levels of, calculations using Fermi liquid theory for odd-parity, (T), 22:18126
energy levels of, calculations using pairing + quadrupole model for even-parity, (T), 22:9784
energy levels of, calculations using shell model with tensor forces for vibrational, (T), 22:7716
energy levels of, calculations using shell model with Tabakin potential, (T), 22:50556
energy levels of, collective particle-hole, (T), 22:20758
energy levels of, description using shell model with harmonic-oscillator potential, (T), 22:20711
energy levels of, description using space scalar approximation to particle--hole interactions, (T), 22:53223
energy levels of, effect of four-body correlations on low-lying, (T), 22:27296
energy levels of, even-parity rotational-band, (T), 22:5782
energy levels of, exact determination of Gamow--Teller matrix elements for supermultiplet states in, 22:13797
energy levels of, rotational, (T), 22:3617
energy levels with unnatural parity from alpha inelastic scattering, (E/T), 22:39639 (UCRL-17989, pp 43-99)
energy-level electromagnetic transition rates in, corrections due to ground-state correlations, (T), 22:16091
energy-level parameters from carbon-12 alpha elastic scattering, (E), 22:32513(R) (ANU-P-400)
energy-level structure of, unified shell-model calculation of low-lying, (T), 22:37302
energy-level transition probabilities from electron inelastic scattering, (E), 22:41974
energy-level transition rates in, corrections for ground-state correlations to, (T), 22:26922
energy-level transitions and widths from electron inelastic scattering, (E), 22:20472
energy-level transitions from electron inelastic scattering, (T), 22:26926
energy-level transitions from electron inelastic scattering, E0 and E2, (E), 22:18124
energy-level transitions in giant resonance region from electron inelastic scattering, (E/T), 22:50596
energy-level transitions in, attenuated M1 and M2 $\Delta T = 0$, (T), 22:13949
energy-level transitions in, branching ratios for, (E), 22:3612
energy-level transitions in, multipolarities of, (E), 22:39598
energy-level transitions in, precision measurement of gamma energies from, (E), 22:15955
energy-level transitions in, sum rules for E1, (T), 22:53106
exchange between magnesium, tungsten, and vanadium oxides and molecular oxygen, rate of, 22:27675
exchange between oxygen and plutonium dioxide at 700 and 850°C, 22:27629 (MLM-1462)
exchange between shock-heated oxygen molecules, 22:10206(R) (NYO-3211-6)
exchange reactions in carbon monoxide, catalytic effects of molybdenum on, 22:33361
exchange reactions with oxygen-18 in carbon dioxide, catalytic effects of cobalt, iron, and nickel oxides on, 22:128
exchange with oxygen-18 chemisorbed on platinum powders, 22:18753
exchange with oxygen-18 in carbon dioxide on chromic oxide surface at -78 to 350°C, rate of, 22:37736
helium-3 elastic scattering at 9.8 to 11.7 MeV, angular distributions for, (E), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,2n) at 33 MeV, production of delayed proton emitting neon-17 by, (E), 22:29913
helium-3 reactions (He-3,α) at 11 MeV with, angular distributions from, (E), 22:32502
helium-3 reactions (He-3,α) at 14 MeV, zero-range DWBA analysis of angular distributions for, (E), 22:46731(R) (COO-1746-8)
helium-3 reactions (He-3,α) at 18 and 19.5 MeV, angular distributions and excitation functions for, (E), 22:48509(R) (BMwF-FBK-68-22)
helium-3 reactions (He-3,α) at 8 MeV, angular distributions for, (E). 22:22560(R) (ORO-1067-2)
helium-3 reactions (He-3,α) at 9.8 to 11.7 MeV, angular distributions for, (E), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,Be-7) at 37 and 41 MeV, angular distributions and spectra for, (E), 22:9800(R) (COO-535-571)
helium-3 reactions (He-3,Be-7), (He-3,He-6), (He-3,Li-6), and (He-3,Li-7) at 70 MeV, angular distributions for, (E), 22:53129
helium-3 reactions (He-3,d) with, fluorine-17 proton decay in, (E), 22:39629 (CONF-670970-, pp 229-42)
helium-3 reactions (He-3,Li-6) with, cross sections for, (E), 22:9800(R) (COO-535-571)
helium-3 reactions (He-3,n) at 11 MeV, angular distributions from, (E), 22:5784
helium-3 reactions (He-3,n) at 7.6 to 10.0 MeV, cross sections for, (E), 22:18156
helium-3 reactions (He-3,n) at 9 to 11 MeV, angular distributions and excitation functions for, (E), 22:53101
helium-3 reactions (He-3,n) up to 13.5 MeV, neon-18 T = 1 energy levels from, (E), 22:11915
helium-3 reactions (He-3,p) at 20 MeV, angular distributions for, (E), 22:50550
helium-3 reactions (He-3,p) at 40 MeV, angular distributions for, (E), 22:53108
helium-3 reactions at 3 to 20 MeV using doubly ionized beams, excitation functions for, (E), 22:39638 (UCRL-17989, pp 1-41)
interactions $\gamma + {}^{16}O \to rho^{0} + {}^{16}O$, rho--N scattering amplitude from, (T), 22:24599
ion implantation of, Coulomb excitation of nuclei after, (E), 22:9108
lithium-7 reactions (Li-7,t) at 16 MeV, rotational levels in neon-20 from, (E), 22:11906
meson (μ) capture by, giant resonance excitation from, (T), 22:3638

meson (μ^-) capture by, description using Migdal theory, (T), 22:27389
meson (μ^-) capture by, description using particle-hole model, (T), 22:26926
meson (μ^-) capture by, transition rates for, (T), 22:20481
meson (μ^-) capture by, universal V--A theory for, 22:5577
meson (μ^-) capture rate for, (E), 22:9785
meson (μ^-) capture rates for, calculations using configuration-mixing model, (T), 22:53128
meson (π^-) absorption with emission of two nucleons, (T), 22:27238
meson (π^-) absorption with helium-8 production, probability of, (E), 22:20480
meson (π^-) and (π^+) reactions with, mechanism for rho$^-$ and rho$^+$ production from, (T), 22:11667
meson (π^-) capture by, interpretation as giant resonance process, (T), 22:48457
meson (π^-) elastic scattering at 1.38 to 4.05 GeV/c, spark chamber study of cross section for, (E), 22:13659
meson (π^-) reactions (π^-,n) at rest, one-particle-absorption mechanism for, (T), 22:15950 (JINR-P4-3666)
meson (π^+) reactions (π^+,np) and (π^+,pp) at 40 and 100 MeV, excitation functions for, (T), 22:24829
meson (π^+) reactions (π^+,π^0) with, effects of p--n correlations on, 22:3460
meson (π^-) reactions (π^-,π^0) with, effects of p--n correlations on, 22:3460
meson (π^+) reactions at rest and at low energies, one-particle-absorption mechanism for, (T), 22:15950 (JINR-P4-3666)
meson (π^-) reactions with, helium-8 production by, (E), 22:22551
neutron cross sections for, calculation using unified reaction model, (T), 22:20578 (WASH-1079)
neutron differential elastic scattering cross section at 14.8 MeV, (E), 22:18141
neutron elastic scattering below 4 MeV, resonances in, (T), 22:37281(R) (NYO-72-191)
neutron elastic scattering by, effects of exchange and Pauli principle on, (T), 22:5896
neutron elastic scattering cross section for, calculations using Feshbach formalism, (T), 22:3620
neutron reactions (n,α) at 14 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,α) at 14 MeV, differential cross sections and spectra for, (E), 22:20457
neutron reactions (n,α) at 14.1 MeV, alpha-particle angular distributions from, (E/T), 22:3633
neutron reactions (n,α) at 14.8 to 18.8 MeV, angular distributions of differential cross sections for, (E), 22:46720
neutron reactions (n,α) at 15 MeV, angular distributions for, (E), 22:44626
neutron reactions (n,p) with, use for determining composition of lunar surface by, 22:4545
neutron total cross section and resonance parameters at 1 to 4 MeV, (E), 22:35293(R) (ORNL-4230)
neutron total cross section at 1.1 to 3.7 MeV, resonance parameters from, (E), 22:42019(R) (MLM-1494)
neutron total cross section at 1.8 to 3.7 MeV, (E), 22:20449 (CONF-680307-15)
neutron total cross section at 1.8 to 3.7 MeV, (E), 22:20576 (ORNL-TM-2159)
neutron total cross section for, resonance spins and widths from, (E), 22:20578 (WASH-1079)
nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
nuclear ground-state properties, from Brueckner--Hartree--Fock calculations, (T), 22:3791
nuclear properties from Hartree--Fock calculations using a realistic two-body force, (T), 22:5890
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
nuclear radius of, from analysis of elastic scattering by carbon-12, (E), 22:26876
nuclear structure in continuum region, description using eigenchannel reaction theory, (T), 22:37295
nuclear structure of, calculations using Reid potential, (T), 22:50560(R) (RLO-1062-681)
oxygen-16 differential elastic scattering cross sections at 35 to 80 MeV, angular distribution for, (E), 22:26874
oxygen-16 elastic scattering at 17 to 35 MeV, metastable states in, (T), 22:26877
oxygen-16 elastic scattering cross sections at 8 to 30 MeV, calculations using molecular-type potentials, (T), 22:37305
oxygen-16 elastic scattering up to 14 MeV, phase-shift analysis using statistical theory with real potential, (T), 22:50674
photoabsorption cross section for, effects of velocity-dependent nucleon--nucleon potential on, (T), 22:44779
photodisintegration cross sections for, calculations using configuration-mixing model, (T), 22:53128
photon absorption cross section in giant dipole resonance region, structure of, (E/T), 22:7655
photon reactions (γ,α), (γ,n), and (γ,p) at 17 to 29 MeV, final-state decay modes in, (E), 22:29936
photon reactions (γ,n) and (γ,p) at 13 to 27 MeV, cross sections for, (T), 22:1610
photon reactions (γ,n) and (γ,p) at 26.5 MeV bremsstrahlung endpoint energy, giant resonance decay modes in, (E), 22:26919
photon reactions (γ,n) and (γ,p) in continuum region, coupled-channel calculations for, (T), 22:26923
photon reactions (γ,n) and (γ,p) in giant resonance region, cross sections and γ spectra for, (E), 22:20474
photon reactions (γ,n) and (γ,p) with giant dipole resonance excitation, isospin mixing in, (E), 22:32501
photon reactions (γ,n) at 60 MeV, neutron time-of-flight spectra and yields from, (E), 22:20475
photon reactions (γ,n) with, cross sections and time-of-flight spectra for, (E), 22:7663
photon reactions (γ,n) with, neutron polarization and time-of-flight spectra for, (E), 22:20578 (WASH-1079)
photon reactions (γ,nγ) and (γ,pγ) at 28 and 30 MeV bremsstrahlung endpoint energy, γ spectra from, (E), 22:26918
photon reactions (γ,p) at 20 to 25 MeV, angular distributions and cross sections for, (E), 22:20578 (WASH-1079)
photon reactions (γ,p) at 20.5 to 25.6 MeV, proton angular distributions and spectra for, (E), 22:22549
photon reactions (γ,p) at 26 MeV, angular distributions and spectra for, (E), 22:26833
photon reactions (γ,p) in water, with fluorine-18 production by oxygen-18 (p,n) reactions, (E), 22:5774
photon reactions (γ,p) up to 55 MeV cross sections and proton spectra for, (E), 22:29919
photon reactions (γ,π^+) with, partial transitions and bound-state nitrogen-16 production in, (T), 22:26605
photon reactions (γ,π^-) with, use of gauge invariance and PCAC theory for cross section for, 22:37102
photon reactions at 0 to 170 MeV, electric-quadrupole transitions in, (T), 22:48458
photon reactions at 25 to 55 MeV bremsstrahlung endpoint energy, cross sections for carbon-11 and nitrogen-13 production by, (E), 22:26921
photon reactions at 25 to 55 MeV with carbon-11 and nitrogen-13 production, cross sections and yields for, (E), 22:1601
photon reactions with, determination of amplitude of rho + N interactions from rho production in, (T), 22:37147 (NP-17497)
proton differential elastic scattering cross sections at 23 to 46 MeV, angular distributions for, (E), 22:18131
proton differential elastic scattering cross section at 1 GeV, (E), 22:24826 (BNL-12342)
proton differential elastic scattering cross section at 1 GeV, optical-model analysis of angular distributions for, (E/T), 22:29907 (ORO-1316-57)
proton differential elastic scattering cross section at 20 to 50 MeV, optical-model analysis of, (E), 22:26838
proton differential inelastic scattering cross sections and deformation parameters at 1 GeV, (E), 22:3630
proton elastic and inelastic scattering at 1 GeV by, cross sections for, (T), 22:15815
proton elastic and inelastic scattering by, angular distributions for, (E), 22:3610
proton elastic and inelastic scattering by, isospin-forbidden resonances in, (E), 22:27051
proton elastic scattering at 1 GeV, cross section for, (T), 22:53088
proton elastic scattering at 1 GeV, cross sections for, (E), 22:26831 (BNL-12344)
proton elastic scattering at 20 to 50 MeV, optical-model analysis of, (E/T), 22:26907
proton elastic scattering at 24 to 40 MeV, angular distribution of polarization in, (E), 22:18132
proton elastic scattering by, resonances in, (E), 22:26989
proton inelastic scattering at 17.5 MeV, differential cross sections and spectra for, (E), 22:3609 (PUC-937-164)
proton inelastic scattering with excitation of non-normal-parity states, differential cross sections and polarizations for, (T), 22:22576
proton reactions (p,α) at 38 MeV, differential cross sections for, (E), 22:26893
proton reactions (p,α) at 40 MeV, angular distributions and cross sections for, (E), 22:24849
proton reactions (p,α) at 40 MeV, differential cross sections for, (E), 22:1598(R) (COO-1265-49)
proton reactions (p,α) from fast neutron reactions, average cross sections for, (E), 22:26932(R) (NP-17434)
proton reactions (p,d) at 1 GeV, Feynman-diagram calculation of deuteron mementum spectra from, 22:39572
proton reactions (p,d) at 100 MeV, differential cross sections for, (E), 22:5766
proton reactions (p,d) at 156 MeV, angular and energy distributions for, (E), 22:20484
proton reactions (p,dp) at 1 GeV, (E), 22:26831 (BNL-12344)
proton reactions (p,γ) at 0.15 to 2.5 MeV, cross-section calculations using direct two-body model, (T), 22:26830
proton reactions (p,γ) with, resonances in, (E),

22:26989
proton reactions (p,He-3) at 185 MeV, angular distributions for, (E), 22:37628 (ISS-68/1)
proton reactions (p,He-3) at 40 MeV, analysis using diffraction model, (T), 22:20728
proton reactions at 1 GeV, magnetic spectrometer study of high-momentum deuteron production from, (E), 22:3257
proton reactions at 125 MeV in emulsions, cross sections for, (E), 22:41976
proton reactions at 156 MeV, (E), 22:29918
proton reactions at 156 MeV, cross section for production of lithium-9 by, (E), 22:29912
proton reactions at 19, 135, and 550 GeV, production of beryllium, boron, and lithium isotopes in, (E), 22:20495
proton reactions at 70 to 200 MeV, cross sections for isotope production by spallation, (E), 22:7658
proton reactions with, spallation cross sections from, (T), 22:19733
proton scattering at 1 GeV, cross sections for, (E), 22:5498 (BNL-11890)
proton scattering at 1.7 GeV/c, N + N correlations in, (E/T), 22:5499 (INP-567/PL/PH)
proton total cross section at 1 GeV, analysis for nuclear structure information, (T), 22:53088
proton total cross section at 27, 34, 41, and 45 MeV, (E), 22:26838
ratio to oxygen-18 in Arctic Ocean glacial-period foraminifera samples, 22:42897 (CU-2663-9, App.G)
reactions (O-16,4n) and (O-16,5n) with plutonium-242 at 89 and 96 MeV, cross sections and mean γ(n)/γ(f) ratios for, (E), 22:46760(T) (ANL-Trans-636)
reactions (O-16,4n) and (O-16,5n) with uranium-233, production of fermium-244 and -245 by, (E), 22:14016
reactions (O-16,4n) with gadolinium-160 at 80 MeV, spin distributions in compound and final nuclei of, (T), 22:30117
reactions (O-16,4n) with tin-116, -118, -120, -122, and -124 at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
reactions (O-16,4n) with tin-116, tin-118, tin-120, tin-122, and tin-124, angular distributions and γ spectra for, (E), 22:48528
reactions (O-16,5n) and (O-16,6n) with holmium-165, production of rhenium-175 and -176 by, (E), 22:9880
reactions (O-16,6n) with gadolinium-160 at 100 MeV, spin distributions in compound and final nuclei of, (T), 22:30117
reactions (O-16,α) with carbon-12 at 22 to 32 MeV, α-γ angular correlations from, (E), 22:39614
reactions (O-16,α) with carbon-12, statistical analysis of, (T), 22:53114
reactions (O-16,d) with lithium-6 at 20 MeV, deuteron angular distributions and spectra from, (E), 22:32498
reactions (O-16,f) with bismuth-209 and uranium-238, fission-fragment angular distributions for, (E), 22:18215(T) (BNL-tr-192)
reactions (O-16,f) with bismuth-209 and uranium-235, fission-fragment angular distributions from, (E), 22:1669
reactions (O-16,F-17) with boron-10, excitation function for, (E), 22:39588
reactions (O-16,F-18) with boron-11, excitation function for, (E), 22:39588
reactions (O-16,γ) with helium-4 36.2 to 36.5 MeV, γ spectra for, (E), 22:20497(R) (AECL-3009)
reactions (O-16,γ) with lithium-7 at 12 to 31 MeV, cross sections and γ spectra for, (E), 22:7656
reactions (O-16,N-15) with aluminum-27 and boron-11 at 30 MeV, analysis using finite-range distorted-wave Born approximation, (T), 22:26880
reactions (O-16,Ne-20), (O-16,N-14), (O-16,N-15), and (O-16,O-17) with boron-10 and boron-11, excitation functions for, (E), 22:39588
reactions (O-16,xn) with lutetium-175, production of alpha-active gold isotopes by, (E), 22:18261
reactions (O-16,xn) with, production of alpha-active gold isotopes by, (E), 22:18261
reactions of ions of, with implanted nuclei in ferromagnetic media at 35 MeV, (E), 22:29241
reactions of ions of, with plutonium to produce nobelium-255, 22:30579
reactions with aluminum-27 and cobalt-59, cross sections for compound-nucleus formation in, (E), 22:29945
reactions with bismuth-209 at 76 to 163 MeV, recoil ranges in aluminum and aluminum oxide for, (E), 22:14050
reactions with cobalt-59 at 60 MeV, compound-nucleus formation and decay in, (E), 22:53151
reactions with iridium, recoil ranges in aluminum and aluminum oxide, (E), 22:14049
reactions with lead-208 at 123 and 126 MeV, recoil ranges in aluminum and aluminum oxide for, (E), 22:14050
reactions with plutonium-239 and -242, effects of N = 152 subshell on nobelium-isotope production by, (E), 22:18210 (JINR-D7-3548, pp 65-70)
reactions with thallium-203 and thallium-205, production of actinium isotopes by, (E), 22:18253
scattering by antimony-121 and antimony-123 at 45 MeV, with Coulomb excitation, (E), 22:20636
scattering by arsenic-75 at 36 to 38 MeV, Coulomb excitation by, (E), 22:3681
scattering by bismuth-209, gold-197, and uranium-238, angular distributions for elastic, (E), 22:18215(T) (BNL-tr-192)
scattering by boron-10 and boron-11 at 14.5 to 27.5 MeV, differential cross sections for, (E), 22:22555
scattering by cadmium-106, cadmium-108, palladium-104, cadmium-108, palladium-104, platinum-192,platinum-194, platinum-196, and platinum-198 with Coulomb excitation, inelastic, (E), 22:29985 (ORNL-TM-2121)
scattering by carbon-12 at 31 to 35 MeV, differential cross section for elastic, (E), 22:26882
scattering by carbon-12 at 35 MeV, angular distributions and cross sections for elastic, (E), 22:26851
scattering by carbon-12 at 35 MeV, angular distribution for elastic, (E), 22:26876
scattering by carbon-12 at 35 MeV, differential cross sections for inelastic, (E), 22:5777
scattering by carbon-13 and oxygen-18 at 10 to 30 MeV, angular distributions and excitation functions for elastic, (E), 22:26836
scattering by cobalt-59 at 36 MeV, Coulomb excitation by, (E), 22:3680
scattering by dysprosium-161 with Coulomb excitation, O-16-γ coincidence spectra for, (E), 22:14008
scattering by erbium-166, samarium-150, and samarium-152, reorientation effect in Coulomb excitation in, (T), 22:7759
scattering by erbium-166, samarium-152, ytterbium-172, ytterbium-174, and ytterbium-176 at 42 to 52 MeV with Coulomb excitation, γ angular anisotropy and yields from inelastic, (E), 22:48523 (ORNL-TM-2211)
scattering by gadolinium-156 and -158 at 50 MeV with Coulomb excitation, (E), 22:11944(R) (AECL-2780)
scattering by helium-4 at 35.96-MeV resonance, (E), 22:32512(R) (AECL-3108)
scattering by indium-115 at 35 MeV, energy levels from inelastic, (E), 22:1674
scattering by magnesium-24 near Coulomb barrier, optical model potential well depth for elastic, (E/T), 22:50581
scattering by neodymium-142, -144, -146, -148, and -150 at 50, 55, and 60 MeV with Coulomb excitation, (E), 22:27154
scattering by osmium-186, -188, -190, and -192 at 42 to 80 MeV with Coulomb excitation, (E), 22:27155
scattering by ruthenium-98, -100, -102, and -104 at 42 to 49 MeV, Coulomb excitation of states in inelastic, (E), 22:32615
scattering by thorium-232 at 70 MeV, Coulomb excitation spectra from, (E), 22:30027
scattering by uranium-235 at 60 to 78 MeV with Coulomb excitation, conversion-electron and γ spectra for inelastic, (E), 22:42042
scattering by uranium-235 at 78 MeV, γ spectra from inelastic, (E), 22:39638 (UCRL-17989, pp 1-41)
separation from oxygen-18 by thermal diffusion, 22:16774(T) (MLM-1485(tr))
stability against pear-shaped deformations, (T), 22:3779
triton elastic scattering at 0.9 to 1.7 MeV, cross section for, (E), 22:24827 (JINR-P15-3756)
triton reactions (t,n) at 1.7 to 3.4 MeV, cross section for, (E), 22:26949
triton reactions (t,n) with, determination of oxygen by, 22:27595
triton reactions (t,p) with, analysis for effective two-body matrix elements for sd shell, (T), 22:20696
triton reactions (t,p) with, calculations using surface delta interaction for residual nucleus, (T), 22:32554
triton reactions (t,p) with, cross sections for, (T), 22:20489
triton reactions (t,p) with, cross-section calculations using distorted-wave approximation with Ohmura hard-core wave function, (T), 22:32510
wave function for ground state of, search for 2p-2h and 4p-4h admixtures in, (E/T), 22:26869
wave functions for, matrix elements of Hamada--Johnson potential for harmonic oscillator, 22:1707 (JINR-E4-3445)
x-ray spectra of π-mesic atoms of, (E), 22:26924
OXYGEN ISOTOPES O-17
charged-particle reactions with, cross-section data compilation for, 22:1600
concentration by fractional distillation of mixture of methane and nitric oxide, 22:37865(P)
concentration in water by countercurrent distillation, 22:48903
description using hard-core harmonic-oscillator wave functions, spin-orbit doublet separation in, (T), 22:18138
description using shell model with low-lying deformed states, (T), 22:3608 (PUC-937-165)
determination in gaseous oxygen by molecular beam mass spectrometry, 22:44994
determination in heavy water, mass-spectrometric, 22:3997 (AEEW-R-550)
deuteron reactions (d,p) with, Hartree--Fock calculations of form factors for, (T), 22:20682
energy levels from carbon-13 (α,n) reactions and alpha elastic scattering, (E), 22:20456
energy levels from carbon-13 (α,n) reactions and elastic scattering, spins and widths of, (E), 22:20578 (WASH-

1079)
energy levels from carbon-13 (α,n) reactions, partial and total widths for, (E), 22:32511
energy levels from carbon-13 α elastic scattering and carbon-13 (α,n) reactions, spins, parities, and widths of, (E), 22:9778 (ANU-P-388)
energy levels from fluorine-19 (d,α) reactions, (E), 22:35232
energy levels from neutron elastic scattering by oxygen-16, (T), 22:37281(R) (NYO-72-191)
energy levels from nitrogen-14 (α,α'p) reactions, (E), 22:46716 (BMwF-FBK-68-06)
energy levels from nitrogen-15 (He-3,p) reactions, (E), 22:39604 (CONF-670970-, pp 179-228)
energy levels from oxygen-16 (d,p) reactions, (E), 22:39589
energy levels from oxygen-16 (d,p) reactions, spectroscopic factors for odd-parity, (T), 22:35235
energy levels from oxygen-16 (d,p) reactions, spectroscopic factors for, (E), 22:26846
energy levels from oxygen-16 (d,p) reactions, spins and spectroscopic factors for, (E), 22:29935
energy levels of, calculations using coupling of collective states with particle and hole states, (T), 22:39595
energy levels of, calculations using shell model with Tabakin potential, (T), 22:50556
energy levels of, calculations using shell model with j-j coupling approximation, (T), 22:20578 (WASH-1079)
energy levels of, description using space scalar approximation to particle--hole interactions, (T), 22:53223
energy levels of, spin-parity assignments and widths of, (E), 22:35293(R) (ORNL-4230)
energy-level spin--orbit splitting in, calculation of Hartree--Fock single-particle, (T), 22:16086
energy-level widths from neutron elastic scattering by oxygen-16, (T), 22:3620
exchange between γ-irradiated magnesium oxide and oxygen, 22:25423
helium-3 differential elastic scattering cross section at 17 MeV, optical-model analysis of, (E), 22:53112
helium-3 differential elastic scattering cross section at 18 MeV, angular distribution for, (E), 22:27009
helium-3 reactions (He-3,n) at 3.076 MeV, angular distributions for, (E), 22:35285(R) (AERE-PR/NP-13)
helium-3 reactions (He-3,t) at 18 MeV, differential cross sections for, (E), 22:27009
nuclear double resonance spectra in calcium sulfates, 22:31998
nuclear magnetic moment of, first- and second-order corrections to, (T), 22:3755 (PUC-937-169)
nuclear magnetic resonance spectra of, incorporated in crystals of ice-d_2, 22:12296
nuclear radius of, from analysis of elastic scattering by carbon-12, (E), 22:26876
proton reactions (p,n) with, DWBA analysis with two-body tensor forces and central forces, (T), 22:50560(R) (RLO-1062-681)
reactions (He-3,t) at 17 MeV, DWBA analysis using two-body interaction between incident and target nucleons, (E/T), 22:53112
scattering by carbon-12 at 35 MeV, angular distribution for elastic, (E), 22:26876
scattering by carbon-12 at 35 MeV, differential cross sections for inelastic, (E), 22:5777
spectra in partially complexed vanadyl ions, NMR, 22:45029 (UCRL-18043, pp 7-105)
spin-orbit doublet splitting in, calculation using harmonic oscillator potential with hard-core and two-body spin-orbit forces, (T), 22:26927
use as tracer for study of transport during sintering of ceramic materials, 22:15236 (UCRL-70164)
use in radiodiagnosis of heart and lung functions, design of equipment for, 22:23589(P)
use in research from 1963 through 1966, bibliography on, 22:18710

OXYGEN ISOTOPES O-18
abundance in carbon stars, (E), 22:8919
abundance in Martian atmosphere, (E), 22:7097
abundance ratio to oxygen-16 in carbon monoxide, spectroscopy using microwave discharge for determination of, 22:33281
alpha differential elastic scattering cross section 2.5 to 5.0 MeV, (E), 22:35256
alpha reactions (α,γ) and (α,n) at 2.5 to 5.0 MeV, excitation functions for, (E), 22:35256
alpha reactions (α,γ) with, γ spectra for, (E), 22:26948
alpha reactions (α,n) with, n-γ and γ-γ coincidence spectra for, (E), 22:24788 (IA-1128, pp 55-77)
carbon-12 elastic scattering at 10 to 30 MeV, angular distribution and excitation function for, (E), 22:26836
charged-particle reactions with, cross-section data compilation for, 22:1600
concentration by fractional distillation of mixture of methane and nitric oxide, 22:37865(P)
concentration in oxygen by thermal diffusion, 22:47300
concentration in oxygen formed in electric discharges, 22:4254
concentration in water by countercurrent distillation, 22:48903
content in French stalagmites, determination of ancient climatic temperatures from, 22:6455
content in ground and rainwaters, hydrological studies of, 22:18927
content in ground water, rainwater, and surface water in Evian basin, France, measurement of, 22:18934
content in natural waters, use as tracer in hydrometeorology, 22:18925
content ratio with oxygen-16 in minerals and rocks, variations in, 22:30714
description using shell model with degeneracy of ground state, (T), 22:32493
description using shell model with low-lying deformed states, (T), 22:3608 (PUC-937-165)
description using shell model with risidual two-body interaction, (T), 22:11908
description using shell model with Tabkin potential, (T), 22:11907
description using shell model, (T), 22:22627
description using shell model, (T), 22:20578 (WASH-1079)
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination in carbon dioxide by proton activation and time-of-flight spectrometry, 22:27587
determination in carbonatites, 22:40016
determination in gaseous oxygen by molecular beam mass spectrometry, 22:44994
determination in gases by neutron time-of-flight spectrometry, 22:25256
determination in heavy water, mass-spectrometric, 22:3997 (AEEW-R-550)
determination in natural waters in USSR, mass-spectrometric, 22:42646
determination in oxygen by helium-3 activation, 22:1965 (UCRL-17812)
determination in sulfates in water, 22:14466
determination of ratio of, to oxygen-16 in carbon monoxide by spectrometry with microwave discharge, 22:27613
determination using organic compounds, method for ir spectrophotometric, 22:40060
deuteron reactions (d,α) at 4.75 to 11.5 MeV, angular distributions and excitation functions for, (E), 22:41970
deuteron reactions (d,p) with, Hartree--Fock calculations of form factors for, (T), 22:20682
deuteron reactions (d,t) at 15 MeV, form factors and cross sections for, (T), 22:27353
distribution in products of silent-discharge reactions between hydrogen and oxygen, 22:16507
effects on decomposition of acetyl peroxide, 22:10219
effects on far infrared spectra of monocarboxylic acids, 22:2067
effects on infrared spectra and force constants of nitrosyl fluoride, 22:4110
effects on infrared spectra of boroxin, 22:35783
effects on ionization of oxygen molecules and oxides of carbon and nitrogen, 22:35820
effects on oxidation of water by hypochlorites, persulfates, and transition metal ions, 22:27660
effects on photolysis of argon--heavy water--water system, 22:21081
energy level at 6.18 MeV, spin of, (E), 22:20578 (WASH-1079)
energy level calculations using velocity-dependent interactions, (T), 22:30105
energy levels for, description using 1p hole state coupling to ground state neon-20, (T), 22:46719
energy levels from carbon-14 (α,γ) reactions, spins, parities, branching ratios, and transition multipolarities for, (E), 22:9799
energy levels from fluorine-19 (n,d) reactions at 14.1 MeV, (E), 22:26844
energy levels from fluorine-19 (n,d) reactions, spectroscopic factors for, (E), 22:44614
energy levels from fluorine-19 (t,α) reactions, (E), 22:26992
energy levels from fluorine-19 (t,αγ) reactions, branching ratios for, (E), 22:20476
energy levels from shell-model calculations, (T), 22:1730
energy levels of, calculations using harmonic-oscillator shell model with exponentially velocity-dependent potential, (T), 22:37294
energy levels of, calculations using Hartree--Fock method with Hamada--Johnston and nonlocal factorizable potentials, (T), 22:1608
energy levels of, calculations using j-j coupling model with surface delta interaction, (T), 22:32554
energy levels of, calculations using shell model with velocity-dependent potentials, 22:1606
energy levels of, calculations using shell model with correlations in core, (T), 22:9954
energy levels of, calculations using shell model with Tabakin interaction, (T), 22:41966
energy levels of, calculations using shell model with Tabakin potential, (T), 22:50556
energy levels of, calculations using velocity-dependent potential, (T), 22:13934
energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave

functions, (T), 22:37304
energy levels of, description using modelistic and realistic interactions, (T), 22:35362 (AD-662219)
energy levels of, description using shell model with intermediate coupling approximation, (T), 22:22637
energy levels of, description using space scalar approximation to particle--hole interactions, (T), 22:53223
energy levels of, effects of degeneracy on solution of Bethe--Goldstone equation for, (T), 22:26862
energy levels of, from core polarization phonons coupled to particles, (T), 22:14089
energy levels of, structure of low-lying, (T), 22:26863
energy levels, beta-decay ft values, electromagnetic moments, and transition rates from simple interaction model, (T), 22:7754
energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
energy-level transitions in, shell-model calculations of, (T), 22:20465
enrichment in water by distillation in packed vacuum column, 22:10327
exchange between 2,4,6-trimethylpyrylium perchlorate and water, effects of pH on, 22:4140
exchange between aquopentamminechromium ions and water, 22:12331
exchange between carbon dioxide and nickel oxide, kinetics of, 22:21058
exchange between chromium ammines and carbon dioxide or water, 22:8042(R) (ORO-2842-6)
exchange between dipropyl phosphonate and water, 22:27639
exchange between enriched water and sodium pentacyanonitrosylferrate, rate of, 22:40056
exchange between glycerophosphoric acid and water, 22:14506
exchange between magnesium, tungsten, and vanadium oxides and molecular oxygen, rate of, 22:27675
exchange between molecular oxygen and cobalt, copper, manganese, and zinc oxides, kinetics of, 22:27633
exchange between rhenium chloride amine complexes and water, 22:33357
exchange between shock-heated oxygen molecules, 22:10206(R) (NYO-3211-6)
exchange between sodium rhodium oxalate and water, exchange of outer and inner oxygens in, 22:37731
exchange between substituted benzophenones and water, 22:16485(R) (ORO-3234-6)
exchange equilibria in oxynitrogen compounds, effects of temperature on, 22:27735
exchange of sulfoxides in acetic or chloroacetic acid, 22:42678
exchange reactions in carbon monoxide, catalytic effects of molybdenum on, 22:33361
exchange reactions on lanthanum oxide at −150 to 350ºC, mechanism of, 22:33315
exchange reactions with oxygen-16 in carbon dioxide, catalytic effects of cobalt, iron, and nickel oxides on, 22:128
exchange with oxygen-16 chemisorbed on platinum powders, 22:18753
exchange with oxygen-16 in carbon dioxide on chromic oxide surface at −78 to 350ºC, rate of, 22:37736
helium-3 differential elastic scattering cross section at 18 MeV, angular distribution for, (E), 22:27009
helium-3 differential elastic scattering cross section at 17 MeV, optical-model analysis of, (E), 22:53112
helium-3 reactions (He-3,n) at 3.076 MeV, angular distributions for, (E), 22:35285(R) (AERE-PR/NP-13)
helium-3 reactions (He-3,n) up to 9.0 MeV, neon-20 T = 2 energy levels from, (E), 22:11915
helium-3 reactions (He-3,t) at 18 MeV, differential cross sections for, (E), 22:27009
incorporation in fructose, 22:21405(R) (CU-1803-12)
metabolism in algae, use of activation analysis for tracer study of, 22:31008
neutron reactions (n,α) at 7.5 to 8.6 MeV, cross sections for, (E), 22:11912
nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
nuclear radius of, from analysis of elastic scattering by carbon-12, (E), 22:26876
oxygen-16 elastic scattering at 10 to 30 MeV, angular distribution and excitation function for, (E), 22:26836
production in S-type star HR 1105, (E), 22:26142
proton elastic scattering at 1.4 to 3.2 MeV, yields for, (E), 22:22560(R) (ORO-1067-2)
proton elastic scattering at 1.4 to 3.2 MeV, yield curve for, (E), 22:20578 (WASH-1079)
proton reactions (p,α) and (p,n) at threshold to 3.2 MeV, yields for, (E), 22:22560(R) (ORO-1067-2)
proton reactions (p,α) at 1.4 to 3.2 MeV, yield curves for, (E), 22:20578 (WASH-1079)
proton reactions (p,n) at 13 to 18 MeV, cross section for, (E), 22:30048(R) (PUC-937-307)
proton reactions (p,n) at threshold to 3.2 MeV, yield curve for, (E), 22:20578 (WASH-1079)
proton reactions (p,n) from fast neutron reactions, average cross section for, (E), 22:26932(R) (NP-17434
proton reactions (p,n) from oxygen-16 (γ,p) reactions in water, (E), 22:5774
proton reactions at 156 MeV, (E), 22:29918
proton reactions at 156 MeV, cross sections for production of lithium-9, carbon-16, and nitrogen-17 by, (E), 22:29912
radiation effects on exchange between neodymium oxide and molecular oxygen, γ, 22:42786
ratio to oxygen-16 in Arctic Ocean glacial-period foraminifera samples, 22:42897 (CU-2663-9, App.G)
reactions (He-3,t) at 17 MeV, DWBA analysis using two-body interaction between incident and target nucleons, (E/T), 22:53112
reactions (O-18,4n) and (O-18,5n) with americium-243 at 87 to 103 MeV, cross sections for, (E), 22:5833
reactions (O-18,4n) and (O-18,5n) with plutonium-239 and plutonium-242, cross sections and mean $\gamma(n)/\gamma(f)$ ratios for, (E), 22:46760(T) (ANL-Trans-636)
reactions (O-18,5n) with plutonium-239, nobelium-252 production by, (E), 22:3696 (JINR-P7-3556)
reactions (O-18,5n) with plutonium-239, production of nobelium-252 by, (E), 22:39646
reactions (O-18,O-16) and (O-18,O-17) with sodium-23 at 12 to 30 MeV, excitation curves for neutron transfer in, (E), 22:48460
reactions (O-18,O-16) with carbon-12 at 32 and 35 MeV, angular distributions for, (E), 22:26875
reactions (O-18,O-19) with beryllium-9 at 12 to 30 MeV, excitation curves for neutron transfer in, (E), 22:48460
reactions with plutonium-239 and -242, effects of N = 152 subshell on nobelium-isotope production by, (E), 22:18210 (JINR-D7-3548, pp 65-70)
scattering by carbon-12 at 35 MeV, angular distribution for elastic, (E), 22:26876
scattering by carbon-12 at 35 MeV, differential cross sections for inelastic, (E), 22:5777
separation from carbon-13 by chemical exchange of carbon dioxide with amine carbamates in methanol solutions, 22:133 (CU-755-4, Paper IIB)
separation from nitric oxide by gas chromatography, column packings for, 22:138 (CU-755-4, Paper VI)
separation from other oxygen isotopes in chemical exchange of carbon dioxide with amines in nonaqueous solution, 22:14578
separation from oxygen-16 by thermal diffusion, 22:16774(T) (MLM-1485(tr))
use as tracer in Dutch ground water flow measurements, 22:18932
use as tracer in hydrologic survey, 22:16773 (STI/DOC-10/73)
use for tracer studies of metabolism in rodents, 22:25800 (UCLA-12-668, pp 37-58)
use in research from 1963 through 1966, bibliography on, 22:18710
use of water-incorporated, for study of anaerobiosis in maize and sunflower plants, 22:12766
x-ray spectra of π-mesic atoms of, (E), 22:26924

OXYGEN ISOTOPES O-19
description using shell model with residual two-body interaction, (T), 22:11908
description using shell model, (T), 22:20578 (WASH-1079)
deuteron reactions (d,p) with, Hartree--Fock calculations of form factors for, (T), 22:20682
energy levels from fluorine-19 (n,p) reactions at 14.1 MeV, (E), 22:26844
energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
half-life of, (E), 22:24845
nucleon pair interactions in, SU(3) symmetry for matrix elements of, 22:26679 (NP-17357)

OXYGEN ISOTOPES O-20
description using shell model with residual two-body interaction, (T), 22:11908
description using shell model, (T), 22:20578 (WASH-1079)
energy level at 1.67 MeV, spin of, (E), 22:20578 (WASH-1079)
energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
energy levels of, SU(3) calculations of, (T), 22:14087
energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
nucleon pair interactions in, SU(3) symmetry for matrix elements of, 22:26679 (NP-17357)

OXYGEN SYSTEMS
Ag--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
Al--O_2--Ti, texture strengthening of, methods for, 22:52185
Al--O--Ti-base, plasticity of α and β, phase analysis at 990ºC of, 22:702
Ar--CO--H--O, ignition of, chain branching and kinetics in shock-wave, 22:25214 (LA-DC-9245)
Ar--H--O, dissociation rates of hydrogen molecules behind shock waves in, (E), 22:43904
Ar--O, aluminum droplet combustion in, 22:16367 (SC-DC-67-2295)

Ar--O, effects on HT yields from recoil tritium reactions with hydrocarbons, 22:45125
C--N--O--U, phase studies, 22:49680(R) (USBM-RC-1347)
C--Nb--O, phase studies of alpha solid solutions in, 22:41100(T) (ORNL-tr-1942)
C--O--Pu, phase studies, 22:31505
C--O--Ta phase studies, 22:10999
C--O--Ta, phase studies of alpha solid solutions in, 22:41100(T) (ORNL-tr-1942)
C--O--U, phase diagram, 22:4866 (BNWL-SA-1494)
C--O--U, phase diagram at 1700°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
C--O--U, phase diagrams, 22:11083
C--O--U, phase studies at 1573°K, 22:26959
C--O--U, phase studies at 1720 to 2070°K, 22:4896
C--O--Zr, phase studies of, 22:2687(R) (N-67-15390)
CO--H_2O--O, radiation effects on binding energy in solutions of, x, 22:12389
CO--O, radiolysis of, formation of carbon dioxide and carbon suboxide in γ, 22:47166
Cs--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
Cu--Fe--O, radiolysis in aqueous or sulfuric acid solution, kinetics of reactions in γ, 22:51022
cyclopropane--O, photolysis of gaseous, 22:47198
cyclopropane--O, radiolysis of gaseous, 22:47198
ethanol--O, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199
ethylene--NH_3--O, radiolysis of, γ, 22:12376
Eu--O--Ti, phase studies at 900 to 1500°C, 22:23896 (CONF-670502-, pp 194-9)
Fe--Mn--O--rare earths, Moessbauer study of crystal and magnetic structure and quadrupole coupling in ionic compounds of, 22:7345 (NP-17133)
Fe--Mn--O--Y, Moessbauer study of crystal and magnetic structure and quadrupole coupling in ionic compounds of, 22:7345 (NP-17133)
Ga--Fe--O--Sr, iron-57 Moessbauer spectra in, 22:24465
glucose--O, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199
glycerol--O, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199
H_2O--NH_3--O, radiation effects on binding energy in vaporous, γ, 22:12389
H_2O--O--trichloroethylene, radiolysis of, yields in, 22:42701 (AD-664757)
H--H_2O--H_2O_2--O, radiolysis of, yields of hydrogen peroxide in, 22:33423
H--N--O, cesium emission properties in various mixtures of, 22:27573
H--O, detonation in nuclear cavities, methods for arresting, 22:12458 (MSAR-67-187)
H--O--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
He--O, plasma helical instability in mixtures of helium with, (E), 22:9402
hexafluorobutadiene--O, effects on HT yield from recoil tritium reactions with hydrocarbons, 22:45125
hexafluorocyclobutene--O, effects on HT yields from recoil tritium reactions with hydrocarbons, 22:45125
HF--O, effects on dissolution of stainless steel cans containing uranium dioxide, 22:4230(R) (EURAEC-1920)
HF--O, use in decladding fuel elements, 22:40156(R) (EURAEC-2031)
hydrocarbon--O, reactions of recoil carbon-11 in, 22:14513 (BNL-50057, pp 60-78)
K--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
Li--O--Tc, preparation and phase studies of compounds in, 22:4071(T) (ANL-Trans-539)
methanol--O, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199
N_2O--O, radiolysis of, yields in pulse, 22:30591(R) (RRL-2310-231)
N--O, effects on HT yields from recoil tritium reactions with hydrocarbons, 22:45125
N--O, measurements on radiating, luminosity-temperature, 22:37775 (BNL-50082, pp 40-78)
N--O, radiation effects on reactions of carbon-11 recoil atoms in, reactor, 22:33453
N--O, radiation emission from, spectral studies on, 22:37775 (BNL-50082, pp 40-78)
N--O, radiolysis of gaseous, nitrogen fixation in fission fragment and γ, 22:37775 (BNL-50082, pp 40-78)
N--O, radiolysis of, computer solutions of reaction rate equations for ions from electron, 22:33370 (AD-662061)
Na--O--Tc, preparation and phase studies of compounds in, 22:4071(T) (ANL-Trans-539)
Nb--Nd--O, phase diagram, 22:49839
Nb--Ni--O, phase precipitation from supersaturated solid solutions of, effects of aging on, 22:11069
Nb--O, phase studies, 22:26087
Nb--O, thermodynamics of interstitial, 22:10984 (COO-1676-3)
Nb--O--Zr, phase studies, 22:49769
NH_3--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
O--2-propanol, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199
O--P--V, electric conductivity of semiconducting glasses of, 22:40993(R) (COO-1198-534)
O--Pr_2O_3, phase studies of, tensimetric, 22:42650 (COO-1109-35)
O--Pu, phase diagrams and properties, 22:36495
O--Pu, physical properties of, 22:2627
O--Pu, sublimation of vapor phases in, partial heats of, 22:22653(R) (ANL-7419)
O--Pu--U, phase diagram, 22:17113 (JAERI-1144)
O--Pu--U, phase diagram of, 22:43663
O--Pu--U, phase studies of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, phase studies of, 22:17168 (STI/DOC-10/79)
O--Pu--U, phase studies of, 22:31509
O--Pu--U, thermodynamic properties of, 22:17168 (STI/DOC-10/79)
O--Pu--U, thermodynamic properties of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, transpiration of, 22:52257 (ANL-7425, pp 94-129)
O--Pu--U, vapor pressure of, 22:52257 (ANL-7425, pp 94-129)
O--Rb--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
O--RuO_2--RuO_4, pressure equilibria at 453 to 723°C, 22:15251 (IN-1013)
O--S--U, crystal structure and phase studies of, 22:43631 (ANL-7299, pp 120-37)
O--Si--V, phase diagram and thermodynamics of, 22:2704
O--Sr--U, chemical equilibria in, 22:35776 (ORNL-TM-2105)
O--Sr--U, phase studies of, 22:25333 (ORNL-4229, pp 162-79)
O--Sr--U, phases and vapor pressures of, at 2000 to 3000°K, 22:31490
O--Ta, thermodynamics of interstitial, 22:10984 (COO-1676-3)
O--Tc--Tl, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
O--U, chemical equilibria in, 22:35776 (ORNL-TM-2105)
O--U, phase diagram, 22:45815 (GEMP-439)
O--U, phase diagrams, 22:11083
O--U, phase studies on, at 1080 to 1200°C, 22:35786
O--U, thermodynamic properties of, 22:21761(T) (ANL-Trans-561)
O--V--W, crystal structure of WV_2O_7 phase in, 22:34120
O--water vapor, reactions with thulium at 650 to 850°C, kinetics of oxidation, 22:2570
O--Y--Zr, preparation by decomposition of alcoholates, 22:4901
O--Y--Zr, properties of, chemical and physical, 22:4901
O--Zr, crystal structure of solid-solution, 22:23826
O--Zr, phase studies, 22:26088
O--Zr, phase studies on, 22:17184
O--Zr, plastic deformation of monocrystals of, at 77 to 950°K, 22:49755
O--Zr, thermal deformation in dilute, effects of strain rate and temperature on, 22:31525

OXYNITRIDES
  recombination in, direct, (T), 22:31618

OXYSULFIDES
    see also Cerium Oxysulfides
    see also Curium Oxysulfides
    see also Lanthanum Oxysulfides
    see also Neodymium Oxysulfides
    see also Praseodymium Oxysulfides
    see also Uranium Oxysulfides

OXYTELLURIDES
    see also Uranium Oxytellurides

OXYTETRACYCLINE
  effects on x-radiosensitivity of autoimmune processes in rabbits, 22:21446
  protective effects of, against radiomimetic effects of oxidized oleic acid on mice and yeasts, 22:19380

OYSTER CREEK POWER REACTOR, UNIT 1
  accident analysis for, maximum credible, 22:30129 (DOCKET-50219-5)
  auxiliary systems for, mathematical model for calculation of depressurization of feedwater, 22:30127 (DOCKET-50219-3)
  blowdown analysis of, reactivity determinations effects on, 22:30127 (DOCKET-50219-3)
  blowdown heat transfer calculations for, 22:30126 (DOCKET-50219-2)
  blowdown in, effects of coolant flow rate and transients during, 22:30133 (DOCKET-50219-9)
  containment structures for, allowable stresses on components for, 22:30135 (DOCKET-50219-11)
  containment system for, comparison of measurement and calculation of pressures in, 22:30126 (DOCKET-50219-2)
  containment system for, description of construction of, 22:32866
  containment systems for, fission product retention capability of, 22:30126 (DOCKET-50219-2)
  containment systems for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
  control rod ejection from, consequences of, 22:30129 (DOCKET-50219-5)
  control rod thimble failures in, analysis of hypothetical, 22:30129 (DOCKET-50219-5)
  control rods for, analysis of design for drive for, 22:30126 (DOCKET-50219-2)
  control systems and instrumentation for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)

coolant for, fission product inventory model for, 22:30126 (DOCKET-50219-2)
coolant injection system for, description of proposed high pressure, 22:30137 (DOCKET-50219-13)
cooling system for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
cooling systems for, availability of standby, 22:30130 (DOCKET-50219-6)
core for, coolant loss accident effect on thermal response, 22:30127 (DOCKET-50219-3)
core for, dynamic characteristics of, 22:30129 (DOCKET-50219-5)
core for, effects of cooling system piping break on internal pressures of, 22:30127 (DOCKET-50219-3)
core for, factors affecting performance of spray cooling for, 22:30127 (DOCKET-50219-3)
core for, heatup analysis model for, 22:30126 (DOCKET-50219-2)
core for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
core for, test program for spray cooling system for, 22:30126 (DOCKET-50219-2)
design basis accidents in, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
design of, comparison of ACRS findings on Browns Ferry and Vermont Yankee with, 22:30135 (DOCKET-50219-11)
design of, complete engineering drawings for, 22:30126 (DOCKET-50219-2)
design parameters for, 22:22712 (STI/PUB-174)
economics of, analysis of construction, 22:20881
electrical systems for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
emergency and auxiliary services for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
emergency program for, description of, 22:30134 (DOCKET-50219-10)
engineered safeguards for, detailed information on, 22:30129 (DOCKET-50219-5)
engineered safeguards systems for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
fuel elements for, cladding-to-coolant heat transfer coefficients for, 22:30127 (DOCKET-50219-3)
fuel elements for, effects of coolant loss accidents on, 22:30127 (DOCKET-50219-3)
monitoring systems for, operating experience with in-core neutron, 22:30126 (DOCKET-50219-2)
operating license for, possible effects of thermal pollution on issuance of, 22:20863
owners of, 1963 financial statements of, 22:30128 (DOCKET-50219-4)
power level scram trip set points for, safety analysis of, 22:30133 (DOCKET-50219-9)
pressure vessel for, cracks in welds joining control rod guide tubes to, 22:20863
pressure vessel for, effects of small breaks in, 22:30132 (DOCKET-50219-8)
pressure vessel for, in-service testing program for, 22:30129 (DOCKET-50219-5)
pressure vessel for, safety evaluation of difficulties and proposed repair program for, 22:46863 (DOCKET-50219-15)
pressure vessel for, strain safety margins for, 22:30126 (DOCKET-50219-2)
pressure vessel installation, description of, 22:48798
radiation monitoring systems for, detailed specifications for, 22:30133 (DOCKET-50219-9)
radiation protection and radioactive waste control at, preliminary safety analysis for, 22:30125 (DOCKET-50219-1)
radioactivity releases from, effects on Barnegat Bay of accidental, 22:30129 (DOCKET-50219-5)
reactivity insertions in, analysis of accident caused by large step, 22:30129 (DOCKET-50219-5)
reactor buildings for, allowable stresses on components for, 22:30135 (DOCKET-50219-11)
reactor vessel for, 12/4/67 status of repair of, 22:35430 (DOCKET-50219-14)
reactor vessel for, procedures for repair of, 22:35430 (DOCKET-50219-14)
reactor vessel for, results of examination of stub tube weld defects in, 22:35430 (DOCKET-50219-14)
regulatory action on, AEC, 22:44854
Review Board for, membership and qualifications of, 22:30134 (DOCKET-50219-10)
safety analysis report on, revised pages for, 22:30131 (DOCKET-50219-7)
site for, effects of hurricane-induced flooding of, 22:30135 (DOCKET-50219-11)
site for, population distribution and meteorology for, 22:30129 (DOCKET-50219-5)
site for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
siting of, evaluation of U. S. policy on, 22:50697 (AECL-3156)
steam and power conversion system for, preliminary safety analysis of, 22:30125 (DOCKET-50219-1)
steam line in, control circuits and operational modes for isolation valves in main, 22:30136 (DOCKET-50219-12)
steam line in, in-service testing for isolation valves in main, 22:30136 (DOCKET-50219-12)
steam system for, performance of isolation valves for main, 22:30129 (DOCKET-50219-5)

OYSTER CREEK POWER REACTOR, UNIT 2
buildings for, performance of post-tensioning tendons for, 22:48641 (DOCKET-50320-5)
buildings for, recommended relaxation values for prestressing steels for, 22:48641 (DOCKET-50320-5)
buildings for, selection and analysis of grouted tendons for, 22:48641 (DOCKET-50320-5)
construction of, quality control procedures for, 22:48641 (DOCKET-50320-5)
containment system for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
containment vessel for, liner design specifications for, 22:48641 (DOCKET-50320-5)
control systems for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
cooling systems for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
core and coolant boundary protection in, preliminary safety analysis of, 22:27411 (DOCKET-50320-3)
core for, preliminary safety analysis of, 22:27409 (DOCKET-50320-1)
electrical systems for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
emergency and auxiliary systems for, preliminary safety analysis of, 22:27411 (DOCKET-50320-3)
engineered safeguards for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
instrumentation for, preliminary safety analysis of, 22:27410 (DOCKET-50320-2)
radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:27411 (DOCKET-50320-3)
regulatory action on, AEC, 22:44854
safeguards for, preliminary safety analysis of standby, 22:27411 (DOCKET-50320-3)
site for, probable maximum hurricane analysis for, 22:48640 (DOCKET-50320-4)
siting of, evaluation of U. S. policy on, 22:50697 (AECL-3156)
siting of, preliminary safety analysis of, 22:27409 (DOCKET-50320-1)
steam and power conversion system for, preliminary safety analysis of, 22:27411 (DOCKET-50320-3)

Oysters (Crassostrea)
see Crassostrea under Mollusca

Oysters (seafood)
see oysters under Meats

OZHENNITE (ZIRCONIUM ALLOY)
radioinduced corrosion by water, effects of air on in-pile, 22:21658
welding to 18-8 stainless steel, methods for, 22:21703

OZONE
abundance in ionospheric D region, (T), 22:52668
book: Chemistry of Dissociated Water Vapor and Related Systems, 22:25366
content in atmosphere, seasonal variations in global, 22:51102
content in mesosphere, observations of ultraviolet airglow, (E), 22:29356
determination in atmosphere, colorimetric and titration methods for, 22:21029 (SC-M-67-3044)
determination in upper atmosphere by radio-release method using krypton-85-labeled clathrates, 22:16421
determination of content of, in air of pharmacies during use of ultraviolet bactericidal devices, 22:33996(T) (JPRS-41315, pp 36-43)
diffusion and transport in stratosphere, 22:21207(R) (NYO-3317-3)
distribution in mesosphere, effects of auroral storms on, 22:29376
distribution in tissues of animals following inspiration, 22:38410
effects ionospheric electron concentrations, (T), 22:22045
effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
effects on pyrimidine bases of nucleic acids of Escherichia coli, 22:51389
effects on x-radiosensitivity of mice, 22:40751
effects on x-radiosensitivity of mice, 22:38410
effects on x-radiosensitivity of neoplasms, 22:38410
effects on x-ray detection by rats, 22:28625 (NYO-2147-13, pp 181)
photolysis in presence of hydrogen peroxide, lifetimes and spectra of free radicals produced by, 22:45029 (UCRL-18043, pp 7-105)
preparation of, method for connecting ozonizers in, 22:1940(T) (ANL-Trans-521)
production and discharge in Franscati linac tunnel calculation of, 22:47528(T) (NRC-TT-1332)
production by flash photolysis and pulse radiolysis of oxygen, kinetics of, 22:25422
production economics in chemonuclear reactor, 22:42756
radio measurement of transition at 101.7 GHz in atmospheric, (E), 22:19690
radioinduced formation from γ-irradiation of liquid and solid carbon monoxide--oxygen, 22:47166
radioinduced formation from oxygen, γ, 22:23046
radioinduced formation in technical and liquefied gases, neutron, 22:42797
radioinduced formation of, in nasal mucosa of monkeys,

effects of, on ability to detect exposure, x, 22:49487 (ORO-2903-39)
radioinduced production from oxygen, economics of, 22:42756
radioinduced synthesis in nitrogen--oxygen mixtures, 22:15141 (BNL-50057, pp 79-100)
radiolysis of, γ, 22:23046
reactions in mesosphere, effects on electron densities, (T), 22:13333
reactions with hexavalent neptunium to produce heptavalent neptunium, 22:45058
reactions with neptunium in alkaline solution to produce heptavalent neptunium ions, 22:50975
synthesis in electric discharges under flow conditions, kinetics of, 22:1941(T) (ANL-Trans-522)
toxicity for frogs, mice, and rabbits, 22:40751
toxicity in man, 22:38410
use as conditional stimulus for x-ray detection by rats, comparison of, with ethyl butyrate, 22:28282 (NYO-2147-13, pp 182-92)
use as tracer of stratospheric air, 22:33570
ZONIDES
properties in irradiated aqueous solutions, 22:8088(R) (NYO-3753-3)

P

-10
see Ethylene, Chlorotrifluoro-, Polymers
-Enzyme
see α-Glucan Phosphorylase
acemakers
see Cardiac Pacemakers
acific Gas and Electric Co. Reactor
see Humboldt Bay Power Reactor
ACIFIC OCEAN
atolls of, carbon-14 and thorium-230/uranium-234 methods for determining subsidence rates of, 22:6465
barium vertical distribution in, 22:42895 (CU-2663-9, App.E)
carbon-14 content in surface layer of, 22:6497
carbon-14 content in surface waters of, measurements from 1958 to 1967, 22:6496
carbon-14 measurements in subsurface and deep waters of, 22:23181(R) (UCSD-34-P-74-1)
cesium-137 content in, 22:42893 (CU-2663-9, App.C)
circulation and mixing of Columbia River water in, effect of river discharge on, 22:4271 (RLO-1725-107)
Columbia River effluent distribution in, effects of meteorological factors on, 22:14595 (RLO-1725-86)
Columbia River effluent distribution in, effects of meteorological factors on, 22:14596 (RLO-1725-87)
Columbia River effluent distribution in, effects of meteorological factors on, 22:14597 (RLO-1725-91)
Columbia River effluent distribution in, effects of meteorological factors on, 22:14598 (RLO-1725-92)
Columbia River effluent distribution in, effects of meteorological factors on, 22:14594 (RLO-1725-85)
currents in, measurement during Project Wigwam of, 22:10411
deep-sea sediments of, activity of aluminum-26 in, 22:6459
fallout particle sinking rate in northeast, from Sept. 1961 weapons test, 22:2255
flow of Kuroshio in, factors affecting, 22:42911 (CU-2663-9, App.U)
mixing in deep, use of radon concentration values for calculating rates of vertical, 22:42894 (CU-2663-9, App.D)
mixing of bottom water in North, patterns of, 22:42904 (CU-2663-9, App.N)
mixing rates in, methods and analyses of, 22:42890(R) (CU-2663-9)
oceanographic studies in, for selection of Project Wigwam site, (E), 22:10410
radioisotope content and distribution in seawater of, cesium-137 and strontium-90, 22:40661(R) (HASL-197)
radioisotope distribution of fallout in, 22:36261
radium vertical distribution in, 22:42895 (CU-2663-9, App.E)
radium-226 content in, 22:4294
radon-222 content in, 22:4294
reef-building corals in, cobalt, silver, and uranium content of, 22:47255
rocks from western islands of, strontium-86 and -87 content of, 22:25504
sampling of, using surface-controlled equipment for comparison with recording sensors, 22:42909 (CU-2663-9, App.S)
sediments from, iridium and osmium contents of deep-sea, 22:42916
strontium-90 content in, 22:42893 (CU-2663-9, App.C)
strontium-90 content of seals from Okhotsk Sea of, during 1966, 22:25827 (NP-17204)
temperature distribution in bottom water of North, potential, 22:42904 (CU-2663-9, App.N)
tritium content in surface waters of North, 22:6506
water waves in deep, design and performance of instrumentation for measurement of, 22:22892 (HIG-67-11)
zinc-65 content of animals in, off Oregon coast, effects of diel, location, and season on, 22:31015
zinc-65 loss by mussels in, 22:4571
zooplankton migration in, Operation Wigwam studies of, 22:10409
PACKAGING
analysis of structural integrity of BNL Shipboard Irradiator, (E), 22:8258 (ORNL-TM-2064)
construction for large radiation sources, 22:264
design and testing for shipping radioactive materials, 22:289
design for radioactive materials, 22:23251(P)
design for shipping and storage of radioactive materials, 22:292
design for shipping Chinon Reactor fuel elements, 22:293
design for shipping fissionable materials and radiation sources, 22:30813
design for shipping radioactive materials, 22:288
design for shipping radioactive materials, 22:291
design for shipping radioactive materials, 22:290
design for uranium hexafluoride shipping containers, engineering drawings for, 22:14745
design for uranium-233, -235 or plutonium-239 shipping containers, 22:14744
design of expendable, for radioactive materials, 22:294
design of vermiculite-insulated, for shipping uranium-235, 22:51207 (Y-DD-19)
design, fabrication, and testing of Type A, for shipping radioisotopes, IAEA regulations for, 22:47307 (EUR-3485(Vol.2))
development for three-dimensional objects using gradient techniques, 22:25223 (SC-CR-67-2863)
economy and safety of, for shipping uranium hexafluoride, 22:282 (CONF-661011, pp 120-31)
effects on growth of microorganisms in γ-irradiated polished and unpolished rice, polyethylene, 22:43505
effects on γ-radioinduced production of gases in packaged foods, 22:601
effects on γ-radiosensitivity of strawberries, 22:8667
effects on radiopreservation of fish, 22:2559
effects on radiosensitivity of storage life, taste, and wholesomeness of seafoods, 22:17064
effects on spoilage patterns of γ-irradiated foods, 22:4724
effects on storage life of radiation processed seafoods, 22:26017(R) (TID-23835)
flexible materials for irradiated food, radiation effects on, 22:11103
materials for irradiated food, 22:52061 (CONF-670945)
methods for radiopasteurized seafoods, effect on quality of, 22:210(R) (TID-24016)
plastic, effects on storage of radiation-processed beef, 22:23703
properties of plastic, for γ-irradiated fish, 22:6931
radiation effects on laminated plastic, 22:19466
radiosterilization of plastic, for blood, γ, 22:4723
regulations for radioactive compounds in U.S.S.R, 22:6810(T) (AEC-tr-6467/2(pp 143-76))
regulations for radioactive material, in Germany, 22:40355
regulations for radioactive materials in Scotland, 22:8328 (NP-17195)
regulations for shipping radioactive materials in East Germany, 22:285 (SZS-10/67)
regulations for solid radioactive waste, for deep-sea disposal, 22:51121
regulations of IAEA for use of, in international shipments, 22:45589
test station for radioactive materials, design of, 22:45260 (EUR-3485(Vol.3))
testing of radioactive material, IAEA regulations for, 22:45262 (EUR-3485(Vol.5))
PACKED COLUMNS
capillarity in porous media, temperature effects on water, 22:14666(R) (ORO-3411-10)
effects of feed flow rate on pressure drop in, dynamics of, 22:23003 (IA-1128, pp 97-146)
heat transfer at wall of, mathematical model to study radial, 22:230 (AAEC/TM-389)
PADUCAH AREA (Ky.)
radiation monitoring of air, vegetation, and water in vicinity of Paducah Plant 1965 to 1966, 22:491 (KY-543)
Paducah Plant
see Gaseous Diffusion Plants
PAINTS
see also Lacquers
analysis by neutron activation methods, 22:22929(R) (GA-8013)
analysis for elements by neutron activation methods, 22:33260
analysis for silver by neutron activation methods, 22:14433 (ORNL-4196, pp 66-89)
analysis for various elements by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
analysis of black, for elements by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
analysis of neutron-activated, use of, in forensic science, 22:4003
compatibility of vinyl, with heavy water, 22:36554 (BARC-322)
decontamination on surfaces, efficiency of water vapor

for, 22:31114
effects on photoreceptor mechanism of Coturnix coturnix and Papilio xuthus, radioluminous, 22:25758
identification by neutron activation methods, 22:48835
radiation effects on personnel manufacturing luminous, regulations for protection against, 22:23559
thickness of, use of beta backscattering method for determining, 22:28197
PAIR PRODUCTION
see also Electron Pairs
see also Ion Pairs
see also Meson Pairs
see also Neutrino Pairs
Born approximation cross sections for, in Coulomb field, 22:39225
Coulomb correction for, (T), 22:48601
cross sections for direct, with total electron energies of 5.511 and 32 MeV, (T), 22:44803
cross sections for electron, second-order Born corrections to, (T), 22:50669
cross sections for $Z = 1$ to 100 elements, tables of, 22:5869 (LA-3753)
cross sections for, computer program for calculating, (T), 22:9916 (AERE-M-1956)
effect of electron anomalous magnetic moment in strong magnetic fields on, (T), 22:41344
effect on stars with high core mass, (T), 22:26167
effects on Friedmann models of early Universe, (T), 22:47726
effects on partially degenerate equations of state for electrons, (T), 22:49919
in intense magnetic fields during gravitational collapse, (T), 22:49898
induction of supernova explosions by the instability of, (T), 22:36569 (N-68-22685)
instabilities in stellar interiors due to, (T), 22:47761
nuclear form factors for electron and meson (μ), elastic and inelastic, (T), 22:27392
photon motion in magnetic field for, operator method for quantum effects in, 22:3583
positron spectra and total cross sections for photon energies below 2.5 MeV, calculations as function of atomic number, (T), 22:44790
radiative corrections to symmetric, 22:26606
spectra for, calculations for Coulomb correction in, (E), 22:48598
theory for wide-angle, from $\gamma + p \to p + l^+ + l^-$ C-noninvariant interactions, 22:17901
theory of, review of, 22:43858 (NYO-3829-17)
theory, (T), 22:5883
PAKISTAN
fission fragment detection and measurement in fallout at Pinstech, after May 9, 1966 Chinese nuclear explosion, 22:51097 (PINSTECH/HP-3)
nuclear power program in, application of heavy water moderated reactors for, 22:25038
radiation processing of potatoes in, storage evaluation of γ, 22:43507
uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)
Pakistan Research Reactor at Nilore (PARR)
see Reactors, Research
Palanquin Project
see Plowshare Project
PALISADES POWER REACTOR
buildings for, design bases for, 22:37411 (DOCKET-50255-3)
construction of, overall quality control and design program for, 22:37412 (DOCKET-50255-4)
containment building ventilation system for, development of, 22:39745 (DOCKET-50255-7)
containment spray system for, flow diagram for, 22:39745 (DOCKET-50255-7)
containment spray system for, safety analysis of, 22:37412 (DOCKET-50255-4)
containment structures for, design and construction program for, 22:37411 (DOCKET-50255-3)
containment systems for, preliminary safety analysis of, 22:37409 (DOCKET-50255-1)
containment systems for, revised design information on, 22:37415 (DOCKET-50255-8)
containment systems for, safety analysis of design of, 22:37412 (DOCKET-50255-4)
control rod ejection from, analysis of consequences of hypothetical, 22:42184 (DOCKET-50255-10)
control rods for, revised design for drive mechanism for, 22:37414 (DOCKET-50255-6)
control rods for, testing and performance evaluation for, 22:37415 (DOCKET-50255-8)
control systems and instrumentation for, 22:37414 (DOCKET-50255-6)
control systems and instrumentation for, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
coolant flow distribution in, safety analysis of pump loss on, 22:37416 (DOCKET-50255-9)
coolant loss accidents in, effects of piping break size on, 22:37413 (DOCKET-50255-5)
coolant loss accidents in, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
coolant pumps for, effects of simultaneous loss of power to, 22:42184 (DOCKET-50255-10)
cooling system for, preliminary safety analysis of, 22:37409 (DOCKET-50255-1)
core for, effects of blowdown on support structure for, 22:37414 (DOCKET-50255-6)
core for, preliminary safety analysis of design of, 22:37409 (DOCKET-50255-1)
critical heat flux data for, tabulation of, 22:42184 (DOCKET-50255-10)
design basis accidents in, determination of dose rates for, 22:37413 (DOCKET-50255-5)
design parameters for, 22:22712 (STI/PUB-174)
electrical supply for, safety analysis of, 22:37412 (DOCKET-50255-4)
electrical systems for, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
emergency and auxiliary systems for, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
engineered safeguards for, logic diagrams for and evaluations of instrumentation for, 22:37413 (DOCKET-50255-5)
engineered safeguards for, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
radioactive waste handling and radiation protection at, preliminary safety analysis of, 22:37410 (DOCKET-50255-2)
safety injection system for, design revisions for, 22:37415 (DOCKET-50255-8)
safety injection system for, flow diagram for, 22:39745 (DOCKET-50255-7)
site for, meteorology and foundation data on, 22:37411 (DOCKET-50255-3)
site for, preliminary safety analysis of, 22:37409 (DOCKET-50255-1)
steam and condensate system for, revised flow diagram for, 22:37415 (DOCKET-50255-8)
steam and power conversion system for, preliminary safet analysis of, 22:37410 (DOCKET-50255-2)
steam generators for, feedwater availability for, 22:39745 (DOCKET-50255-7)
PALLADIUM
abundance in photosphere, (E), 22:23934
analysis for hydrogen, spectral-isotopic method for, 22:19534
analysis for silver by neutron activation methods, 22:33261
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
atomic weight of, based on carbon-12 = 12, 22:42698
book: Uncommon Metals, 22:10981
carbon-12 reactions (C-12,3n) with, with delayed proton emission following tellurium-111 decay, (E), 22:1651 (JINR-P6-3494)
chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
complexes with 2,4-pentanedione, separation of, from fission and spallation products by solvent extraction using benzene, 22:10339
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with Arsenazo III, potentiometric and spectrophotometric studies of, 22:37739
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with dialkyldioximes, crystal structure of, 22:12161(R) (COO-582-14)
complexes with TTA, fractional sublimation of, 22:35911
complexes, radiolysis of solutions of, pulse, 22:25433
corrosion of plate, by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:1711
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deposition of films of, on Vycor glass, 22:35775(R) (NYO-1158-25)
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in gallium arsenide, activation, 22:1969
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as palladium using iodine-131, radiometric, 22:40026
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by oxidation with hypochlorite, and amperometric titration, 22:1966 (UCRL-17824)
determination in carbonaceous and enstatite chondrites, activation, 22:22
determination in high-purity platinum by neutron activation methods, 22:7992(R) (NBS-TN-428)
determination in iron meteorites by neutron activation methods, 22:3 (AERE-R-5254)
determination in irradiated uranium dioxide fuel pins, electron probe, 22:25321 (ANL-7375, pp 95-134)
determination in platinum by neutron activation methods, 22:33276
determination in plutonium and uranium waste solutions

- after liquid-liquid extraction using Aliquat-336 by flame photometry, 22:8024
- determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
- determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
- determination of divalent, by oxidation with hypochlorite, amperometric titrimetric, 22:37718 (UCRL-17989, pp 181-252)
- determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
- determination using 4,4-acetalidine-bis(3-methylisoxazolin-5-one), colorimetric, 22:27554
- diffusion in aluminum at 400 to 630°C, 22:10967
- distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
- distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
- effects of combination of, with thoria on preparation of uranium dioxide sol, catalytic, 22:10201(P)
- effects of film coatings of, on oxidation of zirconium, 22:21667
- effects on corrosion of titanium by saline water, 22:26029 (ORNL-4229, pp 71-83)
- effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
- effects on deuterium exchange reactions with organic compounds, 22:35819
- effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
- effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
- effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
- effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
- effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
- electron beam scattering by single-crystal surface of, properties of specular 10- to 500-eV, (E), 22:43937
- hyperfine magnetic field at nuclei in iron, measurement using perturbed angular correlation technique, (E), 22:46262
- iodine sorption on surfaces of, effects of hydrogen and iodide ion concentration on, 22:25431
- iron-57 lattice dynamics in, from Moessbauer fraction measurements, 22:46212
- neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron differential elastic and inelastic scattering cross sections at 0.3 to 1.5 MeV, angular distributions for, (E), 22:20578 (WASH-1079)
- neutron elastic scattering from, measurements of fast, 22:32959 (ANL-7310, pp 1-30)
- neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron total cross section at 14 MeV, (E), 22:35338
- neutron total cross sections at 2 to 10 MeV, (E), 22:11936
- optical constants of, determination by ellipsometry in ultrahigh vacuum, 22:15569 (ORNL-TM-2114)
- oxidation by carbon dioxide, kinetics and thermodynamics of, 22:17080
- palladium-105 spin--lattice relaxation time in, NMR study of, (E), 22:15627
- photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
- photon reactions (γ,t) with, cross sections for, (E), 22:53095 (BMwF-FBK-68-11)
- precipitation from aqueous sulfuric acid solutions by salicylaldoximate, 22:33359
- preparation of deuterated targets of, for neutron production, 22:11746 (CEA-R-3065)
- production in power reactors, economic aspects of, 22:119
- production of particles of controlled size of, 22:35775(R) (NYO-1158-25)
- properties of, effects of spin fluctuations on, (T), 22:3220
- radiation effects on corrosion of electrodes of, in acid solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
- separation from fission and spallation products by solvent extraction using benzene and 2,4-pentanedione, 22:10339
- separation from gold and platinum by paper chromatography, 22:4248
- separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
- separation from plutonium and uranium waste solutions by liquid-liquid extraction using Aliquat-336, 22:8024
- separation from rhodium by ion exchange, 22:33392
- separation from silver by ion exchange, 22:40199
- separation from silver by solvent extraction, 22:21120
- separation from tungsten by paper chromatography, 22:25257
- separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
- sorption by manganese dioxide from nitric acid, 22:157
- sorptive properties for hydrogen, use of uranium or titanium hydrides to increase, 22:13005(T) (UCRL-Trans-10180)
- sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
- surface atom displacement in monocrystals of, at 25 to 600°C, 22:45029 (UCRL-18043, pp 7-105)
- vaporization of, ion source development for, 22:37938 (ORNL-4271)

PALLADIUM ALLOYS AND SYSTEMS
- sorptive properties for hydrogen, use of uranium or titanium hydrides to increase, 22:13005(T) (UCRL-Trans-10180)
- Ag--Cd--In--Pd, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
- Ag--Cd--In--Pd, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
- Ag--Cd--In--Pd--Sn, mechanical properties of, effects of annealing temperature on, 22:30166(R) (WCAP-3707)
- Ag--Cd--In--Pd--Sn, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
- Ag--Cd--In--Pd--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
- Ag--Mn--Pd, performance as brazing alloy for high-temperature structural materials, 22:23782
- Ag--Pd, silver-109 NMR in, Knight shifts, spin--spin, and spin--lattice relaxation times from, (E), 22:15627
- Au--D--Pd, phase studies by neutron diffraction methods, 22:12278
- Au--H--Pd, phase studies by neutron diffraction methods, 22:12278
- Au--Ni-base--Pd, radiation effects on Palniro 7, neutron, 22:8745 (ORNL-4170, pp 238-44)
- Au--Pd, crystal structure of, effects of deuterium and hydrogen sorption on, 22:4793
- B--Cr--Pd, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- B--Cr--Pd, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- B--Pd, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Be--Pd, phase diagram of, 22:10986(T) (JPRS-43479)
- Cd--Pd, thermodynamic properties, 22:43594 (ANL-7299, pp 251-64)
- Ce--Pd, crystal structure and phase studies of, 22:36494
- Co--Pd, analysis for cobalt, x-ray spectrographic, 22:4 (AERE-R-5452)
- Co--Pd, cobalt-59 nuclear magnetic resonance spectra in, 22:7363
- Co-57--Pd, preparation of gamma source, for Moessbauer spectroscopy, 22:9464
- Cr--Pd--Sb, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Cr--Pd--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Cr--Pt--Sb, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Cu--Pd, phase diagrams and thermodynamic properties of, 22:4803
- Eu--Pd, Moessbauer and magnetic properties of intermetallic, 22:22246
- Fe--H--Pd, magnetic properties of alpha and beta phases in, Moessbauer study of, 22:11541
- Fe--Pd, dilute, NMR spin-echo spectroscopy of, (E), 22:17763
- Fe--Pd, nuclear magnetic resonance in, spin--echo technique for, 22:9438
- Fe--Pd, nuclear magnetic resonance of iron-57 in, (E), 22:7384
- Fe--Pd-base, electron interactions in dilute, calculation of effective, (T), 22:15610
- Gd--Pd, crystal structure and magnetic properties of, (E), 22:44276
- In--Pd, thermodynamic properties, 22:43594 (ANL-7299, pp 251-64)
- Ir--Pd, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
- Ir--Pd, superconductivity, susceptibility, and thermal capacity of, correlation between, (E), 22:11383
- La--Pd, crystal structure and phase studies of, 22:36494
- La--Pd--Re--Ta--Ti-base, production and tensile properties at -196 to +800°C, 22:4789
- Mn--Pd, magnetic structure of zeta-Pd$_3$Mn$_2$, neutron diffraction study, 22:29545(R) (PRNC-84)
- Mo--Pd--Rh--Ru--Tc, fission-induced inclusions of, in plutonium dioxide--uranium dioxide fuels, 22:17152
- Os--Pd, analysis of osmium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
- Pd--Pt, electric properties of, effects of deuterium and hydrogen sorption on, 22:4793
- Pd--Pu, phase studies of, 22:2655
- Pd--Pu--Rh--Ru--U, formation in irradiated plutonium dioxide--uranium dioxide fuels, 22:17152
- Pd--Sb, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Pd--Sb, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Pd--Sb, magnetic properties of, effects of 3d-element impurities on, (E), 22:29393

Pd--Sb, superconducting properties of, effects of 3d-element impurities on, (E), 22:29393
Pd--Sb, thermodynamic properties, 22:43594 (ANL-7299, pp 251-64)
Pd--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pd--Si, radiation effects on crystal structure of, amorphous state produced by fission fragment, (E), 22:37054
Pd--Sn, thermodynamic properties, 22:43594 (ANL-7299, pp 251-64)
Pd--Tc, phase studies of, 22:4807
Pd--U, fission-fragment ranges and energy losses in, (E), 22:1350
Pd--U, production of thin foils of enriched, for use as chemonuclear fuels, 22:37775 (BNL-50082, pp 40-78)
Pd--W, crystal structure and superconductivity of, 22:36496
Pd--Y, phase diagram of, statistical prediction of, 22:31396
Pd--Yb, ytterbium electronic state in solid solution alloys of, 22:48165
Pd--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pd--Zr, phase studies on splat-cooled, 22:47683

PALLADIUM CYANIDE
effects on radioinduced polymerization of butadiene, 22:33387

PALLADIUM HYDRIDES
solvent properties for hydrogen, 22:13033

PALLADIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675

PALLADIUM ISOTOPES
excitation of even, oxygen-16 ions in ferromagnetic media, (E), 22:29241
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production of stable, by US power reactors through 1990, 22:45245 (BNWL-716)

PALLADIUM ISOTOPES Pd-99
energy levels from beta decay of silver-99, (E), 22:1698

PALLADIUM ISOTOPES Pd-101
energy levels from beta decay of silver-101, (E), 22:1699

PALLADIUM ISOTOPES Pd-102
carbon-12 reactions (C-12,3n) with, delayed proton emission in, (E), 22:44694
carbon-12 reactions at 45 to 75 MeV, excitation function for tellurium-111 production by, (E), 22:30025
carbon-12 reactions with, delayed proton emission in, (E), 22:14059
carbon-12 reactions with, delayed proton emission in, (E), 22:14021
carbon-12 reactions with, proton activity produced by, (E), 22:30025
energy levels from beta decay of silver-102, (E), 22:7729
energy-level spins and transitions from rhodium-102 decay, (E), 22:27167
energy-level transitions from vibrational states, angular anisotropy of conversion electrons for, (E), 22:20645
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
proton reactions (p,2n) at 50 MeV, production of silver-101 by, (E), 22:1699
proton reactions (p,3n) and (p,4n) at 10 to 50 MeV, production of silver-99 and -100 by, (E), 22:1698

PALLADIUM ISOTOPES Pd-103
radiation dose to man from plutonium-239 in lungs following inhalation of aerosol-incorporated, use of proportional counters to measure soft x, 22:43300 (AERE-PR/HPM-12)
use for estimation of plutonium compounds in lungs of man, 22:21501

PALLADIUM ISOTOPES Pd-104
alpha inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
energy levels of, magnetic moment of first 2^+ collective, (E), 22:13994 (JINR-P4-3611)
energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
oxygen-16 inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)

PALLADIUM ISOTOPES Pd-105
energy-level transitions from silver-105 decay, multipolarities of, (E), 22:37367
energy-level transitions in, interpretation of, (T), 22:48516 (JAERI-1158, pp 31-8)
neutron activation cross sections at 14.4 MeV, tables (E), 22:22589 (ORO-3346-18)
neutron capture at 52 to 810 eV, cross section and resonance spin assignments for, (E), 22:48554
neutron capture by, γ spectra for, (E), 22:20578 (WAS 1079)
neutron capture by, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)
neutron resonances at 55 to 807 eV, spin assignments f (E), 22:37340(R) (EANDC(E)-89(U))
spin--lattice relaxation time in palladium metal, NMR study of, 22:15627

PALLADIUM ISOTOPES Pd-106
energy level at 1128 keV, g-factor for two-phonon vibrational, (E), 22:32654
energy level at 512 keV, g-factor for, (E), 22:46262
energy level spins and transitions from decay of isome rhodium-106 and silver-106, (E), 22:1700
energy levels from β decay of isomeric rhodium-106, (E 22:35328
energy levels from electron-capture decay of isomeric silver-106, (E), 22:7727
energy levels of, magnetic moment of first 2^+ collecti (E), 22:13994 (JINR-P4-3611)
energy-level spins and transitions from silver-106 deca (E), 22:5839
energy-level transition from rhodium-106 decay, relati phase factor for E2--M1 1.05-MeV, (E), 22:53195
energy-level transitions from beta decay of rhodium-106 (E), 22:9869
energy-level transitions from palladium-105 neutron capture, M1, (E), 22:5809(R) (ANL-7354)
energy-level transitions from palladium-105 neutron capture, E1 and M1, (E), 22:20578 (WASH-1079)
energy-level transitions from silver-106 decay, conversion coefficients for, (E), 22:35352
energy-level transitions in, E2/M1 mixing ratios of 2^+ 2^+, (E), 22:1702
gamma angular correlations in iron, hyperfine interacti studies using perturbed, (E), 22:9107
neutron capture cross section for, thermal, (E), 22:22608
nuclear electric quadrupole moment of, calculations wit anharmonic corrections to method of approximate secon quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements usi Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803

PALLADIUM ISOTOPES Pd-108
energy levels from electron-capture decay of silver-108 (E), 22:14052
energy levels of, magnetic moment of first 2^+ collectiv (E), 22:13994 (JINR-P4-3611)
neutron activation cross sections at 14.4 MeV, tables o (E), 22:22589 (ORO-3346-18)
neutron capture at 24 keV, isomeric cross-section ratio and spin-cutoff parameter for, (E/T), 22:48498
neutron capture by, scintillation spectrometer for measuring gamma rays from, 22:6626
neutron capture cross section for, thermal, (E), 22:22608
neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
nuclear electric quadrupole moment for first excited 2^+ state in, measurement using Coulomb excitation with reorientation effect, (E), 22:46731(R) (COO-1746-8)
nuclear electric quadrupole moment of, calculations wit anharmonic corrections to method of approximate secon quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements usi Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803

PALLADIUM ISOTOPES Pd-109
beta decay of, conversion-electron spectra of, (E), 22:37368
beta decay of, γ singles and coincidence spectra for, (E), 22:50560(R) (RLO-1062-681)
beta decay of, silver-109 energy levels and transitions from, (E), 22:42050
beta decay of, silver-109 energy levels from, (E), 22:7717

PALLADIUM ISOTOPES Pd-110
alpha inelastic scattering at 10 MeV with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
deuteron reactions (d,p) with, proton angular distributions and energy spectra from, (E), 22:5804
energy levels and deformation parameters from proton inelastic scattering, (E), 22:35293(R) (ORNL-4230)
energy levels of, calculation of energy gap in single-particle spectrum of, (T), 22:14017
energy levels of, magnetic moment of first 2^+ collecti (E), 22:13994 (JINR-P4-3611)

energy-level transitions from α inelastic scattering with Coulomb excitation, multipole mixing ratios for, (E), 22:35293(R) (ORNL-4230)
hyperfine magnetic fields at nuclei in cobalt, iron, and nickel, measurements using ion implantation with perturbed angular correlation method, (E), 22:46267
hyperfine magnetic fields at nuclei in magnetized gadolinium below Curie point, measurements using ion implantation with perturbed anbular correlation technique, (E), 22:46267
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron reactions (n,2n) at 14.7 MeV, isomeric cross section ratio for, (E), 22:1672
nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
proton differential elastic and inelastic scattering cross sections at 13 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
PALLADIUM ISOTOPES Pd-111
energy levels from palladium-110 (d,p) reactions, (E), 22:5804
PALLADIUM ISOTOPES Pd-112
yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
PALLADIUM ISOTOPES Pd-115
half-life, (E), 22:18217
yields in thermal neutron fission of uranium-233 and uranium-235, (E), 22:32579 (TID-24500)
PALLADIUM ISOTOPES Pd-117
half-life and yield from uranium-235 thermal neutron fission, (E), 22:44736
PALLADIUM ISOTOPES Pd-118
half-life, (E), 22:29987 (USNRDL-TR-68-25)
yield in uranium-235 thermal neutron fission, (E), 22:29987 (USNRDL-TR-68-25)
PALLADIUM OXIDES
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
Dy_2O_3--PdO, phase relations of, in air, 22:19664
Er_2O_3--PdO, phase relations of, in air, 22:19664
Eu_2O_3--PdO, phase relations of, in air, 22:19664
Gd_2O_3--PdO, phase relations of, in air, 22:19664
Ho_2O_3--PdO, phase relations of, in air, 22:19664
Lu_2O_3--PdO, phase relations of, in air, 22:19664
Nd_2O_3--PdO, phase diagram at 700 to 1400°C, 22:48788
Nd_2O_3--PdO, phase relations of, in air, 22:19664
PdO--Sm_2O_3, phase relations of, in air, 22:19664
Tm_2O_3--PdO, phase relations of, in air, 22:19664
Y_2O_3--PdO, phase relations of, in air, 22:19664
Yb_2O_3--PdO, phase relations of, in air, 22:19664
PALLADIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
PALMITATES
metabolism in rainbow trout, effects of temperature adaptation on, 22:10740 (BNWL-480, pp 153-93)
use of carbon-14-labeled, to determine oxidation rate in fat metabolism, 22:14905 (BNL-50057, pp 111-22)
PALMITIC ACID
radiation effects on absorption of, in small intestine of mice, carbon-14 and tritium tracer study of x, 22:49546
radiation effects on uptake of, by adipose tissues in rabbits, x, 22:40564
separation from liquid scintillation fluid by solvent extraction, 22:10188
use of carbon-14-labeled, for measuring sorption of fat from intestine, 22:19264
yields in self-radiolysis of methyl stearate, 22:37802
PALMITIC ACID, ETHYL ESTER
effects on phagocytosis of colloidal gold-198 in rabbits, 22:12773
Palmitic Acid, Glyceral Ester
see Palmitin
PALMITIC ACID, METHYL ESTER
yields in self-radiolysis of methyl stearate, 22:37802
PALMITIN
radiation effects on absorption of tri-, in small intestine of mice, carbon-14 tracer study of x, 22:49546
PANAMA
seismograph stations in, for canal nuclear excavation investigation, 22:35963 (CGS-P-117)
PANCREAS
book: Principles of Nuclear Medicine, 22:49411
extracts of, effects of, on iron-59 uptake by rats with fatty livers, 22:49244
radiation dosimetry in, of rats following intraperitoneal administration of cobalt radioisotopes, 22:43263
radiation effects on arylesterase activity in, of rats, whole-body x, 22:33735
radiation effects on dry and wet weight of, in mice, effects of dose on x, 22:40947
radiation effects on enzyme activity and ultrastructure of, in dogs, x, 22:49563
radiation effects on functioning of, uv, 22:33901(T) (JPRS-41315, pp 16-25)
radiation effects on hematopoietic tissue in, of mice, combined effects of endoxan on, 22:19413
radiation effects on secretions of human, therapeutic x, 22:36354
radiation effects on ultrastructure of, in dogs, protective effects of alloxan against, x, 22:6894
radiation effects on, of dogs, effects of, on rejection of as transplant, x, 22:43260
radiation effects on, of dogs, protective effects of alloxan against x, 22:23569
radiation effects on, of mice, pathological fast neutron, 22:33940
radiation effects on, of rabbits, effects of dose on x, 22:558
radiodiagnosis of carcinomas of, in man, use of selenium-75-labeled selenomethionine for, 22:28576
radiodiagnosis of dysfunction of, in dogs using iodine-131-labeled oleic acid and triolein, 22:28281 (NYO-2147-13, pp 72-7)
radioprotective effects of removal of, on small intestine of dogs, x, 22:21547
radiotherapy of tumors in, of dog and man, performance of iridium-192 γ for, 22:47540
scanning of human, using selenium-75-labeled selenomethionine, review of, 22:49403
scanning of, use of selenium-75 for, 22:28582
scanning of, use of technetium-99-labeled cystine, methionine, and polypeptides for, 22:4630 (UCLA-34-P-119-16)
scanning simultaneously with liver, isotope subtraction technique for, 22:12883
scanning using selenium-75-labeled methionine, technique for cancelling hepatic shadow from, 22:40742
scintiscanning of human, 22:33885
scintiscanning using selenium-75-labeled selenomethionine with colloidal gold-198 for elimination of liver image, 22:49402
secretions of, effects of, on x-radiosensitivity of small intestines of dogs, 22:28632
silver-110 content of, of spiny lobster, 22:21409 (PRNC-104, pp 83-9)
uptake of selenium-75 labeled selenomethionine by guinea pig, medical evaluation of, 22:25714 (COO-78-163, pp 126-36)
uptake of selenomethionine by, of rats, effect of soybean diet on, 22:38334(R) (COO-1653-45)
zinc content of, in guinea pigs, dogs, man, and rabbits, 22:6721(T) (UCRL-Trans-10099)
zinc-65 metabolism in, of rats, effects of deoxycorticosterone on, 22:28384
Pancreatic Hormones
see Hormones, Pancreatic
Pandermite
see Priceite
Panels
see Structural Panels
PAPAIN
effects on antibodies in rabbit serum, 22:19233(R) (COO-209-144)
effects on in situ precipitation of colloidal phosphorus-32-labeled chromic phosphate, 22:51387
molecular weight of, determination of, using ultracentrifugation, 22:16974(R) (ORO-2832-56)
radioinduced inactivation of, in aqueous and hydroalcoholic solutions, γ, 22:51455
PAPAVERINE
effects on postirradiation retention of stomach contents of rats, 22:21556
PAPER
see also Filter Papers
analysis by neutron activation methods, 22:22929(R) (GA-8013)
development of low mineral content, for use in diapers for collection of feces and urine samples from human infants, 22:40732
production of, control of stream pollution by plants for, 22:30779
production of, design of beta areal-weight meter for controlling machine for, 22:6665
production of, use of radioactive tracers in process flow studies for, 22:14703
production of, use of radioisotopes in, 22:47297
production of, use of tracer techniques in, 22:14701
properties of, tabulations of mechanical and physical, 22:4731
thickness measurements of, use of beta backscattering technique for, 22:6663 (INR-808/XV/J)
thickness of, use of beta backscattering method for determining, 22:28197
Paper Chromatography
see Chromatography
PAPP
see Propiophenone, p-Amino-
Par Event
see Plowshare Project
PARABIOSIS
effects on germ cell chimerism in uv-irradiated frog embryos, 22:33917

effects on kidneys of x-irradiated rats, 22:19423
effects on neurons of spinal cord of x-irradiated rats, 22:49567
effects on x-radioinduced pneumonitis in rats, 22:40862
immune reactions in lethally irradiated hybrid mice during, 22:40536
radiation effects on tolerance to transplantation antigens during, of mice, x, 22:21419
Paradise Point Reactor
see Karachi Power Reactor
PARAFFIN
(Reserved for hydrocarbon wax; for compounds of the paraffin series see Alkanes and the specific compounds.)
see also Alkanes
meson (μ^-) depolarization in, 22:21860
meson (μ^-) residual polarization in, 22:38718 (JINR-P14-3809)
nuclear magnetic resonance in rotating magnetic fields, 22:22250
proton reactions with phantoms of, use of activation detectors for measuring absorbed doses and fluences from, 22:14865
radioinduced graft polymerization of styrene on, γ, 22:27752
H_2BO_3--paraffin, neutron spectra and dose in, deviation from 1/E, 22:24821
Paraffins
see Alkanes
PARALDEHYDE
yields in gamma radiolysis and uv photolysis of nitroethane, 22:10298
PARAMAGNETIC MATERIALS
see also Magnetic Materials
see also Paramagnetic Salts
effects on superconductors, (T), 22:48050
gamma angular correlations from powder sources of, zero-field resonance in, (T), 22:46844
gamma angular correlations from, single crystals of, resonances from repelling levels in perturbed, (T), 22:46845
neutron inelastic scattering by spin fluctuations in, (E/T), 22:24806
neutron inelastic scattering by trivalent rare-earth ions in octahedral crystal fields, thermal, (E), 22:32423 (CONF-670969-1)
neutron scattering at 0.001 to 0.12 eV, cross sections for, (T), 22:22537
neutron scattering by rare-earth, (E/T), 22:11944(R) (AECL-2780)
neutron scattering by, calculations using cluster model and Heisenberg model, (T), 22:18084
neutron scattering by, calculations using Ising model, (T), 22:13916
neutron scattering by, exchange constants for, (T), 22:13915
nuclear hyperfine structure splittings in, measurement using rf resonance destruction of nuclear orientation, (E/T), 22:46222
nuclear orientation in phonon thermal conductivity of, dynamic, (T), 22:5423
properties, lectures on EPR studies of, 22:34743 (ISS-67/34)
spin autocorrelation function for, solution of kinetic equations for, 22:17736
spin--phonon interaction in, (T), 22:24415(T) (AD-665707)
Paramagnetic Resonance
see Electron Paramagnetic Resonance
PARAMAGNETIC SALTS
see also Paramagnetic Material
nuclear spin relaxation times in, (E), 22:31961
Paramecium
see under Protozoa
Paraoxonase
see Arylesterase
PARATHYROID GLANDS
activity in rats, effects of dietary calcium and phosphate content on, 22:6201 (CU-2530-10)
function in female rats, effects of content of uranium in drinking water on, 22:51376
localization of tumors in, use of selenium-75-labeled selenomethionine for, 22:12882
radiation effects on, during treatment for hyperthyroidism, iodine-131 β, 22:47618
radiodiagnosis of adenomas in human, 22:28596
removal from goats, effects of, on calcium-45 metabolism, 22:420 (COO-1339-16)
removal of rat, effects of, on calcium and phosphate content in blood of rats, 22:6200(R) (COO-1668-3)
removal of, effects of, on calcium metabolism in rats, 22:6716 (ORO-284-10)
scanning of, use of selenium-75 for, 22:28582
uptake of selenomethionine by, of rats, effects of EDTA on, 22:38334(R) (COO-1653-45)
Parathyroid Hormones
see Hormones, Parathyroid
Parity
see Elementary Particles
Parity Conservation
see Invariance Principles
PAROTID GLANDS
radiotherapy of adenoid cystic carcinomas in human, combined effects of surgery on cobalt-60 or radium γ, 22:8587
radiotherapy of tumors of, in man, high-energy electron 22:51742
scintiscanning of human, using technetium-99-labeled pertechnetates, 22:31183
PARR (Pakistan Research Reactor at Nilore)
see Reactors, Research
Parr Shoals Power Reactor
see Carolinas-Virginia Tube Reactor
Partial Differential Equations
see Differential Equations
Partially Conserved Axial Vector Current
see Current Algebra
Partially Conserved Tensor Current
see Current Algebra
Particle Accelerators
see Accelerators
PARTICLE COLLECTORS
see also Cascade Impactors
see also Electrostatic Precipitators
see also Filters
design of high-volume airborne, for radioactive droplets 22:19012
efficiency of charcoal-loaded organic vapor respirator, for radioiodine, 22:35939 (ANL-7429)
performance for monitoring radioactive aerosols in work areas, 22:21538
performance for monitoring radioactive aerosols in breathing zones and work areas, 22:21537
performance for monitoring radioactive aerosols in breathing zones of personnel, 22:21536
PARTICLE MICROSCOPES
(Non-optical microscope using ions other than electrons.)
see also Electron Microscopes
design of proton scattering, 22:43168
Particle Models
see Elementary Particle Models
PARTICLE PRECIPITATORS
see also Cascade Impactors
see also Cyclone Separators
see also Electrostatic Precipitators
development of electrophoretic, for separation of cellular, molecular, and subcellular biological materials, 22:33586 (UCLA-12-640, pp 31-44)
PARTICLE SOURCES
see also Alpha Particles
see also Beta Sources
see also Deuteron Sources
see also Electron Sources
see also Ion Sources
see also Irradiation Facilities
see also Neutron Sources
see also Proton Sources
see also Radiation Sources
see also Radioapplicators
design of charged, with low neutral gas flow rate, 22:41625(P)
performance of pulsed and bunched ion, 22:32961 (ANL-7310, pp 377-430)
PARTICLE STATISTICS
see also Bosons
see also Fermions
Bose gases and finite geometries in, 22:39221
Bose--Einstein, Green temperature functions for, 22:740
Bose-Einstein, asymptotic expansions for, 22:5484
calculation of one-particle density matrix for system of hard-sphere bosons at 0°K, 22:29595 (UCRL-50377)
critical point behavior of model of interacting fermions in, (T), 22:41718
density-matrix variational principles at finite temperatures, (T), 22:3223 (UCD-CNL-82)
displacement and collective variables method of quantum, 22:5478
equation for density matrix and role of free Hamiltonian in evolution of dynamical systems, 22:32023 (ITF-68-5
equation of state of degenerate Fermi gas of hard spheres, (T), 22:8964
functional formalism application to classical, (E), 22:41700
geometrical and tensorial Lorentz transformations in, 22:29603
Green's function and density-density correlation functio relationship for large Bose system in, (T), 22:41699
Green's functions of system of interacting particles, solution of Schwinger equation for, 22:32025
kinetic equations for density matrix and interactions, 22:32021 (ITF-68-3)
kinetic equations for density matrix and interactions, 22:32022 (ITF-68-4)
kinetic theory of classical many-particle systems, operator relations in, 22:39218
limits of quantum theory for, classical, 22:5481
low-temperature behavior of two-dimensional Bose system phonon states and long-range order in, 22:39220
of relativistic magnetic anomaly, 22:9493
one-dimensional random potential, (T), 22:13622
quantum hydrodynamics for interacting Bose systems in, (T), 22:41717

  quantum mechanics interpretation by means of joint coordinate-momentum representation, 22:15646 (JINR-E4-3687)
  rotational symmetry properties of spinless two-particle density matrix, 22:52899
  spectral density of Schroedinger equation Green function in many-particle systems, 22:32026
  temperature dependence near phase transitions in quantum mechanical canonical, (T), 22:1372
  thermodynamic properties of degenerate Fermi systems, (T), 22:32027

PARTICLE TRACKS
  analysis in bubble and spark chambers, computer-controlled manual system for film, 22:23322 (SLAC-81)
  analysis in bubble and spark chambers, description of Hummingbird automatic film digitizer for, 22:28165 (SLAC-82)
  analysis in cellulose nitrate and cellulose acetate for detection of light nuclei, 22:16887
  analysis in cellulose nitrate for detection of light charged particles, 22:8338 (JINR-P13-3585)
  analysis in dielectric for charge determination, 22:10564
  analysis in nuclear emulsions for neutron spectroscopy, random-drift method using automatic microscope for, 22:16895
  analysis in SLAC bubble chamber and streamer chamber, photographic techniques for, 22:16907
  analysis in solid-state detectors, determination of mass and energy distribution of fission fragments by, 22:14792
  analysis in solid-state dielectrics for charged-particle detection, etching techniques for, 22:28120
  analysis in solids for charged particle detection, 22:16883
  analysis in Wilson cloud chamber, characteristic properties of chamber expansion for, 22:43100
  analysis of BNL 80 in. bubble chamber, scanning table measurements for film, 22:30860 (UCID-2950)
  analysis of bubble and spark chamber, computer-based system for film, 22:19153
  analysis of bubble and spark chamber, high-speed flying image digitizer for film, 22:40459 (BNL-12679)
  analysis of bubble chamber and nuclear emulsion data on, method for statistical, 22:370
  analysis of bubble chamber and spark chamber, use of CDC 160A computer for, 22:16906
  analysis of bubble chamber, Brookhaven raster display for, 22:43103
  analysis of bubble chamber, computer, 22:12643
  analysis of bubble chamber, computer recognition of line patterns for, 22:49120
  analysis of bubble chamber, correction for geometrical losses in, 22:23321 (CERN-68-10)
  analysis of bubble chamber, data terminal network computer system for film, 22:36103
  analysis of bubble chamber, description of PEPR for film scanning and measuring, 22:38092
  analysis of bubble chamber, design and performance of HPD Mark 2 flying-spot digitizer for film, 22:23320 (CERN-68-4)
  analysis of bubble chamber, design of fast digitizer for automatic film, 22:36101
  analysis of bubble chamber, development of DAPR for automatic film, 22:38094
  analysis of bubble chamber, development of PEPR for, 22:30856 (MIT-2098-422, pp 10-12)
  analysis of bubble chamber, development of RIPPLE semiautomatic device for, 22:47371(R) (ORO-3065-16)
  analysis of bubble chamber, effects of multiple scattering on film, 22:363
  analysis of bubble chamber, electronic specifications of Spiral Reader MP-IIB system for film, 22:30859 (UCID-2842)
  analysis of bubble chamber, evaluation of Image-Plane Digitizers for film, 22:4476 (UR-875-219)
  analysis of bubble chamber, event selection criteria for, 22:49121
  analysis of bubble chamber, film, 22:43099
  analysis of bubble chamber, geometrical reconstruction computer program for, 22:38080(T) (CERN-Trans-67-8)
  analysis of bubble chamber, method for iterative fitting of events involving neutral particles in, 22:49115 (IS-T-265)
  analysis of bubble chamber, modifications to RHEL geometrical reconstruction programs for, 22:16903 (RHEL/R-150)
  analysis of bubble chamber, PEPR (Precision Encoding and Pattern Recognition) system for film, 22:33663
  analysis of bubble chamber, PEPR program for use with IBM-7044 for, 22:12644
  analysis of bubble chamber, PEPR track following system for, 22:47376
  analysis of bubble chamber, POLLY I film measuring system for, 22:47381
  analysis of bubble chamber, scanning and measurement system operating on-line to computer for film, 22:10604(P)
  analysis of bubble chamber, status of automatic scanning at BNL and Columbia for, 22:38095
  analysis of bubble chamber, television measuring projector for film, 22:10598
  analysis of bubble chamber, use of computer for matching photographs for, 22:358 (ANL-7346)
  analysis of bubble chamber, use of MP II for film, 22:361 (UCRL-17611)
  analysis of bubble chamber, vidicon system for, 22:4474 (ORO-2504-110)
  analysis of bubble chamber, with modified PEPR-type machine, 22:4475 (PPAD-628-E)
  analysis of emulsion, charge identification from, 22:38046
  analysis of fission-fragment, for neutron detection, 22:6652 (ORNL-4168, pp 183-230)
  analysis of Gargamelle bubble chamber, equipment and procedures for film, 22:12621 (CERN-67-26(Vol.1), pp 313-27)
  analysis of hammer, in nuclear emulsions, 22:16874
  analysis of heavy-liquid bubble chamber, computer particle-track reconstruction program for, 22:49117
  analysis of hydrogen bubble chamber, using delta electron density, 22:43102
  analysis of inclined, in nuclear emulsions, 22:43101
  analysis of massive charged, in solids, 22:6563
  analysis of photographs of, picture description language for computer, 22:10595 (SLAC-PUB-358)
  analysis of propane bubble chamber, method for compensating for Coulomb scattering and bremsstrahlung for, 22:30862
  analysis of spark chamber, ARIANE flying-spot device on-line to small computer film, 22:2423
  analysis of spark chamber, computerized system for automatic, 22:21316 (RT/EL-(67)13)
  analysis of spark chamber, description of CHLOE film digitizing system for, 22:38093
  analysis of spark chamber, digital system for, 22:6651
  analysis of spark chamber, errors in scanning devices for, 22:45334 (JINR-P10-3910)
  analysis of spark chamber, SASS computer-controlled scanning system for film, 22:2419 (UCRL-17695)
  analysis of spark chamber, SLAC automatic film digitizer for, 22:47373 (SLAC-PUB-426)
  analysis of spark chamber, SPDL computer system for, 22:36099 (SLAC-84)
  analysis of spark chamber, transistorized control circuit for semi-automatic film scanner for, 22:25672(T) (NP-tr-1651)
  analysis of, development of SMP scanning and measuring facility for, 22:32039(R) (COO-1195-124)
  analysis of, recorded on photographic film, optical scanning system for, 22:10605(P)
  brightness in streamer chambers, angular dependence of, 22:8385
  coordinates in bubble chambers, computer program for magnetic field calculations at, 22:359 (JINR-P11-3512)
  coordinates in bubble chambers, program for determining, 22:4472 (JINR-P1-3487)
  coordinates in wire spark chambers, use of ferrite memory systems for recording, 22:6647
  counting in nuclear emulsions, electronic equipment for, 22:28169
  data from nuclear emulsions, computer program for processing of, 22:6646
  density in Saint Severin meteorite, relations with depth, 22:6460
  density measurements in dielectric track detectors, use of scattered light for, 22:37990 (KAPL-3412)
  density on glass surfaces after neutron irradiation, 22:8212
  detection and identification of fission fragment-induced, in minerals, 22:37874 (64-RL-3635-M)
  distortion in emulsions, correlation function for spurious scattering from, 22:8387
  distortion in streamer spark chambers, 22:2424
  formation in solids, radiation damage studies by, 22:36513
  geometry measurements in bubble chambers, use of on-line PDP-5 connected to IBM 360/50 for, 22:360 (PPAD-629-C)
  length in muscovite, use in age estimation, 22:18917
  measurement in emulsions, cross-wire digitized eyepiece for, 22:49168
  measurement in nuclear emulsions, development of automatic systems for, 22:40367
  measurement of proton, in nuclear emulsions, photographic scanning technique for, 22:36082
  measurement on bubble chamber film, operation of SMP for, 22:22332(R) (UH-511-23)
  method for age estimation of man-made and natural glasses, 22:6470
  model for heavy particles in water, 22:29272
  production of fictitious, testing program for, 22:4473 (JINR-P10-3526)
  proton identification using multiple scattering in nuclear emulsion, 22:35305
  reconstruction of bubble chamber, computer program for geometrical, 22:49113(T) (ANL-Trans-668)
  recording of spark chamber, design and performance of vidicon for, 22:36105
  registration of charged, use of dry developing paper for, 22:38019
  simulation of bubble chamber, computer program for, 22:30858 (UCID-2753)
  simulation of bubble chamber, use of light scattering by

bubbles for, 22:12647
structure of, relation of theory of primary radiation chemistry yields to, 22:2100 (UJV-1883)
use of uranium-238 fission, to estimate age of natural minerals, 22:6446

PARTICLE TRAJECTORIES
calculation in magnetic fields, 22:28137
determination in electromagnetic fields, computer program for calculating and plotting, 22:50488 (LA-3903)
determination in nontrivial fields, arc transcriber for, 22:8419

PARTICLES
see also Aerosols
see also Alpha Particles
see also Beta Particles
see also Charged Particles
see also Cosmic Particles
see also Dusts
see also Electrophoresis
see also Elementary Particles
see also Nuclear Particles
see also Particle Sources
see also Powders
see also Radiation Sources
see also Solar Particles
acceleration in general relativity, Einstein equations for gravitational radiation from, 22:9686
activity of fritted and spheroidal, from Small Boy nuclear explosion, 22:35957 (AD-660655)
angular distribution measurements of, method for correcting errors from medium distortion by, 22:7564
behavior and density of, in exhaust plume from NERVA rocket engine, lidar equipment and method for studying, 22:47241 (UCRL-13358)
book: Topics in Several Particle Dynamics, 22:13688
calculations for point, in relativity theory, formulation for Monte Carlo treatment of, 22:18017 (LA-3839)
charged exchange between neutral, and the solar wind, (T), 22:43723
coating submicron size, method using nickel carbonyl, 22:7045
coating submicron, by chemical vapor deposition of nickel, 22:7045
collisions of three point, maximum number of binary, 22:20169
correlation with gamma radiation, processing of statistical matrices for analysis of experiments on, 22:6602
crack configurations in coated, 22:11049
density of fallout, from atmospheric nuclear explosions, 22:2229
deposition of 1 to 50 μ particles on natural surfaces, factors affecting, 22:10771
deposition of small, on vertical surfaces, 22:16717
deposition on ground, turbulent transfer mechanism for, 22:40253 (AECL-2787, pp 602-14)
detection of relativistic, use of cesium iodide and potassium chloride films for, 22:40361(T) (SLAC-Trans-84)
detection of, design of ΔE--E coincidence circuit for, 22:336
diffusion and fall of atmospheric, computer programmed model for prediction of, 22:40237 (AECL-2787, pp 320-33)
diffusion in atmospheric boundary layer, mathematical analysis of, 22:40243 (AECL-2787, pp 437-52)
diffusion in exponential atmosphere of small, spatial, (T), 22:17480
diffusion in turbulent atmosphere, Eulerian--Lagrangian relation for determining, 22:40247 (AECL-2787, pp 485-502)
diffusion in turbulent atmosphere, Eulerian--Lagrangian relation for determining, 22:40246 (AECL-2787, pp 476-84)
diffusion in upper atmosphere, analog studies using rotating fluid-filled annulus, 22:42871 (SC-CR-67-2812)
diffusion of, effects of forests on, 22:40251 (AECL-2787, pp 581-8)
distribution of Thorotrast, in organs of rabbits, 22:38486
distributions and trajectories of, in collision with rain drops, high-speed photographic studies of, 22:40248 (AECL-2787, pp 514-26)
dose entering spacecraft from external sources, heavy, 22:49652
dynamics and interactions of, covariant Hamiltonian formalism for classical, 22:22258
effects on Chinese hamster cells, 22:12837
effects on man, pathological and somatic, 22:12925
electric mobility of submicron, effects of shape on, 22:43300 (AERE-PR/HPM-12)
electromagnetic scattering by, conference on, 22:5152
electromagnetic-wave scattering by small moving, (T), 22:37061
energy in Mollers tetrad theory, (T), 22:7557
energy losses of relativistic, from ionization in films, (E/T), 22:38729(T) (SLAC-Trans-82)
energy of ultrarelativistic, device for measuring, 22:38088
energy transfer by, in general relativistic gases, 22:44279
existence of faster-than-light, causality effects for, 22:3302
existence of stable, in metagalaxy, 22:1507
fall, dispersion, and transport of atmospheric, Model computer program for estimation of, 22:2228 (SC-CR-6 2645)
fallout, determination of composition and structure of, 22:45537
field equations for stable states of scalar, Klein--Gordon, 22:26712
fluid dynamic properties of, computer program for calculation of, 22:38261(R) (SC-CR-67-2845)
formation of condensation, by radiolysis of gaseous impurities in air, (E), 22:16710
generation of cosmic showers at 20 mwe by neutral, (E), 22:13276
gravitational self-forces and radiation losses of classical spin, (T), 22:1484
Green function of free, 22:17832
heat transfer and motion of fluidized bed, effects of pulsating gas flow on, (T), 22:25599(T) (ANL-Trans-591)
heat transfer between fluidized bed, and bed-immersed surface, 22:25598(T) (ANL-Trans-587)
heat transfer between fluidized bed, and bed-immersed heating surface, (E), 22:25600(T) (ANL-Trans-592)
heat transfer between moving fluidized bed, and bed surface, 22:25597(T) (ANL-Trans-586)
heat transfer between pulsating bed, and bed-immersed surface, (E), 22:25600(T) (ANL-Trans-592)
heat transfer to fluid--solid, in turbulent pipe flow, 22:45242 (ORNL-TM-2124)
hypersonic reentry of small spherical, aerodynamic parameters of, 22:42977(R) (SC-PR-68-451)
infrared emission from graphite, in NGC 7027, (E), 22:17252
inhalation of plutonium-238-labeled, by man, effects of size on, 22:38261(R) (SC-CR-67-2845)
interacting, integral representation for systems of, (T 22:41709
interactions and motion of spinning, classical theory o 22:11728
interactions in field of gravitational wave, (T), 22:1508
interactions in relativistic classical mechanics, Hamiltonian formalism in, 22:20168
interactions of, conservation of momentum and angular momentum in classical mechanics for, 22:22336
interactions with phonons in many-boson system, 22:133
kinematics in five-dimensional relativistic scheme, 22:7453
lattice bands in interstellar, evidence for, (T), 22:8
light scattering by interstellar, (E), 22:26124
localization in space and time for relativistic micro-, 22:9676
measurement of surface, comparison of methods for, 22:23549
motion in external gravitational field, five-dimensiona relativistic scheme for, 22:7556
motion in isotropic fluid sphere, generalized Tolman solutions in general relativity for, 22:5665
motion of classical, Feynman integral for, 22:32207
motion of massless in space, conditions for stationary, (T), 22:5665
motion of, Dicke assumptions in scalar--tensor theories for, 22:46518
packing shot-size spherical, visual model for powder metallurgy using vibration, 22:2594
phagocytosis of carbon and metal oxide, by cultured cel from reticulo-endothelial system of rats, 22:25229 (UR-49-919)
phagocytosis of latex, by epidermal cells, 22:49179(R) (ORO-3578-4)
plutonium isotopes content of airborne, in U. S. during 1965, 22:25850
precipitation of aerosol, during laminar gas flow throug tubes, effects of tube configuration on, (E), 22:190 (TID-24285)
preparation of simulated fallout, description of methods for, 22:47244
preparation of spherical fuel, 22:11035(P)
production of spherical ceramic, method for, 22:7051(P
properties of aerosol, equipment and procedures for studying surface, 22:51098
properties of scattering, in reflection nebulae, (T), 22:2771
radiation effects on aggregation of, in vaccinia virus plaques, γ and x, 22:19368
radiation effects on phagocytosis of carbon, following injection of India ink, 22:23617
radioactive, distribution in respiratory tract, 22:235 (SC-M-67-2973)
radioactive, dose to human skin from deposited, 22:680 (ORNL-4168, pp 289-311)
radioactive, uptake and retention of, by man following inhalation, review of, 22:33715 (SZS-15/67)
radioactivity content of airborne, in North and South America during 1966, 22:28502
radioactivity content of airborne, in North and South America during 1966, 22:28495
radioinduced production of ammonium sulfate, in air and

gases, α, 22:43300 (AERE-PR/HPM-12)
  removal from gaseous radioactive wastes, design of filter for, 22:10473(P)
  removal from troposphere of, mechanisms of, 22:10377
  residence time of fluidized bed, effects on heat transfer, (E), 22:47281 (ANL-7353)
  retention on human skin, tracer study of, 22:6804 (ORNL-4168, pp 289-311)
  sampling air for radioactive, design of equipment for, 22:2476(P)
  scattering in slabs, trajectories for, (T), 22:31621
  scattering of, differential cross section calculation for, 22:9009
  scattering of, space--time transformations of initial and final states in, (T), 22:41706
  scattering on metallic blocks, angular and distance distributions for multiple, (T), 22:31643
  separation and analysis of radioactive, from nuclear detonations, methods for systematic, 22:42873 (UCRL-50428)
  separation of highly radioactive fallout, from dust on sampling filters, method for, 22:25526 (HASL-193, pp I.17-26)
  size classification in aerosols, atmospheric pressure sampler for, 22:25332 (ORNL-4229, pp 156-61)
  size classification of submicron, by low-pressure impactor, 22:25332 (ORNL-4229, pp 156-61)
  size distribution in sedimentation columns, determination using β backscattering, 22:224
  size distribution in sediments, SED computer program for calculation of, 22:51136 (LA-4001)
  size distribution of, sedimentation method for determination of, 22:14450
  size of micron-range, methods of determining, 22:223
  size of plutonium oxide, effects of, on phagocytosis in peritoneal cavity of rats, 22:10677 (BNWL-480, pp 99-106)
  size of radioactive dust, effects of, on removal from surfaces, 22:51591
  size of, effects of, on dissolution in relation to lung burdens, mathematical analysis of, 22:28465
  statistics of gravitating relativistic system for, 22:1502
  symmetries in classical mechanics of systems of point, 22:46475
  tracking of atmospheric, use of tetrakis (dimethylamino) ethylene for, 22:21209 (SC-RR-66-2693)
  trajectory through atmosphere, MIDAS computer program for calculation of low-level isentropic, 22:37879 (BNWL-441)
  transport of entrained, from turbulent flow to channel or pipe walls, 22:27996 (WAPD-TM-765)
  transport through gastrointestinal tract of laboratory animals and man, 100- to 200-micron, 22:51305 (LA-3848, pp 75-96)
  transport through matter, modeling trajectories in complex geometry systems for, 22:34735
  use of high-energy, in biological and medical research, 22:51440
  velocity in interstellar space, effects of isotropic radiation on, (T), 22:2762
  velocity near ground, variance reduction analysis of, 22:40239 (AECL-2787,pp 381-90)
  volume of inhaled plutonium oxide, in relation to retention by lungs of beagles, 22:10676 (BNWL-480, pp 85-97)
  wave function for spin-1/2 composite, 22:29607
  wave functions in weak gravitational fields, 22:5655
Pascal (French)
    see Q Devices
PASSIVATION
    see also Corrosion Inhibitors
Pathfinder Reactor
    see Sioux Falls Power Reactor
PATHOGENICITY
    see also Virulence
  radiation effects on, of storage rot fungi of strawberries, effects of dose on γ, 22:33985 (NP-17428)
PATHOLOGY
    see also Diseases
    see also Necrosis
  analysis of whole-body γ radiation effects on beagle dogs, 22:43433
  radiation effects on central nervous system, of monkeys, x, 22:36370
  radiation effects on, of guinea pigs, chronic fractionated whole-body γ, 22:43415
  radiation effects on, of progeny of whole-body irradiated cattle, γ, 22:40828 (ORO-657, pp 11-17)
PBF
    see Power Burst Facility
PBMA
    see Methacrylic Acid, Butyl Ester, Polymers
PCAC
    see Current Algebra
PCR
    see Savannah River Components Test Reactor
PCTC
    see Current Algebra
PCTR
    see Physical Constants Testing Reactor
PEACH BOTTOM POWER REACTOR, UNIT 1
    (40 Mw(e); startup 1966)
  boiler tube failures in, analysis of cracks in type 304 stainless steel, 22:32840
  containment building electrical penetrations at, fire protection modifications to, 22:24992
  containment vessel for, seals for electrical penetrations for, 22:10051
  control rod calibration in, use of on-line reactivity computer for, 22:22694 (GAMD-7912)
  control rods for, differential and integral reactivity worth of, 22:16148(R) (GA-8370)
  cooling system for, flow calibration of primary, 22:42188 (GAMD-7903)
  cooling system of, effectiveness of helium purification assembly in, 22:22690(R) (GA-8500)
  cooling system of, testing of helium purification for, 22:22692 (GAMD-7902)
  core for, verification of heat transfer coefficient for, 22:12023(R) (GA-8153)
  core heat transfer film coefficient measurements during rise to power in, 22:24960 (GAMD-7911)
  design and operating characteristics of, tabulation of, 22:7831
  design parameters and layout of, 22:16146 (GA-8075)
  design parameters for, 22:22712 (STI/PUB-174)
  dynamics response during startup of, plant, 22:32809
  fuel elements for, use of ISOCHECK method for determining heavy isotope content in, 22:12011 (CEND-294)
  heat transfer coefficients for core of, effects of coolant exit temperature on, 22:32875
  helium coolant for, evaluation of purification system for, 22:16148(R) (GA-8370)
  maintenance during October 1967, 22:5933(R) (NP-17145)
  maintenance during September 1967, 22:5930(R) (NP-17085)
  noise analysis measurements in, 22:22693 (GAMD-7908)
  nuclear instrumentation for, description and calibration of, 22:42188 (GAMD-7903)
  operating limits of, tabulation of, 22:42188 (GAMD-7903)
  operation and performance during October 1967, 22:5933(R) (NP-17145)
  operation and performance during September 1967, 22:5930(R) (NP-17085)
  operation calibration measurements on, 22:12023(R) (GA-8153)
  operation of, review of initial, 22:46943
  operation performance of, description of, 22:48689
  operations during February to April 1968, description of 150 equivalent full-power day core maintenance inspection, 22:39771 (GA-8679)
  operations during November to January 1968, 22:22690(R) (GA-8500)
  operations history of, 22:16148(R) (GA-8370)
  operations history of, total, 22:1821
  performance of, analysis of component testing for, 22:30148 (GA-8040)
  power calibration of, description of, 22:30148 (GA-8040)
  power coefficient measurements in, 22:16148(R) (GA-8370)
  power history for May--July 1967, 22:12023(R) (GA-8153)
  power level calibration of, instrumentation for, 22:42188 (GAMD-7903)
  reactivity of, effects of variation of concentration of Xenon-135 and Samarium-149 poisoning on, 22:24959 (GAMD-7910)
  reactivity variations in rise-to-power during January to June 1967, effects of core temperature and power coefficients on, (E/T), 22:39772 (GAMD-7909)
  shutdown reactivity of, effects of xenon-135 on, 22:22690(R) (GA-8500)
  startup of, description of physics and engineering measurements during, 22:32809
  startup reactivity of, effects of xenon-135 on, 22:22690(R) (GA-8500)
  steam generator for, evaluation of performance of, 22:42188 (GAMD-7903)
  testing of, approach-to-power, 22:12023(R) (GA-8153)
  testing of, description of approach-to-power, 22:42188 (GAMD-7903)
  thermal efficiency as a function of power level, 22:16148(R) (GA-8370)
  zero-power experiments in, 22:24939 (CONF-660524-, pp 695-715)
PEACH BOTTOM POWER REACTOR, UNIT 2
    (1,065 Mw(e))
  applicability of ACRS findings on Brown's Ferry Reactor to, 22:22673 (DOCKET-50277-3)
  containment system for, preliminary safety analysis report on pressure suppression, 22:18371 (DOCKET-50277-1)
  containment systems for, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)
  control systems and instrumentation for, preliminary analysis report on, 22:22673 (DOCKET-50277-3)
  control systems and instrumentation for, preliminary safety analysis report on, 22:18371 (DOCKET-50277-1)
  core for, preliminary safety analysis of design for, 22:18371 (DOCKET-50277-1)
  drawings for, complete set of reduced-size engineering, 22:18372 (DOCKET-50277-2)
  electrical system for, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)

excursion description and design basis accident analysis for Units 2 and 3 of, preliminary safety analysis reports giving, 22:18371 (DOCKET-50277-1)
incidents in, preliminary safety analysis reports on, 22:22673 (DOCKET-50277-3)
loss of station cooling accident at, preliminary safety analysis report on, 22:18373 (DOCKET-50277-5)
owners of, financial statements of, 22:18374 (DOCKET-50277-6)
siting of, preliminary safety analysis report on, 22:18371 (DOCKET-50277-1)
siting of, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)
stability analysis of, preliminary safety analysis report on, 22:22674 (DOCKET-50277-4)

PEACH BOTTOM POWER REACTOR, UNIT 3
(1,065 Mw(e))
applicability of ACRS findings on Brown's Ferry Reactor to, 22:22673 (DOCKET-50277-3)
containment system for, preliminary safety analysis report on pressure suppression, 22:18371 (DOCKET-50277-1)
containment systems for, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)
control systems and instrumentation for, preliminary analysis report on, 22:22673 (DOCKET-50277-3)
control systems and instrumentation for, preliminary safety analysis report on, 22:18371 (DOCKET-50277-1)
core for, preliminary safety analysis of design for, 22:18371 (DOCKET-50277-1)
drawings for, complete set of reduced-size engineering, 22:18372 (DOCKET-50277-2)
electrical system for, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)
excursion description and design basis accident analysis for Units 2 and 3 of, preliminary safety analysis reports giving, 22:18371 (DOCKET-50277-1)
incidents in, preliminary safety analysis reports on, 22:22673 (DOCKET-50277-3)
loss of station cooling accident at, preliminary safety analysis report on, 22:18373 (DOCKET-50277-5)
owners of, financial statements of, 22:18374 (DOCKET-50277-6)
siting of, preliminary safety analysis report on, 22:18371 (DOCKET-50277-1)
siting of, preliminary safety analysis report on, 22:22673 (DOCKET-50277-3)
stability analysis of, preliminary safety analysis report on, 22:22674 (DOCKET-50277-4)

Peanuts (the botanical entity)
see Angiospermidae--Arachis

Peanuts (the commodity)
see Fruits--peanuts

PEARLITE
production of nodules of, effects of chromium and molybdenum on, 22:636
radiation effects on corrosion and electrochemical behavior of steel, thermal neutron, 22:52224

PEARLS
radiation effects on color of, effects of manganese content of shell on γ, 22:10856

Peas (Pisum)
see Pisum under Angiospermidae

PEAT
see also Humic Acids
age determination of, carbon-13 to carbon-12 ratio analysis for, 22:48940
drying of shredded, on moist soil, radioactive tracer studies of mechanisms of, 22:25620
radioactive waste binding by, 22:33505
radium occurrence in, effects of ionic bonds and alkaline earth elements on form of, 22:33566
sorptive properties for radium and uranium, 22:8209
uranium content of, effects of organic matter and water salinity on, 22:40214
water content in, use of neutron-backscattering moisture gages for determining, 22:25684

Pebble-bed Reactors
see Reactors, Pebble-Bed

PEC FAST TEST REACTOR
accident classes for, definition of credible, 22:53446
control rods for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
control rods for, design parameters for, 22:30310(T) (ORNL-tr-1787(Vol.1))
control systems and instrumentation for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
control systems and instrumentation for, design of, 22:30310(T) (ORNL-tr-1787(Vol.1))
coolant loss accidents in, effects of power supply failure on, 22:53444
coolant pumps for, evaluation of types of motors for, 22:53444
core for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
core for, design parameters for, 22:30310(T) (ORNL-tr-1787(Vol.1))
data acquisition system for, description of automatic, 22:30310(T) (ORNL-tr-1787(Vol.1))
design drawings for, 22:32968 (EURFNR-478)
design of, general description of, 22:30157 (PRV-(66)45(Sect.1))
design parameters for, 22:32968 (EURFNR-478)
dynamic behavior under accident conditions, 22:53445
emergency power supply for, evaluation of, 22:53444
fuel elements for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
fuel elements for, design parameters for, 22:30310(T) (ORNL-tr-1787(Vol.1))
loading machine for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
loading machine for, design parameters for, 22:30310(T (ORNL-tr-1787(Vol.1))
safety analysis of, 22:53445
safety characteristics of, definitions of, 22:53446
shielding for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
shielding for, design parameters for, 22:30310(T) (ORN tr-1787(Vol.1))
test facilities for, design drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
test facilities for, design parameters for, 22:30310(T (ORNL-tr-1787(Vol.1))

PECTINESTERASE
radiation effects on content of, in fruits and vegetables, effects of state of purification on γ, 22:30954

PECTINS
carbon-12 content of, of plankton, 22:40609
effects on iron-59 excretion in rats, 22:21455
radiation chemistry of, 22:52123
radiation effects on, in papaya, γ, 22:45737
radioinduced decomposition of, in fresh fruits and vegetables, γ, 22:8671
zinc-65 content of, in cell walls of maize seedlings, 22:45403

PEGASE
see Cadarache Reactors

PEGMATITE DEPOSITS (ONTARIO)
geology of uraniferous, 22:45202

PEGMATITES
formation of, processes in, 22:7981(T) (WAPD-Trans-80)
phases in beryl, vertical repartition of, 22:27932

Pelargonic Acid
see Nonanoic Acid

PELLETS
design of improved ceramic fuel, for rod-type reactor fuel elements, 22:2686(P)
fabrication and testing of carbon-coated plutonium dioxide, 22:724 (BMI-1809, Sect.C)

PEMOLINE
radioprotective effects of magnesium compounds of, on survival of mice, x, 22:40754
radioprotective effects of magnesium compounds of, on survival of mice in comparison to pemoline and dextroamphetamine, x, 22:40746
radioprotective effects of, on mice, x, 22:25921

PENETRANT TESTING
use of alcohol, for detection of defects in graphite inserts for rocket nozzles, 22:43008

PENICILLAMINE
radiation effects on electron spin resonance spectra of effects of temperature on x, 22:36194
radioinduced formation of free radicals in, ESR spectra of uv, 22:10720
radioinduced sulfur radicals in penicillamine-sephadex, effects of heat on x, 22:6734
radioprotective effects of, on mammalian cells, γ and x 22:38407
reactions with hydrogen peroxide and titanium trichloride, ESR spectral studies on free radicals produced by, 22:2147
penicillamine-sephadex, radioinduced unpaired spins in frozen aqueous solutions of, ESR analysis of effects pH on x, 22:45439

PENICILLIN
effects on uv-radiosensitivity of Escherichia coli K$_{12}$, 22:21469
effects on x-radiosensitivity of autoimmune processes i rabbits, 22:21446
protective effects of, against radiomimetic effects of oxidized oleic acid on mice and yeasts, 22:19380
radiation effects on sensitivity of bacteria and yeast to, γ, 22:52054
radiation effects on transduction of resistance to, in bacteriophages, uv, 22:51551

PENICILLINASE
radiation effects on activity of extracts of, from Bacillus licheniformis, 22:8443
synthesis by Staphylococcus aureus, chromosomal locatio of genetic elements controlling, 22:51551
synthesis by Staphylococcus, use of uv-irradiated transducing phage for mapping of gene-loci for, 22:51532

PENNSYLVANIA
radiation protection regulations, 1956, 22:31100

Pennsylvania Advanced Reactor (PAR)
see Reactors, Power

PENTABORANE(9)
radiolysis of gaseous, γ, 22:30639

PENTACENE
effects on excretion of inhaled thulium-170 by man, 22:31216

8-PENTADECYNOIC ACID
  synthesis of, 22:33717 (UCLA-12-640, pp 81-90)
9-PENTADECYNOIC ACID
  synthesis of, 22:33717 (UCLA-12-640, pp 81-90)
1,3-PENTADIENE
  yields in radiolysis of cyclopentane, 22:50998
1,4-PENTADIENE
  yields in radiolysis of cyclopentane, 22:50998
PENTAERYTHRITOL TETRANITRATE
  detonation of, time-resolved emission spectra of products from, 22:3993 (UCRL-50328)
  ignition of deflagrations in, with slowly exploding wires, 22:7951 (LA-DC-8956)
Pentamethylenetetrazole
  see Pentylenetetrazole
PENTANE
  deuterium exchange between, and butane on platinum--alumina contact, effects of temperature on, 22:4144
  effects on yields in photolysis and radiolysis of tetrachloroethylene, mechanism of, 22:23034 (IA-1128, pp 78-96)
  evaporation from n-tridecane into flowing nitrogen, gas phase fraction saturation as function of liquid phase mole fraction in, 22:37931 (UCRL-17989, pp 253-60)
  evaporation into flowing nitrogen, use of correction factors to compare with predicted, 22:37931 (UCRL-17989, pp 253-60)
  neutron scattering cross sections at 0.009 to 0.0013 eV, (E), 22:24811
  photolysis at 1470 A of, radical yields of, 22:27396(R) (AI-AEC-12638)
  radiation effects on, ESR study of radicals from γ and x, 22:27816
  radiolysis at 1470 A of, radical yields of, 22:27396(R) (AI-AEC-12638)
  radiolysis of liquid, effects of dose on product yields from, 22:12337(R) (COO-1116-6)
  radiolysis of liquid, products and mechanisms of, 22:33439
  radiolysis of, effects of dose, temperature, olefins, and scavengers on γ, 22:33405
  radiolysis of, effects of molecular structure on free-ion yield from γ, 22:42757
  radiolysis of, free radical yields in, 22:8126
  radiolysis of, free radical yields in, 22:42711(T) (AEC-tr-6937, pp 84-95)
  radiolysis of, mechanism of hydrogen formation in γ, 22:33437
  reactions of recoil tritium with, 22:40130
  reactions of solid, with recoil tritium, absolute yields of products formed by, 22:27758
  yields in radiolysis of cyclopentane, effects of iodine on, 22:50998
  yields in radiolysis of gaseous cyclohexane, effects of nitric oxide on, 22:35836
  pentane--tetrachloroethylene, radiolysis of, yields from γ, 22:33437
PENTANE, 1-BROMO-
  radioinduced fluorination of, using fluorine-18-labeled potassium fluoride in dimethylformamide, γ, 22:27804
  radiolysis of glassy, polycrystalline, at 77°K, ESR spectral studies on γ, 22:2111
PENTANE, 3-BROMO-
  reactions with potassium ethoxide in ethanol, effects of deuterium on cis- and trans-2-penetene formation by, 22:27719
  reactions with potassium tert-butoxide in 2-methyl-2-butanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
PENTANE, 1-CHLORO-
  radioinduced fluorination of, using fluorine-18-labeled potassium fluoride in dimethylformamide, γ, 22:27804
PENTANE, 3-CHLORO-
  reactions with potassium ethoxide in ethanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
  reactions with potassium tert-butoxide in 2-methyl-2-butanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
PENTANE, 2-CHLORO-2,4,4-TRIMETHYL-
  solvolysis of deuterated and normal, secondary steric isotope effects in, 22:21070
PENTANE, DODECAFLUORO-
  radiolysis of, yields in γ, 22:18836
PENTANE, 3-ETHYL-2-METHYL-
  radiation effects on ion pair production in, method for measuring mean energy in γ, 22:16601
PENTANE, 1-IODO-
  radioinduced fluorination of, using fluorine-18-labeled potassium fluoride in dimethylformamide, γ, 22:27804
  radiolysis of glassy, polycrystalline, at 77°K, ESR spectral studies on γ, 22:2111
PENTANE, 3-IODO-
  reactions with potassium ethoxide in ethanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
  reactions with potassium tert-butoxide in 2-methyl-2-butanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
PENTANE, 3-METHYL-
  effects on γ-radiolysis and photolysis of tert-butyl peroxide, ESR study of, 22:16626
  effects on radioinduced polymerization of 2-methylpropene, effects of anhydrous conditions on, 22:8096(T) (AEC-tr-6908, pp 56-63)
  radiation effects on glasses of, ESR studies of trapped electrons and free radicals in γ, 22:27825
  radiation effects on trapped electrons in glass of, at 77°K, ESR studies of γ, 22:16617
  radiation effects on, ESR spectral studies on γ, 22:8102(T) (AEC-tr-6908, pp 130-8)
  radiation effects on, ESR study of radicals from γ and x, 22:27816
  radioinduced polymerization of, with 2-methylpropene at 77°K, ESR spectral studies on γ, 22:8105(T) (AEC-tr-6908, pp 154-6)
  radioinduced trapped electrons in glasses of, at 77°K, ESR and optical studies on γ, 22:30627
  radioinduced trapped electrons in glasses of, containing N,N,N',N'-tetramethyl-p-phenylenediamine, ESR and optical studies on uv, 22:30627
  radiolysis of glasses of, effects of alkyl halide and photobleaching on free radical production in γ, 22:27756
  radiolysis of liquid, effects of nitrous oxide on hydrogen and nitrogen yields in γ, 22:18824
  radiolysis of solid, at -196°C, spectral studies on ionic processes in γ, 22:30608
  2-methylbutane--3-methylpentane, radioinduced trapped electrons in glasses of, containing N,N,N',N'-tetramethyl-p-phenylenediamine, ESR and optical studies on uv, 22:30627
  carbon tetrachloride--3-methylpentane, radiolysis of glasses of, at 20 and 70°K, reactions of unstable species in γ, 22:117
PENTANE, 1-PHENYL-
  radiolysis of, yields of hydrogen from γ, 22:25393
PENTANE, 2,2,4-TRIMETHYL-
  analysis for hydrogen by neutron slowing-down method, 22:4005
  effects on solvent properties of dioctyl phosphate for europium and terbium, 22:6400
  photolysis of, reactions of nitrous oxide with excited molecules from, 22:16620
  radiation effects on ion pair production in, method for measuring mean energy in γ, 22:16601
  radioinduced oxidation of, effects of water on, 22:25382
  radioinduced oxidation of, formation of peroxide compounds from x, 22:33394
  radiolysis of, 22:21106
  radiolysis of liquid, effects of ion scavengers on fragmentation of excited ions in γ, 22:10274
  radiolysis of, effects of postirradiative additions of iodine on yields in γ, 22:99
  radiolysis of, reactions of nitrous oxide with excited molecules from, 22:16620
  bromomethane--2,2,4-trimethylpentane, radiolysis of, chemical method for determining free-ion yields in γ, 22:51006
  cyclohexane--2,2,4-trimethylpentane, radiolysis of, effects of hexanethiol and naphthalene on hydrogen yields from γ, 22:16586
  cyclopentane--2,2,4-trimethylpentane, radiolysis of, 22:21106
  decahydronaphthalene--2,2,4-trimethylpentane, radioinduced oxidation of, effects of oxygen and inhibitors on, 22:16575
PENTANE, 2,3,4-TRIMETHYL-
  radiolysis of, 22:21106
  radiolysis of, effects of postirradiative additions of iodine or methyl methacrylate on yields in γ, 22:99
PENTANE, UNDECAFLUORO-2-(TRIFLUOROMETHYL)-
  radiolysis of, yields in γ, 22:18836
PENTANE, UNDECAFLUORO-3-(TRIFLUOROMETHYL)-
  radiolysis of, yields in γ, 22:18836
2,4-PENTANEDIONE
  carbon-14 exchange between tris(acetylacetonato)aluminum and, 22:40098
  chelates with indium-113 for use in scanning, 22:4630 (UCLA-34-P-119-16)
  complexes with aluminum or beryllium, preparation of, 22:45039
  complexes with aluminum, carbon-14 exchange between 2,4-pentanedione and, 22:40098
  complexes with americium and rare earths, preparation of, 22:25459 (KFK-672)
  complexes with chromium, effects of thermal annealing on exchange reactions of chromium-51 recoil ions in methanol solutions of neutron-irradiated, 22:30597
  complexes with chromium, polarization of electron transitions in, spectral studies on, 22:37712(R) (COO-773-15)
  complexes with chromium, solubility of, in organic solvents, 22:12298
  complexes with cobalt or nickel and pyridine, preparation of, for use as secondary standards, 22:45039
  complexes with cobalt, radiation effects on, γ and neutron, 22:21148
  complexes with copper and indium in mixtures with other β-diketones, stability constants for, 22:37776 (BNL-50082, pp 79-92)
  complexes with halogens and quadrivalent cerium, hafnium, thorium, and zirconium, preparation of, 22:4153

  complexes with lanthanides and related elements, fractional sublimation for separation studies on, 22:4097
  complexes with palladium, separation of, from fission and spallation products by solvent extraction using benzene, 22:10339
  complexes with protactinium in perchloric acid solutions, 22:30576
  complexes with protactinium, solvent extraction studies on distribution and formation constants of, 22:6388
  complexes with rare earths, stability of, 22:14566 (ORO-2124-12)
  complexes with rare earths, structure of, 22:14566 (ORO-2124-12)
  complexes with uranyl ions, reactions with 2,4-pentanedione, and tributyl, tricyclohexyl, and triphenyl phosphates, products in, 22:27894
  complexes with uranyl ions, solubility of, in organic solvents, 22:12298
  complexes with vanadium, effects on radioinduced polymerization of butadiene, 22:33387
  complexes with various metals, preparation of, for use as secondary standards, 22:45039
  complexes, use in precipitation of beryllium, magnesium, and uranium from basic solution, 22:158
  preparation of chromium-51- or iron-59-labeled chelates of, 22:10782(R) (UCLA-34-P-119-10)
  reactions with 2,4-pentanedione complexes of uranyl ions, products in, 22:27894
  solvent properties for actinides, 22:25459 (KFK-672)
  solvent properties for scandium, synergestic effects of TBP and TOPO on, 22:51068
  yields in γ radiolysis of frozen acetone, 22:33425
  2,4-pentanedione--phosphoric acid ester, distribution of uranyl ions in, effects of benzene, chloroform, and cyclohexane and inorganic anions on, 22:27894
  2,4-pentanedione--phosphoric acid ester, solvent properties for uranyl ions, 22:27894
2,4-PENTANEDIONE, 1,1,1,5,5,5-HEXAFLUORO-
  complexes with cobalt, separation of, from ruthenium hexafluoroacetylacetonates, gas chromatographic, 22:51075
  complexes with lanthanides and related elements, fractional sublimation for separation studies on, 22:4097
  complexes with ruthenium, separation of, from cobalt hexafluoroacetylacetonates, gas chromatographic, 22:51075
  solvent properties for actinides, 22:25459 (KFK-672)
2,4-PENTANEDIONE, 1,1,1-TRIFLUORO-
  complexes with halogens and quadrivalent cerium, hafnium, thorium, and zirconium, preparation of, 22:4153
  complexes with lanthanides and related elements, fractional sublimation for separation studies on, 22:4097
  solvent properties for actinides, 22:25459 (KFK-672)
1-PENTANETHIOL
  radiolysis at 77°K, EPR studies of γ, 22:37799
2-PENTANETHIOL, 4-AMINO-2-METHYL-
  hydrochloride, radiolysis of aqueous solutions of,, 22:6357
1-PENTANOL
  effects on mechanism of formation of phosphorus-32-labeled alkyl phosphates in neutron irradiated carbon tetrachloride, 22:30596
  effects on yields in gamma radioinduced polymerization of ethylene at 30°C, 22:45130
  effects on yields in gamma-radioinduced polymerization of ethylene, 22:2105
  solvent properties for molybdenum, rhenium, and tungsten in hydrochloric acid--tartaric acid solutions, 22:4246
  HCl--1-pentanol, effects on chromatographic behavior of inorganic ions, 22:16675
2-PENTANOL
  neutron scattering cross sections at 0.009 to 0.0013 eV, (E), 22:24811
  solvent properties for protactinium, 22:12414
3-PENTANOL
  vapor pressure of, effects of deuterium on, 22:42665
2-PENTANONE
  deuterium exchange between dioxane--heavy water solutions and, relative rates of base-catalyzed, 22:45050
  use with hydrochloric acid--hydrofluoric acid mixture for chromatographic separation of ions, 22:30570
3-PENTANONE
  effects on gamma radioinduced polymerization of 2-furanacrolein, 22:18821
  reactions with borohydride ions, secondary kinetic deuterium isotope effects in, 22:27667
2-PENTANONE, 4,4-DIMETHYL-
  deuterium exchange between dioxane--heavy water solutions and, relative rates of base-catalyzed, 22:45050
2-PENTANONE, 4-METHYL-
  deuterium exchange between dioxane--heavy water solutions and, relative rates of base-catalyzed, 22:45050
  deuterium exchange in, acid-catalyzed, 22:27708
  effects on solvent properties of dioctyl phosphate for europium and terbium, 22:6400
  solvent properties for metal complexes with 8-quinolinol, polarographic studies on, 22:50930
  solvent properties for molybdenum, niobium, tantalum, ar
  tungsten, 22:8190
  solvent properties for molybdenum, rhenium, and tungste
  in hydrochloric acid--tartaric acid solutions, 22:424
  solvent properties for protactinium, effects of acetone
  and alcohols on, 22:40198
  solvent properties for tantalum, 22:22984
  4-methyl-2-pentanone--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-
  259)
  acetic acid--4-methyl-2-pentanone--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-T-259)
1-PENTENE
  radiolysis of, effects of additives on, 22:16599
  yields in radiolysis of cyclopentane, effects of iodine
  on, 22:50998
2-PENTENE
  radioinduced isomerization of, 22:25417
  yields in radiolysis of cyclopentane, 22:50998
2-PENTENE, 3-METHYL-
  radioinduced isomerization of, 22:25417
1-PENTENE, 4-METHYL-
  radioinduced polymerization of, in presence of solvents
  and/or zinc oxide, γ, 22:8097(T) (AEC-tr-6908, pp 64-
  73)
  radioinduced polymerization of, with and without 2,2'-azobis[2-methylpropionitrile], uv, 22:8097(T) (AEC-tr
  6908, pp 64-73)
  radioinduced polymerization of, with sulfur dioxide, 22:8098(T) (AEC-tr-6908, pp 74-8)
1-PENTENE, 4-METHYL-, POLYMERS
  radioinduced free radical formation in, γ and uv, 22:6353
3-PENTEN-2-ONE, 4-AMINO-
  complexes with rare earths, preparation of, 22:14566 (ORO-2124-12)
2-PENTEN-4-YN-1-OL
  fragmentation of, effects of deuterium on electron collision-induced, 22:37769
PENTOBARBITAL SODIUM
  effects on γ-radiosensitivity of electrical potential of
  brain in cats, 22:8630
  effects on intestinal motility in rabbits, 22:49550
  protective effects of, against effects of oxygen on γ-irradiated solutions of myosin, 22:25868
Penton
    see Oxetane, 3,3-Bis(chloromethyl)-
PENTOSANS
  radiation effects on SP 54, effects of, on formation of
  stem cells in animals, x, 22:16990
Pentosenucleic Acids
    see Nucleic Acid, Ribo-
PENTOSES
    see also Ribose
    see also Xylose
Pentoxyl
    see Uracil, 5-(Hydroxymethyl)-6-methyl-
Pentyl Alcohol
    see 1-Pentanol
PENTYLENETETRAZOLE
  effects on x-radiosensitivity of central nervous system
  of rats, mechanism of, 22:47625
  radioprotective effects of, on mice and rats, 22:25914
  radioprotective effects of, on survival of mice and rats
  22:25914
PEOPLE'S DEMOCRATIC REPUBLIC OF GERMANY
  disposal of radioactive waste in, research on treatment
  methods for, 22:21301
  radioactive waste disposal in salt formations in, feasibility study, 22:36017 (SZS-5/68)
  reactor fuels in, production facilities for, 22:30754
  shipping of radioactive materials in, regulations for, 22:285 (SZS-10/67)
  strontium-90 content of diet and milk in Berlin, during
  1962 to 1965, 22:51648
  strontium-90 content of milk in, during 1964, 22:505
  strontium-90 content of plants and soil in, during 1964 to 1965, 22:12856
Peppers (Capsicum)
    see Capsicum under Angiospermidae
Peppers (the commodity)
    see peppers under Vegetables
PEPSIN
  effects on γ-irradiated heat coagulated egg white proteins, 22:28306
  radiation effects on activity of, effects of oxygen on
  22:33860
  radiation effects on excretion of, by human children, effects of region of body irradiated on x, 22:51770
  radiation effects on recombination of unpaired electrons
  in, effects of temperature on γ and uv, 22:49176(T) (JPRS-43645, pp 95-7)
  radiation effects on, EPR study of combined effects of oxygen and temperature on, 22:28367
  radioinduced free radicals in, effects of oxygen on yiel
  of γ, 22:33860
  radioinduced free radicals in, EPR spectra of uv, 22:47459
  radioinduced inactivation of, analysis of molecular structure during γ, 22:28335
PEPTIDES
    see also Kinins

deuterium exchange in synthetic, effects of amino acid position on, 22:2072
glycine, radioinduced formation of free radicals in, effects of molecular weight on yields from x, 22:18850
isolation for determining luminescence in fireflies, 22:6715(R) (NYO-2514-9)
poly, radiation effects on distribution of, in central nervous system and small intestines of rats, x, 22:36201
polymers in vertebrates, electrophoretic analysis of, 22:12160(R) (CALT-642-3)
polymers of, deuterium exchange in monolayers of synthetic, 22:40079
polymers of, properties and structure of monolayers of synthetic, 22:40079
production by radioinduced reaction of ethylene glycol with hydroxylamine, 22:10721
radiation effects on aliphatic di-, uv, 22:36160
radiation effects on aqueous solutions of, effects of temperature on γ, 22:8674
radiation effects on glycine-containing di-, chromatographic analysis of uv, 22:51425
radiation effects on recombination of unpaired electrons in, γ and uv, 22:33747
radiation effects on, chemical analysis of γ, 22:45417
radiation effects on, mechanism of, 22:40123
radioinduced changes in molecular structure of, in serum albumin, x, 22:23442
radioinduced formation of, study of physical factor affecting x, 22:45443
radiolysis of aqueous solutions of, effects of oxygen and pH on production of amides and carbonyl groups by γ, 22:8675
radiolysis of poly, of crystalline RNAase, γ, 22:30990
radiolysis of poly-, γ, 22:40556
radiolysis of, effects of temperature on, in relation to free radical formation, 22:28364
radioprotective effects of sulfhydryl, on mice, x, 22:28541 (ORNL-4100, pp 152)
reactions with hydrated electrons to cleave nitrogen--carbon bond, 22:36200
separation by column chromatography, 22:19233(R) (COO-209-144)
synthesis from amino acids, effects of dicyanamide on, 22:12201 (UCRL-17936)
synthesis of primordial poly-, 22:33734
eptidyl-L-amino-acid Hydrolase
see Carboxypeptidase A
EPTONES
effects on x-radiosensitivity of vesicular stomatitis viruses, 22:595
radioprotective effects of, on yeasts, x, 22:40632
eracetic Acid
see Peroxyacetic Acid
ERBORATES
effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
reaction with hexavalent neptunium to produce heptavalent neptunium, 22:45058
ERCH LAKE (ONTARIO)
evaporation rates of, measurement using tritium, 22:35919(R) (AECL-3022)
erch, Yellow (Perca)
see Perca under Osteichthyes
ERCHLORATES
see also Aluminum Perchlorates
see also Ammonium Perchlorates
see also Barium Perchlorates
see also Calcium Perchlorates
see also Cobalt Perchlorates
see also Lanthanum Perchlorates
see also Lithium Perchlorates
see also Magnesium Perchlorates
see also Neodymium Perchlorates
see also Potassium Perchlorates
see also Sodium Perchlorates
see also Thorium Perchlorates
see also Uranyl Perchlorates
see also Zinc Perchlorates
complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
complexes with uranyl ions, formation of, 22:25338
effects on bromine-82 uptake by blood and thyroid gland of rats, 22:10689
effects on distribution of uranyl ions in 2,4-pentanedione--phosphoric acid ester, 22:27894
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
preparation of saturated copper-63- and -65-labeled solutions of, in heavy water, 22:130 (AERE-M-1948)
radiolysis of alkali and alkaline earth, EPR spectral studies on mechanism of γ, 22:51041
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
separation of neodymium and samarium from aqueous solutions of, by solvent extraction using bis(2-ethylhexyl) esters of phosphoric acid, 22:21163
ERCHLORIC ACID
analysis of solutions of, for uranium(VI) using Arsenazo III, 22:22986
effects on absorption spectra of plutonyl perchlorates in aqueous solutions, 22:27650
effects on distribution of valence forms of neptunium-239 in beta decay of uranium-239 solutions, 22:27843
effects on polarographic behavior of uranium, 22:27535 (NIM-129)
effects on ruthenium volatility in fixation of radioactive wastes in glass, 22:23094(R) (IAEA-3431-4)
molecular structure of, 22:10207 (UCRL-17915)
properties in tributyl phosphate--water systems, 22:154
radiolysis of aqueous solutions of, spectral studies on kinetics of pulse x, 22:33371 (AD-662736)
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
radiolysis of frozen aqueous solutions of, containing impurities, EPR spectral studies on γ, 22:16578
radiolysis of, reactions of hydrated electrons during and after x-ray pulse, 22:18815
separation by solvent extraction using methylenebis[di-n-hexylphosphine oxide] in carbon tetrachloride, 22:6402
separation by solvent extraction using TBP in benzene, chloroform, and 1,3,5-triethylbenzene, complexing in, 22:37718 (UCRL-17989, pp 181-252)
separation by solvent extraction using TBP in carbon tetrachloride, 1,2-dichloroethane, and 2-methylheptane, complexing in, 22:37718 (UCRL-17989, pp 181-252)
separation from water by solvent extraction using 1-decanol in 1,2-dichloroethane or 2-methylheptane, proton solvation in, 22:37718 (UCRL-17989, pp 181-252)
separation of barium, calcium, and strontium from, by solvent extraction using TBP, 22:30675
separation of cesium from, by solvent extraction using nitrobenzene, mechanism of, 22:6415
separation of hafnium and zirconium from, by solvent extraction using N-phenylbenzohydroxamic acid or 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6395
separation of iodine from, 22:42656 (UCRL-13352)
separation of neptunium from solutions of, by solvent extraction using 4-benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one, 22:45174
separation of protactinium from, by solvent extraction with TTA, 22:30661
separation of protactinium from, by solvent extraction using 2,4-pentanedione, 22:30576
solubility in dioctylarsinic acid, 22:22901(R) (ORO-2733-13)
solvent properties for neutron-irradiated Armco iron, 22:16596
solvent properties for thorium and uranium pyrophosphates at 25°C, 22:27691
solvent properties for thorium citrate, 22:10229
spectrophotometric studies at 25 to 250°C of deuterated, 22:42578 (ORNL-4279)
thermodynamic properties of, 22:25209(R) (COO-1712-1)
$DClO_4$--$HClO_4$--H_2O, molecular state and thermodynamics of, 22:45029 (UCRL-18043, pp 7-105)
HCl--HNO_3--$HClO_4$, solvent properties for fissium--uranium alloys, 22:43629(R) (LA-3933)
$HClO_4$--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
$HClO$--H_2O--trifluoroacetic acid, effects on deuterium exchange in benzenoid hydrocarbons, 22:27632
PERFUME
processing of, bibliography on tracer techniques for use in, 22:4727
radiation effects on fragrance of, 22:10313(P)
radiation effects on isoamyl salicylate, γ, 22:10311(P)
radiation effects on quality of geraniol, 22:23082(P)
PERHAPSATRON
see also Electric Arcs
Periclase
see Magnesium Oxides
Peridots
see Olivines
PERIODATES
see also Potassium Periodates
determination in presence of iodides and iodates, 22:14428 (ORNL-4196, pp 33-44)
effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
reaction with hexavalent neptunium to produce heptavalent neptunium, 22:45058
PERIODIC SYSTEMS
(Systematic arrangements and classification schemes for elements or nuclides)
book: Atomic and Nuclear Chemistry. Vol. 1. Atomic Theory and Structure of the Atom, 22:25367
book: The Encyclopedia of the Chemical Elements, 22:45055
Periscopes
see Remote-Viewing Equipment
Peritectic Reactions
see Phase Studies
PERITONEUM
radiation effects on leukocyte count in, of rats, whole-body x, 22:33913

PERLITE
  fabrication of high-temperature heat-insulating articles of, 22:19684(P)
PERMANGANATES
  see also Barium Permanganates
  see also Potassium Permanganates
  see also Silver Permanganates
  effects of ions of, on sorption of uranium by ion exchange resins, 22:47124
  radiation effects on thermal decomposition of, 22:15231
  radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
  reactions with deuterated and normal formate ions, kinetics of isotope effects on, 22:4127
PERMEABILITY
  see also Diffusion
  see also Magnetism
  see also Porosity
  determination for membranes of algae, method for, using electroosmosis and tracer techniques, 22:10681
  erythrocyte membrane to potassium and sodium, effects of p-chlormercuribenzene sulfonate on human, 22:38211
  membrane, for radioisotopes in cylinders, kinetic analysis of, 22:40610
  membrane, for radioisotopes, kinetic analysis of, 22:40611
  properties of tubular epithelium in kidneys of rabbits, effects of uranyl acetate on, 22:14911(R) (COO-1691-1)
  radiation effects on blood vessel, in rats, iodine-131 tracer study of acute x, 22:49621
  radiation effects on, of blood vessels in kidneys of rats following injection of polonium-210, α and γ, 22:23628
  radiation effects on, of blood vessels in skin of rabbits, effects of temperature on topical x, 22:43403
  radiation effects on, of capillaries in epithelium of intestine in mice, combined effects of taurocholic acid on, 22:14910(R) (COO-1244-12)
  radiation effects on, of capillaries of rabbits, effects of antihistaminic and vasoactive drugs on x, 22:28559
  radiation effects on, of cell membranes of green algae, 22:8650
  radiation effects on, of cell walls of Chara, neutron and x, 22:45508(R) (PG-Report-826)
  radiation effects on, of erythrocyte membranes of man, x, 22:23426
  radiation effects on, of human erythrocyte membranes, x, 22:38211
  radiation effects on, of skin, uv, 22:49179(R) (ORO-3578-4)
  radiation effects on, of vessels of lymph system in dogs, x, 22:52005
  radioprotective compound effects on, of rat liver mitochondria, 22:25893
  sodium-24, from blood into tissues of cats, effects of antihistamine preparations and triiotrast on, 22:49258
Permittivity
  see Dielectric Constants
PEROXIDASE
  activity in rats, effects of monoiodoacetic acid on, 22:45618
  apoisoenzymes and isoenzymes of horseradish, activity, amino acid composition and structure of, 22:33718 (UCLA-12-640, pp 61-80)
  conformation of, use of circular dichroism for determination of, 22:25723 (UCLA-12-668, pp 71-84)
  radiation effects on activity of, from horseradish and turnip, effects of ferric chloride, glucose, heat, 3-indolylacetic acid, pH, and sodium bisulfite on electron and gamma, 22:30973
  radiation effects on activity of, in human leukocytes, infrared and radio wave, 22:36197
  radiation effects on activity of, in milk, effects of oxygen on, γ, 22:14950
  radiation effects on activity of, in seed and seedlings of barley, x, 22:17050(R) (EUR-3606)
  radiation effects on distribution of exogenous, in intestines of mice, x, 22:31219
  radiation effects on reaction of, with granulocytes from guinea pigs, x, 22:38215
  radiation effects on, in oranges, β and γ, 22:23694 (IA-1128, pp 168-84)
  synthesis in fungi, effects of mutations on, 22:25206(R) (COO-1301-5)
PEROXIDE, BIS(TRIFLUOROMETHYL)
  photolysis of, spectral studies on, 22:96(R) (RRL-2310-214)
PEROXIDES
  see also Acetyl Peroxide
  see also Benzoyl Peroxide
  see also tert-Butyl Peroxide
  see also Hydrogen Peroxides
  see also Hydroperoxides
  see also Sodium Peroxides
  see also Uranium Peroxides
  benzylidene, decomposition of, kinetic analysis of benzaldehyde formation by, 22:27626 (MIT-905-108, pp 33-62)
  effects on color center properties of sodium fluoride, 22:36963 (AD-664943)
  effects on crosslinking of rubber, 22:25396
  photochemical formation of, review of electron transfer processes in, 22:2150
  radiation effects on radicals of, in glassy poly(methyl methacrylate), spectral studies on x, 22:35847
  radioinduced formation by oxidation of hydrocarbons, x, 22:33394
  radioinduced formation of, in biological materials, ionizing, 22:51480
  radioinduced output of, from peptides, γ, 22:45417
  radioinduced pyrimidine, in Paramecium caudatum, toxic effects of, 22:51983
  radioinduced, in cells, review of, 22:40612
  radioinduced, in oleic acid, radioprotective effects of, on carotene, 22:28303
PEROXYACETIC ACID
  use for sterilization of radium cells, 22:40980
PEROXYBENZOIC ACID
  reactions with substituted acetophenones, effects of carbon-14 on, 22:16485(R) (ORO-3234-6)
Peroxyborates
  see Perborates
PEROXYDICARBONIC ACID, DIISOPROPYL ESTER
  $CuCl_2$--diisopropyl peroxydicarbonate, reactions with benzene and toluene, effects of deuterium on, 22:2106
PEROXYDISULFATES
  see also Ammonium Peroxydisulfates
  see also Sodium Peroxydisulfates
PERRHENATES
  see also Potassium Perrhenates
  see also Uranyl Perrhenates
  reactions with hydrogen sulfides, formation of tetrathioperrhenates in, 22:2083
  separation from hydrochloric acid by solvent extraction using organic oxides, 22:6413
PERRHENIC ACID
  separation by solvent extraction using TBP in benzene, chloroform, and 1,3,5-triethylbenzene, complexing in, 22:37718 (UCRL-17989, pp 181-252)
  separation by solvent extraction using TBP in carbon tetrachloride, 1,2-dichloroethane, and 2-methylheptane complexing in, 22:37718 (UCRL-17989, pp 181-252)
PERSONNEL
  (Information on management, safety hazards, licensing and training, etc., related to a group of persons employed in a particular field of endeavor is included here; for studies of or related to individuals in a group, see also Man.)
  see also Aviation Personnel
  see also Medical Personnel
  see also Military Personnel
  alpha activity in nose-blow samples from, at AERE, 22:38249 (BLG-371)
  alpha hand and shoe monitor for, use of air proportional detectors in, 22:25639
  atomic energy legal aspects training course for administrative and legal, 22:43336
  blast and shock wave effects from TNT explosions on, in coniferous forest, 22:43348 (AD-666822)
  book: Diplomats, Scientists, and Politicians, 22:1943
  book: Means of Individual Protection for Work with Radioactive Materials, 22:40731
  contamination by radioactive materials, methods of dosimetry for determining, 22:51593
  contamination of, Geiger--Mueller detectors for beta particles and gamma radiation for monitoring, 22:25659(P)
  decontamination of skin of, 22:31093
  description of SENA Power Reactor, during October to December 1967, 22:24975(R) (TID-24368)
  dose calculations for LASL criticality excursion in 1946 blood-sodium and mockup analysis for revised, 22:2746 (LA-3861)
  dosimetry by nuclear track registration in solid material, neutron, 22:49348
  dosimetry of AB Atomenergi, during 1966, 22:31057 (AE-312)
  duties of safety officer, in radiotherapy departments, 22:51641
  exposure of operating, during fabrication of FFTF fuel, 22:280 (BNWL-SA-1388, pp 12.1-15)
  exposure to radioactive particles in air, correlation of air and fecal sampling for measurement of, 22:38264 (UCRL-18140, pp 37-55)
  hazards from inhalation of fission products released fro irradiated fuel elements, 22:51572 (RD/B/N-1143)
  hazards of internal contamination to laboratory and industrial, 22:23527
  hazards to uranium mining, 22:15002 (SC-M-67-2959)
  incidence of aberrations of chromosomes in leukocytes of nuclear industry personnel, 22:28436
  incidence of disabling accidents and radiation doses to ORNL, during 1967, 22:43307(R) (ORNL-4286)
  incidence of lung cancer in uranium mining, review of, 22:45703
  incidence of microcythemia in nuclear industry, 22:8634
  inhalation of aerosols and dusts of rare metals by, hazards from, 22:10160(T) (AEC-tr-6710)
  inhalation of radon decay products by, in uranium mines, 22:19328(R) (COO-1500-5)
  lead-210 content of bones of, in uranium mines in relation to inhalation of radon decay products, 22:31082
  management program for LITR, description of

administrative, 22:25095 (ORNL-TM-1737)
monitoring in radiodiagnosis and radiotherapy departments, 22:51640
neutron dosimetry in, use of small proportional counters for, 22:43300 (AERE-PR/HPM-12)
protactinium-231 contamination of laboratory, effects of DTPA on, 22:40514 (CONF-670965-2)
protection against dusts, low temperatures, and x radiation, development of clothing for, 22:49341
protection against fallout contamination of civil and military, under conditions of war, 22:10757 (FOA-4-4491-24)
protection against radioactive dusts and gases, design of plastic suits for, 22:10765(T) (LB/G-2598)
protection from radiation, movable shielded cabin for, 22:47275(P)
radiation damage to chromosomes of, β, γ, neutron, and x, 22:471
radiation dose monitoring for, at Kjeller Research Center, Norway, 22:16356 (KR-116)
radiation dose rates from plutonium to, 22:23084 (BNWL-SA-1644)
radiation dose records of nuclear, techno-legal aspects of development of, 22:38268 (UCRL-18140, pp 277-88)
radiation dose to industrial radiography, γ, 22:45580
radiation dose to industrial, in Czechoslovakia, evaluation of, 22:40674
radiation dose to radium dial painting, in relation to frequency of chromosome aberrations in leukocytes, external γ, 22:28438
radiation dose to reactor, in Canada during 1967, β and γ, 22:33806 (AECL-3063)
radiation dose to, at research reactors, γ and neutron, 22:6818
radiation dose to, determination of maximum permissible, 22:38320
radiation dose to, determination of permissible γ, 22:45526
radiation dose to, during fabrication of high-burnup plutonium, 22:43526 (ANL-7299, pp 114-19)
radiation dose to, EURATOM determination of maximum permissible, 22:19330 (NP-17180)
radiation dose to, following accidental internal exposure to plutonium-239, 22:21552
radiation dose to, ICRP recommendations for maximum permissible, 22:28471
radiation dose to, in nuclear power plants, 22:8536
radiation dose to, in plutonium production centers, use of blood studies, excretion studies, and whole-body counting for measurement of, 22:49342
radiation dose to, operating heavy water reactors, β, 22:2503 (AECL-2756)
radiation dose to, operating reactors, 22:8623
radiation dose to, responsibility of health physicists in estimation of, 22:8521 (CONF-670305-, pp 269-76)
radiation doses to, use of glass and photographic film dosimeters for measuring low, 22:6657
radiation dosimetry for, design and performance of silver-activated phosphate glass radiophotoluminescent dosimeter for, 22:8394
radiation dosimetry in, effects of exchange interval of films on, 22:28490
radiation dosimetry in, performance of ionization chambers, photographic film, and photoluminescent glass detectors for, 22:21519
radiation dosimetry in, performance of photographic film detectors for, 22:21516
radiation dosimetry in, performance of photoluminescent detectors for, 22:21515
radiation dosimetry of accelerator, 22:38328
radiation dosimetry of skin of laboratory, use of ring-type thermoluminescent dosimeter for β or γ, 22:45558
radiation dosimetry of synchrocyclotron, 22:21529
radiation dosimetry of, following exposure to high doses, use of area and personnel dosimeters and clinical evaluation for, 22:21524
radiation dosimetry of, following exposure to low doses, performance of dosimeters for, 22:21524
radiation dosimetry of, in Belgium, 22:21518
radiation dosimetry of, methods based on dose absorbed by organs in relation to time, 22:21511
radiation dosimetry of, methods for γ and x, 22:21512
radiation dosimetry of, performance of photographic film detectors for β, γ, and x, 22:21513
radiation dosimetry of, performance of photographic film detectors for γ and x, 22:21523
radiation dosimetry of, performance of photographic film and photoluminescent glass detectors for, 22:21520
radiation dosimetry of, performance of thermoluminescent detectors for, 22:21514
radiation dosimetry of, performance of thermoluminescent detectors for partial-body and whole-body β, γ, and x, 22:21526
radiation dosimetry of, use of nuclear emulsions for fast neutron, 22:21530
radiation dosimetry of, use of photographic film dosimeters for, in Sweden, 22:21517
radiation effects on blood of, following occupational exposure, effects of time on, 22:33966
radiation effects on bone marrow and blood of, microwave, 22:38462
radiation effects on electrocardiogram and nervous system of radar, microwave, 22:33965
radiation effects on eyes of reactor, 22:8623
radiation effects on hands of, during dental radiography, pathological x, 22:28486
radiation effects on immune reactions in, effects of chronic exposure on, 22:21430
radiation effects on industrial, protective measures against x, 22:51592
radiation effects on industrial, review of accidental, 22:8518 (CONF-670305-, pp 143-54)
radiation effects on laboratory, diagnosis of ionizing, 22:45722
radiation effects on military, command guidance for, 22:49602
radiation effects on motor function in, electromyographic analysis of, 22:38204
radiation effects on phagocytic activity of neutrophil leukocytes of nuclear, chronic ionizing, 22:40896
radiation effects on physiology of radio and television, microwave, 22:28695
radiation effects on, at Lawrence Radiation Laboratory, hematological study of routine, 22:49504
radiation effects on, in luminous paint factories, regulations for protection against, 22:23559
radiation effects on, in nuclear industry, methods for evaluation of γ and neutron, 22:31268
radiation effects on, legislation for medical supervision of, 22:38283
radiation effects on, standards for protection against β and γ, 22:40720
radiation effects on, variables affecting microwave, 22:21585
radiation exposure of uranium mining, hearings before congressional committee on, 22:51668
radiation hazards to beryllium fabrication, air sampling methods for determination of, 22:43302 (CONF-671063-1)
radiation hazards to industrial, from cesium-137 radiography, γ, 22:43406
radiation hazards to oil well logging, using neutron radiometric gages, 22:28489
radiation hazards to plutonium handling, review on factors in controlling, 22:8333
radiation hazards to radar, 22:40718
radiation hazards to radar, protection against, 22:23512(T) (LA-tr-68-12)
radiation hazards to, from handling of radiation sources and radioisotopes, 22:12895 (AED-C-16-03-I)
radiation hazards to, from inhalation of polonium-218, determination of diffusion coefficient in relation to, 22:31092
radiation hazards to, from ovens in food-vending establishments, microwave, 22:33831
radiation hazards to, in radium dial painting, 22:23545
radiation hazards to, in Roumania, standards for protection against, 22:33832
radiation injuries to reactor, following accidents, installation for treatment of, 22:36270
radiation injuries to, legal aspects of, 22:36271
radiation monitoring in, performance of spectrometer for carbon-14 and tritium β, 22:28494
radiation monitoring of hands of, handling radioisotopes, α and β, 22:45562
radiation monitoring of, performance of photographic film dosimeters for, 22:51581
radiation protection for power reactor, standards for, 22:48707
radiation protection of boiler, during use of γ radiometric pressure gages, 22:45579
radiation protection of eyes of industrial, 22:40675
radiation protection of industrial, x, 22:23525
radiation protection of laboratory, handling radioisotopes, standards for, 22:501
radiation protection of mortuary, against radioactive corpses of man, standards for, 22:4625
radiation protection of pharmacy, against radioisotopes, 22:40722
radiation protection of plutonium laboratory, 22:36268
radiation protection of power reactor, analysis of health physics criteria for, 22:53321
radiation protection of reactor, code of practice for, 22:4628
radiation protection of reactor, in Japan, 22:4603(R) (JAERI-5016)
radiation protection of respiratory tracts of, use of gas masks for, 22:28481
radiation protection of space flight, proposed program of Soviet Union for, 22:25831(T) (JPRS-42635, pp 1-6)
radiation protection of uranium mining, standards for, 22:33824
radiation protection of, against atmospheric contamination in laboratories, use of diving suits, gas masks, and respirators for, 22:45575
radiation protection of, against unsealed sources, regulations for, 22:12862
radiation protection of, at Electrical Communication Laboratory in Japan, 22:36276
radiation protection of, confidence limits for radiation measurements in environment in relation to, 22:21535
radiation protection of, dosimetry in reactor environs for, 22:8548
radiation protection of, during handling and processing

of plutonium, 22:4621
radiation protection of, during handling of tritium, 22:21525
radiation protection of, during industrial radiography, γ, 22:45581
radiation protection of, during use of industrial radiography equipment, γ, 22:45578
radiation protection of, employed in industries and laboratories, 22:490 (CONF-660649)
radiation protection of, ICRP recommendations for monitoring work areas in relation to, 22:21531
radiation protection of, in environment contaminated with radioactive aerosols, evaluation of fibers in clothing for, 22:40677
radiation protection of, in France, standards for, 22:36269
radiation protection of, in Germany, standards for, 22:33834
radiation protection of, in industry, review of methods for, 22:49371
radiation protection of, in nuclear industries in France, 22:21533
radiation protection of, in nuclear industry, 22:28479
radiation protection of, in nuclear industry, regulations for, 22:8554
radiation protection of, in nuclear installations, 22:21532
radiation protection of, in plutonium production centers, 22:49342
radiation protection of, in presence of radioactive aerosols, 22:21537
radiation protection of, in presence of radioactive aerosols, 22:21538
radiation protection of, in presence of radioactive aerosols, 22:21536
radiation protection of, in radiochemical laboratories, 22:45574
radiation protection of, in radiochemical laboratories, 22:45587
radiation protection of, in radiochemistry laboratories, 22:45560
radiation protection of, in reprocessing of irradiated fuel, 22:10321 (EURAEC-1938)
radiation protection of, in uranium mines, 22:21539
radiation protection of, in x ray laboratories, recommendations for x, 22:28518
radiation protection of, performance of photographic film dosimeters for, 22:49350
radiation protection of, performance of photographic film dosimeters for, 22:49351
radiation protection of, program for, 22:49330
radiation protection of, program for laser, 22:492 (LA-3731)
radiation protection of, program for microwave, 22:554(R) (UR-49-810)
radiation protection of, training for, 22:28493
radiation protection of, using industrial radiographic equipment and gages, γ, 22:45576
radiation protection of, using radiations and radioisotopes, 22:45583
radiation protection of, using tritium, 22:19345
radiation protection procedures and standards for NERVA test operations, manual of, 22:36255 (NTO-T-0022)
radiation protection programs for, in industries using radioactive materials, 22:45586
radiation protection standards for laser, 22:38252 (CONF-660573-, pp 97-109)
radiation protection standards for, in France, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
radiation protection standards of industrial radiography, in France, 22:36265
radioactive contamination of clothing worn by, in nuclear industry, methods for removal of, 22:8553
radioactive contamination of skin of, in nuclear installation, methods for removal of, 22:12850
radioactive contamination of, from fallout, 22:38356
radioinduced aberrations of chromosomes in leukocytes of radiation, 22:28437
radioinduced aberrations of chromosomes in leukocytes of medical radiology, incidence of x, 22:28439
radioinduced cancer in lungs of mining, 22:25963
radioinduced chromosome aberrations in leukocytes of, incidence of γ and x, 22:8506
radioinduced chromosome aberrations in leukocytes of, 22:4594
radioinduced chromosome aberrations in, following accidental exposure, γ, 22:43406
radioinduced chromosome aberrations in, of nuclear industry, estimation of, 22:31030
radioinduced inflammation of skin of, cytological analysis of x, 22:38442
radioinduced injuries to hands of, following accidental exposure, x, 22:25983
radioisotope decontamination and removal from, review of methods for, 22:38298
radiosensitivity of skin of, effects of, on qualifications for work in nuclear research centers, 22:49530
radiotherapy of diseases of mining, induced by lack of sunlight, uv, 22:33837(T) (JPRS-41315, pp 26-35)
reactor operator training for, description of GE-Dresden, 22:37499
reactor operator training program for, detailed curriculum and schedule for, 22:37450 (WCAP-7170)
safety hazards of power reactors on, effects of radiation, 22:42150 (AECL-3067, pp 29-33)
safety in Eurochemic fuel reprocessing plant at Mol, 22:6424
safety procedures and equipment for maintenance of liquid metal-cooled fast reactor liquid sodium cooling system, description of, 22:46960
safety standards for laser, at Sandia laboratory, 22:51573 (SC-TM-68-436)
safety systems for Savannah River Production Reactors, description of tritium monitoring and protection, 22:35455 (DPSPU-66-30-13)
standards for protection of, against industrial accidents in Germany, 22:33833
standards for protection of, against radioactive aerosols, 22:23508 (SC-M-67-2973)
thorium detection and measurement of thorium activity in, of lamp factory in Brazil by whole-body counting, 22:25829 (TID-24488)
training architectural and engineering, for building construction, 22:4387
training course for reactor operators, basic physics notes for, 22:5917 (APIO-1038)
training for control of radiation accidents, 22:12844 (NP-17209)
training handbook for reactor operators, instrumentation and controls sections of, 22:35670 (ORNL-TM-2034(Vol.5))
training of college, description of reactor physics course for, 22:33104
training of medical and military, for treating atomic warfare casualties, 22:45536
training of reactor operations, requirements for, 22:22683 (DUN-1617)
training of reactor operators, reactor physics instruction handbook for, 22:35669 (ORNL-TM-2034(Vol.3))
training of, description of nuclear materials management course for, 22:33105
training program for AGN--201 reactor experimentation, 22:30341
training program for college, use of time-sharing computers in nuclear engineering, 22:33106
training program for high school, description of traveling lecture-demonstration atomic energy, 22:33107
training program for University of California, description of nuclear engineering, 22:33103
training program for University of Washington, description of nuclear engineering televised seminar, 22:33102
training programs for EURATOM nuclear power plants, 22:20809 (EUR-3662)
training programs for European reactor, 22:5931(R) (NP-17110)
training requirements for operation of proposed power reactors, 22:12052
tritium exposure to, design and performance of photographic film dosimeters for determining, 22:8399
uranium cases among Y-12, showing long chest burden retentions, 22:40703
uranium concentration permissible for, review of, 22:51559 (AHSB(RP)R-77)
uranium contamination of, development of formulas for monitoring and toxicity of, 22:51563 (CEA-R-3361)
uranium content of urine of, use of, for monitoring work area environment, 22:38270
uranium-235 content of industrial, 22:25859 (UCLA-12-668, pp 1-28)

Perspex
see Methacrylic Acid, Methyl Ester, Polymer

PERTECHNETATES
see also Sodium Pertechnetates
clearance of technetium-99-labeled, from human parotid gland, 22:25736
content of gastric juice and saliva, 22:40600
determination in presence of molybdate and perrhenate ions, polarographic method for, 22:2025 (EUR-3641)
dosimetry and performance of technetium-99-labeled, for diagnosis of diseases of salivary glands in man, 22:51778
metabolism of technetium-99 labeled, in thyroid of rats, comparison of, with iodine-131, 22:14961
metabolism of technetium-99-labeled, in man and rats, 22:8451
polarographic behavior of, 22:1951 (JUL-465-RC)
properties of, chemical and physical, 22:2025 (EUR-3641)
radiation dose to man from use of technetium-99-labeled, for brain scanning, 22:2531
reactions with hydrogen sulfides, 22:2083
separation from hydrochloric acid by solvent extraction using organic oxides, 22:6413
use of technetium-99 labeled, for stomach scanning, evaluation of, 22:10786
use of technetium-99-labeled sodium, for scanning human stomachs, 22:31162
use of technetium-99-labeled, for brain scanning, 22:40761
use of technetium-99-labeled, for brain scanning,

  comparison of mercury-197-labeled chlormerodrin to, 22:28562
  use of technetium-99-labeled, for diagnosis of brain tumors, review of, 22:21546
  use of technetium-99-labeled, for scanning of human salivary glands, 22:31183
PERTURBATION THEORY
  accuracy of first-order, for uniformly rotating polytropes, (T), 22:2748
  amplitudes at high energies in quantum electrodynamics, algebraic structure of, 22:3511
  book: Commutation Properties of Hilbert Space Operators and Related Topics, 22:20105
  calculation of multigroup neutron transport in infinite, periodic, plane lattice using, (T), 22:20930 (AEEW-R-219)
  calculation of Weinberg sum rules in sigma-model, 22:24726
  calculations in quantum electrodynamics, comparison of S-matrix and, 22:22444
  commutation relations of renormalized currents for isoscalar and isovector spin-0 meson couplings in, equal-time, 22:39471
  commutator products in, Baker--Hausdorff formula for properties of higher-order, 22:41832
  commutators of nonconserved currents for π + sigma interactions in, equal-time, 22:46396 (DESY-68/37)
  composite particles in nonrelativistic, Z = 0 conditions for, 22:34894
  current commutators for renormalizable quark model in spectral representation for matrix elements of equal-time, 22:20213 (JINR-P2-3661)
  current--current commutators for sigma model in, equal-time, 22:39300 (JINR-P2-3827)
  derivation of generalized, for bi-linear functionals of the real and adjoint neutron fluxes in critical multiplying systems, 22:6179
  development of modern, for reactor physics calculations, 22:20849
  diagrams containing composite particles in model field theory, analytic properties of, 22:3522
  diagrams in, behavior of very-high-order, 22:32205
  energy as perturbation in, kinetic, 22:7414
  energy as perturbation in, kinetic, 22:14100
  energy levels for light atoms, Feynman diagrams for first and second orders for, 22:21864
  for Dirac equation with central electrostatic potential, 22:19793
  for retarded-temperature Green's function, 22:17841
  formalism for composite particles, 22:44343
  formalism for gravitational field--electromagnetic field interactions, 22:35116
  formalism for reaction amplitudes for pseudoscalar mesons on spin-$^1/_2$ fermions in fourth-order, 22:46443
  formalism for response to time-dependent interactions in quantum mechanics, 22:46296
  formalism using variational principles of neutron diffusion theory, 22:1585
  formulation of Coulomb-wave, for atom excitation or ionization by electron impact, 22:9075
  formulation of Hartree--Fock, for many-electron systems, nonorthogonal, 22:21877
  formulation of super, for scattering problems, 22:45929
  formulation of super-, for scattering, 22:50382
  formulation of time-dependent, 22:5480
  formulation without divergences, in field theory with semi-definite metrics, 22:32202
  fuel burnup calculations using, equations for, 22:10080 (NAA-SR-Memo-12491)
  meson field theory in lattice space in, 22:41859
  model for non-Regge terms in single current amplitude, 22:3541
  model for sum rules from current algebra, 22:3294
  model of complex angular momentum theory, signature properties in, 22:41875
  neutron cross-section measurements for, effects on Doppler coefficient of temperature-dependent, (T), 22:35709
  operator equations in, (T), 22:3227
  propagators in square diagrams of, insertions of complex, 22:3507
  quantization of gauge-invariant fields in, 22:26683 (ITF-67-36)
  quantum field, in the case of two states in open shells, 22:13609(T) (ANL-Trans-551)
  Regge poles and cuts in, mixing of, 22:29771
  S-matrix in, asymptotic quantum field theory for, 22:44517
  S-matrix in, unitarity in, 22:15858
  scattering in, smooth method for solution of general equations for multiple-wave, 22:46556
  scattering theory formalism extension in, distortion operator for, 22:46550
  solution for equations of second order, for error estimation in reactivity measurement of fast reactor, 22:37558 (IA-1156)
  solution of terminated ramp and pseudo-random chain code, for optimum reactivity parameters at 20 MW(t) of Dragon Reactor, 22:35420 (AEEW-R-571)
  theory for, limitations of nonlocal, 22:26690 (JINR-P2-3590, pp 44-5)
  thermal neutron density in water-moderated reactor calculations using, analysis of water gap effects on, 22:39884
  Thirring four-fermion model in, 22:5650
  use for current algebra standard identity, 22:7536
  use for sodium void effects on physics measurements in ZPR-6, 22:35628
  use in error analysis of neutron cross sections, (T), 22:32448
  use in error analysis of physics measurements for liquid sodium-cooled fast reactor, 22:35708
  use in nuclear theory, 22:1740
  use with variational principle for variational wave functions, 22:3234
  variational principles in, complementary, 22:24494
PERU
  nuclear power--desalination plant economics in Lima area, 22:44880 (NP-17508)
PERYLENE
  electron attachment cross sections for, nondissociative, 22:35777 (ORNL-TM-2216)
  radiation effects on triplet-singlet energy transfer in benzophenone-containing solutions of, spectral studies on, 22:27626 (MIT-905-108, pp 33-62)
  radiolysis of polystyrene solutions of, spectral studies on electron, 22:10276
  spectra of, excimer emission electrochemiluminescence, 22:27626 (MIT-905-108, pp 33-62)
PERXENATES
    see also Sodium Perxenates
  effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
PESTICIDES
    see also Herbicides
    see also Insecticides
    see also Phosphorothioic Acid, O,O-Diethyl O-[4-(methylthio)-3,5-xylyl] Ester
    see also Phosphorothioic Acid, O,O-Dimethyl O-[4-(methylthio)-m-tolyl] Ester
  analysis of residues of, use of nickel-63 foils with electron-capture detectors for, 22:2439
  determination of residues of, in crops by neutron activation methods, 22:42636
  determination of residues of, in grains by neutron activation methods, 22:48835
  effects on calcium-45 transport through apple skins, 22:49192
  hazards of, reduction of drift method for determination of, 22:6194 (BNWL-SA-1480)
  labeling with gold-198, techniques for, 22:6747
  metabolism in animals, 22:51445
  residue analysis of, cleaning of nickel-63 electron capture detectors used for, 22:19174
  transport through ecological systems of Long Island estuaries, 22:14905 (BNL-50057, pp 111-22)
Peteosthor
    see Radium Isotopes Ra-224
PETN
    see Pentaerythritol Tetranitrate
PETROLATUM
  effectiveness of ointments containing, for topical treatment of human radiodermatitis, 22:28618
PETROLEUM
  analysis for heteroatom content, radioactive absorption method for, 22:27602
  analysis for oxygen and sulfur by fast-neutron activation methods, 22:51
  analysis for sulfur, effects of interfering elements on activation, 22:48831
  analysis for trace elements by neutron activation methods, 22:1989
  analysis for vanadium, spectrophotometric method for, 22:14467
  consumption for electric power generation, predictions to 1985 of US, 22:48958
  exploration by gamma well logging, equipment and methods for, 22:2375
  geochemical prospecting for, use of radium content in stratal underground water in, 22:12433
  pipeline transport of, use of tracer techniques for measurement of, 22:14694
  plasma of, thermodynamic and electric properties of, (T), 22:17436
  pollution of aquatic systems by, carbon isotope ratios as measure of, 22:35928
  processing of crude, for isotropic graphite preparation, 22:23875(P)
  product development from, use of radioisotopes in, 22:8320
  production by retorting oil shales in underground nuclear explosion chimneys using reactor heat, 22:42937 (UCRL-50380)
  production equipment at Baxterville, Miss., for, effects of Sterling Event on, 22:25559 (VUF-1041)
  production of, use of radioisotope tracer methods in, 22:14690
  production of, use of radioisotope tracer methods in, 22:14689
  production of, use of radioisotopes in research on, 22:40330
  production using underground nuclear explosions, review of progress in, 22:51130

prospecting for, development of neutron generator for, 22:11754
prospecting for, well logging method using neutron tube for, 22:30886
radiation effects on aging of, in contact with structural materials, 22:14524
radioinduced oxidation of dearomatized and deparaffinized, effects of water on, 22:16575
radiolysis of PEMEX lubricants and refinery residual, effects of dose on yields from electron and γ, 22:33471
radioprotective effects of products of, on rats, 22:25876
recovery from oil shales using nuclear explosions, 22:10422
recovery from oil shales, use of underground nuclear explosions in Project Bronco for, 22:30742
recovery from shales using underground nuclear explosions, 22:12468(T) (UCRL-Trans-10200)
recovery from shales, use of nuclear explosions in, 22:23186(R) (ORNL-TM-2198)
refining of, use of activable tracers to determine process conditions during, 22:14707
refining of, use of germanium-77 as tracer to determine petroleum product behavior during, 22:14709
tritium contamination of shale, by underground nuclear explosions, 22:45208(R) (ORNL-TM-2298)
tritium separation from shale, processed by underground nuclear explosions, 22:45208(R) (ORNL-TM-2298)
use of white spirits, in decontamination of fabrics, 22:6794 (CEA-R-3159)
mineral oil—terphenyl, radiation resistance of lubricants of, 22:11108(P)

Petroleum Ether
see Ligroine

PETTEN TEST REACTOR
description of, 22:20920

PFR (Great Britain)
see Prototype Fast Reactor

PGCR
see Army Reactors (ML-1)

pH
see Hydrogen Ion Concentration

PHAEOPHYTA
see also Agar-Agar
Ascophyllum nodosum, strontium-89 uptake and retention in, effects of sodium chloride content of water on, 22:43232
Fucus serratus, strontium-89 uptake and retention in, effects of sodium chloride content of water on, 22:43232
Fucus sp., radioactivity content of, in Connecticut during 1961 to 1964, β, 22:40694
Fucus sp., radioactivity content of, in Connecticut during 1961 to 1964, β, 22:28510
Fucus vesiculosus, strontium-89 uptake and retention in, effects of sodium chloride content of water on, 22:43232
radiation effects on, effects of, on extracted agar, γ, 22:4702
radioisotope uptake and retention by, effects of alginate content on calcium-45 and strontium-85, 22:45399
radioisotope uptake by, phosphorus-32 and zinc-65, (E), 22:12455(R) (EUR-3635)
Sargassum sp., radiation monitoring of, from coast of India, natural background, 22:28463

Phaeton Project
see Plowshare Project

PHAGOCYTOSIS
activity in liver and spleen of mice, effects of isologous ribosome injections on, 22:19235(R) (COO-1282-1)
activity in spleen of mice, effects of dimethylbenzanthracene and methylcholanthrene on, 22:19235(R) (COO-1282-1)
activity in spleen of mice, effects of spontaneous mammary carcinomas and lymphomas on, 22:19235(R) (COO-1282-1)
activity in spleen of mice, effects of tumor transplants on, 22:19235(R) (COO-1282-1)
activity of cultured cells from reticulo-endothelial system of rats, effects of environmental factors on, 22:25229 (UR-49-919)
analysis in leukocytes, tracer study of, 22:438
analysis of leukocytic, in rabbits, effects of cystamine on, 22:25886
effects on metabolism in human leukocytes, 22:36180
gold-198 colloids, in rabbits, effects of ethylpalmitate and Thorotrast on, 22:12773
latex particle, by epidermal cells, 22:49179(R) (ORO-3578-4)
particle size effects on, of colloidal gold-198 in rabbits, 22:38469
plutonium oxide, in peritoneal cavity of rats, effects of DTPA and particle size on, 22:10677 (BNWL-480, pp 99-106)
radiation effects on metabolism in human leukocytes during, x, 22:36180
radiation effects on, by macrophages of necrotic cells in thymus of mice, x, 22:36195
radiation effects on, in dogs, proton, 22:23670
radiation effects on, in guinea pigs, acute x, 22:49281
radiation effects on, of carbon particles by reticulo-endothelial system in rats, γ, 22:45706
radiation effects on, of carbon particles in India ink following injection in rats, 22:23617
radiation effects on, of Escherichia coli by guinea pig leukocytes, in vitro x, 22:51909
radiation effects on, of Escherichia coli following intracutaneous injection in rats, microwave and radio wave, 22:19406
radiation effects on, of neutrophil leukocytes of nuclear personnel, chronic ionizing, 22:40896
radiation effects on, of reticulo-endothelial system of rats, tracer study of ionizing, 22:23610
radiation effects on, of reticuloendothelial cells in mice, effects of puromycin on γ, 22:45641
regulation of hepatic, effects of heparin, oxygen, pH, and temperature on, 22:10693
uptake of fibroblasts by leukocytes, effects of uv microbeam on, 22:25728

PHANTOMS
defects in liver, use of scanning for detection of, 22:6859
design and use of line-source, for testing performance of scintillation cameras, 22:38039
design for calibration of whole-body gamma-spectrometers for determination of strontium-90 content of man, 22:8556
design for γ dosimetry in curved surfaces during cesium-137 and cobalt-60 therapy, 22:8546
design for testing depth resolution of scanners, 22:37997 (UCLA-12-689)
development for comparison of gamma cameras and scintillation scanners for radioisotope scanning, 22:49418
development of brain tumor, for testing effects of collimator resolution on technetium-99 scintiscans, 22:49417
development of plexiglass kidney, for calibration of scintigraph, 22:25943
development of thermoluminescent detector-impregnated, of malignant human lung for use in comparison of therapeutic dose of γ, 22:51612
development to determine sources of error in radiocardiography, using chromium-51 for scanning, 22:25776
dose calibration of thimble ionization chambers in water, for 30-MV x rays, 22:380
dose in tissue-equivalent water, of 260- and 660-MeV protons, 22:1287 (JINR-P9-3369)
dosimetry of 3-GeV protons in tissue-equivalent, using activation detectors, 22:21356 (CEA-R-3376)
dosimetry of californium-252 fast neutrons in tissue-equivalent, 22:43109 (TID-24609)
electron depth dose measurements in Presdwood, Presdwood with inhomogeneities, and water, for radiotherapy, 22:51693
electron depth dose measurements in Rando, 35-MeV, 22:51692
fast neutron dosimetry at bone-tissue interface in polythene, 22:516
gamma absorption in water, 22:512
gamma dosimetry in, containing measured dose of technetium-99-labeled pertechnetate, 22:25919
gamma sources in, use of thallium-activated sodium iodide scintillation detectors for whole-body counting of, 22:25645
gamma sources in, use of thallium-activated sodium iodide scintillation detectors for whole-body counting of, 22:25646
materials for tissue-equivalent, 22:25848
meson (π^+) and meson (π^-) absorption in tissue-equivalent, (E), 22:43324
meson (π^-) depth—dose distribution in water, calculated and measured, 22:33828
neutron activation of beryllium and sodium in tissue equivalent, fast and thermal, 22:25961(R) (BNWL-531-2)
neutron dose rate and quality factor distribution in tissue-equivalent, at energies up to 700 MeV, 22:14823(T) (LA-tr-68-8)
neutron dosimetry in tissue-equivalent, californium-252 fission, 22:30866 (BNL-12452)
neutron reactions at 3 and 15 MeV, spectra of recoil particles produced by, 22:6652 (ORNL-4168, pp 183-230)
performance for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance for radiation dose measurements in accelerator environs, 22:21529
photon dosimetry in human, effects of distance and exposure angle on, 22:45566
photon dosimetry in tissue-equivalent, tabulations of calculated absorbed fractions for, 22:36275
proton activation of beryllium and sodium in tissue equivalent, 22:25961(R) (BNWL-531-2)
proton depth-dose measurements in, after homogeneous irradiation, 22:45515
proton reactions with paraffin, use of activation detectors for measuring absorbed doses and fluences from, 22:14865
quality factor of 260- and 660-MeV protons in water, 22:31115
radiation attenuation in tissue-equivalent, x, 22:25848

- radiation distribution in, performance of smaller Gravicert cobalt-60 source for effective γ, 22:38353
- radiation dose distribution in bone and soft tissue, use of Monte Carlo method for determination of neutron, 22:8524 (CONF-670305-, pp 306-17)
- radiation dose distribution in rat, comparison of, with frozen rats, x, 22:40723
- radiation dose distribution in, measurement of γ, neutron, and x, 22:36279
- radiation dose field measurements in water, effects of x-ray contrast media on bremsstrahlung and γ, 22:45630
- radiation dose to cylindrical or ellipsoid tissue-equivalent human, for point sources or uniformly-distributed radioisotopes, measurement of γ, 22:23538
- radiation dose to water, ratio of, to lung tissue dose, photon, 22:21542
- radiation dose to, description of computer program for estimating gamma, 22:38260 (ORNL-TM-2250)
- radiation dose to, methods for measurement and calculation of integral γ and x, 22:25836
- radiation dosimetry in cylindrical tissue-equivalent, effect of slant exposure on fast-neutron, 22:6652 (ORNL-4168, pp 183-230)
- radiation dosimetry in human, calculation of, for depth in central axis, γ, 22:43319
- radiation dosimetry in human, comparison of performance of ionization chambers, photoluminescent dosimeters, and thermoluminescent dosimeters for γ, 22:38325
- radiation dosimetry in human, γ, 22:6803 (ORNL-4168, pp 231-88)
- radiation dosimetry in human, in relation to photon energy measurements for bone marrow, x, 22:51626
- radiation dosimetry in human, whole-body, 22:8513 (CONF-670219)
- radiation dosimetry in tissue-equivalent plastic, measurement x, 22:45544
- radiation dosimetry in tissue-equivalent polystyrene, proton, 22:15005
- radiation dosimetry in tissue-equivalent, effects of penetration depth on neutron, 22:6652 (ORNL-4168, pp 183-230)
- radiation dosimetry in tissue-equivalent, fluence-dose conversion factors for fission neutron, 22:43309(T) (ORNL-tr-1963)
- radiation dosimetry in tissue-equivalent, for calculation of dose field in therapy, 22:45533
- radiation dosimetry in tissue-equivalent, neutron, 22:10759 (JINR-P16-3587)
- radiation dosimetry in water, cobalt-60, 22:509
- radiation dosimetry in water, γ and orthovoltage x, 22:31086
- radiation dosimetry in water, γ and supervoltage x, 22:45596
- radiation dosimetry in water-equivalent, 22:36285
- radiation dosimetry in, bremsstrahlung, γ and x, 22:4613
- radiation dosimetry in, fallout, 22:6831
- radiation dosimetry in, for biological experiments using Stebel apparatus, 22:51620
- radiation dosimetry in, for mantle therapy of lymph nodes, γ, 22:51637
- radiation dosimetry in, for use in calibration of ferrous sulfate dosimeter, β, γ, and x, 22:10774
- radiation dosimetry in, for use in teletherapy, γ, 22:51636
- radiation dosimetry in, for use in therapy of malignant tumors, electron and neutron, 22:45534
- radiation dosimetry in, high-energy proton, 22:8525 (CONF-670305-, pp 318-28)
- radiation dosimetry in, performance of ionization chambers and thermoluminescent detectors for γ and x, 22:28529
- radiation dosimetry of, using combined (fluorescent and transistor) detectors, γ and x, 22:38296
- radiation dosimetry using tissue-equivalent, comparison of γ, neutron, and x, 22:51597
- radiation effects on temperature of tissues of, effects of metal implants on IFR, 22:43343
- radioisotope distribution in, optical transfer function of scintillation cameras used for determining, 22:43045
- thermal neutron activation of calcium in human, 22:36192
- use for calculating kerma dependence on neutron energy, 22:6652 (ORNL-4168, pp 183-230)
- use for calibration of whole-body counter, anthropomorphus, 22:36278
- use for comparison of performance of radioisotope scanning machines, 22:38401
- use for determination of x-ray depth dose curves, 22:40713
- use for determining dose distributions in cobalt-60 planar rotation, 22:47545
- use for determining size of thyroid, evaluation of errors in, 22:36295
- use for dosimetry of neutrons from monoenergetic beams, 22:28456 (ORNL-P-3048)
- use for evaluation of low-energy γ-emitting radioisotopes for use in scintiscanning, 22:38337
- use for evaluation of radiotherapy methods for nasopharyngeal neoplasms, 22:31146
- use for evaluation of scintiscanners, 22:540
- use for measuring scattered x radiation during dental diagnosis, 22:38299
- use for neutron activation analysis of total body calcium, chlorine, nitrogen, phosphorus, and sodium in man, 22:31007
- use for x-ray dosimetry of children for use in therapy of ringworm, 22:31085
- use in evaluation of protective shelters, 22:4386
- use of calibrated, for evaluating AAEC scintillation whole-body counter, 22:37969 (AAEC/TM-450)
- use of carbon tetrachloride—hexane, in ionization detector for dosimetry of photons, 22:14863
- use of heterogenous materials with air cavities as, for bremsstrahlung dosimetry, 22:51618
- use of lung, for calibration of collimator for use with scintillation detectors for xenon-133 scanning, 22:40773
- use of polystyrene, to determine biological 20-MeV electron effects on HeLa cells, 22:28380
- use of standard man, for dosimetry of x radiation during dental radiography, 22:25839
- use of standard man, for dosimetry of x radiation during dental radiography, 22:25838
- use of standard man, for dosimetry of x radiation during dental radiography, 22:25840
- use of water, for dosimetry of therapeutic γ rays using dual carbon-platinum ionization chambers, 22:51613
- use of water, for measurements of γ-dose distribution during pendulum therapy, 22:49349
- use of water, to determine x radiation dose to gonads of man during therapy for hemangiomata, 22:38285
- use to calculate neutron fluence-to-kerma factors for human body, 22:31071
- use to calculate parameters of radiation absorption and scattering in muscle tissue, 22:43329
- use to determine effects of anatomical irregularities on electron dose distribution, 22:51578
- use to determine therapeutic efficiency of modified γ irradiation facilities, 22:31156
- x-ray scattering by Presdwood, secondary radiation from, 22:28497

PHARMACEUTICALS
- development of radioactive, methods for, 22:25859 (UCLA-12-668, pp 1-28)
- preparation of labeled, at Israel AEC, 22:48806(R) (IA-1168)
- radiation effects on chemical and physical properties of hydrocortisone ointments, γ, 22:52100
- radiation effects on survival of bacteria in ointments containing corticosterone, γ, 22:52101
- radiation energy sorption by iodine-125- and -131-, mercury-197- and -203-, and phosphorus-32-labeled solutions of, 22:37819
- radiation processing of solutions of, evaluation of γ, 22:52067
- radioactive, for kidney scanning, evaluation of short-lived, 22:25859 (UCLA-12-668, pp 1-28)
- radiosterilization of fluorescein and neomycin, γ, 22:52103
- radiosterilization of hydrocortisone-containing, γ, 22:52101
- radiosterilization of preparations of hormone, γ, 22:52105
- radiosterilization of thyreoidea, γ, 22:52077
- radiosterilization of vitamin, γ, 22:52104
- radiosterilization of, code of practice of IAEA for, 22:52069
- radiosterilization of, code of practice recommended by IAEA for, 22:52068
- radiosterilization of, design of facilities for γ, 22:52072
- radiosterilization of, design of linear accelerator facility for, 22:52073
- radiosterilization of, developments in U.S.S.R. of γ, 22:40987
- radiosterilization of, economics of γ, 22:52071
- radiosterilization of, facilities and economics for γ, 22:52074
- radiosterilization of, symposium on, 22:52064 (STI/PUB-157)

PHARMACOLOGY
- book: Isotopes in Experimental Pharmacology, 22:2489
- use of radioisotopes in, training programs for protection against, 22:40722

PHARYNX
- radiotherapy of cancer of human, interstitial and intracavitary gold-198, iodine-125, iridium-192, radon-222, and external x, 22:49430
- radiotherapy of carcinomas of human, evaluation of telecesium γ, 22:43379
- radiotherapy of carcinomas of hypo-, in man, high-energy electron, 22:51733
- radiotherapy of malignant tumors of, in man, development and surgical repair of injuries to skin following, 22:47598
- radiotherapy of neoplasms of, evaluation of methods for x, 22:31146
- radiotherapy of neoplasms of, in man, cobalt-60 γ, 22:31171
- radiotherapy of transitional cell carcinomas of, in man, development and treatment of dental decay following, 22:31174
- radiotherapy of tumors in, dose distribution measurements

for evaluating pendulous technique for electron, 22:51691
radiotherapy of tumors of meso-, in man, high-energy electron, 22:51736
PHASE DIAGRAMS
book: Metallography of Refractory Metals and Alloys, 22:15204
calculation for reciprocal salt pairs, 22:52556 (ANL-7425, pp 172-89)
determination in fused salt, by microscopy, 22:31448
determination of, equipment and techniques for, 22:35981
determination of, use of Moessbauer effect in, 22:39189
development of binary alloy, reference data on, 22:10908
methods of determining metal, by carbonyl and evaporation processes, 22:15209(T) (MLM-1381(tr))
thermodynamics of binary and ternary refractory systems, 22:36499
PHASE STUDIES
(Including allotropic formations, eutectoid reactions, nucleation, precipitation, phase transformations, recovery, segregation, etc.)
see also Diffusion
see also Grain Growth
see also Phase Diagrams
see also Solutions
bibliography on high-temperature, 22:5418 (NP-17141)
book: Phase Transformations, 22:31411
method for oxides above 2000°K, 22:31498
methods for metallic uranium, 22:2651
phase boundaries and homogeneity ranges of nonstoichiometric compounds, 22:36499
phase transitions, theory for, 22:6208 (LA-3805)
research progress on nucleation, 22:12161(R) (COO-582-14)
Phasotron (Russian)
see Synchrocyclotrons
PHENANTHRENE
deuterium exchange with hydrogen in perchloric acid--trifluoroacetic acid--water solution of, at 30°C, kinetics of, 22:27632
electron attachment cross sections for, nondissociative, 22:35777 (ORNL-TM-2216)
extinction coefficients of triplet--triplet transition in, pulse radiolytic method for determining, 22:42779
preparation of tritium-labeled, effects of variables on Wilzbach method for, 22:65
structure of, neutron diffraction study of, (E), 22:50223(R) (PRNC-115)
thermal capacities of, 22:10204(R) (COO-1149-102)
thermal capacity anomaly in, effects of deuteration, purification, and dissolution on, 22:25339
PHENANTHRENEQUINONE
radioinduced reaction with olefins, photolysis of oxetanes from γ, 22:14531
1,10-PHENANTHROLINE
complexes with iron, reactions with oxidants, 22:12179(R) (ORO-2858-19)
complexes with molybdenum, effects of benzyl alcohol and thiocyanate on spot test for, 22:18714
complexes with thorium, 22:45048
complexes with uranium and thenoyltrifluoroacetone, fluorescence of urany ion in, 22:16548
complexes with uranyl ions and 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, preparation and properties of, 22:18795
complexes with uranyl nitrate, infrared spectra of, 22:14502
complexes with uranyl nitrate, luminescence spectra of, 22:33304
compounds with rhenium or technetium, preparation and properties of, 22:45032
ferric, use for spectrophotometric study of transguanylations of AET and APT, 22:31181
use in fluorimetric determination of europium and terbium in yttrium oxides, 22:33220
use in gravimetric and volumetric determinations of uranium, 22:33290
PHENAZINE
electrochemistry in acidic methanol solutions, 22:27626 (MIT-905-108, pp 33-62)
photolysis of acidic methanol solutions of, mechanism of uv, 22:27626 (MIT-905-108, pp 33-62)
Phenazone
see Antipyrine
Phenergan (R)
see Promethazine
PHENETHYL ALCOHOL
radiolysis of, EPR spectra of radicals from, 22:18848
α-Phenethyl Chloride
see Benzene, (1-Chloroethyl)-
Phenethylamine, 4-Hydroxy-
see Tyramine
Phenethylamine, α-Methyl-
see Amphetamine
PHENIX FAST REACTOR
cooling system for, design parameters for, 22:35479
core for, design parameters for, 22:35479
core of, design parameters of, 22:16188
description of, 22:37457
description of 250 MW(e), 22:18528
design and performance objectives of, review of preliminary, 22:42147(T) (AEC-tr-6948)
design of, safety criteria for, 22:53361
design parameters for, analysis of, 22:35498
development program for, summary of, 22:50810(R) (TID-24696)
fuel element rupture detection methods in, 22:14257 (CEA-R-3339)
neutron physics measurements for, description of, 22:35625
operating parameters of, 22:16188
operation of, calculation of parameters for optimum, 22:18518
physics calculations for, 22:14149(T) (ORNL-tr-1764)
PHENOBARBITAL
effects on content of cytochrome P-450 in liver of rats, inhibition of, by nickel carbonyl, 22:6216(R) (ORO-3461-9)
effects on enzyme regulation in liver of rats, 22:28623 (ANL-7278, pp 132-43)
effects on γ-radiosensitivity of liver in rats, 22:28623 (ANL-7278, pp 132-43)
PHENOBARBITAL SODIUM
radioprotective effects of vapor of, on survival of mice, x, 22:31252
PHENOL
association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
content of human urine, effects of electromagnetic waves and vibration on, 22:25970
radiation effects on sorption of, by lithium, potassium, and sodium forms of KU-2 ion exchanger, γ, 22:27814
radioprotective effects of, on mice, combined effects of cystamine on x, 22:28548
reactions with bromine in acetic acid, effects of deuterium on, 22:4122
yields in gamma radiolysis of oxygen-saturated benzene solutions containing ferric or ferrous sulfate, 22:23072
yields in γ radiolysis of aqueous anisole solutions, 22:37812
yields in γ radiolysis of aqueous benzene solutions containing oxygen, 22:16584
yields in radioinduced hydroxylation of anisole in dilute aqueous solutions, 22:96(R) (RRL-2310-214)
yields in radiolysis of benzene in aqueous solution in presence of oxygen, effects of acidity on, 22:27813
yields in radiolysis of benzene vapor containing nitrous oxide, 22:30591(R) (RRL-2310-231)
yields in radiolysis of dilute aqueous solutions of fluorobenzene, 22:30591(R) (RRL-2310-231)
yields in radiolysis of gaseous benzene--nitrous oxide mixtures, 22:96(R) (RRL-2310-214)
phenol--water, density isotherms for, (E), 22:12951 (NYO-2731-3)
PHENOL, o-AMINO-
reactions with cytidine, transamination products from, 22:2050
PHENOL, p-AMINO-
yields from radioinduced hydroxylation of 4-nitrophenol, 22:16585
PHENOL, o-BROMO-
enthalpies of intramolecular hydrogen bonds of vapors of deuterated and normal, infrared spectral studies on, 22:4125
PHENOL, p-BROMO-
reactions with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
PHENOL, 4-sec-BUTYL-2-(α-METHYLBENZYL)-
effects on solvent extraction of alkali metals by bis(2-ethylhexyl) phosphate, 22:16691
solvent properties for cesium, 22:16651
solvent properties for cesium, effects of various synergistic reagents and diluents on, 22:33504
PHENOL, m-CHLORO-
association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
PHENOL, o-CHLORO-
association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
enthalpies of intramolecular hydrogen bonds of vapors of deuterated and normal, infrared spectral studies on, 22:4125
PHENOL, p-CHLORO-
association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
PHENOL, 4-CHLORO-2-PHENYL-
solvent properties for cesium, 22:16651
PHENOL, 2,4-DINITRO-
dissociation of, effects of deuterium in solvent on, 22:10221
effects on calcium, potassium, and sodium content of rabbit tissues, 22:47611
effects on calcium-45 and strontium-89 activity in subcellular fractions of rat liver, 22:16989
effects on excretion of phosphorus-32 in urine of x-irradiated rats, 22:51482
effects on flux ratios of solutes through membranes, effects of hyperosmotic solutions on, 22:50891(R)

(RLO-1754-11)
  effects on γ-radiosensitivity of activity of lymphatic hearts of frogs, 22:31132
  effects on γ-radiosensitivity of oxidative phosphorylation and mitochondria of potato tubers, 22:19253
  effects on metabolism of calcium and strontium in Tetrahymena, 22:40515 (NYO-1822-25)
  effects on metabolism of lead-210, polonium-210, and strontium-89 in kidney bean plants, 22:6728
  effects on radioisotope uptake by tracheal cells of guinea pigs, 22:12804
  effects on Rhizobium mutants, correlation of, with uv radiation, 22:40653
  effects on roots in carbon dioxide and air, 22:21011(R) (UCB-34-P-5-47)
  effects on strontium uptake and accumulation by wheat, 22:49206
  effects on x-radiosensitivity of respiration in erythrocytes of rabbits, 22:45428
  radioprotective effects of, on ATP-deficient L cells, x, 22:6749
  radioprotective effects of, on thymocyte nuclei in rats, γ, 22:21581
PHENOL, m-FLUORO-
  yields in radiolysis of dilute aqueous solutions of fluorobenzene, 22:30591(R) (RRL-2310-231)
PHENOL, o-FLUORO-
  enthalpies of intramolecular hydrogen bonds of vapors of deuterated and normal, infrared spectral studies on, 22:4125
PHENOL, p-FLUORO-
  yields in radiolysis of dilute aqueous solutions of fluorobenzene, 22:30591(R) (RRL-2310-231)
PHENOL, o-FORMINIDOYL-
  complexes with copper and nickel, effects of deuterium on, 22:21077
PHENOL, o-IODO-
  enthalpies of intramolecular hydrogen bonds of vapors of deuterated and normal, infrared spectral studies on, 22:4125
PHENOL, m-METHOXY-
  yields in γ radiolysis of aqueous anisole solutions, 22:37812
PHENOL, o-METHOXY-
  yields in γ radiolysis of aqueous anisole solutions, 22:37812
PHENOL, p-METHOXY-
  yields in γ radiolysis of aqueous anisole solutions, 22:37812
PHENOL, 2-METHOXY-4-HYDROXY-
  radioinduced reaction of, with oxygen to yield vanillin, 22:23081(P)
PHENOL, METHYLENEBIS[3,4,6-TRICHLORO-
  effects on uv-photoallergic reactions of skin of man, 22:19361
  effects on uv-radiosensitivity of human skin, 22:49598
PHENOL, m-NITRO-
  association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
  yields in gamma radiolysis of aerated aqueous nitrobenzene solutions, effects of dichromate additions and dose rate on, 22:2116
PHENOL, o-NITRO-
  association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
  dissociation of, effects of deuterium in solvent on, 22:10221
  yields in gamma radiolysis of aerated aqueous nitrobenzene solutions, effects of dichromate additions and dose rate on, 22:2116
  carbon tetrachloride—o-nitrophenol, effects on bonding and interactions in tetradecylammonium uranyl chloride, ir spectral studies on, 22:12299
PHENOL, p-NITRO-
  association equilibrium constants in cyclohexane, carbon tetrachloride, and benzene, 22:22908(R) (SC-CR-68-3521)
  radioinduced hydroxylation of, dehydridation of intermediate cyclohexadienyl radicals in, 22:16585
  yields in gamma radiolysis of aerated aqueous nitrobenzene solutions, effects of dichromate additions and dose rate on, 22:2116
PHENOL, PENTACHLORO-
  effects on calcium-45 and strontium-89 activity in subcellular fractions of rat liver, 22:16989
PHENOL, o-PHENYL-
  solvent properties for cesium, 22:16651
PHENOL, p-PHENYL-
  effects on solvent extraction of tetraheptylammonium fluoride using toluene, 22:37718 (UCRL-17989, pp 181-252)
PHENOL, o-(N-2-PYRIDYLFORMIMIDOYL)-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
PHENOL, 2,2'-THIOBIS[4,6-DICHLORO-
  effects on uv-photoallergic reactions of skin of man, 22:19361
  effects on uv-radiosensitivity of human skin, 22:49598
  radioinduced allergic reactions to, in skin of man, uv, 22:38213
PHENOTHIAZINE
  effects on production of melanin in human skin, combined effects of uv radiation on, 22:4672
  effects on uv-radiosensitivity of skin, 22:40770
  nitrogen-14 nuclear electric quadrupole interaction in, 22:46199 (UCRL-18043, pp 183-98)
Phenothiazine, 2-Chloro-10-(3-dimethylaminopropyl)-
    see Chlorpromazine
Phenothiazine, 2-Chloro-10-[3-(4-methyl-1-piperazinyl)propyl]-
    see Proclorperazine
Phenothiazine, 10-(2-Dimethylaminopropyl)-
    see Promethazine
PHENOXIDES
  polymers, use as solid particle track detector, 22:327
Phenyl Carbinol
    see Benzyl Alcohol
PHENYL DISELENIDE
  reactions with cyclopentadienyl transition metal complexes, 22:27834
PHENYL DISULFIDE
  reactions with cyclopentadienyl transition metal complexes, 22:27834
PHENYL DITELLURIDE
  radiation effects on reactions of, with cyclopentadienyl molybdenum carbonyls, 22:27834
  reactions with cyclopentadienyl transition metal complexes, 22:27834
PHENYL ETHER
  deuterium exchange between methyl sulfoxide and, catalytic effects of lithium and potassium tert-butoxide on, 22:45087
  testing for use as heat pipe fluid, method for life, 22:19033(R) (LA-3881)
  tritium exchange between tritium oxide and, in presence of platinum oxide, effects of internal radiation on rate of, 22:8058
  biphenyl—phenyl ether, pyrolytic degradation at 650 and 700°F, 22:45221(R) (SAN-651-65)
  biphenyl—phenyl ether, stability in organic Rankine cycle power conversion systems, evaluation of thermal, (E), 22:25617(R) (SAN-651-49)
  biphenyl—phenyl ether, thermal stability in organic Rankine cycle power conversion system, fabrication of loop to study, (E), 22:10506(R) (SAN-651-43)
  biphenyl—phenyl ether, thermal stability in Rankine cycle loop tests at 650°F, 22:30768(R) (SAN-651-57)
  biphenyl—phenyl ether, use as working fluid in RISE for hydrospace studies, 22:16743
Phenyl Oxide
    see Phenyl Ether
PHENYL SELENOXIDE
  solvent properties for perrhenate and pertechnetate ions in hydrochloric acid, effects of basicity on, 22:6413
Phenyl Sodium Sulfates
    see Sodium Phenyl Sulfates
PHENYL SULFOXIDE
  complexes with thorium, 22:45048
  oxygen-18 exchange in acetic or chloroacetic acid, 22:42678
  solvent properties for perrhenate and pertechnetate ions in hydrochloric acid, effects of basicity on, 22:6413
Phenylalanine
    see Alanine, Phenyl-
Phenylalaninase
    see Phenylalanine 4-Hydroxylase
PHENYLALANINE 4-HYDROXYLASE
  effects on hydroxylation of deuterated and tritiated phenylalanine, mechanism of, 22:2169
Phenylbutazone
    see 3,5-Pyrazolidinedione, 4-Butyl-1,2-diphenyl-
PHENYLENE POLYMERS
  radioinduced free radicals in, ESR studies of pulsed electron, 22:34130 (NP-17353)
m-PHENYLENEDIAMINE, N'-BENZYLIDENE-N,N-DIMETHYL-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
p-PHENYLENEDIAMINE, N'-BENZYLIDENE-N,N-DIMETHYL-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
p-PHENYLENEDIAMINE, N,N,-DIMETHYL-
  radiolysis of, effects of solvent on absorption spectra from pulse, 22:27775
p-PHENYLENEDIAMINE, N,N,N',N'-TETRAMETHYL-
  effects on isomerization of diaziridinones to aziridine ureas, mechanism of electron transfer in catalytic, 22:27627 (MIT-905-108, pp 63-78)
  radioinduced luminescence in hexene solutions at 77°K, γ, 22:25406
  radioinduced trapped electrons in, in hydrocarbon glasses at 77°K, ESR and optical studies on uv, 22:30627
  radiolysis of, effects of solvent on absorption spectra from pulse, 22:27775
  acetonitrile—N,N,N',N'-tetramethyl-p-phenylenediamine, photolysis of, formation of solvated electron by, 22:51014
PHENYLEPHRINE
  radioprotective effects of, on bone marrow of mice, 22:33841
Phenylmercuric Acetate

see Mercury Acetates, Phenyl-
PHERMEX
see Linear Accelerators
PHILIPPINE ISLANDS
radiation protection in, regulations of government for, 22:4611
use of radioisotopes in, review of industrial, 22:33201
PHILLIPSITES
hydrogen isotopic ratios in, 22:27913
oxygen isotopic ratios in, 22:27913
PHLEOMYCIN
effects on chromosomes in roots of Vicia faba, combined effects of hydroxyurea on aberrant, 22:47505
effects on chromosomes of Vicia faba, effects of hydroxyurea on mutagenic, 22:31022
effects on colony formation and x-radiosensitivity of HeLa cells, 22:8436(R) (NYO-910-58)
Phoebus Reactor
see Rocket Reactors (Phoebus)
PHONONS
see also Crystal Structure
behavior in very weak itinerant ferromagnets, isotope effect on, (T), 22:44231
dispersion curves for hcp metals, comparison with potentials, 22:48170
dispersion curves for, in beryllium and diamond, (T), 22:11873(R) (GA-8085)
dispersion in solid helium at 2.9°K, from slow neutron inelastic scattering, 22:3189
dispersion law in superconducting semiconductors, (T), 22:44051
dispersion relation for hcp ^{4}He, (E), 22:39153 (BNL-12596)
effects on interstellar OH, radio emission from, (T), 22:21788
effects on thermal conductivity of silicon dioxide--uranium dioxide systems, 22:49832
interactions with electrons in solids, theory of isotopic effects in, 22:24440
interactions with individual particle in many-boson system, 22:13387
lifetime in crystals, determination of, (E/T), 22:24376 (CEA-Bib-100)
measurement in metals, three axis crystal neutron spectrometer for, 22:28161
scattering by impurities in solids, (T), 22:1367 (NYO-3699-16)
scattering from He-3 in superfluid He-4, attenuation of first sound above 0.2°K for, (E), 22:41534
theory, dispersive anharmonicities in lattice dynamics of quantum crystals, 22:44236
PHOSGENE
determination in atmosphere, method for, 22:21029 (SC-M-67-3044)
radiation effects on preparation of, by catalysis, 22:48876 (JAERI-1155)
synthesis of, effects of heating temperature and γ-irradiation on catalytic activities of active carbon in, 22:42747
use in separation of tantalum from reaction products of tantalum chloride with calcium fluoride or calcium oxide, 22:23098 (IS-1799)
Phosphatase, Acid
see Acid Phosphatase
Phosphatase, Alkaline
see Alkaline Phosphatase
PHOSPHATE FERTILIZERS
effects on growth of vegetable crops, evaluation of, 22:38287
radiation hazards in, 22:21193
PHOSPHATE ROCKS
see also Phosphates
analysis for rare earths by titration with EDTA, 22:33216
processing of, economics of uranium production as by-product from, 22:27870
radium content of, radiation hazard from, 22:21193
sorptive properties of crandallite for calcium and strontium, 22:37859
thorium content in, radiation hazard from, 22:21193
uranium content of, radiation hazard from, 22:21193
uranium geochemistry in, 22:40218
PHOSPHATES
see also Aluminum Phosphates
see also Ammonium Phosphates
see also Barium Phosphates
see also Calcium Phosphates
see also Cellulose Phosphates
see also Cerium Phosphates
see also Cesium Phosphates
see also Chromium Phosphates
see also Dysprosium Phosphates
see also Erbium Phosphates
see also Fructose Phosphates
see also Glucose Phosphates
see also Glycerophosphates
see also Iron Phosphates
see also Lithium Phosphates
see also Magnesium Phosphates
see also Metaphosphates
see also Plutonium Phosphates
see also Polyphosphates
see also Polysaccharides
see also Potassium Phosphates
see also Pyrophosphates
see also Rubidium Phosphates
see also Sodium Phosphates
see also Thorium Phosphates
see also Tin Phosphates
see also Titanium Phosphates
see also Uranium Phosphates
see also Uranyl Phosphates
see also Zirconium Phosphates
see also Zirconyl Phosphates
analysis for fluoride ions by titration using thorium nitrate, 22:1973
analysis for thorium, 22:10196
content of blood of rats, effects of parathyroid hormone, thyrocalcitonin, and vitamin D on, 22:6200(R) (COO-1668-3)
content of buffer, effects of, on radioinduced toxicity of Endoxan for Escherichia coli and HeLa cells, 22:23473
content of diet of chicks, effects of, on strontium-89 content of tissues in chicks, 22:36215
content of diet of rats in relation to activity of parathyroid glands, 22:6201 (CU-2530-10)
content of diet, effects of, on strontium-89 deposition in bones and eyes of young chickens, 22:28334
content of diet, effects of, on strontium-89 metabolism in chickens, 22:36215
content of soluble, in plants, colorimetric determinatio of, 22:22904 (PRNC-104, pp 90)
determination by neutron activation methods, radiochemical column separation procedures in, 22:25284
determination in aqueous solutions by automatic radiometric method, 22:18687 (EUR-3738)
determination in fertilizers by automatic radiometric method, 22:18687 (EUR-3738)
determination in uranium ore leach solutions, colorimetric, 22:25236 (CEA-N-616, pp 20-71)
determination of, fluorometric, 22:14428 (ORNL-4196, pp 33-44)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
effects on colorimetric determination of uranium, 22:33262
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on crystallite growth of beryllium oxide powders during sintering, 22:49809
effects on defect formation in gamma-irradiated calcium molybdates and calcium tungstates, ESR studies of, 22:41664
effects on determination of fluorides by thermometric titration, 22:4039
effects on metabolism of cerium-144, plutonium-239, and yttrium-91 in rats, combined effects of epinephrine, diuretics, and EDTA on, 22:12787
effects on precipitation of molybdenum and tungsten with zirconium hydroxide, 22:8063
effects on radiation effects on potassium chromate crystals, 22:33396
effects on recovery of γ-irradiated Escherichia coli, 22:26012
effects on x-radiosensitivity of nuclei in thymocytes of rats, 22:21437
effects on yttrium-91 metabolism in mice, 22:43210
leach tests on durability of glasses of, for disposal of radioactive waste, 22:18906
phosphorus-32 concentration in neutron-irradiated, by Szilard--Chalmers effect, 22:16591
production of super-, use of radioactive tracers for measurement of material flow and mixing conditions during, 22:14706
properties for solidification of radioactive wastes in, effects of component concentration on, 22:23244 (BNWL-544)
radiation effects on content of, in liver of mice, effects of diet on, 22:47580
radiation effects on glasses of, 22:35837
radiation effects on glasses of, ESR spectra from γ, 22:4220
radiation effects on metabolism of, by tomatoes, x, 22:2483
radiation effects on metabolism of, in yeast, phosphorus-32 β, 22:28354
radiation effects on silver-activated glasses of, optica and ESR studies of x, 22:106
radiation effects on uptake of, by embryos of barley, effects of water content on γ and x,, 22:6723
radiation effects on, ESR studies of unstable intermediates in, 22:25405
radioinduced color centers in glassy, mechanism of,

22:30606
radioinduced formation of radicals of, in ice matrices, electron transfer in, 22:2150
radioinduced photoluminescent centers in silver-activated glasses of, formation and stability of gamma, (E), 22:7360
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
separation from bone ash by electrodialysis, 22:14430 (ORNL-4196, pp 55-9)
separation of cerium from nitrate-containing solutions of, by solvent extraction using ethylenebis[dioctylphosphine oxide], 22:10331
separation of labeled, from sulfate ions by coprecipitation with iron hydroxide, 22:45171
sorption by crystalline cerium oxides, thorium oxides, or zirconium oxides, 22:47122
use in determination of lanthanum by flame photometric titration, 22:48836
use of glasses of, for photoluminescent dosimetry of x and gamma radiation simultaneous with neutron activation dosimetry, 22:14859
use of thorium- or uranium-doped glassy, for neutron dosimetry by registration of fission-fragment tracks, 22:23336

PHOSPHATIDES
see also Lecithins
determination in coleoptile tissues of oats, 22:19263
effects on free radical-induced hemolysis in irradiated animal tissues, 22:28291
phosphorus-32 uptake by, in oats, effects of indoleacetic acid on, 22:19263
preparation of labeled, review of methods for, 22:40570
radiation effects on content of, in brain, liver, and muscles of guinea pigs, latent, 22:51351
radiation effects on content of, in erythrocyte stroma in rabbits, x, 22:40824(T) (JPRS-44070, pp 19-23)
radiation effects on content of, in liver of newborn rats, x, 22:10699
radiation effects on elastic conductivity of membranes containing, effects of dose on x, 22:45413
radiation effects on structure of, in organs of rabbits, x, 22:16992
radiation effects on, of human plasma, x, 22:23456
use of phosphorus-32 labeled ethiodol-lecithin, for therapy of lymphoma of man, 22:8564

PHOSPHENES
(A luminous impression on the retina caused by excitation other than light.)
radiation effects on, of frogs, effects of monochromatic light on x, 22:43252
radioinduced, in human eyes, γ, 22:28693
radioinduced, in humans, medical uses and review of phenomenon of x, 22:28580

PHOSPHIDES
see also Cerium Phosphides
see also Chromium Phosphides
see also Dysprosium Phosphides
see also Erbium Phosphides
see also Europium Phosphides
see also Gadolinium Phosphides
see also Gallium Phosphides
see also Hafnium Phosphides
see also Holmium Phosphides
see also Indium Phosphides
see also Lanthanum Phosphides
see also Neodymium Phosphides
see also Niobium Phosphides
see also Platinum Phosphides
see also Plutonium Phosphides
see also Praseodymium Phosphides
see also Rare Earth Phosphides
see also Tantalum Phosphides
see also Terbium Phosphides
see also Thorium Phosphides
see also Thulium Phosphides
see also Titanium Phosphides
see also Uranium Phosphides
see also Vanadium Phosphides
see also Ytterbium Phosphides
see also Zinc Tin Phosphides
see also Zirconium Phosphides
analysis for phosphorus in presence of uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of inclusions of, for gold by neutron activation methods, 22:18718

PHOSPHINE
electric field gradient for deuteron sites of deuterated, one-center expansion wave functions in calculation of, 22:12279
photolysis of, review on, 22:25421
reactions of substituted, with alkali metals, 22:22901(R) (ORO-2733-13)
thermodynamic properties of liquid, significant structure theory of, 22:4155
butadiene--PH$_3$, radiolysis of, yields of silicon-31-labeled products in fast neutron, 22:48874(R) (COO-1713-5)
ethylene--PH$_3$, radiolysis of, yields of silicon-31-labeled products in fast neutron, 22:48874(R) (COO-1713-5)
PH$_3$--SiH$_4$, radiolysis of, yields of silicon-31-labeled products in fast neutron, 22:48874(R) (COO-1713-5)

PHOSPHINE, DIMETHYLPHENYL-
reactions with methyl p-toluenesulfonate, secondary deuterium isotope effects in, 22:8080
reactions with methyl tosylate, effects of deuterium on, 22:4158

PHOSPHINE OXIDE
complexes with americium and neptunium bromides, preparation of, 22:37722
deuterium--hydrogen exchange in asymmetric secondary, 22:25368
preparation of asymmetric secondary, 22:25368
racemization in asymmetric secondary, 22:25368
reactions with uranium tetrachloride or uranyl chloride, properties of compounds from, 22:40063
trialkyl derivatives, solvent properties for rare earths and yttrium, 22:18876
use in chromatographic separation of niboium and zirconium, 22:146

PHOSPHINE OXIDE, BENZYLPHENYL-
deuterium exchange between methanol and, 22:33327

PHOSPHINE OXIDE, ETHYLENEBIS[DIHEXYL-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
ethylenebis[dihexylphosphine oxide]--4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, solvent properties for europium, 22:6368 (IS-T-197)

PHOSPHINE OXIDE, ETHYLENE BIS[DIOCTYL-
effects on solvation of uranyl nitrates, 22:16545
solvent properties for cerium in nitrate and nitrate--phosphate solutions, 22:10331

PHOSPHINE OXIDE, METHYLENEBIS[BIS(2-ETHYLBUTYL)-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)

PHOSPHINE OXIDE, METHYLENEBIS[BIS(3,3-DIMETHYLBUTYL)-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)

PHOSPHINE OXIDE, METHYLENEBIS[BIS(2-ETHYLHEXYL)-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)
solvent properties for dysprosium, holmium, and terbium nitrates, ir spectral studies on, 22:6402
use for separating rare earth nitrates by extraction chromatography, 22:16665

PHOSPHINE OXIDE, METHYLENEBIS(DIHEXYL-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
complexes with neptunium and plutonium, kinetic studies of, 22:27893
complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)
solvent properties for erbium nitrate, 22:6402
solvent properties for niobium, tantalum, and zirconium in chloride, nitrate, and sulfate solutions, 22:6403
solvent properties for nitric and perchloric acids and water, ir spectral studies on, 22:6402
use for separating rare earth nitrates by extraction chromatography, 22:16665
methylenebis[dihexylphosphine oxide]--4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, solvent properties for europium, 22:6368 (IS-T-197)

PHOSPHINE OXIDE, TETRAMETHYLENEBIS[DIHEXYL-
chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)
tetramethylenebis[dihexylphosphine oxide]--4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, solvent properties for europium, 22:6368 (IS-T-197)

PHOSPHINE OXIDE, TRIBUTYL-
complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
complexes with uranyl fluorides in benzene solution, spectral studies on structure of, 22:16544
complexes with uranyl perrhenate, preparation and properties of, 22:16488
reactions with uranium tetrachloride, effects of media on, 22:33323
solvent properties for cerium, 22:42817 (UJV-1924)
solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
solvent properties for perrhenate, pertechnetate, and uranyl ions, effects of basicity on, 22:6413
solvent properties for ruthenium, 22:42816 (UJV-1921)
solvent properties for uranium in hydrochloric acid solutions, spectral studies on, 22:6406
D$_2$O--tributylphosphine oxide, melting diagram for, 22:6407
H$_2$O--tributylphosphine oxide, melting diagram for, 22:6407
H$_2$O--tributylphosphine oxide, phase studies on mutual solubility in, as function of temperature, 22:6407

PHOSPHINE OXIDE, TRIHEXYL-

- solvent properties for cerium, 22:42817 (UJV-1924)
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
- solvent properties for ruthenium, 22:42816 (UJV-1921)

PHOSPHINE OXIDE, TRIMETHYLENEBIS[DIHEXYL-
- chromatographic behavior of, gas and fragmentation-gas, 22:6289 (IS-T-184)
- complexes with uranyl nitrate, gas chromatographic behavior of, 22:6289 (IS-T-184)
- 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione--trimethylenebis[dihexylphosphine oxide], solvent properties for europium, 22:6368 (IS-T-197)

PHOSPHINE OXIDE, TRIOCTYL-
- complexes of, distribution of, between sulfuric acid and hexane or carbon tetrachloride, 22:47216
- complexes with beryllium, ir spectra of, 22:45040
- complexes with uranium(VI) and dibutyl phosphate in hexane and carbon tetrachloride, formation of, 22:47217
- effects on solvent extraction of rare earths using 4,4,4-trifluoro-1-phenyl-1,3-butanedione, 22:8178
- effects on solvent extraction of strontium using D2EHPA, synergistic, 22:42807 (BNWL-759)
- effects on solvent properties of 2,4-pentanedione for scandium, 22:51068
- effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
- solvent properties for americium and lanthanides, 22:37640(T) (ANL-Trans-628, pp 2-50)
- solvent properties for thorium and cerium, 22:27873
- solvent properties for water in carbon tetrachloride, ir spectral studies on, 22:6402
- 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione--trioctylphosphine oxide, solvent properties for europium, 22:6368 (IS-T-197)
- carbon tetrachloride--dibutyl phosphate--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- dibutyl phosphate--hexane--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401

PHOSPHINE OXIDE, TRIPHENYL-
- complexes with plutonium tetrabromide and uranium pentabromide, preparation and properties of, 22:37722
- complexes with thorium, 22:45048
- complexes with uranyl acetate and uranyl nitrate, crystal structure of, 22:27716
- complexes with uranyl bromide, chloride, nitrate, and thiocyanate, ir spectral studies on, 22:16559
- complexes with uranyl ions containing nitrate and oxygen groups, molecular structure of, 22:50973
- effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
- solvent properties for metal anions, effects of basicity on, 22:6413

Phosphine Oxide, Tris(1-aziridinyl)-
- see Triethylenephosphoramide

PHOSPHINE OXIDE, TRIS(2-METHYL-1-AZIRIDINYL)-
- effects on digestion of blood meal by mosquitoes, 22:2546

PHOSPHINE, PHENYL-
- radiation effects on, ESR spectral studies on yields in γ, 22:8111(T) (AEC-tr-6908, pp 216-36)

PHOSPHINE SELENIDE
- complexes of trisubstituted, with iodine, formation and thermodynamic properties of, 22:22901(R) (ORO-2733-13)

PHOSPHINE, TRIBUTYL-
- radioinduced reactions with aryl halides, formation of quaternary phosphonium salts from γ, 22:27746

PHOSPHINE SULFIDE
- reactions of substituted, with alkali metals, 22:22901(R) (ORO-2733-13)

Phosphine Sulfide, Tris(1-aziridinyl)-
- see Triethylenethiophosphoramide

PHOSPHINE, TRIPHENYL-
- complexes with hydridonitrogen cobalt, isotopic exchange between deuterium gas and, 22:18771
- effects on radiation effects on poly(methyl methacrylate), mechanism of, 22:16587
- effects on radioinduced polymerization of butadiene, 22:33387
- radioinduced reactions with aryl halides, formation of quaternary phosphonium salts from γ, 22:27746
- solvent properties for americium and lanthanides, 22:37640(T) (ANL-Trans-628, pp 2-50)

PHOSPHINIC ACID, DIBUTYL-, BUTYL ESTER
- solvent properties for cerium, 22:42817 (UJV-1924)
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
- solvent properties for plutonium and uranium, 22:16648 (UJV-1312)
- solvent properties for ruthenium, 22:42816 (UJV-1921)
- solvent properties for uranium in hydrochloric acid solutions, spectral studies on, 22:6406
- butyl dibutylphosphinate--H_2O, phase studies on mutual solubility in, as function of temperature, 22:6407
- butyl dibutylphosphinate--H_2O--H_2SO_4, phase studies on solubility in, 22:6407
- butyl dibutylphosphinate--H_2O--$UO_2(NO_3)_2$, phase studies on solubility in, as function of temperature, 22:6407
- butyl dibutylphosphinate--H_2O--$UO_2(NO_3)_2$, thermodynamic properties of, 22:50976
- butyl dibutylphosphinate--HNO_3--H_2O, phase studies on solubility in, 22:6407

PHOSPHINIC ACID, DIBUTYL-, ETHYL ESTER
- solvent properties for perrhenate, pertechnetate, and uranyl ions, effects of basicity on, 22:6413
- ethyl dibutylphosphinate--H_2O, phase studies on mutual solubility in, as function of temperature, 22:6407

PHOSPHINIC ACID, DIBUTYL-, METHYL ESTER
- H_2O--methyl dibutylphosphinate, phase studies on mutual solubility in, as function of temperature, 22:6407

PHOSPHINIC ACID, DIBUTYL-, PROPYL ESTER
- H_2O--propyl dibutylphosphinate, phase studies on mutual solubility in, as function of temperature, 22:6407

PHOSPHINIC ACID, DIISOPENTYL-, BUTYL ESTER
- solvent properties for cerium, 22:42817 (UJV-1924)
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
- solvent properties for ruthenium, 22:42816 (UJV-1921)

PHOSPHINIC ACID, DIMETHYL-, BUTYL ESTER
- solvent properties for cerium, 22:42817 (UJV-1924)
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
- solvent properties for ruthenium, 22:42816 (UJV-1921)

PHOSPHINIC ACID, DIPHENYL-, BUTYL ESTER
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)

PHOSPHINIC ACID, DIPHENYL-, PHENYL ESTER
- solvent properties for perrhenate, pertechnetate, and uranyl ions, effects of basicity on, 22:6413

PHOSPHINOUS BROMIDE, BIS(DIBROMOMETHYL)-
- formation by γ-induced reaction between bromoform and white phosphorus, 22:37782

PHOSPHITES
- see also Alkyl Phosphites
- see also Hypophosphites
- radiation effects on, ESR studies of unstable intermediates in, 22:25405

Phosphocreatine
- see Creatinephosphoric Acid

PHOSPHODIESTERASE
- activity in intestine of rats, effects of chlorambucil and myleran on, 22:36399
- effects on RNA turnover in cell nucleus, 22:12173(R) (NYO-3621-5)
- radiation effects on activity of, in intestine of rats, whole-body x, 22:36399

PHOSPHOFRUCTOKINASE
- radiation effects on activity of, in liver of mice, effects of starvation on whole-body x, 22:31010
- radiation effects on activity of, in thymocytes of rats, x, 22:45431

PHOSPHOGLUCOMUTASE
- radiation effects on activity of, in bone marrow cells o rabbits, x, 22:33728
- radiation effects on activity of, in liver and spleen of rats, whole-body ionizing, 22:40589

PHOSPHOLIPASE A
- radiation effects on activity of, in intestinal mucosa o rats, x, 22:553(R) (ORO-3329-3)
- radiation effects on sensitivity of proteins in erythrocyte cell membrane to, x, 22:23442

PHOSPHOLIPASE B
- radiation effects on activity of, in intestinal mucosa o rats, x, 22:553(R) (ORO-3329-3)

Phospholipins
- see Phosphatides

4-PIPERIDONE, 2,2,6,6-TETRAMETHYL-, N-OXIDE
- effects on radiosensitivity of anoxic cells, 22:21410(R (YALE-2653-30)

PHOSPHOMOLYBDATES
- see also Ammonium Phosphomolybdates

PHOSPHONIC ACID, (α-ANILINOBENZYL)-, OCTYL ESTER
- solvent properties for barium and lanthanum in hydrochloric acid solutions, 22:37847

PHOSPHONIC ACID, BUTYL-, DIBUTYL ESTER
- effects on solvent extraction of strontium using D2EHPA, synergistic, 22:42807 (BNWL-759)
- solvent properties for americium, 22:21018 (ARH-SA-1)
- solvent properties for cerium, 22:42817 (UJV-1924)
- solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
- solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
- solvent properties for plutonium and uranium, 22:16648 (UJV-1312)
- solvent properties for ruthenium, 22:42816 (UJV-1921)
- solvent properties for uranium in hydrochloric acid solutions, spectral studies on, 22:6406

PHOSPHONIC ACID, (CHLOROMETHYL)-
  production of labeled, by reactions of recoil phosphorus atoms with chloromethanes, mechanism of, 22:30595
PHOSPHONIC ACID, DIETHYL ESTER
  hydrolysis of, bond fission in, 22:27639
  solvent properties for thorium and uranium in nitric acid solutions, 22:33489
PHOSPHONIC ACID, (DICHLOROMETHYL)-
  production of labeled, by reactions of recoil phosphorus atoms with chloromethanes, mechanism of, 22:30595
PHOSPHONIC ACID, DIMETHYL ESTER
  hydrolysis of, bond fission in, 22:27639
PHOSPHONIC ACID, DIPROPYL ESTER
  deuterium exchange between heavy water and, 22:27639
  oxygen-18 exchange between water and, 22:27639
  solvent properties for thorium and uranium in nitric acid solutions, 22:33489
PHOSPHONIC ACID, ISOPENTYL-, DIBUTYL ESTER
  solvent properties for cerium, 22:42817 (UJV-1924)
  solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
  solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
  solvent properties for ruthenium, 22:42816 (UJV-1921)
PHOSPHONIC ACID, METHYL-, DIBUTYL ESTER
  solvent properties for americium and lanthanides, 22:37640(T) (ANL-Trans-628, pp 2-50)
  solvent properties for cerium, 22:42817 (UJV-1924)
  solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
  solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
  solvent properties for ruthenium, 22:42816 (UJV-1921)
PHOSPHONIC ACID, METHYL-, DIPENTYL ESTER
  solvent properties for uranium in hydrochloric acid solutions, spectral studies on, 22:6406
PHOSPHONIC ACID, METHYLENEDI-, DIOCTYL ESTER
  solvent properties for niobium and tantalum, 22:42833
  solvent properties for niobium and tantalum in hydrochloric and oxalic acid solutions, 22:6411
PHOSPHONIC ACID, 1-OXOOCTYL-, DIOCTYL ESTER
  solvent properties for niobium, tantalum, and zirconium in chloride, nitrate, and sulfate solutions, 22:6403
PHOSPHONIC ACID, PHENYL-, 2-ETHYLHEXYL ESTER
  solvent properties for cations in chloride and nitrate solutions, effects of zirconium on, 22:48905
  solvent properties for lanthanides, effects of enthalpy and entropy on, 22:2182
  solvent properties for rare earths, 22:2183
PHOSPHONIC ACID, PHENYL-, DIBUTYL ESTER
  determination of nitric-degraded, in diethylbenzene, gas chromatographic, 22:33257
  effects on solvent extraction of strontium using D2EHPA, synergistic, 22:42807 (BNWL-759)
  solvent properties for cerium, 22:42817 (UJV-1924)
  solvent properties for nitric acid and uranyl nitrate, 22:21158 (UJV-1148)
  solvent properties for ruthenium, 22:42816 (UJV-1921)
  solvent properties for thorium and uranium in nitric acid solutions, 22:33489
PHOSPHONIC ACID, PHENYL-, DIPHENYL ESTER
  solvent properties for niobium-95 and zirconium-95 and uranium, 22:25467 (UJV-1912)
  solvent properties for perrhenate, pertechnetate, and uranyl ions, effects of basicity on, 22:6413
PHOSPHONIC ACID, PYRUVYL-, DIOCTYL ESTER
  solvent properties for niobium, tantalum, and zirconium in chloride, nitrate, and sulfate solutions, 22:6403
PHOSPHONIC ACID, SUCCINIMIDO-, DIBUTYL ESTER
  solvent properties for elements, 22:16666
PHOSPHONIC ACID, (TRICHLOROMETHYL)-
  production of labeled, by reactions of recoil phosphorus atoms with chloromethanes, mechanism of, 22:30595
PHOSPHONIC ACID, VINYL-, DICHLORIDE
  radioinduced polymerization of, γ, 22:33386
PHOSPHONIC ACID, VINYL-, BIS(2-CHLOROETHYL) ESTER
  radioinduced polymerization of, γ, 22:33386
PHOSPHONITRILE CHLORIDES
  radiation effects on thermoluminescence of, x, 22:30635
  radioinduced polymerization of, review on electron and uv, 22:25421
PHOSPHONIUM COMPOUNDS
  alkylphosphonium hexachlorothorate, spectra of, Raman and ir, 22:35821
  alkylphosphonium hexachlorouranates, spectra of, Raman and ir, 22:35821
  benzyltributylphosphonium chloride, preparation of, 22:14483 (ORNL-4196, pp 91-2)
  butyltriphenylphosphonium bromide, complexes with various metals and pyrocatechol, 22:48906
  electric field gradient for deuteron sites of deuterated, one-center expansion wave functions in calculation of, 22:12279
  formation by gamma-induced reactions of triphenylphosphine or tributylphosphine with aryl halides, 22:27746
  propyltriphenylphosphonium bromide, complexes with various metals and pyrocatechol, 22:48906
  tetrabutylphosphonium bromide, preparation of, 22:14483 (ORNL-4196, pp 91-2)
PHOSPHONIUM IODIDES
  phosphonium ion motion in, 22:6193 (BNL-11836)
  radioinduced color centers in single-crystal, EPR study of I_2^-, x-, 22:20056
PHOSPHONIUM IONS
  motion in phosphonium iodides, 22:6193 (BNL-11836)
PHOSPHONOUS DIBROMIDE, DIBROMOMETHYL-
  formation by γ-induced reaction between bromoform and white phosphorus, 22:37782
PHOSPHOPROTEINS
    see also Casein
    see also Egg Yolks
    see also Milk
  radiation effects on metabolism of, in brain of guinea pigs, effects of folic acid on x, 22:19454
PHOSPHOPYRUVATE HYDRATASE
  radiosensitivity of, effects of copper ions on, 22:23398 (IA-1128, pp 147-55)
Phosphor Bronze
    see Bronze
PHOSPHORAMIDIC ACID, 2,4-DICHLOROPHENYL METHYL ESTER
  hydrolysis of alkyl substituted, effects of deuterium on, 22:33326
PHOSPHORESCENCE
    see also Fluorescence
    see also Luminescence
    see also Phosphors
  conference on, Munich, September 6 to 9, 1967, parts I and II, 22:8155
  radioinduced, in DNA, uv, 22:10823
PHOSPHORIC ACID
  analysis for cerium, voltammetric, 22:14437
  analysis for trace fluorides, effects of metal ions on potentiometric, 22:33244
  analysis for uranium, method for, 22:27846 (CEA-N-816, pp 277-323)
  complexes with boron trifluoride, tritium exchange between hydrocarbons and tritiated, 22:18807 (EUR-3731)
  complexes with plutonium, effects of concentration on, 22:8072
  complexes with protactinium, solvent extraction method for calculating constants of, 22:6387
  corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
  corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
  corrosive effects on tungsten, 22:43530 (BM-RI-7169)
  corrosive effects on TZM molybdenum alloys, 22:43530 (BM-RI-7169)
  determination in acetone solutions, method for, 22:25236 (CEA-N-616, pp 20-71)
  effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
  effects on oxidation of tantalum at 500 to 625°C, analysis of, 22:48788
  effects on polarographic behavior of uranium, 22:27535 (NIM-129)
  effects on strontium-89 metabolism in tissues of chicks, 22:14973
  effects on titrimetric determination of chromium, molybdenum, and vanadium, 22:22948
  photolysis of, review on, 22:25421
  production of labeled, by reactions of recoil phosphorus atoms with chloromethanes, mechanism of, 22:30595
  radiation effects on glossy, at 77°K, EPR studies of γ, 22:30640
  radiation effects on incorporation of phosphorus-32 labeled, into the DNA of splenic lymphocytes from hamsters, x, 22:23604
  radioinduced thermoluminescence of, effects of phase transitions on x, 22:16593
  radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
  reactions with plutonium and uranium in aqueous solutions, spectral studies on coexistence of tetravalent metals in, 22:40057
  residues of, effects of, on γ-radiosensitivity of nucleotides, purines, and pyrimidines, 22:33770
  solvent properties for clad ceramic fuels, 22:19670 (BNWL-624, pp 6.1-20)
  ethylene glycol--H_3PO_4, use in electrolytic cleaning of plutonium, 22:23749(P)
  HF--H_3PO_4--$K_2Cr_2O_7$, use as a solvent in spectrophotometric determination of nitrogen in refractory metals and alloys, 22:16448
  HNO_3--H_2SO_4--H_3PO_4, solvent properties of aqueous, for clad ceramic fuels, 22:19670 (BNWL-624, pp 6.1-20)
PHOSPHORIC ACID, ALKYL ESTERS
  photolysis of, review on, 22:25421
  use in paper chromatographic separation of rare earths, 22:42630
  yields of phosphorus-32-labeled, in neutron irradiated carbon tetrachloride in presence of alcohols, mechanism of, 22:30596
PHOSPHORIC ACID, 2-AMINOETHYL ESTERS
  determination of carbon-14-labeled, radiochromatographic, 22:6279
PHOSPHORIC ACID, ARYL ESTERS
  photolysis of, review on, 22:25421
PHOSPHORIC ACID, BIS(2-ETHYLHEXYL) ESTER
  complexes with beryllium, ir spectra of, effects of deuterium on, 22:45040
  complexes with plutonium and uranium, charge transfer

- transitions in, 22:37745
- solvent properties for alkali metals, effects of 4-sec-butyl-2(α-methylbenzyl)phenol on, 22:16691
- solvent properties for calcium and strontium, effects of diluent on, 22:45154
- solvent properties for cerium, 22:2185
- solvent properties for cerium, 22:42595 (UJV-1978)
- solvent properties for cerium and yttrium, 22:42844
- solvent properties for cerium in nitrate solutions, complex formation and oxidation in, 22:47202 (BNWL-SA-1447)
- solvent properties for cerium in presence of fission products, 22:33271
- solvent properties for cerium, yttrium, and zirconium, 22:27836
- solvent properties for cesium, 22:16651
- solvent properties for cesium, ruthenium, strontium, and zirconium in presence of uranyl ions, 22:33271
- solvent properties for heavy rare earths in aqueous hydrochloric acid solutions, 22:45157
- solvent properties for molybdenum, 22:27836
- solvent properties for molybdenum in processing solutions containing rhenium, 22:37840
- solvent properties for neodymium and samarium in aqueous solutions of chlorides, nitrates, and perchlorates, 22:21163
- solvent properties for neptunium and plutonium from Purex sludge solutions, 22:21154 (BNWL-583)
- solvent properties for niobium and zirconium, 22:40029
- solvent properties for protactinium in hydrochloric, nitric, and sulfuric acids, 22:33493
- solvent properties for rare earths, 22:6367 (IS-T-188)
- solvent properties for strontium, antagonistic and synergistic effects of organic phosphorus compounds on, 22:42807 (BNWL-759)
- solvent properties for strontium, synergistic effects of aliphatic diluent and TBP on, 22:35899
- solvent properties for thorium, 22:4247
- solvent properties for trivalent actinides and rare earths, 22:16663
- solvent properties for uranium in aqueous nitric acid solutions, mechanism of, 22:33497
- solvent properties for uranium in nitric acid solutions, 22:2179
- solvent properties for yttrium-90, 22:30425 (AAEC/TM-421)
- solvent properties for zirconium, 22:33537

PHOSPHORIC ACID, BUTYL ESTER
- effects on distribution of valence forms of neptunium-239 in beta decay of uranium-239 solutions, 22:27843
- effects on solvent extraction of strontium using D2EHPA, synergistic, 22:42807 (BNWL-759)
- separation of plutonium from, in TBP solvent extraction process, 22:6433(P)

PHOSPHORIC ACID, DIBUTYL ESTER
- complexes of, distribution of, between sulfuric acid and hexane or carbon tetrachloride, 22:47216
- complexes with uranium(VI) and tributyl phosphate or trioctylphosphine oxide in hexane and carbon tetrachloride, formation of, 22:47217
- effects on solvent properties of tridodecylamine for uranium, 22:27845 (CEA-N-816, pp 150-276)
- precipitation of iron in nitric acid, kinetics of, 22:25452 (CEA-N-616, pp 154-214)
- separation from tributyl phosphate by adsorption by activated clay, 22:25452 (CEA-N-616, pp 154-214)
- solvent properties for strontium, effects of diluents on, 22:33512
- solvent properties for uranium, 22:47217
- solvent properties of dibutyl phosphate for zirconium in nitrate solutions, 22:131 (AERE-R-2945)
- carbon tetrachloride--dibutyl phosphate--H_2SO_4, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- carbon tetrachloride--dibutyl phosphate--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- carbon tetrachloride--dibutyl phosphate--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- dibutyl phosphate--hexane--H_2SO_4, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- dibutyl phosphate--hexane--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
- dibutyl phosphate--hexane--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401

PHOSPHORIC ACID, O,O-DIETHYL O-[3-ETHYL-4-(METHYLSULFONYL)PHENYL] ESTER
- radioprotective effects of, on cholinesterase activity in brain of common-fly, γ, 22:33743

PHOSPHORIC ACID, DIOCTYL ESTER
- solvent properties for calcium and strontium, effects of diluent on, 22:45154
- solvent properties for europium and terbium, effects of diluent on, 22:6400
- solvent properties for strontium, effects of diluents on, 22:33512

PHOSPHORIC ACID, DIPENTYL ESTER
- solvent properties for strontium, effects of diluents on, 22:33512

PHOSPHORIC ACID, DI-p-TOLYL ESTER
- solvent properties for zirconium in nitric acid solutions, 22:35897

PHOSPHORIC ACID, ESTERS
- radiolysis of, review on γ, 22:25421
- 2,4-pentanedione--phosphoric acid ester, distribution of uranyl ions in, effects of benzene, chloroform, and cyclohexane and inorganic anions on, 22:27894
- 2,4-pentanedione--phosphoric acid ester, solvent properties for uranyl ions, 22:27894

PHOSPHORIC ACID, 2-ETHYLHEXYL ESTER
- solvent properties for strontium, effects of diluents on, 22:33512

PHOSPHORIC ACID, TRIBUTYL ESTER
- activity in uranyl nitrate--water, phase studies on, 22:6404
- analysis for 1-butanol in TBP, method for gas chromatographic, 22:1962 (PG-Report-806)
- analysis for uranium, spectrophotometric, 22:14436
- boiling of aqueous solutions of, 22:37823(T) (ANL-Trans-619)
- complexes of, distribution of, between sulfuric acid and hexane or carbon tetrachloride, 22:47216
- complexes with plutonium and uranium, charge transfer transitions in, 22:37745
- complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
- complexes with uranium(VI) and dibutyl phosphate in hexane and carbon tetrachloride, formation of, 22:47217
- complexes with uranyl fluorides in benzene solution, spectral studies on structure of, 22:16544
- complexes with uranyl, thorium, and lanthanum nitrates, dielectric constants of, 22:4133
- decomposition in first Purex extraction cycle for fuel reprocessing, 22:16650(T) (ORNL-tr-1902)
- decomposition in fuel reprocessing, compounds formed in, 22:47226
- determination in aqueous phase, coulometric and mineralization methods for, 22:27846 (CEA-N-816, pp 277-323)
- distribution of hydrochloric acid between water and, 22:42820
- effects on reactions of lanthanides with nitrate ions and water, spectral studies on, 22:45010
- effects on separation of strontium from sodium solutions by solvent extraction using bis(2-ethylhexyl) phosphate, synergistic, 22:35899
- effects on solvent extraction of rare earths using 4,4,4-trifluoro-1-phenyl-1,3-butanedione, 22:8178
- effects on solvent properties of 2,4-pentanedione for scandium, 22:51068
- effects on solvent properties of dibutyl phosphate for uranium in sulfuric acid solution, 22:6401
- effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
- purification and recovery of, after fuel reprocessing, method for, 22:6434(P)
- radiation effects on, 22:40167 (KR-126, pp 120-42)
- radiation effects on ruthenium retention in, 22:16683
- radiation effects on, ESR spectral studies on yields in γ, 22:8111(T) (AEC-tr-6908, pp 216-36)
- radiation stability of, in nuclear fuel reprocessing, 22:18865 (ORNL-4212)
- radiolysis in fuel reprocessing systems, review of, 22:18873(T) (ORNL-tr-1901)
- radiolysis of, effects of hydrocarbon diluents on, 22:8185
- reactions with 2,4-pentanedione complexes of uranyl ions, products in, 22:27894
- reactions with water, proton magnetic resonance studies of, 22:27860(R) (NYO-1922-43)
- separation from degraded kerosene--TBP solutions of fission products by ion exchange, 22:21170
- separation of actinides from solutions of, 22:37872(P)
- separation of actinides from, by backwashing using nitrous acid, 22:16689
- separation of dibutyl phosphate from, by adsorption by activated clay, 22:25452 (CEA-N-616, pp 154-214)
- separation of ruthenium from, by adsorption, materials for, 22:25452 (CEA-N-616, pp 154-214)
- separation of uranium from dodecane solutions of, by solvent extraction using nitrogen dioxide, 22:27845 (CEA-N-816, pp 150-276)
- solubility in nitric acid or water solutions, 22:27845 (CEA-N-816, pp 150-276)
- solvation energy of aqueous uranyl chloride in, use of plutonium-239 electrode for measuring, 22:23010
- solvent partition between dodecane and aqueous solutions, effects of temperature on, 22:27845 (CEA-N-816, pp 150-276)
- solvent properties for actinides and rare earths in nitric acid, effects of complexants on, 22:27848 (CEA-N-816, pp 359-414)
- solvent properties for americium and lanthanides, 22:37640(T) (ANL-Trans-628, pp 2-50)
- solvent properties for barium, calcium, and strontium in perchloric acid solutions, 22:30675

solvent properties for cerium, neodymium, praseodymium, and samarium nitrates, thermochemical studies on, 22:18907
solvent properties for fission products, 22:16678
solvent properties for fission products, plutonium, and uranium in irradiated reactor fuels, 22:25484
solvent properties for gallium, 22:33223
solvent properties for hexavalent molybdenum in hydrochloric or nitric acid solutions, 22:10350
solvent properties for metals, 22:23119
solvent properties for molybdenum, 22:45160
solvent properties for molybdenum and niobium complexes with thiocyanate, effects of diluents on, 22:1990
solvent properties for niobium and tantalum, 22:27888
solvent properties for niobium and titanium in hydrochloric acid, 22:37863
solvent properties for niobium and zirconium, 22:16679
solvent properties for perchloric and perrhenic acids, effects of benzene, carbon tetrachloride, chloroform, 1,2-dichloroethane, 2-methylheptane, and 1,3,5-triethylbenzene on, 22:37718 (UCRL-17989, pp 181-252)
solvent properties for plutonium, 22:35891
solvent properties for plutonium and uranium, 22:51046(T) (EURFNR-499)
solvent properties for plutonium and uranium, 22:25452 (CEA-N-616, pp 154-214)
solvent properties for plutonium from spent fuels, 22:23123(P)
solvent properties for plutonium in countercurrent extraction process, 22:30656(P)
solvent properties for plutonium, effects of amines on, 22:16687
solvent properties for plutonium, uranium, and zirconium, effects of aluminum nitrate, nitric acid, and sodium tartrate concentrations on, 22:6409
solvent properties for polonium, 22:147
solvent properties for protactinium, effects of acetone and alcohols on, 22:40198
solvent properties for thorium and cerium, 22:27873
solvent properties for thorium and uranium in feed solutions, 22:21165
solvent properties for thorium and uranium in nitric acid solutions, 22:33489
solvent properties for thorium nitrate, 22:10334
solvent properties for thorium nitrate in presence of calcium nitrate, 22:10329
solvent properties for uranium, 22:7997
solvent properties for uranium, 22:4257
solvent properties for uranium, 22:14579(P)
solvent properties for uranium and plutonium, 22:27857 (KFK-680)
solvent properties for uranium in aqueous nitric acid solutions, 22:48822
solvent properties for uranium in hydrochloric acid solutions, spectral studies on, 22:6406
solvent properties for uranium, automation of method using, 22:27539 (NIM-156)
solvent properties for uranium, plutonium, americium, and curium in fused salts at 180°C, 22:4255
solvent properties for uranium, review of separation methods based on, 22:4258
solvent properties for uranyl compounds, 22:42837
solvent properties for uranyl nitrates in aqueous solutions, 22:27885
solvent properties for water, mechanism of, 22:27612
solvent properties for zirconium in nitric acid solutions, 22:16662
solvent properties for zirconium in nitric and sulfuric acid solutions, mechanism of, 22:12419
solvent properties of TBP for molybdenum, rhenium, and tungsten in hydrochloric acid--tartaric acid solutions, 22:4246
solvent properties of, for use in process and solution chemistry, 22:6397
steam distillation of entrained solutions of, in dodecane in aqueous phase extractions, 22:27846 (CEA-N-816, pp 277-323)
use as solvent extraction in hydrochloric acid solutions, distribution studies on, 22:30676
use in solvent extraction, bibliography on, 22:12401 (LS-70(Pt.1))
benzene--TBP, effects on electron exchange reactions between hexavalent and tetravalent uranium, 22:27736
benzene--TBP, use in separation of plutonium and uranium from transplutonium elements, 22:37851
carbon tetrachloride--dibutyl phosphate--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
carbon tetrachloride--TBP, solvent properties for uranyl nitrate and nitric acid, competition in, 22:30674
dibutyl phosphate--hexane--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
dodecane--HNO_3--TBP, work regions in horizontal pulse extractor for, 22:25468 (UJV-1929)
ethanol--TBP, dielectric properties of, 22:4133
H_2O--HNO_3--TBP--$UO_2(NO_3)_2$, effects of nitric acid on activity coefficients of diluents in, 22:6405
H_2O--TBP, mineral acid properties in, 22:154
H_2O--TBP, phase studies on mutual solubility in, as function of temperature, 22:6407
H_2O--TBP--$UO_2(NO_3)_2$, phase studies on activity coefficients of TBP in, 22:6404
HNO_3--H_2O--TBP, effects of nitric acid on activity coefficients of diluents in, 22:6405
HNO_3--H_2O--TBP, solvent properties for cerium, lanthanum, thorium, yttrium, and zirconium nitrates, chromatographic studies on effects of diluents on, 22:6405
HNO_3--$Pu(NO_3)_4$--TBP, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--$PuO_2(NO_3)_2$--TBP, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--TBP--$Th(NO_3)_4$, phase studies on, by distribution coefficient measurements, 22:6408
HNO_3--TBP--$UO_2(NO_3)_2$, phase studies on, by distribution coefficient measurements, 22:6408
kerosene--TBP, analysis for plutonium and uranium by solvent extraction using phosphorylated cellulose and scintillation counting, 22:39997
kerosene--TBP, analysis for uranium in solutions of, at liquid nitrogen temperature, luminescence method for, 22:16426
kerosene--TBP, separation of fission products and their complexing agents from, ion exchange, 22:21170
kerosone--TBP, solvent properties for radioactive manganese in presence of iron, 22:35898
$NaClO_4$--TBP, solvent properties for rare earths, 22:6392
$NaNO_3$--tributyl phosphate--$UO_2(NO_3)_2$, flow in stacked-clone contactors, 22:16645 (ORNL-4075, pp 4-21)
TBP--4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, solvent properties for rare earths, 22:51049
PHOSPHORIC ACID, TRI-sec-BUTYL ESTER
thermal decomposition of, isomeric olefin yield from, 22:18775
PHOSPHORIC ACID, TRICYCLOHEXYL ESTER
reactions with 2,4-pentanedione complexes of uranyl ions, products in, 22:27894
PHOSPHORIC ACID, TRIMETHYL ESTER
radiation effects on, ESR spectral studies on yields in γ, 22:8111(T) (AEC-tr-6908, pp 216-36)
PHOSPHORIC ACID, TRIOCTYL ESTER
solvent properties for uranium in uranyl chloride and sulfate solutions, mechanism of, 22:6399
4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione--trioctyl phosphate, use in reversed-phase partition chromatography of americium, cerium, and lanthanum, 22:27876
PHOSPHORIC ACID, TRIPHENYL ESTER
reactions with 2,4-pentanedione complexes of uranyl ions, products in, 22:27894
PHOSPHORIC ACID, VINYL ESTER
sorptive properties of cylinders of, for uranium in acetate and nitrate solutions, kinetics of, 22:27688
PHOSPHORIC TRIAMIDE, HEXAMETHYL-
complexes with plutonium tetrabromide and uranium pentabromide, preparation and properties of, 22:37722
Phosphorite
see Phosphate Rocks
PHOSPHORODITHIOIC ACID, O,O-DIETHYL ESTER, SODIUM SALT
solvent properties for silver, 22:37682
PHOSPHOROTHIOIC ACID
(H_3PO_3S)
radioprotective effects of AET derivatives of, on mice, evaluation of, 22:19396
radioprotective effects of derivatives of, on mice, x, 22:45629
S-2-aminoethyl ester, sodium salt, radioprotective effects on survival of mice, 22:25899
sodium salt, radioprotective effects of, on mice, effects of dose fractionation on, 22:49384
PHOSPHOROTHIOIC ACID, O,O-DIETHYL O-[4-(METHYLTHIO)-3,5-XYLYL] ESTER
metabolism of sulfur-35-labeled, by calves, 22:33741
PHOSPHOROTHIOIC ACID, O,O-DIMETHYL O-[4-(METHYLTHIO)-m-TOLYL] ESTER
metabolism of sulfur-35-labeled, by insects, 22:33741
PHOSPHOROTRITHIOUS ACID, TRIMETHYL ESTER
formation by γ-induced reaction of white phosphorus and dimethyl sulfide, 22:37784
PHOSPHOROUS ACID, ALKYL ESTERS
radioinduced oxidation of, review on, 22:25421
PHOSPHOROUS ACID, DIMETHYL ESTER
radiation effects on, ESR spectral studies on yields in γ, 22:8111(T) (AEC-tr-6908, pp 216-36)
PHOSPHOROUS ACID, TRIMETHYL ESTER
radiation effects on, ESR spectral studies on yields in γ, 22:8111(T) (AEC-tr-6908, pp 216-36)
PHOSPHOROUS ACID, TRIPHENYL ESTER
effects on radiation effects on poly(methyl methacrylate), mechanism of, 22:16587
PHOSPHORS
(For phosphors mounted as part of a radiation detection system, see Radiation Detectors, Scintillation or Radiation Detectors, Luminescent.)
see also Anthracene
see also Cadmium Sulfides
see also Calcium Tungstates
see also Cesium Iodides
see also Lithium Iodides
see also Luminescence
see also Naphthalene
see also Oxazole, 2,5-Diphenyl-

  see also Oxazole, 2,2'-p-Phenylenebis[5-phenyl-
  see also Phosphorescence
  see also Potassium Iodides
  see also Quaterphenyl
  see also Sodium Iodides
  see also Terphenyl
  see also Zinc Sulfides
 analysis of rare earth-activated, for rare earths, 22:18703
 cathodoluminescence of rare earth-activated yttrium oxide, 22:22996 (CONF-670502-, pp 271-82)
 chemical and physical properties of rare earth, 22:40413
 coatings for, preparation of protective polymer, 22:10568(P)
 collection yield of cylindrical liquid, for photons, 22:6593
 decay times of, light pulse generators for studying, 22:38018
 deexcitation of, effects of strong electric field on, 22:36035(T) (SLAC-Trans-85)
 description of gallium-activated zinc oxide, for detecting alpha particles, 22:28100
 design of radioisotope-activated, for use as photometer light source, 22:51269(P)
 development of mixed, for detection of thermal neutrons, 22:28126(P)
 efficiency of liquid, for counting carbon-14-labeled-melanin, 22:37688
 efficiency of NE-213 organic, for detecting 2.7- and 14.5-MeV neutrons, 22:23295
 electron reactions with organic and inorganic, energy losses in, 22:45290
 emission bands of tin- and thorium-activated calcium oxide, 22:92
 energy degradation in organic liquid, temperature effects on, 22:40416
 fabrication of thallium-activated potassium iodide, for gamma spectroscopy, 22:28133 (NP-17352)
 fluorescence of yttrium europium vanadate, effects of temperature on, 22:38632
 fluorescence of yttrium vanadate, effects of temperature on, 22:38632
 fluorescence spectra of terbium ion-activated inorganic, 22:5448
 gamma response of liquid, (E), 22:5809(R) (ANL-7354)
 gamma response of MEL 150-C and NE 102, effects of peak dose rate on nonlinear, 22:4425 (EGG-1183-2158)
 krypton diffusion in polyvinyltoluene, 22:25640
 light flashes in liquid, use of decaying electric field for quenching of, 22:40360 (JINR-P13-3894)
 light output of argon, effect of impurities on, 22:12589
 light output of crystal, plastic, and organic, 22:40414
 light output of NE-213, for proton detection, 22:16888
 light transport efficiency of, computer program for analyzing, 22:21319 (UUIP-568)
 light yield of plastic, of cylindrical and rectangular parallelpiped shapes, 22:36068
 luminescence and storage capacity of calcium sulfate--manganese, 22:4076
 luminescence decay times of ultraviolet-excited solutions of, 22:28110
 luminescent light decoupling from conical and cylindrical, calculations of, 22:23269
 luminescent properties of rare earth, 22:40413
 meson (μ) ionization energy loss at 0.3 to 120 GeV/c in plastic, cosmic, (E/T), 22:48211
 optical homogeneity of thallium-activated cesium iodides and sodium iodides, 22:38003
 performance of toluene in presence of Water as, effects of dioxane and naphthalene on, 22:22952
 phosphorescence decay of tin- and thorium-activated calcium oxide, 22:91
 photon reactions with, evaluation of upper energy of electrons during Compton scattering in, 22:36062
 preparation and performance of manganese-activated lithium borate, for thermoluminescent dosimetry, 22:14856
 preparation of layers of organic, 22:36064
 preparation of liquid scintillation mixtures for measurement of carbon-14 and tritium samples, 22:33274
 preparation of plastic, 22:18802(P)
 preparation of polycrystalline layers of, 22:36064
 preparation of self-luminescent, 22:21083(P)
 properties of oxygen-doped zinc telluride, 22:40428
 properties of supercooled molten organic, 22:4188
 properties of tellurium-doped cadmium sulfide, 22:40428
 pulse shape discrimination parameters for anthracene, NE 213, and stilbene, use of zero cross-over technique for measuring, 22:36047
 quantum efficiency of argon, krypton, and neon, for x-ray detection, 22:28112
 quenching in liquid, comparison to photosensitivity of biological systems due to energy transfer processes, 22:8350
 radiation absorption calculations for rare earth, gamma- and x-ray, 22:40413
 radiation damage in plastic NE 102A, 4- to 10-keV electron, 22:16967
 radiation damage to plastic, for beta detection, 22:10561
 radiation effects on thermoluminescent response of lithium fluoride, γ and x, 22:25373 (COO-1105-119)
 radioinduced energy states in, infrared-stimulated de-excitation of, 22:9422 (EGG-1183-2151)
 radioinduced luminescence in cyclohexane, effects of various solutes on γ, 22:27759
 radioinduced luminescence in organic, kinetics of prompt and delayed components of, 22:25654
 radioinduced luminescence in thallium-activated sodium iodide, at 5 to 80°K, 22:40422
 radioinduced luminescence of nickel-, silver-, and copper-activated sodium chloride, irradiation time dependence of x, 22:23271
 radioinduced luminescence of plastic, γ, 22:4187
 radioinduced scintillations in organic, electron, 22:40417
 radioinduced scintillations in organic, kinetic study of fast component of, 22:11495(T) (UCRL-Trans-10166)
 radioinduced scintillations in plastic and stilbene, time dependence of gamma and neutron, 22:40415
 radioinduced scintillations in plastic, method for measuring luminosity of, 22:40432
 response of NE213 organic liquid, for neutron detection at 0.3 to 3.8 MeV, 22:12581
 response of plastic, for electron detection, 22:16870
 response of plastic, for fast neutron detection, 22:2407
 response to heavy ions at 1 to 10 MeV, theory of, 22:31952
 safety of organic liquid, in scintillation whole-body counters, 22:33654
 scintillation characteristics of vacuum-deposited thallium-activated cesium iodide and sodium iodide, 22:19100 (UCRL-70773)
 scintillation decay time of crystal, plastic, and organic, 22:40414
 scintillation decay times of electron-excited, organic, 22:40417
 scintillation decay times of thallium-activated cesium iodide and sodium iodide, use of simulated photomultiplier pulses for measuring, 22:36048
 scintillation efficiency of plastic, for 1.3-MeV protons and 0.624-MeV electrons, 22:36061
 scintillation pulse shape in gamma-excited thallium-activated sodium iodide, effects of thallium concentration and temperature on, 22:40421
 scintillation response anisotropy of anthracene, to neutron-generated recoil protons and carbon ions, 22:40418
 scintillation response of thallium-activated sodium iodide, 22:30845
 scintillation response to recoil protons generated in stilbene, 22:40419
 separation of fatty acids from liquid, by solvent extraction, 22:10188
 testing of borazine and borazarene derivatives as, for detection of thermal neutrons, 22:37974 (CNEA-206)
 use as tube coating for radioisotope-powered light sources, 22:23206(P)
 use for detection of fast neutrons, pulse-height distribution of recoil protons in, 22:14815
 use for determining carbon-14 and tritium in detergent--water solutions, 22:45225
 use of composite, for separation of luminescent decay components in scintillation detectors, 22:45291
 use of hexafluorobenzene, for gamma dosimetry in mixed gamma--neutron fields, 22:28108
 use of lithium fluoride--polyethylene--silver-activated zinc sulfide, for measurement of thermal neutron flux in subcritical assemblies, 22:2374
 use of organic, for improving efficiency of Compton gamma spectrometer for energies up to 400 keV, 22:356
 use of plastic, in eye of dogs as radiation detector, efficiency of, 22:31119
 use of plastic, with photoresistive cells for gamma- and x-ray dosimetry, 22:25674
 use of plastic, with strontium-90--yttrium-90 beta source as standard light source, luminosity of, 22:47415
 use with photographic film for determining activity of dust particles on air sample filters, 22:28515
PHOSPHORUS
 abundance in HD 1909 and 53 Tauri, (E), 22:47730
 abundance in photosphere, (E), 22:23932
 abundance of, solar, (T), 22:13206
 accumulation by maize, selection of populations according to differences in, 22:33712(R) (NYO-2744-53)
 activation analysis of total body, in man, neutron, 22:31007
 arsenic content in, use of neutron activation analysis for determining, 22:4468
 atomic weight of, based on carbon-12 = 12, 22:42698
 book: Topics in Phosphorus Chemistry. Vol. 4, 22:25434
 compounds with thorium or uranium and selenium, sulfur, or tellurium, preparation and structure of, 22:47118
 compounds, ionization and fragmentation by electron impact in mass spectrometer, review on, 22:25421
 compounds, photolysis of, review on, 22:25421
 content of animal tissues, determination of, by neutron activation analysis, 22:17049
 content of diet, effects of, on strontium-90 metabolism in rats, 22:45404
 content of human aorta and testes, effects of age on, 22:12749 (ORNL-P-3541)
 content of marine algae, crustaceans, fish, and mollusks,

22:22903 (PRNC-104, pp 57-67)
content of yeast cells, relation of, to postradiation recovery, 22:31290
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in semiconductor silicon, neutron activation, 22:39993
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation analysis, 22:7989 (CONF-660905-2)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by Karl Fischer reagent, 22:40063
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination in alloy steel by neutron activation methods, 22:35765
determination in alloys and metals, extraction method for spectrophotometric, 22:4043
determination in aluminum and magnesium by neutron activation techniques, 22:47083
determination in biological materials by automated neutron-activation methods, 22:16450
determination in biological materials by neutron activation methods, 22:35766
determination in biological materials, automatic separation system for, 22:8020
determination in copper, activation, 22:27558
determination in detergents by neutron activation, 22:4308 (TID-24029)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in high-purity niobium, 22:1981
determination in high-purity selenium by neutron activation methods, 22:45019
determination in high-speed and stainless steels, photometric, 22:28783(T) (TT-66-59003-4/A)
determination in iron meteorites, 22:35749
determination in liver by neutron activation methods, 22:48835
determination in molybdenum or tungsten by neutron activation method, 22:50910
determination in oils by activation methods, 22:33250
determination in organic compounds, 22:37835(T) (JPRS-45458)
determination in phosphides and phosphocarbides in presence of uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in plutonium dioxide using α-reaction γ spectra, 22:18704
determination in rocks, by neutron activation methods, 22:16442
determination in scandium, spectroscopic, 22:18727
determination in semiconductor silicon by neutron activation methods, 22:14459
determination of inactive, in phosphorus-32 products, 22:14433 (ORNL-4196, pp 66-89)
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
diffusion in silicon for use as fast-neutron detector, 22:314
diffusion of radioactive and stable, in soils with sinks, 22:49030
distribution in steel, use of phosphorus-32 as tracer in autoradiographic studies of, 22:8324
effects of anodic oxide films containing, on gaseous oxidation of tantalum, 22:4735
effects on calcination of molybdic waste solutions, 22:27849 (CEA-N-816, pp 415-80)
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on grain structure of cast molybdenum--uranium alloys, 22:43602
effects on neutron-induced lifetime degradation in silicon, (E), 22:17826
effects on weldments of copper--nickel alloy pipes and Monel plates, 22:10927 (WERL-0029-4)
effects on x-radiosensitivity of sunflower seedlings, 22:43478
electron reactions with, ionization cross sections for, (T), 22:45931
energy level transition probabilities for atomic, 22:2811
fluorescence yield of, K-shell, (E), 22:17392
formation of red, by γ-induced reaction of white phosphorus and dimethyl sulfide, 22:37784
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
hyperfine structure of, Brueckner--Goldstone calculations of, 22:52543
lifetime by electron collision using phase shift method, radiative, 22:41331
nodules in Miyazaki Prefecture, Japan, radiometric anomalies of, 22:6442
nuclear magnetic resonance in rare earth phosphides, 22:24383 (CONF-670502-, pp 68-77)
organic compounds, ionization and fragmentation by electron impact in mass spectrometer, review on, 22:25421
photolysis of, review on, 22:25421
radiation effects on content of, in blood and lymph of dogs, 22:45437
radiation effects on content of, in buckwheat plants, phosphorus-32 β, 22:36408
radiation effects on content of, in leaves of salvia, phosphorus-32 β, 22:36410
radiation effects on content of, in soils, γ, 22:23450
radiation effects on metabolism of, by barley, γ, 22:6723
radiation effects on metabolism of, in nucleic acids of normal and denervated muscles of rabbits, whole-body x, 22:49217
radiation effects on ratio of, to esterified fatty acids in lecithins, x, 22:23456
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced luminescence of thallium-activated cesium iodide, effects of excitation intensity on electron-pulse, (E), 22:34768
radioinduced reaction of white, with bromoform, study of free radicals in γ, 22:37782
radioinduced reaction of white, with dimethyl sulfide, formation of red phosphorus and methyl phosphorotrithioite from γ, 22:37784
separation from neutron-irradiated sulfur, mild extraction process for, 22:16605
separation from sulfur by solvent extraction, 22:12355
separation from sulfur by sorption on magnesium dioxide, 22:157
separation of hafnium and/or zirconium from solutions containing titanium and, 22:37871(P)
sorption by manganese dioxide from nitric acid, 22:157
spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
superconductivity at high pressures, (E), 22:46064
superconductivity of, 22:34530
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)

PHOSPHORUS ACIDS
see also Phosphoric Acid
production of labeled, by reactions of recoil phosphorus atoms with chloromethanes, mechanism of, 22:30595
radioinduced oxidation of, review on, 22:25421

PHOSPHORUS CHLORIDES
see also Phosphoryl Chlorides
exchange reactions of carrier-free phosphorus-32 in, 22:18786
ionization and fragmentation by electron impact in mass spectrometer, review on, 22:25421
radioinduced reactions with cyclohexane and hexane, γ, 22:47175
radioinduced reactions with hydrocarbons, review on electron and γ, 22:25421
$NbTaCl_5$--PCl_3, phase studies on, 22:18794
$NbTaCl_5$--PCl_5, phase studies on, 22:18794
PCl_5--UCl_5, preparation of, 22:27651

PHOSPHORUS IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
distribution and range in bombarded silica, (E), 22:50250
effects on germanium single crystals, radiation damage and chemical impurity studies of, 22:26492
effects on silicon, activation energy and annealing temperatures for defects from, (E), 22:26493
effects on surface electric properties of silicon as function of dose and heat-treatment conditions, (E), 22:13557
implantation in cadmium sulfides, (E), 22:29574
implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
implantation in germanium and silicon, helium ion channeling study of lattice disorder from, 22:26489
implantation in p-type silicon at 30 keV, effects on carrier concentration and mobility, (E), 22:41677
implantation in silicon crystals at 10 to 110 keV, distribution profiles for channeled, (E), 22:26480
implantation in silicon crystals, distribution profiles for, (E), 22:26481
implantation in silicon, effects of bombardment temperature on, (E), 22:26493
implantation in silicon, effects of channeling on, (E), 22:26490

- ranges in gold above 100 keV, measurement using chemical film technique, 22:26223
- reactions with n-type silicon, temperature effects on current carriers in, (E), 22:15641
- use for doping silicon by ion implantation at 1 to 2.5 MeV, 22:16862
- use for fabricating semiconductor radiation detectors by ion-implantation, 22:323

PHOSPHORUS ISOTOPES
- energy-level parameters for, data compilation for, (E), 22:9819

PHOSPHORUS ISOTOPES P-28
- beta decay scheme of, half-life and β and γ spectra for, (E), 22:13971
- decay scheme, (E), 22:32520
- mass of ground state of, (E), 22:13971
- nuclear mass excess from reaction Q-value measurements, (E), 22:9845

PHOSPHORUS ISOTOPES P-29
- energy level from silicon-28 (p,γ) reaction, T = 3/2, (E), 22:53149
- energy levels from aluminum-27 (He-3,n) reactions, isobaric analog, (E), 22:26932(R) (NP-17434)
- energy levels from silicon-28 proton elastic and inelastic scattering, isospin-forbidden analog, (E), 22:18163
- energy levels from silicon-28 proton elastic and inelastic scattering, (E), 22:27051
- energy-level transitions from T = 3/2 states, multipolarities of, (E), 22:48507(R) (ANL-7436)

PHOSPHORUS ISOTOPES P-30
- energy levels from silicon-28 (He-3,pγ) reactions at 6.2 MeV, (E), 22:29966
- energy levels from silicon-29 (p,γ) reactions, (E), 22:32513(R) (ANU-P-400)
- energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
- energy-level transitions from silicon-29 (p,γ) reactions, (E), 22:29951

PHOSPHORUS ISOTOPES P-31
- alpha elastic and inelastic scattering at 25 MeV, angular distributions for, (E), 22:48502
- alpha reactions (α,d) at 18.7 MeV, DWBA analysis of differential cross sections for, (E), 22:27084
- alpha reactions (α,p) at 8.5 MeV, triple γ-γ angular correlations from, (E), 22:46729(R) (AECL-3157)
- deuteron reactions (d,α) at 7 to 12 MeV, fluctuation analysis of, (E), 22:11949(R) (ORO-2972-47)
- deuteron reactions (d,n) at 4.9 MeV, sulfur-32 isobaric analog levels from, (E), 22:26966
- deuteron reactions (d,p) below Coulomb barrier, angular distributions for, (T), 22:39716
- effects of ion beams of, on diamond surfaces, 22:46246
- electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
- energy level at 3.13 MeV, γ width for, (E), 22:53148
- energy level at 3.13 MeV, width of, (E), 22:9824
- energy levels and transitions from proton capture in silicon-30 at 0.5 to 2.2 MeV, (E), 22:9823
- energy levels and transitions from proton capture in silicon-30, (E), 22:1597(R) (COO-1120-68)
- energy levels from α inelastic scattering, deformation parameters for, (E), 22:48502
- energy levels from proton inelastic scattering, (E), 22:18140
- energy levels from proton inelastic scattering, (E), 22:3609 (PUC-937-164)
- energy levels from silicon-28 (α,p) reactions, lifetime measurements using Doppler shift attenuation, (E), 22:35285(R) (AERE-PR/NP-13)
- energy levels from silicon-30 (p,γ) reactions, multipole mixing ratios and spins of, (E), 22:27028
- energy levels from silicon-30 (p,γ) reactions, spins of, (E), 22:26932(R) (NP-17434)
- energy levels from sulfur-32 (d,He-3) reactions, (E), 22:5809(R) (ANL-7354)
- energy levels from sulfur-32 (d,He-3) reactions, (E), 22:18174
- energy levels from sulfur-32 (n,d) reactions at 14 MeV, (E), 22:20528
- energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
- energy-level transitions from sulfur-32 (n,d) reactions, (E), 22:29978
- energy-level transitions in, data on $7/2^- \to 7/2^-$, (E), 22:15967
- energy-level widths from gamma resonant absorption at 7.90 and 8.20 MeV, (E), 22:15981
- gamma resonance absorption in silicon-30 (p,γ) reactions, (E), 22:11948(R) (NP-17216)
- helium-3 elastic scattering at 6 MeV, optical-model analysis of, (E), 22:53134 (COO-1120-70)
- helium-3 reactions (He-3,n) with, neutron time-of-flight spectra for, (E), 22:26932(R) (NP-17434)
- helium-3 reactions (He-3,p) at 6 MeV, angular distributions for, (E), 22:53134 (COO-1120-70)
- helium-3 reactions (He-3,p) at 8 MeV, collective effects in angular distribution of protons from, (E), 22:1597(R) (COO-1120-68)
- incorporation in hormones for metabolism studies in birds and mammals, 22:21404 (COO-301-150)
- neutron capture using polarized beams, γ circular polarization from thermal, (E), 22:39613
- neutron differential elastic and inelastic scattering cross sections at 5.95 MeV, (E/T), 22:32526
- neutron inelastic scattering at 4.7 and 5.5 MeV, γ spectra from, (E), 22:35285(R) (AERE-PR/NP-13)
- neutron reactions (n,2n) at 14.8 MeV, cross sections for, (E), 22:29973
- neutron reactions (n,p) at 1.0 to 2.2 MeV, cross section for, (E), 22:18195
- neutron total cross section at 0.4 to 1.2 MeV, 22:39575 (CEA-R-3279)
- nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
- nuclear magnetic resonance in paramagnetic uranium phosphide, Knight shift as function of temperature in, (E), 22:3182
- nuclear magnetic resonance in paramagnetic uranium phosphides, Knight shift in, (E), 22:3181
- nuclear magnetic resonance in transition-metal phosphides, (E), 22:17807
- nuclear magnetic resonance measurements in PtP_2, 22:39202
- photon reactions (γ,n) with, cross sections and time-of-flight spectra for, (E), 22:7663
- photon reactions (γ,p) at 17 to 24 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27076
- photon reactions (γ,p) at 19 MeV, proton angular and energy distributions for, (E), 22:53158
- photon scattering by, resonance, (E), 22:53148
- proton differential elastic scattering cross section at 1.0 to 3.8 MeV, (E), 22:24841
- proton differential elastic scattering cross section at 1.99 to 2.05 MeV, (E), 22:20516
- proton differential inelastic scattering cross sections at 17.5 MeV, (E), 22:18140
- proton elastic scattering at 8.0 to 8.2 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
- proton reactions (p,α) at 1 to 2 MeV, differential cross sections and spectra for, (E), 22:20516
- proton reactions (p,α) at 1.0 to 3.8 MeV, angular distributions for, (E), 22:24841
- proton reactions (p,α) at 8.5 to 12.3 MeV, fluctuation analysis of, (E), 22:11929
- proton reactions (p,α) with, spin mixing in entrance channels for, (E/T), 22:48506
- proton reactions (p,d) and (p,t) with, differential cross sections for, (E), 22:30048(R) (PUC-937-307)

PHOSPHORUS ISOTOPES P-32
- absorption by leaves following foliar and soil application, 22:49190
- abundance in Saint-Severin meteorite, 22:43753
- accumulation in brain of man, effects of polycythemia on, 22:21429
- analysis for inactive phosphorus, 22:14433 (ORNL-4196, pp 66-89)
- analysis for phosphorus-33, methods for, 22:35280
- analysis for trace impurities, spectrographic, 22:4055
- beta decay of, bremsstrahlung angular correlations and spectra for, (E), 22:9873
- beta decay of, bremsstrahlung emission in, (T), 22:9958
- beta dosimetry in bones using point source method, 22:19324 (AERE-R-5679)
- beta emission by, effects of internal, on connective tissue of gastrointestinal tract of fish, 22:33971
- beta emission by, effects of, on activity of T1 phage and host Escherichia coli, comparison of lesions produced by, with γ and transmutation, 22:52041
- beta emission by, effects of, on blood proteins of rabbits, protective effects of serotonin against, 22:40805
- beta emission by, effects of, on body weight of mice, protective effects of glutathione against, 22:28571
- beta emission by, effects of, on bone marrow and peripheral blood cells, quantitative dynamics of, 22:49582
- beta emission by, effects of, on Chlorella vulgaris, mutagenic, 22:43291
- beta emission by, effects of, on chromosomes in root tip cells of jute, 22:43279
- beta emission by, effects of, on Coleus and Tradescantia, 22:40952 (ORO-657, pp 93-120)
- beta emission by, effects of, on content of nucleic acids, nucleoproteins, and phosphorus in leaves of salvia, 22:36410
- beta emission by, effects of, on FSH response of ovaries in Indian catfish, 22:45654
- beta emission by, effects of, on growth and phosphorus level of buckwheat plants, 22:36408
- beta emission by, effects of, on growth of millet, salvia, and soybeans, 22:36409
- beta emission by, effects of, on hematopoiesis and liver in man, 22:33949
- beta emission by, effects of, on immune response and leukemia incidence in man, 22:15032
- beta emission by, effects of, on induction of early ripening of fruits and seeds of vegetable plants, 22:49308
- beta emission by, effects of, on intrauterine death in mice following injection, 22:36386

beta emission by, effects of, on iodine-131 uptake by thyroid of man with polycythemia vera, 22:49615
beta emission by, effects of, on larvae of Drosophila, effects of ontogenesis on, 22:51931
beta emission by, effects of, on Lilium longiflorum and Zea mays, effects of pollen exposure on mutagenic, 22:31044
beta emission by, effects of, on long-chain fatty acids in rabbits, acute, 22:47482
beta emission by, effects of, on neoplastic metastases in lymph system of rabbit following lymphatic infusion, 22:51781
beta emission by, effects of, on platelet count of rabbits, 22:49522
beta emission by, effects of, on sodium, potassium-ATPase, calculation of molecular weight from, 22:33767
beta emission by, effects of, on structure of DNA in sperm of Drosophila, 22:28426
beta emission by, effects of, on transcription of messenger RNA from specific genes in Escherichia coli, 22:28376
beta emission by, measurement of, for diagnosis of cancer of human prostate, 22:38365
beta emission by, use of, for extracorporeal irradiation of human blood, 22:28533
beta emission by, use of, for radiotherapy of prostate neoplasms in dogs and man, 22:15030
beta emission from, RBE in rats of external and internal, 22:23651
beta emission in man, leukemogenic effects of, 22:36362
beta energy yield from, use of Geiger--Mueller detectors for determining, 22:6592
beta spectra for $1^+ \rightarrow 0^+$ allowed transition in, (E), 22:50568
beta spectra for, endpoint energy of, (E), 22:24835(R) (BARC-305)
beta spectra of, measurement using intermediate-image spectrometer, 22:18212 (SGAE-PH-58/1967)
concentration in neutron-irradiated tripolyphosphate by Szilard--Chalmers effect, 22:16591
contamination of polyvinylchloride foil, glass, and steel, removal of, by detergents, 22:4626
content in Columbia River fish, 22:18964 (BNWL-SA-1606)
content in farm produce in Richland, Wash., environs, 22:18964 (BNWL-SA-1606)
content of Columbia River, effects of, on uptake by periphyton, 22:21591
content of drinking water in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
content of Drosophila females and males, effects of, on transfer to offspring, 22:23463
content of fish from Columbia River, 22:19326 (BNWL-665)
content of fish, fruit, meat, milk, and vegetables in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
content of organisms in Columbia River, effects of reactor shutdown on, 22:10740 (BNWL-480, pp 153-93)
content of plant tissues, autoradiographic method for measurement of, 22:31070
content of sewage and streams surrounding Delta Primate Center, 22:47544
detection in solutions, flowthrough liquid scintillator for, 22:25644
detection of, methods for improving efficiency of autoradiographic, 22:49257
determination in air and rainwater, 22:35750
determination in aqueous solutions by liquid scintillation counting of Cherenkov radiation, 22:47085
determination in liquid scintillation counter without use of scintillator, 22:16456
determination in liquids, sensitivity of G--M detectors for, 22:19116
determination in neutron-irradiation sulfate solutions, using beta absorption, (E), 22:5790(T) (CEA-tr-A-1898)
determination in tissues by activation methods, 22:47
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
diffusion through capillaries in x-irradiated rats, effects of vasotrophic compounds and vitamins on, 22:49436
distribution in Columbia River, 22:40614(R) (RLO-2047-2)
distribution in Drosophila pupae, following uptake by larvae of different ages, 22:23460
distribution in man following intra-arterial injection, use of bremsstrahlung measurements to determine, 22:45393
distribution in organs of rabbits following endoarterial introduction in cationic resin microspheres, 22:28609
distribution in vascular hydrophytes, effects of redox potential of water on, 22:19299(R) (NYO-3018-18)
distribution of calcium phosphate-incorporated, in rats, 22:6743
distribution of chromic phosphate-incorporated, in rats, 22:6743
distribution of ferric phosphate-incorporated, in rats, 22:6743
distribution of ingested $CrPO_4$-incorporated, in gastrointestinal tract of rats, 22:49537
distribution of phosphate-incorporated, in roots of barley, effects of microorganisms on, 22:21414
effects on activity of alkaline phosphatase in human blood, 22:49216
effects on content of serotonin in central nervous system of rats, 22:21417
effects on erosion, redeposition of sedimentary materials, and weathering, geochemical, 22:35936
effects on hematopoiesis in bone marrow of dogs and rats following injection, 22:52009
effects on metabolism of phosphates by tomato plants, 22:2483
effects on mutants of E. coli, 22:592
effects on polycythemia patients, therapeutic, 22:51830
effects on radiation energy sorption in pharmaceuticals, 22:37819
emission of β-particles, effects of, on response of mosquito larvae to light, 22:6916
energy level at 77 keV from phosphorus-31 (d,p) reactions, lifetime measurement using delayed coincidence method, (E), 22:29976
energy level at 77 keV, lifetime of, (E), 22:13977
energy levels from phosphorus-31 thermal neutron capture, spin-parity assignments and multipole mixing ratios for, (E), 22:39613
energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
evaluation of phosphate-incorporated, for scanning brain tumors, 22:38361
exchange reactions of carrier-free, with phosphorus chloride, phosphoryl chloride, and thiophosphoryl chloride, 22:18786
excretion in urine by man, methods for calculation of safe limits of, 22:6811
formation and half-life from potassium-39 (n,2α) reactions at 14 MeV, (E), 22:50579
formation in sulfur targets by neutron reactions (n,p), 22:18786
half life in sandflies, determination of effective, 22:4584
incorporation in bacteriophage DNA, 22:30414 (ORNL-4100, pp 148-51)
incorporation in colloidal chromic phosphate, in situ precipitation of with papain, method for, 22:51387
incorporation in DNA for determining genetic transformation in bacteria, 22:39951 (BNL-50101)
incorporation in hormones for metabolism studies in birds and mammals, 22:21404 (COO-301-150)
incorporation in larvae of elm sawfly following ingestion of radioactive foliage, 22:36179
incorporation into nucleotides of pea leaves, effects of temperature on, 22:43258
ingestion of $CrPO_4$-incorporated, effects of, on gastrointestinal tract of rats, 22:49537
ion implantation in silicon crystals, (E), 22:35285(R) (AERE-PR/NP-13)
labeling of adenine, orotic acid, and uracil for preparation of labeled RNA, 22:12746 (EUR-3669)
labeling of adult sandflies, method for, 22:4582
labeling of beetles, evaluation of methods for, 22:8467
labeling of honey bees, dietary method for, 22:47458
labeling of lipids, review of methods for, 22:40570
labeling of mosquito larvae for dispersion studies, 22:17003
metabolism in corn, effects of inbreeding on, 22:45453
metabolism in rabbits, effects of irradiation of tibial bone on, 22:43441
metabolism in tissues of mice following inhalation, 22:28328
metabolism of zirconyl phosphate-incorporated colloids of, in tissues of mice, 22:6755
preparation of chronic phosphate-incorporated, comparison of methods of, 22:543
production by cosmic ray reactions with hydrochloric and sulfuric acids, 22:40107
production by neutron irradiation of potassium chloride, valence distribution of, 22:18830
production by neutron irradiation of sulfur and solvent extraction, 22:12355
production from neutron-irradiation of sulfur, state of phosphorus in, 22:16605
production in Australia, 22:42761
production in DNA and nucleotides by neutrons, 22:462
production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
production in IAN-R1 Reactor, 22:40321 (IAN-Q-6)
production in man by neutron exposure, 22:23504 (HW-76823)
production in neutron reactions (n,p) with sulfur-32 in sulfur compounds, oxidation states of, 22:111
production of, effects of thermal annealing on valence distribution in single crystals of potassium chloride, 22:18831
proton inelastic scattering at 17.5 MeV, differential cross sections and spectra for, (E), 22:3609 (PUC-937-164)
radiation effects on distribution of, in blood serum proteins, brain, and liver of rats, proton, 22:52001
radiation effects on incorporation of, in RNA of yeasts, correlation of, with catalase activity, γ, 22:19252
radiation effects on incorporation of, into DNA of splenic lymphocytes from hamsters, x, 22:23604
radiation effects on metabolism of, in rats, effects of dose on x, 22:51482
radiation effects on uptake of, by DNA and RNA of ascites

hepatoma cells in rats, combined effects of carcinostatics on cobalt-60 γ, 22:31025
radioinduced inhibition of, uptake by rat thymus, ionizing, 22:45447
reactions of recoil atoms of, with chloromethanes, mechanism of formation of labeled chloromethylphosphinic acid products in, 22:30595
reactions of recoil, in neutron-irradiated alkali metal orthophosphates, 22:42724 (COO-1618-8)
removal from aluminum, chemical and electrolytic methods for, 22:12422
removal from raw sewage, effect of Vorticellid protozoa on, 22:10534
separation of cosmic-ray-produced, from hydrochloric and sulfuric acids, 22:40107
sorption by leaves of bean plants, effects of phosphorus content of soil on, 22:6766
sorption by roots of rice plants, effects of low temperature on, 22:40551
sorption from intestines and urinary bladder of dogs, measurement of, 22:36222
sorption of ionic, by metal surfaces, 22:35767(T) (AEC-tr-6776)
sorption on cationic resin microspheres, 22:28609
sorption on metal and oxide surfaces, 22:4129
transport through salt-marsh ecosystem, 22:6773(R) (ORO-3238-3)
uptake by A. falcatus, 22:23138
uptake by algae in seawater, (E), 22:12455(R) (EUR-3635)
uptake by carcinoma of penis of man, use of, for diagnosis of lymphatic metastasis, 22:12874
uptake by DNA in mitochondria and nuclei of Tetrahymena, 22:12744 (BL-207)
uptake by DNA of leukocytes of man with tropical eosinophilia, 22:6726
uptake by honey bees, method for distinguishing iodine-131 from, 22:4689
uptake by human vulvar skin, effects of lichen sclerosus et atrophicus on, 22:45398
uptake by larvae and pupae of yellow-fever mosquitoes, effects of age and synchrony on loss and transfer during development, mating, and oviposition, 22:36165
uptake by oats, effects of indoleacetic acid on, 22:19263
uptake by periphyton in Columbia River, effects of activity of river on, 22:21591
uptake by plankton, 22:51488
uptake by rats, protective effects of AET against, 22:21551
uptake by roots of Coleus and Tradescantia, 22:40952 (ORO-657, pp 93-120)
uptake by sandflies, effects of age on, 22:4582
uptake by Tradescantia, mutagenic effects of, 22:6772 (ORNL-4168, pp 61-118)
uptake by tumor transplants in rats, development of instruments for measurement of, 22:12851
uptake of chromic phosphate-incorporated, by bones, bone marrow, liver, lungs, and spleen of rats, effects of blocking agents on, 22:21418
use as tracer for material flow measurements in chemical processes, 22:14706
use as tracer in autoradiographic studies of phosphorus distribution in steels, 22:8324
use as tracer in detection of oil leaks in mechanical seals, 22:16781
use as tracer to study propagation of ice crystals in clouds, 22:51188
use for diagnosis of brain tumors, review of, 22:21546
use for differentiation of benign and malignant intraocular lesions, 22:28582
use for localization of carcinomas of vulva, 22:28582
use for radiodiagnosis of testicular tumors, 22:28546
use for scanning in Russia, 22:8568
use for studying radiation effects on cells, 22:30966
use for therapy of chronic lymphoid and myeloid leukemia, 22:10805
use for therapy of chronic lymphoid and myeloid leukemia, colloidal, 22:10805
use for therapy of human brain tumors, 22:38391
use for therapy of idiopathic thrombocytopenic purpura, 22:47622
use for therapy of leukemia in man, 22:33866
use for therapy of neoplasms in lymph system of man, 22:23563
use for therapy of neoplasms in man before or following surgery, 22:25926
use for therapy of pleural and peritoneal malignant effusions, protection against hazards of, 22:51644
use for therapy of polycythemia in man, 22:33866
use for therapy of polycythemia in man, complications following, 22:51846
use for therapy of polycythemia vera in man, 22:23563
use for therapy of polycythemia vera, incidence of anemia and leukemia following, 22:6886
use for therapy of polycythemia vera, occurrence of leukemia development following, 22:4682
use for therapy of polycythemia, development of leukemia following, 22:6912
use for treatment of polycythemia vera, comparison of, with busulfan, 22:49432
use in autoradiographic determination of fissure conditions in rocks, 22:14691
use in double tracer technique for process analysis in chemical plants, 22:14710
use in radiopharmaceuticals, determination of half-life and radiation-emission for, 22:23586
use of chromium phosphate incorporated, for therapy of human bladder carcinomas, 22:36340
use of d-isopropyl-phosphorofluoridate-incorporated, to determine survival time of erythrocytes in young horses, 22:51307 (ORAU-106, pp 105-34)
use of disodium phosphate-incorporated, for scanning of human brain for localization of intracranial neoplasm 22:31198
use of ethiodol-lecithin-incorporated, for therapy of lymphoma of man, 22:8564
use of lipopolysaccharide-incorporated, for determining effects on agglutination of erythrocytes by anti-bloo group B serum, 22:23395 (COO-1285-11)
use of pyrophosphate-incorporated, for study of phospha uptake by ATP in Mycobacterium tuberculosis, 22:4052
use of sodium phosphate-incorporated, for treatment of polycythemia vera in man, development of neoplasia following, 22:49589
use of virus-incorporated, to determine electrophoretic mobility of foot-and-mouth disease virus, 22:14932
uses for dispersion studies of Anopheles sergenti, 22:51403

PHOSPHORUS ISOTOPES P-33
abundance in Saint-Severin meteorite, 22:43753
determination in neutron-irradiation sulfate solutions, using beta absorption, (E), 22:5790(T) (CEA-tr-A-189
determination in phosphorus-32, methods for, 22:35280
effects on erosion, redeposition of sedimentary materials, and weathering, geochemical, 22:35936
energy levels from silicon-30 (α,p) and sulfur-34 (d,He-3) reactions, (E), 22:18174
energy levels from silicon-30 (α,p) reactions, lifetime measurements using Doppler shift attenuation, (E), 22:35285(R) (AERE-PR/NP-13)
energy levels from silicon-30 (α,p) reactions, spin-parity assignments and branching ratios for, (E), 22:53144
energy levels from sulfur-34 (d,He-3) reactions, (E), 22:5809(R) (ANL-7354)
energy levels from sulfur-34 (n,d) reactions at 14 MeV, (E), 22:20528
energy-level transitions from sulfur-34 (n,d) reactions (E), 22:29978
half-life of, (E), 22:24845
production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)

PHOSPHORUS OXIDES
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
radiation effects on ESR spectra of crystalline, relati of oxygen vacancies to gamma, (E), 22:20046
reactions with americium oxides, solid-state, 22:30548
use for drying seeds, effects of, on x-radiosensitivity 22:21627
Al_2O_3--B_2O_3--CaO--P_2O_5, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
Al_2O_3--B_2O_3--Fe_2O_3--P_2O_5, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
Al_2O_3--B_2O_3--Na_2O--P_2O_5, composition and properties of, for vitrification of fission product solutions, 22:27849 (CEA-N-816, pp 415-80)
Al_2O_3--B_2O_3--Na_2O--P_2O_5, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
Al_2O_3--B_2O_3--P_2O_5, composition of glasses of, at 1000°C 22:25456 (CEA-N-616, pp 369-434)
CaO--P_2O_5--ZrO_2, phase studies at high temperatures, 22:11086
P_4O_{10}--V_2O_5, radiation effects on electric conductivity of semiconducting glass of, gamma, 22:15264

Phosphorus Oxychlorides
see Phosphoryl Chlorides

PHOSPHORUS SYSTEMS
B--P--Th, thorium nitride formation over nitrogen-containing, thermodynamics of, 22:45044
C--Fe--P, ferromagnetism of $Fe_{80}P_{12.5}C_{7.5}$, (E), 22:155 (CALT-221-38)
C--Fe--P, magnetization at 1.8 to 300°K, (E), 22:31958
C--Fe--P, Moessbauer spectra at 4.2 to 800°K, (E), 22:31958
Cr--Ni--P, performance as brazing alloy for high temperatures, 22:12991
Cr--Ni--P, testing as brazing alloy for sodium corrosio loop, 22:12972
O--P--V, electric conductivity of semiconducting glasse of, 22:40993(R) (COO-1198-534)
P--Pu, phase relations in, 22:2699
P--Th, phase diagrams, 22:36548

PHOSPHORUS TETRAFLUORIDE RADICAL
molecular structure of, 22:96(R) (RRL-2310-214)

PHOSPHORYL CHLORIDES
effects on air oxidation of graphite, effects of moistu on, 22:779 (AERE-R-5552)
exchange reactions of carrier-free phosphorus-32 in, 22:18786
radiation effects on thermoluminescence of, x, 22:3063
$AlCl_3$--$HfCl_3$--$POCl_3$, phase studies on, 22:8068
$AlCl_3$--$POCl_3$--$SnCl_4$, phase studies on, 22:8068

AlCl$_3$--POCl$_3$--ZrCl$_4$, phase studies on, 22:8068
osphorylase a (or b)
  see α-Glucan Phosphorylase
OSPHORYLATION
  see also Cytochromes
  radiation effects on activity of, in liver mitochondria of rats, protective effects of mustard gas solutions against x, 22:19378
  radiation effects on capacity for, in Azotobacter, γ, 22:21428
  radiation effects on oxidative, in cotton leaves, effects of seed exposure on γ, 22:6762
  radiation effects on oxidative, in liver mitochondria, effects of galascorbin on, 22:51385
  radiation effects on oxidative, in mitochondria from brain of mice, effects of substrate on fast neutron and x, 22:16994
  radiation effects on oxidative, in mitochondria of potato tubers, effects of dinitrophenol on γ, 22:19253
  radiation effects on oxidative, in mitochondria of liver and spleen of rats, whole-body γ and x, 22:6750
  radiation effects on oxidative, in mitochondria of rat tissue, neutron and x, 22:16981
  radiation effects on oxidative, in Phycomyces, x, 22:16980
  radiation effects on processes of oxidative, in cotton plants following treatment of the seed, γ, 22:33748
  radiation effects on, in mitochondria and nuclei of cotton plants, 22:19294
  radioinduced uncoupling in oxidative, in mitochondria from liver and spleen of rats, γ, 22:8442
  reaction mechanisms of uncouplers of oxidative, in house flies and mice, 22:25225(R) (UCB-34-P-113-2)
  reactions in liver mitochondria of rats, effects of radioprotective compounds on, 22:25893
  stimulation of oxidative, by deuterated water, 22:47477
OSPHOTUNGSTATES
  see also Ammonium Phosphotungstates
osphotungstic Acids
  see Heteropoly Acids
osphotungstomolybdic Acids
  see Heteropoly Acids
otocells
  see Photoelectric Cells
otochemical Reactions
  see Photochemistry
OTOCHEMISTRY
  see also Photosynthesis
  book: Chemistry of the Ionosphere (in Russian), 22:26318
  conference on, Munich, September 6 to 9, 1967, parts I and II, 22:8155
  conference on, Univ. of Newcastle upon Tyne, England, Sept. 21 to 23, 1966, 22:2148
  electron transfer processes in radioinduced reactions, 22:2150
  elementary reactions at variable wavelength in, 22:48872(R) (CALT-532-37)
  equipment for studying, use of flash photolysis and time-resolved mass spectrometry, 22:43159 (SC-M-68-125)
  instrumentation for repetitive flash photolysis, 22:37780(R) (RRL-2310-242)
  processes for production of hot atoms, 22:4173
  processes in low-temperature, of organic vitreous liquids, review of, 22:6328
  processes in, comparison of, with radiation processes, 22:2149
  radiation effects on, of polyuridylic acid complexes, uv, 22:10727
  radiation effects on, of protein systems, uv, 22:33710(T) (JPRS-41315, pp 4-15)
  radiation effects on, of spores of Bacillus megaterium, uv, 22:49656
  reaction mechanism for, of oxidation of chlorophyllous pigments, 22:25794
  reaction mechanisms of, of photoinactivation of bacteriophages, 22:25797
  reaction mechanisms of, of retina of eyes, 22:25796
  research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
  research progress in, review of Soviet, 22:12343(T) (JPRS-44048)
  research progress in, summaries of off-site USAEC, 22:18811 (TID-4005(Pt.2A)(3rd Ed.))
  review on, 22:2129
  review on phosphorus compounds in, 22:25421
  use for determination of derivatives of 5-bromouracil and thymine in aqueous solution, 22:23409(R) (NYO-2798-32)
  use for determination of molecular structure of dipeptides, 22:36160
otoconductive Cells
  see Photoelectric Cells
OTOCONDUCTIVITY
  conference on, 22:4547
OTOELASTICITY
  analysis of stresses at openings in thin-walled cylindrical pressure vessels, 22:2317 (TID-24106)
  testing of pressure vessel skirt-support junctions, stress analysis by two- and three-dimensional, 22:14303
  use for simulation of thermal stresses in ChS Epoxy 110 and ChS Epoxy 12, 22:783
OTOELECTRIC CELLS
  (Including photoconductive, photoelectric, and photovoltaic cells and tubes.)
  see also Photomultiplier Tubes
  see also Radioelectric Cells
  see also Solar Cells
  conference on, 22:4547
  design of promethium-147 fueled, 22:33616
  development for detection of 10- to 400-A x radiation, review of, 22:10547
  development for space power, review of, 22:13306
  efficiency for detecting Cherenkov radiation, 22:33637 (CERN-68-14)
  linearity of, system for measuring, 22:21318 (UCRL-50176)
  operation of high-voltage gamma--electric cell, (E/T), 22:43959
  performance using concentrators, 22:19839
  radiation effects on cathodes of, used for middle and vacuum uv, electron and gamma, 22:51293
  radiation effects on quantum efficiency of photocathode materials, electron, 22:48154 (N-68-24731)
  sensitivity to soft fluorescent x rays, 22:8341 (UCID-15248)
  sensitization of, transfer method for, 22:40499
  use in energy conversion, review of present status of, 22:29320
  use in microcator for measuring positional changes of bodies at 10^{-6} m range, 22:21014 (UUIP-560)
  use in operation Nougat, linearity measurements for, 22:21318 (UCRL-50176)
  use of cadmium sulfide, with plastic phosphor for gamma- and x-ray dosimetry, 22:25674
  use with position-sensitive silicon detectors for detection of ultraviolet radiation, 22:28083
PHOTOELECTRIC EFFECT
  angular distributions in, effect of photoelectron scattering on, (T), 22:52498
  conference on, 22:4547
  cross sections for Z = 1 to 100 elements, tables of, 22:5869 (LA-3753)
  cross sections for, computer program for calculating, (T), 22:9916 (AERE-M-1956)
  energy loss in soft tissue, use of, in radiography for detection of breast neoplasms, 22:10785
  equations for atomic K shell, relativistic, 22:47823
  quantum efficiency in semiconductors, 22:19838
  resonance processes in, 22:29235
  theory of gamma-ray induced, (T), 22:5883
  theory of, review of, 22:43858 (NYO-3829-17)
  yield in sodium iodide scintillation detectors, measurement of, 22:16880
  yield measurements from thin targets, 22:38799
PHOTOFISSION
  cross sections and fragment yields from heavy nuclei, at photon energies of 300 to 1600 MeV, (E/T), 22:5856
PHOTOGRAPHIC EMULSIONS
  (Not to be confused with thicker diagnostic emulsions (see Nuclear Emulsions))
  see also Nuclear Emulsions
  see also Photographic Film
  coating and processing of autoradiographic, 22:36190
  development for alpha track autoradiography of submicron aerosol particles, 22:49075
  development of gelatin-free, for positive-ion detection for mass spectroscopy, 22:4530
  ion beam range measurements at 2.0 to 7.5 MeV in, beryllium-9, boron-11, and carbon-12, 22:6585
  latent image formation in, effects of strong electric field on, 22:36035(T) (SLAC-Trans-85)
  preparation of layers of, for autoradiograpny, equipment for, 22:19179(P)
  radiation effects on performance of Kodak Personal Neutron Monitoring film types A, β, γ, and x, 22:51266
  radiation effects on, dispute on dose equivalences for kilovoltage, 22:51652
  radiation effects on, mechanism of secondary background blackening from ion beam, 22:16969
  resolution of, for detection of 7- to 60-keV electrons, 22:40384
  response of ion-sensitive, dependence on ion energy of, 22:4529
  response of, for detection of 7- to 60-keV electrons, 22:40383
  thickness of, determination by energy loss of alpha particles, 22:40366
  use in autoradiography, criteria for, 22:10659
  use in determination of thorium-232, method of introducing isotope into, 22:37692
  use in double-tracer macro-autoradiography, 22:49149
PHOTOGRAPHIC FILM
  see also Nuclear Emulsions
  analysis of bubble and spark chamber, computer-controlled manual system for, 22:23322 (SLAC-81)
  analysis of bubble and spark chamber, Hummingbird automatic digitizer for, 22:28165 (SLAC-82)
  analysis of bubble chamber, design and performance of HPD Mark 2 flying-spot digitizer for, 22:23320 (CERN-68-4)
  analysis of mass spectrographic, digital reader for, 22:28205 (GEPP-32)
  analysis of spark chamber, SPDL computer system for, 22:36099 (SLAC-84)

assay of developer activity of x-ray, method for, 22:40785
contrast for radioisotope scans, method for enhancing, 22:40762
development for dental radiography, 22:12870
digitizing computer program for, 22:6232 (UCID-15212)
drive design for x-ray, in Moessbauer spectrometer, 22:14637
labeling for use in autoradiography, device for, 22:43189
particle tracks recorded on, optical scanning system for analysis of, 22:10605(P)
processing of color, bromine rejuvenation of ferricyanide bleach in, 22:27523 (SC-DC-68-2132)
processing of radioisotope scan, 22:49401
protection of types 103-0 and plus x, on space vehicles, 22:48983 (N-68-25220)
radiation effects on Apollo telescope mount, proton, 22:38186 (N-68-11469)
response of x-ray, at 0.005 to 1.3 MeV, quantitative calibration of, 22:8360
sensitivity for detection of x rays, spectral, 22:12584
sensitivity to nuclear radiation in near-earth orbital missions, 22:12730
silver content of, x-ray fluorescence method for determining, 22:45343
silver thickness measurements on x-ray, x-ray absorption gage for, 22:43146
use for dosimetry of γ rays, electrons, and photons in water equivalent phantom, 22:36285
use for leak testing of sealed radium-226 sources, 22:38306
use in electron scattering measurements, accuracy of, 22:5113
use of dry developing, for registration of charged-particle tracks, 22:38019
use with phosphors for determining activity of dust particles on air sample filters, 22:28515
Pyrazine, Hexahydro-
see Piperazine
PHOTOGRAPHY
see also Cameras
see also Electrophotography
see also Photographic Film
see also Photomicrography
camera system for projectile in-flight, film image synchronized drum, 22:22895 (LA-3846)
conference on pictoral pattern recognition, 22:38174
data recording camera design for personnel badge, 22:14640
data recording camera design for personnel badge, 22:14633
development of microscopic, for Rankine cycle phase distribution studies, 22:10486(R) (SAN-677-19)
equipment and methods for stop-motion flash, of projectiles in flight, 22:22896 (LA-3874)
equipment design for, in bubble chambers, 22:30864
equipment for high-speed, conference on use of photo-electronic image device, 22:4539
equipment for holography, design of x-ray interference, 22:45358(P)
experiments in, for particle tracks in bubble chambers, 22:12647
method for fine-structure study of solar flares, 22:47785
method for processing radioisotope scans to improve display of isotope distribution, 22:49401
methods for transmission scinti-, of human organs, 22:51823
optical distortions in, of bubble chamber particle tracks, 22:12615 (CERN-67-26(Vol.1), pp 201-13)
optical distortions in, of bubble chamber particle tracks, effects of turbulent convective motions on, 22:12616 (CERN-67-26(Vol.1), pp 215-28)
reproduction of photographic print by neutron activation autoradiography, 22:16398 (GA-8171, pp 119-32)
use in tracking nitromethane explosion-produced clouds, 22:198 (PNE-1108)
use of cine scintillation, for determining abnormalities of cardiopulmonary circulation, 22:25859 (UCLA-12-668, pp 1-28)
use of microcinema-, to study x radiation effects on cytokinesis of Triton erythroblasts, 22:33954
use of micrographic, to study x-ray effects on blood circulation in chicken embryos, 22:31253
use of polaroid technique for, of radioisotope scans, 22:40762
use of three-dimensional, for contour mapping of explosion-created craters, 22:12462 (SC-DC-67-2330)
use of time-lapse, for studies on proliferation kinetics of x-irradiated L cells, 22:36356
use to study chip flow in two-flute twist drills, 22:14406 (Y-DA-1999)
Photoluminescent Detectors
see Radiation Dosimeters, Photoluminescent
PHOTOMETERS
see also Fluorophotometers
design for identifying charged particles stopped in emulsions, 22:19111
design of, with radioisotope-activated scintillator light source, 22:51269(P)
PHOTOMETRY
see also Colorimetry
see also Spectrophotometry
beta-excited isotopic light sources for, 22:14433 (ORNL 4196, pp 66-89)
classification of stellar spectra by photoelectric narrow-band, (T), 22:7124
data for atomic-absorption flame, of barium, beryllium, boron, and europium, 22:30442
interpretation of eclipsing stellar systems in, (T), 22:36573
radiation magnitudes and units, 22:17024
sensitivity of flame, effects of increasing signal-to-noise ratio on, 22:14425 (ORNL-4196, pp 1-12)
use in determination of trace elements, review on, 22:33213
use of flame, for strontium determinations in leaves, comparison of, with activation analysis, 22:12938 (NP 17124)
PHOTOMICROGRAPHY
see also Microscopy
development for studying phase distributions in linear and helical boiling mercury flow, 22:47285(R) (SAN-677-29)
preparation of porous ceramics and metals for, 22:43544 (Y-1625)
use for analysis of radiation effects in plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuel elements, 22:32743(R) (BNWL-739)
use of electron, for optical irradiation analysis of uranium oxide (UO_2) and uranium carbide (UC), 22:2749
PHOTOMULTIPLIER TUBES
amplification stability of FEU, 22:30916
amplification stability of, used in eight-crystal scintillation gamma spectrometers, 22:36095
characteristics of FEU-77, for light pulses in 700 nm range, 22:47423
circuits for, design of coincidence--anticoincidence, amplifier--discriminator, and amplifier, 22:38158
dark current production by Cherenkov pulse due to cosmic mesons (μ) in, used for spectrophotometry of faint astronomical sources, 22:51286
description for detecting metastable electronically excited molecules, 22:38150 (UCRL-17989, pp 167-79)
design and fabrication in Czechoslovakia, 22:38154
design and fabrication of, 22:6673 (DEG/SINR-68)
design and fabrication of cross-field, with nanosecond risetime for nuclear studies, 22:28231
design and performance of, in combinations with thallium-activated sodium iodide scintillation detectors, 22:8354
design of, capable of withstanding shock acceleration of 10,000 g, 22:40501
design with high quantum efficiency and low dark current for use with scintillation detectors, 22:40430
development for high counting rate experiments, 22:26929(R) (COO-1420-139)
development of highly-sensitive PM 55, with transparent Cs--K--Na--Sb photoelectric surface, 22:12582
development of metal--ceramic, for use at temperatures u to 175°C, 22:40502
diode for hybrid, description of reverse epitaxial silicon, 22:40500
efficiency of fast, associated with threshold circuit, 22:19207
electron secondary emission processes in, 22:40424
electron time-of-flight in, variations of, 22:30917
field theory for high resolution of thermal radiation, quantum, 22:23302
focusing adjustments for XP 1020, description of, 22:49076
gain of RCA 7046, for fixed dynode potentials, detector load dependence of, 22:23368
gain-control in high-radiation environments, circuit design for automatic, 22:2463
light collection for, solid light funnels for increasing efficiency of, 22:43034
light measurements with, noise characteristics in, 22:43147 (AE-323)
noise in, circuit for suppressing, 22:48509(R) (BMwF-FBK-68-22)
operating characteristics of, for high resolution gamma spectroscopy using thallium-activated sodium iodide scintillation detectors, 22:51246 (RT/EL-(68)1)
performance for dosimetry of pulsed x radiation, 22:665
performance for liquid scintillation counting, effects o after-pulses on, 22:51224
performance for use in radiation detectors, 22:21318 (UCRL-50176)
performance for use with large scintillation detector, 22:49399
performance of, circuit for monitoring, 22:14885
performance with dual-phosphor scintillation detectors for monitoring α and β activity on human hands, 22:45562
performance with scintillation counter for measurement o activity from radon decay products on filter paper samples from air of uranium mines, 22:45561
photocathode uniformity of large end-window, measurement of, 22:10541 (MIT-952-4, pp 267-99)
photocathodes for, technology of antimony--cesium, 22:12215(T) (UCRL-Trans-10201)

power supply for, stabilized high-voltage, 22:47421
pulse converter for, design of time-to-amplitude, 22:38159
pulse integrators for, design of nanosecond, 22:4519
pulse parameters of short-time, experimental approximation methods for determining, 22:33690 (ZfK-121, pp 134-248)
pulse shaper for, design of, 22:28121
pulse-shape discrimination of high-energy electrons and muons, 22:2421
pulses from Philips 58 AVP, effect on neutron time-of-flight spectroscopy of secondary, 22:10588
radioinduced noise in star tracker, electron, 22:12728
readout circuits for, 22:21400(P)
response and afterpulsing in, single electron, 22:12711
response of, derivative measurement of, 22:43183
response to short signals, time, 22:49170
sensitization of, transfer method for, 22:40499
shield and base for, design of, 22:38151 (UCRL-18031)
socket assemblies of, design of pulse limiters for protection of logic circuits from overloads originating in, 22:12699
spark-over indicator for, 22:47420
spectral matching to various solutes in liquid scintillation counting, 22:8343
stability in scintillation detectors, 22:38017
stabilization of, servo-circuits for, 22:47331
testing of RCA 8575 fast, with gallium-phosphide diode XP-20 nanosecond light source, 22:4520
testing of, used in radiation monitoring instruments, 22:6556 (CONF-650460-1)
time-spread characteristics of Valvo 58 AVP, 22:2461
use as photon detector, 22:8418
use of gridded, for coincidence measurements, 22:33690 (ZfK-121, pp 134-248)

PHOTON BEAMS
effects on tumors, performance of 42 MeV betatron as source for therapeutic, 22:23575
monitoring at Bonn electron synchrotron, design and performance of quantameter for, 22:46689
monitoring at Cambridge Synchrotron, calibration and performance of quantameters for, 22:46690
monitoring at DESY, calibration of quantameters for, 22:46688
monitoring at DESY, calibration of systems for, 22:46658
monitoring at Frascati Synchrotron, calibration of quantameter for, 22:46691
monitoring of 4- to 27-MeV, sensitivity of thick-walled aluminum ionization chamber for, 22:46664
monitoring of, cryogenic calorimeter for use as absolute reference quantameter for, 22:46666
monitoring of, use of quantameters for, 22:46687

Photon Showers
see Cascade Showers

Photoneutrons
see Neutrons--photoproduction

PHOTONS
see also Bremsstrahlung
see also Gamma Radiation
see also Photon Beams
see also X Radiation
absorption by atoms at 20 to 1000 eV, lectures on, 22:37628 (ISS-68/1)
absorption by deuterium, retardation functions for orbital E1, E2, and M1 transitions in, (T), 22:35216
absorption by nuclei, effects of velocity-dependent nucleon--nucleon potential on integral cross sections for dipole, (T), 22:44779
absorption by nucleons and nucleon bound states, Drell--Herne--Gerasimov sum rule for, 22:3333
absorption by oriented nuclei in polarized beams, cross section for, (T), 22:42125
absorption by water at 15 keV to 3 MeV from point isotropic sources, calculated data on energy deposition by, 22:36274
absorption cross section for beryllium-9, calculations using many-particle shell model for dipole, (T), 22:50546
absorption in intergalactic space, vector dominance model for $\gamma + \gamma \to \text{rho}^0 + \text{rho}^0$ interactions at high energies for, 22:34918
absorption of two, field correlation effects in, (T), 22:26209
absorption of, free--free radiative transitions in, 22:7177
absorption processes in monatomic gases, multi-, (T), 22:9005
absorptions by hydrogen atoms, cross sections for ionization from, (T), 22:17382
acceleration of cosmic particles by, (T), 22:15384
angular correlation of atomic cascade, calculation of signal-to-noise ratio for measuring, 22:19102
angular correlation of, from positron annihilation in rare earth metal single crystals, 22:24436
angular distributions from positron annihilation in rare earth single crystals, 22:24024 (CONF-670502-, pp 487-94)
annihilation into neutrino-antineutrino pair via charged intermediate vector boson in stars, (T), 22:21793
attenuation and energy-absorption coefficients, review of, 22:5400
beams of hard, theoretical and experimental study of, 22:15878 (NP-17237)
book: Introduction to General Theory of Particle Transport, 22:22267
book: Photomeson Processes, 22:32045
collection yields of cylindrical liquid phosphors, 22:6593
collimation of monoenergetic, with linear polarization near 100 percent, from thin crystal targets, 22:11619
Compton scattering of, spectral change due to multiple, (T), 22:31601
cosmic-ray interactions with background, in Universe, (T), 22:34302
coupling constant (rho--γ) in quark model, 22:11655
coupling constants for γNN*, test of N(1400) dominance of nucleonic form factors from, 22:15733
coupling to neutrinos, theory of weak, 22:50355
coupling to rho, ω, and phi, form factor for, 22:3316
coupling with N and Δ(1236), current algebra calculation of, 22:3323
detection and measurement of, use of photomultiplier tubes for, 22:8418
detection in molecular beams, methods for, 22:24027 (UCRL-18032)
detection of 0.5- to 1300-A, design of scintillation system for, 22:28123
detection of 15-GeV cosmic, spark--emulsion chamber for, 22:10559
detection of, quantum theory of field attenuation in, 22:26704
distribution in cascade showers, (T), 22:21919
dose rate from 0.01- to 20-GeV, normally incident to water slab, calculation of, 22:19352
dose rate measurements of, review of concepts for, 22:43118
dosimetry in human phantoms at different exposure angles and distances, 22:45566
dosimetry in tissue-equivalent phantoms, tabulations of calculated absorbed fractions for, 22:36275
dosimetry in tissues in relation to LET and exposure, 22:38307
dosimetry in water-equivalent phantom, 22:36285
dosimetry of high energy, ferrous sulfate, 22:16974(R) (ORO-2832-56)
dosimetry of, design and performance of tissue-equivalent ionization chamber for, 22:14863
effects on back scattering, differential absorption, and lateral diffusion, 22:49442
effects on biological objects, comparison of electron to, 22:38447
effects on C-reactive protein content of malignant and normal tissues of man, 22:45407
effects on deuterated and normal butane and propane, mechanism and yields in, 22:35869
effects on epitheliomas of tonsillar tissues, therapeutic, 22:51702
effects on isotope enrichment in gases, 22:10325(T) (UCRL-Trans-10178)
effects on luminescence of alkali metal iodides, 22:29560
effects on lung carcinoma, effects of lung tissue on exit dose following therapeutic 33 MeV, 22:21542
effects on mitosis in regenerating liver and tumor tissue of rats, 22:40851
effects on π production from e + p interactions, (E), 22:13635 (LAL-1185)
effects on seeds of Vicia faba, comparison of, to x ray, 22:40960
effects on singlet and triplet π-electronic states of benzene and naphthalene, 22:16603
effects on superconductors, theory, 22:48060
effects on survival of bacteria and yeasts, RBE for 20-MeV electron, γ, and 20-MV, 22:38503
effects on survival of mice, RBE for 20-MeV electron and 21-MeV, 22:38277
effects on tissues, discussion of, 22:25911
effects on tongue base tumors in man, comparison of high-energy electron to therapeutic, 22:51735
efficiency for activation analysis, 22:14469
electron scattering on, relativistic, (T), 22:29102
emission by man, effects of cesium-137 and potassium-40 content on, 22:488 (AEEW-M-715)
emission from antenna, quantum electrodynamics with external current and potential for, 22:32200
emission in $e^+ + e^-$ interactions in colliding beams, formulas for soft, 22:29659
emission in $\mu^+ + e \to \nu + \text{anti } \nu + \gamma$ interactions, angular and energy distributions for, (T), 22:26618
emission in nuclear and elementary particle scattering and decay processes, electromagnetic properties of short-lived states from, 22:44366
emission in particle interactions, approximations for calculating radiative corrections for, 22:34910
emission of soft, from particle interactions, Low approximation for components of polarization tensor for, 22:41770 (JINR-P2-3851)
emission of soft, low-frequency limit of bremsstrahlung amplitude for, 22:50453
emission of, during recombination of hydrogen in expanding Universe, (T), 22:43751
energy loss calculations for 0.1- to 20-GeV, in semi-infinite slab of water, 22:2507 (ORNL-TM-2026)

energy measurements in xenon bubble chambers, precision of, 22:38084
field commutator in quantum theory of intensity correlations, (T), 22:5641
field theory for neutral vector meson and, 22:29753
flux of cosmic, in galaxy, (T), 22:41389
form factor for γNN^* from analysis of π^0 electroproduction, transition, 22:26609
graviton emission by, in electromagnetic field, 22:53032
Green functions for, quantum electrodynamics without bare constants and divergences for, 22:20187
intensity at sea level of cosmic, solar diurnal, (E), 22:19804
intensity fluctuations in cascade showers, (T), 22:21916
intensity half value layer calculations for aluminum, copper, and lead, determination of effective energy from, 22:30873
intensity measurement of field-emission, in cavity resonators, 22:9724(T) (ANL-Trans-535)
intensity variations at sea level of cosmic, pressure effects on, (E), 22:19803
interactions $\gamma + {}^{11}B \to {}^{11}C + \pi^-$, use of gauge invariance and PCAC theory for cross-section sum rules for, 22:37102
interactions $\gamma + {}^{16}O \to {}^{16}N + \pi^-$, use of gauge invariance and PCAC theory for cross section for, 22:37102
interactions $\gamma + {}^{16}O \to$ rho^0 $+ {}^{16}O$, determination of rho + N scattering amplitude from, (T), 22:37147 (NP-17497)
interactions $\gamma + {}^{16}O \to$ rho^0 $+ {}^{16}O$, rho--N scattering amplitude from, (T), 22:24599
interactions $\gamma + {}^3He \to p + d$ at 180 to 550 MeV, spark chamber and scintillation counter study of differential cross section for, (E), 22:32046
interactions $\gamma + {}^3He \to \pi^+ + {}^3H$, use of current algebra and PCAC hypothesis in soft-pion approximation for, 22:24605
interactions $\gamma + {}^4He \to {}^3He + N^{*0}$ and $\gamma + {}^4He \to {}^3H + N^{*+}$, isotopic relations between cross sections for, 22:50327
interactions $\gamma + {}^4He \to$ rho^0 $+ {}^4He$, determination of rho + N scattering amplitude from, (T), 22:37147 (NP-17497)
interactions $\gamma + {}^4He \to$ rho^0 $+ {}^4He$, rho--N scattering amplitude from, (T), 22:24599
interactions $\gamma + 3\pi$ in $\pi + p \to \pi^- + p + \gamma$ interactions, final-state, (T), 22:24651
interactions $\gamma + C \to e^+ + e^- + C$, test of quantum electrodynamics from wide-angle pair production in, (E), 22:50283
interactions $\gamma + d \to \gamma + d$, sum rules for, 22:5543
interactions $\gamma + d \to n + N^{*+}$ and $\gamma + d \to p + N^{*0}$, isotopic relations between cross sections for, 22:50327
interactions $\gamma + d \to n + p$ at 140 to 400 MeV, differential cross sections for, (E), 22:24520
interactions $\gamma + d \to n + p$ at high energies, covariant theory for, 22:39333
interactions $\gamma + d \to p + n$ at 170 to 450 MeV, proton polarization from, (E), 22:15661
interactions $\gamma + d \to \pi + p + n$ at 911 to 1390 MeV, Cherenkov counter study of cross section for, (E), 22:15662
interactions $\gamma + d \to \pi^0 + d$ at 650 to 820 MeV, scintillation counter study of differential cross sections for, (E), 22:24537
interactions $\gamma + d \to \pi^+ + 2n$ at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions $\gamma + d \to \pi^+ + 2n$ at 3.4 and 5 GeV, cross section for π^+ production in, (E), 22:39237
interactions $\gamma + d \to \pi^- + 2p$ at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions $\gamma + d \to \pi^- + 2p$ at 3.4 and 5 GeV, cross sections for π^- production in, (E), 22:39237
interactions $\gamma + d \to \pi^+ (\pi^-) + 2n(2p)$ at high energies and low momentum transfers, impulse approximation with spin--isospin deuteron structure for analysis of, 22:44352 (DESY-68/35)
interactions $\gamma + d$ at 0 to 100 MeV, dispersion theory of elastic, 22:41778
interactions $\gamma + d$ at 100 to 320 MeV, (E), 22:48447
interactions $\gamma + d$ at 300 MeV with production of Δ(1236) resonance, cross section for, (T), 22:50319 (DESY-68/38)
interactions $\gamma + d$ at high energies, covariant theory of deuteron disintegration in, 22:22353
interactions $\gamma + d$ at high energies, test of cross section sum rules for nucleon magnetic moments from forward Compton, (T), 22:22347 (JINR-E2-3715)
interactions $\gamma + d$ below 1.5 GeV, review of experiments and theory for single π production in, 22:32089
interactions $\gamma + d$ below 6 GeV in bubble chamber, resonance production from, (E), 22:15660 (DESY-67/40)
interactions $\gamma + d$, Drell--Herne--Gerasimov sum rules for absorption, 22:3333
interactions $\gamma + d$, possible test of internal symmetries of electromagnetic current from π^0 production from, (E), 22:1406
interactions $\gamma + d$, sum rules for forward, 22:1402 (JINR-P4-3450)
interactions $\gamma + d$, test of cross-section sum rules for deuteron magnetic moments from, 22:37101
interactions $\gamma + e \to \gamma + e$ at 662 keV, Compton polarimeter study of γ polarization in Rayleigh, (E), 22:22348
interactions $\gamma + e \to \gamma + e$ in field of intense laser beam, resonance Compton, (T), 22:13703
interactions $\gamma + e \to \gamma + e$, test of CP violation in γ + 2γ transitions in Compton, (T), 22:24699
interactions $\gamma + e$ at 500 and 950 MeV, pair production and Compton, (E), 22:44301
interactions $\gamma + e$ at low energies, Singh lemma for Compton, 22:3315
interactions $\gamma + e$ in eight-dimensional space, (T), 22:5535
interactions $\gamma + e$ in lasers, quantum electrodynamics with external current and potential for, 22:32200
interactions $\gamma + e$, cross sections for double and tripl Compton, 22:22285
interactions $\gamma + e$, currents as coordinates for amplitu of forward, 22:48260
interactions $\gamma + e$, formula for differential cross section for Compton, 22:22364
interactions $\gamma + e$, spectrum of inverse Compton, (T), 22:22349
interactions $\gamma + \gamma \to$ gravitons in gravitational fields, cross sections for, (T), 22:22458
interactions $\gamma \to \gamma + \gamma$, model for CP violation in, (T), 22:24699
interactions $\gamma + \gamma \to \nu$ + anti ν, stellar energy loss from, 22:50355
interactions $\gamma + \gamma \to \pi^0 + \pi^0$, $f^0 \to 2\gamma$ decay width from dispersion sum rule for, 22:17908
interactions $\gamma + \gamma \to$ rho^0 + rho^0 at high energies, vect dominance model for cross section of, 22:34918
interactions $\gamma + \gamma$, gravitational interaction effects o (T), 22:24737
interactions $\gamma + \gamma$, polarization tensor on the n-th ran from, 22:9549
interactions $\gamma + K \to \Lambda$ + anti N, analyticity properties of helicity amplitudes of, 22:39341
interactions $\gamma + \Lambda^0 \to \Lambda^0 + \pi^0$, superconvergent sum rule for, 22:39325
interactions $\gamma + N \to \Delta$ (1920) $\to$ rho^0 + N in vector-meso dominance model, cross sections for, 22:50325
interactions $\gamma + N \to \Delta$(1236), dispersion relations solution for, 22:3328
interactions $\gamma + N \to \Delta$(2420) $\to$ rho^0 + N in vector-meson dominance model, cross sections for, 22:50325
interactions $\gamma + N \to$ eta + N at high energies, Regge po model for eta production in, 22:24607
interactions $\gamma + N \to$ eta + N, phase shift analysis for, 22:1404 (TH-177)
interactions $\gamma + N \to \gamma + N$ in s- and u-channel, contribution to amplitude for baryon resonance production, (T), 22:22357
interactions $\gamma + N \to \gamma + N$, method for derivation of lo energy theorem from amplitude of Compton, 22:44364
interactions $\gamma + N \to \gamma + N$, $\pi^0 \to 2\gamma$ and eta^0 $\to 2\gamma$ decay rates from superconvergence relations of Compton, (T) 22:34907
interactions $\gamma + N \to K + \Lambda$ (Σ), photon--vector meson analogy model for anti K + N $\to$ vector meson + Λ (Σ) relation with, 22:46366
interactions $\gamma + n \to K^0 + \Lambda^0(\Sigma^0)$ below 1.530 GeV in hea liquid bubble chamber, upper limits for, (E), 22:324
interactions $\gamma + N \to \Lambda + K$, use of current algebra and PCAC hypothesis for amplitude of, 22:15715
interactions $\gamma + N \to N + 2\pi$, use of PCAC hypothesis and current commutation relations for multiple soft-pion production in, (T), 22:44359
interactions $\gamma + N \to N + \omega^0$, use of linearly polarized photons as parity filter in, 22:37106
interactions $\gamma + N \to N + \pi$ at low energies, current commutators and mass extrapolation theory for parameters of multipole amplitudes of, 22:39330
interactions $\gamma + N \to N + \pi$, current algebra study of lo energy behavior of amplitudes for, 22:9550
interactions $\gamma + N \to N + \pi$, currents and current commutators for amplitude of, 22:11706
interactions $\gamma + N \to N + \pi$, model for N^* production in, 22:3451
interactions $\gamma + N \to N + \pi$, nucleon magnetic moment relations from modified PCAC hypothesis for, (T), 22:44358
interactions $\gamma + N \to N + \pi$, rho--π--γ vertex calculati from modified PCAC hypothesis for, 22:37121
interactions $\gamma + N \to N + \pi$, sum rule for π form factor from, 22:34927
interactions $\gamma + N \to N$ + rho^0, use of linearly polarize photons as parity filter in, 22:37106
interactions $\gamma + N \to N$ + vector mesons, quark model for 22:20184
interactions $\gamma + N \to N^* + \pi^0$, test for Regge cuts in angular momentum plane from, (T), 22:22354
interactions $\gamma + N \to N^*$, form factor for γNN^* vertex from, 22:26607
interactions $\gamma + n \to p + \pi^-$ at 352 to 550 MeV, differential asymmetry ratios with polarized photons in, (E), 22:52918
interactions $\gamma + N \to \pi + \Delta$(1236) below 6 GeV, models fo 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + N \to \pi + \Delta$(1236), production and decay angular distributions for, (T), 22:7468 (UCRL-17867
interactions $\gamma + N \to \pi + N + \gamma + \gamma$, perturbation theory

for, 22:39335
interactions $\gamma + N \to \pi + N + \gamma$, perturbation theory for, 22:39335
interactions $\gamma + N \to \pi + N$ at high energies in O(4) symmetry, conspiracy of Regge poles in, 22:3336
interactions $\gamma + N \to \pi + N$ at low energies, dispersion theory of low-energy limits for, 22:46436
interactions $\gamma + N \to \pi + N$ below 6 GeV, models for, (E), 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + N \to \pi + N$, A-dominance model for, 22:7473
interactions $\gamma + N \to \pi + N$, conspiracy test in, 22:5540
interactions $\gamma + N \to \pi + N$, dispersion relation theory of π production in, 22:24604
interactions $\gamma + N \to \pi + N$, dynamical models for superconvergence sum rules for, 22:39458
interactions $\gamma + N \to \pi + N$, finite-energy sum rules and ω Regge pole residue functions for, 22:34898 (NP-17489)
interactions $\gamma + N \to \pi + N$, generalized dispersion sum rules for A_2 trajectory and residue function in, 22:44381
interactions $\gamma + N \to \pi + N$, kinematic constraints on Regge-pole residues in, 22:11683
interactions $\gamma + N \to \pi + N$, method for deriving angular correlations for, 22:41774 (NP-17531)
interactions $\gamma + N \to \pi + N$, photon--vector-meson analog model for relations between $\pi + N \to$ rho $+ N$ interactions and, 22:39323
interactions $\gamma + N \to \pi + N$, pole terms in fixed angle approach for, 22:3325
interactions $\gamma + N \to \pi + N$, unitarity condition for matrix elements for, 22:35154
interactions $\gamma + N \to \pi + N$, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)
interactions $\gamma + N \to \pi + N$, vector dominance in, (T), 22:32085
interactions $\gamma + N \to \pi + N^*$, low-energy theorem from current algebra for, 22:11620
interactions $\gamma + N \to \pi^0 + N$ at high energies, test of Regge pole hypothesis from π^0 production from, 22:1414
interactions $\gamma + N \to \pi^0 + N$, ω Regge residue functions and finite-energy sum rules for, 22:34921
interactions $\gamma + N \to \pi^0 + N$, test for Regge cuts in angular momentum plane from, (T), 22:22354
interactions $\gamma + N \to \pi^+ + n$ at 2 to 4 GeV, absorption correction in, (T), 22:41776
interactions $\gamma + N \to \pi^+ + N$ at high energies, π conspiracy residues and trajectories in, 22:37100 (IC-68/40)
interactions $\gamma + n \to \pi^- + p$ at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions $\gamma + n \to \pi^- + p$ at 3 GeV/c, violation of quark model sum rules in, (T), 22:22363
interactions $\gamma + n \to \pi^- + p$ at 500 to 800 MeV in deuterium, proposal for scintillation counter study of cross sections for, (E), 22:37069 (NP-17458)
interactions $\gamma + n \to \pi^- + p$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + n \to \pi^- + p$, vector dominance and quark model relation for polarization in, 22:41769 (DESY-68/33)
interactions $\gamma + N \to \Sigma + K$, use of current algebra and PCAC hypothesis for amplitudes of, 22:15715
interactions $\gamma + N \to$ vector meson $+ N$, conspiracy relations in Regge-pole theory for, 22:34922
interactions $\gamma + N \to$ vector mesons $+ N$ in Regge pole theory, kinematic singularities and zeros for, (T), 22:44356
interactions $\gamma + N$ at 1 to 3 GeV, angular distributions for forward π^+ production, (T), 22:20193
interactions $\gamma + N$ at 6 GeV, angular-defining counter study of wide-angle μ pair production in, (E), 22:22276 (CONF-670923-, pp 409-51)
interactions $\gamma + N$ at 60 to 750 MeV, differential cross section for Compton, 22:13705
interactions $\gamma + N$ at 60 to 750 MeV, nucleon electromagnetic structure from Compton, 22:13705
interactions $\gamma + N$ at high energies and small momentum transfer, SU(3) symmetry and Regge pole model for pseudoscalar and neutral vector meson production in, 22:48347
interactions $\gamma + N$ at high energies, sum rules in vector dominance model for integral of total cross section relation with meson--nucleon interactions, 22:46357 (JINR-E2-3926)
interactions $\gamma + N$ at high energies, sum rules in vector dominance model for vector meson production in, 22:46357 (JINR-E2-3926)
interactions $\gamma + N$ at high energies, test of CP violation in $\gamma \to 2\gamma$ transitions in pair production in, (T), 22:24699
interactions $\gamma + N$ at high energies, test of cross section sum rules for nucleon magnetic moments from forward Compton, (T), 22:22347 (JINR-E2-3715)
interactions $\gamma + N$ at low energies, dispersion relation-calculation of scattering amplitude for Compton, 22:20188
interactions $\gamma + N$ at low energies, equal-time commutation relations and PCAC for total amplitude of 2π production in, 22:29666
interactions $\gamma + N$ below 1.5 GeV, review of experiments and theory for single π production in, 22:32089
interactions $\gamma + N$ in O(3,1) symmetry, high-energy behavior of forward Compton, 22:24705
interactions $\gamma + N$ in Regge pole theory, cross-section relations for π, eta, and K production in, 22:17905
interactions $\gamma + n$ near threshold, π^0 production in, 22:20182
interactions $\gamma + N$, angular correlations for pseudoscalar meson production in, (T), 22:24579
interactions $\gamma + N$, conspiracy relations for, 22:44406
interactions $\gamma + N$, contribution from Compton graph to cross section for lepton pair production in, (T), 22:24588
interactions $\gamma + N$, dispersion relation calculation of $\Delta(1236)$ resonant partial amplitude for π production in, 22:34906
interactions $\gamma + N$, dispersion sum rules in static model for virtual π production from, (T), 22:1449
interactions $\gamma + N$, Drell--Herne--Gerasimov sum rules for absorption, 22:3333
interactions $\gamma + N$, equal-time commutators of current operators in renormalized perturbation theory for, 22:39332
interactions $\gamma + N$, finite-energy sum rules for Compton, 22:26603
interactions $\gamma + N$, gauge-invariance constraints on Regge amplitude for π production in, 22:22365
interactions $\gamma + N$, generalized Ward--Takahashi identities and current algebra for soft meson production from, 22:13681
interactions $\gamma + N$, higher-order low-energy theorems for Compton, 22:26595
interactions $\gamma + N$, invariant amplitudes for Compton, (T), 22:50340
interactions $\gamma + N$, invariant amplitudes for π production, (T), 22:50340
interactions $\gamma + N$, low-energy theorems and invariant amplitudes for Compton, 22:50324
interactions $\gamma + N$, low-energy theorems for amplitudes of forward Compton, 22:46358
interactions $\gamma + N$, low-energy theorems for Compton, 22:15725
interactions $\gamma + N$, low-energy theorems for Compton, 22:34905
interactions $\gamma + N$, low-energy theorems in S-matrix theory for π production in, 22:34930
interactions $\gamma + N$, low-energy theorems to e^4 order for Compton, 22:48272
interactions $\gamma + N$, particle interaction constants from amplitudes of, (T), 22:13698
interactions $\gamma + N$, polarization effects in ω^0 production in, 22:15726
interactions $\gamma + N$, π conspiracy and residue from finite-energy sum rule for π production in, 22:44365
interactions $\gamma + N$, quark model for pseudoscalar meson production in, 22:32125
interactions $\gamma + N$, quark model for π production in, 22:50336
interactions $\gamma + N$, reconstruction of matrix amplitudes for forward, 22:20245
interactions $\gamma + N$, Regge pole conspiracy in π^- and π^+ production in, 22:20197
interactions $\gamma + N$, review of experimental data for SU(3) symmetry predictions for neutral vector and pseudoscalar mesons production in, 22:37175 (CONF-670725-, pp 56-73)
interactions $\gamma + N$, review of forward peak in inelastic, 22:39265 (CERN-68-7(Vol.1), pp 60-110)
interactions $\gamma + N$, review of π and vector meson production from, 22:15713 (DESY-67/43)
interactions $\gamma + N$, review of π production from, 22:1403 (SLAC-PUB-355)
interactions $\gamma + N$, rho dominance hypothesis for Compton, 22:46358
interactions $\gamma + N$, SU(3) symmetry and Regge pole model for meson production with baryon resonances in, 22:48347
interactions $\gamma + N$, sum rules for amplitude of Compton, 22:34925
interactions $\gamma + N$, sum rules for Compton effect amplitudes for, 22:13700
interactions $\gamma + N$, sum rules relating anomalous nucleon magnetic moment and amplitude for π production in, 22:37103
interactions $\gamma + N$, superconvergence and current algebra for production amplitude of, 22:20176
interactions $\gamma + N$, superconvergence and current algebra relations for Compton, 22:34931
interactions $\gamma + N$, superconvergent sum rules for eta^0 production in, 22:50323
interactions $\gamma + N$, test of cross-section sum rules for nucleon magnetic moments from, 22:37101
interactions $\gamma + N$, test of vector dominance model from π^+ and π^- production in, 22:52964 (DESY-68/44)
interactions $\gamma + N$, validity of sum rules and high energy theorem for, 22:9605
interactions $\gamma + N$, vector dominance model with polarization for amplitudes of, 22:24582 (DESY-68/4)
interactions $\gamma + \nu$, zero-rest mass for weak, 22:32103
interactions $\gamma + p \to$ anti $K + K + p$, mass distributions in anti KK system for, 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to \Delta(1236) + \pi^-$ at 4.8 to 6.0 GeV,

Δ(1236) production cross sections and decay angular distributions from, (E), 22:5490
interactions $\gamma + p \to \Delta^{++} + \pi^- \to p + \pi^+ + \pi^-$ below 0.8 GeV, (T), 22:34896 (DESY-68/7)
interactions $\gamma + p \to \text{eta} + p$ at 775 to 850 MeV, Cherenkov counter study of angular distribution for, (E), 22:20117
interactions $\gamma + p \to \text{eta} + p$ from threshold to 970 MeV, S-matrix analysis of amplitudes for, 22:3338
interactions $\gamma + p \to \text{eta} + p$, cross section for, (T), 22:22359
interactions $\gamma + p \to \text{eta} + p$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \text{eta}^0 + p$ at 6 to 16 GeV, cross sections for, (E), 22:41726
interactions $\gamma + p \to \gamma + p$ at 300 MeV, spark chamber and scintillation counter study of cross sections for Compton, (E), 22:11577
interactions $\gamma + p \to \gamma + p$ at 550 to 1130 MeV, differential cross sections for Compton, (E), 22:15750
interactions $\gamma + p/ \to K^+ + \Lambda$ and $\gamma + p \to K^+ + \Sigma^0$ at 2.88 to 6.1 GeV, ratio of cross sections for, (E), 22:11570
interactions $\gamma + p \to K^+ + \Lambda$ at 1 to 1.12 GeV, magnetic spectrometer study of Λ polarization from, (E), 22:3250
interactions $\gamma + p \to K^+ + \Lambda$, coherent-droplet model for, (T), 22:9539
interactions $\gamma + p \to K^+ + \Lambda(1405)$ at 1.485 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Lambda(1520)$ at 1.730 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Lambda(\Sigma)$ above 3 GeV, review of experiments on, 22:22274 (CONF-670923-, pp 309-36)
interactions $\gamma + p \to K^+ + \Lambda(\Sigma)$, conspiracy and evasion in, 22:37113
interactions $\gamma + p \to K^+ + \Lambda(\Sigma^0)$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to K^+ + \Lambda(\Sigma^0)$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to K^+ + \Lambda^0\ (\Sigma^0)$ at 3.4 to 5.0 GeV, gas Cherenkov counter study of cross sections for, (E), 22:9502
interactions $\gamma + p \to K^+ + \Lambda^0$ at 0.950 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Sigma(1385)$ at 1.445 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Sigma^0$ at 1.080 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to l^+ + l^-$, corrections to cross sections for C-noninvariant, (T), 22:17901
interactions $\gamma + p \to \Lambda + K^+$ at high energies, Regge-pole model for, 22:17904
interactions $\gamma + p \to \Lambda(\Sigma^0) + K^+$, quark model for cross sections for, 22:50336
interactions $\gamma + p \to \Lambda^0 + K^+$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \mu^- + \mu^+ + p$ at 850 MeV, scintillation counter telescope study of cross section of, (E), 22:22288
interactions $\gamma + p \to \mu^- + \mu^+ + p$, test of quantum electrodynamics from asymmetry of μ pairs in, (E), 22:39232 (AD-668169)
interactions $\gamma + p \to n + \pi^+$ at 165 to 230 MeV, differential cross sections for, (E), 22:32043
interactions $\gamma + p \to n + \pi^+$ at 500 to 800 MeV, cross sections for, (E), 22:24521
interactions $\gamma + p \to n + \pi^+$ at high energies, mechanism without conspiracy for, (T), 22:22362
interactions $\gamma + p \to n + \pi^+$ at high energies, Regge-pole model for, 22:17899
interactions $\gamma + p \to n + \pi^+$ at high energies, Regge-pole model for, 22:17904
interactions $\gamma + p \to n + \pi^+$, current algebra for, 22:13767
interactions $\gamma + p \to \omega + p$ at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to \omega + p$, DWBA and diffraction model for, 22:41767 (DESY-68/23)
interactions $\gamma + p \to \omega(\text{phi}) + p$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to \omega(\text{phi}) + p$, optical theorem for, 22:41768 (DESY-68/28)
interactions $\gamma + p \to p + 2\pi^+ + 2\pi^- + \pi^0$, mass distributions in 5π system for, 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p + 2\pi^+ + 2\pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + 3\pi^+ + 3\pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \text{eta}\ (X^0)$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \text{eta}$ at 0.8 to 1.45 GeV, cross sections for, (E), 22:52914
interactions $\gamma + p \to p + \text{eta}$, use of poles and resonances for chi² fits to, 22:15811
interactions $\gamma + p \to p + n\pi$ at 800 MeV, resonance production from, (E), 22:13637
interactions $\gamma + p \to p + \omega + \pi^+ + \pi^-$ at 2.5 to 5.8 GeV, cross sections for ω production in, (E), 22:32044
interactions $\gamma + p \to p + \omega$ at 1 to 5 GeV, cross sections as function of energy for , (T), 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p + \omega$ at 2.1 to 5.8 GeV, cross sections for ω production in, (E), 22:32044
interactions $\gamma + p \to p + \omega^0$ at 6.5 to 17.8 GeV, differential cross sections for, (E), 22:44307
interactions $\gamma + p \to p + \omega^0$ at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p + \text{phi} + \pi^+ + \pi^-$ at 3.5 to 5.8 Ge cross sections for phi production in, (E), 22:32044
interactions $\gamma + p \to p + \text{phi}$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \text{phi}$ at 2.5 to 5.8 GeV, cross sections for phi production in, (E), 22:32044
interactions $\gamma + p \to p + \text{phi}^0$ at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p + \pi^0$ at 163 to 234 MeV, phenomenological analysis of, 22:13699
interactions $\gamma + p \to p + \pi^0$ at 163, 212, and 234 MeV, π^0 angular distributions from, (E), 22:1378
interactions $\gamma + p \to p + \pi^0$ at 4.0 to 5.8 GeV at small angles, Cherenkov counter study of differential cross section for, (E), 22:17847
interactions $\gamma + p \to p + \pi^0$ at 450 to 600 MeV, scintillation counter telescope and spark chamber stud of recoil proton polarization in, (E), 22:44306
interactions $\gamma + p \to p + \pi^0$ at 500 to 1000 MeV, polarization of recoil protons in, (E), 22:39238
interactions $\gamma + p \to p + \pi^0$ at 660 to 780 MeV, backward anomaly in, (E), 22:34824 (AD-448108)
interactions $\gamma + p \to p + \pi^0$ at 750 and 1450 MeV, spark chamber study of recoil proton polarization in, (E), 22:24523
interactions $\gamma + p \to p + \pi^0$ at 750 to 1450 MeV/c, scintillation counter and spark chamber study of energ dependence of recoil proton polarization in, (E), 22:20112
interactions $\gamma + p \to p + \pi^0$, SU(3) symmetry and Regge pole model for, 22:48347
interactions $\gamma + p \to p + \pi^+ + \pi^- + \pi^0$ above 1.1 GeV, mas distributions in 3π system for, 22:48202(R) (BMwF-FBK 68-01)
interactions $\gamma + p \to p + \pi^+ + \pi^- + \pi^0$ below 1.1 GeV, resonance production from review of, (E), 22:13720
interactions $\gamma + p \to p + \pi^+ + \pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \pi^+ + \pi^-$ at 450 to 1000 MeV, Δ(1236) isobar excitation mechanism for, (E/T), 22:46316
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 1 GeV in hydrogen bubble chamber, preliminary results for total cross section and Δ(1236) production in, (E), 22:34828 (LNF 68/21)
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 1 GeV, isobaric model for proton angular distributions from, (T), 22:32090
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 5.8 GeV in hydrogen bubble chamber, rho⁰ production from, (E), 22:20110(T) (SLAC-Trans-79)
interactions $\gamma + p \to p + \pi^+ + \pi^-$, below 1.4 GeV, review of resonance production from, 22:13720
interactions $\gamma + p \to p + \text{rho}^0 + \pi^+ + \pi^-$ at 3.5 to 5.8 GeV, cross sections for rho^0 production in, (E), 22:32044
interactions $\gamma + p \to p + \text{rho}^0\ (\omega)$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \text{rho}^0$ at 1 to 5 GeV, cross sections as function of energy for, (E), 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p + \text{rho}^0$ at 2 to 5.8 GeV, cross sections for rho^0 production in, (E), 22:32044
interactions $\gamma + p \to p + \text{rho}^0$ at 6.5 to 17.8 GeV, differential cross sections for, (E), 22:44307
interactions $\gamma + p \to p + \text{rho}^0$ at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p + W + \text{anti } W$, analytical expression for cross section of, (T), 22:44351(T) (ANL-Trans-649)
interactions $\gamma + p \to \text{phi} + p$ at 14 and 16 GeV, spectrometer study of upper limit for, (E), 22:24515
interactions $\gamma + p \to \text{phi} + p$ at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to \text{phi}^0 + p$ at 9 to 16 GeV/c, modifie vector-dominance model for cross sections for, 22:50335
interactions $\gamma + p \to \pi + \Delta$ in Regge pole model, π conspiracy in, 22:39369
interactions $\gamma + p \to \pi + \Delta(1236)$, current algebra for amplitude of, 22:13701
interactions $\gamma + p \to \pi + p$, contribution of Mandelstam branch cuts from Reggeon exchange to, (T), 22:3455
interactions $\gamma + p \to \pi^0 + n$ in energy region below firs resonance, multipole analysis of, 22:26604
interactions $\gamma + p \to \pi^0 + p$ at 0.8 to 5.5 GeV, cross sections for π^0 production in backward direction in, (E), 22:11571
interactions $\gamma + p \to \pi^0 + p$ at 0.8 to 5.5 GeV,

scintillation counter study of resonance production from, (E), 22:13633 (DESY-67/36)
interactions $\gamma + p \to \pi^0 + p$ at 180 to 470 MeV, use of fixed-t dispersion relations for, 22:24603
interactions $\gamma + p \to \pi^0 + p$ at 240 to 420 MeV, polarization of recoil protons from, (E), 22:29615
interactions $\gamma + p \to \pi^0 + p$ at 5 GeV/c, polarized differential cross sections for, (T), 22:46458
interactions $\gamma + p \to \pi^0 + p$ at 500 to 1000 MeV, recoil proton polarization from, 22:26549
interactions $\gamma + p \to \pi^0 + p$ at 535 to 850 MeV, analysis of π production in second resonance region in, (T), 22:5537
interactions $\gamma + p \to \pi^0 + p$ at 6 to 16 GeV, cross sections for, (E), 22:41726
interactions $\gamma + p \to \pi^0 + p$ at 650 to 1750 MeV, differential cross sections for, (E), 22:48210
interactions $\gamma + p \to \pi^0 + p$ at high energies in Regge-pole model, inconsistency of crossover phenomena with, (T), 22:3310
interactions $\gamma + p \to \pi^0 + p$ at low energies, ω and B exchange in, 22:24602
interactions $\gamma + p \to \pi^0 + p$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \pi^0 + p$, coherent-droplet model with long-range π exchange for, (T), 22:9539
interactions $\gamma + p \to \pi^0 + p$, low-energy theorem from current algebra for amplitude of, 22:46363
interactions $\gamma + p \to \pi^0 + p$, $\pi^0 \to \gamma + \gamma$, total-absorption lead glass Cherenkov detector for studying, 22:371
interactions $\gamma + p \to \pi^0 + p$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \pi^0 + p$, review of pion exchange in, 22:24684
interactions $\gamma + p \to \pi^0 + p$, vector dominance hypothesis and Regge pole exchange fcr, 22:48273
interactions $\gamma + p \to \pi^- + \Delta(1236)$ at 0.9 to 1.3 GeV, scintillation and Cherenkov counter study of cross sections for, (E), 22:3247
interactions $\gamma + p \to \pi^+ + \Delta^{++}(1236)$ using polarized photons, $\pi\pi$ production in, (E), 22:39321
interactions $\gamma + p \to \pi^+ + n$ at 0.01 to 2 $(GeV/c)^2$, spectrometer study of forward peak in, (E), 22:7426
interactions $\gamma + p \to \pi^+ + n$ at 0.9 to 3.2 GeV, cross sections for backward T^+ production in, (E), 22:48209
interactions $\gamma + p \to \pi^+ + n$ at 180 to 470 MeV, use of fixed-t dispersion relations for, 22:24603
interactions $\gamma + p \to \pi^+ + n$ at 180 to 500 MeV, π^+ angular distribution from, (T), 22:17907
interactions $\gamma + p \to \pi^+ + n$ at 2 GeV, absorption corrections in, 22:13697
interactions $\gamma + p \to \pi^+ + n$ at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions $\gamma + p \to \pi^+ + n$ at 2.7 and 4.9 GeV, forward peak in cross section for, (E), 22:13632 (DESY-67/35)
interactions $\gamma + p \to \pi^+ + n$ at 3 GeV/c, violation of quark model sum rule in, (T), 22:22363
interactions $\gamma + p \to \pi^+ + n$ at 3.4 and 5 GeV, cross section for π^+ production in, (E), 22:39237
interactions $\gamma + p \to \pi^+ + n$ at 3.4 and 5.0 GeV, Cherenkov counter study of differential cross sections for, (E), 22:3239
interactions $\gamma + p \to \pi^+ + n$ at 300 to 750 MeV, differential cross sections for, (E), 22:46313
interactions $\gamma + p \to \pi^+ + n$ at 300 to 750 MeV, magnetic spectrometer and counter telescope study of differential cross section of, (E), 22:24514 (LAL-1186)
interactions $\gamma + p \to \pi^+ + n$ at 390 MeV, polarization of recoil neutron from, (E), 22:26555
interactions $\gamma + p \to \pi^+ + n$ at 4 and 8 GeV/c, vector-dominance model comparison of $\pi^- + p \to$ rho^0 + n and, 22:34916
interactions $\gamma + p \to \pi^+ + n$ at 5 GeV/c, polarized differential cross sections for, (T), 22:46458
interactions $\gamma + p \to \pi^+ + n$ at 5 to 16 GeV, differential cross sections for π^+ production in, (E), 22:13640
interactions $\gamma + p \to \pi^+ + n$ at 500 to 1350 MeV, magnetic spectrometer study of eta production from, (E), 22:3246
interactions $\gamma + p \to \pi^+ + n$ at 535 to 850 MeV, analysis of π production in second resonance region in, (T), 22:5537
interactions $\gamma + p \to \pi^+ + n$ at high energies, absorption effects in, (T), 22:26601
interactions $\gamma + p \to \pi^+ + n$ at high energies, cross sections for, (E), 22:44308
interactions $\gamma + p \to \pi^+ + n$ at high energies, rho exchange for absorption effects in, 22:13692 (DESY-67/37)
interactions $\gamma + p \to \pi^+ + n$ below 16 GeV, vector dominance model for comparison with $\pi^- + p \to$ rho^0 + n interactions below 16 GeV, 22:29652 (DESY-68/6)
interactions $\gamma + p \to \pi^+ + n$ below 230 MeV, (E), 22:39342
interactions $\gamma + p \to \pi^+ + n$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to \pi^+ + n$ in energy region below first resonance, multipole analysis of, 22:26604
interactions $\gamma + p \to \pi^+ + n$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \pi^+ + n$ in Regge pole model, π conspiracy in, 22:39369
interactions $\gamma + p \to \pi^+ + n$ near threshold, divergence conditions for, (T), 22:20185
interactions $\gamma + p \to \pi^+ + n$, coherent-droplet model with long-range π exchange for, (T), 22:9539
interactions $\gamma + p \to \pi^+ + n$, conspiracy and evasion in, 22:37113
interactions $\gamma + p \to \pi^+ + n$, double-Regge-exchange conspiracy for π^+ production in, 22:34928
interactions $\gamma + p \to \pi^+ + n$, Lorentz invariance in Reggeization of π trajectory in, 22:39336
interactions $\gamma + p \to \pi^+ + n$, Regge-pole model for pion-exchange, 22:7494
interactions $\gamma + p \to \pi^+ + n$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \pi^+ + n$, review of pion exchange in, 22:24684
interactions $\gamma + p \to \pi^+ + n$, vector dominance and quark model relation for polarization in, 22:41769 (DESY-68/33)
interactions $\gamma + p \to \pi^+ + n$, vector-meson dominance analysis of, 22:26664
interactions $\gamma + p \to \pi^- + N^{*++}$ at high energies, cross sections for, (E), 22:44308
interactions $\gamma + p \to \pi^- + \pi^+ + p$ at 0.85 to 1.21 GeV, differential cross sections for, (E), 22:46315
interactions $\gamma + p \to \pi^- + \pi^+ + p$ at 0.9 to 1.3 GeV, scintillation and Cherenkov counter study of cross sections for, (E), 22:3247
interactions $\gamma + p \to \pi^+ + \pi^- + p$ at 16 GeV, cross sections for rho^0 production in, (E), 22:48212
interactions $\gamma + p \to \pi^- + \pi^+ + p$ below 750 MeV, counter and spark chamber study of Δ (1236) production in, (E), 22:24513 (INSJ-107)
interactions $\gamma + p \to$ rho + p, cross sections for, 22:9554
interactions $\gamma + p \to$ rho + p, optical theorem for, 22:41768 (DESY-68/28)
interactions $\gamma + p \to$ rho + p, optical theorem for lower limit on cross sections for, 22:44354
interactions $\gamma + p \to$ rho + p, two-pion exchange contributions to absorptive amplitude for, 22:3424
interactions $\gamma + p \to$ rho^0 + p at 14 and 16 GeV, spectrometer study of upper limit for, (E), 22:24515
interactions $\gamma + p \to$ rho^0 + p at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to$ rho^0 + p below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to$ rho^0 + p, differential cross section from e + p interaction at 4.9 GeV, (E), 22:15716
interactions $\gamma + p \to$ rho^0 + p, strong-absorption model for spin independence of, (T), 22:13691 (DESY-67/32)
interactions $\gamma + p \to$ rho$^+$ + n, rho$^+ \to \pi^+ + \pi^0$, rho$^+$ Regge-trajectory-exchange model for, 22:44360
interactions $\gamma + p \to \Sigma^0 + K^+$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \Sigma^+ + K^0$, dispersion sum rules for Σ^+ magnetic moment from, 22:9537
interactions $\gamma + p \to$ vector meson + p, cross sections for, (T), 22:46448
interactions $\gamma + p$ above 3 GeV, review of experiments on, 22:22274 (CONF-670923-, pp 309-36)
interactions $\gamma + p$ at 0.05 to 5.0 GeV in hydrogen bubble chamber, total cross section for hadron production in, (E), 22:41721 (DESY-68/31)
interactions $\gamma + p$ at 0.5 and 5.0 GeV, total cross section for hadron preduction in, (E), 22:50278
interactions $\gamma + p$ at 0.5 to 45 GeV, kinematics tables for, 22:7421 (SLAC-77)
interactions $\gamma + p$ at 1.5 to 6 GeV, review of strange particle production from, 22:22273 (CONF-670923-, pp 254-69)
interactions $\gamma + p$ at 200 to 450 MeV, π^+ production by linearly polarized, (E), 22:29616
interactions $\gamma + p$ at 220 to 380 MeV, cross section for backward production of π^0 in, (E), 22:11574
interactions $\gamma + p$ at 290 to 550 MeV in hydrogen bubble chamber, π^+ production at 0^0 and forward angles from, (E), 22:1377
interactions $\gamma + p$ at 4 GeV in bubble chamber, meson (eta^0) production from, (E), 22:52922
interactions $\gamma + p$ at 4.8 to 6.0 GeV in hydrogen bubble chamber, production of multipion final states in, (E), 22:34908
interactions $\gamma + p$ at 60 to 750 MeV, differential cross section for Compton, 22:13705
interactions $\gamma + p$ at 850 MeV, magnetic spectrometer of asymmetric μ pair production in, (E), 22:22276 (CONF-670923-, pp 409-51)
interactions $\gamma + p$ at high energies in hydrogen bubble chamber, strange particle production from, (E), 22:13638
interactions $\gamma + p$ at high energies, review of meson production in, (E), 22:39234 (CERN-68-7(Vol.1), pp 556-70)
interactions $\gamma + p$ at high energies, vector dominance model for sum rule connecting photon--vector transition and meson--nucleon interaction with cross section of, 22:20173 (JINR-P2-3704)
interactions $\gamma + p$ below 150 MeV, analysis of experimental data for Compton, 22:20111
interactions $\gamma + p$ below 234 MeV, multipole analysis of

π^0 production in, (T), 22:29662
interactions $\gamma + p$ below 6 GeV in bubble chamber, resonance production from, (E), 22:15660 (DESY-67/40)
interactions $\gamma + p$ in GeV range, design and performance of on-line data acquisition system for studying, 22:367
interactions $\gamma + p$ near threshold, π^0 production in, 22:20182
interactions $\gamma + p$ on polarized targets, π angular distribution from production in, (T), 22:50322
interactions $\gamma + p$, Adler--Fubini sum rule for, 22:48263
interactions $\gamma + p$, meson and baryon resonance production in, 22:46375
interactions $\gamma + p$, multiple pion production in, (E/T), 22:17897
interactions $\gamma + p$, parity doublet conspiracy of pion from finite energy sum rules in π^+ production in, 22:20183
interactions $\gamma + p$, polarization effects on production of symmetric lepton pairs in, 22:34904
interactions $\gamma + p$, polarization in vector dominance model for π production in, 22:39419
interactions $\gamma + p$, quark model relations for differential cross sections of, 22:44382
interactions $\gamma + p$, Regge pole model for vector meson production in, 22:37109
interactions $\gamma + p$, review of S not equal to 0 baryon resonances in, 22:32057
interactions $\gamma + p$, SU(3) symmetry and Regge pole model for differential cross section relations for π^+ and K^+ production in, 22:48347
interactions $\gamma + p$, subtraction constants in sum rules for Compton, 22:15714
interactions $\gamma + \pi \rightarrow 2\pi$, coherent dissociation $\pi \rightarrow 2\pi$ in nuclear field for possible measurement of, (T), 22:32084
interactions $\gamma + \pi \rightarrow$ anti $N + N$ in t-channel, contribution to amplitude for meson resonance production, (T), 22:22357
interactions $\gamma + \pi \rightarrow \gamma + \pi$ near threshold, sum rules, rho dominance, and amplitude of, 22:29665
interactions $\gamma + \pi \rightarrow \gamma + \pi$, threshold vector dominance hypothesis for Compton, 22:5544
interactions $\gamma + \pi \rightarrow N +$ anti N, analyticity properties of helicity amplitudes of, 22:39341
interactions $\gamma + \pi \rightarrow \pi + e + \nu$ near threshold, sum rules, rho dominance, and amplitude of, 22:29665
interactions $\gamma + \pi \rightarrow \pi + \pi$ and $\gamma + \pi \rightarrow \gamma + \pi$, exchange of meson resonances in, 22:48270
interactions $\gamma + \pi \rightarrow \pi + \pi$, use of current algebra and PCAC for γ--3π coupling constant in, 22:37114
interactions $\gamma + \pi$, invariant amplitudes for Compton, (T), 22:50340
interactions $\gamma + \pi$, low-energy theorems and invariant amplitudes for Compton, 22:50324
interactions $\gamma + \pi$, low-energy theorems for Compton, 22:34905
interactions $\gamma + \pi$, low-energy theorems in S-matrix theory for isovector Compton, 22:34930
interactions $\gamma + \pi$, low-energy theorems to e^4 order for Compton, 22:48272
interactions $\gamma + \pi$, particle interaction constants from amplitudes of, (T), 22:13698
interactions $\gamma + \pi$, sum rules for virtual Compton, 22:37111
interactions in carbon, aluminum, copper, and lead at 1.2 to 4.0 GeV, total cross sections for electron pair production in, (E), 22:34832
interactions in condensed media, multiple scattering effects on angular and energy distribution of charged particles produced from, (T), 22:17893
interactions in constant and uniform electric field, scalar-particle pair production from, (T), 22:22360
interactions in constant and uniform electric field, electron pair production from, 22:22360
interactions in emulsion chambers above 10 TeV, (E), 22:3237
interactions in gravitational fields, (T), 22:18019
interactions of cosmic background, with protons, (T), 22:45915
interactions of polarized, with spin-1/2 particles, Compton, 22:26610
interactions of soft, classical currents for coherent states without infrared divergences, 22:34902
interactions of stellar, with photons in interstellar space, (T), 22:8968
interactions of, algebraic simplification in quantum electrodynamics for Compton, 22:20317
interactions of, conference on, 22:22342 (CONF-670923)
interactions of, infinite multiplet theory for amplitudes of Compton, 22:17892
interactions of, lepton electromagnetic form factors from, 22:13719
interactions of, low-energy theorems for Compton and photopion production, 22:20192
interactions of, pion and conspirator residues and trajectories in π production from, 22:44355
interactions of, relation between gauge invariance and zero rest-mass of photons from weak, 22:32103
interactions of, review of elementary particle property determination from, 22:1403 (SLAC-PUB-355)
interactions of, review of vector meson production in, (E), 22:39236 (DESY-68/29)
interactions of, S-matrix theory for, 22:20178
interactions of, test of Regge trajectory conspiracy from renormalizable perturbation expansion for, 22:37104
interactions on complex nuclei, production of lepton pairs via vector meson decay in, (T), 22:32093
interactions to 18 GeV, search for production of new particles in, (E), 22:50281
interactions with arbitrary-spin hadron targets, kinematic singularities of helicity amplitudes for Compton, 22:26608
interactions with baryons, higher resonance contributions to dispersion sum rules for Compton, 22:48267
interactions with baryons, O(4,2) symmetry for coupling in, 22:37173
interactions with baryons, review of dispersion sum rules for, 22:11644 (ITF-67-13)
interactions with baryons, statistical model for high-energy, 22:50408
interactions with electrons in Compton scattering, effect on electron distribution function of, 22:19756
interactions with electrons in standing light waves, stimulated Compton scattering in, (E), 22:20118
interactions with elementary particles, electromagnetic current in strong-coupling theory for, 22:5645
interactions with elementary particles, Regge pole hypothesis for amplitudes of, 22:9553
interactions with fermions, asymptotic behavior of amplitudes for meson production in, 22:50332
interactions with gravitational fields, gravitational radiation production from, (T), 22:18022
interactions with gravitons, effect on gravitational radiation production from mixed Compton effect in, (T), 22:18022
interactions with hadrons, chiral dynamics for, 22:29678
interactions with hadrons, review of, 22:11568 (SLAC-PUB-370)
interactions with hadrons, vector dominance model for, (T), 22:22344 (CONF-670923-, pp 270-308)
interactions with J/sup P/ = 1^- and $3/2^+$ particles, sum rules for Compton, 22:5538
interactions with leptons, model for, 22:5553
interactions with matter, radiative transfer with scattering, 22:52477 (LA-4006)
interactions with mesons from meson interactions in Coulomb field of nucleus, 22:41823
interactions with spin-0 and $-^1/_2$ targets in dispersion theory, low-energy theorems and sum rules for Compton, 22:15727
interactions with spin-0 system, low-energy theorem for Compton, 22:50330
interactions with spinless targets, Regge pole phenomonology for large argument values of S-matrix elements for Compton, 22:20351
interactions with spinor particles, asymptotic behavior of vertex function in theory of nonrenormalizable CP-noninvariant, 22:7538 (JINR-E2-3557)
interactions with spinor particles, asymptotic behavior of vertex function in theory of nonrenormalizable CP-odd, 22:32187
interactions with stable particles and nuclei of arbitrary spin, total-cross-section sum rule for Compton, 22:15720
interactions with vector mesons, formulation of relativistic quark field theory for coupling constants in, 22:29743 (DESY-68/11)
mass of, gauge invariance with nonzero, 22:39337
mass of, geomagnetic limit on, (E), 22:44305
mass of, upper limit for, (T), 22:44374
momenta of, regular null networks in flat space--time for four-, 22:35119
motion in magnetic fields, operator method for quantum effects in pair production from, 22:3583
physical meaning of Freundlich--Forbes empirical constant, (T), 22:1373
polarization in $\pi^+ (K^+) + e \rightarrow \pi^+(K^+) + e + \gamma$ and $\pi^-(K^-) + e \rightarrow \pi^-(K^-) + e + \gamma$ interactions, circular, (T), 22:7470
polarization measurement from electron pair production, 22:3241
polarization tensor from $\gamma + \gamma$ interactions, effect on anomalous magnetic moment of muon, 22:9549
production and interaction data, computer program for, 22:26441 (LA-DC-9215)
production from $e^+ + e^- \rightarrow 2\gamma$ interactions at high energies, γ circular polarization in, (T), 22:13709
production from $e^+ + e^- \rightarrow \gamma + \gamma$ and $\mu^+ + \mu^- \rightarrow \gamma + \gamma$ interactions, calculation of matrix elements with anomalous magnetic moment and polarization effects for, 22:20177
production from $e^+ + e^- \rightarrow \mu^+ + \mu^- + \gamma$ interactions, nonlocal interaction theory for circular and linear polarization in, 22:9532
production from electron scattering by diamonds at high energies, angular distribution in, (T), 22:39334
production from $K^+ \rightarrow \pi^+ + \pi^0 + \gamma$ decay in heavy liquid bubble chamber, angular distribution for, (E), 22:743
production from $p + p \rightarrow p + p + \gamma$ interactions, cross sections for, (T), 22:1454
production from pair annihilation, operator method for quantum effects in, 22:3583

production from particle interactions, extension of Low soft-photon theorem for radiative cross sections for, 22:9551
production in cascade showers, Monte Carlo calculation of signal-to-noise ratio for, 22:49078
production in cosmic antiproton--proton interactions below 286 MeV, upper limits and selection rules for, (T), 22:20174 (NP-17316)
production in $\Delta^+(1236)$ and fireball decay in $p + p \to p + p + \pi^0$ interactions below 1 GeV, spectrum for, (T), 22:20125 (NP-17315)
production in $e + e \to e + e + \gamma$ interactions at 2 x 160 MeV, integral cross section and emission probabilities for, (E), 22:44304
production in $e^+ + e^- \to \gamma + \gamma$ interactions under astrophysical conditions, spectra for, (T), 22:20175 (NP-17317)
production in heavy-liquid bubble chamber, electron trajectories for determining, (T), 22:44300 (LAL-1190)
production in $K^+ \to \pi^+ + \pi^0 + \gamma$ decay, for counter and spark chamber study of inner bremsstrahlung mechanism for, (E), 22:39240 (COO-1749-4)
production in $N + N \to N + N + \gamma$ interactions, general form of amplitude of, (T), 22:39425 (JINR-P2-3803)
production in $N + N \to N + N + \gamma$ interactions, Low approximation for, 22:39426 (JINR-P2-3830)
production in $p + p \to p + p + \gamma$ at 10 to 200 MeV, potential model for cross section of coplanar and noncoplanar, 22:22418
production in $p + p \to p + p + \gamma$ interactions at 10.5 MeV, preliminary results for surface barrier counter study of upper limit of cross section of, (E), 22:39233 (ANU-P-407)
production in $\pi^0 \to \gamma + \gamma$ decay in cosmic anti $p + p \to \pi^+ + \pi^- + \pi^0$ interactions below 1 GeV, spectra for, (T), 22:20125 (NP-17315)
production in thin crystals, review of, 22:44371
production of cosmic, in cascades from particle interactions at high energies at 2900 m in emulsions, vertical intensity and spectrum for, (E), 22:22286
production of polarized and monochromatic beams of, methods for, 22:22278 (CONF-670923-, pp 527-55)
production of showers of, in $\pi^- + p$ interactions at 1.5 GeV/c, spark chamber study of, (E), 22:34851
propagation in external magnetic fields, (T), 22:5482
propagation in static and solar gravitational field in general relativity, formula for frequency shift in, 22:39480
quantum field theory for coherent states of field of, 22:5637
quantum theory of multiphoton processes, double-photon contribution in, 22:20101
radiative transfer in dispersive medium, 22:41217
reactions (γ,d) and $(\gamma,2p)$ with helium-3, calculations using Cabibbo--Radicati sum rule, (T), 22:3603
reactions (γ,d) and (γ,n) with helium-3, cross sections for, (T), 22:7631
reactions (γ,n) and $(\gamma,2n)$ at 10 to 50 MeV, 1000-liter liquid scintillation detector for determining cross sections for, 22:16881
reactions (γ,n) and (γ,p) with nitrogen-15 in giant resonance region, total cross sections for, (T), 22:53106
reactions (γ,n) with beryllium-9 near threshold, R-matrix calculations of cross sections for, (T), 22:48454
reactions (γ,n) with copper-63 at 10 to 25 MeV, cross section for, (E), 22:20578 (WASH-1079)
reactions (γ,np) with lithium-6, cross-section calculations using electric dipole approximation, (T), 22:39581
reactions (γ,p) with helium-4, cross-section calculations using particle-hole-core model, (T), 22:44796
reactions (γ,p) with helium-4, effects of velocity-dependent nuclear forces on, (T), 22:48449
reactions (γ,p) with nuclei, cross-section calculations using velocity-dependent potentials, (T), 22:32485
reactions (γ,p), (γ,n) and (γ,pn) with helium-4 at 0 to 170 MeV, multipolarity in, (T), 22:48443
reactions (γ,π) with helium-3 and tritium, magnetic moment anomaly from, 22:13928
reactions (γ,π^+) with aluminum-27 at 750 MeV, yields and cross sections for, (E), 22:48207
reactions (γ,π^-) with boron-11 at 750 MeV, yields and cross sections for, (E), 22:48207
reactions (γ,π^-) with carbon-12, partial transitions and bound-state nitrogen-12 production in, (T), 22:26605
reactions (γ,π^+) with oxygen-16, partial transitions in π^+ and bound-state nitrogen-16 production in, (T), 22:26605
reactions $(\gamma,\pi^\pm)$ with strontium-88 at 230 MeV, cross sections for, (T), 22:52959
reactions (γ,π^+) with vanadium-51 at 750 MeV, yields and cross sections for, (E), 22:48207
reactions (γ,π^-2n) with vanadium-51 at 750 MeV, yields and cross sections for, 22:48207
reactions (γ,rho^0) with copper-64 and lead-208, angular distributions for, (T), 22:39429
reactions at 845 to 2000 GeV in emulsions, angular and lateral structure of electromagnetic cascade production from, (E), 22:3242
reactions of high-energy, astrophysical implications of, (T), 22:29102
reactions with aluminum at 4.25 and 5.5 GeV, $K_2{}^0$ production in, 22:7427
reactions with aluminum, carbon, and hydrogen at 3.2 to 4.9 GeV, rho^0 mass and production cross sections from, (E), 22:13631 (DESY-67/30)
reactions with aluminum, carbon, and hydrogen at 3.2 to 4.9 GeV, cross sections for rho^0 production, (E), 22:9501
reactions with aluminum, carbon, and hydrogen at 3.2 to 4.9 GeV, cross sections for rho^0 production in, (E), 22:26546 (DESY-F-32/4)
reactions with aluminum, carbon, copper, and hydrogen at 3.0 and 5.0 GeV, rho^0 production in, (E), 22:20114
reactions with atomic hydrogen, yields from, (E), 22:36754
reactions with atomic nitrogen, cross sections for, (E), 22:36752
reactions with atomic oxygen, ionization cross sections for, (E), 22:36753
reactions with atoms, Coulomb effects on ionization in, (T), 22:29236
reactions with atoms, Monte Carlo calculations for coherent and incoherent scattering and pair production--annihilation in, 22:38730 (UCRL-14190)
reactions with atoms, resonance fluorescence from, 22:19800
reactions with carbon and hydrogen, proposed experiment using range absorber method for production of very asymmetric μ pairs in, 22:44299 (DESY-68/34)
reactions with carbon at 1 to 2 GeV, differential cross sections for $\pi^+\pi^-$ production in, (E), 22:22287
reactions with carbon at 1.8 GeV, cross section for phi production in, (E), 22:26551
reactions with carbon at 470 to 1070 MeV, μ pair production in, (E), 22:34825 (AD-665851)
reactions with carbon, copper, and lead, nonforward production of rho^0 from, (T), 22:48262
reactions with carbon, copper, and lead, test of vector-dominance model for rho production and decay in, (E/T), 22:11572
reactions with carbon, gas Cherenkov and shower counter study of electron pair invariant mass from, (E), 22:22276 (CONF-670923-, pp 409-51)
reactions with carbon, optical theorem for lower limit on cross sections for rho production in, 22:44354
reactions with carbon, SU(2) x SU(2) chiral symmetry for rho$\pi\pi$ coupling from rho production in, (E/T), 22:35055
reactions with carbon, virtual Compton scattering amplitude from electron-pair yields in, (E), 22:5495
reactions with colliding atoms, double excitation in, (T), 22:29212
reactions with complex nuclei, amplitude of rho^0 coherent production in nonforward, (T), 22:29653 (DESY-68/15)
reactions with conducting materials at 1.25- or 0.66-MeV, low-energy electron spectra from, (E), 22:31985
reactions with conducting materials, fluence of low-energy electrons produced in and emitted from, 22:43114
reactions with cosmic nuclei at 0.010 to 1 TeV/nucleon in emulsions, fragmentation without visible particle production from, (E), 22:3236 (INR-792/VI/PH)
reactions with deuterium, cross-section calculations using sum rules, (T), 22:32486
reactions with gold, uranium, and tantalum, scattering cross sections for 662-keV, 22:36701 (AD-663424)
reactions with ground-state atomic hydrogen, theory for ionization by, 22:52497
reactions with $H_2{}^+$, dissociation cross sections from, (E/T), 22:7134
reactions with helium, total pair-production cross section from incoherent-scattering function for, (T), 22:44361
reactions with helium-3 and tritium with two- and three-body final states, cross sections for, (T), 22:9776
reactions with helium-3 and tritium, cross-section calculations using separable potentials for two- and three-body photodisintegration, (T), 22:18118
reactions with helium-4, calculation of the integrated cross section for, (T), 22:29902
reactions with helium-4, cross-section calculation using two-body velocity-dependent potentials, (T), 22:9773
reactions with helium-4, sum rules for, (T), 22:44605
reactions with hydrogen and deuterium molecular ions, dissociation cross sections for, (E/T), 22:38759
reactions with hydrogen at 1 to 2 GeV, differential cross sections for $\pi^+\pi^-$ production in, (E), 22:22287
reactions with hydrogen atom, analysis of multiphoton ionization, (T), 22:5050
reactions with hydrogen atoms, bound--bound transitions in, (T), 22:50037
reactions with hydrogen atoms, tables of ionization cross sections for, 22:2780(T) (UCRL-Trans-10134)
reactions with hydrogen to produce molecular ions, 22:5809(R) (ANL-7354)
reactions with krypton and xenon at 300 to 2500 eV, absorption cross sections for, (E), 22:31597 (ORNL-4238, pp 105-15)
reactions with krypton and xenon, bound states in ionization from, 22:31634
reactions with lead at 15 to 100 MeV, electron--photon cascade from, (T), 22:9410 (ORNL-4192)

reactions with lead, upper limit for production of faster-than-light particles in, (E), 22:44303
reactions with lead, virtual Compton scattering amplitude from electron-pair yields in, (E), 22:5495
reactions with liquid helium II, electron ejection from bubble states in, (E), 22:1128
reactions with liquid xenon at 100 to 2000 MeV, fluctuations in development of showers in, (E), 22:41722 (JINR-P1-3919)
reactions with lithium, ionization cross sections for, 22:41378
reactions with molecular hydrogen, ionization and absorption cross sections near threshold for, (E/T), 22:41309
reactions with molecules, ionization cross sections for, (T), 22:15347
reactions with negative carbon and nitrogen ions, photodetachment cross sections for, (T), 22:38757
reactions with negative iodine ions, electron detachment cross sections for, (E), 22:41368
reactions with negative iodine ions, plane-wave approximation for two-photon electron detachment from, 22:2791
reactions with nitrogen and oxygen, ionization cross sections for, 22:31613
reactions with nuclei at 10 GeV, test of linearity of quantum electrodynamics equations from cross section of, (T), 22:48360
reactions with nuclei at high energies, Regge amplitude for absorption in antinucleon production in, (T), 22:20194
reactions with nuclei at high energies, unstable particle + nucleon cross sections from rho^0 production in, (T), 22:22419
reactions with nuclei in giant resonance region, 22:7784
reactions with nuclei near threshold, cross sections for heavy-meson production in, 22:7471
reactions with nuclei with modified fermion propagator in quantum electrodynamics, asymmetric lepton pair production in, 22:46495 (DESY-68/36)
reactions with nuclei, A/sup -1/6/ dependence of giant dipole resonance in, (T), 22:50673
reactions with nuclei, boson production with S = T = 0 from, (T), 22:3319
reactions with nuclei, calculations using Tchebycheff polynomials in integral equations, (T), 22:48571 (CEA-R-3427)
reactions with nuclei, conservation laws for Bethe--Salpeter equation for, 22:5877
reactions with nuclei, review of rho^0 production from, (E), 22:22311 (CONF-670923-, pp 452-83)
reactions with nuclei, theory of disintegration, (T), 22:13931
reactions with nuclei, use of sum rules for integrated cross sections for, 22:17833
reactions with nuclei, W-meson pair production from, 22:13724
reactions with odd-A nuclei at low energies, calculations using single-particle wave functions with undefined parity in, (T), 22:48596
reactions with oriented atoms, perturbation from, (T), 22:45966
reactions with oxygen, ionization cross sections for, 22:9021
reactions with oxygen-16 at 0 to 170 MeV, electric-quadrupole transitions in, (T), 22:48458
reactions with oxygen-16, cross section calculations using configuration-mixing model, (T), 22:53128
reactions with quantum plasmas, theory and observation probabilities for nonlinear interactions excited by, 22:31923 (BNL-50083, pp 155-66)
reactions with spherical nuclei, effects of giant resonance coupling to surface quadrupole oscillations on, (T), 22:30058
reactions with spinless nuclei, Primakoff effect for eta production in, (T), 22:39317 (JINR-P2-3845)
reactions with tissues, fluence of low-energy electrons produced in and emitted from, 22:43114
reactions with uranium at 10 to 300 keV, attenuation cross sections for, (E), 22:9020
reflection coefficients for, angular dependence of mirror, (T), 22:11484 (JINR-P4-3614)
reflection of 10 MeV, from homogeneous slabs, calculation of, 22:4384
rest mass of, relation to Einstein's cosmological constant, (T), 22:45906
scattering amplitude for nuclei at low energy, in Thomson limit, (T), 22:9959
scattering by aluminum at 662 keV, polarization effects in Compton, 22:24041
scattering by atomic hydrogen, evaluation of Kramers--Heisenberg matrix element for, 22:17376
scattering by electrons in stellar photospheres, (T), 22:43710
scattering by electrons moving in refracting medium, (T), 22:39322
scattering by electrons, Legendre polynomial expansion for Klein--Nishina formula for, 22:946
scattering by hydrogen, retardation in elastic, 22:43855 (IFA-FT-70)
scattering by nuclei in giant resonance region, cross sections for, (T), 22:14108
scattering by nuclei, (T), 22:18343
scattering by nuclei, conservation laws for Bethe--Salpeter equation for elastic, 22:5877
scattering by nuclei, generalized formalism for, (T), 22:50687
scattering by plane thick layer, photon distributions from multiple, 22:39303
scattering cross sections for beryllium, carbon, magnesium, and sulfur at 30 to 130 keV, incoherent, (E/T), 22:17389
scattering from Maxwellian gas of free electrons, (T), 22:36629
scattering from point source near air--ground interface, spectral measurements of, 22:52839 (AD-669452)
scattering in thick slabs, Monte Carlo technique for resonance-line, (T), 22:29206
scattering of optical, by electrons, polarized photon source from Compton back-, 22:24752 (UCID-15296)
scattering of polarized, asymmetry ratios and cross sections for Rayleigh, (T), 22:22647
scattering of, low-energy theorems for, 22:26715
scattering on atomic hydrogen, analysis of elastic, (T), 22:950
scattering on electron gases, Compton cross sections for 22:45919 (AWRE-O-33/68)
scattering on electrons in refractive media, (T), 22:29176 (JINR-E4-3760)
scattering on electrons, effects in Friedmann cosmologies, (T), 22:26118
scattering on spinless systems at low energies, Compton, 22:15331
scattering, transport theory for, (T), 22:44288
self-energy graphs for, renormalization group for asymptotic behavior of, 22:15840
self-energy graphs of quantum electrodynamics, asymptoti estimates of Feynman integrals for, 22:50449
source theory for, 22:50318
sources of, discrete astrophysical, (T), 22:5174
spectra of prompt, from cosmic-ray bombardment of Moon, (T), 22:31534
spectrum of prompt, produced in lunar surface by cosmic-ray bombardment, (T), 22:15382 (ORNL-TM-2100)
symmetry for zero-mass, reduction of relativistic wavefunctions to irreducible representations of inhomogeneous Lorentz group in, 22:29728
symmetry for, classification in SU, 22:17993
symmetry for, weak localizability in Poincare group in, 22:20288
theory for electron--photon showers, characteristic functional for cascade processes in, 22:17896
theory for, perturbation calculation of generalized two-point function in, 22:37186
transitions in hydrogen in Coulomb field, bound-state, 22:29211
transport calculations, DTF program for using method of discrete ordinates for, 22:3151 (SC-RR-67-419)
transport in arbitrary finite body, invariant imbedding as generalization of resolvent equation for, 22:20345
transport in shielding materials, calculations using invariant imbedding theory, 22:52844
transport in shielding, SORS code for CDC-6600 calculations of, 22:20035 (UCRL-50358)
transport in thin slab geometries, approximate method involving successive scatters for calculation of, 22:31893
use for radiotherapy, 22:23565
use in activation analysis, review on, 22:1975
vortical motions of, in early Universe, (T), 22:45879

PHOTOPERIODISM
book: Comprehensive Biochemistry, Vol. 27. Photobiology, Ionizing Radiations, 22:49222
detection in animals, method for use of tritium-activate luminescent paint in, 22:25758
radiation effects on mechanism of, in Coturnix coturnix and Papilio xuthus, tritium β, 22:25758
radioinduced mutation affecting, in pea plants, γ, 22:2498

Photoprotons
see Protons--photoproduction

PHOTOREACTIVATION
analysis in γ- and uv-irradiated Blastocladiella emersonii, 22:31288
book: Comprehensive Biochemistry, Vol. 27. Photobiology, Ionizing Radiations, 22:49222
effects on acriflavine inhibition of DNA synthesis in uv irradiated Escherichia coli, 22:8664
effects on early thymineless death of E. coli following uv irradiation, 22:591
effects on monomerization of pyrimidine dimers in hamste cells, 22:23397(R) (COO-1704-4)
effects on pyrimidine dimers in DNA of Paramecium aurelia, 22:28399 (ORNL-4100, pp 40-7)
effects on pyrimidine dimers in DNA of uv-irradiated Paramecium, 22:8445
effects on uv-irradiated amphibian cells, 22:45667
effects on uv-irradiated DNA in Tetrahymena, 22:21587
effects on uv-radioinduced biological damage, review of, 22:49223
effects on uv-radioinduced inactivation of Neurospora conidia, 22:28400 (ORNL-4100, pp 48-53)
effects on uv-radioinduced mutation in corn, 22:47501

(NP-17136)
effects on uv-radioinduced mutations to prototrophy in Chlamydomonas, 22:31046
effects on uv-radioinduced reversion in Neurospora mutants, 22:19312
effects on uv-radiosensitivity of algae, 22:19310
evaluation in Escherichia coli, in relation to dark repair of uv-induced lesions, 22:51526
incidence in uv- and x-irradiated Chlamydomonas reinhardi, effects of postirradiation time on, 22:31286
incidence in uv-irradiated Escherichia coli, effects of light intensity and time on, 22:49644(R) (NYO-3893-1)
inhibition in Hemophilus influenzae by amino acids and chloramphenicol, 22:25715(R) (NYO-1371-51)
isolation and purification of enzymes for, in yeasts, method for batch, 22:25715(R) (NYO-1371-51)
isolation of enzyme for, of uv-induced injury in Neurospora crassa, 22:15114
occurrence in γ- and uv-radioinduced mutants of Zea mays, analysis of, 22:40633
occurrence in uv- and x-irradiated Ec9 and T6 bacteriophages, 22:49645
occurrence in uv-irradiated spores of Bacillus stearothermophilus, effects of salt and sugar contents on, 22:47643
occurrence in uv-irradiated yeast, nature and significance of, 22:26000
performance of visible light for, of uv- and visible light-induced reduction of growth in cultures of Ginkgo pollen and HeLa cells, effects of wavelength on, 22:15069
radiation effects on, of Escherichia coli by lambda phage, protective effects of caffeine against uv, 22:40965
radiation effects on, of Escherichia coli effects of temperature on uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on, of tobacco mosaic viruses, effects of temperature on uv, 22:4706(R) (RLO-1952-2)
radioprotective effects of, in Escherichia coli, uv, 22:15123
repair of uv radiation effects on DNA of Serratia bacteriophage, 22:36422
repair of uv radiation effects on mutants of Chlamydomonas reinhardi, mechanism of, 22:10895
role of enzymes in, of viruses in blue-green algae, 22:25720(R) (ORO-3630-2)
role of thymine dimerization in, of uv-irradiated DNA, 22:21424
spectra for prophage-inducing uv damage in Escherichia coli, 22:52057

PHOTOSENSITIVITY
determination in Serratia marcescens, effects of prodigiosine on, 22:52047
mutations resulting in enhanced, of Proteus mirabilis, characterization of, 22:51539
radiation effects on cadmium sulfide, x, 22:19675
radiation effects on, of human skin, uv, 22:6853
radioinduced, of skin, effects of soap additives on uv, 22:40770
role of free radicals in, of skin, 22:8612

PHOTOSPHERE
see also Solar Granules
alkaline earth abundances in, (E/T), 22:43825
book: The Solar Granulation, 22:38676
carbon monoxide abundance in, (E), 22:36581
carbon monoxide dissociation in layer between, and chromosphere, (T), 22:13116
carbon-12 and carbon-13 abundance in, (E), 22:17316
convective motions in layers of, (T), 22:29063
departures from LTE in stellar, (T), 22:13173
electric conductivity gradients in sunspots in, (T), 22:894
electron density in, (T), 22:13134
element abundances in, (T), 22:26176
element abundances in, aluminum, phosphorus, potassium, sodium, and sulfur, (E), 22:23932
element abundances in, carbon, nitrogen, and oxygen, (E), 22:23956
element abundances in, iron group, (E), 22:23934
elemental abundance in, iron, magnesium, and silicon, (T), 22:41203
elemental abundances in, relative to corona, iron and silicon, (E/T), 22:34229
energy conversion in, convective to magnetic, (T), 22:29167
energy emission at 4477 to 8638 A from center of, (E), 22:31579
energy flow from, to chromosphere and corona, (T), 22:19706
Evershed effect as wave phenomenon in, (T), 22:11177
faculae in, connection to coronal polar plumes, (E), 22:29156
faculae spectrum of, turbulent velocities associated with, (E), 22:52453
faculae, correlation of chromosphere faculae and, (E/T), 22:43794
granular velocity field in, (E), 22:29158
granulation in, pattern of super-, (E), 22:17268
granulation of, high-resolution spatial cinematography of, (E), 22:26163
heating in flare stars, (T), 22:43710
hydrodynamics of lower, (E), 22:2765
hydrodynamics of lower, (T), 22:7105
hydrogen spectrum in, continuous and line, (T), 22:17275
intensity profile in far infrared and millimeter regions, (E), 22:17288
intensity ratio of spot umbra to, (E), 22:49872
interplanetary field origin in, (T), 22:38646 (AD-664509)
iron abundance in, (T), 22:8940
magnetic field of, comparison with interplanetary magnetic field, (E/T), 22:890
magnetic fields in, (E), 22:29158
magnetic fields in, (E), 22:11189
magnetic fields of, fine structure of, (T), 22:34146
magnetic fields of, flare positions relative to, (E), 22:880
magnetic-field patterns in, (E), 22:36617
magnetic-field patterns in, persistent, (E), 22:31560
model for A/sub m/ stars, (T), 22:4930
model for, (T), 22:24017
model for, modification of Bilderberg Continuum Atmosphere, (T), 22:17282
model of, (T), 22:26175
model of, Bilderberg, 22:17274
morphology of active regions, (T), 22:26189
nuclear charge composition of, (E), 22:52408
opacity of layers of, continuous, (E), 22:17285
oscillations, spatial and temporal properties of, (E), 22:43798
oxygen abundance in, (E), 22:17280
physical parameters of, (E), 22:52443
physics of, (T), 22:34143 (CNIE-PE-8)
profiles of Hα line in the neighborhood of moving prominence, (T), 22:21795
properties of calcium plage producing post-limb flare of March 2, 1966, (E), 22:13170
properties of, correlations between brightness, velocity, and magnetic fields for, 22:34180
radiation at 2000 A to 100 μ from, (E), 22:52353
radiation intensity profiles in, Hα, (T), 22:21794
radio emission from small-area spot groups in, (E), 22:45899
relation of magnetic fields of, to radio-emission spectra, (E), 22:36667
rubidium abundance in, (E), 22:43832
scanning of, Mt. Wilson magnetograph, (E), 22:43798
silicon abundance in, (E), 22:23933
spectra in region of lithium resonance lines, Fraunhofer, (E), 22:31575
spectra of granulation of, (E), 22:29131
spectra of granulation of, (E), 22:29093
spectra of granules in, color in, (E), 22:29155
spectra of lower, (E), 22:29011
spectra of, (T), 22:13134
spectra of, absolute wavelengths of Fraunhofer lines in, (T), 22:29063
spectra of, continuum source function in, (T), 22:29010
spectra of, effect of seeing on velocity measurements in, (E), 22:29140
spectra of, microwave absorption lines from dielectronic recombination of highly ionized atoms, (T), 22:31553
spectra of, origin of short-period oscillations in, (E), 22:29141
spectra of, search for quarks in, (E), 22:21836
spectra of, wavelengths of forbidden lines of neutral oxygen in, (E/T), 22:29074
spectra, origin of short-period oscillations in, (E), 22:29139
spectrum of, center-to-limb behavior of molecular lines in, (T), 22:17279
spectrum of, identification of forbidden line lambda 7323.88 A of Ca II in, (E), 22:23925
spectrum of, resonance lines of ionized calcium and magnesium in, 22:4933
spectrum of, saturation function PSI (a,y) for, 22:13101
structure of, nonhomogeneous, (T), 22:26181
sulfur abundance in, (E), 22:36618
sulfur abundance in, (E), 22:31550
sunspot umbral model, (T), 22:881
temperature distribution in, simplified model for, 22:17281
temperature fluctuations in lower, (E), 22:29011
temperature model for, (T), 22:17283
temperature reversal in, following acoustic waves, (T), 22:41201
temperatures for carbon monoxide in, vibrational and kinetic, (E), 22:7093
temperatures of layers of, from Lyman-α and -β spectra, (E/T), 22:11173
velocity fields in, properties of, (E), 22:882
velocity fields in, spatio-temporal analysis of, (E), 22:41157
velocity fluctuations in lower, (E), 22:29011
wave generation in, ion--acoustic, (T), 22:52414
wave motion in regions of continuous emission strips, (E), 22:8988
Zeeman spectra in, generalized theory calculation of lambda 5250 triplet, 22:43911

PHOTOSYNTHESIS
see also Chlorophylls
see also Chloroplasts

    see also Photochemistry
  book: Comprehensive Biochemistry, Vol. 27. Photobiology, Ionizing Radiations, 22:49222
  energy conversion during, 22:10118 (BNL-50051)
  fixation of carbon dioxide molecules during, effects of single flash of light on, 22:33714(R) (ORO-2687-16)
  measurement of electron spin resonance in, using photoreactive material in reaction centers, 22:53501(R) (NYO-3759-5)
  mechanisms of, role of triplet states in, 22:35829(R) (CALT-383-5)
  quantum requirements for, in algae and tobacco, determination of, 22:33714(R) (ORO-2687-16)
  radiation effects on, in algae, 22:4699(R) (RLO-1783-13)
  radiation effects on, of cotton and maize, effects of seed exposure on γ, 22:588
  radiation effects on, of cotton plants, effects of seed exposure on cobalt-60 γ, 22:23468
  rate in vascular hydrophytes, effects of seasons and time of day on, 22:19299(R) (NYO-3018-18)
  reaction kinetics of, in spinach chloroplasts, EPR analysis of, 22:30418 (UCRL-17852)
  reactions of cytochromes in relation to, in Chromatium, light-induced, 22:6192 (BNL-11684)
  reactions, effects of light and oxygen on, 22:28285 (ORNL-4100, pp 135-40)
  role of chloride ions in, 22:53493 (BNL-12532)
Phototubes
    see Photoelectric Cells
Photovoltaic Cells
    see Photoelectric Cells
Phthalates
    see Phthalic Acid--derivatives
1,4-PHTHALAZINEDIONE, 5-AMINO-2,3-DIHYDRO-
  luminescence of, chemical mechanisms for, 22:30410(R) (NYO-3401-4)
  spectra in methyl sulfoxide as function of time, chemiluminescence, 22:27626 (MIT-905-108, pp 33-62)
PHTHALIC ACID
  complexes with neptunium, kinetic studies of, 22:27893
  reactions of ions of, with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
PHTHALIC ACID, 3-NITRO-
  complexes with uranyl ions, preparation and stability of, 22:27655
PHTHALIC ACID, 4-NITRO-
  complexes with uranyl ions, preparation and stability of, 22:27655
PHTHALIDE, 3-METHOXY-3-PHENYL-
  hydrolysis in aqueous sulfuric acid, effects of deuterium on, 22:45062
PHTHALIMIDE, N-1,3-BUTADIENYL-
  polymerization of, 22:18835
  radioinduced polymerization on polyethylene, γ, 22:18835
PHTHALIMIDE, N-VINYL-
  radioinduced polymerization of, in solid and solution states, 22:10288
PHTHALOCYANINE
  complexes with cobalt, method for separation of cobalt complex with aniline from, 22:2102
  complexes with cobalt, Szilard-Chalmers reaction in, yields of cobalt-60 in, 22:2102
  complexes with hafnium and zirconium, Szilard-Chalmers reactions in, recoil energies in, 22:37776 (BNL-50082, pp 79-92)
  complexes with indium, Szilard--Chalmers reactions in, production of isomeric indium-114 by, 22:16616
  complexes with metals, Szilard-Chalmers reactions in irradiated, 22:33429
PHYSICAL CHEMISTRY
    see also Thermodynamics
  book: Annual Review of Physical Chemistry, 22:2073
  conference on aerothermochemistry, 22:939 (AGARD-CP-12(Vol.2))
  conference on aerothermochemistry, 22:928 (AGARD-CP-12(Vol.1))
  research at Hebrew Univ. of Jerusalem, 1965-66, 22:6210(R) (NP-17097)
  solvent extraction in, review on, 22:6398
  theory of effect of lattice defects in nonstoichiometric chemical reactions, review, 22:19659
PHYSICAL CONSTANTS TESTING REACTOR
  core configuration for uranium-fueled bismuth metal-target, description of 5 x 5 lattice, 22:44885 (BNWL-692)
  core configurations for T-shaped Supercell and 6 x 6 Test Cell in, description of, 22:42164(R) (BNWL-775)
  core variations for, description of, neutron flux, 22:22804(R) (BNWL-685)
  critical enrichment of hydrogenous uranyl nitrate systems in, determination of minimum, 22:12087 (BNWL-472, pp 5.1-16)
  fast fission measurements in, use of uranium isotopes for, 22:16270 (BNWL-633)
  fuel assemblies of, computer program methods for physics measurements in multi-composition and multi-configuration, (E/T), 22:37531 (DUN-SA-70)
  fuel cell configuration for, description of light water-moderated plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:32743(R) (BNWL-739)
  fuel elements for, null reactivity measurements in tubular, 22:48727 (BNWL-834)
  fuel elements in, fast fission factor and initial conversion ratios in tubular, 22:48727 (BNWL-834)
  fuel elements in, neutron multiplication factors and utilization ratio measurements in tubular, 22:48727 (BNWL-834)
  kinetics of Phoenix Core in, measurement of, 22:42164(R (BNWL-775)
  lattice parameter measurements in, 22:33044
  neutron flux measurements in, 22:22804(R) (BNWL-685)
  neutron multiplication factor determinations in plutoniu oxide (PuO_2)--uranium oxide (UO_2) graphite lattices in 22:12085 (BNWL-472, pp 3.1-33)
  neutron multiplication factor for uranium--lithium supercell in, determination of infinite medium, (E/T), 22:27459 (BNWL-634, pp 3.1-27)
  neutron multiplication factor in, measurement in graphit moderated lithium and uranium square lattice supercell of infinite medium, 22:18545 (BNWL-622)
  neutron multiplication factor measurements in, 22:33044
  neutron multiplication measurements in, use of uranium--lithium supercell for, 22:22804(R) (BNWL-685)
  neutron production cross sections for uranium--lithium supercell in, determination of adjoint weighted excess (E/T), 22:27459 (BNWL-634, pp 3.1-27)
  physics experiments in, calculations for fast, 22:14255 (BNWL-CC-886)
  physics measurements for multiple-configuration fuel-target lattices in, use of EXTERMINATOR-2 and HAMMER computer program combinations for, 22:53412 (DUN-SA-55)
  physics measurements for thorium oxide (ThO_2)--uranium oxide (UO_2)-fueled, description of, 22:42164(R) (BNWL 775)
  plutonium-239 neutron capture-to-fission ratio in fast spectra, integral measurements of, (E), 22:35288 (BNWL-774)
  reactivity measurements in, effects of water losses on, 22:33044
  reactivity measurements on plutonium oxide (PuO_2)--uranium oxide (UO_2)--water lattices in, plutonium oxid (PuO_2) particle size effects on, 22:20779 (BNWL-624, pp 3.1-159)
  reactivity multiplication factor for multiple configuration thorium oxide (ThO_2)-target supercell of 8 x 8 lattice, measurement of infinite medium, 22:50800 (BNWL-792)
  reactivity of 5 x 5 lattice uranium-fueled bismuth metal target, computer program and activation analysis for, (E/T), 22:44885 (BNWL-692)
  reactivity worth measurements in, determination of critical uranium-235 enrichment for uranyl nitrate using, 22:14251(R) (BNWL-534)
PHYSICAL SECURITY
    (Covering procedures and devices for the physical protection of reactors, plants, etc.)
    see also Alarm Systems
PHYSICS
    see also Astrophysics
    see also Atomic Physics
    see also Biophysics
    see also Cryogenics
    see also Geophysics
    see also Health Physics
    see also High-Energy Physics
    see also Low-Temperature Physics
    see also Mathematics
    see also Nuclear Physics
    see also Quantum Mechanics
    see also Solid State Physics
  bibliography on high-temperature, of gases and plasmas, 22:30506 (NP-17479)
  bibliography on high-temperature, of materials in the condensed state, 22:21646 (NP-17284)
  book: Applications of Mathematics to Problems in Theoretical Physics, 22:9684
  book: Fundamentals of Gas-Surface Interactions, 22:1100
  book: Fundamentals of Quantum Optics, 22:17843
  book: Handbook of Physics (2nd Ed.), 22:9116
  book: High-Speed Physics, 22:36134
  book: Introduction to the Physics of X and Gamma Radiation, 22:15734
  book: Methods of Resolution of Some Boundary Problems in Mathematical Physics, 22:46293
  book: Physics of Many-Particle Systems, 22:11565
  book: Physics Pocket Book, 22:1374
  book: Program of the Physical Experiments on a 1000-GeV Cybernetic Proton Accelerator, 22:41881(T) (AEC-tr-6936)
  book: Radioisotopes, 22:21146
  book: Selected Topics in Solid-State and Theoretical Physics, 22:46353
  book: Symposia On Theoretical Physics. Vol. V, 22:13623
  book: The Application of Group Theory in Physics, 22:39448
  book: The Constructive Uses of Nuclear Explosives, 22:25562
  book: Theory of Groups in Classical and Quantum Physics. Vol. 1. Mathematical Structures and the Foundations of Quantum Theory, 22:7465
  commutator products in, Baker--Hausdorff formula for properties of higher-order, 22:41832

constants and units in, relations among atomic and cosmological, 22:1506
constants in, secular changes in atomic, 22:36750
developments in theoretical, 22:32035
experiments in, error-correcting data link between acquisition and analysis computers for, 22:28210 (UCRL-17999)
Green's function application in, 22:24501
information retrieval system, status and plans for AIP, 22:7943 (IARD-67-1)
Landau papers on, collection of, 22:15504
measurements in macro- and micro-, analysis of, 22:24495
measurements, units of, 22:31135
plutonium technology in, 22:35726 (BNWL-672)
radioisotope uses in, conference on, 22:28011 (CONF-660503)
research at AECL laboratories, 22:44967
research at Hebrew Univ. of Jerusalem, 1965-66, 22:6210(R) (NP-17097)
research at Israel AEC, Jan.--Dec. 1967, 22:48806(R) (IA-1168)
research at Puerto Rico Nuclear Center, 1967, 22:48807(R) (PRNC-121)
research at Studsvik, Sweden in, 22:33399
research in, 22:14416
research in plasma, in Sweden, 22:14468
research in radiological, at Columbia University, report on, 22:49325(R) (NYO-2740-5)
research progress on chemical, 22:42653(R) (NP-17448)
statistical mechanics of relativistic magnetic anomaly, 22:9493
time invariance of elementary charge, testing using uranium-238 spontaneous fission, (E/T), 22:14033

HYSIOLOGY
see also Biochemistry
see also Excretion
see also Metabolism
see also Reproduction
see also Respiration
book: Compartments, Pools, and Spaces in Medical Physiology, 22:6832 (CONF-661010)
detection of abnormal lung, in man, radiographic method for, 22:31120
effects on mineral content of calcareous skeletons, 22:30421
effects on retention of manganese-54 and zinc-65 by euryhaline fish, 22:8491
effects on strontium uptake and accumulation by wheat, 22:49206
radiation effects on heart and nerve, of mice, effects of acetylcholine and histamine on, protective effects of sodium bromide against, 22:51968
radiation effects on variability in, of wheat populations, recurrent x, 22:49639
radiation effects on, chronic x, 22:51902
radiation effects on, of amoeba, x, 22:45682
radiation effects on, of cerebral cortex of rats, x, 22:575
radiation effects on, of flour beetles, combined effects of DDT and temperature on x, 22:4664 (BNWL-SA-571)
radiation effects on, of fruits and vegetables, effects of fungicidal doses on γ, 22:4715(R) (UCD-34-P-73-20)
radiation effects on, of kidney of dog, 22:33950
radiation effects on, of living systems, amelioration of, with nucleic acids, 22:40766
radiation effects on, of man, clinical description of microwave, 22:585
radiation effects on, of man, ionizing, 22:52003
radiation effects on, of man, SHF microwave, 22:25972
radiation effects on, of nervous system of rabbits, microwave, 22:583
radiation effects on, of rabbits, effects of dose on x, 22:33920
radiation effects on, of rats, effects of dose, drugs, and environmental temperature on microwave, 22:554(R) (UR-49-810)
radiation effects on, of rhesus monkeys, mixed neutron and γ, 22:49473 (CONF-680410-, pp 8.1-6)
radiation effects on, of thyroid gland of man, β, 22:2534(R) (COO-1243-8)
radiation effects on, of white clover plants, effects of seed exposure on x, 22:8656
radiation effects on, of young cattle, effects of trace elements on uv, 22:51894
research on bears and elks, design of radiotelemetry systems for, 22:14391(R) (RLO-1929-6)
research on cellular and animal, at Chalk River National Laboratory April 1--June 30, 1968, 22:51556 (AECL-3158)
use of tracer techniques for analysis of animal, IAEA program of, 22:6248

HYTIN
precipitation of niobium, tantalum, thorium, tin, titanium, and zirconium from boiling acid solutions by, 22:33319
use in analysis of iron and steels, 22:33319

HYTOHEMAGGLUTININ
effects on abundance of antibody plaque-forming cells in spleen of mice, 22:38223
effects on cell division in lymphocyte cultures, 22:14906 (BNL-50057, pp 123-37)
effects on frequency of x-radioinduced aberrations of chromosomes in cultured human leukocytes, comparison of antigen with, 22:28433
effects on genetics of lymph node cells of mice, 22:36170
effects on human lymphocytes in relation to RNA metabolism, 22:28629 (ORNL-4100, pp 104-9)
effects on radiosensitivity of chromosomes in human blood cells, 22:25804
effects on radiosensitivity of hepatoma ascite cells, 22:33942
effects on survival of x-irradiated cultured lymphocytes from normal man and patients with Hodgkin's disease, 22:28333
effects on x-radiosensitivity of mitosis in lymphocyte cultures, 22:16996
effects on x-radiosensitivity of reproduction of leukocytes in cultures, 22:19292
radiation effects on response of cultured human lymphocytes to, x, 22:43200 (AD-664651)
radiation effects on stimulation of cell division by, x, 22:14929
radioprotective effects of, on content of transplantable colony forming unit in bone marrow of mice, x, 22:10796
use for study of fast neutron-radioinduced aberrations of chromosomes in cultured human lymphocytes, 22:28431
use for study of x-radioinduced aberrations of chromosomes in cultured human leukocytes, 22:28430
use for study of x-radioinduced aberrations of chromosomes in cultured human leukocytes, 22:28429

Phytomenadione
see Vitamin K Group--phytomenadione

Picket Fence (Cusp Thermonuclear Reactor)
see Thermonuclear Reactors

PICKERING POWER REACTOR, UNIT 1
(508 Mw(e))
construction of multi-unit station with, description of, 22:30237
containment system for, description of negative-pressure, 22:32865
core assembly of, description of, 22:35419 (AECL-3126)
description of 500 MW(e) multi-unit, with common containment system, 22:3809 (AECL-2941)
design parameters for, 22:22712 (STI/PUB-174)
economics of, 22:16106 (AECL-2795)
economics of multi-unit station with, description of, 22:30237
emergency cooling systems for, description of, 22:32852
fueling of, economics of, 22:12004 (AECL-2790)
loading system for, description of on-power, 22:46921 (TID-24679(Vol.2))
loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
siting of, evaluation of Canadian policy toward, 22:50697 (AECL-3156)

PICKERING POWER REACTOR, UNIT 2
(508 Mw(e))
construction of multi-unit station with, description of, 22:30237
design parameters for, 22:22712 (STI/PUB-174)
economics of multi-unit station with, description of, 22:30237
emergency cooling systems for, description of, 22:32852

PICKLING
see also Cleaning

PICOLINE
complexes with uranyl nitrate, infrared spectra of, 22:14502
deuterium exchange between heavy water and, on Group VIII metal catalysts, 22:50988
mass spectra of, 22:42647(T) (AEC-tr-6937, pp 104-8)
spectra of, 22:8052

2-PICOLINE
complexes with uranyl nitrate, luminescence spectra of, 22:33304
reactions with acetic anhydride, effects of deuterium on, 22:27702

4-PICOLINE
reactions with acetic anhydride, effects of deuterium on, 22:27702

2-PICOLINE, 6-PHENYL-
reactions with acetic anhydride, effects of deuterium on, 22:27702

PICOLINE, VINYL-
polymers, radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)

PICOLINIC ACID
complexes with rare earths, thermodynamic properties of, 22:21054 (ORO-1797-11, pp 1-113)
hydrochloride, chlorine-36 exchange between gaseous hydrochloride and, kinetics of, 22:47146
rare earth salts, formation constants of, 22:44951 (IS-T-242)
reactions with 8-quinolinol and uranium, thermal decomposition and solubility of chelates from, 22:16513
reactions with uranium, thermal decomposition and solubility of chelates from, 22:16513

Picrylhydrazyl, Diphenyl-
see Hydrazyl, Diphenylpicryl-

PIEZOELECTRIC CRYSTALS
  analysis of thin plate, Laplace transform, (T), 22:9426 (SC-RR-67-66)
  calibration of quartz, used as pressure gages for hydrogen bubble chambers, 22:40460 (DESY-68/30)
  development of bimorph, for coupling ultrasonic energy to air, 22:51276(R) (IDO-17269)
  use of lead titanate zirconate ceramic disk, for locating and discerning objects in liquid sodium, 22:4498 (APDA-210)
  use of lead-titanate-zirconate, for ultrasonic post-irradiation dimension measurements of reactor fuel element coolant channels, 22:30899
Pigeons (Columba)
    see Columba under Aves
PIGMENTS
    see also Carotene
    see also Carotenoids
    see also Chlorophyll
    see also Dyes
    see also Heme
    see also Hemin
    see also Luciferin
    see also Melanin
    see also Paints
  absorption spectra of retinal, in man, monkeys, and rabbits in relation to laser-radiosensitivity of eyes, 22:51922
  composition in cultured marine algae, effects of light on, 22:42576(R) (NYO-3497-13)
  content of ascites tumor cells, effects of, on photooxidation of ascitic fluid, 22:25796
  content of chloroplast, in barley seedlings, effects of age and temperature on, 22:25801(R) (COO-332-2)
  content of hair of mice, effects of γ-irradiated RNA injections on, 22:25735
  dispersion in melanocytes of fish, combined effects of deuterium, pressure, and temperature on, 22:19273
  distribution of autofluorescent, in cerebral cortex of rats, 22:23592(R) (COO-1474-11)
  effects on laser-radiosensitivity of animal cells, 22:2541
  effects on laser-radiosensitivity of blood cells and skin in guinea pigs and rabbits, 22:40823(T) (JPRS-44070, pp 10-18)
  effects on laser-radiosensitivity of cells, 22:12783
  effects on laser-radiosensitivity of eyes of man, 22:8620
  effects on laser-radiosensitivity of human eyes, 22:8621
  effects on laser-radiosensitivity of retina of eyes, 22:14962
  effects on laser-radiosensitivity of skin of hamsters, man, and rabbits, 22:12784
  effects on laser-radiosensitivity of skin of swine, pathological analysis of, 22:567
  effects on laser-sensitivity of man, rabbits, and swine, tattoo, 22:25989
  effects on uv-radiosensitivity of cholesterol content of human skin, 22:51338
  effects on uv-radiosensitivity of growth in lettuce seedlings, phytochrome, 22:23679
  isolation and identification of purpurogenone, from Penicillum purpurogenum, 22:23678
  kinetics of excitation transfer in, of photosynthetic bacteria, 22:53501(R) (NYO-3759-5)
  labeling of bile, with tritium, 22:28273 (ANL-7278, pp 219-49)
  phycoerythrin, fluorescence properties of, effects of protein structure integrity on chromophore migration in relation to, 22:43205(R) (COO-894-30)
  phytochrome, identification of chromophore species in plant, use of absorption spectra for, 22:43207(R) (NYO-2373-3(App.))
  phytochrome, radiation effects on absorption spectra of plant, effects of wave length on monochromatic light, 22:43207(R) (NYO-2373-3(App.))
  radiation effects on content of, in hair of mice, x, 22:49506
  radiation effects on content of, in hair of swine, fast neutron, 22:38427(R) (ORO-659)
  radiation effects on dermal tattoo, in man, laser, 22:10691
  radiation effects on formation of, effects of intensity and time on uv, 22:40714
  radiation effects on production of, by Penicillium purpurogenum, uv, 22:23678
  radiation effects on production of, in peaches, combined effects of temperature on, γ, 22:23695(R) (UCD-34-P-80-5)
  radiation effects on production of, in variegated Arabidopsis, stability of x, 22:6787
  radiation effects on tattoo, in human skin, laser, 22:47604
  radiation effects on, in eyes of dogs, laser, 22:15075
  radiation effects on, of melanomas, laser, 22:38421 (CONF-660573-, pp 35-48)
  radioinduced changes in, of beef, during storage following processing, γ, 22:23703
  radioinduced mutations for, in Mycobacterium phlei, characterization of uv, 22:40623
Pigs
    see Swine
Piles
    see Reactors
PILGRIM POWER REACTOR
  accident analyses for, definition of strain limit criteria for, 22:50715 (DOCKET-50293-13)
  accident and safety analyses for, 22:50718 (DOCKET-50293-16)
  accidents at, radiation dose effects of postulated, 22:50709 (DOCKET-50293-5)
  ACRS report on, 22:50708 (DOCKET-50293-4)
  buildings for, loading combinations and stress limits for, 22:50711 (DOCKET-50293-8)
  buildings for, preliminary safety analysis of, 22:50718 (DOCKET-50293-16)
  containment system for, analysis of effects of tornado loadings on secondary, 22:50712 (DOCKET-50293-10)
  containment system for, fission product retention capability of, 22:50718 (DOCKET-50293-16)
  containment systems for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  control rod drive system for, description and analysis of, 22:50718 (DOCKET-50293-16)
  control systems and instrumentation for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  coolant injection system for, control system logic for low pressure, 22:50709 (DOCKET-50293-5)
  coolant injection system for, design of low pressure, 22:50715 (DOCKET-50293-13)
  coolant loss and earthquake effects on, preliminary safety analysis of simultaneous, 22:50709 (DOCKET-50293-5)
  cooling systems for, preliminary safety analysis of design of, 22:50717 (DOCKET-50293-15)
  core for, preliminary safety analysis of design of, 22:50717 (DOCKET-50293-15)
  core for, test program for spray cooling system for, 22:50718 (DOCKET-50293-16)
  design drawings for, complete engineering, 22:50719 (DOCKET-50293-17)
  electrical systems for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  emergency and auxiliary systems for, preliminary safety analysis of, 22:50718 (DOCKET-50293-16)
  Emergency Core Cooling System for, predicted operation and performance of, 22:50709 (DOCKET-50293-5)
  Emergency Core Cooling Systems for, analysis of operation of, 22:50712 (DOCKET-50293-10)
  Emergency Core Cooling Systems for, design requirements for, 22:50715 (DOCKET-50293-13)
  engineered safeguards for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  heat exchangers for, design analyses of residual heat removal system, 22:50712 (DOCKET-50293-10)
  operation of, preliminary safety analysis of, 22:50718 (DOCKET-50293-16)
  operators for, G.E. training program for, 22:50711 (DOCKET-50293-8)
  owners of financial statements of, 22:50716 (DOCKET-50293-14)
  pumps for, development of jet, 22:50718 (DOCKET-50293-16)
  quality control program for, outline of, 22:50711 (DOCKET-50293-8)
  radiation monitoring at, description of equipment for, 22:50712 (DOCKET-50293-10)
  radioactive waste control systems for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  regulatory action on, AEC, 22:44854
  research and development programs for, preliminary description of, 22:50709 (DOCKET-50293-5)
  residual heat removal system for, bases for evaluation of, 22:50709 (DOCKET-50293-5)
  safety evaluation of, USAEC Division of Reactor Licensing, 22:37430 (DOCKET-50293-1)
  site for, hurricane and storm analyses for, 22:50711 (DOCKET-50293-8)
  site for, preliminary safety analyses of, 22:50710 (DOCKET-50293-7)
  site for, preliminary safety analysis of, 22:50717 (DOCKET-50293-15)
  site for, seismic analyses for, 22:50714 (DOCKET-50293-12)
  site for, seismologic and geologic analyses of, 22:5071 (DOCKET-50293-10)
  site for, test data on soils at, 22:50713 (DOCKET-50293-11)
  structures and equipment for, no-loss-of-function criteria for Class I, 22:50714 (DOCKET-50293-12)
PILOCARPINE
  effects on iodine-131 secretion in respiratory tract of guinea pigs and rats, 22:431
  use in quantitative radioisotope scanning of salivary glands and thyroid of man, 22:36332
PIMELIC ACID
  deuterium exchange between heavy water and, 22:12327
Pinacolone
    see 2-Butanone, 3,3-Dimethyl-
PINCH DEVICES
  capacitor bank for Juelich, safety problems in, 22:4610 (JUL-540-PP)
  capacitor banks for turbulence heating experiment, desig

of, 22:46102 (IPP-4/50)
control circuits for 2.6-MJ theta, design of, 22:3003 (IPP-1/71)
description and operation of high-temperature low-magnetic-field theta, 22:24258
design and operation of Isar I, 22:52731 (IPP-4/65)
design and operation of long cusp, 22:1140 (LA-3770, Paper G4)
design and performance of 500-kJ double-fed linear theta-pinch ISAR II, 22:46105 (IPP-4/58)
design and performance of low-energy theta, 22:1251 (LA-3770, Paper D4)
design modification of linear, for production of intense, relativistic, self-focusing electron beams, 22:15913
design of 15-meter theta-pinch Scyllac, 22:46110 (LA-DC-9507)
design of Columba, for high-temperature z-pinch plasma, 22:1249 (LA-3770, Paper G3)
design of hard-core theta, 22:46108 (JUL-538-PP)
design of ultra-fast theta, 22:3010
development of, 22:5302(R) (JUL-494-PP)
development of 15-meter Scyllac, 22:1131 (LA-3770, Paper G1)
development of Chalice, research during 1966, 22:9274 (SIT-2582-25)
development of Chalice, review of, 22:9275 (SIT-2582-26)
development of Scyllac, 22:11404(R) (LA-3831)
electric discharge formation in noncylindrical Z, (E/T), 22:46172
Faraday rotation measurements in Scylla IV, 22:1155 (LA-3770, Paper A3)
Faraday rotation measurements in Scylla IV, 22:31842
Faraday rotation measurements in Scylla IV, 22:11404(R) (LA-3831)
hydrogen injection into superconducting levitron, properties of, (E), 22:19972 (UCID-15295)
hydromagnetic equilibrium of thin-skin, finite-beta toroidal, 22:13512 (LA-3778)
ion temperature in Isar III theta, by laser forward scattering, (E), 22:41560
ion temperature measurement in Isar III theta-, by laser forward scattering, (E), 22:44085 (IPP-1/78)
lead design for minimum field distortion in theta, 22:13426 (67-C-252)
magnet coils for Scyllac, modeling of stabilization, 22:11404(R) (LA-3831)
magnetic field analysis in rotating, apparatus for, 22:13451 (LRP-35/67)
magnetic field disturbances in coil of theta, hf analog model for measuring, 22:46101 (IPP-1/80)
magnetic field measurement with peaking strip in theta, zero, 22:39099
magnetic reverse field configurations in linear theta, trapped, 22:1181 (LA-3770, Paper A4)
mass pickup in low-energy theta, measurement of, 22:1188 (LA-3770, Paper D6)
neutron and x-ray production in focused z, 22:34726 (AD-665416)
neutron production in dense plasma focus, 22:34727 (LA-DC-9327)
neutron production in noncylindrical z, in deuterium, 22:1280 (LA-3770, Paper C3)
neutron spectra from ISAR I, deuteron velocity distribution from, 22:50212 (IPP-1/83)
operation of ISAR, review of 1965, 22:7256(R) (NP-16754)
performance of hard-core theta, with reverse trapped magnetic field, 22:1141 (LA-3770, Paper G5)
performance of z-preheater, for MJ theta pinch devices, 22:1256 (LA-3770, Paper H2)
plasma and loss in Scylla III, laser interferometric measurement of, 22:11404(R) (LA-3831)
plasma anisotropy and relaxation in fast MJ theta, 22:1195 (LA-3770, Paper G2)
plasma anisotropy and relaxation in Isar-I, 22:1176 (IPP-1/67)
plasma densities and confinement in large theta, 22:1132 (LA-3770, Paper A5)
plasma density and temperature measurement in theta, using 90° laser scattering, 22:3015 (IPP-1/58)
plasma diagnostics in Balloon experiment, 22:50126(R) (EUR-CEA-FC-352)
plasma diagnostics in theta, using lasers, 22:39053
plasma electron density in large, optical measurement of, 22:9299
plasma electron density measurement in theta, using Mach--Zender interferometers, 22:1156 (LA-3770, Paper D2)
plasma end loss inhibition by nonadiabatic rough magnetic walls in theta, computer simulation of, 22:44068 (LA-DC-9328)
plasma end losses in slow theta, 22:7257
plasma equilibria in Scyllac, calculation of high-beta, 22:7329 (LA-3749)
plasma equilibrium in, two-dimensional calculations for high-beta, 22:1133 (LA-3770, Paper B4)
plasma heating in two-step theta, (E), 22:26360
plasma hydromagnetic instabilities in theta, 22:1265 (LA-3770, Paper B1)
plasma instabilities in traveling bumpy theta, 22:7330
plasma ion heating in fast theta, 22:1136 (LA-3770, Paper D1)
plasma loss measurement from end of theta, using lasers, 22:26368
plasma loss measurements from theta, using laser interferometers, 22:1137 (LA-3770, Paper D3)
plasma loss rates from theta, collisionless equilibrium, 22:1134 (LA-3770, Paper B5)
plasma losses from end of theta, adiabatic, (T), 22:36885
plasma preionization properties in large inverse field, 22:1257 (LA-3770, Paper H6)
plasma preionization source for theta, design and performance of, 22:24354
plasma preionization source for theta, properties of, 22:24355
plasma production in theta, without interaction between plasma and neutrals at ends, 22:1182 (LA-3770, Paper A8)
plasma properties in 8-meter theta, 22:1180 (LA-3770, Paper A2)
plasma properties in Columba, 22:11404(R) (LA-3831)
plasma properties in linear theta, research in Garching, 22:1179 (LA-3770, Paper A1)
plasma properties in theta with transverse magnetic fields, two-dimensional, 22:46136 (IPP-1/81)
plasma properties in theta, high-temperature, 22:41583
plasma properties in theta, in azimuthal magnetic fields, 22:29478(T) (NP-tr-1633)
plasma properties in theta, with azimuthal magnetic field, 22:15514
plasma stability in bumpy field Scylla IV, 22:11404(R) (LA-3831)
plasma stability in hard-core theta, 22:1269 (LA-3770, Paper G6)
plasma stability in linear and toroidal theta, 22:46189 (LA-DC-9324)
plasma stabilization in slow theta, due to plasma outside mirror end points, 22:1264 (LA-3770, Paper A7)
plasma stabilization in theta, properties of, (E), 22:29531
plasma waves in theta, area, 22:39135
plasmoid production and propagation in nonlinear Alfven waves in, (T), 22:36924
potential breakdown in hydrogen--methane and deuterium--methane filled theta, (E), 22:31841
power supplies for fast compression experiments, fast current pulse, 22:46104 (IPP-4/57)
properties of Scyllacita, 22:50131 (LA-3863)
shock implosion calculations for theta, using collisionless ion Vlasov equation, 22:13450 (67-C-166)
use for high-temperature plasma production, 22:31863
valve for theta, design of high speed, 22:47438
x ray emission from theta, 22:46167

PINCH EFFECT
  computer simulation of theta, 22:1193 (LA-3770, Paper F2)
  effect of interelectrode distance on stability of z, in quadrupole hf fields, 22:46135 (IAE-1486)
  electron trajectories in toroidal, 22:17657
  formation and breakup in plasma focus, 22:1185 (LA-3770, Paper C5)
  kinetics of, quasi-orthogonal theory for, 22:20005
  mass pickup in low-energy theta, (E), 22:9343
  neutron and x-ray emission from focussed z, in deuterium, 22:1281 (LA-3770, Paper C6)
  neutron emission in coaxial discharges, in deuterium and deuterium--tritium plasmas, 22:1279 (LA-3770, Paper C2)
  plasma confinement and stability in theta, effects of magnetic mirrors on, 22:1138 (LA-3770, Paper D7)
  plasma current sheath dynamics in Z, two-dimensional snowplough model for, 22:31853
  plasma diagnostics in, using uhf wave reflection, 22:44089 (NP-17570)
  plasma dynamics in theta, with transverse magnetic fields, 22:44163
  plasma electron density measurement in rotating-field, 22:13437 (LRP-36/67)
  plasma equilibria in theta, collisionless, (T), 22:52773 (LA-3844)
  plasma equilibrium in constant and helical hf magnetic fields, 22:50171
  plasma hydromagnetic instabilities in theta, (T), 22:1273
  plasma properties in theta, effects on beta in, (E), 22:17690
  plasma properties in z, pressure effects on, 22:7317
  plasma resistive instabilities in low-energy theta, (E/T), 22:13525
  plasma sheath stability in theta, (T), 22:1268 (LA-3770, Paper F3)
  plasma stability in high-beta theta, z-dependent marginal, 22:1267 (LA-3770, Paper B7)
  plasma stabilization in Z, using superimposed theta pinch, (E), 22:50200 (IPP-1/77)
  production of Megagauss z, in solid plasma, 22:11448
  theory for one-dimensional, static, 22:3081
  use with hydromagnetic accelerators, for dense plasma production, 22:1250 (LA-3770, Paper C1)
  viscous effects in liquid conductor model of hard-core, (T), 22:19978

Pine Trees (Pinus)
  see Pinus under Gymnospermidae

2-PINENE

  radiation effects on, products from γ, 22:6323
Pinot Project
  see Plowshare Project
Pions
  see Mesons (π)
PIPE FITTINGS
  design of steel and Zircaloy-2 reactor, to withstand temperature-induced strains, 22:49695(P)
PIPERAZINE
  radioprotective effects of, on hemin solutions, x, 22:8562 (NP-16875)
  use as impregnant in activated charcoal for trapping methyl iodide from wet gases, 22:42945(P)
PIPERIDINE
  complexes with europium and terbium containing 1,3-diphenyl-1,3-propanedione, effects of deuterium on luminescence of, 22:18764
  effects on luminescence of ionic processes in x-irradiated p-terphenyl in cyclohexane, 22:35872
  effects on separation of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amine carbonate in methanol solutions, 22:133 (CU-755-4, Paper IIB)
  reactions with 4-chloro-1,6-dinitronaphthalene, effects of deuterium on, 22:37724
  reactions with cyclohexyl 2,4-dinitrophenyl ether, effects of deuterium on, 22:37724
PIPERIDINE, 4-tert-BUTYL-1-ETHYL-
  reactions with methyl chloride in 1,2-dimethoxyethane, chlorine isotope effects in, 22:27627 (MIT-905-108, pp 63-78)
Piperylene
  see 1,3-Pentadiene
PIPES
  (Generally thick walled, large diameter.)
  see also Pipe Fittings
  see also Tubes
  bonding of, method for, 22:8719
  cleaning in heat exchangers, 22:12483
  cleaning methods for N Reactor, 22:15142 (DUN-SA-45)
  closing of aluminum, copper, and steel, using high explosives, 22:6513 (LA-3786)
  configurations of enriched uranyl nitrates in multiple intersecting, criticality parameters for, (T), 22:50807 (RFP-1197)
  corrosion of oil well, monitoring using cobalt-60, 22:23724(P)
  corrosion of power plant, methods for reducing, 22:52134
  corrosion of type 304 stainless steel reactor coolant, 22:2610(R) (GEAP-5512)
  corrosion of underground steel, cathodic protection from, 22:40996 (CONF-680605-1)
  corrosion protection in heat exchangers, 22:12483
  crack detection in, sonic method for, 22:12008(R) (BNWL-537)
  crack growth in metal, equation derivation for probability of circumferential, (T), 22:50734(R) (GEAP-5637)
  crack growth in, acoustic emission method for detection of, (E), 22:51190 (BNWL-SA-1772(Pt.1))
  crack growth rates in type 304 stainless steel reactor coolant, 22:2610(R) (GEAP-5512)
  cracking and deformation in natural gas, use of acoustic emission to detect, 22:269 (BNWL-SA-1262)
  description of Tokai-Mura Power Reactor cooling system, 22:20840
  design criteria for nuclear installation, 22:7816(R) (ORNL-TM-2057)
  design for plutonium fabrication hood, engineering drawings for, 22:14654
  design for Sodium Component Test Installation, 22:48982(R) (LMEC-68-20)
  design for uranium hexafluoride sampling and transfer facility, engineering drawings for, 22:14639
  design, fabrication, assembly, and testing of systems of, for nuclear power plants, ASME Standard Code for, 22:40298
  elbows in, computer program for stress analysis of, 22:50734(R) (GEAP-5637)
  fabrication methods in Japan of reactor coolant loop, 22:14177
  fabrication problems of stainless steel, description of Fukushima Power Reactor Unit 1, 22:53326
  failure of nuclear power plant, effects of stress intensity on, 22:27952 (GEAP-5557)
  failures in carbon steel, low alloy steel, and stainless steel, analysis of crack, (E/T), 22:35459(R) (GEAP-5587)
  failures in nuclear power plants, bibliography on, 22:3816 (CEA-Bib-79)
  failures in reactor cooling system, probability analysis for mechanisms of, 22:35459(R) (GEAP-5587)
  fatigue testing of primary coolant, stress analysis for, 22:15174(R) (GEAP-5554)
  fatigue testing of primary coolant, stress ratio analysis of, 22:15174(R) (GEAP-5554)
  flexibility in liquid metal-cooled fast breeder power reactor cooling system, design and analysis of, 22:39812
  flow at exit of vertical, use of turning tee and beam to measure unsteady two-phase, 22:10488 (TID-24126)
  flow of flashing fluid through, theory of critical, 22:42957 (AHSB(S)R-147)
  flow of fluid--solid suspensions in, heat transfer measurements for turbulent, 22:45242 (ORNL-TM-2124)
  flowrate limits in cryogenic stainless steel, 22:24194 (LA-DC-9163)
  fluid flow effects on heat transfer in two-phase gas-liquid region in vertical, (T), 22:14299
  fracture mechanics of ASTM A-106B steel, analysis of, 22:50734(R) (GEAP-5637)
  fracture testing of reactor coolant type A-106B steel, at room temperature, 22:2610(R) (GEAP-5512)
  fracture testing of type 304 stainless steel reactor coolant, 22:2610(R) (GEAP-5512)
  heat transfer from, to moving fluids, effects of pipe surface roughness on, 22:23213(R) (RLO-1954-2)
  inspection of Dresden Power Reactor Unit 1, description of nondestructive in-service, 22:53343
  inspection of, design of gamma camera for, 22:47393(P)
  interface in, isotope-powered x-ray instrument for detecting arrival of, 22:43137(P)
  joint seal for coolant, description of inclined radial groove, 22:10092(P)
  leak detection in inaccessible, review of radioactive tracer techniques for, 22:49034
  liquid flow in rectangular, velocity stabilization of mercury MHD, 22:5209
  magnetohydrodynamic flow along cylindrical, in transverse magnetic field, (T), 22:13319
  magnetohydrodynamic flow in, with sudden expansion, (E/T), 22:9158
  materials for fossil-fuel steam plant, review of, 22:52191
  materials for steam, requirements of, 22:47672 (CONF-671007-5)
  mechanical properties of steel, at 550ºF, 22:2610(R) (GEAP-5512)
  neutron attenuation by air ducts in shield, (T), 22:31910
  neutron streaming through concrete duct, (E/T), 22:31902
  neutron transport in, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
  particle transport to walls of, from turbulent flow, 22:27996 (WAPD-TM-765)
  rupture in 24-in.-OD reactor coolant, effects of surface flaws on, 22:16787(R) (BMI-1828)
  rupture of carbon steel, extent and initiation of ductile, 22:646(R) (BMI-1817)
  seals for horizontal, description of concentric cylinder with sphere covered hole for, 22:7867(P)
  turbulent flow through, non-Newtonian correlation for, 22:12532
  use in nuclear power plants, preparation and properties for, 22:32805
  use of plastic and plastic-lined, in plutonium scrap recovery plant, 22:27855 (ISO-SA-22)
  water flow in circular, diffusion and mixing during turbulent, 22:47280 (AERE-R-5569)
  water flow in, heat transfer measurements in, (E), 22:16766
PIPETS
  design of remote-control, for liquid radioactive samples, 22:37915
Piqua Nuclear Power Facility
  see Piqua Power Reactor
PIQUA POWER REACTOR
  coolant temperatures in, effects of core depth on, 22:10006(R) (NAA-SR-12561)
  core system for, description of hydraulic model studies of, 22:37406 (BNWL-518(Del.))
  design and operating characteristics of, tabulation of, 22:7831
  fuel assemblies in, effects of configuration on temperature of lower end grid support, date of, 22:35421 (AI-AEC-Memo-12574)
  fuel assembly performance in Core I of, post-irradiation testing of, 22:44860
  fuel element assemblies for, postoperation evaluation of core-I, 22:6026
  fuel element characteristics of, 22:49822
  fuel elements for, analysis of coolant erosion of modified design for, 22:12031 (NAA-SR-Memo-12401)
  fuel elements for, hydraulic testing of modified, 22:12033 (NAA-SR-Memo-12536)
  fuel elements in Core II of, ISOCHECK method for isotopic analysis of, 22:16116 (CEND-291)
  maintenance of, description of January 1966 shutdown, 22:46856 (AI-AEC-12696)
  operating availability evaluation following completion of recovery program modifications, 22:10007 (NAA-SR-Memo-12420(Vol.1))
  operating availability evaluation for, reliability diagrams, component failure data, and failure mode and effect analyses used in, 22:10008 (NAA-SR-Memo-12420(Vol.2))
  operation performance of, description during 1963 to 1966, 22:46856 (AI-AEC-12696)
  operational performance of, 22:3833(R) (NAA-SR-Memo-12540)
  operations history during January to July 1967, 22:10006(R) (NAA-SR-12561)
  operations history of, total, 22:1821

PISTON ENGINES
see also Aircraft Engines
see also Internal Combustion Engines
design and performance of modified Stirling cycle, for circulatory support system, 22:40318 (AGN-8258)
piston ring wear in, radioactive tracer method for measuring, 22:49031
Pitch
see Bituminous Materials
PITCHBLENDE DEPOSITS
(This heading may be modified by location in the form Pitchblende Deposits (Colo.).)
seleniate mineral contents in Liauzun-en-Olloix, France, 22:48966
PITCHBLENDES
see also Uraninites
promethium-147 content in African, 22:35950
uranium distribution in, effects of radium on, 22:33577
PITTSBURGH AREA (PENN.)
radioactivity content of environment at Bettis Atomic Power Laboratory, during 1965, 22:28502
PITUITARY GLAND
extracts from hypothalamus of, effects of, on oxidative metabolism and synthesis of protein in cell cultures from glands of rats, 22:12175(R) (NYO-3827-3)
metabolism in cell cultures from, of rats, effects of hypothalamic extracts on oxidative, 22:12175(R) (NYO-3827-3)
protein synthesis in cell cultures from, of rats, effects of hypothalamic extracts on, 22:12175(R) (NYO-3827-3)
radiation effects on activity of, of dogs and rats, effects of radioprotective compounds on x, 22:25896
radiation effects on adenohypophysis of, of castrated rats, cytological study of γ, 22:45663
radiation effects on function of, in man, microwave, 22:21623
radiation effects on histochemistry in, of mice, lethal x, 22:12906
radiation effects on histochemistry of, in mice, effects of dose on uv, 22:6732
radiation effects on homogenates of, effects of, on bone, gonads, and thyroid of hypophysectomized rat recipients, x, 22:40539
radiation effects on human, effects of, on vision, proton, 22:31150
radiation effects on neurosecretory activity of posterior, in rats, γ and x, 22:40565
radiation effects on structure and function of, in Triturus, effects of transplantation on, 22:19239(R) (ORO-3564-3)
radiation effects on synthesis of ACTH in, of rats, x, 22:23458
radiation effects on ultrastructure of, in rats, acute γ, 22:49271
radiation effects on, effects of, on production of thyrotropic hormone, strontium-90 β, 22:14964
radiation effects on, from implant of iridium-192, radon-222, and yttrium-90, 22:51298(R) (COO-1484-3)
radiation effects on, of albino rats, combined effects of heat treatment on ionizing, 22:10883
radiation effects on, of dogs, pathological laser, 22:570
radiation effects on, of goldfish, cytological and physiological study of iodine-131 β and γ, 22:36208
radiation effects on, of mammals in relation to radiation sickness, review of ionizing, 22:25966
radiation effects on, of man, effects of age and dose on γ, heavy particle, and x, 22:8616
radiation effects on, of mice, effects of, on diurnal rhythm of eosinophils, γ, 22:25993
radiation effects on, of rats, effects of dose on chronic x, 22:31260
radiation effects on, of rats, polonium-210 α and γ, 22:47606
radiation effects on, of swine, stereotaxic method for introducing strontium-90 source for β, 22:36365
radioinduced ablation of, for treatment of neoplasms in man, use of implants of gold-198 and yttrium-90 for, 22:51975
radioinduced gonadotropic adenomas in, of rats, effects of exposure of thyroid gland on β and x, 22:10871
radioinduced necrosis of human, following yttrium-90 implant therapy, β, 22:49526
radioinduced tumor of, of rats, astitine-211, 22:2538
radioinduced tumors in, pathogenesis of x, 22:15082
radioinduced tumors of, in rats, determination of small dose for fast neutron and proton, 22:38483
radioinduced tumors of, in rats, iodine-131, 22:45693
radioinduced tumors of, in rats, iodine-131 β and γ, and x, 22:43452
radiotherapy of adenomas in human, development of fibrosarcomas following x, 22:4669
radiotherapy of adenomas of, effects of, on human growth hormone, proton, 22:47620
radiotherapy of carcinomas in, of man using yttrium-90 implants, γ, 22:51820
radiotherapy of chromophobe adenomas of, in man, combined effects of surgery on, 22:12876
radiotherapy of malignant exophthalmos in, of man, development of hyperthyroidism following iodine-131 β and γ, 22:15105
radiotherapy of tumor in human, proton, 22:49386
radiotherapy of tumor of, in man, development of middle cerebral artery occlusion following γ and x, 22:28554
removal from rats, effects of, on calcium-45 and sulfur-35 fixation in bones, 22:47494
removal of diseased, by yttrium-90 ablation, 22:51820
removal of, effects of, on food consumption by mammals, 22:21404 (COO-301-150)
surgery in man, use of β-emitting radioisotopes for, 22:15031
surgical removal of, effects of, on iodine-125 metabolism in rat thyroid gland, 22:40517(R) (ORO-1643-89)
synthesis of ACTH in, of rats, effects of adrenalectomy on, 22:23458
tumors in, of man, use of beam focus radiography with color isodose curve plotter for localization of hypophyseal, 22:28228
use of extract of anterior, with prostigmine for elimination of colic gases during abdominal radiodiagnosis, 22:4640
Pituitary Hormones
see Hormones, Pituitary
PIVALIC ACID, p-NITROPHENYL ESTER
hydrolysis of, effects of deuterium in solvent on elastase-catalyzed, 22:10214
PLACENTAL TISSUES
cerium-144 transport across, of rats following injection, 22:30950
cesium-134 transport across, of rabbits, 22:38427(R) (ORO-659)
cesium-137 content of human, in Japan, relation of, to body burden, 22:45454
cesium-137 transfer by, to fetuses of pregnant guinea pigs and rats, 22:38329
iodine-125 transport across, following injection into pregnant rabbits, 22:40827 (ORO-657, pp 3-10)
iodine-125 transport across, of rabbits and swine, 22:38427(R) (ORO-659)
iodine-131 content of fetal and maternal, in rabbits, comparison of, 22:10700
iodine-131 exchange in, of pregnant rabbits, 22:10687
iodine-131 transport across, following injection into pregnant rabbits, 22:40827 (ORO-657, pp 3-10)
iodine-131 transport across, of rabbits and swine, 22:38427(R) (ORO-659)
localization during human pregnancy, use of iodine-131-labeled serum albumin for, 22:8589
localization of human, use of technetium-99 and scintillation counters for, 22:31169
neptunium-237 uptake by, following injection of pregnant rats, 22:30948
plutonium-239 uptake by, following injection of pregnant rats, 22:30948
radiation effects on blood supply of, of rats, repair of, 22:51953
radiation effects on fat content of rat, x, 22:12897 (SZS-12/67)
radiation effects on lipid balance in rat, x, 22:435
radiation effects on transport of iodine-131-labeled iodide and thyroxine in, of rats, γ, 22:47495
radiodiagnosis of placenta praevia of, by photoscanning with technetium-99-labeled albumin, 22:40795
radioisotope scanning for localization of human, use of technetium-99-labeled pertechnetate and γ cameras for, 22:38359
scanning in man using chromium-51-labeled erythrocytes, 22:33861
scanning using technetium-99 and gamma cameras, 22:25940
scintiscanning in man, using technetium-99-labeled albumins, 22:49398
scintiscanning using technetium-99-labeled serum albumin, 22:25936
strontium-85 transfer through, to fetuses of mice, 22:450
strontium-85 transfer to fetuses of mice through, 22:36193
strontium-85 transport across, of rabbits, 22:38427(R) (ORO-659)
strontium-90 content of human, in Germany from 1958 to 1966, 22:33808 (BMwF-FBK-67-70)
uranium-233 uptake by, following injection of pregnant rats, 22:30948
Planaria (Dugesia)
see Dugesia under Platyhelminthes
PLANETS
see also Asteroids
see also Earth
see also Jupiter (planet)
see also Mars (planet)
see also Mercury (planet)
see also Saturn (planet)
see also Venus (planet)
analysis of surface materials using thermal-neutron-capture gamma rays, (E), 22:31533
atmosphere formation for terrestrial-type, (T), 22:52311 (BNL-50114)
atmospheres of, absorption integrals of, (T), 22:41263
bibliography on 1966 Soviet studies on, 22:17461(T) (JPRS-44343)
book: An Introduction to Astronomy: Planets, Stars, and Galaxies, 22:24022
book: Introduction to Space Science, 22:19898

book: Physics of Planets, 22:43673
book: Radar Astronomy, 22:31592
condensation of, (T), 22:13125
conference on moon and, 22:2773
cosmic-radiation depth distribution in surface of, calculation of, 22:4940
effects of solar-tide induced by, on activity cycle, (T), 22:29048
formation of systems of, from rapidly rotating main-sequence stars, (T), 22:866
formation of, (T), 22:19721
formation of, critical velocity hypothesis in, (T), 22:13098
formation of, review of theories on, 22:26161
formation of, use of fossil particle tracks in study of, 22:15314
gravitational radiation from orbiting, theory of scalar, 22:5658
heating by dynamo induction from pre-main sequence T Tauri solar wind, (T), 22:45859
interaction with solar wind, (T), 22:19712
magnetic fields and rotation of, test of Blackett hypothesis, (T), 22:21792
magnetic fields of, (T), 22:43692
magnetic fields of, turbulent motion analysis for origin of, (T), 22:8929
mantles of terrestrial, conference on, 22:26196
modulation of solar activity by, (T), 22:29044
molecular hydrogen abundance in atmospheres of, (T), 22:7120
motion in linear theory of gravitation, 22:50464
motion of, Kepler's third law for, (T), 22:43749
motion of, quaternion representation of general relativity theory for gravitation and electromagnetism for, 22:29765
orbits of, effects of general relativity on, (T), 22:8897
orbits of, solar wind and, (T), 22:2753
perihelion advance of, and solar oblateness, (T), 22:8924
physical characteristics of, (T), 22:43673
precession in gravitation theory, general relativistic correction for, 22:22456
quasiperiodic solutions of first kind in plane n-body problem, (T), 22:45897
radar studies of, (T), 22:31592
radiative transfer in atmosphere of, Rayleigh-scattering analysis of, (T), 22:17238
rotation of, due to solar wind, (T), 22:36859
solar wind interactions with, dynamo effects from, 22:52627
solar-wind interactions with, (T), 22:24167
spectra of, inversion of limb-darkening equation using Prony algorithm, (T), 22:26130
use of small, in pulsar model, (T), 22:41275

PLANKTON
(Minute, free-floating water plants and animals.)
see also Chaetognatha
see also Protozoa
carbon-12 content of, off coasts of Ecuador and Peru, 22:40609
carbon-14 metabolism by, efficiency of liquid scintillation and Geiger--Mueller detectors for measuring, 22:38000
carbon-14 specific activity in total carbonate of, 22:43311(R) (PRNC-85)
cerium-144 content of, in Black Sea during 1966, 22:8550
cesium-137 content of, in Black Sea during 1966, 22:8550
composition of phyto-, from Tvaeren Bay of Baltic Sea, 22:53489 (AE-327)
content of major- and trace elements in, in Puerto Rico, 22:43311(R) (PRNC-85)
effects of radioactivity on, in seawater, (E), 22:12455(R) (EUR-3635)
iodine-131 content of, in Wisconsin lakes, 22:38236 (COO-1281-6)
migration of Pacific Ocean, Operation Wigwam studies of, (E), 22:10409
polonium-210 content of marine, off South African coast during 1965 to 1966, 22:6817
quark content in, upper limit for, (E), 22:34841 (COO-1112-155)
radioisotope content of, in Columbia River, effects of reactor shutdown on, 22:10740 (BNWL-480, pp 153-93)
radioisotope uptake by, phosphorus-32 and zinc-65, 22:51488
role in carbon-14 uptake from water by fish, 22:25837
strontium content of, of Atlantic and Pacific Oceans, 22:36261
strontium-90 accumulation by, effects of calcium content of lake water on, 22:47500

Plant Cells
see Cells

Plant Hormones
see Hormones, Plant

Plant Physiology
see Physiology

Plant Reproduction
see Reproduction

Plant Respiration
see Respiration

PLANTS
(Limited to general papers on plants in the botanical sense.)
see also Bacteriophages
see also Bryophyta
see also Chlorophyta
see also Chrysophyta
see also Crops
see also Cyanophyta
see also Euglenophyta
see also Eumycota
see also Gaseous Diffusion Plants
see also Leaves
see also Microorganisms
see also Myxomycota
see also Nuclear Power Plants
see also Phaeophyta
see also Pollen
see also Power Plants
see also Pyrrhophyta
see also Radiochemical Processing Plants
see also Rhodophyta
see also Rickettsia
see also Roots
see also Schizomycota
see also Seed
see also Seedlings
see also Steam Power Plants
see also Stems
see also Submarine Power Plants
see also Uranium Ore Processing Plants
see also Vegetables
see also Viruses
absorption of fission products by, 22:51445
analysis by neutron activation methods, 22:25278
analysis for beryllium, fluorometric, 22:18683 (AAEC/TM-87)
analysis for bromine by neutron activation methods, 22:49
analysis for bromine, methods for precision and sensitivity in activation, 22:42594 (TEES-2671-6)
analysis for cesium-137, method for, 22:21029 (SC-M-67-3044)
analysis for copper by neutron activation methods, 22:21044
analysis for gross beta activity, method for, 22:21029 (SC-M-67-3044)
analysis for mercury by sublimation and extraction titration, 22:4057
analysis for molybdenum and tungsten by neutron activation techniques, 22:47082
analysis for nitrogen isotopes by optical spectrometry, 22:37644 (CEA-R-3410)
analysis for plutonium, thorium, and uranium by alpha spectroscopy, 22:48839
analysis for potassium by gamma spectra from potassium-41, 22:18697
analysis for strontium by atomic absorption spectrophotometry, 22:25245
analysis for strontium-90 by solvent extraction of yttrium-90 daughter using bis(2-ethylhexyl) phosphate, 22:30425 (AAEC/TM-421)
analysis for strontium-90, method for, 22:21029 (SC-M-67-3044)
analysis for trace amounts of molybdenum, 22:10175(T) (LB/G-2584)
analysis for trace elements, activation, 22:16423
analysis for uranium after concentration on sodium diethyl dithiocarbamate, 22:4057
analysis of data on effects of site factors on, review of, 22:23478 (ORNL-TM-1974)
analysis of low nitrogen-15-content, for nitrogen-14 and nitrogen-15 by optical spectrometry, 22:14443
beta activity of, use of, for determining isotope content, 22:45540
calcium uptake by, effects of soil organic matter on, 22:27901
carbon-14 content of, in Japan and southeast Asia from 1948 to 1965, 22:40710
cesium-137 content in Pelindaba, South Africa, 22:180 (PEL-89)
cesium-137 content of Danish, 1966, 22:10358 (RISO-155)
cesium-137 content of, in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
cesium-137 content of, in Greenland, 1966, 22:10359 (RISO-156)
chromophore species in phytochrome of, use of absorption spectra to identify, 22:43207(R) (NYO-2373-3(App.))
content of trace elements in, determination of, by neutron activation analysis, 22:17049
development, growth, and metabolism of, effects of simulated low-gravity environments on, 22:28701 (ANL-7278, pp 297-303)
distribution of insects associated with, at Nevada Test Site, review of, 22:23483
distribution of pesticides in leaves of, use of gold-198-labeled compounds to study, 22:6747
distribution of saxicolous, in relation to microtopography and microweathering of granite, 22:23480(R) (ORO-2412-7)
ecology in Savannah River, 22:6775
ecology in tropical rain forest of Puerto Rico,

22:47496(R) (PRNC-103)
ecology of vascular, in Iceland, 22:18662(R) (ORO-3556-11)
effects on deuterium content in ground water, 22:18939
fallout content of Danish, 1966, 22:10357 (RISO-154)
fallout uptake by forage, in Nevada Test Site environs, 22:18963 (BNWL-481-1, pp 93-101)
fission products distribution in, use of γ spectrometry to measure low-level, 22:6795(R) (COO-414-6)
gamma emissions from potassium-42 in tissues of, use of liquid scintillation spectrometer for counting of, 22:503
gamma irradiation of, design of apparatus for, 22:2290(P)
iodine-131 content of, instruments and techniques for measurement of, 22:8535
iodine-131 content of, ratio of, to content of atmosphere and milk, 22:17001 (CONF-680108-1)
iodine-131 transport from atmosphere to, properties of turbulent, 22:40252 (AECL-2787, pp 589-601)
lead content of, on Galician soils, effects of release by soils on, 22:6826
leaf-water-content changes and moisture state of, beta-ray gaging techniques for analysis of, 22:6669
metabolism of herbicides in, 22:14913 (ORNL-TM-2042)
mineral nutrition in lower, review of, 22:12781
pasture, determination of removal rate of iodine-131 from, 22:28452 (NYO-2147-13, pp 152-9)
phosphorus-32 content of tissues of, autoradiographic method for determination of, 22:31070
potassium-40 content in Pelindaba, South Africa, 22:180 (PEL-89)
primary productivity of, determination of, in Puerto Rico, 22:22904 (PRNC-104, pp 90)
radiation effect on, ecological study of chronic γ, 22:51487
radiation effects on absorption spectra of phytochrome in, effects of wave length on monochromatic light,, 22:43207(R) (NYO-2373-3(App.))
radiation effects on chlorophyll content and growth of, solar uv, 22:43484
radiation effects on content of anthocyanin in leaves of higher, γ and x, 22:31285
radiation effects on infection and immune mechanisms in, bibliography on ionizing, 22:4566 (TID-23990(Suppl.1))
radiation effects on infection and immune reactions in, bibliography on ionizing, 22:4565 (TID-23990)
radiation effects on living, bibliography on, 22:4663 (AED-C-04-30)
radiation effects on, bibliography on, 22:51869 (AED-C-04-31)
radiation effects on, dosimetry in, 22:14525
radiation effects on, during space flight, proton, 22:12899(T) (N-67-29205, pp 77-82)
radiation effects on, following nuclear war, review of, 22:28395 (TID-23939)
radiation effects on, in biosatellite programs in relation to safety of astronauts, 22:31078
radiation effects on, ionizing, 22:17020
radiation effects on, neutron, 22:16997
radiation effects on, of forest ecosystem, cesium-137 γ, 22:47497
radiation effects on, proton, 22:38474
radiation effects on, RBE of proton, 22:36273
radiation effects on, space, 22:21634
radiation monitoring of BNL area, 1965, 22:40258 (BNL-50093)
radiation monitoring of Savannah River Plant, January through June 1968, 22:45178(R) (DPST-68-30-2)
radiation monitoring of, in vicinity of Paducah Plant during 1965 to 1966, 22:491 (KY-543)
radioactivity content of, relation of, to post attack food supply of domestic animals and man, 22:38263 (TID-24459)
radioactivity in, near Ames Research Reactor, 1962 to 1968, 22:25532 (IS-1776)
radioactivity of French, effects of fallout on, 1961 to 1965, 22:25538
radioactivity of, on Pacific Island of Niue, 22:2215
radiochemical assay of, in Brazil for lead-210, radium-228, and thorium-228, 22:25829 (TID-24488)
radioecology of, methods of research in, 22:19302
radioinduced chromosome aberrations in cells of, review of neutron, 22:51492 (UCRL-18432)
radioinduced chromosome aberrations in, comparison of, with animals and humans, 22:38245
radioinduced mutations in crop, dosimetry for neutron, 22:31047
radioinduced mutations in, for use in agriculture, 22:10881
radioinduced toxins in, mutagenic effects of, on Escherichia coli, 22:51522
radioisotope analysis in, following accident at Savannah River Plant, plans for emergency, 22:36251 (DP-MS-68-1)
radioisotope content of, cerium-144, cesium-137, radium-226, strontium-90, zirconium-95, 22:25800 (UCLA-12-668, pp 37-58)
radioisotope content of, effects of infection with pathogens or symbionts on, 22:12798
radioisotope content of, in France during 1962 to 1966, fallout, 22:43317
radioisotope content of, in Germany during 1960 to 1963, cesium-137 and strontium-90, 22:51587
radioisotope content of, methods of determining and separating cerium-144, cesium-137, and strontium-90, 22:33818 (UCLA-12-676)
radioisotope sorption from soils by, method for study of fission product, 22:51301 (FOA-4-4323)
radioisotope uptake from soils by roots of, 22:43233
radiosensitivity of seeds and seedlings of, in relation to taxonomic differences, γ and x, 22:36411
radium-226 distribution in, of aquatic ecosystem, 22:47498
radon-222 release from, measurements in Champaign County, Illinois, 22:171 (PHS-999-RH-26)
recovery in γ-irradiated tropical rain forest, 22:49282(R) (PRNC-119)
root development of, use of tracer techniques to study, 22:6449
selenium distribution in, 22:51325
selenium transport in, 22:51325
space flight effects on genetics and physiology of, effects of seed exposure during space flight on, 22:45488
species of potted, effects of, on cesium-137 and strontium-89 uptake, 22:43313 (RISO-170)
strontium uptake by, effects of soil organic matter on, 22:27901
strontium-85 uptake and release by aquatic, in aquaria and rivers, 22:33815(R) (ORO-490-14)
strontium-85 uptake by, in streams, 22:10356 (ORO-490-12)
strontium-89 uptake by potted, effects of calcium/strontium ratio, soil type, and species on, 22:43313 (RISO-170)
strontium-90 content in Pelindaba, South Africa, 22:180 (PEL-89)
strontium-90 content of Danish, 1966, 22:10358 (RISO-155)
strontium-90 content of Danish, 1966, 22:10357 (RISO-154)
strontium-90 content of, in Black Sea during 1965 and 1966, 22:33805 (A-AC-82/G/L-1194)
strontium-90 content of, in Greenland, 1966, 22:10359 (RISO-156)
succession on flood plain, effects of nuclear explosion on secondary, 22:23480(R) (ORO-2412-7)
toxicity of tritium-labeled thymidine on genetic material of, 22:51555
uptake of cations by, effects of strontium-90 reactions with clay fractions of soils on, 22:6795(R) (COO-414-6)
uptake of radioisotopes by aquatic, from KAPL wastes, 22:21497 (HW-43112)
uptake of soil water by, effects of root development on, 22:23352
water evaporation from, in arid regions, methods for measurement of, 22:23350
zinc-65 content of, in Columbia River estuary, 22:45469
zinc-65 distribution in, of aquatic ecosystems, 22:14980

PLASMA
see also Blood Plasma
see also Electric Arcs
see also Ion-Acoustic Waves
see also Lymph
see also Pinch Effect
see also Plasma Accelerators
absorption coefficient for hot, intensity dependence of inverse bremsstrahlung, (T), 22:48120
absorption coefficient measurement by gas lasers, 22:41567
acceleration in electric fields, variational calculation of, (T), 22:11455
acceleration in magnetic mirror, stochastic, (T), 22:17627
acceleration of argon, by propagating current sheets, 22:31843
acceleration of laser-produced, (T), 22:9383(T) (NP-tr-1605)
acceleration of plasmoids, method for, 22:31783
acceleration with traveling electromagnetic waves, (E), 22:50173
admittance in uniform rf electric fields, (E/T), 22:5809(R) (ANL-7354)
alpha particle reactions with, optical emission from slowing down, 22:1245
antenna impedance in warm, (T), 22:9285
atomic beam interactions with, excitation of hydrogen, 22:5329(T) (UCRL-Trans-10139)
atomic beam scattering by, collective effects from, 22:50184
beam interactions in partially ionized, nonlinear effects of, (T), 22:24854 (IA-1128, pp 12-20)
bibliography, 22:48074 (AED-C-03-21)
bibliography of Stanford publications, 22:50127 (SU-IPR-255)
bibliography on, 22:2999 (AED-C-03-12)
bibliography on, 22:2998 (AED-C-03-11)
bibliography on, 22:5301 (AED-03-13)
bibliography on, 22:7254 (AED-C-03-13)
bibliography on, 22:13425 (AED-C-03-14)
bibliography on, 22:22118 (AED-C-03-16)

bibliography on, 22:26348 (AED-C-03-17)
bibliography on, 22:31784 (AED-C-03-18)
bibliography on, 22:36880(R) (N-68-16284)
bibliography on, 22:36879 (AED-C-03-19)
bibliography on, 22:52720 (AED-C-3-22)
bibliography on, 22:15503 (AED-C-03-15)
bibliography on, 22:46094 (AED-C-03-20)
bibliography on computer simulation of, 22:3046 (IPPJ-54)
bibliography on high-temperature chemistry and physics of, 22:17608 (NP-17283)
bibliography on high-temperature chemistry and physics of, 22:44064 (NP-17580)
bibliography on Stanford reports, papers, and conference presentations on, 22:3000 (SU-IPR-190)
book: Electrodynamics of Plasmas, 22:20018
book: Electromagnetics and Plasmas, 22:39114
book: Electronic Processes in Gases and Solids, 22:26431
book: Introduction to Dynamics of Rarefied Gases, 22:20017
book: Introduction to the Spectroscopy of Plasmas, 22:19959
book: Lectures on Plasma Diagnostics, 22:46126
book: Lectures on Plasma Physics, 22:36945
book: Linear Transport Theory, 22:20104
book: Low-Temperature Plasma, 22:17698
book: Methods of Measuring Velocities in Gasdynamics and Plasma Physics, 22:31800
book: Nonlinear Effects in Plasma, 22:11468
book: Physical Processes in Electromagnetic Shock Tubes, 22:46158
book: Plasma Chemistry in Electrical Discharges, 22:20016
book: Plasma Physics, 22:20019
book: Plasma Physics, 22:46097
book: Plasma Physics: Collective Processes in Plasma and Turbulent Heating, 22:26432
book: Plasma Physics, in Czech, 22:1244
book: Plasma Physics. Vol. 2. Weakly Ionized Gases, 22:34573
book: Plasma; The Fourth State of Matter, 22:50128
book: Problems of Plasma Theory, 22:15542
book: Propagation of Electromagnetic Waves in Plasma, 22:15543
book: Propagation of Electromagnetic Waves in Plasma, 22:29524
book: Results of Plasma Physics and Gas Electronics. Vol. I, 22:22142
book: Spectral Line Formation, 22:24021
book: Theoretical Methods in Plasma Physics, 22:5304
book: Vacuum Ultraviolet Spectroscopy, 22:24019
boundary conditions for magnetized, at plane electrode, (T), 22:41624
boundary layer calculations in transverse magnetic fields, 22:26294
boundary layer dynamics in, (T), 22:9308 (TID-24203, pp 73-134)
boundary layer equations for partially ionized argon, laminar, 22:3076
boundary layer of microwave-discharge, skin-slab, 22:13475
boundary layer of turbulent, electron density in, 22:5313
boundary layer of, in external magnetic fields, (T), 22:34692
boundary layer structure in shock-produced argon, (E/T), 22:3118
boundary layers for conducting wedges in anisotropic, intrinsic loss in, (T), 22:15530
boundary layers involving nonequilibrium ionization in, magnetohydrodynamic, 22:46137(R) (N-68-23191)
boundary layers of magnetic-combined, electron acceleration in, 22:9369
boundary layers of, stability of, (T), 22:31881
boundary layers of, temperature variations at discontinuous, (T), 22:9366
boundary structure of collisionless, with transverse flow, (T), 22:17683
bremsstrahlung from extreme relativistic, spectrum and energy losses from ion-electron, (T), 22:21837
charge particle motion in toroidal stellarator fields, (T), 22:9280
charged particle acceleration in turbulent, (T), 22:3106
charged particle beam interactions with hot, oscillations from, (T), 22:1231
charged particle beam interactions with magneto, oscillations from, (T), 22:39101
charged particle beam interactions with, dispersion equation for, 22:44118
charged particle beam interactions with, hydromagnetic instabilities from, (T), 22:26308
charged particle beam interactions with, statistical analysis of hf oscillations from, 22:52794
charged particle beam interactions with, steady-state oscillations in, 22:44145
charged particle beam scattering by current-carrying, (T), 22:3069
charged particle equilibrium configuration and self-consistent field with axial symmetry, 22:3043 (IPPCZ-64)
charged particle interactions with electron, stopping power of, (T), 22:26375 (BNL-10300)
charged particle interactions with, application to decay of plasma wave echoes, (T), 22:44170
charged particle interactions with, stochastic acceleration in, 22:34647 (N-68-11000)
charged particle kinetics in stochastic electromagnetic fields, 22:9494
charged particle motion in magnetic mirror-confined, (E), 22:3005(T) (UCRL-Trans-1358)
charged particle radiation losses in, test, (T), 22:9344
charged-particle acceleration in bounded, stochastic processes in, 22:34653 (TID-24491, pp 85-97)
charged-particle acceleration in turbulent, 22:39103
charged-particle acceleration in, review of, 22:26418
charged-particle beam interactions with quantum, theory of test particle, 22:5343
charged-particle beam interactions with, cyclotron wave excitation in, 22:3094
charged-particle beam interactions with, distribution function for, (T), 22:36930
charged-particle beam interactions with, electromagnetic wave amplification in, (T), 22:26404
charged-particle beam interactions with, instabilities from, (T), 22:5391
charged-particle beam interactions with, optical emission from slowing down, 22:1245
charged-particle beam interactions with, oscillations from modulated, 22:44177
charged-particle beam interactions with, oscillations from, (T), 22:11459
charged-particle beam interactions with, unified theory of relaxation in, ((T), 22:24304
charged-particle beam interactions with, waves from, 22:17664
charged-particle motion in helical fields with equipotential coinciding magnetic surfaces, 22:44077 (NP-17586)
charged-particle motion in magnetized, radiation reactions from, 22:52812
charged-particle motion in minimum-B fields, 22:44082
charged-particle motion in, radiation from, (T), 22:31819
charged-particle motion in, stability of, (T), 22:1225
charged-particle-beam interactions with, summaries of conference papers on, 22:7311
chemistry of, review of Soviet research on, 22:12343(T) (JPRS-44048)
collision processes in, spectral study of, 22:34642 (AD-666946)
collisional processes in, review of, 22:39131
collisions in argon afterglow, ion conversion in, 22:41579
collisions in argon arc, energy exchange in, 22:9331
collisions in argon, frequency of electron--atom, (E), 22:22137 (TID-24331, pp 153-65)
collisions in barium, rates of electron--atom inelastic, (E), 22:24243 (MATT-Q-25, pp 118-65)
collisions in carbon, rate coefficients for helium-like, 22:9354
collisions in cesium-discharge, momentum transfer cross sections for electron-atom, (T), 22:26238
collisions in decaying helium, effects on neutral particle density, 22:39057 (CEA-R-3450)
collisions in dense neutral, cross sections for atom--atom, (T), 22:29482
collisions in helium--neon, cross sections for transfer of excitation energy in, (E), 22:9035
collisions in low-temperature neutral helium, rates of inelastic electron--atom, (E), 22:24242 (MATT-Q-25, pp 30-117)
collisions in low-temperature, effects on relaxation processes of interatomic, (T), 22:50172
collisions in magneto-, radiations from particle--wave, (T), 22:26405
collisions in partially ionized, kinetic theory of, 22:17688
collisions in quantum, bremsstrahlung emission in, (T), 22:1202
collisions in turbulent, Coulomb, (T), 22:11446
collisions in turbulent, properties of, (T), 22:3088
collisions in, electron--electron relativistic, (T), 22:29509
collisions in, Fokker--Planck theory for, 22:1247
collisions in, Green function for Coulomb, 22:15529
collisions in, kinetic theory of Compton, 22:34685
collisions in, nonlinear temperature effects in electron--ion, 22:3072
collisions in, scattering spectrum for unequal electron and ion temperatures in presence, (T), 22:17689
collisions in, summaries of conference papers on, 22:7306
collisions in, transport cross sections for inelastic, 22:39078 (SC-RR-68-171)
compression and heating of arc, method for, (E), 22:26363(P)
compression in toroidal magnetic fields, adiabatic, (E), 22:19933(T) (MATT-Trans-52)
compression of relativistic, anisotropic, 22:3078
compression of solar, by magnetic fields causing loop prominences, (T), 22:844
computer simulation of guiding center fluids, three-dimensional, 22:3047 (IPPJ-55)

computer simulations of, bibliography on, 22:3046 (IPPJ-54)
conductivity determination by profile methods, coil capacitance effects on, 22:9330
conductivity due to Landau waves, trans-, (T), 22:7295
conductivity in Al'fa machine, measurement of hf electric, 22:3027
conductivity in fast-moving, in shock tubes, electric, (T), 22:39136
conductivity in strong magnetic fields, electric, 22:13467
conductivity in strong magnetic fields, electric, (T), 22:19974(T) (NP-tr-1623)
conductivity in Tokamak TM-3 device, anomalous, 22:19934(T) (NP-tr-1617)
conductivity measurement in, immersion-type rf probe for electric, 22:52745
conductivity measurement of neon, capacitor method for electric, 22:48098
conductivity measurements in C stellarator, using Thomson scattering, (E), 22:24242 (MATT-Q-25, pp 30-117)
conductivity of alkali-metal-seeded rare gas, effects of bulk gas on electric, (T), 22:24319
conductivity of argon arc, thermal, (E), 22:22151
conductivity of cesium, thermal, 22:34683
conductivity of collisionless magneto-, thermal, (T), 22:50149 (RISO-175)
conductivity of collisionless, in weakly turbulent magnetic fields, (T), 22:39070 (N-68-19706)
conductivity of condensing metallic, electric, 22:1162
conductivity of degenerate, electric and thermal, (T), 22:36941
conductivity of dense, research on electric, 22:1151(R) (AD-646889)
conductivity of Fermi, frequency dependence on, (T), 22:50164
conductivity of fully ionized, electric and thermal, (T), 22:31832
conductivity of fully ionized, electric, (T), 22:9374
conductivity of high-temperature argon, thermal, (E), 22:26401
conductivity of highly turbulent argon, hydrogen, and xenon, electric, (E), 22:46179
conductivity of hydrogen, in magnetic field, thermal, (E), 22:52758
conductivity of low-frequency, electric, (T), 22:34667
conductivity of magneto-, effective parameters for non-Maxwellian, (T), 22:34623 (AD-660810)
conductivity of magneto-, effective parameters for Maxwellian, (T), 22:34622 (AD-660809)
conductivity of neon, collisional effects on electric, (T), 22:22181
conductivity of nitrogen in electric arcs, thermal, 22:9332
conductivity of nonequilibrium cesium-seeded helium, optimum seeding for, (T), 22:24310
conductivity of nonequilibrium two-temperature, generalized Saha equation for electric, (T), 22:19981
conductivity of partially ionized, electric, (T), 22:3001
conductivity of partially ionized, steady electric field induced anisotropy in ac, 22:52809
conductivity of petroleum and coke, electric, (T), 22:17436
conductivity of positive column, thermal, 22:31838
conductivity of potassium and sodium, temperature and pressure effects on thermal, (E/T), 22:9328
conductivity of potassium- and oxygen-seeded, measurement of, 22:17636
conductivity of potassium-seeded argon and helium, electric, 22:5357
conductivity of potassium-seeded argon and helium, in crossed fields, 22:3017 (IPP-3/59)
conductivity of potassium-seeded argon, electric, 22:5361
conductivity of potassium-seeded nitrogen, electric, 22:52769 (AD-672249)
conductivity of potassium-seeded nitrogen, electric, (T), 22:39126
conductivity of rare gas, in crossed electric and magnetic fields, electric, (E), 22:39052
conductivity of relativistic, electric, 22:34628 (AD-662904)
conductivity of seeded-flame, (E), 22:41565
conductivity of shock-heated argon--potassium and nitrogen--potassium, electric, 22:5359
conductivity of theta pinch-hydrogen, electric, (E), 22:29470
conductivity of toroidal, Thomson scattering measurement of, 22:22140
conductivity of turbulent, dc electric, 22:15526
conductivity of turbulent, electric, (T), 22:31811
conductivity of weakly ionized turbulent, electric, (T), 22:44092(T) (NSJ-tr-122)
conductivity of well-magnetized, laminar, (T), 22:50193
conductivity of, calculation of total thermal, 22:36911 (N-68-16681)
conductivity of, effects of electron collisions on thermal, (T), 22:36931
conductivity of, effects of impurities on electric, (T), 22:1163
conductivity of, kinetic equation for hf, (T), 22:24334
conductivity tensor of inhomogeneous Lorentz, nonlinear, 22:34670
conductivity, density and collision frequency from rf, 22:39047
conference on, 22:7255
confinement and instabilities in magnetic traps, (T), 22:26359
confinement and stability in toroidal magnetic fields, 22:5311
confinement and stability of theta-pinch, effects of magnetic mirrors on, 22:1138 (LA-3770, Paper D7)
confinement enhancement in theta pinch using nonadiabatic rough magnetic walls, computer simulation of, 22:44068 (LA-DC-9328)
confinement in 2X machine, analysis of, 22:13429 (UCRL-70656)
confinement in C stellarator, xenon, (E), 22:24242 (MATT-Q-25, pp 30-117)
confinement in closed magnetic trap Sirius, with helical fields, (E), 22:26356(T) (NP-tr-1620)
confinement in closed magnetic trap with spiral field, (E), 22:7261
confinement in collisionless equilibrium configurations, loss rate of high-beta, 22:1134 (LA-3770, Paper B5)
confinement in DCX-1.5, properties of, 22:52723 (CONF-671127, pp 46-76)
confinement in DECA II device, limitations of, 22:50126(R) (EUR-CEA-FC-352)
confinement in DECA II experiment, 22:52725 (CONF-671127, pp 144-69)
confinement in hard-core theta-pinch with reverse trapped magnetic field, 22:1141 (LA-3770, Paper G5)
confinement in Heliotron magnetic fields with inner conductors, (E), 22:22134
confinement in intense magnetic fields, research review of, 22:22132
confinement in isolated column, free expansion in, 22:48081
confinement in large theta pinch devices, 22:1132 (LA-3770, Paper A5)
confinement in linear multipole and spherator, 22:44069 (MATT-620)
confinement in linear quadrupole, nonclassical particle losses in, (E), 22:41543
confinement in LM-1 linear quadrupole configuration, 22:46111 (MATT-592)
confinement in long cusp pinch devices, 22:1140 (LA-3770, Paper G4)
confinement in magnetic fields, design and fabrication of CLASP toroidal system for, 22:11412
confinement in magnetic fields, expansion of resistive spherical, (T), 22:52733
confinement in magnetic mirror machines, possibilities of, (T), 22:52728 (CONF-671127, pp 280-308)
confinement in magnetic mirrors, effect of ionization losses on electron, 22:41539(T) (NP-tr-1677)
confinement in magnetic mirrors, optimization of, (T), 22:36883 (UCRL-70681)
confinement in MHD-stabilized toruses, lf loss mechanisms in, 22:44071 (MATT-624)
confinement in mirror fields, charge exchange losses from injected hydrogen, 22:5310
confinement in open-ended systems with magnetically rough walls, 22:11404(R) (LA-3831)
confinement in open-ended systems, reduction of end losses in, (T), 22:22130
confinement in Q devices, ion temperature effects on, (E), 22:24243 (MATT-Q-25, pp 118-65)
confinement in relativistic proton coils in toroidal configurations, (T), 22:22121 (UCID-15282)
confinement in rf-supplemented magnetic mirror machines, (T), 22:31789
confinement in Scylla III, laser interferometric measurement of end loss, 22:11404(R) (LA-3831)
confinement in Skornyakov traps, field line trajectories for, 22:39037
confinement in slow theta pinch, end losses, 22:7257
confinement in spherical multipole magnetic fields, 22:3002 (INR-836/XVIII/PP)
confinement in spherical multipole magnetic fields, 22:44066 (INR-914)
confinement in spherical multipole magnetic fields, 22:44065 (INR-912)
confinement in spherical multipole magnetic fields, (T), 22:3008
confinement in spherical multipole systems, (E), 22:44079
confinement in stellarators, computer simulation of, 22:46112 (MATT-618)
confinement in stellarators, single-particle, (E), 22:50136
confinement in stellarators, velocity--space effects in computer simulation of, 22:50132 (MATT-648)
confinement in theta-pinch devices, adiabatic and losses in, (T), 22:36885
confinement in theta-pinch devices, loss measurements using laser interferometers, 22:1137 (LA-3770, Paper D3)
confinement in three-dimesional trap formed by microwave quasipotential, (E), 22:22131
confinement in Tokamak device, pressure equilibrium

distribution in, (T), 22:3011
confinement in toroidal devices, design of quadrupole for, 22:11404(R) (LA-3831)
confinement in toroidal magnetic fields, losses in, (T), 22:17618
confinement in toroidal multipole devices, properties of, 22:7260
confinement in toroidal octupole device, (E), 22:17609 (GA-8141)
confinement in toroidal octupole device, (E), 22:52734
confinement in toroidal octupole device, research on, 22:5306(R) (COO-1233-59)
confinement in toroidal octupole, effects of toroidal magnetic field on, 22:26358
confinement in toroidal octupoles, 22:39031 (CONF-680805-7)
confinement in toroidal systems with negative V'' and magnetic shear, (T), 22:19936(T) (NP-tr-1621)
confinement in triple-wound stellarators with circular magnetic axis, 22:3012
confinement lifetime in magnetic mirror traps, electrons, (E/T), 22:17621
confinement of beam-injected, in B-3 and Etude stellarators, 22:26357
confinement of cesium in Q devices, particle losses from charge-exchange in, (E/T), 22:17628
confinement of dense, theory of inertial, 22:1142 (LA-3770, Paper H4)
confinement of deuterium in magnetic wells, decay modes of, 22:36884 (UCRL-70869)
confinement of electron cloud, in toroidal devices, 22:1143(R) (NYO-3863-1)
confinement of electron cyclotron resonance heated, (E), 22:50134
confinement of electron cyclotron resonance-heated, in open-ended devices, 22:52727 (CONF-671127, pp 267-79)
confinement of electrons in magnetic mirrors, bunching in, (E/T), 22:24257(T) (NP-tr-1648)
confinement of high-temperature, device for, 22:5312(P)
confinement of high-temperature, device for, 22:13433(P)
confinement of hydrogen-ion injected, into magnetic mirrors, (E), 22:15512
confinement of injected, in cusp magnetic fields, (E), 22:17615
confinement of injected, in stellarators, (E), 22:24242 (MATT-Q-25, pp 30-117)
confinement of injected, into stellarators with double-helix-type magnetic fields, 22:15508
confinement of ionized fusion gases, inertial-electrostatic method for, 22:1150
confinement of laser-produced lithium hydride, 22:1254 (LA-3770, Paper F5)
confinement of low-beta toroidal, prospects for, (E/T), 22:19929 (TID-24228)
confinement of rotating, in magnetic traps, 22:48078
confinement of toroidal low-beta, fluid description of, (T), 22:24247 (MATT-Q-25, pp 201-22)
confinement of turbulent-heated, in toroidal devices, 22:46099 (IAE-1485)
confinement of warm streaming, by magnetic fields, (T), 22:31721
confinement of, design of 3-kG aluminum electromagnet for, 22:43186
confinement of, design of rf pulse generator for producing 1.8 kG rotating magnetic field for, 22:28225
confinement of, effect of shear and connection length of drift waves on, 22:44072 (MATT-625)
confinement of, magnetic field measurement of tetrahedral spire for, (E), 22:17624
confinement of, minimum B Heliotron field for, 22:22133
confinement of, use of coils with tennis ball seam configuration for, 22:11413
confinement time of cesium and potassium, in Q devices, (E), 22:44080
convection effects on current patterns in nonequilibrium, (T), 22:13317
corotation of magnetospheric, with a celestral body, (T), 22:5220
current density and equilibrium in magnetically confined, 22:41601
current density in, second-harmonic generation by nonuniform microwave fields in, 22:19984
current flow in electrode discharge, skin effect in, (T), 22:9313
current measurement between shock-driven and flat plates, 22:5326 (SC-CR-67-2748)
currents drawn to wedge probe in flow of collisionless, predictions, 22:48094
decay of electron--hole, design of nanosecond rise time, high power, variable delay double pulse generator for measuring, 22:8415
density distribution changes in mercury discharge, microwave field effects on, 22:3095
density fluctuation approach to classical, (T), 22:24312
density in magnetotail, (T), 22:13349
density of resonantly sustained, (E), 22:17702
density perturbations in cesium, velocity of, (E), 22:34662
density variations of, in solar neighborhood, (E), 22:17300
detection of dense intergalactic, by x-ray emission, (E), 22:41178
determination of cesium ground-state depletion in low-pressure cesium--argon, (E), 22:7265
diagnostic of laser-produced, use of laser light scattering for electron density measurements in, 22:41558
diagnostics and production of pulsed, laser application for, 22:3020
diagnostics behind reflected shock waves, electron temperature, 22:36890
diagnostics by scattering method, calculation of critical aperture in, 22:46127
diagnostics by self-reversed contours of spectral lines, 22:5315
diagnostics in arc discharges, electron and atom temperature, 22:5320
diagnostics in beam-plasma discharge, ion energy, (E), 22:34594 (TID-24491, pp 111-16)
diagnostics in C stellarator, density, (E), 22:24242 (MATT-Q-25, pp 30-117)
diagnostics in cylindrically symmetric electric arc columns, temperature, 22:52759
diagnostics in electrodeless discharges, spectroscopic, 22:50142
diagnostics in electromagnetic shock tubes, using microwaves, 22:19952
diagnostics in high-current hollow-cathode discharges, temperature, 22:52750
diagnostics in hollow-cathode arcs, 22:22148 (TID-24331, pp 167-209)
diagnostics in hollow-cathode arcs, 22:9308 (TID-24203, pp 73-134)
diagnostics in hollow-cathode arcs, ion temperature, 22:22147 (TID-24331, pp 121-52)
diagnostics in L-1 stellarator, equipment for electron density and fluctuation, 22:44091 (NP-17587)
diagnostics in large theta pinch, electron density, 22:9299
diagnostics in magnetic mirrors with hexapole fields, use of probes in, (E), 22:46124 (TID-24666, pp 92-5)
diagnostics in open cavity resonators, electron collision frequency, 22:34596
diagnostics in pinch device with rotating fields, electron density, 22:13437 (LRP-36/67)
diagnostics in Q-devices, camera for, 22:31793 (SIT-2813-45)
diagnostics in reflex discharges, using cw laser scattering, 22:29472
diagnostics in resonant cavities, electron density, 22:31792 (IPPCZ-53)
diagnostics in Scylla IV theta pinch, using Faraday rotation, 22:1155 (LA-3770, Paper A3)
diagnostics in shock tubes, spectroscopic, (E), 22:13449
diagnostics in theta pinch with azimuthal magnetic field, density and temperature, 22:15514
diagnostics in theta-pinch Balloon experiment, 22:50126(R) (EUR-CEA-FC-352)
diagnostics in wall-stabilized arcs, laser interferometer technique for electron density, 22:7271
diagnostics in wide unstable positive column, radial density distribution, 22:44103
diagnostics method, temperature effects on whistler resonance, 22:1160
diagnostics near antennas, using microwaves, 22:19951
diagnostics of acoustic waves in, electron density, (E), 22:11422
diagnostics of afterglow, using microwaves, 22:46125
diagnostics of alkali metal, in Q device, (T), 22:11404(R) (LA-3831)
diagnostics of alkali metal, using electrostatic probes, 22:19946 (MATT-520)
diagnostics of alkali-metal-seeded argon, temperature, 22:9292
diagnostics of alkali-seeded argon in electric fields, temperature, 22:3036
diagnostics of arc, spectral analysis for electron density, 22:52752
diagnostics of arc, spectroscopic measurement of electron density and atom and ion temperatures, 22:41549
diagnostics of arc, using double floating probes, 22:24267
diagnostics of arc, using vacuum uv radiation, 22:34586 (AD-662626)
diagnostics of argon arc, electron temperature from spectral line intensities, (E/T), 22:36894
diagnostics of argon arc, ion temperature, charge exchange and collisions, (E), 22:34616
diagnostics of argon arc, spectroscopic, 22:34619
diagnostics of argon arc, spectroscopic determination of electron density in, (E/T), 22:36901
diagnostics of argon arc, spectroscopic, (E), 22:29474
diagnostics of argon, effects of rf potential on electron energy and density, 22:39048
diagnostics of argon, electron--atom collision frequency, 22:22137 (TID-24331, pp 153-65)
diagnostics of argon, spectroscopic, (E), 22:22139
diagnostics of argon, spectroscopic, (E), 22:50138
diagnostics of barium Q, electron temperature from luminosity of, (T), 22:26370
diagnostics of barium, using optical scattering, 22:1164
diagnostics of carbon, two-wavelength interferometry of laser-produced, 22:11424

diagnostics of cesium and potassium, Q device for, 22:9290
diagnostics of collisional, Langmuir probe theory for, 22:1272(R) (SU-IPR-198)
diagnostics of collisional, spherical probe analysis for, (E/T), 22:36893
diagnostics of collisionless Maxwellian, spherical and cylindrical Langmuir probe theory for, 22:11427
diagnostics of decaying helium, using lasers and microwaves, 22:44101
diagnostics of decaying hydrogen, atomic density, 22:11428
diagnostics of decaying hydrogen, neutral atom density, (E), 22:36892
diagnostics of decaying hydrogen, using double microwave interferometers, 22:50137 (NP-17620)
diagnostics of dense, using laser interferometers, 22:1151(R) (AD-646889)
diagnostics of deuterium by efflux velocity measurements, temperature, 22:48088
diagnostics of deuterium discharge, by self-reversed spectral lines, (E/T), 22:52757
diagnostics of deuterium, spectroscopic, 22:46133
diagnostics of deuterium, using differential neutron spectrum, 22:48087
diagnostics of deuterium, using neutrons from d--d interactions, 22:26364(T) (LA-tr-67-113)
diagnostics of diffusion-controlled, distribution of charge carriers in, 22:39045
diagnostics of electric field-produced hydrogen, microwave, 22:3019 (JUL-480-PP)
diagnostics of electric-field-excited toroidal hydrogen, using microwaves, 22:19949(T) (NP-tr-1630)
diagnostics of electrodeless discharge, (E/T), 22:50140
diagnostics of electrodeless rf, use of electrostatic probes for, 22:19950
diagnostics of electron beam-produced, electron density, 22:44106
diagnostics of electron density fluctuations in, ultrahigh-frequency probe studies, 22:44090 (NP-17571)
diagnostics of helium afterglow, electron binding energy, 22:48099
diagnostics of helium afterglow, using Langmuir probes and microwaves, 22:1167
diagnostics of helium afterglow, using Langmuir probes, 22:44100
diagnostics of helium afterglow, using mass spectrometers, 22:44099
diagnostics of helium afterglow, using microwaves, 22:31797
diagnostics of helium afterglow, using narrow-band far-infrared interferometer, 22:22147 (TID-24331, pp 121-52)
diagnostics of helium arc, electron density determination from He⁺ 3203 A line, 22:7262
diagnostics of helium arc, pressure profiles and, (E/T), 22:39054
diagnostics of helium reflex discharge, electron velocity distribution from laser scattering, 22:34592 (TID-24491, pp 43-5)
diagnostics of helium, effects of cascading and metastable atoms on electron temperature, (E/T), 22:24268
diagnostics of helium, from Stark broadening of spectral lines, 22:34607
diagnostics of helium, temperature determination from spectra, 22:1161
diagnostics of helium, using optical techniques, 22:24261
diagnostics of high-pressure, spectroscopic, 22:36897
diagnostics of high-temperature alkali-seeded argon, electrostatic probe theory for, 22:11425
diagnostics of high-temperature, by two-seeding method, temperature, 22:24270
diagnostics of hot deuterium, using neutrons from, 22:1169
diagnostics of hot, electrostatic analyzer for electron and ion energies, 22:1153 (IPP-1/66)
diagnostics of hot, review of corpuscular method for, 22:9296
diagnostics of hydrogen discharge, laser interferometer for electron density, 22:13436 (LRP-33/67)
diagnostics of hydrogen, at cyclotron resonance, probe technique for density and temperature, 22:5318
diagnostics of hydrogen, electron density and temperature, 22:52742 (NP-17568)
diagnostics of hydrogen, in a magnetic well, (E), 22:26365
diagnostics of hydrogen, in reflex discharges in magnetic fields, (E), 22:11421
diagnostics of hydrogen, spectroscopic, 22:9427 (TID-24201)
diagnostics of inhomogeneous boundary layer, using microwaves, (E/T), 22:24272
diagnostics of inhomogeneous, using microwaves, 22:36895
diagnostics of laser produced air and deuterium--air, temperature measurement from gas breakdown in, (E), 22:41555
diagnostics of laser-produced helium afterglow, using lasers, 22:31798
diagnostics of laser-produced lithium, 22:34597
diagnostics of laser-produced metal, 22:36904
diagnostics of laser-produced, Mach--Zehnder interferometry, 22:7266
diagnostics of lithium-arc, using emission spectra, 22:9289
diagnostics of lithium, microchemical analysis application to, 22:34602
diagnostics of low-density magneto-, comparison of methods for, 22:24263
diagnostics of low-pressure xenon, Langmuir probe for, 22:26367
diagnostics of low-temperature cesium, probe techniques for, 22:13435 (FEI-20)
diagnostics of low-temperature discharge, density, 22:39049
diagnostics of low-temperature, using rf conductivity measurements, 22:39047
diagnostics of magnetized and time-varying, electron temperature, 22:48092
diagnostics of magnetized, γf properties of electric probes for, 22:52747
diagnostics of magneto-, cavity resonance in, (T), 22:36823
diagnostics of magneto-, effects of electron drift velocity on probe, 22:34603
diagnostics of magneto-, electron properties of probe, (T), 22:29475
diagnostics of mercury discharge, microwave measurement of electron density, 22:22152
diagnostics of mercury, microwave measurement of electron density profile, 22:34617
diagnostics of MHD, review of basic studies on, 22:43974
diagnostics of molecular hydrogen, spectroscopic, 22:13438 (NP-17214)
diagnostics of neon discharge, probe, 22:52763
diagnostics of partially ionized in electric fields, electron temperature, (T), 22:22135 (AE-313)
diagnostics of pinch, using uhf wave reflection, 22:44089 (NP-17570)
diagnostics of positive column discharge, electron density, 22:19958
diagnostics of pulse discharge, electron density, 22:41568
diagnostics of radio-frequency, microwave, 22:24273
diagnostics of rare gas, in crossed electric and magnetic fields, (E), 22:39052
diagnostics of rare-gas, Langmuir probe and microwave, (E), 22:29473
diagnostics of reflex discharge, using lasers, 22:9188 (TID-24203, pp 37-43)
diagnostics of sheaths between Saha, and field-modified emitting electrodes, (T), 22:22170
diagnostics of shock produced, magnetic probes for, 22:13443
diagnostics of shock-heated argon, using Langmuir probes, 22:31794
diagnostics of shock-produced argon, electron density, 22:9287
diagnostics of shock-produced, electron density and temperature, 22:9293
diagnostics of shock-produced, infrared laser interferometry for electron density, 22:15515
diagnostics of shock-produced, use of laser for, 22:13441
diagnostics of shock-wave, electron density and temperature determination by laser light scattering, 22:7263
diagnostics of space, satellite-borne data processing system for, 22:23376
diagnostics of space, satellite-borne mass-energy spectrometer for, 22:23377
diagnostics of striations in positive column, electron temperature, 22:7273
diagnostics of Theta Pinch Isar III, by laser forward scattering, (E), 22:44085 (IPP-1/78)
diagnostics of theta pinch, by laser forward scattering, (E), 22:41560
diagnostics of theta pinch, temperature and density from laser scattering, 22:11423
diagnostics of theta pinch-hydrogen, density and temperature, 22:29469
diagnostics of theta-pinch deuterium, space-time resolved Mach--Zender interferometer for electron density, 22:1156 (LA-3770, Paper D2)
diagnostics of theta-pinch end loss, using laser interferometers, 22:1137 (LA-3770, Paper D3)
diagnostics of theta-pinch end loss, using lasers, 22:26368
diagnostics of theta-pinch helium, spectroscopic, 22:24266
diagnostics of theta-pinch, using 90° laser scattering, 22:3015 (IPP-1/58)
diagnostics of theta-pinch, using lasers, 22:39053
diagnostics of theta-pinch, using Mach--Zehnder interferometers with lasers, 22:46132
diagnostics of toroidal-confined, conductivity measurements from Thomson scattering, 22:22140
diagnostics of turbulent arc, nonlinear corrections to spectroscopic temperature, 22:34587(R) (AD-665143)
diagnostics of turbulent boundary layer of, electron density, 22:5313
diagnostics of turbulent toroidal discharge, using

microwave probe, 22:39043(T) (NP-tr-1676)
diagnostics of turbulent, in high-current toroidal discharges by shf probing, 22:46121(T) (MATT-Trans-61)
diagnostics of turbulent, method for, 22:39040 (N-68-11059)
diagnostics of turbulent, microwave techniques for, 22:3026
diagnostics of turbulent, using microwaves, 22:44098
diagnostics of ultra-high-temperature air--nitrogen, spectroscopic, 22:46122 (N-68-24571)
diagnostics of uranium matrix in dc arcs, temperature, voltage, and electric field, 22:52749
diagnostics of, boundary phenomena in MHD generators, 22:41397 (AD-668454)
diagnostics of, by electromagnetic interactions, (T), 22:48091
diagnostics of, continuous electron density, 22:52753
diagnostics of, cross section measurements in, 22:38809
diagnostics of, density and temperature from spectroscopic, 22:9282
diagnostics of, effects of refraction and absorption on antenna coupling for, 22:3025
diagnostics of, electron decay in diffusion and recombination controlled afterglow, 22:39041 (N-68-17892)
diagnostics of, generalization of symmetric three-probe method for, 22:9284
diagnostics of, hf electromagnetic field, 22:46120 (IPP-4/51)
diagnostics of, laser interferometer for electron density, 22:11414 (LA-3730)
diagnostics of, magnetic field measurements using scattered light, 22:1154 (IPP-1/69)
diagnostics of, methods for, 22:1171
diagnostics of, methods for, 22:19827
diagnostics of, microwave electron density probe for, (E), 22:26369
diagnostics of, microwave reflection technique for electron density, 22:34614
diagnostics of, microwave techniques for, 22:1170
diagnostics of, performance of toroidal resonator for, 22:9288
diagnostics of, photoelectronic attachment for temperature measurement in, 22:36891
diagnostics of, properties of circular antenna focused in Fresnel zone for, 22:216
diagnostics of, radio frequency method for, (T), 22:24260
diagnostics of, rapid-time and space-resolved measurement of luminous density distribution, 22:48083 (JUL-537-PP)
diagnostics of, reduction by electron--neutral atom collisions of shot noise to probe in, 22:44096
diagnostics of, research on, 22:22143
diagnostics of, review of high-speed methods for, 22:36899
diagnostics of, spectral techniques for helium-like, 22:19955
diagnostics of, spectroscopic measurement of ion temperature, (E/T), 22:46123 (TID-24666, pp 85-91)
diagnostics of, spectroscopic methods for temperature measurement, review, 22:13448
diagnostics of, spectroscopic, (T), 22:11415
diagnostics of, Stark measurements of hf electric field, 22:11419
diagnostics of, statistical processing of spectral line contours for, 22:52751
diagnostics of, summaries of conference papers on methods for, 22:7268
diagnostics of, temperature determination from spectral shift and broadening, 22:3021
diagnostics of, temperature determination from spectral intensity ratios, 22:52765(P)
diagnostics of, use as impedance element in Fabry--Perot microwave resonator, 22:41547 (TID-24566)
diagnostics of, use of Langmuir probes for low-density, (T), 22:7269
diagnostics of, using electron absorption of electrostatic waves, (T), 22:36898
diagnostics of, using radial waveguides, 22:5323
diagnostics using absorption measurements of continuum x radiation from, electron temperature, 22:34589 (CLM-R-81)
diagnostics using admittance probe methods, electron temperature, 22:48096
diagnostics using capacitor systems, quasi-static approximate value of resonance of, 22:52760
diagnostics using carbon dioxide lasers, density, (E), 22:48085
diagnostics using cylindrical probe, saturation electron current in magnetic field calculation in, 22:41557
diagnostics using directional twin probe, current measurements in, 22:41577
diagnostics using Doppler-broadened spectroscopy, temperature, 22:26349(R) (IPPCZ-72)
diagnostics using eight channel polychromator, density, 22:48095
diagnostics using electric probes, effects of secondary electrons on, 22:24264
diagnostics using electromagnetic phase changes, density, 22:46130
diagnostics using electromagnetic waves, electron density and collision frequency, 22:41552
diagnostics using electrostatic cylindrical probes, probe properties in, 22:34605
diagnostics using electrostatic probes, theory for use in strong magnetic fields, 22:52739 (AD-672273)
diagnostics using floating double probe, electron temperature measurements in, 22:41556
diagnostics using floating double probe, electron temperature, 22:39051
diagnostics using focused conductivity method, limits for using, 22:34600
diagnostics using gas lasers, electron density, 22:9283
diagnostics using grid probes, ion temperature, 22:48093
diagnostics using Hall current effect, 22:34618
diagnostics using helical coils, electron density and collision frequency, 22:3032
diagnostics using highly negative Langmuir probes, kinetic theory for, 22:22136 (MATT-563)
diagnostics using holography, review of, 22:41545(T) (LA-tr-68-23)
diagnostics using holography, review of, 22:41546(T) (NP-tr-1679)
diagnostics using holography, review of, 22:52741 (LA-3968)
diagnostics using hot diffusion probes, theory for, 22:44109
diagnostics using impedance bridges, rf, 22:19948 (SC-RR-68-30)
diagnostics using Langmuir probes, effects of fluctuations on electron density, 22:3022
diagnostics using Langmuir probes, ion current extrapolation for, (T), 22:36900
diagnostics using Langmuir probes, ion current measurement for electron density, 22:34615
diagnostics using laser light scattering, research on, 22:22138 (TID-24331, pp 217-30)
diagnostics using laser scattering, electron thermalization, 22:3030
diagnostics using lasers, density, 22:46131
diagnostics using lasers, methods for, 22:17630 (CEA-R-3125)
diagnostics using lasers, review of, 22:34611
diagnostics using light scattering, review of, 22:3035
diagnostics using light scattering, techniques for, 22:13439(R) (ORO-3393-3)
diagnostics using loaded waveguides, 22:50141
diagnostics using medium dispersion optical spectrographic and source monitoring equipment, 22:44094
diagnostics using microwave Fabry--Perot resonator, 22:34610
diagnostics using microwave Fabry--Perot resonator, 22:39046
diagnostics using microwave interferometers, effects of multiple reflections on accuracy of, 22:19953
diagnostics using microwave interferometry, collision frequency, 22:19947 (NP-17340)
diagnostics using microwave interferometry, effect of multiple reflections on electron density, 22:3018 (IPPCZ-70)
diagnostics using microwave interferometry, errors in, 22:48089
diagnostics using microwave refraction technique, (E), 22:11420
diagnostics using microwave refraction techniques, 22:11418
diagnostics using microwave resonant cavities, electron density, 22:52762
diagnostics using microwave resonant cavities, profile, 22:52761
diagnostics using microwave scattering, in rectangular waveguides, 22:34604
diagnostics using microwave techniques, 22:52748
diagnostics using microwaves, comparison of methods for, 22:11417
diagnostics using microwaves, electron collision frequency, 22:19957
diagnostics using microwaves, electron density, 22:19954
diagnostics using microwaves, electron density and ionization rate, 22:9295
diagnostics using microwaves, equipment development for, 22:24281 (MATT-Q-25, pp 305-20)
diagnostics using modified Langmuir probes, performances of, (T), 22:19956
diagnostics using neutral atom ejection analysis, method for detecting, 22:13440
diagnostics using open resonators, electron collision frequency, 22:41554
diagnostics using photon counting, properties of, 22:34609
diagnostics using polarized light scattering, temperature, (T), 22:26366
diagnostics using probes, method for measuring dc currents of floating potentials, 22:7267
diagnostics using radar interferometry, 22:46129
diagnostics using refractory methods, review of, 22:17632
diagnostics using relativistic Doppler broadening, 22:44105
diagnostics using resonance plane probes, theory for, 22:24274

diagnostics using resonance probes, boundary theories for, 22:26372
diagnostics using scattered radiation phase shifts, electron density, 22:48086
diagnostics using small-angle electron scattering, 22:34588 (AD-666475)
diagnostics using spectral line broadening, density, 22:34599
diagnostics using spectroscopic methods, limitations in, 22:41566
diagnostics using spherical electrostatic probes, kinetic theory for, 22:3031
diagnostics using spherical electrostatic probles, asymptotic theory for, 22:24262
diagnostics using spherical Langmuir probes, theory for, 22:13444
diagnostics using surface wave propagation, electron density, (T), 22:44107
diagnostics using three-coil probe, boundary conditions for, 22:39042 (N-68-21691)
diagnostics using two-wavelength interferometry with color film, electron density, 22:13442
diagnostics using waveguide probe, temperature, 22:26374
diamagnetism of positive column discharge, 22:34710
diamagnetism of radially inhomogeneous, in uniform magnetic field, (T), 22:22149 (TID-24331, pp 211-15)
dielectric constant of electron, hf, (T), 22:29498
dielectric function for homogeneous, calculation of, 22:19979
diffusion across magnetic field lines, nonlinear effects in, (T), 22:26361
diffusion across magnetic field, review of, (E), 22:24254(T) (NP-tr-1640)
diffusion across magnetic fields, (E), 22:48079
diffusion across magnetic fields, effects of electric fields on, (E/T), 22:7282
diffusion across Q-device, potassium, 22:34581 (SIT-2813-46)
diffusion across uniform magnetic field, kinetic theory of transverse, 22:1147
diffusion and anomalous instabilities in homogeneous, research on, 22:46191(R) (SU-IPR-249)
diffusion and microinstabilities in thermal, (E/T), 22:24367
diffusion and recombination in, (T), 22:20009
diffusion and thermalization of turbulent, research on anomalous, 22:34580(R) (ORO-3458-11)
diffusion and thermodiffusion coefficients of multicomponent thermal nonequilibrium, in stationary electromagnetic field, 22:41575
diffusion coefficient measurements in magnetically confined, wave technique for, (E), 22:22147 (TID-24331, pp 121-52)
diffusion coefficients for Tokamak devices, (E/T), 22:19937(T) (NP-tr-1622)
diffusion enhancement in turbulent, relation between enhanced longitudinal resistivity and transverse, (T), 22:31818
diffusion from positive columns above critical magnetic field, (T), 22:13495
diffusion in cold-cathode reflex discharges, properties of anomalous, 22:11408(R) (SU-IPR-207)
diffusion in cylindrical discharge column, anomalous, (E), 22:26381 (NP-17439)
diffusion in electric arcs, (E), 22:9307 (TID-24203, pp 53-71)
diffusion in Garching octupole device, 22:5307 (IPP-6/61)
diffusion in helium and xenon afterglow, measurement of thermal, 22:1222
diffusion in magnetic mirror fields, violation of third adiabatic invariant, (T), 22:3009
diffusion in minimum B fields, 22:46100 (IAE-1488)
diffusion in positive column discharge tubes, transverse, 22:34708
diffusion in Q devices, dispersion relation for, 22:36881 (RISO-171)
diffusion in Q devices, effect of shear on, (E), 22:24243 (MATT-Q-25, pp 118-65)
diffusion in Q devices, ion--neutral collisional effects on, 22:11404(R) (LA-3831)
diffusion in Q devices, research on, 22:41571(R) (TID-24563)
diffusion in Q devices, research on, 22:31865(R) (ORO-3405-20)
diffusion in toroidal devices, ignition when undergoing Bohm, (T), 22:36882 (UCID-15334)
diffusion in toroidal magnetic fields, (E/T), 22:17614
diffusion in toroidal magnetic fields, (E/T), 22:17613
diffusion in toroidal stellarators, (T), 22:24255(T) (NP-tr-1644)
diffusion in Townsend discharges, in uniform electric fields, 22:7300
diffusion in, atomistic computer modeling of anomalous, 22:48110
diffusion of cesium in Q devices, viscous, (T), 22:24280 (MATT-Q-25, pp 257-303)
diffusion of cesium, in narrow columns, (E), 22:24243 (MATT-Q-25, pp 118-65)
diffusion of discharge, across magnetic fields, (E), 22:24250(T) (AD-666145)
diffusion of helium afterglow, 22:39038
diffusion of high-frequency, (E), 22:9406
diffusion of magneto-, collisional transverse, (T), 22:17616
diffusion of magneto-, in Q-devices, 22:13428 (NP-17257)
diffusion of magnetoactive relativistic, quasilinear theory of resonant, 22:41592
diffusion of nonequilibrium seeded, drift velocity of, (T), 22:13492
diffusion of potassium magneto-, in Q device, (E), 22:26352 (NYO-2813-39)
diffusion of potassium Q, transverse, (E), 22:24283(R) (SIT-2813-44)
diffusion of quiescent potassium magneto-, cross-field, (E), 22:31828
diffusion of relation of singularities of fluid equations to anomalous, 22:19943
diffusion of ring, in toroidal magnetic fields, (E), 22:19942
diffusion of thermal potassium, turbulent, (E), 22:17617
diffusion of turbulent, transport coefficients for, 22:29464
diffusion of two-component bounded magneto-, research on, (T), 22:1270(R) (ORO-2454-9)
diffusion of, computer experiments on anomalous, 22:11407(R) (SU-IPR-202)
diffusion of, relativistic magnetoionic theory for, 22:22182
diffusion of, relativistic properties of, 22:34575 (AD-662908)
diffusion tensor of inhomogeneous Lorentz, nonlinear, 22:34670
distribution function and correlation energy of high-temperature, binary, (T), 22:26386
distribution function for dense, binary, 22:20015
distribution function for hydrogen, calculation of radial, (T), 22:22154
distribution in Alice device, effects of ion cyclotron instabilities on, 22:41628 (UCRL-70868)
distribution of thermal, in Jovian magnetosphere, 22:17208
disturbances in cold, three-dimensional, (T), 22:34466
driver for, design of thermoacoustic generator for, 22:209 (SC-CR-67-2759)
effect on synchrotron emission by electrons, (T), 22:31551
effects of magnetic field of flowing, on boundary shape of cavity containing a dipole field, (T), 22:15450
effects of solar atmospheric, on gyrosynchrotron emission spectra, (T), 22:34152
effects on noise figure of space vehicle microwave receivers, 22:10636 (SC-RR-67-2964)
electric and magnetic fields in relativistic, probability distributions of, 22:34700
electric conductivity decrease in turbulent, relation between enhanced transverse diffusion and longitudinal, (T), 22:31818
electric conductivity of, 22:1172(R) (AD-646672)
electric discharge formation in noncylindrical Z-pinch, (E/T), 22:46172
electric discharge in flowing, specific energy and electric field for maintenance of electrodeless, (E), 22:11472
electric discharge, vaporization during powder insufflation into, 22:44111(T) (IS-Trans-76)
electric discharges in argon, drag width of short moving arc, 22:7316
electric discharges in argon, electron density in contracted hf, 22:50139
electric discharges in argon, neutral gas temperature in, (E), 22:29504
electric discharges in bounded magneto-, energy loss of modulated axial current in, (T), 22:39121
electric discharges in breakdown potential for, 22:44116 (SC-RR-68-284)
electric discharges in free-electron, negative point-to-plane breakdown in, (E), 22:34705
electric discharges in helium, atomic and molecular processes in positive column, 22:2813
electric discharges in helium, time-dependent study of emitted light and electron density in low-pressure, (E/T), 22:15528
electric discharges in helium, turbulent eddies in high-density, 22:34627 (AD-662346)
electric discharges in helium-3, nuclear polarization in, 22:50175
electric discharges in hydrogen, current limitation and electric double sheet in, 22:26349(R) (IPPCZ-72)
electric discharges in hydrogen, neutral atom density in decaying, (E), 22:36892
electric discharges in hydrogen, time lapse effects of gamma and x radiation on, 22:24318
electric discharges in mercury--krypton, effect of striations on electron distribution in, 22:48115
electric discharges in nonuniform, hf breakdown in, (T), 22:24299
electric discharges in toroidal, high-temperature, 22:50143 (IPP-6/67)
electric discharges in, capacitor simulator for pulsed, 22:34669
electric discharges in, current calculations for, 22:5367

electric discharges in, cyclotron echoes from positive column, 22:1272(R) (SU-IPR-198)
electric discharges in, density variations in, (E), 22:22157
electric discharges in, effect of conducting wall on positive column, (E), 22:52818
electric discharges in, electrode sheath kinetics in, 22:44180
electric discharges in, electron and ion distribution in microwave and hf, (E), 22:19982
electric discharges in, electron density and potential measurements in PIG, 22:3024
electric discharges in, electron energy distribution in striations in, 22:3063
electric discharges in, energy balance in capillary, 22:41613
electric discharges in, energy-exchange in high-pressure, 22:39094
electric discharges in, frequency effects on properties of, 22:17696
electric discharges in, from concentric spherical electrodes, 22:11458
electric discharges in, motion processes in pulsed, (T), 22:9325
electric discharges in, noise emission from electrodeless ring, 22:5324 (CONF-670810-6)
electric discharges in, nonlinear effects in electron cyclotron resonance, (E), 22:19971 (NP-17361)
electric discharges in, pressure buildup in magnetically stabilized, 22:5342
electric discharges in, properties of rf plasmoid, 22:36939
electric discharges in, rotation in hollow cathode reflex, 22:3079
electric discharges in, sound pulses in low-pressure, 22:29514
electric discharges in, space-charge effects on hf, 22:3083
electric discharges in, transition between resonances in hf, (E), 22:22180
electric discharges in, trapped electroacoustic waves in, (T), 22:13479
electric field measurements in, using Stark effect, 22:11419
electric field potential behind spheres in rarefied, (E), 22:44009
electric fields in carotating, (T), 22:34146
electric fields in one-dimensional, correlation function for, (T), 22:15541
electric microfield distributions in, calculation using collective-coordinate technique, 22:26423
electric microfield distributions in, low-frequency component of, 22:9357
electric microfield distributions in, low-frequency, 22:39063 (N-68-12828)
electric potential in, design of Langmuir probe for measuring, 22:45370
electroacoustic resonance in mercury-vapor, surrounding metallic cylinder, (E), 22:52793
electromagnetic field measurement techniques for, hf, 22:46120 (IPP-4/51)
electron and ion distribution functions for homogeneous, 22:48084
electron beam interactions at 17.7 keV, microwave radiations from, (E), 22:29511
electron beam interactions at 600 to 1500 eV, microwave radiations from, (E), 22:29497
electron beam interactions with bounded magneto-, energy losses in, (T), 22:39121
electron beam interactions with cesium, microwave amplification in, 22:9322
electron beam interactions with cold, wave interactions from, (T), 22:34657 (TID-24491, pp 131-6)
electron beam interactions with electrostatic waves in, instabilities from, 22:50178
electron beam interactions with hydrogen magneto-, properties from, (E), 22:39122
electron beam interactions with magneto-, instabilities from, 22:46173
electron beam interactions with magneto-, instabilities from, (E), 22:17650
electron beam interactions with magneto-, oscillations from, (T), 22:19977
electron beam interactions with magneto-, oscillations from, (T), 22:22146 (NP-17389)
electron beam interactions with mercury, transverse modulation effects on, (E), 22:1198
electron beam interactions with nitrogen, collision wave structure in, 22:9377
electron beam interactions with nonisothermal, Langmuir wave decays in, 22:3057
electron beam interactions with nonlinear process in, (E), 22:39071 (N-68-19962)
electron beam interactions with potassium, oscillations from, 22:13458
electron beam interactions with surface waves of, properties of, 22:46168
electron beam interactions with waveguides filled with, 22:3068
electron beam interactions with weakly ionized, energy relaxation from cathode, 22:5353
electron beam interactions with, absorption of waves in, 22:17649
electron beam interactions with, amplification in, 22:3121
electron beam interactions with, amplification in, 22:5340
electron beam interactions with, beam energy spread and radiations from, (E), 22:31806 (ORNL-4238, pp 67-104)
electron beam interactions with, computer model of, 22:9308 (TID-24203, pp 73-134)
electron beam interactions with, current-convective instabilities from, 22:7276(T) (UCRL-Trans-10149)
electron beam interactions with, current-convective instability in, 22:13522
electron beam interactions with, decay of, 22:5348
electron beam interactions with, density decay and oscillations from, (E/T), 22:34654 (TID-24491, pp 118-22)
electron beam interactions with, dispersion relations for low-density, 22:41596
electron beam interactions with, electroacoustic waves from, (T), 22:24326
electron beam interactions with, electron heating in, (T), 22:17659
electron beam interactions with, excitation of Bernstein modes in, (E/T), 22:52819
electron beam interactions with, excitation of ion cyclotron harmonic waves in, (E), 22:22185
electron beam interactions with, frequency multiplication in, 22:46141(R) (N-68-25551)
electron beam interactions with, hf instabilities from, (E), 22:17711
electron beam interactions with, instabilities from spiraling, 22:46144 (TID-24666, pp 96-102)
electron beam interactions with, instabilities from, 22:5371
electron beam interactions with, instabilities from, 22:48117
electron beam interactions with, instabilities near electron cyclotron harmonics in, 22:44181
electron beam interactions with, ion energy measurements in, 22:34594 (TID-24491, pp 111-16)
electron beam interactions with, ion oscillations from, (E/T), 22:24349
electron beam interactions with, ion wave excitation in, (E), 22:26416
electron beam interactions with, lf and hf oscillations from, (E), 22:11451
electron beam interactions with, microwave oscillations from, (E), 22:34703
electron beam interactions with, millimeter wave production in, 22:41618
electron beam interactions with, nonlinear hydromagnetic instabilities from, (T), 22:19964 (JINR-P9-3690)
electron beam interactions with, nonlinear interaction of oscillations in, (T), 22:13491
electron beam interactions with, oscillations from, 22:41580
electron beam interactions with, oscillations from, 22:7290
electron beam interactions with, oscillations from, (E/T), 22:22148 (TID-24331, pp 167-209)
electron beam interactions with, parametric amplification in, 22:7288
electron beam interactions with, relativistic, (T), 22:29509
electron beam interactions with, research in USSR, 22:1130
electron beam interactions with, research on, 22:19962 (IPPCZ-91)
electron beam interactions with, research on, 22:50126(R) (EUR-CEA-FC-352)
electron beam interactions with, research on, (E/T), 22:26349(R) (IPPCZ-72)
electron beam interactions with, resonant resistive instabilities from, 22:7278
electron beam interactions with, synchrotron instabilities from relativistic, (T), 22:22176
electron beam interactions with, three-stage instability from, (E), 22:3138
electron beam interactions with, transverse modulation in, 22:7286
electron beam interactions with, two-stream instability in, (T), 22:41570 (ORO-3458-13)
electron beam interactions with, wave growth in, (T), 22:34658 (TID-24491, pp 137-40)
electron beam interactions with, wave interactions in nonrelativistic, 22:39072 (N-68-20825)
electron beam interactions with, wave interactions from, (T), 22:24337
electron beam interactions with, waves from, (T), 22:44115 (NP-17582)
electron clouds in magnetic fields, electrostatic equilibrium of, (T), 22:24307
electron concentration in, measurement by broadened hydrogen lines of, 22:3028
electron confinement in toroidal apparatus, (E/T), 22:44199(R) (NYO-3863-8)
electron decay in diffusion and recombination controlled afterglow, 22:50174
electron densities in, microwave measurements using complex reflection coefficient, 22:44104

electron density and collision frequency in afterglow, 22:20022
electron density fluctuations in, effects on plasma resonances, 22:48133
electron density in, formed by fast electron beam, 22:44102
electron density in, interferometric--spectrographic method of measurement of, 22:5322
electron distribution function and atomic state densities in, self-consistent analysis of, 22:24346
electron distribution function for collision-dominated positive column, (T), 22:41603
electron distribution function for electric field-immersed, collisional effects on, (T), 22:26408
electron distribution function for inhomogeneous partially ionized, 22:52789
electron distribution function for Lorentz, resolution of Boltzmann equation for, 22:19975
electron distribution function for Lorentzian, anisotropies and harmonics of, (T), 22:26417
electron distribution function for Lorentzian, in varying electric fields, (T), 22:24287
electron distribution function for molecular discharge, (T), 22:3085
electron distribution function for nonequipartition, 22:11465
electron distribution function for partially ionized, calculation of, (T), 22:24323
electron distribution function for weakly ionized, in time-dependent electric and magnetic fields, (T), 22:34671
electron distribution function in Tokamak, (E), 22:19938(T) (NP-tr-1624)
electron distribution in, self-consistent Astron E layer, 22:7302
electron drift velocity and mean free path in, (E/T), 22:17638
electron energies in weakly ionized, Maxwellian distribution derivations in, 22:39092
electron energy distribution in presence of moving striations, (E), 22:50153
electron energy relaxation in nitric oxide magneto-, 22:41576
electron existence and maintenance in electrodeless high-frequency, conditions for fast, (E/T), 22:31822
electron heating by magnetic shock waves in, (E), 22:1235
electron imbedding in cold ambient magneto-, growth role of synchrotron radiation from, (T), 22:36921
electron mobility and conductivity in wall-stabilized argon arc, (E/T), 22:41559
electron motion in magnetic mirror traps in, 22:44083
electron recombination, attachment, and diffusion in afterglow of nitric oxide, (E), 22:39130
electron runaway in electric fields, (E/T), 22:24343
electron scattering by, application of Moliere's theory to, 22:26422
electron temperature distribution in diodes, (T), 22:34325 (RT/FI-(68)7)
electron temperature distribution in nonequilibrium, radiation operator for, 22:26373
electron temperature measurement in alkali-metal-seeded rare-gas, use of line-reversal method for, 22:44086 (IPP-3/69)
electron temperature measurement in hot, spectrophotometer for, 22:5317
electron temperature measurements in torus, using spectrophotometer, 22:5316
electron transport coefficients for partially ionized magneto-, collisional effects on, (T), 22:36944
electron transport in rare gas, scattering cross sections for, 22:34676
electron velocity distribution in nitrogen, non-Maxwellian form of, (E), 22:11443
electron viscosity coefficients for low-turbulence, 22:46169
electron--helium ion recombination in helium afterglow, (E), 22:26426
electron--ion dissociative recombination coefficient for molecular oxygen at 180 to 630°K, 22:52792
electron--ion recombination energy in rare gas, partition of, (E/T), 22:1204
electron--ion recombination equation for, asymptotic integral property of, 22:31854
electron--ion recombination in, 22:52787
electron--ion recombination in afterglow nitrogen, temperature effects on, 22:5344
electron--ion recombination in afterglow, dependence of emitted light on charge density of, 22:50168
electron--ion recombination in alkali-metal, neutral flux measurement from, (E), 22:24243 (MATT-Q-25, pp 118-65)
electron--ion recombination in argon and helium afterglow, laser interferometric measurement of, 22:3124
electron--ion recombination in argon, spectral analysis of, (E/T), 22:13497
electron--ion recombination in cesium afterglow, microwave measurement of, (E), 22:26371
electron--ion recombination in columns of, (T), 22:11450
electron--ion recombination in dense, laser beam effects on, 22:11404(R) (LA-3831)
electron--ion recombination in glow-discharges, 22:13465
electron--ion recombination in helium afterglow, 22:46155
electron--ion recombination in helium afterglow, spectroscopic study of, 22:22144 (AE-311)
electron--ion recombination in neon discharge, effects of pressure and temperature on, 22:15527
electron--ion recombination in neon, electron temperature effects on, 22:9353
electron--ion recombination in, summaries conference papers on, 22:7306
electron--ion recombination, radiative energy loss, and level populations in cesium discharge, 22:24316
electron-transport phenomena in thermionic converter, (E/T), 22:11444
emission line at 4412 A from argon--deuterium, (E), 22:49946
energy balance equation for argon induction, solution of, 22:52768 (AD-672247)
energy level populations in carbon, nitrogen, and oxygen, electron density and temperature from, (T), 22:41544 (INR-859)
energy level transitions in theta-pinch helium, (E), 22:50187
energy level transitions in wall-stabilized argon arcs, 22:36732
energy of electron, ground-state, (T), 22:50167
energy-level transitions in positive column of helium--xenon, (E), 22:5065
equilibrium composition and compressibility factor of superheated mixed-gas, calculation method for, 22:48130
equilibrium in toroidal geometries, stationary, 22:48118
equilibrium in toroidal magnetic fields, stationary, (T), 22:26395
equilibrium of collisionless theta-pinch, (T), 22:52773 (LA-3844)
equilibrium of finite Larmor radius, with anisotropic pressure, (T), 22:29495
equilibrium of high-β, in toroidal magnetic field with nonplanar axis, (T), 22:39033 (RIEC-TR-29).
equilibrium of pinch, in constant and helical hf magnetic fields, 22:50171
equilibrium of rotating cylindrical, macroscopic, 22:34663
excitation in cold, magnetoacoustic resonance for nonlinear, (E/T), 22:17699
excitation of, theory of four-plasmon parametric, 22:3058
flow at magnetopause during magnetic storm of Jan. 13--14, 1967, (E), 22:47977
flow deceleration of helium T-tube, in transverse magnetic field, (E), 22:34686
flow in azimuthal magnetic fields, contraction in, (T), 22:29515
flow in geomagnetic tail following geomagnetic bays, outward, 22:5230
flow in magnetosphere, model for, (T), 22:47960
flow in wall-constricted arcs, properties of, (E/T), 22:39061 (N-68-11083)
flow into vacuum of partially ionized argon, source, (E), 22:9184
flow near electrodes in electric arcs, (E), 22:17647
flow of arc, balanced magnetically in transverse gas stream, (E), 22:2903
flow of argon, induced emf measurements during supersonic, 22:43969
flow of potassium-seeded argon, ionization and recombination processes in nonequilibrium, 22:5360
flow of, classical diffusion limit for one-dimensional, (T), 22:26392
flow of, nonequilibrium magnetohydrodynamic, (T), 22:5213
flow over boundary of magnetic field, nonequilibrium and enhanced mixing during, (T), 22:4939
flow past flat plates, current collection in, 22:15513 (SC-DC-67-2052)
flow, results of two-dimensional Lax--Wendroff hydromagnetic code for, (T), 22:50150 (SC-DC-68-2404)
focusing of spherical waves in semi-confined, linear, (T), 22:41584
geomagnetic disturbance propagation in magnetized, cold, 22:48011
Hall effects in ionized, 22:34711
heat transfer from argon, flowing in circular tubes, 22:12524
heat transfer in, effect of electric and magnetic fields on, 22:237
heat transfer in, in pulsed accelerator, 22:44154
heat transfer of arc, balanced magnetically in transverse gas stream, (E), 22:2903
heat transfer to solid wall boundary, 22:41582
heating and diffusion in stochastic fields, (E/T), 22:24259
heating by adiabatic compression, anomalous electron, 22:9281
heating by collisionless shock waves, electron, 22:3013
heating by electron beam, probe measurements of ion energy distribution in, 22:34715
heating by fast compression, generation of rapid rise current pulses for, 22:46104 (IPP-4/57)
heating by fast hydromagnetic waves, 22:9279

heating by fast large-amplitude magnetoacoustic waves, 22:46118
heating by fast large-amplitude magnetosonic waves, 22:44073 (NP-17551)
heating by fast magnetosonic wave of large amplitude, 22:11410
heating by hf electromagnetic fields, (T), 22:46107 (IPP-6/64)
heating by hf electromagnetic fields, research in USSR on, 22:1130
heating by hf fields, cyclotron, (E), 22:48077(T) (MATT-Trans-60)
heating by hf fields, in presence of magnetic fields greater than cyclotron field, 22:48076(T) (MATT-Trans-57)
heating by intense electron beam in mirror-confined, 22:31790
heating by magnetic field compression, (T), 22:15510
heating by microwaves below electron cyclotron frequency, absorption in, 22:48075(T) (NP-tr-1668)
heating by microwaves in INTEREM facility, electron cyclotron, 22:31787 (ORNL-4238, pp 59-66)
heating by opposing magnetic fields, turbulent, 22:48080
heating by reflection of ultrahigh-frequency waves in, compression in, 22:39032(T) (MATT-Trans-59)
heating by rf electromagnetic waves, 22:39102
heating by rf power concentration at second harmonic of electron cyclotron frequency, (E), 22:11411
heating by stochastic fields, theory of relativistic, 22:17629
heating by uhf field in magnetic trap with plugs, electron reflection in electron-cyclotron, (E/T), 22:44075 (NP-17565)
heating in Alice machine, enhanced ion cyclotron radiations and stabilizing effects of microwave, 22:26355 (UCRL-70841)
heating in Bille-en-Tete device, 22:50126(R) (EUR-CEA-FC-352)
heating in closed magnetic traps, by electron injection, 22:46114(T) (N-68-24459)
heating in closed magnetic traps, stochastic, 22:46119
heating in electric arcs, properties of, (T), 22:22125
heating in fast theta pinch, ion, 22:1136 (LA-3770, Paper D1)
heating in magnetic mirror machines, turbulent ion, (E), 22:22129
heating in magnetic mirrors, limit of cyclotron resonance, (T), 22:29465
heating in magnetic mirrors, turbulent, 22:41542
heating in magnetic mirrors, with fast condenser discharges, 22:1139 (LA-3770, Paper E1)
heating in mirror, turbulent, 22:3007
heating in Q devices, electron cyclotron, 22:11404(R) (LA-3831)
heating in Sirius stellarator, by runaway electron beam, 22:9276(T) (MATT-Trans-44)
heating in stochastic fields, rate of, (E), 22:3064
heating in toroidal geometries, limitations on ion cyclotron resonance, (E), 22:24242 (MATT-Q-25, pp 30-117)
heating in two-step theta-pinch, (E), 22:26360
heating in ultra-fast thetatron pinch, 22:3010
heating of alkali, method for electron cyclotron resonance, 22:1149
heating of cylindrical, rf, 22:31791
heating of dense hydrogen, ohmic, (E), 22:22124
heating of dense magnetized, microwave method for electron component, 22:34578 (CLM-R-78)
heating of electrons by uhf fields and of ions by hf fields in magnetic mirror, 22:44076 (NP-17567)
heating of electrons in homogeneous, quasilinear theory of Cherenkov, 22:29466
heating of electrons in magnetic traps, adiabatic, (E/T), 22:24256(T) (NP-tr-1646)
heating of ions by MHD waves in, theory of turbulent, 22:48137
heating of magnetized, shock wave, (E/T), 22:1135 (LA-3770, Paper B8)
heating of toroidal, turbulent, 22:48082
heating of turbulent, pressurized switching unit to start and crowbar experiment on, 22:46103 (IPP-4/52)
heating of, cyclotron resonance, (T), 22:24280 (MATT-Q-25, pp 257-303)
heating of, electric arcs for, 22:52738
heating of, ion cyclotron, (E/T), 22:44081
heating of, klystron amplifier for electron cyclotron resonance, 22:6702
heating of, linear turbulent, (E), 22:15511
heating of, quasi-linear theory of Cherenkov, 22:17620
heating of, theory of stochastic, 22:26350 (IPPCZ-77)
heating of, turbulent, 22:7258
heating of, use of industrial magnetrons for, 22:24281 (MATT-Q-25, pp 305-20)
heating of, use of lasers for, 22:44132
hydrodynamics and radiation transfer of, 22:19986
hydrogen atom energy distribution from, at 2 keV to 1 MeV, methods for measurement and display of time-varying, 22:40378
hydrogen atom reactions with, ionization processes in, 22:20020 (IAE-1364)
hydrogen ion (H_3^+ and H_2^+) partition functions in equilibrium hydrogen, up to 60,000°K, (T), 22:46147
hydromagnetic disturbances in cold, three-dimensional, (T), 22:34465
impurities in surface of electron gas, screening of, (T), 22:3098
impurity segregation in, cataphoretic, (E/T), 22:1259
information storage and retrieval experiments in, 22:46096
injection and confinement in B-3 and Etude stellarators, 22:26357
injection and confinement in cusp magnetic fields, (E), 22:17615
injection experiment for loading a magnetic field, 22:11404(R) (LA-3831)
injection into closed magnetic configurations, (T), 22:19940
injection into cusp magnetic fields, reflection of waves in high-β, (E), 22:48123
injection into double curvature magnetic geometries, ion drift in, 22:3038 (CEA-R-3278)
injection into levitated toroidal quadrupole, azimuthally localized fluctuations in, (E), 22:29484
injection into magnetic dipole fields, properties of, (E), 22:13481
injection into magnetic fields, resonant and near-resonant wave--particle interactions in, (T), 22:34660 (TID-24491, pp 183-92)
injection into magnetic mirrors, accumulation in front of, (E), 22:34584
injection into magnetic mirrors, Fokker--Planck equations for hydrogen formation in, 22:26434
injection into stellarators with double-helix-type magnetic fields, trapping in, 22:15508
injection into superconduction levitron, hydrogen, (E), 22:19972 (UCID-15295)
injection into toroidal octupole device, magnet coil system for, (E), 22:19926 (GA-7423)
injection into transverse magnetic field, ring formation in, 22:9318
injection into transverse magnetic fields, boundary layers from, (T), 22:7277
injection of neutral hydrogen, in torus, (T), 22:19930 (UCID-15298)
interaction of moving, with dipole field, (E), 22:17491
interactions with beams in beam-generated systems, (T), 22:22166
interactions with cloud of carbon dioxide sublimed from dry ice, (E), 22:13146
interactions with dipole magnetic fields, (T), 22:17509
interactions with electric fields, one-dimensional Vlasov, (T), 22:39073 (N-68-21096)
interactions with electric fields, response of Vlasov, (T), 22:52781
interactions with hf electromagnetic fields in magnetic fields, properties of, 22:52771 (CONF-671127, pp 215-60)
interactions with hf fields, research on, 22:26349(R) (IPPCZ-72)
interactions with high-frequency magnetic fields, penetration in, (E/T), 22:31802 (D-1-82-0706)
interactions with longitudinal electric fields, penetration in, (T), 22:50163
interactions with magnetic dipoles, measurement of, 22:26298(T) (MATT-Trans-56)
interactions with magnetic fields in travelling-wave accelerators, one-dimensional analysis of, 22:1516 (AD-646778)
interactions with magnetic fields, anomalous skin effect in, 22:31801 (D-1-82-0705)
interactions with magnetic fields, expansion and shock wave formation due to, 22:41578
interactions with magnetic fields, skin effect in, 22:44131
interactions with magnetic fields, wave excitation at interface of, (T), 22:19999
interactions with pulsed electric fields, response to, (E), 22:24329
interactions with radial magnetic fields in shock tubes, 22:48114
interactions with traveling magnetic field, reactive energy production in, 22:41604
ion beam extraction from, computer program for calculating surface shape and particle trajectories for, 22:41585
ion beam interactions with homogeneous oscillations from, (E), 22:19961 (IAE-1400)
ion beam interactions with, instabilities from, (E), 22:5350
ion beam interactions with, research on, (E/T), 22:26349(R) (IPPCZ-72)
ion currents behind spheres in rarefied, (E), 22:44009
ion energy distribution in Tokamak devices, hydrogen, 22:19944
ion energy level population in, relaxation in, (T), 22:31857
ion energy spectra of laser-produced aluminum, (E), 22:1217
ion excitation in mercury gas-discharge, spectroscopic study of mechanisms for 6 $^2P(^1/_2)$ state of, 22:41319
ion frequency in, use of low pressure alkali metal vapor thermionic cells for analysis of, 22:33087 (ANL-7310, pp 513-22)

ion mobilities in pure argon and neon afterglow, 22:44153
ion mobility in rare gas, properties of, (E), 22:31833
ion motion in electric fields, (T), 22:13477
ion motion in homogeneous magnetic fields, calculation of, 22:17668
ion motion in, in electric fields, 22:52807
ion recombination in decaying nitrogen, diffusion and surface catalysis in, (E), 22:19980
ion resonance in, theory for, 22:22172
ion slip in slightly ionized alkali-metal-seeded rare gas, (T), 22:46000
ion stream interaction with target, during recharging, (T), 22:46148
ion temperature measurement in hot, spectrophotometer for, 22:5317
ion velocity distribution functions for partially ionized, (T), 22:24306
ion--molecule reactions in 50-MHz, kinetics of, (E), 22:52801
ionization and distribution of excited states in cesium, (T), 22:15520
ionization and recombination processes in hydrogen, 22:24315
ionization by electron impact in neon, rate coefficients for, (E), 22:52509
ionization by electron-fluid-dynamical waves, 22:24353
ionization equilibrium in optically thin hydrogen and alkali-metal, 22:17663
ionization equilibrium in, effect of electron density on, (T), 22:34157
ionization in large inverse pinch device, 22:1257 (LA-3770, Paper H6)
ionization in low-voltage arcs, nonequilibrium, (T), 22:20025
ionization kinetics of argon arc, 22:17695
ionization levels in argon and cesium high-pressure discharges, 22:34643(R) (AD-666970)
ionization levels in hydrogen, with radiation absorption, 22:17662
ionization levels of carbon, nitrogen, and oxygen, population of, 22:31824
ionization losses in astrophysical, (T), 22:29102
ionization mechanisms in, (T), 22:13098
ionization of argon--potassium, by dc electric fields and metastable nitrogen molecules, 22:34680
ionization of cesium in low-voltage arcs, nonequilibrium processes in, 22:5381
ionization of cesium in low-voltage arcs, nonequilibrium processes in, 22:5382
ionization processes in neon discharge, (T), 22:26433
ionization processes in, effect of radiative capture on, 22:52806
ionization properties with violation of intercombination forbiddenness in, 22:15536
ionization rate in shock-heated gases, measurement using lecher wire microwave method, 22:44087 (IPP-3/70)
ionization rates for deuterium, in uniform electric fields, 22:7327
ionization rates of neon in stellerator, temperature dependence of, 22:1232
ionization source for hydrogen and helium, for theta pinch experiments, 22:24355
ionization source for hydrogen, for theta pinch experiments, 22:24354
ionization waves in discharge, nonlinear coupling of, 22:34651 (TID-24491, pp 74-6)
ionization--recombination processes in magnetic fields, 22:26409
iron-ion reactions with, optical emission from slowing down, 22:1245
kinetic coefficients of multicomponent nonisothermal, 22:44156
kinetic equation for high-frequency conductivity of, (T), 22:24334
kinetic equation for inhomogeneous, in magnetic fields, 22:46164
kinetic equation for weakly turbulent collisional, 22:36935
kinetic equations for drifted, Lenard--Balescu, 22:36938
kinetic equations for excitations and wave interactions, review of, 22:44113 (NP-17575)
kinetic equations for weakly turbulent magnetospheric, conservation, 22:52647
kinetic equations for, comparison of, 22:17674
kinetic equations for, difficulties in derivation of, 22:34696
kinetic equations for, information--theory derivation for one-particle distribution function, 22:34697
kinetic equations for, partial summation derivation for one-particle distribution function, 22:34695
kinetic equations for, research on, 22:50126(R) (EUR-CEA-FC-352)
kinetic equations, probabilistic derivation of BBGKY hierarchy, 22:44147
kinetic model of magneto-, one-dimensional, 22:44168
kinetic theory in strong magnetic fields, quantum mechanical, 22:13493
kinetic theory of, 22:48106
kinetic theory of astrophysical, Compton effect in, 22:34664
kinetic theory of classical equilibrium, 22:50180
kinetic theory of column of, 22:17692
kinetic theory of finite beta, continuum equations for, 22:1184 (LA-3770, Paper B6)
kinetic theory of high-temperature, quantum statistical mechanics for, 22:9373
kinetic theory of highly nonequilibrium, 22:44159
kinetic theory of inelastic processes in, statistical, 22:20014
kinetic theory of inhomogeneous, 22:39069 (N-68-19082)
kinetic theory of Lorentz, 22:24339
kinetic theory of nondegenerate, quantum mechanics of static transport phenomena, 22:11467
kinetic theory of partially and fully ionized, transport, 22:34698
kinetic theory of partially ionized, 22:17688
kinetic theory of rapidly changing, equations for occupation density of quantum levels in, 22:52797
kinetic theory of relativistic scalar, 22:13462
kinetic theory of stable and unstable, research on, 22:24280 (MATT-Q-25, pp 257-303)
kinetic theory of stable and weakly unstable, 22:50179
kinetic theory of two-component, equilibrium correlation functions for, 22:17673
kinetic theory of weakly turbulent electron--ion, 22:31820
kinetic theory of weakly turbulent, (T), 22:39087
kinetic theory of, asymptotic master equations for, 22:39090
kinetic theory of, constants of linearized Vlasov equation for, 22:17652
kinetic theory of, distribution functions for, 22:15537
kinetic theory of, formal developments in, 22:39091
kinetic theory of, Hamiltons principle and solution of Vlasov equations for, 22:24276(R) (LA-3831(Add.))
kinetic theory of, lectures on, 22:13502
kinetic theory of, macroscopic, 22:24342
kinetic theory of, relation to classical elasticity, 22:13464
kinetic theory of, reversibility of Vlasov equation for, 22:13454
kinetic theory of, review of, 22:1205
kinetic theory of, solution of one-dimensional time dependent MHD equations for, 22:1192 (LA-3770, Paper F1)
kinetic theory of, spherically symmetric solutions of time-independent Boltzmann--Vlasov equations for, 22:31835
kinetic theory of, statistical problems in, 22:46157
kinetic theory of, with time-dependent background state, 22:1209
kinetics in discharge tubes, gas pumping effects in, (T), 22:26425
kinetics in discharge tubes, gas pumping effects in, (E), 22:26424
kinetics of anisotropic, discontinuities in, 22:1213
kinetics of anisotropic, nonlinear mixed frequency generation in, (T), 22:24335
kinetics of Bogolyubov, evolution of probability distributions and correlation functions for, 22:34666
kinetics of classical electron, irreversible processes in, (T), 22:24324
kinetics of classical electron, radial distribution function for, 22:17661
kinetics of classical, quantum corrections to pair distribution function in, 22:41587
kinetics of collisional, quasilinear approximation equations for, 22:3056
kinetics of collisionless, one-dimensional free expansion, 22:3115
kinetics of dark sheath in rf-discharge, (E/T), 22:3061
kinetics of Debye--Hueckel, shear viscosity, 22:34701
kinetics of dense stellar, statistical mechanics for, 22:34145 (UCRL-71080)
kinetics of dielectronic recombination in, effect of radiation fields on, (T), 22:17311
kinetics of electron in magnetic fields, Goldstone theorem for, 22:13455
kinetics of excited atoms in optically dense, 22:52805
kinetics of freely expanding, in magnetic fields, 22:3052
kinetics of fully ionized, fifth and sixth approximations to electron transport coefficients for, (T), 22:17682
kinetics of fully ionized, in electric and magnetic fields, (T), 22:7264
kinetics of fully ionized, Monte-Carlo calculation of equation of state for, 22:34679
kinetics of high-temperature, second virial coefficient for free energy, 22:1240
kinetics of hydrogen, equation of state for, 22:52786
kinetics of hydrogenous, Monte Carlo study near ionization temperature of, 22:39112
kinetics of imploding magnetically driven axisymmetric sheets of, 22:44171
kinetics of inhomogeneous, computer simulation of, 22:34656 (TID-24491, pp 127-30)
kinetics of magnetized, nonthermal ion space-charge effects in, 22:1210
kinetics of magnetized, particle, momentum, and heat balance, 22:9304 (N-67-22496)
kinetics of monatomic, transport properties for, (T), 22:1206

kinetics of nitrogen afterglow, energy level, 22:31827
kinetics of nonequilibrium partially ionized, transport properties of, 22:1248
kinetics of nonequilibrium two-temperature, generalized Saha equation for, 22:19981
kinetics of nonisothermal, correlation functions for, 22:9309(T) (NP-tr-1606)
kinetics of nonradiating, model for, 22:26419
kinetics of one-dimensional, collision effects on, 22:11466
kinetics of partially ionized hydrogen, variations of Saha law for, 22:44144
kinetics of partially ionized, statistical mechanisms of, 22:46178
kinetics of quantum Coulomb, first order phase transitions in, 22:31815
kinetics of quantum, calculation of exchange term of pair distribution function, 22:44142
kinetics of quantum, nonlinear interactions in, (T), 22:31807 (ORNL-TM-2101)
kinetics of relativistic, anisotropic compression, 22:3078
kinetics of relativistic, locally Maxwellian distributions in, 22:34629 (AD-662906)
kinetics of relativistic, phase-space symmetry, 22:41590
kinetics of slightly relativistic, (T), 22:29501
kinetics of slightly relativistic, (T), 22:29502
kinetics of turbulent magneto-, diffusion, particle orbits, and field fluctuations in, 22:44169
kinetics of turbulent, equation for energy spectrum in, 22:48107
kinetics of turbulent, quasi-linear theory of, 22:48109
kinetics of two-component, statistical, 22:39104
kinetics of Vlasov, energy requirement for nonlinear density fluctuations in, (T), 22:19985
kinetics of weakly turbulent, unified quasilinear theory of, 22:41594
kinetics of, BBGKY hierarchy treatment of high-frequency branch of dispersion relation in, 22:46149
kinetics of, Boltzmann equation with cutoff potentials for, 22:1207
kinetics of, collisional transfer contributions in quantum theory of transport phenomena, 22:29522
kinetics of, compatibility requirements in BBGKY expansion for, 22:34665
kinetics of, computational problems in, 22:39081 (UCRL-71205)
kinetics of, computer simulation of, 22:34702
kinetics of, convergence of correlation function for two-component, 22:41550
kinetics of, Debye--Hueckel lower bounds in, 22:39110
kinetics of, equation of state for excited gas of resonance atoms, 22:22177
kinetics of, exact solutions of Boltzmann--Vlasov equations for, 22:38839 (N-68-11353)
kinetics of, exact stationary wave solutions of nonlinear Vlasov equation for, 22:31847
kinetics of, experimental and theoretical concepts for, 22:1244
kinetics of, Fokker--Planck equation for, 22:24309
kinetics of, fundamental solution for linearized guiding-center equations for, (T), 22:26390
kinetics of, geometrical and tensorial Lorentz transformations for, 22:29603
kinetics of, Hamilton's principle and numerical solution of Vlasov equations, 22:50147 (LA-3803)
kinetics of, hypergeometrization of relativistic phase-space formalism for, 22:48128
kinetics of, Korteweg--de Vries equation for, 22:52803
kinetics of, Korteweg--de Vries equation for, 22:52802
kinetics of, magnetohydrodynamic description of, 22:9324
kinetics of, mathematical aspects of relativistic statistical mechanics for, 22:26407
kinetics of, one-dimensional Vlasov--Poisson equations for, 22:39056 (AD-664585)
kinetics of, radial distribution functions at zero particle separation for, 22:39111
kinetics of, radiative transfer processes in, (T), 22:24331
kinetics of, relativistic kinetic equations including radiation effects, 22:29513
kinetics of, research on, 22:46140 (N-68-23989)
kinetics of, shock-like solutions of electrostatic Vlasov equation, 22:39075 (N-68-21832)
kinetics of, singular perturbation methods for calculating, 22:52770 (AD-672516)
kinetics of, small-amplitude solutions to spatially uniform continuity equations for, 22:36916 (N-68-22887)
kinetics of, solution of linearized Vlasov equation for space--time-dependent distribution function, 22:26391
kinetics of, solution of Poisson equation for, 22:34707
kinetics of, spherical-harmonic and power-series expansion of Boltzmann equation for, 22:31844
kinetics of, stochastic approach to theory of fluctuations in, 22:19995
kinetics of, stochastic equations for, 22:46156
kinetics of, summaries of conference papers on transport processes in, 22:7310
kinetics of, theory of microfields in, 22:44129
kinetics of, virial and equations of state for, 22:44151
Landau papers on, collection of, 22:15504
laser beam reactions with argon and nitrogen, spectra from, 22:9346
laser beam reactions with dense, absorption in, (T), 22:24280 (MATT-Q-25, pp 257-303)
laser beam reactions with, in magnetic field, (T), 22:1214
light scattering by, in magnetic field, (T), 22:48097
luminosity of barium Q, electron temperature from, (T), 22:26370
magnetic field confinement by streaming, (T), 22:22034
magnetic field effects in resonantly sustained, axial, (E), 22:17702
magnetic field excitation in turbulent, spontaneous, 22:46163
magnetic field measurements in, using scattered light, 22:1154 (IPP-1/69)
magnetohydrodynamic equilibrium solutions with azimuthal symmetry, 22:13309 (67-C-102)
mass pickup in low-energy theta-pinch devices, measurement of, 22:1188 (LA-3770, Paper D6)
microwave emission during beam instability development in, (E), 22:29530
motion and cutoff in transverse magnetic fields, 22:24330
motion in crossed fields, Ohm's law for, 22:41605
motion in cylindrical cavities with external magnetic fields, 22:3055
motion in electric arcs with transverse magnetic fields, (E), 22:31831
motion in electromagnetic fields, (T), 22:20012
motion in magnetic fields, research on, 22:1174 (AD-648083)
motion in nonuniform magnetic channel, expansion and thermalization of, 22:41616
motion in semi-infinite circular waveguides, (T), 22:9336
motion of gravitating rarefied, equation solutions for axially symmetric, 22:1239
motion of low-pressure, stationary convective, (T), 22:24136
motion of magnetized, rotational, (T), 22:22145 (FOA-4-4341-23)
motion of rarefied, automodel for, (T), 22:29483
motion of strongly turbulent, in magnetic field, (T), 22:24297
motion of weakly ionized, in nonuniform magnetic fields, (T), 22:34648 (NP-17503)
motion through uniform transverse magnetic fields, two-dimensional time-independent solutions for, 22:1148
neutrino processes in stellar, energy losses due to, (T), 22:11149
neutrino production in hot stellar, (T), 22:8977
neutron and x-ray emission from focussed z-pinch deuterium, 22:1281 (LA-3770, Paper C6)
neutron emission from noncylindrical z-pinch in deuterium, 22:1280 (LA-3770, Paper C3)
opacity of, effect of Z on radiative Rosseland mean, 22:7319
optical properties of uranium, 22:18541 (GA-8244)
oscillations and instabilities in finite, (T), 22:31866 (ORNL-4238, pp 1-27)
oscillations and transport in reflex discharges, 22:48103 (SU-IPR-204)
oscillations at anode of alkali-metal-vapor arc, (T), 22:41588
oscillations from electron currents in weakly ionized, 22:22168
oscillations in bounded current-carrying, potential, (T), 22:39115
oscillations in bounded hot, electrostatic, (T), 22:39109
oscillations in bounded magneto-, electron stream coherent amplification in, 22:3082
oscillations in bounded one-dimensional nonuniform, longitudinal, (T), 22:17685
oscillations in bounded, with external electric field, 22:3077
oscillations in boundless magneto-, uncoupled approximation for longitudinal electron, (T), 22:41581
oscillations in boundless Maxwellian, magnetic field effects on Landau damping of, (T), 22:7299
oscillations in C stellarator, Ohmic-heated, (E), 22:24242 (MATT-Q-25, pp 30-117)
oscillations in collisional, kinetic theory of, 22:24301
oscillations in collisionless, ion, (T), 22:13480
oscillations in collisionless, perturbation theory for nonlinear, 22:31810
oscillations in constant electric fields, dispersion relations for, 22:48104 (UUIP-593)
oscillations in current-carrying, electron cyclotron harmonic, 22:11447
oscillations in current-carrying, overstable modes due to resistive gradients, 22:5374
oscillations in cylindrical current-carrying, potential, (T), 22:3086
oscillations in discharge, ion--acoustic wave excitation of electron, (E), 22:17648
oscillations in electric and magnetic fields, dispersion relations for, 22:46166
oscillations in finite-temperature, electrostatic, (T), 22:3119

oscillations in half-bounded, electromagnetic, 22:1242
oscillations in hf-field-immersed, dissipative--parametric buildup of, (T), 22:34721
oscillations in high-temperature, dispersion relations for, 22:15524
oscillations in homogeneous anisotropic low-pressure, (T), 22:11431(T) (UCRL-Trans-10202)
oscillations in homogeneous, theory of electromagnetic, 22:3112
oscillations in ideal, in presence of radiation, (T), 22:31859
oscillations in inhomogeneous anisotropic, stability of electrostatic, (T), 22:20006
oscillations in inhomogeneous by compressible gravitating cylinders of, (T), 22:11457
oscillations in inhomogeneous cold, (T), 22:34655 (TID-24491, pp 123-6)
oscillations in inhomogeneous cold, (T), 22:46145 (TID-24666, pp 103-5)
oscillations in inhomogeneous, review of, 22:3113
oscillations in isotropic homogeneous, power spectrum from collective, (T), 22:17681
oscillations in long gas discharge, microwave, (E), 22:50159
oscillations in low-pressure discharges, longitudinal, 22:50182
oscillations in magnetic mirror machines, stable and unstable flute, 22:11430 (ERL-M-213)
oscillations in magnetized carbon arc, low-frequency, 22:15539
oscillations in magneto-, effect of neutral impurity levels on spectra from, (E), 22:24298
oscillations in Maxwellian, computer check of analytic second-order theory of, 22:34661
oscillations in Maxwellian, nonlinear, (T), 22:24341
oscillations in multipole-confined, ballooning modes of, 22:11433
oscillations in partially ionized, low-frequency, (T), 22:9341
oscillations in plane diodes, low-frequency, 22:44155
oscillations in Q devices, periodic pulling and transition to turbulence in, (T), 22:34649 (ORO-3405-21)
oscillations in Q devices, turbulent drift, (E), 22:24243 (MATT-Q-25, pp 118-65)
oscillations in Q-device, noncorrelation with anomalous transport and equilibrium density in, 22:3080
oscillations in rarefied with uncompensated space charge, flute, (T), 22:39116
oscillations in relativistic, covariant theory of, 22:44148
oscillations in relativistic, in uniform magnetic fields, 22:7305
oscillations in rf excited, dipole resonance, 22:3060
oscillations in slab, resonant modes of electron, (T), 22:19983
oscillations in slabs of magneto-, radiative modes of, (T), 22:13482
oscillations in toroidal octupoles, probe measurement of, 22:44160
oscillations in TP-D device, (E), 22:29506
oscillations in turbulent microwave-heated stellarator, modes of, (E), 22:24242 (MATT-Q-25, pp 30-117)
oscillations in two-stream, stability of transverse, (T), 22:41586
oscillations in Vlasov magneto-, theory of, 22:34681
oscillations in Vlasov--Maxwell, nonlinear, (T), 22:13483
oscillations in weakly turbulent, kinetic theory of, 22:31816
oscillations in, convective instabilities from, 22:5393
oscillations in, electromagnetically-excited, (T), 22:5345
oscillations in, generation by electron beam, (E), 22:7332
oscillations in, initial-value problem for relativistic, 22:13472
oscillations in, instabilities in parametric, (T), 22:41599
oscillations in, integral equation treatment of linearized theory of electrostatic, 22:24296
oscillations in, interactions of, (T), 22:29521
oscillations in, kinetic theory of forced, 22:24347
oscillations in, modification to Harris quasi-linear equations for, 22:9338
oscillations in, nonadiabatic behavior of electrostatic, (T), 22:24305
oscillations in, nonlinear ion cyclotron, 22:15523
oscillations in, nonlinear stabilization of electron, (T), 22:22175
oscillations in, perturbation approach to, 22:31871
oscillations in, resonance interaction of flute, 22:39086
oscillations in, statistical analysis of, 22:26413
oscillations in, theory of longitudinal, 22:9380
oscillations in, two-dimensional computer analysis of noise in, 22:31852
oscillations near electron cyclotron harmonics in, nonlinear, 22:44182
oscillations of astrophysical, non-linear, (T), 22:34132(R) (AD-661573)
oscillations of nonuniform finite-pressure, (T), 22:20010
oscillations of strongly turbulent microwave-heated, in Etude stellarator, 22:36905 (MATT-580)
oscillations of Vlasov, in magnetic fields, (T), 22:39084
oscillations produced by smooth large disturbance in nonisothermal, (E), 22:46185
parameter estimation by mathematical statistics, 22:3100
parameters in, in supernova envelopes, (T), 22:13112
particle acceleration and deceleration in inhomogeneous magnetic fields, bimodal diffusion mechanism of, (T), 22:52676
particle acceleration in cosmic, (T), 22:21972
particle distribution around infinite charged cylinder in, (T), 22:24290
particle distributions in stream of, device for forming replica images of, 22:36902(P)
perturbation near electrodes in, analysis of region of, 22:50071
pinch discharge in methane, carbon V ion triplet-to-singlet excitation rate from spectral measurements in theta-, 22:31795
pinch effect in dense deuterium, neutron production in, 22:34727 (LA-DC-9327)
pinch effect in deuterium, neutron and x-ray production in focused z, 22:34726 (AD-665416)
pinch effect in high-temperature, properties in theta, 22:41583
pinch effect in quadrupole hf fields, effect of interelectrode distance on, 22:46135 (IAE-1486)
pinch effect in toroidal, electron trajectories in, 22:17657
pinch effect in toroidal, screw, 22:41569 (NP-17527)
pinch effect in, area waves in theta, 22:39135
pinch effect in, collisionless compression with anomalous friction in, (T), 22:17677
pinch effect in, computer simulation of, 22:1193 (LA-3770, Paper F2)
pinch effect in, effects on beta in theta-, (E), 22:17690
pinch effect in, mass pickup in low-energy theta, (E), 22:9343
pinch effect in, one-dimensional static solutions for, 22:3081
pinch effect in, quasi-orthogonal theory for, 22:20005
pinch effect in, sheath stability in, (T), 22:1268 (LA-3770, Paper F3)
pinch effect in, two-dimensional dynamics with transverse magnetic fields in theta, 22:44163
pinch effect in, two-dimensional snowplough model for, 22:31853
pinch effect in, viscous effects in liquid conductor model of hard-core, (T), 22:19978
pinch effect in, without interaction between plasma and neutrals at ends of theta, 22:1182 (LA-3770, Paper A8)
pinch formation and breakup in coaxial discharge, 22:1185 (LA-3770, Paper C5)
pinch implosion calculations for, ion Vlasov equations for theta, 22:13450 (67-C-166)
plasmoid expansion in external magnetic field, variable conductivity, 22:22160
plasmoid expansion in laser-produced, in magnetic fields, (T), 22:13509
plasmoid injection along double-bend magnetic field, depolarizing currents in, 22:1190 (LA-3770, Paper E4)
plasmoid injection into transverse magnetic fields, properties of, 22:46115 (NP-17516)
plasmoid production and motion in guiding magnetic field with mirrors, (E), 22:36932
plasmoid production and propagation in nonlinear Alfven waves in, (T), 22:36924
plasmoid structure in, variational calculations of, 22:1194 (LA-3770, Paper F4)
potassium-ion motion in, in electric fields, 22:52807
potential distribution in magnetized cold, effects of electric fields on, (E/T), 22:7282
power transfer to finite, near lower hybrid resonance, 22:1124
pressure broadening in, quantum theory of, (T), 22:39050
probes in, superious second harmonics from modulated Langmuir, 22:1166
production and confinement in spherical multipole magnetic fields, 22:44065 (INR-912)
production and confinement in spherical multipole magnetic fields, 22:44066 (INR-914)
production and confinement of gun-injected, in C stellarator, (E), 22:24242 (MATT-Q-25, pp 30-117)
production and confinement of laser-produced lithium hydride, 22:1254 (LA-3770, Paper F5)
production and heating using lasers, properties of, 22:29526 (NP-17453)
production and properties of high-temperature low-magnetic-field theta pinch, 22:24258
production and properties of hydrogen, by high-power microwaves, (E), 22:39118
production and separation of alkali metals in magneto-, using contact ionization, 22:1260
production and stability of cesium, Pascal Q device for, 22:5379
production by electric arcs, heat properties in, (E), 22:9396

production by electron beams, nonvacuum, 22:34714
production by focused laser radiation on solids, (E), 22:50196
production by focusing laser emission on lithium deuteride surface, (E), 22:50198
production by giant pulse lasers, properties of, 22:29528
production by high-power Q-switched laser, research on, 22:46180(R) (WERL-3472-11)
production by high-power Q-switched lasers, research on, 22:36947(R) (WERL-3472-10)
production by high-power Q-switched lasers, research on, 22:24350(R) (WERL-3472-9)
production by high-power Q-switched lasers, research on, (E/T), 22:7325(R) (WERL-3472-8)
production by ionization of gas by ohmically heated electrons, model for, 22:44185 (IPP-1/79)
production by laser beam irradiation of deuterium solid particles, 22:34716
production by laser beam irradiation of lithium hydride solid particles, 22:11471(R) (NYO-3578-4)
production by laser beam irradiation of lithium hydride solid particles, research on, 22:41623 (NYO-3578-9)
production by laser beam irradiation of solid particles, 22:13441
production by laser beam on polythene films, (E), 22:17700
production by laser irradiation of solid hydrogen, (E), 22:1262
production by laser irradiation of solid hydrogen, numerical computation of, 22:52821 (IPP-3/74)
production by laser irradiation, heating and expansion properties in, 22:50126(R) (EUR-CEA-FC-352)
production by laser-beam irradiation of metallic surfaces, problems in, (E), 22:22188 (SC-DC-67-3217)
production by laser-beam irradiation of solid particles, thermoelectron emission and plasma divergence in, 22:46186
production by pulsed discharges, research on, 22:34712(R) (AD-661327)
production by shock waves in an electromagnetic field, (T), 22:20024
production by wire explosions, temperature in, 22:5384
production device for, film-cooling of generator anode of, 22:46184
production from exploding wires, positive ion heating in, 22:11475
production from fast atom injection into magnetic traps, 22:41622 (IAE-1399)
production from laser beam irradiation of single solid particles, 22:9382(R) (NYO-3578-7)
production in electric arcs with transpiration-cooled porous electrodes, 22:22190
production in gas-filled cavity resonators by γ heating in reactors, microwave diagnosis for power monitoring, 22:37585
production in hf electrodeless discharges, properties of, 22:29527
production in laser beam interactions with solid particle lithium hydride, kinetics of, 22:3127(R) (NYO-3578-1)
production in magnetic fields using lasers, resistive plasmoid expansion in, (T), 22:13509
production in reactors as indicator of power level, 22:37613(P)
production in spark discharges, shock wave effects on, (E/T), 22:13507
production kinetics of hydrogen, in pulsed discharges, (E), 22:9381 (CEA-R-3185)
production of ambi-, during metagalaxy development, separation of matter and antimatter in, (T), 22:9305 (N-67-22498)
production of argon, by photoionization in spark discharges, (E), 22:13511
production of argon, for use in MHD experiments, 22:1263
production of beryllium, using lasers, (E), 22:22187 (CEA-R-3296)
production of dense deuterium, using hydromagnetic accelerators with fast z-pinch, 22:1250 (LA-3770, Paper C1)
production of dense thermonuclear, by intense field emission discharge, possibility of, 22:48135
production of dense, by pulsed microwaves, 22:1258 (LA-3770, Paper H7)
production of deuterium, primary ionization coefficient for, 22:1261
production of high-temperature lithium deuteride, using lasers, 22:1255 (LA-3770, Paper F6)
production of high-temperature, device for, 22:5385(P)
production of high-temperature, review of methods for, 22:31863
production of high-temperature, z-pinch Columba device for, 22:1249 (LA-3770, Paper G3)
production of hydrogen, by laser beam irradiation of solid foils, (E), 22:26436
production of hydrogen, formation time for breakdown in crossed fields, (E/T), 22:26435
production of lithium hydride, by laser beam irradiation of solid particles, (E), 22:24352
production of lithium hydride, by laser focusing on solid targets, 22:5380
production of lithium hydride, by laser-beam irradiation of solid particles, 22:13506(R) (NYO-3578-8)
production of lithium hydride, hydrodynamic model for laser, 22:52822
production of lithium, laser, 22:34597
production of lithium, volt--ampere calculations of low-pressure arcs for, 22:9389
production of low-temperature, design and performance of electric arc source for, 22:52825
production of quiescent discharge, with high electron temperatures, 22:20023
production of xenon and xenon--neon, in shock tubes, kinetics of, 22:3129
production of zirconium iodide, using laser irradiation of solid particles, (E), 22:22189
production of, device for, 22:41626(P)
production of, generator for, 22:11476(P)
production of, generator for, 22:44187
production of, in charged particle source, 22:41625(P)
production of, properties of vortex-stabilized plasmatron for, (E), 22:9395
production using lasers, acceleration in, (T), 22:9383(T) (NP-tr-1605)
production using lasers, spark analysis in strong magneric fields, (E), 22:13508
propagation on column of, nonlinear excitation of surface, (E), 22:24293
properties at high temperatures, bibliography on chemical and physical, 22:5417 (NP-17130)
properties in 8-meter theta-pinch device, 22:1180 (LA-3770, Paper A2)
properties in ac flow-stabilized arcs, 22:39074 (N-68-21242)
properties in alternating electric fields, 22:17693
properties in alternating electric fields, (E), 22:17694
properties in anomalous glow discharges, at parameter changes of nanoseconds, 22:48105
properties in auto-oscillating PIG discharges, nonlinear, 22:7289
properties in caulked stuffed cusp experiment, 22:11404(R) (LA-3831)
properties in electromagnetically driven shock tubes, 22:3016 (IPP-3/58)
properties in fast MJ theta-pinch devices, 22:1195 (LA-3770, Paper G2)
properties in high-beta mirror machines, two-dimensional equilibrium calculations for, 22:1133 (LA-3770, Paper B4)
properties in high-frequency ring discharges, 22:5366
properties in high-pressure electric arcs, 22:31806 (ORNL-4238, pp 67-104)
properties in hollow-cathode arcs, rotation, (E), 22:26389
properties in kiloampere discharges, 22:50156
properties in linear theta pinch devices, research in Garching, 22:1179 (LA-3770, Paper A1)
properties in low-pressure discharges, radial structure of, (T), 22:24294
properties in low-voltage arcs, research on, 22:34625(R) (AD-661304)
properties in magnetic fields, quantum mechanical theory of nonlinear, 22:50177
properties in magnetostatic and potential fields, stationary state, 22:3093
properties in magnetostatic and potential fields, stationary state, 22:3044 (IPPCZ-66)
properties in MPD arcs, with nonequilibrium ionization, 22:39067 (N-68-14559)
properties in Penning discharges in inhomogeneous magnetic mirror fields, (E), 22:52779
properties in positive column discharges, in transverse magnetic field, 22:3075
properties in positive column discharges, nonlinear asymptotic analysis of, (T), 22:13499
properties in pulsed capillary discharges, 22:44095
properties in pulsed toroidal discharges in crossed fields, (E), 22:29499
properties in stabilized electric arcs, (T), 22:9361
properties in Target experiments, 22:52724 (CONF-671127, pp 77-97)
properties in toroidal geometries, curvature effects on, 22:39058 (CEA-R-3490)
properties in toroidal multipoles, 22:31806 (ORNL-4238, pp 67-104)
properties in vortex-stabilized plasmatrons, 22:9362
properties in z-pinch Columba experiment, 22:11404(R) (LA-3831)
properties in z-pinch discharges, pressure effects on, 22:7317
properties of air and argon, dielectric, (E), 22:17654
properties of argon and cesium, in electric arcs, 22:44128
properties of argon, in electric arc column, (E/T), 22:13500
properties of argon, refractive index at 6328 A and 1.15 μ, 22:34641 (AD-666665)
properties of argon--cesium, at entrance of MHD generators, 22:5332
properties of barium, cesium, and potassium, graphical compilation of, 22:3049 (SIT-2813-42)
properties of cesium thermal, in strong high-frequency electric field, 22:17667
properties of cesium, review of physical, 22:5349

properties of cesium-seeded helium in pulse discharges, physical, (E/T), 22:9329
properties of cometary, (T), 22:8858
properties of dense, electric, 22:39039 (CONF-680704-2)
properties of finite gyromagnetic, separation constants for, (T), 22:24313
properties of fully ionized, statistical theory of emission, absorption, and conductivity of, 22:34631 (AD-662910)
properties of gaseous and solid-state, (E), 22:24311
properties of helium in glow discharges, effects of vhf fields on, 22:46175
properties of hydrogen, in high-current arcs, 22:5330
properties of inductively coupled argon, 22:7279
properties of interplanetary, 22:26429
properties of interplanetary, (T), 22:45872
properties of interstellar and interplanetary, 22:15307
properties of ionospheric, (T), 22:44017
properties of low-temperature, nonequilibrium, 22:41609
properties of Maxwellian and nonMaxwellian magneto-, effective parameters for, 22:44152
properties of microwave-produced, in magnetic fields, 22:39093
properties of rare gas, in low-voltage arcs, 22:34624(R) (AD-661073)
properties of rf, nonequilibrium, (E), 22:34699
properties of rf-generated, in static magnetic fields, review, (E/T), 22:52833
properties of rf-produced, (E), 22:31814
properties of rotating, 22:39100
properties of thermionic, 22:13461
properties of theta pinch, in azimuthal magnetic fields, 22:29478(T) (NP-tr-1633)
properties of theta-pinch, with transverse magnetic fields, 22:46136 (IPP-1/81)
properties of waveguide, equivalent circuit for cylindrical, 22:41607
properties of, hodographic method for electrodynamic, 22:24291
properties of, pseudopotential of quasi-classical, (T), 22:44178
properties of, review of, 22:48134
properties of, summaries of conference papers on fundamental, 22:7309
properties of, theoretical review of, 22:34574
proton beam interactions with arc discharge helium and hydrogen, energy losses in, (E), 22:39124
proton beam interactions with potassium, oscillations from, 22:13458
radiation absorption (negative) in noncollective, cyclotron and gyromagnetic, (T), 22:4936
radiation amplification in, properties of short-wave, (T), 22:34694
radiation diffraction in cold, lossless, isotropic, plane-stratified, solution to half-space configurations and similarity principle for, (T), 22:36922
radiation emission and reabsorption by relativistic, synchrotron, (T), 22:23912(T) (NASA-TT-F-521)
radiation emission by electron--atom collisions in positive neon column, bremsstrahlung continuum, (E), 22:29486
radiation emission from axially symmetric, calculation of radial intensity distribution of, 22:41572
radiation field of magneto-, Hamiltonian with relativistic effect for, 22:9314
radiation from electrically excited carbon dioxide--nitrogen and carbon dioxide--helium--nitrogen, spectra of infrared, 22:1229
radiation from helium discharge, absorption resonances at cyclotron harmonics in, (E), 22:1223
radiation from high-pressure, (T), 22:11442
radiation from highly relativistic, amplification of synchrotron, (T), 22:29138
radiation from isothermal layers of dense hydrogen, absolute intensity measurement of, 22:34678
radiation interaction with, frequency shift and amplitude jump of electrostatic mode for, (T), 22:39127
radiation interaction with, nonlinear effects for induced resonance in, (T), 22:39127
radiation lines from carbon and fluorine, at 10,000 to 100,000ºK, (T), 22:52814
radiation pattern from magnetic line source on conducting plane, angular anisotropy of EM- and P-mode, (T), 22:46152
radiation properties of jet in M87 radio galaxy, (E), 22:21834
radiation transport equation for, 22:44112 (NP-17460)
radiation transport in nonuniform atomic, (T), 22:31821
radiations from argon and neon magneto-, microwave, 22:41608
radiations from argon, absorption and emission properties of, 22:34621 (AD-660576)
radiations from bounded, instabilities from, (T), 22:3133
radiations from column of, pulse-stimulated, (E/T), 22:13456
radiations from compressible, ray-optical analysis of, (E/T), 22:13505
radiations from dense hot theta-pinch, bremsstrahlung, 22:1187 (LA-3770, Paper D5)
radiations from ECR discharge, enhanced cyclotron, (E), 22:34659 (TID-24491, pp 177-82)
radiations from finite thickness hydrogen, spectra of, 22:52804
radiations from fully ionized in infrared, bremsstrahlung, 22:44165
radiations from fully ionized, infrared bremsstrahlung, 22:39060 (CONF-670928-5)
radiations from homogeneous anisotropic, conditions for, 22:52785
radiations from hot electrons, synchrotron, 22:44166
radiations from hot-cathode arc-discharge, shf, 22:3067
radiations from magneto-, (E/T), 22:31805 (LA-DC-9540)
radiations from magneto-, angular spectra of ion cyclotron harmonic, 22:3070
radiations from microwave-heated magnetic mirror-confined, (E), 22:26387
radiations from partially ionized, bremsstrahlung, (T), 22:34673
radiations from PIG discharge, self-absorption resonances at electron cyclotron harmonics, 22:3042 (IPP-3/60)
radiations from pulse discharge, device for polarization measurements from, 22:5370
radiations from pulse discharge, time characteristics of, 22:5333
radiations from Q devices, near electron cyclotron harmonics, (E), 22:22146 (NP-17389)
radiations from quantum, emission of electron--electron bremsstrahlung, (T), 22:1202
radiations from singly ionized oxygen, (E), 22:5119
radiations from slabs of magneto-, dispersion relations for, (T), 22:13482
radiations from sources immersed in partially ionized, (T), 22:36914 (N-68-22708)
radiations from test particles in, (T), 22:9344
radiations from theta-pinch, x, 22:46167
radiations from thetatron, resonance, (T), 22:1175 (IPP-1/65)
radiations from Tokamak device, microwave, 22:34693
radiations from turbulent, bremsstrahlung, (T), 22:9307 (TID-24203, pp 53-71)
radiations from, at 6000 to 12000ºK, 22:44125
radiations from, bremsstrahlung and scattering at harmonics of plasma frequency, 22:44164
radiations from, correlation function for bremsstrahlung, 22:44134
radiations from, electron and ion temperature effects on, 22:3054
radiations from, electron cyclotron harmonic, (E), 22:19997
radiations from, free--free bremsstrahlung, (E), 22:26388
radiations from, kinetics of, (T), 22:3116
radiations from, photomultiplier radiometer for detection of r-f modulated, 22:44140
radiations from, pressure anisotropy from bremsstrahlung, 22:11445
radiations from, relativistic correction to bremsstrahlung, 22:17678
radiations from, summaries of conference papers on, 22:7312
radiations from, theory of cyclotron harmonic, 22:19991
radiations from, time-dependent behavior of nonequilibrium, 22:50166
radiations from, transport theory for, 22:1203
radiative decay of tangential surface plasmons in silver, (T), 22:52824
reactions with metal surfaces, secondary electron spectra from, (T), 22:7150
recombination coefficient in dense argon, 22:41548
recombination coefficients in highly ionized cesium and potassium, (E), 22:39128
recombination of primeval, (T), 22:41233
relaxation and anisotropy in Isar-I megajoule theta pinch device, 22:1176 (IPP-1/67)
relaxation processes and amplification of radiation in dense, 22:50169
research at Garching, 1965, 22:7256(R) (NP-16754)
research at Institut fuer Plasmaphysic, 1966, 22:5302(R) (JUL-494-PP)
research at Institute of Nuclear Research at Swierk, 22:52722
research at ORNL, 22:19927 (ORNL-TM-2146)
research at Poland Inst. of Nuclear Research, 22:9270 (INR-P-846/XVIII/PP)
research at Wills Plasma Physics Dept., Sydney Univ., Jan.-June 1968, 22:50133(R) (NP-17625)
research in magnetic mirror machines, report of Ad Hoc Panel on, 22:26353 (TID-24254)
research in USSR, 22:1130
research on, 22:9273(R) (N-67-22920)
research on, 22:19924(R) (NP-17332)
research on, 22:22143
research on, 22:31781
research on, 22:5303(R) (NP-17128)
research on high-temperature, review of, 22:15525
research on laboratory and interplanetary, conference on, 22:5305
resonance in aluminum, study of optically excited, (E), 22:41621 (DESY-68/27)
resonance rectification effects in magneto-, (E), 22:1215
resonance-rectification effects in warm magneto-, (E),

22:7292
resonances in self-maintained, ionic modulation of Tonks--Dattner, (E), 22:50155
resonances in weakly ionized, generalized electron cyclotron, (T), 22:50154
resonances in, higher-order cyclotron harmonic, (E), 22:41476
shock formation in Q devices, (E), 22:19993
shock profile in, unified, (T), 22:9337
shock propagation in high beta, destruction of, 22:9302 (CLM-R-74)
shock propagation in, with anomalous friction, 22:9303 (IPP-1/72)
shock structure in argon, hydromagnetic, (T), 22:13504
shock structure in argon, nonequilibrium, (T), 22:13494
shock structure in rarefied, theory of, 22:5372
shock structure in, oblique collisionless, (E), 22:9306(R) (ORO-3647-1)
shock structure in, quasi-stationary magnetohydrodynamic, (E), 22:29480(T) (NP-tr-1643)
shock wave decay in, properties of MHD, (T), 22:9351
shock wave interactions with air and argon, ion density profiles in, 22:1221
shock wave interactions with air and argon, structure in, (E), 22:22159
shock wave interactions with air, electron distributions and collisions in, 22:1197(T) (AD-653513)
shock wave interactions with air, velocity profiles behind, (T), 22:26428
shock wave interactions with argon, electrophysical properties of, 22:5331
shock wave interactions with argon, ionization and nonequilibrium radiations from, (T), 22:24356
shock wave interactions with argon, ionization properties of, (T), 22:50197
shock wave interactions with argon, ionization rates and collision cross sections for, (E), 22:52777
shock wave interactions with argon--nitrogen, radiation processes from nitrogen, 22:41610
shock wave interactions with isothermal hydrogen--helium, equilibrium radiations from, 22:34709
shock wave interactions with magnetized, electron temperatures from, 22:3013
shock wave interactions with nonequilibrium, electron density and temperature in, 22:9293
shock wave interactions with rare gases, radiations from, (E), 22:26430
shock wave interactions with, electric field ahead of, (E), 22:26399
shock wave interactions with, electron distribution in, (T), 22:36925
shock wave interactions with, ion density and electric field perturbations from, (T), 22:20001
shock wave interactions with, isomagnetic jump im front of strong, (E), 22:24292
shock wave interactions with, magnetohydrodynamic wave modes in, 22:17686
shock wave interactions with, magnetohydrodynamic wave modes behind, (E), 22:19970 (NP-17347)
shock wave interactions with, properties of, 22:52767 (AD-669572)
shock wave interactions with, properties of MHD, (T), 22:9352
shock wave interactions with, properties of normal ionizing, (E), 22:36950
shock wave interactions with, properties of, (E/T), 22:39055(R) (AD-664342)
shock wave interactions with, rarefaction waves in, (T), 22:3074
shock wave interactions with, summaries of conference papers on, 22:7313
shock wave interactions with, turbulent, (T), 22:52774 (MPI-PAE/PL-6/68)
shock wave propagation in argon and helium, properties of, 22:13453
shock wave propagation in collisionless magneto-, properties of, (T), 22:15535
shock wave propagation in magnetized, properties of, 22:52796
shock wave propagation in z-pinch, velocity and current density in, 22:39097
shock wave reflection in xenon, structure of, (E/T), 22:52776
shock wave reflection in, electron density separation from current sheet in, (E), 22:36926
shock wave reflection in, microwave measurement of electron temperature in, 22:36890
shock wave structure in argon, (T), 22:17687
shock wave structure in argon--helium, 22:52766 (AD-669570)
shock wave structure in magnetized hydrogen, oblique hydromagnetic, 22:36917 (ORO-3647-3)
shock wave structure in weakly ionized, (T), 22:26397
shock wave structure in, quasi-steady magnetohydrodynamic, (T), 22:22158
shock wave structure in, research on collisionless oblique, (E), 22:24282(R) (ORO-3647-2)
shock wave structure in, with electromagnetic fields, 22:50181
shock waves in fully ionized, structure of weak, (T), 22:26402
shock waves in high-density stellar neutron, (T), 22:2738
shock waves in highly ionized helium, (E), 22:39076 (N-68-22854)
shock waves in rarefied, turbulent structure and radio emission of, (T), 22:7086
shock waves in, discontinuous structure of viscous isoelectron-temperature, 22:44157
shock waves in, effect of longitudinal electric field on ionizing, 22:50165
sound propagation in low-pressure discharge, (E), 22:17669
space-charge field in dc-discharge, effects of electron temperature gradient on, (T), 22:3096
spectra at high electron densities, H/sub β/ Stark-broadening in, (E), 22:50188
spectra at high electron densities, H/sub β/ Stark-broadening theory for, (E/T), 22:50189
spectra from burnout devices, (E), 22:31806 (ORNL-4238, pp 67-104)
spectra from dense high-temperature hydrogen, (T), 22:24269
spectra from laser-produced, vacuum uv, 22:20008
spectra from magneto-, effect of neutral impurity levels on, (E), 22:24298
spectra in arc discharges, electron and atom temperature determination from, 22:5320
spectra in Q devices, discrete and continuum, 22:44093 (ORO-3405-19)
spectra in strong electric and magnetic fields, Stark effect in, 22:9301
spectra line intensity measurements in Tokamak TM-3, hydrogen, 22:3029
spectra lines of, calculation of contour of readsorbed, 22:5321
spectra lines of, effect of electron distribution function on intensity of, 22:52754
spectra of argon, Stark broadening parameters of electron-irradiated, (E), 22:24321
spectra of classical ideal gas, correlation of density fluctuations in, (T), 22:20013
spectra of cylindrical, spatial resolution of emission and absorption coefficients for, 22:34638 (AD-665826)
spectra of decaying hydrogen, in shock tubes, 22:34606
spectra of dense, profile asymmetry of Lyman, Balmer and Paschen lines, (T), 22:52740 (IAE-1440)
spectra of deuterium, Stark broadening in, 22:11449
spectra of He in H--He, Stark broadening of, (E), 22:38753
spectra of high-density helium arc, 22:31806 (ORNL-4238, pp 67-104)
spectra of hydrogen, effect of strong collisions on H/sub α/ profile, 22:31823
spectra of laser-produced, effects on, 22:20007
spectra of multiply ionized atoms of, produced by lasers, (E), 22:50196
spectra of rare gas, continuous, (T), 22:17660
spectra of turbulent, high-frequency, 22:50064
spectra of undriven electron oscillations in nonuniform collisionless, (T), 22:24295
spectra of warm uniaxial, Doppler effect in, (T), 22:52746
spectra of, electron collisional effects on, 22:9297
spectra of, emission coefficients from, 22:41551
spectra of, method for analysis of wave number, (T), 22:52744
spectra of, review of Soviet work related to, 22:2788
spectra of, Stark broadening of hydrogen lines in, (T), 22:1168
spectra of, Stark broadening of Lyman α line in, 22:43886
spectra of, techniques for vacuum uv and soft x-ray, 22:9300
spectra, radiation transfer in, (T), 22:945(T) (CLM-Trans-10)
spectral line broadening in hydrogen, (T), 22:24314
spectral line broadening in, electron correlations in, 22:13447
spectral line broadening in, electron correlations in, 22:39064 (N-68-12880)
spectral line shift in cesium, electron density correlation with, (E), 22:41563
spectral lines in argon arc, Stark broadening of, 22:7270
spectral lines in, effects of radial dependence on parameters of symmetric self-reverse contour of, (T), 22:52816
spectral lines of argon, transition probabilities, half-widths, and dislocation of, 22:39079(T) (SC-T-68-1530)
spectral lines of ionospheric, Thomson scattering probe for examining, 22:34439
spectral lines of optically thin, profile approximations of, 22:34272
spectral lines of, electron broadening of isolated, 22:41564
stability against low-frequency interchanges, energy principle for, 22:13524
stability and anomalous diffusion in reflex discharges, 22:52836
stability and equilibria of collisionless, in cylindrical geometry, (T), 22:17708
stability and transport processes in toroidal-confined,

22:5386(T) (NP-tr-1600)
stability and turbulence in alkali metal, research on, 22:1270(R) (ORO-2454-9)
stability and voltage oscillation in MHD generator, (T), 22:38850
stability at magnetic field interface with, turbulence, (E/T), 22:36951(R) (N-68-15826)
stability conditions in, dynamic stabilization of low-frequency microin-, (T), 22:52834
stability criterion for helical instability of hollow column of, in magnetic field with shear, (E/T), 22:24359
stability for anisotropic ion velocity distributions in, quasilinear theory of, 22:11478
stability in ''average minimum-B'' configurations, low-frequency interchange, 22:7334
stability in axisymmetric toruses, low-frequency, (T), 22:46190 (MATT-617)
stability in B/sub theta/ magnetic fields, negative mass, (T), 22:13526
stability in Bille-en-Tete device, 22:50126(R) (EUR-CEA-FC-352)
stability in bumpy field in Scylla IV, 22:11404(R) (LA-3831)
stability in cold, effect of multiperiodic hf field on two-stream, (T), 22:17703
stability in collisionless potassium, ion-cyclotron in-, (E), 22:52837
stability in combined magnetic fields, (E), 22:9404
stability in controlled fusion reactions, review of, 22:31882
stability in cross fields, from ionization and recombination processes, 22:17705
stability in DCX-2 experiment, 22:52827 (CONF-671127, pp 98-143)
stability in electric discharges, 22:3137
stability in electron cyclotron resonance discharge, enhanced, 22:46193 (TID-24666, pp 135-44)
stability in general magnetic field configurations, drift, (T), 22:20031
stability in hard-core theta-pinch devices, 22:1269 (LA-3770, Paper G6)
stability in helical magnetic fields, pressure effects on, 22:15546
stability in helium--oxygen mixtures, helical, (E), 22:9402
stability in hf spatially uniform external electric fields, 22:9400
stability in hollow positive column discharges, effect of azimuthal magnetic field on helical, (E), 22:31874
stability in injectors, ion cyclotron, (T), 22:34720
stability in linear and toroidal theta pinches, 22:46189 (LA-DC-9324)
stability in loss cone of magnetic field, electrostatic, (T), 22:13518(T) (UCRL-Trans-10203)
stability in low-energy theta pinch, resistive, (E/T), 22:13525
stability in magnetic field, quasi-linear theory of electron beam relaxation, 22:31870
stability in magnetic mirror fields, loss cone, (T), 22:31866 (ORNL-4238, pp 1-27)
stability in magnetic mirror machines, drift-cyclotron, 22:52829 (CONF-671127, pp 350-62)
stability in magnetic traps, (T), 22:26359
stability in magnetic traps, magnetohydrodynamic theory for, 22:15548
stability in magnetic traps, theory for microinstabilities in, 22:50203
stability in magnetic wells produced by beam currents, (T), 22:31878
stability in minimum B adiabatic traps, ion cyclotron, (E), 22:20026 (IAE-1331)
stability in minimum-B adiabatic traps, ion-cyclotron, 22:13516(T) (NP-tr-1604)
stability in Model C stellarator, ion cyclotron, 22:52828 (CONF-671127, pp 196-214)
stability in Phoenix II experiment, ion cyclotron, 22:52826 (CONF-671127, pp 1-26)
stability in positive column discharges with longitudinal magnetic fields, screw, (T), 22:31875
stability in positive column discharges, research on, (E/T), 22:1272(R) (SU-IPR-198)
stability in presence of neutral particles, hydromagnetic Kelvin, 22:1276
stability in Q devices, effect of finite ion Larmor radius on Kelvin--Helmholtz, 22:1271 (RISO-158)
stability in Q devices, research on, 22:34719(R) (ORO-3405-18)
stability in quadrupole magnetic fields, ballooning, 22:9399
stability in quasi-homogeneous magnetic field, hydromagnetic, (T), 22:13521
stability in rotating magnetic fields, 22:9401
stability in skin layer of collisional, (T), 22:9403
stability in slow theta pinch, end effects in, (E), 22:7331
stability in stellarators, resistive interchange and ballooning modes of, (T), 22:24357 (MATT-Q-25, pp 223-38)
stability in Tokamak devices, hydromagnetic, 22:36954
stability in toroidal magnetic fields, magnetohydrodynamic, (T), 22:17710
stability in toroidal quadrupole and octupole configurations, (E), 22:36956
stability in toroidal systems, balloon mode of, (T), 22:22191
stability in, critical-current thresholds of beam, (E), 22:48139
stability of alkali-metal, finite ion Larmor radius and ion collisional effects on drift wave, 22:44188 (MATT-619)
stability of anisotropic, temperature, (T), 22:41631
stability of cesium in minimum-B fields, helical, 22:1270(R) (ORO-2454-9)
stability of cesium-seeded argon or mercury, effects in MHD converters of, (T), 22:5179(T) (CEA-tr-R-1901)
stability of collisionless magneto-, with ion temperature gradients, (T), 22:29529
stability of collisionless, cross-stream hydromagnetic--electrostatic, (T), 22:36955
stability of collisionless, in closed multipole fields, drift wave, (T), 22:24364
stability of cross-field, irregularities in ionosphere due to, (E), 22:36824
stability of current-carrying, (T), 22:5387(T) (UCRL-Trans-10147)
stability of current-carrying, overstable modes due to resistivity gradients in, 22:34718 (AD-665421)
stability of current-carrying, overstable modes due to resistivity gradients in, (T), 22:41632
stability of cylindrical, effect of diffusion distribution on, 22:50207
stability of dense, variational calculations for, 22:39139 (MIAPH-PL-68.3)
stability of dilute and dense, drift, (E/T), 22:50210
stability of electron-cyclotron-resonance-heated, research on, 22:39138(R) (COO-1695-10)
stability of finite beta toroidal, hydromagnetic equilibrium, 22:1266 (LA-3770, Paper B2)
stability of finite systems of, (T), 22:52831 (CONF-671127, pp 408-72)
stability of guiding center, 22:11477 (ORNL-TM-2025)
stability of guiding-center, (T), 22:50209
stability of helium arc magneto-, low-frequency, 22:41634
stability of high-beta theta-pinch, z-dependent marginal, 22:1267 (LA-3770, Paper B7)
stability of high-beta, thin-skinned, toroidal, calculation of, 22:7329 (LA-3749)
stability of high-frequency, (E), 22:9406
stability of high-temperature, with isotropic distribution functions in a magnetic field, 22:11480
stability of highly ionized column of, drift wave, 22:1277
stability of hot electron in quadrupole mirror machines, cyclotron, (E/T), 22:17707
stability of hot-ion, threshold density for ion-cyclotron, 22:3139
stability of inhomogeneous, ion cyclotron, 22:1278
stability of loss-cone, effect of electron temperature on, 22:41633
stability of low density, complete spectrum of flute, (T), 22:3130 (IPPCZ-73)
stability of low-beta, nonlinear computer model for interchange, 22:3142
stability of magnetic mirror-confined, dissipative effects on flute, 22:5389
stability of magnetically confined, variation calculations of, (E/T), 22:17701 (MIAPH-PL-67.10)
stability of magneto-, nonlinear limit of drift, 22:1275
stability of magneto-current-convective, (T), 22:13523
stability of mirror-confined in C stellarator, ion-cyclotron, (E), 22:24242 (MATT-Q-25, pp 30-117)
stability of mirror-confined potassium, flute, (E/T), 22:3141
stability of multicomponent, high-frequency flute, (T), 22:24362
stability of multicomponent, modes of, (T), 22:13515 (UCRL-70665)
stability of multipole machine, effect of toroidal magnetic field on, 22:39142
stability of neutral sheet of, (T), 22:34724
stability of nonstationary, (T), 22:20032
stability of nonuniform, electron temperature, (T), 22:3135
stability of nonuniform, in electric dc fields, (T), 22:17712
stability of one-dimensional, two-stream, 22:44189 (MATT-623)
stability of positive column, modes of screw, 22:5388
stability of positive column, perturbation density from helical, (E), 22:26437
stability of positive column, properties of, 22:29477(R) (SU-IPR-224)
stability of Q devices, photography of flute, 22:44196
stability of relativistic, gardenhose, (T), 22:22192
stability of sheaths of, in magnetic fields, (T), 22:31881
stability of stratified anisotropic, internal gravitational, 22:3134
stability of strong-current discharge in dense optically transparent, (T), 22:44191 (NP-17573)
stability of strongly inhomogeneous, 22:47884

stability of synthesis, 22:44193
stability of thermal, diffusion processes from micro, (E/T), 22:24367
stability of thermally ionized, properties of, 22:3131(T) (UCRL-Trans-10142)
stability of theta-pinch, hydromagnetic, 22:1265 (LA-3770, Paper B1)
stability of theta-pinch, hydromagnetic, (T), 22:1273
stability of toroidal column of, in steady-state and hf magnetic fields, (T), 22:17713
stability of toroidal confined, low-frequency limit of interchange, (T), 22:24360
stability of toroidal high-beta, equilibrium, (T), 22:24365
stability of toroidal, resistive, (E), 22:34722
stability of traveling bumpy theta-pinch, 22:7330
stability of turbulent, nonlinear drift, 22:50201 (JINR-P9-3981)
stability of two-component columns of, (T), 22:41630
stability of two-dimensional nonhomogeneous, effects of initial conditions on, 22:5392
stability of variable conductivity, (T), 22:34717(R) (AD-664924)
stability of viscous fluid with horizontal boundary, resistive, (T), 22:31876
stability of weakly ionized layer of, in crossed electric and magnetic field, 22:44192
stability of weakly ionized, in nonuniform magnetic fields, convection, (T), 22:31880
stability of, analysis of, (T), 22:9308 (TID-24203, pp 73-134)
stability of, conditions for longitudinal disturbances in, (T), 22:26439
stability of, convective and absolute, (T), 22:13520
stability of, effect of electron- and ion-temperature perturbations on, (T), 22:20028
stability of, effect of finite ion Larmor radius on Kelvin--Helmholtz, 22:17709
stability of, effect of finite Larmor radius on gravitational, (T), 22:36626
stability of, effect of hf magnetic field on, (T), 22:39141
stability of, effect of homogeneity on, (T), 22:15545 (IIF-LA-9)
stability of, effect of inductive and capacitive walls on diocotron, (T), 22:34723
stability of, effect of viscosity on, (T), 22:17704
stability of, effects of bounce resonance on, 22:41629
stability of, effects of dispersion of curvature drift velocities on, (T), 22:7336
stability of, effects of electric currents on, 22:39102
stability of, effects of electron current with velocity gradient on, 22:3107
stability of, effects of electron velocity distribution on, (T), 22:29532
stability of, effects of high-frequency magnetic fields on, 22:11481
stability of, effects of magnetic field spatial variations on, (T), 22:50211
stability of, effects of magnetic shear on density gradient, 22:17706
stability of, effects of thermonuclear reactions on, 22:11483
stability of, electron cyclotron resonance radiation effects on, (E/T), 22:7328(R) (COO-1695-5)
stability of, excited by azimuthal electron beam, 22:31872
stability of, gravitational, 22:39143
stability of, guiding-center treatment of finite gyroradius fluid equations for, 22:31879
stability of, in Astron device, 22:36953 (UCRL-70876)
stability of, inhomogeneous two-stream, (T), 22:24363
stability of, integration of perturbed Vlasov equation in reduced phase space, 22:9405
stability of, ion resonance, 22:48138 (TID-24688)
stability of, kinetic theory of drift-dissipative, 22:15547
stability of, Larmor radius and collisional effects on combined Taylor and Kelvin, 22:39144
stability of, macroscopic quasi-linear theory of garden hose, 22:39140 (N-68-17428)
stability of, macroscopic quasi-linear theory of garden-hose, 22:52832
stability of, macroscopic quasi-linear theory of two-stream, 22:9398
stability of, nonlinear evolution of resonant interchange, (T), 22:24361
stability of, nonlinear wave interactions from beam, (T), 22:11479
stability of, research on universal, 22:31865(R) (ORO-3405-20)
stability of, resonant loss-cone, 22:52830 (CONF-671127, pp 374-407)
stability of, review of, 22:7333
stability of, ring approximation theory for, 22:26438
stability of, singularity interaction of oscillation modes in theory of, 22:31869
stability of, theory using ring approximation, 22:13519
stability of, with axially symmetric velocity distribution, 22:11482
stability under strong electromagnetic wave action, ion cyclotron in, 22:52835
stability, calculation of statistical entropy for nonequilibrium, 22:3136
stabilization in external hf fields, drift, (E/T), 22:50206
stabilization in magnetic mirrors, effect of gyration radii on, 22:50126(R) (EUR-CEA-FC-352)
stabilization in magnetic mirrors, effects of ion distribution function on, (T), 22:36883 (UCRL-70681)
stabilization in theta pinch devices, due to plasma outside mirror end points, 22:1264 (LA-3770, Paper A7)
stabilization of absolute loss-cone instabilities, effect of finite β on, 22:24358 (UCRL-50397)
stabilization of acoustic oscillations in magneto-, effects of ion viscosity on, (T), 22:13517(T) (NP-tr-1607)
stabilization of collision-dominated, shear, 22:50208
stabilization of convective instabilities in, by superhigh-frequency fields, 22:46188 (IAE-1490)
stabilization of cylindrical, with current in longitudinal magnetic field, (T), 22:22194
stabilization of dense, in closed magnetic traps, (T), 22:50204
stabilization of drift waves in alkali metal, ion mass, (E), 22:24243 (MATT-Q-25, pp 118-65)
stabilization of flute growth in, large amplitude, 22:1274
stabilization of flute instabilities in, by feedback, 22:46187 (IAE-1444)
stabilization of flute instabilities using a feedback system, (E/T), 22:50205
stabilization of flute oscillations in high-density, effects of electric field on, (T), 22:44197
stabilization of inhomogeneous, by feedback, 22:34725
stabilization of magnetic mirror-confined, criteria for electrostatic modes in, 22:36952 (UCRL-70866)
stabilization of screw-type instability of, by hf field, (E), 22:50202
stabilization of straight axisymmetric bumpy column of, 22:44195
stabilization of theta pinch, properties of, (E), 22:29531
stabilization of trapped-particle instability by finite orbit effect, (T), 22:31873
stabilization of two-stream instabilities in, possibility of, (E), 22:31877
stabilization of Z-pinch, using theta pinch, (E), 22:50200 (IPP-1/77)
stabilization of, review of methods for, 22:9397
Stark profile calculations for Hα, Hβ, Hγ, and H delta lines in hydrogen, (T), 22:41562
stress tensor in hf electromagnetic fields, collisional effects on, 22:46165
striation motion in neon, variations of plasma parameters in, 22:44149
striation motion in positive column, electron thermal relaxation length in neon, (E/T), 22:52795
striation motion in, variation of plasma parameters in, 22:44150
striation production in, theory of artificial, 22:29517
striations in discharge, microwave measurements of electron density in, 22:9312
striations in discharge, origin of moving, 22:41606
striations in positive column of dc discharge in hydrogen, cross wave of moving, (E), 22:1230
striations in positive column, damping by hf field of moving, (E/T), 22:3099
striations in, potential variations in, (E), 22:24288
structure of interplanetary, radioastronomical study of inhomogeneous, 22:52314
structures in interplanetary, analysis of micro-scale, (E/T), 22:34237
temperature measurement, optical-spectroscopic method for, 22:34595
thermal equilibrium of argon, 22:5358
thermodynamic calculations for high-temperature air--carbon dioxide, 22:44183
thermodynamic equilibrium in rf argon, local, 22:41553
thermodynamic functions for alkali-metal, at 2,000 to 25,000°K and 10^{-4} to 100 atm, (T), 22:26411
thermodynamic functions for free electrons and protons in hydrogen, 22:9359
thermodynamic functions of ionizing atomic stellar, (T), 22:26126
thermodynamic properties of cesium--mercury, in MHD generators, (E/T), 22:52557 (CONF-680704-3)
thermodynamic properties of superheated mixed-gas, calculation method, 22:48129
thermodynamic properties of uranium, (T), 22:18541 (GA-8244)
thermodynamics of air--carbon, calculation of, 22:9342
thermodynamics of degenerate dense, (T), 22:41615
thermodynamics of dense, (T), 22:13470
thermodynamics of dense, numerical integration of equations for, 22:3103
thermodynamics of petroleum and coke, (T), 22:17436
thermodynamics of weakly relativistic, (T), 22:29519
thermodynamics of, review of, 22:1238
thermophysical properties of, conference on, 22:25611
transport across magnetic fields, design of high-speed correlator for determining anomalous, 22:28219
transport coefficients for partially ionized two-

temperature, 22:9365
transport coefficients in, influence of inelastic collisions on, 22:36903
transport coefficients of degenerate, (T), 22:31860
transport coefficients of degenerate, (T), 22:36941
transport coefficients of dense, Bogolyubov distribution functions in, (T), 22:34821
transport coefficients of partially degenerate, calculation of, 22:48108
transport equations for weakly ionized electron, 22:44158
transport of flare-produced, to Earth, (E/T), 22:24171
transport phenomena in magnetized, effects of radiation processes on, (T), 22:52813
transport processes across strong magnetic field, elementary theory of, 22:26410
transport processes in, second-order contributions to, (T), 22:41593
transport processes in, summaries of conference papers on, 22:7310
transport properties of partially ionized, in magnetic fields, (T), 22:9340
transport properties of thermal nitrogen, calculation of thermal conductivity and viscosity, (T), 22:26414
turbulence in collisionless, H function for, 22:5390
turbulence in high-current toroidal discharges, (E/T), 22:20027(T) (MATT-Trans-53)
turbulence in shock-produced helium, (E), 22:13503
turbulence in, kinetic equations for microscopic, 22:13513 (MPI-PAE/PL-4/67)
turbulence in, review, 22:46194
turbulence in, statistical theory of, 22:5338
turbulence in, theory of stationary-state, 22:9356
turbulence in, theory of weak, 22:3140
turbulence in, two-dimensional, 22:44161
turbulence structure due to nonlinear cross-field instability in, (T), 22:20030
use as impedance element in Fabry--Perot microwave resonator, 22:41547 (TID-24566)
use of magneto-, as microwave lens, 22:10640
use of rf-generated nonequilibrium, in MHD power generator, 22:47870
uses of thermal, in nuclear engineering, metallurgical, 22:15156
viscosity of collisionless magneto-, (T), 22:50149 (RISO-175)
viscosity of high-temperature cesium, 22:5334
wave absorption and dispersion in magnetized quantum, electromagnetic, (T), 22:31830
wave absorption and emission by bounded, collisionless electromagnetic, (T), 22:29523
wave absorption and emission by hot bounded, collisionless electromagnetic, 22:3071
wave absorption and emission coefficients for optically dense, radial distribution of, (T), 22:22173
wave absorption and emission in one-dimensional, collisional, (T), 22:24280 (MATT-Q-25, pp 257-303)
wave absorption and propagation in hot, ion cyclotron, (E), 22:24278 (MATT-Q-25, pp 183-99)
wave absorption at electron cyclotron resonance in, negative electromagnetic, 22:3092
wave absorption by electrons in, electrostatic, (T), 22:36898
wave absorption in hf discharge, electron cyclotron resonance, 22:13476
wave absorption in layers of nonuniform, electromagnetic, 22:1243
wave absorption in magnetic fields greater than cyclotron field, ultrahigh-frequency, 22:44088 (NP-17560)
wave absorption in magneto-, electromagnetic, 22:1228
wave absorption in partially ionized, electromagnetic, (E/T), 22:24333
wave absorption in, holographic measurement of light, (E), 22:22178
wave absorption in, negative cyclotron resonance, 22:34639(R) (AD-665886)
wave absorption in, rf, 22:9307 (TID-24203, pp 53-71)
wave absorption near electron cyclotron harmonic frequencies, (T), 22:39089
wave absorption near second harmonic of electron cyclotron frequency, (E), 22:26394
wave absorption spectrum in resonant cavities, 22:22164
wave amplification in gaseous, ultrasonic-, (T), 22:44120
wave attenuation and dispersion in partially ionized, longitudinal, (T), 22:39068 (N-68-18703)
wave attenuation on surface of column, electromagnetic, (T), 22:31817
wave buildup in hf electric fields, electron Langmuir and ion-acoustic, 22:13468
wave collisional damping in, echo, 22:17653
wave conversion in fluctuations in, theory of longitudinal-to-transverse, 22:44137
wave coupling in ECR discharges, nonlinear, (E), 22:34650 (TID-24491, pp 71-4)
wave coupling in inhomogeneous compressible, electromagnetic and electron acoustic, (T), 22:7323
wave coupling in quiescent cesium, drift, (E), 22:36907 (N-68-16007)
wave coupling in Tonks--Dattner resonances in, hf and lf electromagnetic, (E), 22:29487
wave coupling in waveguides of, fast and slow, (E), 22:26406
wave coupling in waveguides, nonlinear, (T), 22:29505
wave coupling in weakly turbulent, kinetic theory of, 22:39087
wave coupling in, nonlinear cyclotron harmonic, 22:44173
wave coupling to acoustic resonances in warm, high-power micro-, 22:3128
wave damping and echoes in, Landau, 22:44136
wave damping and entropy in, Landau, 22:17656
wave damping in cesium, Landau nonlinear, (E), 22:3065
wave damping in collisional, ion acoustic, 22:9358
wave damping in current-carrying, anisotropic ion--acoustic, 22:3051
wave damping in electron, collisional, (T), 22:24344
wave damping in magneto-, Langmuir, (T), 22:5368
wave damping in Maxwellian as t → 0, Landau, (T), 22:20002
wave damping in relativistic Vlasov, Alfven, (T), 22:26376 (D-1-82-0709)
wave damping in weak magnetic fields, electron, (T), 22:31809
wave damping in, amplitude effects on ion--acoustic, (E), 22:34637 (AD-665529)
wave damping in, collisional effects on Landau, (T), 22:24302
wave damping in, effect of free-streaming particles on spatial Landau, (E/T), 22:17680
wave damping in, effect on correlation functions for, (T), 22:7324
wave damping in, effects of particle phase mixing on, (T), 22:31848
wave damping in, energy loss relation between spatial dispersion and Landau, 22:5346
wave damping in, nonlinear and collisional effects on Landau, (T), 22:52782
wave damping in, stochastic electron heating effects on hydromagnetic, 22:3073
wave damping in, Tonks--Dattner resonance, (E), 22:39133
wave detection in, by observing discharges, electromagnetic, (T), 22:3090
wave diffraction on ionospheric, electromagnetic, (T), 22:36810(T) (N-68-22366)
wave diffraction on radially inhomogeneous, electromagnetic, (T), 22:36943
wave diffraction on two parallel radial nonuniform cylinders of, plane electromagnetic, (T), 22:36889
wave dispersion in highly ionized argon magneto-, ion--acoustic, (E/T), 22:52783
wave echo decay in, test particle analysis of, (T), 22:44170
wave echo phenomena in highly ionized, cyclotron, 22:46154
wave echoes in, cyclotron-harmonic, (T), 22:52798
wave echoes in, observation of, (E), 22:31845
wave enhancement in H--He, ion cyclotron, (T), 22:50148 (N-68-18485)
wave equation for inhomogeneous warm, gradient coupling in, 22:17642
wave excitation and detection in, Landau, 22:3120
wave excitation at magnetic boundaries of, (T), 22:19999
wave excitation by electric fields, ion acoustic, 22:9347
wave excitation by electromagnetic waves in, ion-acoustic, 22:15521
wave excitation by grid in, pseudo-, (E/T), 22:48124
wave excitation by large-amplitude lf waves in, hf, (T), 22:31808
wave excitation from thermal fluctuation at drift wave frequencies in, parametric, 22:44174
wave excitation in bounded, by external fields, 22:13474
wave excitation in column of, using external ring source, (E), 22:24332
wave excitation in compressible, equivalence relations and, 22:1201
wave excitation in current-carrying, electromagnetic, 22:9350
wave excitation in dc magnetic fields by microwaves, 22:7303
wave excitation in discharge, microwave harmonic, (E/T), 22:31834
wave excitation in electron-cyclotron-resonance-heated, research on, 22:39138(R) (COO-1695-10)
wave excitation in gas-discharge, in magnetic fields, (T), 22:3102
wave excitation in inhomogeneous slab, longitudinal, (T), 22:24300
wave excitation in magnetized column of, bulk, (T), 22:29496
wave excitation in magneto-, exothermal, (T), 22:52791
wave excitation in nitrogen, effect of collision on, 22:39106
wave excitation in nonuniform, ion-acoustic, 22:3084
wave excitation in Q devices, ion acoustic, 22:41571(R) (TID-24563)
wave excitation in stellarator-confined, fast magnetoacoustic, 22:7275(T) (MATT-Trans-43)
wave excitation in, amplitude oscillations of large amplitude ion-acoustic, (E), 22:24327
wave excitation in, by upper hybrid resonance microwaves, 22:34636 (AD-665527)
wave excitation in, coupled electromagnetic, (T),

22:29508
wave excitation in, dielectric tensor analysis of, (T), 22:26377 (NP-17429)
wave excitation in, electron cyclotron harmonic, (E/T), 22:52811
wave excitation in, ion acoustic, (E), 22:41619
wave excitation in, ion-acoustic, 22:44119
wave excitation in, ion-heating mechanism of magnetoacoustic, (E), 22:3105
wave excitation in, nonlinear acoustic, 22:48100 (JINR-P9-3980)
wave excitation in, nonlinear processes in, (E/T), 22:31829
wave excitation in, power dissipated from, (T), 22:3039 (CEA-R-3288)
wave excitation in, properties of spatial ion-wave echoes from, (E), 22:11454
wave excitation in, research on ion cyclotron, (E), 22:9308 (TID-24203, pp 73-134)
wave excitation in, temporal and spatial echoes, (T), 22:13478
wave excitation in, upper and lower hybrid modes, 22:11452
wave excitation near electron cyclotron harmonics, longitudinal, (E/T), 22:13489
wave excitation near ion cyclotron frequency, power transfer from Stix coil for, (T), 22:39062 (N-68-11404)
wave focusing in, electromagnetic, (T), 22:11438
wave focusing in, ion--acoustic, 22:50170
wave generation in anisotropic, theory of nonlinear mixed-frequency, 22:1173 (AD-647683)
wave interactions in magneto-, interference of characteristic, 22:34706
wave interactions in magneto-, nonlinear electromagnetic, 22:41600
wave interactions in magneto-, nonlinear electromagnetic, (T), 22:13490
wave interactions in magneto-, nonlinear processes in electrostatic, 22:1211
wave interactions in positive column, microwave frequency electroacoustic and TEM, 22:1177 (IPP-3/54)
wave interactions in turbulent, ion acoustic, (T), 22:9348
wave interactions in turbulent, Langmuir and acoustic, 22:50144 (JINR-P9-3978)
wave interactions in warm magneto-, nonlinear cyclotron harmonic, 22:46142 (SU-IPR-244)
wave interactions in waveguides, electron-beam space charge, (T), 22:34657 (TID-24491, pp 131-6)
wave interactions in weakly turbulent, effects on energy spectrum and frequency of Langmuir waves, (T), 22:3104
wave interactions in, dispersion relations for ion and electron, 22:1241
wave interactions in, effect of Coulomb collisions on nonlinear transverse, (T), 22:50146 (JINR-P9-4040)
wave interactions in, effects of ion--ion collisions on nonlinear Langmuir, (T), 22:19963 (JINR-P9-3689)
wave interactions in, electromagnetic and plasma, (T), 22:5328(T) (NP-tr-1598)
wave interactions in, electromagnetic radiations from longitudinal, 22:5355
wave interactions in, electromagnetic, plasma, and ion--acoustic, (T), 22:13488
wave interactions in, from beam instability, 22:11479
wave interactions in, interference of characteristic, (E), 22:19967 (NP-17342)
wave interactions in, kinetics of three, (E), 22:29490
wave interactions in, nonlinear temperature effects in electron--ion, 22:3072
wave interactions in, plasma and electromagnetic, (T), 22:15531
wave interactions in, positive and negative energy, (T), 22:52778
wave interactions in, random phase approximation for nonlinear,(T), 22:15518 (IIF-LA-6)
wave interactions in, review of nonlinear, (T), 22:44113 (NP-17575)
wave interactions in, transverse and longitudinal, 22:13473
wave interactions in, validity conditions of random phase approximation for nonlinear, 22:29479(T) (NP-tr-1634)
wave interactions with bounded compressible, nonlinear effects in, (T), 22:39098
wave interactions with bounded, electromagnetic, (T), 22:46150
wave interactions with classical and quantum, electromagnetic, 22:11469
wave interactions with cold rotating, cyclotron resonance in, 22:11434
wave interactions with cold, in constant longitudinal magnetic field, circularly polarized electromagnetic, 22:44110 (IPP-6/62)
wave interactions with current-carrying, two-stream instability from uhf, 22:3143
wave interactions with cylindrical and slab, trapped modes of, 22:36910 (N-68-16507)
wave interactions with cylindrical, electromagnetic, (T), 22:46162
wave interactions with electron, echoes from, (E), 22:9319
wave interactions with electrons, ions, and waves in, Hamiltonians for, 22:31820
wave interactions with external electric fields, ion--acoustic, (E), 22:11432
wave interactions with hf discharge, energy transmission in electromagnetic, 22:17655
wave interactions with inhomogeneous, nonlinear effects and energy transformation in, 22:3091
wave interactions with ionized slab, harmonic generation in electromagnetic, (T), 22:36927
wave interactions with magneto-, radiations from, (E/T), 22:31805 (LA-DC-9540)
wave interactions with magneto-, refraction of oblique incident electromagnetic, (T), 22:19968 (NP-17343)
wave interactions with magneto-, stimulated Brillouin effect from, 22:9345
wave interactions with partially ionized, electron density growth in electromagnetic, (T), 22:1246
wave interactions with particles in nonuniform finite-pressure, Alfven, 22:15522
wave interactions with plasmoids, forces of electromagnetic, (T), 22:9323
wave interactions with semi-infinite longitudinally drifting magneto-, electromagnetic, (T), 22:9320
wave interactions with shock-produced, electromagnetic, 22:46153
wave interactions with stellar, self-trapping and red shift in optical, 22:34687
wave interactions with thermal cesium, nonlinear electromagnetic, 22:48131
wave interactions with theta pinch, Faraday rotation in, 22:31842
wave interactions with theta-pinch, Faraday rotation of laser, (E), 22:34613
wave interactions with turbulent, effects on anomalous skin layer, (E), 22:3109
wave interactions with weakly ionized, acoustic wave amplification in, (E), 22:19998
wave interactions with, boundary effects on electromagnetic, 22:11436
wave interactions with, Cherenkov heating of electrons in, (T), 22:29466
wave interactions with, cyclotron echo radiation from, (E/T), 22:6704
wave interactions with, energy absorption in electromagnetic, (T), 22:24284(T) (AD-666147)
wave interactions with, energy exchange in electrostatic, (E/T), 22:17675
wave interactions with, energy transfer in quasi-monochromatic, (T), 22:29494
wave interactions with, equipment for high-power hf electromagnetic, (E), 22:24285(T) (AD-666148)
wave interactions with, harmonics from electromagnetic, (T), 22:13498
wave interactions with, instabilities and wave excitation from electron cyclotron resonance, (E/T), 22:7328(R) (COO-1695-5)
wave interactions with, ion echoes from, (E), 22:13457
wave interactions with, microinstabilities from electromagnetic, (E/T), 22:22156
wave interactions with, microwave harmonics from, 22:34630 (AD-662909)
wave interactions with, multiple echoes of longitudinal, (T), 22:19976
wave interactions with, nonlinear effects from electromagnetic, (T), 22:44121
wave interactions with, nonlinear processes in, 22:11468
wave interactions with, parametric amplification in, (E), 22:29507
wave interactions with, pulse response and determination of collision data in, 22:22167
wave interactions with, radiation pressure on vacuum boundary of, (T), 22:31825
wave interactions with, reflection of harmonic components of electromagnetic, (T), 22:15540
wave interactions with, relativistic refinements and collective theory for electromagnetic, 22:50176
wave interactions with, resonances in, (T), 22:13501
wave interactions with, strong turbulence theory for electromagnetic, 22:46146 (TID-24666, pp 145-56)
wave interactions with, study of acoustic, (T), 22:50152
wave interferometry of phase and amplitude of transmission coefficient of, micro-, 22:44184
wave motions in, effects of constant gravitational and magnetic fields on, (T), 22:47781
wave phenomena in, review of, 22:9321
wave production and amplification in, micro-, 22:5356
wave production and growth in, transition region for ion acoustic, 22:11461
wave production by longitudinal fluctuations in infinite stable, nonlinear, 22:41589
wave production in C stellarator, optimum ion cyclotron, (E), 22:24242 (MATT-Q-25, pp 30-117)
wave production in magneto-, method for, 22:36937(P)
wave production in, electrostatic quasi-linear, (T), 22:34668
wave production in, hybrid ion--electron resonance, 22:5325(R) (ORO-3110-10)
wave production in, nonlinear harmonic at plasma resonances, 22:46143 (TID-24666, pp 76-82)
wave propagation and coupling in inhomogeneous, (T), 22:17640

wave propagation and damping in, large-amplitude ion-acoustic, (E), 22:22179
wave propagation and dispersion in magneto-, hydromagnetic and ion cyclotron, (E/T), 22:36906(R) (N-68-15521)
wave propagation and reflection in inhomogeneous, loss-cone mode of, (T), 22:24340
wave propagation and rotation in hollow-cathode arc discharges, 22:3126
wave propagation below ion cyclotron frequency in, compressional Alfven, (E), 22:26380 (NP-17437)
wave propagation below ion cyclotron frequency, compressional Alfven, (E), 22:22153
wave propagation from localized source of, including Hall effect, MHD, (T), 22:31684
wave propagation in anisotropic homogeneous, distortion of electromagnetic, 22:17645
wave propagation in astrophysical, (T), 22:43784
wave propagation in bounded gyrotropic, multipolar mode of, 22:22165
wave propagation in bounded magneto-, kinetic theory of electromagnetic, 22:11439
wave propagation in bounded streaming, instability of coupled longitudinal and transverse EM modes of, 22:20029
wave propagation in bounded, dispersion relations for hf, (T), 22:50160
wave propagation in cables, electromagnetic, 22:50183
wave propagation in cesium and mercury circular columns, electromagnetic, (E), 22:24338
wave propagation in cold, nonlinear effects of extraordinary, 22:44162
wave propagation in cold, reductive perturbation method for nonlinear hydromagnetic, 22:29512
wave propagation in collision-free, echoes in, (T), 22:1224
wave propagation in collision-free, nonlinear hydromagnetic solitary, (T), 22:7284
wave propagation in collisional, dispersion relations for, (T), 22:24275 (CEA-R-3413)
wave propagation in collisional, finite amplitude, 22:1183 (LA-3770, Paper B3)
wave propagation in collisional, kinetic theory of, 22:24301
wave propagation in collisionless warm magneto-, hydromagnetic, 22:52810
wave propagation in collisionless, CGL approximation for hydromagnetic, 22:5339
wave propagation in collisionless, exact nonlinear undamped, (T), 22:22147 (TID-24331, pp 121-52)
wave propagation in collisionless, fundamental modes of, (E/T), 22:36915 (N-68-22847)
wave propagation in column of, electromagnetic, (T), 22:52808
wave propagation in compressible magneto-, acoustic, (T), 22:24317
wave propagation in compressible unbounded, ray-optical analysis of, (E/T), 22:13505
wave propagation in contact-ionized alkali, low-frequency, (E), 22:24325
wave propagation in coronal, stable and unstable modes of, (T), 22:2736
wave propagation in cosmic-ray, transverse electromagnetic, 22:1212
wave propagation in cylindrical column of, magnetohydrodynamic, (T), 22:50161
wave propagation in cylindrical magneto-, circularly polarized electromagnetic, 22:5341
wave propagation in cylindrical waveguides, measurement of, (E), 22:39077 (RIEC-TR-18).
wave propagation in cylindrical, collisional effects on quasi-electrostatic, (T), 22:50126(R) (EUR-CEA-FC-352)
wave propagation in cylindrical, MHD and helical, 22:3114
wave propagation in degenerate electron liquid, 22:52799
wave propagation in discharge column, ion and drift, (T), 22:26385 (SU-IPR-226)
wave propagation in discharge, electron temperature effects on ion--acoustic, (E/T), 22:13486
wave propagation in discharge, ion acoustic, (T), 22:13485
wave propagation in drifting warm, oblique electromagnetic, (T), 22:22183
wave propagation in drifting, whistler, (T), 22:34691
wave propagation in finite temperature electromagneto-, whistler, (T), 22:36928
wave propagation in finite-length, lower-hybrid resonance, (T), 22:3117
wave propagation in fully ionized, nonlinear effects from electromagnetic, (T), 22:52780
wave propagation in fully ionized, small-amplitude, (T), 22:17671
wave propagation in fully-ionized, small-amplitude, (T), 22:17672
wave propagation in hot cylindrical, in inhomogeneous magnetic field, cyclotron, 22:1178 (IPP-6/60)
wave propagation in hot electron and cold ion, (T), 22:24289
wave propagation in hot, whistler, (T), 22:31855
wave propagation in ideal electron, Doppler effect in, (T), 22:5347
wave propagation in incompressible inhomogeneous, resistively modified hydromagnetic modes in, (T), 22:24357 (MATT-Q-25, pp 223-38)
wave propagation in inhomogeneous anisotropic, dispersion relations for hf, 22:44122
wave propagation in inhomogeneous electromagnetic, (T), 22:13364
wave propagation in inhomogeneous magneto-, electromagnetic, (T), 22:36936
wave propagation in inhomogeneous magneto-, electromagnetic, (T), 22:5362
wave propagation in inhomogeneous, torsional Alfven, (E), 22:39059 (CONF-670840-1)
wave propagation in inhomogeneous, Vlasov equation for electromagnetic, (T), 22:11453
wave propagation in laminated waveguides of, kinetic theory of electromagnetic, 22:5352
wave propagation in magnetically confined, hydromagnetic, (T), 22:5375
wave propagation in magnetized column of, field distribution of forward mode of, (T), 22:48122
wave propagation in magneto, radio, (E), 22:34684
wave propagation in magneto-, adiabatic transformation of electromagnetic, 22:13469
wave propagation in magneto-, Alfven, (T), 22:19854
wave propagation in magneto-, circularly polarized electromagnetic, (T), 22:19966 (NP-17341)
wave propagation in magneto-, collisionless heating in acoustic, (T), 22:13487
wave propagation in magneto-, decay instability of electron, (T), 22:29488
wave propagation in magneto-, eikonal equation for, 22:36942
wave propagation in magneto-, electromagnetic, (T), 22:34675
wave propagation in magneto-, hf electrostatic, 22:11429 (CLM-R-75)
wave propagation in magneto-, hydromagnetic, (E), 22:19928 (RAE-TR-67279)
wave propagation in magneto-, near cyclotron frequencies, circularly polarized, 22:3045 (IPPCZ-74)
wave propagation in magneto-, nonlinear demodulation of, (T), 22:9327
wave propagation in magneto-, nonlinear theory of Koerper resonance, 22:11435
wave propagation in magneto-, plane electromagnetic, (T), 22:26403
wave propagation in magneto-, surface potential, 22:3087
wave propagation in magneto-, transverse electromagnetic, (T), 22:17679
wave propagation in magneto-, vlf electromagnetic, (T), 22:48111
wave propagation in magneto-, vlf, (E), 22:2965
wave propagation in magnetoactive, dielectric tensor and constant for, (T), 22:17639
wave propagation in moving magneto-, electromagnetic, (T), 22:46159
wave propagation in moving, electromagnetic, (T), 22:7296
wave propagation in multicomponent Vlasov, dispersion relations for, 22:17665
wave propagation in nonlinear anisotropic time-dependent, transverse electromagnetic, (T), 22:29516
wave propagation in nonuniform, longitudinal, (T), 22:9339
wave propagation in one-dimensional, nonlinear behavior in, (E), 22:36929
wave propagation in parallel-plate waveguides of, (T), 22:29520
wave propagation in partially filled waveguide of, in infinite axial magnetic field, electromagnetic, (T), 22:1199
wave propagation in partially ionized, thermodynamics and magnetohydrodynamics of, (T), 22:44123
wave propagation in positive column, space-charge, 22:39096
wave propagation in potassium magneto-, Fermi-liquid effects in, (T), 22:24328
wave propagation in rare gas, pulse-excited ionic, (T), 22:13496
wave propagation in rarefied, cylindrical, (T), 22:5369
wave propagation in relativistic Vlasov, dispersion relations for, 22:26393
wave propagation in Scylla IV theta pinch, Faraday rotation measurement of, 22:11404(R) (LA-3831)
wave propagation in slab of, dispersion and stability of TE mode, 22:34704
wave propagation in system with electron beam, confined by magnetic field, 22:44117
wave propagation in transverse magneto-, stability of electromagnetic, (T), 22:31849
wave propagation in turbulent, second sound, (T), 22:9355
wave propagation in unbounded magnetoactive one-component, with anisotropic pressure, (T), 22:3097
wave propagation in uniform magneto-, cyclotron harmonic, (T), 22:26384 (SU-IPR-205)
wave propagation in waveguide-filled, modes of, (T), 22:17644
wave propagation in waveguides of, (T), 22:24336
wave propagation in waveguides of, high-intensity electromagnetic, (E), 22:44138

wave propagation in waveguides, surface, 22:34689
wave propagation in weakly ionized, nonlinear transport in, (T), 22:31851
wave propagation in, (T), 22:7293
wave propagation in, band theory of helicon, 22:29485
wave propagation in, collision-induced instabilities near electron cyclotron harmonics in, (T), 22:7283
wave propagation in, collisional effects on hydromagnetic, (T), 22:9317
wave propagation in, collisional effects on, (T), 22:29491
wave propagation in, comparison of compressional and torsional Alfven, (E/T), 22:17691
wave propagation in, compressional and torsional Alfven, (E), 22:26379 (NP-17436)
wave propagation in, constants of linearized motion for large-amplitude electrostatic, (T), 22:24279 (MATT-Q-25, pp 239-56)
wave propagation in, convection from large-amplitude, (T), 22:24279 (MATT-Q-25, pp 239-56)
wave propagation in, cyclotron harmonic, 22:39105
wave propagation in, cyclotron harmonic resonance, (E/T), 22:39065(R) (N-68-13142)
wave propagation in, dispersion of ion acoustic, 22:31806 (ORNL-4238, pp 67-104)
wave propagation in, echoes at upper hybrid resonance, (E), 22:17658
wave propagation in, effects of increasing frequency on ion--acoustic, (E), 22:1216
wave propagation in, effects of ion--atom collisions on ion-acoustic, (E), 22:31850
wave propagation in, electromagnetic, (T), 22:13452
wave propagation in, electron cyclotron, (E), 22:17637 (IAE-1244)
wave propagation in, electron density effects on electromagnetic, (T), 22:24320
wave propagation in, harmonics in ion, (E/T), 22:41574
wave propagation in, Huygens principle in magnetohydrodynamic, 22:11440
wave propagation in, independence of geometry in ion, 22:1219
wave propagation in, instability of periodic magnetoacoustic, 22:46134 (IAE-1455)
wave propagation in, ionospheric Thomson scattering for analyzing, 22:7274 (MATT-555)
wave propagation in, Landau poles for, (T), 22:44179
wave propagation in, longitudinal ion, (E), 22:17643
wave propagation in, nonlinear demodulation of amplitude-modulated electromagnetic, (T), 22:1226
wave propagation in, nonlinear effects from ion drift, (T), 22:24279 (MATT-Q-25, pp 239-56)
wave propagation in, nonlinear effects of large-amplitude Alfven, (E), 22:19969 (NP-17346)
wave propagation in, nonlinear effects of large-amplitude Alfven, (E), 22:19990
wave propagation in, nonlinear processes of, (E), 22:24345
wave propagation in, quadratic form for collisional drift, (T), 22:24357 (MATT-Q-25, pp 223-38)
wave propagation in, reductive perturbation method for calculating nonlinear, 22:22184
wave propagation in, research on cyclotron resonance, 22:34644 (LFEN-NI.-28-a)
wave propagation in, research on ion acoustic and cyclotron harmonic, 22:29477(R) (SU-IPR-224)
wave propagation in, rotational discontinuity in Alfven, (T), 22:24303
wave propagation in, solitary pulse ion acoustic, 22:11437
wave propagation in, solitary-wave pulse, (T), 22:39117
wave propagation in, two-pole approximation for dispersion relation for, 22:13484
wave propagation near electron cyclotron frequency in magneto-, electromagnetic, (E), 22:19965 (NP-17339)
wave propagation on cold nonuniform columns of, guided, (E), 22:24322
wave propagation on column of, surface, (T), 22:11463
wave propagation on, attenuation and coupling impedance of backward dipole surface, 22:7287
wave propagation theory for, model of nonlinear dispersive equation for, 22:52800
wave reflection and refraction on homogeneous magneto-, electromagnetic, (T), 22:31856
wave reflection and transmission in magnetized slabs of, electromagnetic, (T), 22:17684
wave reflection from boundary of, electromagnetic, 22:1227
wave reflection from moving magneto-, electromagnetic, (T), 22:22162
wave reflection from, oblique electromagnetic, (T), 22:50162
wave reflection in inhomogeneous, nonlocal, (T), 22:17676
wave reflection in perturbed, ion, 22:41591
wave reflection in, cyclotron echo measurement for, 22:31836
wave reflection on inhomogeneous layers of, electromagnetic, (T), 22:44146
wave refraction in cylindrical, electromagnetic, (T), 22:34652 (TID-24491, pp 76-85)
wave refraction on collisionless magneto-, phase and group indices for, (T), 22:36809 (N-68-21904)
wave scattering by cylindrical inhomogeneous, electromagnetic, (T), 22:15538
wave scattering by inhomogeneities in, supraluminous, (T), 22:31839
wave scattering by piece-uniform, with zero layer, (T), 22:24286
wave scattering by turbulent weakly ionized, electromagnetic, (T), 22:36940
wave scattering by turbulent, time-dependent autocorrelation functions for light, (T), 22:29476 (NP-17456)
wave scattering from anisotropic turbulence in, electromagnetic, (E/T), 22:39085
wave scattering in, application to ionospheric irregularities of Brillouin, (T), 22:29333
wave scattering in, continuum theory of incoherent electromagnetic, 22:39113
wave scattering on charged particles in, cross sections for electromagnetic, 22:5327(T) (AD-659875)
wave scattering on cylindrical, electromagnetic, (E/T), 22:50126(R) (EUR-CEA-FC-352)
wave scattering on density fluctuations in alkali, electromagnetic, 22:41602
wave scattering on field-aligned columns of, radio frequency, (T), 22:26412
wave scattering on inhomogeneous collisionless cylinders of, electromagnetic, (T), 22:29492
wave scattering on nonhomogeneous rotating ellipsoidal, electromagnetic, (T), 22:9376
wave scattering on relativistic, depolarization of light, (T), 22:26366
wave scattering on spherical, electromagnetic, (T), 22:26382 (SC-R-68-1691)
wave scattering on spherical, electromagnetic, (T), 22:26383 (SC-R-68-1692)
wave scattering on turbulent oscillations in, electromagnetic, 22:44198
wave scattering on, oblique incidence electromagnetic, (T), 22:19994
wave self-trapping and instability in cold magneto-, hydromagnetic, (T), 22:39132
wave stabilization by random fields in sodium, drift-, (T), 22:7335
wave structure in, variational calculations of magnetohydrodynamic, 22:1194 (LA-3770, Paper F4)
wave trajectories in anisotropic, near resonance, (T), 22:47966
wave transformation and scattering in electric field-immersed, electromagnetic, (T), 22:22163
wave transformation into electromagnetic wave at dielectric boundary, analysis of longitudinal, 22:46151
wave transmission in magnetic quadrupole confined, drift, (E/T), 22:15517 (GA-8074)
wave transmission through hypersonic air, electromagnetic, 22:1196 (SC-CR-67-2710)
wave--particle interactions in weakly turbulent magneto-, (T), 22:26405
wave--particle interactions in weakly turbulent, nonlinear effects of, (T), 22:19989
waves in beam waveguide, normal modes of, 22:11464
waves in boundary of, relation of transverse, surface, and longitudinal, 22:9349
waves in bounded, hot, electrostatic, (T), 22:39109
waves in cold, theory of cyclotron, 22:7322
waves in collisional, nonlinear instabilities from Langmuir, 22:50145 (JINR-P9-3979)
waves in cylindrical, field of electron cyclotron, 22:3125
waves in finite conductivity, model of Alfven, (T), 22:9367
waves in half space, longitudinal, 22:34645 (N-68-10073)
waves in highly ionized, correlation measurements of ion acoustic, 22:41598
waves in inhomogeneous column of, resonances in, 22:52788
waves in inhomogeneous warm magneto-, linear equations for coupled, 22:22174
waves in inhomogeneous, effect of second-order terms on second harmonic and sum and difference frequency generation in, (T), 22:17641
waves in inhomogeneous, fluid-like electron and ion modes of, (T), 22:50186
waves in ionospheric, Landau damping of, (E), 22:13339
waves in isotropic electron, Landau, (E), 22:7294
waves in low-pressure, instability of magneto-acoustic, 22:9333
waves in magneto-, decay instability of Alfven, (T), 22:50158
waves in microparticle, dispersion relations for longitudinal and transverse, (T), 22:29503
waves in periodic slab, gravitational and drift, (T), 22:19960 (CLM-R-83)
waves in rare gas discharge, ion, 22:7321
waves in strongly magnetized inhomogeneous warm, theory of, 22:44143
waves in warm magneto-, review of cyclotron harmonic, 22:3050 (SU-IPR-189)
waves in weakly ionized, parametric excitation of ion, (T), 22:7285
waves in, asymptotic solution of Korteweg--de Vries

equations for nonlinear dispersive, 22:9326
waves in, coupling at shock front between electron--acoustic and ion--acoustic and electromagnetic, (T), 22:39129
waves in, damping and reflection of ion--acoustic, (E), 22:41573
waves in, electron density in acoustic, (E), 22:11422
waves in, energy density of acoustic, (T), 22:5363
waves in, evolution of nonlinear ion acoustic, (T), 22:7281
waves in, finite-amplitude resistive drift, 22:34672
waves in, losses caused by collisional drift, 22:3132
waves in, magneto-gravity, (T), 22:39083
waves in, method for solution of Korteweg--de Vries equation for, 22:3053
waves in, modes of internal magneto-gravity, 22:48101 (N-68-23990)
waves in, modification to Harris quasi-linear equations for, 22:9338
waves in, negative cyclotron resonance absorption, 22:39107
waves in, nonlinear effects of large-amplitude, 22:41597
waves in, nonlinear kinetics of ion, 22:41617
waves in, numerical solutions for linear confining potential, (T), 22:31846
waves in, relativistic MHD Alfven, 22:52607
waves in, self-trapping and self-focusing of electromagnetic, (T), 22:31813
waves in, stability of electrostatic drfit, (T), 22:44141
waves in, structure of MHD, (T), 22:24108
waves in, summaries of conference papers on, 22:7311
waves with finite amplitude in, drift, (T), 22:7301
x-ray emission from linear turbulent-heated mirror-confined, (E), 22:52764
x-ray emission from solar, (E), 22:13172
x-ray production from bremsstrahlung in SCO X-1, (T), 22:5005

PLASMA ACCELERATORS
atom and ion velocity measurements in homopolar, 22:7314
boundary effects on operation of, (E/T), 22:46139(R) (N-68-23572)
charged-particle interactions with current layers in, (T), 22:26396
current distribution in nonequilibrium J x B devices, (T), 22:7298
current distributions in coaxial, 22:46160
current sheets in, steady one-dimensional motion of, (T), 22:52775
description, 22:31783
design utilizing gas-cooled electrodes of low work function material, 22:22186(P)
development for propulsion, 22:12216
development for space propulsion, 22:13303
development of, 22:5302(R) (JUL-494-PP)
development of coaxial high-energy, 22:1252 (LA-3770, Paper E2)
development of microwave-energized, for operation near cyclotron resonance, 22:1200
development of pulsed gun, 22:11404(R) (LA-3831)
electric arc stability in thermionic rail, (T), 22:43967
electric potential distribution for, (E), 22:26420
electrode erosion in pulsed, (E), 22:50190
electrode erosion in pulsed, cathode, (E), 22:50191
energy absorption in high-frequency, 22:9311
fluid flow in, with progressive waves, 22:29326
gas properties in coaxial, analysis of, (E), 22:17611 (INR-P-861/XVIII/PP)
gas properties in coaxial, probe measurements of electron temperature, 22:17631 (INR-P-851/XVIII/PP)
heat losses in pulsed, 22:44154
impurities in induction-type, analysis of, 22:20011
ion velocity measurements from rod, using monochromators, 22:34590 (INR-P-883/XVIII/PP)
ionization kinetics in crossed field, (E), 22:34688
ionization phenomena in coaxial and parallel-plate, pre-, 22:1253 (LA-3770, Paper E5)
jet angular distribution from coaxial electrodynamic, (E), 22:29525
jet density and temperature from pulsed coaxial, 22:52756
jet density profile measurements from coaxial, 22:34585 (AD-660588)
jet diagnostics from conical z-pinch, using Faraday-cup ion and double Langmuir probes, 22:1159 (LA-3770, Paper E9)
jet diagnostics in coaxial, spectra of cesium, 22:1158 (LA-3770, Paper E7)
jet diagnostics in coaxial, transient argon spectra, 22:1157 (LA-3770, Paper E6)
jet distribution measurements in coaxial, 22:52743
jet dynamics in pulsed, (T), 22:29518
jet motion behind electromagnetic, (T), 22:5365
jet properties from focused hydrogen, 22:36912 (N-68-16784)
jet properties in coaxial conductivity and temperature, 22:31796
jet properties in propagation current sheet, argon, 22:31843
jet rotation in homopolar, (E), 22:19996
jet velocity and magnetic field gradients in MHD, effects on operation of, 22:34646 (N-68-10502)
jet velocity in induction, conductivity determination in, 22:34674
model for coaxial discharge, snowplow, 22:1186 (LA-3770, Paper C7)
nozzle electrode design for, 22:34690
operation of coaxial, gas conditions in, 22:44130
operation of conical electrode, 22:5354
operation of hf, with static magnetic field gradient, 22:17697
operation of rail-type, in dense gases, 22:13459
oscillations in magnetoplasmadynamic, (E), 22:43966
performance and properties of coaxial, (E), 22:17610 (INR-P-850/XVIII/PP)
performance characteristics, (T), 22:9140
performance of coaxial, 22:31812
performance of coaxial, spectral analysis of, 22:36913 (N-68-17070)
performance of high-frequency, with laser preionizer, 22:9310
performance of MPD thrustor for space applications, 22:36909 (N-68-16396)
performance of steady-state, using radioisotope heat sources, 22:31862
performance of, loss effects on, 22:34635(R) (AD-665142)
performance using curved nozzles, 22:11460
performance using self-consistent field and electron cyclotron resonance, 22:52772 (CONF-671127, pp 261-6)
pinch effect in deuterium and deuterium--tritium, neutron emission in, 22:1279 (LA-3770, Paper C2)
pinch effect in, formation and breakup of plasma focus, 22:1185 (LA-3770, Paper C5)
pinch focusing of, neutron and x-ray production in, 22:1281 (LA-3770, Paper C6)
plasma properties in coaxial, hydrogen, (E), 22:29500
plasmoid instabilities in, ion--cyclotron, (T), 22:34720
power supplies for high-voltage, design of, 22:24249(T) (AD-666140)
properties of coaxial, for DECA II device, 22:50126(R) (EUR-CEA-FC-352)
properties of conical electrode, (T), 22:39120
properties of dense plasma focus discharge, 22:19992
properties of electron bombardment ion engine, 22:46138 (N-68-23335)
properties of rf traveling-wave, gas, 22:31858
research on MPD thrustors, 22:36908 (N-68-16067)
shock production in coaxial, properties of, 22:1191 (LA-3770, Paper E8)
sources for, design and performance of rf, 22:34640 (AD-665895)
spokes in coaxial and parallel-plate, properties of, 22:1189 (LA-3770, Paper E3)
stability in plasma betatron, negative mass, (E), 22:20033
theory of electrodynamic, with inductive energy storage, 22:39119
thermal losses in coaxial pulsed, 22:44172
use as highly-stripped heavy ion source, 22:18065
use of electron cyclotron resonance, for space vehicle propulsion, 22:13301
use with fast z-pinch, for dense plasma production, 22:1250 (LA-3770, Paper C1)
vortices and their magnetic fields inside a conical theta-pinch, 22:31837

Plasma Diodes
see Thermionic Cells

PLASMA JETS
acceleration to thermonuclear velocities, methods for, (E), 22:17625
angular distribution from coaxial electrodynamic accelerators, (E), 22:29525
compression of, self-, (E), 22:39095
current and potential distributions in MPD, (T), 22:9182
diagnostic methods for, comparison of Langmuir-probe and microwave, 22:1165
diagnostics from coaxial accelerators, density profile, 22:34585 (AD-660588)
diagnostics from pulsed coaxial accelerators, density and temperature, 22:52756
diagnostics from rod injectors, monochromator measurements of ion velocity, 22:34590 (INR-P-883/XVIII/PP)
diagnostics in coaxial accelerators, conductivity and temperature, 22:31796
diagnostics in coaxial accelerators, probe measurements of electron temperature, 22:17631 (INR-P-851/XVIII/PP)
diagnostics in electric arcs, electron and ion temperature, (E/T), 22:9298
diagnostics in longitudinal magnetic fields, (E), 22:19945 (CLM-R-72)
diagnostics in wind tunnels, sheath, 22:11416
diagnostics of argon and nitrogen, by microwave interferometry, 22:34612
diagnostics of argon discharge, using continuum probes, 22:34593 (TID-24491, pp 99-109)
diagnostics of argon, electron and ion temperature, 22:34598
diagnostics of argon, techniques for temperature, 22:3033
diagnostics of argon, temperature distribution, 22:17635
diagnostics of argon, use of laser interferometers for electron density, 22:5314

- diagnostics of argon, using Thomson scattering, 22:24271
- diagnostics of argon, velocity profiles and nonequilibrium temperature from spectra, 22:7272
- diagnostics of argon--hydrogen, radial temperature distribution, (E), 22:17633
- diagnostics of argon--potassium, using electric currents, 22:34608
- diagnostics of cesium MHD arc, (E), 22:36948
- diagnostics of collisionless shock-produced, 22:9294
- diagnostics of collisionless, Langmuir probe use for, (E/T), 22:11426
- diagnostics of dense argon, using electrostatic probes, 22:1152(R) (AD-646891)
- diagnostics of dense high-temperature argon, using laser interferometers, 22:29471
- diagnostics of heterogeneous low-temperature, by asymmetric self-reversed spectral lines, 22:52755
- diagnostics of induction-coupled, in air and argon, spectral, (E), 22:22127
- diagnostics of inductive argon, radial temperature distribution, 22:34591 (RT/FI-(68)12)
- diagnostics of laminar nitrogen, temperature determination from electric conductivity measurements, 22:36896
- diagnostics of low-density, ion velocity distribution, 22:46128
- diagnostics of pulse, spectroscopic, 22:31799
- diagnostics of sheath around flat plate, ion-density proble for, (T), 22:24265
- diagnostics of supersonic argon, temperature and density, 22:5319
- diagnostics of turbulent, method for, 22:39040 (N-68-11059)
- diagnostics of, asymmetrical probe methods for, 22:22141
- diagnostics of, laser scattering measurements of electron density profiles, 22:29468
- diagnostics of, probe for velocity measurements, 22:36888 (N-68-16527)
- diagnostics of, techniques for local thermodynamic properties, 22:48090
- diagnostics of, use of double electrostatic probes for, 22:13446
- diagnostics of, using Faraday-cup ion and double Langmuir probes, 22:1159 (LA-3770, Paper E9)
- diagnostics using microwave techniques, 22:52748
- diagnostics using pilot tube--electric probe combination, 22:9286
- diagnostics using spectroscopic methods, 22:15516
- diffusion of argon and helium, in free air, (E), 22:22155
- effects on graphite and graphite composites, ablative, 22:52230
- electric discharge between cold electrodes in supersonic, physical picture of, 22:43971
- enthalpy and pressure measurements in, at 4000 to 15,000°K, probes for, 22:39044(T) (SC-T-68-1524)
- excitation temperature of ultrasonic rarefied, 22:20003
- excited states in argon, equations for rate coefficients of, 22:48127
- flow around charged bodies, kinetic theory of, 22:31826
- flow in azimuthal magnetic fields, contraction in, (T), 22:29515
- flow past spheres, potential distribution around, (T), 22:11462
- heat transfer from, to cylinder walls, (E/T), 22:11456
- heat transfer in circular tube, argon, helium, and nitrogen, 22:7280
- heating of argon, by rf fields, (E/T), 22:13434
- impurities in induction-produced, analysis of, 22:20011
- injection along double-bend magnetic field, depolarizing currents in, 22:1190 (LA-3770, Paper E4)
- injection into vacuum chambers, properties of, 22:22171
- interactions of pulsed argon, with transverse magnetic fields, 22:52790
- interactions of, thermalization in, (E), 22:52820
- interactions with axisymmetric magnetic cusp field, 22:36920
- interactions with cooled bluff body, (E/T), 22:39134
- interactions with dipole magnetic fields, boundary of, (E), 22:36934
- interactions with electromagnetic fields, with finite tensor conductivity, 22:39082
- interactions with magnetic fields, properties of, (E), 22:5364
- interactions with metals, destruction in, 22:44124
- interactions with transverse magnetic fields, annihilation from, 22:1236
- ion collection by cylinders in stream of, 22:9334
- motion behind electromagnetic accelerators, (T), 22:5365
- motion in electric arcs, longitudinal, (E), 22:15533
- motion in electric arcs, longitudinal, (E), 22:15534
- oscillations in cesium, electrostatic, (E), 22:29493
- oscillations in, random processes effects of temperature, 22:36891
- performance in deposition of metal coatings, on metals, 22:19502
- production by microwave ionization, 22:34713 (CLM-R-80)
- production by transverse magnetic field cutoff, properties in, 22:44114 (NP-17581)
- production of alkali metal, in vacuum, (E), 22:24351(T) (AD-666155)
- properties of hydrogen target, for charge exchange studies, (E), 22:29489
- properties of hydrogen, from coaxial electrodynamic injectors, (E), 22:29500
- properties, summaries of conference papers on, 22:7165
- radiation effects on man from medical use of, 22:51653
- radiations from hf argon discharge, calorimetric measurement of, 22:17634
- reactions with bodies in magnetic fields, 22:9335
- reactions with cylindrical plates, electron density measurements in, 22:9291
- research on, 22:5303(R) (NP-17128)
- spectra in coaxial accelerators, transient argon, 22:1157 (LA-3770, Paper E6)
- spectra of argon in coaxial guns, correlation with gun performance, 22:36913 (N-68-17070)
- spectra of argon, visible, 22:7320
- spectra of cesium, in coaxial accelerators, 22:1158 (LA-3770, Paper E7)
- spectra of nitrogen, determination of local temperatures from, (E), 22:34601
- spectra of under-expanded argon, 22:3034
- spectral line profiles of Ar II in flute argon, 22:44108
- stability in magnetic mirrors, 22:44194
- stability in traveling-wave ultrahigh-frequency field in waveguide, 22:44190 (NP-17559)
- stability of stationary, hydromagnetic, (T), 22:22193
- temperature in argon induction, spectroscopic measurement of, 22:44084 (INR-906)
- theory of hydrodynamic beam instabilities from, nonlinear, 22:46170
- transport using two-dimensional multipolar magnetic fields, 22:9370
- use for determination of traces by atomic absorption, 22:4000 (RT/CHI-(67)15)
- use for preparation of tantalum nitrides, 22:15237(T) (MLM-1475(tr))
- use in emission spectroscopy, 22:7975(T) (ORNL-tr-1826)
- use in nuclear technology, 22:13460
- use of 10-kW induction coupled, for microspheroidizing ceramics, 22:17161 (UCRL-17896)
- velocity measurement method for, theory of induction method of, 22:41561
- velocity measurements in induction machine, conductivity determination from, 22:34674
- velocity measurements of, probe for, 22:36888 (N-68-16527)
- wave scattering on, spectra of electromagnetic, (T), 22:19987

PLASMA, SOLID-STATE
- bibliography on, 22:3144 (MATT-BIB-1)
- collective description of electron in generalized RPA, 22:3066
- diagnostics of pulsed high-density, in linear pinch, 22:1282 (LA-3770, Paper H5)
- diffusion in crossed-fields, (E), 22:24277 (MATT-Q-25, pp 166-82)
- electron beam interactions with whistlers in, (E), 22:24277 (MATT-Q-25, pp 166-82)
- electron beam interactions with, theory and observation probabilities for nonlinear, 22:31923 (BNL-50083, pp 155-66)
- kinetics of quantum, nonlinear interactions in, (T), 22:31807 (ORNL-TM-2101)
- oscillations in electron beam reactions with aluminum foils at 34 keV, 22:7304
- photon beam interactions with, theory and observation probabilities for nonlinear, 22:31923 (BNL-50083, pp 155-66)
- pinch effect in, Megagauss z, 22:11448
- production and properties of, review of, 22:13466
- properties of gaseous and solid-state, (E), 22:24311
- transport theory in strong magnetic fields, 22:50135
- wave coupling in, cyclotron and spin, 22:3145
- wave propagation in indium antimonide, helicon, (E/T), 22:1283
- wave propagation in, low-frequency limit of helicon, 22:5430
- wave propagation in, normal to magnetic field, (T), 22:1284

Plasma Thermocouple
- see Thermionic Cells

PLASMIN
- radiation effects on activity of, in guinea pigs, acute x, 22:49281

Plasminokinase
- see Streptodornase--Streptokinase

PLASTIC DEFORMATION
- see also Creep
- effects on martensitic transformations in β brass, 22:34066 (ORO-3395-5)
- mechanisms in bcc metals, 22:17103(R) (GA-7978)
- rates in thin tubes, effects of pressure and stress on, 22:28810

PLASTIC FLOW
- see also Fluid Flow

Plastic-Moderated Assembly
- see Critical Assemblies

PLASTICITY
- numerical analysis of strain distribution of materials during, effects of stress and strain variations on, 22:4775 (WAPD-TM-712)

PLASTICS

- (See also specific compounds used as plastics.)
- see also Ethylene Polymers
- see also Laminates
- see also Polyoxymethylenes
- see also Styrene Polymers
- analysis for antimony and gold, activation, 22:27558
- analysis for halogens, 22:30436(R) (UCRL-50006-68-1)
- book: Modern Composite Materials, 22:34007
- charge states of fast ions in, relation to electronic structure of ions, 22:36726
- coatings of electric insulating Phenoxy, performance of fluidized-bed-deposited, 22:11100 (BDX-613-100)
- combustion and smoldering of, opacity of smokes from, 22:16374 (UCRL-70794)
- conference on uses in Pacific Northwest, Richland, Washington, July 14 to 16, 1966, 22:26097 (CONF-660706)
- fracture toughness testing of glassy, 22:26100 (UCRL-17911)
- iodine retention properties of coatings of, 22:5963
- light output of Naton 137 and Pilot B, 22:40414
- mechanical properties of Fiberglas laminated, effect of glass beads and powdered quartz additives on, 22:11099 (AERE-R-5504)
- neutron propagation in reinforced, (T), 22:29842
- preparation of, use in measuring radiation effects on organic tissues, 22:6354(P)
- properties evaluation for use as fuel handling magazine, 22:26037 (CONF-660706-, pp 91-103)
- properties of, 22:11047(T) (JPRS-42628)
- properties of, tabulations of electrical, mechanical, and physical, 22:4731
- radiation curing of reinforced, electron, 22:11102
- radiation effects on, 22:26097 (CONF-660706)
- radiation effects on cords of, 22:47189(P)
- radiation effects on curing of glass-fiber-reinforced, 22:10268
- radiation effects on elasticity of, electron, γ, and x, 22:21643
- radiation effects on electrical-discharge patterns of plates of epoxy, electron, 22:28974
- radiation effects on films of, γ, 22:33374(T) (CEA-tr-X-635)
- radiation effects on flexible, for packaging irradiated foods, 22:11103
- radiation effects on infrared spectra of, 22:14518(R) (ORO-2418-4)
- radiation effects on Lexan, track formation from charged particle, (T), 22:31953
- radiation effects on molecular structure of, ir studies of, 22:48879(R) (ORO-2418-5)
- radiation effects on properties of, neutron, 22:15270
- radiation effects on stability of, γ, 22:19466
- radiation effects on, review of, 22:26098 (CONF-660706-, pp 55-61)
- radiation mass stopping power of, gamma, (E/T), 22:50042
- radiation resistance of pipes of, γ, 22:45104
- radiation resistance of, effects of composition on, 22:48890
- radiation resistance of, for use as electric insulators, 22:25375 (ORNL-4229, pp 183-7)
- radiation transmission through, 17-keV x, 22:38261(R) (SC-CR-67-2845)
- radioactive contamination of surfaces of, development of solution for removing, 22:38289
- radioinduced free radicals in, ESR studies of pulsed electron, 22:34130 (NP-17353)
- radioinduced graft polymerization of Celcon or Delrin filaments onto styrene, effects of N,N-dimethylformamide or methanol on rate of γ, 22:8094(T) (AEC-tr-6908, pp 42-7)
- radioinduced graft polymerization of Delrin filaments onto styrene, effects of acids, alkali, and heat on products of γ, 22:8095(T) (AEC-tr-6908, pp 48-55)
- radioinduced scintillations in NE-213, NE-213M, and NE-218, time dependence of gamma and neutron, 22:40415
- scintillation decay time of Naton 137 and Pilot B, 22:40414
- scintillation efficiency of phosphors of, for 1.3-MeV protons and 0.624-MeV electrons, 22:36061
- smoke properties of various types of, 22:45357(R) (UCRL-50007-68-1)
- strain distribution in, numerical analysis of, 22:4775 (WAPD-TM-712)
- thermal defects in tissue-equivalent, used for calorimetric dosimetry, experimental evaluation of, 22:28176 (BNWL-SA-1760)
- thickness of tubes of, design of radiometric gage for measuring, 22:25690(P)
- thickness variations of steel plate-sandwiched sheets of, determination by radiography, 22:277
- ultrasonic sound wave attenuation in, for use in lens materials testing devices, 22:782 (SCL-DR-67-110)
- use for fast neutron flux measurements by particle track detection, 22:40364
- use for personnel neutron dosimetry based on alpha particle, fission fragment, or recoil nuclei track registration, 22:21361
- use of bags of, for air sampling, 22:43303 (LA-DC-9056)
- use of polycarbonate, for uranium and plutonium determination in tissues and water by particle track analysis, 22:16883
- uses at Hanford, review of, 22:26099 (CONF-660706-, pp 111-23)
- uses in plutonium scrap recovery plant, 22:27855 (ISC-SA-22)
- plastic--wood, bonding and mechanical fastening of, 22:15268 (ORO-2945-9)
- plastic--wood, commercial development and uses of, 22:23041
- plastic--wood, mechanical and physical properties of, 22:23041
- plastic--wood, radiation curing of, economics of, 22:2140
- plastic--wood, radioinduced formation of, 22:23055
- plastic--wood, radioinduced polymerization in, gamma, 22:19683
- plastic--wood, radioinduced production of, review of, 22:108
- plastics--wood, conference on, Sacramento, California, June 9, 1967, 22:42751
- plastics--wood, radiation processing of, review on, 22:35866
- plastics--wood, radioinduced formation of, 22:25371 (CONF-660706-, pp 195-9)
- plastics--wood, radioinduced formation of, 22:26097 (CONF-660706)
- plastics--wood, radioinduced formation of, 22:42751
- plastics--wood, radioinduced production of composite, survey of, 22:8854

PLATES

- aerodynamic motion of rectangular, during free-fall drop tests, 22:51193 (SC-RR-68-132)
- beam scattering by border of, at normal incidence, 22:18052
- bending of circular, under symmetrical loads and temperatures, mathematical methods for solution of, 22:10154 (TID-23984)
- bending of circular, under symmetrical variable load, (T), 22:27969
- bending of circular, under uniform load on concentric circle, (T), 22:27968
- bowing of nonhomogeneous, from nonuniform heating, (T), 22:30368
- charged-particle energy losses in transit through three-layer, 22:24769
- deflections and stresses in perforated circular, effect of uniform lateral pressure on, 22:14618
- design of circular, stress analysis in, 22:10154 (TID-23984)
- elastic properties of square pitch perforated, effect of uniform lateral pressure on, 22:14618
- electrostatics of conductive spheres on charged conductive planes, 22:7404 (ORNL-4193)
- fabrication of metal, with small holes, electrolytic method for, 22:10166(T) (ORNL-tr-1827)
- fabrication of tube, for reactor pressure vessels, 22:10474(P)
- failure pressure limits for flat metal, in flowing air and helium, (E/T), 22:42389 (N-68-16227)
- flow of sodium over, drag in MHD, 22:9151
- flow past semi-infinate flat, MHD, (T), 22:2911
- flow past thin, with inwardly diffusing magnetic field, MHD, (T), 22:2912
- fluid flow over accelerated infinite flat, velocity distribution for MHD, (T), 22:17448
- gamma penetration through, calculation by invariant imbedding, 22:24372
- gamma slant penetration of concrete slab, calculation of 1.25-MeV, 22:31890
- heat transfer for turbulent flow over flat, analysis of transient, (E/T), 22:6536
- heat transfer in, characteristics in random temperature field in, 22:21277
- heating of leading edges of flat, effects of induced pressure on, 22:37929 (SC-RR-68-133)
- inspection of, equipment and method for radiographic, 22:19083(P)
- magnetogasdynamic boundary layer on flat, heat-transfer analysis of, 22:11306
- performance of magnetically driven flyer, effect of varying capacitor bank parameters on, 22:12189 (SCL-DR-67-116)
- photon transport in thin-slab geometry, successive-scatter approximation of, 22:31893
- stability of flat, aerodynamic testing of, 22:18666 (SC-RR-67-778)
- stability of flat, subsonic wind tunnel testing of dynamic, 22:18664 (SC-DC-67-1951)
- stress analysis of involute, one- and two-dimensional transient, (T), 22:24925(R) (ANL-7427)
- stress analysis of perforated, computer program for, 22:28031 (GEMP-598)
- stress distribution in two interconnected multiregion, matrix-inversion analysis of, (E/T), 22:10072 (ANL-7162)
- structure of intermediate-state superconducting, description of dynamic lamellar, 22:2990
- temperature at surface of strip-heated flat, variations in, (T), 22:6535
- temperatures in dual-layered, computer calculation of nuclear explosion-induced, 22:2259(R) (AD-646858)

  thermal stress in composite, analysis of, 22:28799
  vibration in reactors of flat, coolant flow induced, 22:7927
PLATING
  (See also specific materials being plated or being deposited.)
    see also Coatings
    see also Diffusion Coatings
    see also Electrochemical Analysis
    see also Electrochemistry
    see also Electroplating
    see also Metal Spraying
  mechanisms of chemical vapor, relations with ablation and combustion, 22:6959
  method for reactor materials, review of, 22:12956
  methods for A-286 alloy surfaces, 22:19477 (NASA-SP-5090)
  methods for electronic materials, 22:34030
  methods for reactor materials fabrication, review of, 22:217
  methods for reactor materials, review, 22:21676
  methods for stainless steels, 22:19477 (NASA-SP-5090)
  methods of chemical vapor, 22:43636
PLATINUM
  abundance in photosphere, (E), 22:23934
  alpha particle channeling in foils of, use in defect studies, 22:41681
  analysis for gold, iridium, osmium, and ruthenium by neutron activation methods, 22:27570
  analysis for iridium, palladium, and silver by neutron activation methods, 22:33276
  analysis of high-purity, by neutron activation methods, 22:7992(R) (NBS-TN-428)
  analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
  atomic weight of, based on carbon-12 = 12, 22:42698
  bremsstrahlung spectra from beta-excited, (E), 22:13248
  cleaning for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
  complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
  complexes, radiolysis of solutions of, pulse, 22:25433
  corrosion by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
  corrosion of soot-coated, by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
  corrosion of, effects of radiation and irradiated solutions on electrochemical, (E), 22:28735 (EURAEC-2010)
  crystal lattice vibrations from inelastic neutron scattering, (E), 22:26764 (SGAE-PH-60/1967)
  crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  decontamination of plates of, from plutonium-239 by immersion in concentrated hydrochloric acid, 22:14574
  determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by atomic-absorption spectroscopy using induction plasma, 22:1985
  determination by photon activation methods, 22:27589
  determination by thermal neutron activation method including radiochemical separation by exchange with mercury, 22:27575
  determination in carbonaceous and enstatite chondrites, activation, 22:22
  determination in gallium by neutron activation methods, 22:42614
  determination in various materials by selective extraction and activation methods, 22:14454
  determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
  determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
  determination of trace amounts of, by neutron activation methods, 22:4058
  diffusion of deuterium and hydrogen in monocrystalline, at 350 to 670°C, 22:35813
  distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  effects of electrochemical activation on electrodes of, 22:37707 (BNL-50082, pp 27-39)
  effects of electrodes of, on deuterium separation factor in hydrogen electrode reactions, 22:14499
  effects of film coatings of, oxidation of zirconium, 22:21667
  effects on corrosion of iron and low-alloy and rimmed steels by carbon dioxide, 22:52135
  effects on deuterium exchange between benzene and heavy water, catalytic, 22:27649
  effects on deuterium exchange reactions with organic compounds, 22:35819
  effects on deuterium self-exchange reactions in labeled toluene, catalytic, 22:33340
  effects on direct titrimetric determination of molybdenu using ceric sulfate, 22:4025
  effects on mitosis in Escherichia coli, 22:23397(R) (COO-1704-4)
  effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
  effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
  effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
  effects on stainless steel corrosion by boiling aqueous magnesium chloride, 22:10912(R) (EURAEC-1932)
  effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
  effects on titrimetric determination of uranium, 22:22972
  electric conductivity of fine wires of, quenched in superfluid helium, 22:2608(R) (COO-1247-7)
  electron beam scattering by single-crystal surface of, properties of specular 10- to 500-eV, (E), 22:43937
  electron binding energies in, (E), 22:13540 (UUIP-553)
  electron reactions at 500 MeV with, cross sections for trident and pair production in, (E), 22:26593
  electron reactions at 500 MeV, ionization chamber spectrometer and scintillation and Cherenkov counter study of trident, quartet, and bremsstrahlung production in, (E), 22:26547 (SLAC-PUB-330)
  emission spectra excitation in, by β particles of carbon-14 or promethium-147, 22:27844
  gamma incoherent scattering in, (E), 22:9072
  iron-57 lattice dynamics in, from Moessbauer fraction measurements, 22:46212
  Knight shift of platinum-195 in, effects of temperature on NMR spectra of, 22:50234
  krypton depth distribution in, after sputtering at low energies, 22:52893
  meson (π) reactions with, 5g—4f x rays from, 22:47838
  molecular beam scattering at 0.1 to 7.5 keV, target temperature effects on, (E), 22:19765
  molecular beam scattering from, argon, helium, and neon, 22:982
  neutron capture by, γ spectra from thermal, (E), 22:27156
  neutron differential elastic and inelastic scattering cross sections at 0.3 to 1.5 MeV, angular distributions for, (E/T), 22:5810 (ANL-7363)
  neutron differential elastic and inelastic scattering cross sections for, angular distributions for fast, (E), 22:20578 (WASH-1079)
  neutron elastic and inelastic scattering at 0.3 to 1.5 MeV, angular distributions for, (E), 22:27109
  nuclear-magnetic-resonance spin echoes, 22:1347
  performance of wire markers of, for cation diffusion in oxide surfaces on niobium, 22:739
  photofission at 300 to 1600 MeV, cross sections and fragment yields for, (E/T), 22:5856
  photofission cross section at 0.1 to 1.6 GeV, (E), 22:22586 (NP-17325)
  photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
  production of particles of controlled size of, 22:35775(R) (NYO-1158-25)
  properties for use in gamma thermometers, 22:43055
  properties for use in vacuum systems, 22:16828
  proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
  proton reactions at 2.8 GeV, production of mesons ($K_2{}^0$) and γ radiation from, (E), 22:34856
  radiation damage and recovery, effects of defect doping on low-temperature neutron, (E), 22:3191
  radiation damage at 90°K in, effects of impurities and vacancies on rate of electron, (E), 22:31933 (BNL-50083, pp 348-58)
  radiation damage in foils of, effects of vacancies and impurities on 90°K electron, (E), 22:3195
  radiation effects on corrosion of electrodes of, in acid and basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
  radiation effects on density and yield strength of, fast neutron, (E), 22:19575 (BNWL-455, Paper 5.1-10)
  radiation effects on interstitials of, 22:712(R) (CU-3551-9)
  radiation effects on, annealing effects on fast neutron, 22:15141 (BNL-50057, pp 79-100)
  radiation effects on, deuteron, 22:8795
  radiation effects on, relations with energy, 22:21735
  radioinduced defects in crystals of, annealing effects on neutron, 22:2663 (CU-3551-7)
  radioinduced defects in, effects of plastic deformation and substitutional gold on production and recovery of deuteron, 22:31949
  radioinduced defects in, effects of pre-irradiation treatments on production and recovery from deuteron, (E/T), 22:31928 (BNL-50083, pp 291-302)
  radioinduced defects in, effects of preirradiation treatments on production and recovery of deuteron, (E), 22:46202
  radioinduced defects in, rate of production of electron, review, 22:17820

  rare earth diffusion out of, 22:29795
  reactions of aqueous, with alumina of high surface area, 22:4066(R) (COO-1354-13)
  reactions of liquid, with transition metal carbides, 22:12287
  rubidium atom reactions on surfaces of, ionization coefficients for, (E), 22:52496
  separation from acid solutions by selective extraction using copper diethyldithiocarbamate, 22:14454
  separation from gold by ion exchange, 22:12375
  separation from gold, iridium, palladium, and silver by paper chromatography, 22:4248
  separation from mixture of metals by ring-oven method, 22:18880
  separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
  separation from titanium by paper chromatography, 22:25257
  separation from tungsten by paper chromatography, 22;25257
  separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
  separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
  shielding properties of, during tantalum-182 therapy of tumors, 22:47540
  solvent properties of monocrystalline, for deuterium and hydrogen at 350 to 670°C, 22:35813
  sorption by manganese dioxide from nitric acid, 22:157
  sorptive properties for ionic radioisotopes in aqueous solutions, effects of acidity on, 22:35767(T) (AEC-tr-6776)
  sorptive properties for oxygen, 22:12270(R) (COO-1383-1)
  sorptive properties for radioactive ions, effects of surface passivation on, 22:21072
  sorptive properties for radioisotopes, 22:4129
  sorptive properties for rare earth ions, 22:47109 (AERE-R-5323)
  sorptive properties of powders of, for oxygen, isotopic exchange studies of, 22:18753
  sorptive properties of surfaces of electrodes of, for oxygen, electrochemical kinetics of, 22:27626 (MIT-905-108, pp 33-62)
  sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
  stability at high temperatures, 22:37900 (BNL-50082, pp 153-80)
  surface reactions of anodes of, in persulfate production, 22:7971(T) (BNL-tr-168)
  thermal conductivity, 22:8731 (ORNL-4170, pp 37-41)
  thermoelectric power of, effect of pressure on, 22:40993(R) (COO-1198-534)
  use of thin films for fission fragment detection by particle tracks, 22:40364
  use of thin films of, in alpha autoradiography of plutonium distribution in reactor fuel elements, 22:44942
  x-ray absorption in, photoionization cross sections for ultrasoft, (E/T), 22:24475
  x-ray fluorescence spectra of, semiconductor detectors for measuring, 22:19096 (INR-820/II/PS)
  x-ray spectra from beta-excited, (E), 22:13248

PLATINUM ALLOY COUPLES
  Pt/Pt--Rh, design and performance of, 22:36453 (LMEC-Memo-68-10)

PLATINUM ALLOYS AND SYSTEMS
  cleaning for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
  fabrication and properties of, for large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
  Ag--Cd--In--Pt, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
  Ag--Cd--In--Pt, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
  Ag--Cd--In--Pt--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
  Ag--Pt, corrosion--polarization and corrosion--kinetic parameters of, radioactive methods of determining, 22:2575
  Al_2O_3--Pt, deuterium exchange between hydrocarbons, effects on, 22:4144
  B--Pt, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  B--Pt--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Ce--La, magnetic susceptibility of intermetallic $CePt_2$ and $CeLa_5$ at 80 to 300°K, (E), 22:15599
  Ce--La, platinum-195 NMR at 80 to 300°K in intermetallic $CePt_2$ and $CePt_5$, (E), 22:15599
  Ce--Pt, conduction-electron polarization at inequivalent Pt sites in, (E/T), 22:9460
  Ce--Pt, phase studies of, 22:19566
  Ce--Pt, thermal capacity and magnetic susceptibility of Laves phase $CePt_2$ at low temperatures, 22:48151 (IS-T-228)
  Co--Pt, analysis for cobalt, x-ray spectrographic, 22:4 (AERE-R-5452)
  Cr--Pt--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Cr--Pt--Sn, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Cu--Pt, copper-63 NMR in copper-rich, first- and second-order quadrupole effects in, (E), 22:1309
  Cu--Pt, corrosion--polarization and corrosion--kinetic parameters of, radioactive method of determining, 22:2575
  Cu--Pt, crystal lattice vibrations from inelastic neutron scattering, (E), 22:26764 (SGAE-PH-60/1967)
  Cu--Pt, crystal structure and thermoelectric properties of intermetallic Cu_3Pt, 22:10950 (ORO-3091-8)
  Cu--Pt, mechanical properties of intermetallic Cu_3Pt, effects of deformation on, 22:10951 (ORO-3091-9)
  Cu--Pt, strength of intermetallic Cu_3Pt, effects of deformation on, 22:10985(R) (ORO-3091-7)
  Cu--Pt-base, formation heats, 22:43594 (ANL-7299, pp 251-64)
  Dy--Pt, magnetic properties of intermetallic $DyPt_2$, 22:4778
  Dy--Pt, phase studies of, 22:19566
  Er--Pt, magnetic properties of intermetallic $ErPt_2$, 22:4778
  Eu--Pt, Moessbauer and magnetic properties of intermetallic, 22:22246
  Eu--Pt, phase studies of, 22:19566
  Fe--Pt, analysis for iron, x-ray spectrographic, 22:4 (AERE-R-5452)
  Fe--Pt, chemical and magnetic ordering in, Moessbauer spectral studies of, 22:5456
  Fe--Pt, internal magnetic fields at platinum nuclei in, from platinum-195 Moessbauer effect, (E), 22:1351
  Fe--Pt, phase diagrams and thermodynamic properties of, 22:4803
  Gd--Pt, gadolinium ion EPR in intermetallic $GdPt_2$, (E), 22:15599
  Gd--Pt, gadolinium ion ESR in intermetallic compounds of, relation between g shift and hyperfine field in, (E), 22:29579
  Gd--Pt, magnetic properties of intermetallic $GdPt_2$, 22:4778
  Gd--Pt, phase studies of, 22:19566
  Hg--Pt, spectra of Knight shift of platinum-195 in, effects of temperature on NMR, 22:50234
  Ho--Pt, magnetic properties of intermetallic $HoPt_2$, 22:4778
  Ir--Pt, platinum-195 NMR in, (E), 22:29570
  Ir--Pt, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
  Ir--Pt, superconductivity, susceptibility, and thermal capacity, correlation between, (E), 22:11383
  La--Pt, conduction-electron polarization at inequivalent Pt sites in, (E/T), 22:9460
  La--Pt, magnetic susceptibility of intermetallic $LaPt_2$ and $LaPt_5$ at 80 to 300°K, (E), 22:15599
  La--Pt, phase studies of, 22:19566
  La--Pt, platinum-195 NMR at 80 to 300°K in intermetallic $LaPt_2$ and $LaPt_5$, (E), 22:15599
  La--Pt, thermal capacity of Laves phase $LaPt_2$ at low temperatures, 22:48151 (IS-T-228)
  Mo--Pt, phase diagram, 22:26061
  Mo--Pt, platinum-195 NMR shift in, effects of molybdenum content on, (E), 22:1319
  Mo--Pt, superconductivity, 22:26061
  Nd--Pt, conduction-electron polarization at inequivalent Pt sites in, (E/T), 22:9460
  Nd--Pt, magnetic properties of intermetallic $NdPt_2$, 22:4778
  Nd--Pt, magnetic susceptibility of intermetallic $NdPt_2$ and $NdPt_5$ at 80 to 300°K, (E), 22:15599
  Nd--Pt, phase studies of, 22:19566
  Nd--Pt, platinum-195 NMR at 80 to 300°K in intermetallic $NdPt_2$ and $NdPt_5$, (E), 22:15599
  Pb--Pt, spectra of Knight shift of platinum-195 in, effects of temperature on NMR, 22:50234
  Pd--Pt, electric properties of, effects of deuterium and hydrogen sorption on, 22:4793
  platinum Mo--Pt-base, platinum-195 NMR in, (E), 22:29570
  Pr--Pt, conduction-electron polarization at inequivalent Pt sites in, (E/T), 22:9460
  Pr--Pt, magnetic properties of intermetallic $PrPt_2$, 22:4778
  Pr--Pt, magnetic susceptibility of intermetallic $PrPt_2$ and $PrPt_5$ at 80 to 300°K, (E), 22:15599
  Pr--Pt, phase studies of, 22:19566
  Pr--Pt, platinum-195 NMR at 80 to 300°K in intermetallic $PrPt_2$ and $PrPt_5$, (E), 22:15599
  Pt--Rh, coating with iron titanate, methods for, 22:4355(R) (NAA-SR-12578)
  Pt--Rh, fabrication for large radioisotope heat source capsule barrier caps and shells, 22:47290(R) (AI-AEC-12713)
  Pt--Rh, photoelectric cross sections for, (E), 22:47818
  Pt--Rh, testing for fuel capsule liner cladding, 22:4355(R) (NAA-SR-12578)
  Pt--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Pt--Sm, phase studies of, 22:19566
  Pt--Sn, brazability and corrosion by water at 680°F,

22:8703(R) (IITRI-578-P-29-17)
  Pt--Sn, spectra of Knight shift of platinum-195 and tin-119 in, effects of temperature on NMR, 22:50234
  Pt--TaO$_2$, production of thin-film, by sputtering, 22:722(R) (AD-648018)
  Pt--Tb, magnetic properties of intermetallic TbPt$_2$, 22:4778
  Pt--Tc, phase studies of, 22:4807
  Pt--Th, phase studies of, 22:19566
  Pt--W, crystal structure and superconductivity of, 22:36496
  Pt--WO$_2$, production of thin-film, by sputtering, 22:722(R) (AD-648018)
  Pt--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Pt-base--Rh, compatibility testing of, for oxidation barrier for large radioisotope heat source capsules, 22:51175 (AI-AEC-12739)
  Pt-base--Rh, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
  Pt-base--Rh, testing for large radioisotope heat source capsule coating, 22:23216(R) (AI-AEC-12642)
PLATINUM ARSENIDES
  arsenic-75 and platinum-195 nuclear magnetic resonance measurements in, 22:39202
  arsenic-75 nuclear quadrupole resonance measurements in, 22:39202
PLATINUM BROMIDES
  complexes of, bromine-82 exchange between substituted ammonium compounds and, 22:10290
  complexes with ammonia, bromine-82 exchange between potassium bromide and, mechanism of, 22:30574
  reactions of ions of, with iodide ions in aqueous solutions, spectral studies on equilibria in replacement, 22:37776 (BNL-50082, pp 79-92)
PLATINUM CHLORIDES
  complexes of, chlorine-36 exchange between substituted ammonium compounds and, 22:10290
  radioinduced oxidation and reduction of ions of, yields in pulse, 22:33383
  reactions of ions of, with iodide ions in aqueous solutions, spectral studies on equilibria in replacement, 22:37776 (BNL-50082, pp 79-92)
PLATINUM COUPLES
  Pt/Pt--Rh, design and performance of, 22:36453 (LMEC-Memo-68-10)
  Pt/Rh, design and performance of, 22:36453 (LMEC-Memo-68-10)
PLATINUM, DIBROMODIAMMINE-
  bromine-82 exchange between bromides and, kinetics of, 22:6290 (IS-T-186)
PLATINUM IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
PLATINUM ISOTOPES
  energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:27109
  neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
  nuclear quadrupole moments, (E/T), 22:11957
  production of foils of, for nuclear research, 22:263
  production of radiochemically pure, 22:12375
PLATINUM ISOTOPES Pt-176
  alpha decay of, α energy and half-life for, (E), 22:5840
PLATINUM ISOTOPES Pt-177
  alpha decay of, α energy and half-life for, (E), 22:5840
PLATINUM ISOTOPES Pt-178
  alpha decay of, α energy and half-life for, (E), 22:5840
PLATINUM ISOTOPES Pt-180
  alpha decay of, α energy and half-life for, (E), 22:5840
PLATINUM ISOTOPES Pt-182
  energy-level transition rotational constants for, (E), 22:30027
PLATINUM ISOTOPES Pt-184
  energy-level transition rotational constants for, (E), 22:30027
PLATINUM ISOTOPES Pt-186
  energy-level transition rotational constants for, (E), 22:30027
PLATINUM ISOTOPES Pt-188
  conversion-electron and gamma spectra following tantalum-181 (B-11,4n) reactions, (E), 22:30027
  electron-capture decay scheme of, Q-value and log-ft values for, (E), 22:44748
  energy levels from electron-capture decay of gold-188, (E), 22:30031
  energy-level transition rotational constants for, (E), 22:30027
PLATINUM ISOTOPES Pt-190
  alpha decay of, α energies and half-life for, (E), 22:35323
  energy-level transition rotational constants for, (E), 22:30027
PLATINUM ISOTOPES Pt-192
  alpha decay of, α energies and half-life for, (E), 22:35323
  description using rotational-vibrational model, (T), 22:20574 (LYCEN-6785)
  energy level at 316 keV, g-factor for, (E), 22:24835(R) (BARC-305)
  energy level at 316 keV, g-factor measurement using γ-γ directional correlations, (E), 22:26929(R) (COO-1420-139)
  energy level of, lifetime of second excited, (E), 22:46731(R) (COO-1746-8)
  energy levels at 316 and 612 keV, g-factor measurements using γ--γ angular correlations in hyperfine fields, (E), 22:46731(R) (COO-1746-8)
  energy levels from iridium-192 decay, spin-parity assignments and multipole mixing ratios for, (E), 22:44747
  energy levels of, g-factor measurements using precession in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)
  energy levels of, purity of collective, (T), 22:24901
  energy-level transitions from iridium-192 decay, multipole mixing ratios for, (E), 22:26929(R) (COO-1420-139)
  energy-level transitions from iridium-192 decay, multipole mixing ratios for, (E), 22:46731(R) (COO-1746-8)
  energy-level transitions in, E2/M1 mixing ratios of 2$^+$ → 2$^+$, (E), 22:1702
  energy-level transitions in, K/L and K/L$_3$ internal conversion ratios for E2, (E), 22:53187
  energy-level transitions in, matrix elements for E0, E2, and M1, (E), 22:27189
  internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
  neon-22 reactions with, radium-isotope production by, (E), 22:9854 (JINR-P7-3613)
  oxygen-16 inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
PLATINUM ISOTOPES Pt-193
  electron-capture decay of, x-ray spectra from, (E), 22:53169(R) (PPAD-647-D)
  energy levels from electron-capture decay of gold-193, (E), 22:14015
  energy levels from gold-193 decay, spin-parity assignments and transition multipolarities for, (E), 22:20581
  energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
PLATINUM ISOTOPES Pt-194
  description using rotational-vibrational model, (T), 22:20574 (LYCEN-6785)
  energy levels at 328 and 622 keV, g-factors for, (E), 22:24835(R) (BARC-305)
  energy levels from oxygen-16 scattering with Coulomb excitation, electric quadrupole moments of first 2$^+$, (E), 22:32636
  energy levels of, g-factor measurements using Coulomb excitation in alloys, (E), 22:46786
  energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  energy-level transitions from decay of isomeric iridium-194, multipolarities of, (E), 22:42047
  energy-level transitions from iridium-194 β decay, (E), 22:11950(R) (ORO-3624-1)
  energy-level transitions in, matrix elements for E0, E2, and M1, (E), 22:27189
  hyperfine magnetic fields at nuclei in cobalt, iron, and nickel, measurements using ion implantation with perturbed angular correlation method, (E), 22:46267
  hyperfine magnetic fields at nuclei in magnetized gadolinium below Curie point, measurements using ion implantation with perturbed anbular correlation technique, (E), 22:46267
  neon-22 reactions with, radium-isotope production by, (E), 22:9854 (JINR-P7-3613)
  neutron strength function and scattering radius at 0 to 825 eV, (E), 22:18285
  oxygen-16 inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
PLATINUM ISOTOPES Pt-195
  electron spectra of, measurement of K-, L-, and M-Auger and L-Coster--Kronig, 22:943 (ORNL-TM-1988)
  energy level at 99 keV, magnetic moment from Moessbauer measurements, (E), 22:48202(R) (BMwF-FBK-68-01)
  energy levels from iridium-195 beta decay, (E), 22:5837
  energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:5810 (ANL-7363)
  energy-level transition from gold-195 decay, multipole mixing ratio for 31-keV, (E), 22:42072
  Knight shift of, in platinum and its alloys, effects of temperature on NMR spectra of, 22:50234
  Knight shifts in rare earth alloys, (E), 22:9460
  Moessbauer effect in iron--platinum alloys, (E), 22:1351
  neutron capture at 10 to 700 eV, partial widths for resonance, (E), 22:18284
  neutron capture at 30 keV, γ transition strengths in, (E), 22:27100
  neutron capture by, γ spectra from thermal, (E), 22:27156
  neutron capture by, radiative strength function for, (T), 22:53174
  neutron capture by, resonance, (E), 22:37340(R)

(EANDC(E)-89(U))
  neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
  neutron strength function and scattering radius at 0 to 825 eV, (E), 22:18285
  nuclear hyperfine interactions in, Moessbauer studies of, (E), 22:18302
  nuclear magnetic resonance in iridium--platinum alloys and molybdenum--platinum-base alloys (E), 22:29570
  nuclear magnetic resonance in molybdenum--platinum alloys, effects of molybdenum content on, (E), 22:1319
  nuclear magnetic resonance in platinum--rare earth alloys at 80 to 300°K, (E), 22:15599
  nuclear magnetic resonance measurements in PtP_2 and $PtAs_2$, 22:39202
PLATINUM ISOTOPES Pt-196
  analysis for impurities, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
  description using rotational-vibrational model, (T), 22:20574 (LYCEN-6785)
  energy level at 355.7 keV, g-factor measurement using perturbed angular correlations, (E), 22:20574 (LYCEN-6785)
  energy level at 355.7 keV, g-factor measurement using integral rotation method, (E), 22:46787
  energy level at 356 keV, g-factor for, (E), 22:14058
  energy levels from oxygen-16 scattering with Coulomb excitation, electric quadrupole moments of first 2^+, (E), 22:32636
  energy levels of, g-factor measurements using Coulomb excitation in alloys, (E), 22:46786
  energy-level spins and transitions from decay of ground-state and isomeric iridium-196, (E), 22:42084
  energy-level transition rotational constants for, (E), 22:30027
  energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  energy-level transitions from platinum-195 thermal neutron capture, (E), 22:27156
  energy-level transitions in giant resonance region, radiative widths for, (T), 22:53174
  energy-level transitions in, matrix elements for E0, E2, and M1, (E), 22:27189
  neutron capture by, lithium-drifted germanium spectrometer for measuring resonance, 22:14834
  oxygen-16 inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
  photoabsorption cross section in giant resonance region, (T), 22:53174
PLATINUM ISOTOPES Pt-197
  beta decay of, gold-197 energy levels and internal-conversion coefficients from, (E), 22:5863
  beta decay of, gold-197 energy levels and transitions from, (E), 22:14031
  energy level at 53 keV, lifetime and E2 transition probability for, (E), 22:20600
PLATINUM ISOTOPES Pt-198
  description using rotational-vibrational model, (T), 22:20574 (LYCEN-6785)
  energy levels from oxygen-16 scattering with Coulomb excitation, electric quadrupole moments of first 2^+, (E), 22:32636
  energy-level transitions from Coulomb excitation, branching ratios and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
  neutron resonance integrals, (E), 22:16901
  oxygen-16 inelastic scattering with Coulomb excitation, γ spectra and yields from, (E), 22:29985 (ORNL-TM-2121)
  use in multi-element activation detectors, 22:16901
PLATINUM ISOTOPES Pt-199
  beta decay of, conversion-electron spectra from, (E), 22:5848
  beta decay of, gold-199 energy levels and internal-conversion coefficients from, (E), 22:5863
  beta decay of, gold-199 energy levels and transition rates from, (E), 22:1701
  beta decay scheme of, β and γ spectra for, (E), 22:11943 (AE-300)
PLATINUM METAL OXIDES
    see also Iridium Oxides
    see also Osmium Oxides
    see also Palladium Oxides
    see also Platinum Oxides
    see also Rhodium Oxides
    see also Ruthenium Oxides
PLATINUM METALS
    see also Iridium
    see also Osmium
    see also Palladium
    see also Platinum
    see also Rhodium
    see also Ruthenium
PLATINUM OXIDES
  effects on deuterium exchange between heavy water and benzene, catalytic, 22:8058
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  formation on platinum anode in production of persulfates, 22:7971(T) (BNL-tr-168)
PLATINUM PHOSPHIDES
  phosphorus-31 and platinum-195 nuclear magnetic resonance measurements in, 22:39202
PLATINUM THIOCYANATES
  complexes of, sulfur-35 exchange between potassium platinum thiocyanate and, 22:10290
PLATYHELMINTHES
  Ancylostoma caninum, radiation effects on antigenicity of larvae of, for use in vaccine preparation, x, 22:52085
  Clonorchis sinensis, radiation processing of vaccines of, research on, 22:31305
  Dugesia genocephala, radiation effects on tissue regeneration by, x, 22:40842
  Dugesia sp., radiation effects on survival of, role of stem cells in x, 22:49517
  Dugesia tigrina, radiation effects on, protective effects of serotonin-creatinine sulfate complex against x, 22:23579
  effects of sunspot cycle on mass mortality in, (T), 22:43698
  Fasciola hepatica, radiation effects on morphology of, following exposure of metacercariae, x, 22:25985
  Hymenolepis microstoma, radiation effects on, effects of, on immunity of hosts, x, 22:14971
  Hymenolepis nana, radiation effects on mice infected with, protective effects of streptomycin against x, 22:38207
  infections of marmoset colony, 22:51309 (ORAU-106, pp 194-220)
  Opisthorchis felineus, radiation processing of vaccines of, research on, 22:31305
  Polycelis nigra, radiation effects on embryogenesis of, electron microscopy of x, 22:40928
  Schistosoma japonicum, radiation effects on development and morphology of, γ, 22:51871(T) (JPRS-45744)
  Schistosoma japonicum, radiation effects on virulence of cercariae of, in mice and monkeys, x, 22:12809
  Schistosoma mansoni, parasitic snails on, uptake of heavy metal ions by, 22:4585
  Schistosoma mansoni, radiation effects on infectivity of, in mice, γ, 22:23481(R) (PRNC-102)
  Taenia sp., radiation processing of vaccines of, research on, 22:31305
Pleiede
    see High Energy Injection Devices
Plexiglas (R)
    see Methacrylic Acid, Methyl Ester, Polymers
Plowboy Project
    see Plowshare Project
PLOWSHARE PROJECT
  air blast measurements in Project Pre-Schooner II, 22:42924 (PNE-512-F)
  analysis of surface-foci travel times in, use of data from Gnome, Bilby, and Salmon events for, 22:195
  book: The Constructive Uses of Nuclear Explosives, 22:25562
  canal construction in, feasibility of nuclear explosives for transisthmian sea-level, 22:48974
  cavity and chimney exploration in Piledriver Event in, 22:23187 (UCRL-50385)
  cavity formation in Piledriver Event in, calculation of free-field motion for, 22:19001 (UCRL-50373)
  cavity formation in Project Gasbuggy, postshot investigation of, 22:45210 (UCRL-50425)
  cavity pressure and temperature following nuclear explosion in alluvium, 22:200
  chemical applications of nuclear explosions in, developments in, 22:23186(R) (ORNL-TM-2198)
  chimney and crater formation in, for development of water resources, 22:8245 (UCRL-70762)
  chimney and surrounding granite characteristics in Piledriver, 22:8243(R) (UCRL-50008-67-4)
  civil engineering applications in, lecture notes on, 22:199 (TID-23748)
  cloud development studies in Project Pre-Gondola I, 22:198 (PNE-1108)
  cloud diffusion studies in, use of NRX reactor effluent for, 22:182 (UCRL-50299)
  coal gasification in Wyoming by underground nuclear explosions in, Project Thunderbird for, 22:10423
  conference on civil engineering developments in, July 1 to Aug. 15, 1967, 22:12461 (PRNC-110)
  construction of sea-level canal in, feasibility studies of, 22:42932
  copper mining in, description of Project Sloop for, 22:27947
  copper ore and shale oil processing in, feasibility study of, 22:45208(R) (ORNL-TM-2298)
  crater excavations in, hydrologic distribution of radioisotopes around nuclear, 22:21226 (NVO-1229-87)
  crater formation from row charges beneath a ridge, 22:51127 (SC-RR-68-449)
  crater formation from surface explosions in, scaling laws for, 22:40285
  crater formation in, laboratory-scale studies of, (E), 22:8241 (PNE-5011)
  crater formation in, using row charges of TNT, 22:8242 (SC-RR-67-728)
  cratering and ejecta mechanisms in, use of chemical explosives to study, 22:12462 (SC-DC-67-2330)

- cratering calibration tests for Pre-Gondola, ground motion and structure responses during, 22:35926 (PNE-1100)
- cratering explosions in Buggy and Cabriolet Projects, lidar equipment and method for tracking debris clouds from, 22:47242 (UCRL-13360)
- cratering site calibration tests in Project Pre-Gondola I for, 22:197 (PNE-1104)
- cratering studies in hard, dry rock using single-charge chemical explosives, Pre-Schooner II, 22:4296 (PNE-516)
- cratering studies in Project Pre-Gondola I, 22:35965 (PNE-1102)
- cratering studies in Project Pre-Gondola I, 22:8240 (PNE-1107(Pt.1))
- cratering studies in, review of, 22:12466(T) (UCRL-Trans-10152)
- cratering studies in, use of individually detonated multiple-charge arrays for, 22:10419 (SC-RR-67-727)
- cratering tests in wet clay--shale for Project Pre-Gondola, response during, 22:40282 (PNE-1116)
- craters produced in, ground water movement through, 22:168 (CBA-1229-F-4)
- damage to structures and equipment in, empirical method for prediction of, 22:27943 (TID-24483)
- debris analysis from Anacostia and Kennebec events, prompt sample systems for, 22:37657 (UCRL-50441)
- description of technology during 1967, 22:22925
- development by USAEC, JCAE hearings on, 22:10169
- development of nuclear explosive technology in, review of, 22:27949
- developments in chemical applications of nuclear explosions, 22:4295(R) (ORNL-TM-2062)
- developments in Projects Bronco and Sloop in, review of US, 22:30742
- distribution of gaseous radioisotopes in and around nuclear cavities in, 22:35964 (NVO-1229-85)
- dynamic stress measurements in underground granite during Hardhat Event in, 22:19000 (UCID-15283)
- effects of underground explosions, summary of, 22:47261
- engineering and geologic properties of dry rock in, for cratering experiments, Palanquin Event preshot studies of, 22:51124 (PNE-905)
- engineering and geologic property studies in Project Dugout for, 22:40281 (PNE-602F)
- engineering applications of nuclear explosives in, environmental contamination from, 22:12463 (UCID-15251)
- engineering properties of nuclear craters in, 22:37898 (PNE-5012-I)
- engineering uses for nuclear explosives in, review of developments in, 22:45211
- excavations using nuclear explosives, feasibility of, 22:10421
- explosion cloud detection and analysis in Project pre-Gondola in, airborne lidar method for, 22:21227 (PNE-1119)
- explosion performance in Gasbuggy event of, summary of, 22:30740
- fallout from Projects Danny Boy, Palanquin, and Sedan in, fractionation of ground level, 22:27944 (UCRL-50409)
- fallout radiation dose to man from events of, computer calculations for iodine-131 and tritium, 22:33814 (ORNL-TM-2229)
- feasibility of Gasbuggy, review of, 22:30738
- fracturing and in place retorting of oil shales in, design of Project Bronco for, 22:8244 (UCRL-50339)
- ground motion from pre-Gondola II high explosive cratering event in, data analysis on, 22:51126 (PNE-1115)
- ground motion measurements at Fort Peck Dam in, instruments for detection of explosion-induced, 22:33192 (UCRL-13329(App.A))
- ground motion measurements at Fort Peck Dam in, seismic method for, 22:33193 (UCRL-13329(Pt.1))
- ground motion, earth stress, and pore pressure measurements in Project Pre-Gondola I, 22:197 (PNE-1104)
- ground water contamination from underground nuclear explosions, monitoring system for, 22:23185 (HNS-1229-43)
- leaching of radioisotopes from Sedan crater ejecta in, 22:40284 (UCRL-70630)
- natural gas production in, description of Project Gasbuggy for, 22:51130
- natural gas production in, procedures for conducting Project Gasbuggy experiments for, 22:12464 (UCRL-50334)
- natural gas production stimulation in, Project Gasbuggy test results for, 22:18999 (PNE-1003)
- natural gas recovery in Project Gasbuggy, feasibility studies of, 22:42927
- natural gas recovery in, description of Gasbuggy Project for, 22:14603
- natural gas storage in nuclear cavities in, economics of, 22:14602
- natural gas storage in nuclear cavities in, feasibility study of, 22:27942 (PNE-3008)
- natural gas storage in Project Ketch, economic and feasibility studies of underground, 22:42927
- natural gas storage in underground nuclear explosion-created cavities in, economics of, 22:42926(R) (UCRL-13354)
- nuclear chimney purging methods in, (E), 22:21228 (UCID-15259)
- oil recovery from oil shales in, description of Project Bronco for, 22:6507 (PNE-1400)
- petroleum production from oil shales using underground nuclear explosions, 22:10422
- production of underground cavities for waste disposal in, use of nuclear explosions for, 22:40286
- public health aspects of civilian applications in, 22:2261 (CONF-671029-1)
- radiation and shock wave hazards in, review of protective measures for, 22:12466(T) (UCRL-Trans-10152)
- radiation dose estimations in feasibility evaluations of, use of EXREM computer program for external β and γ, 22:43308(R) (ORNL-TM-2249)
- radiation effects on man associated with Ketch, quantitative evaluation of ionizing, 22:51876 (UCID-15325)
- radioactivity, air blast, seismic shock, and ground water contamination in, lecture notes on hazards of, 22:199 (TID-23748)
- radon-222 content in natural gas, pre-Gasbuggy baseline, 22:25853
- review, 22:4309 (TID-24102)
- review of, 1965 JCAE hearings on, 22:10424
- shock wave calculations for Gasbuggy Event, using SOC code, 22:35966 (UCRL-50419)
- site selection for Pre-Schooner II chemical explosion, geologic evaluation of, 22:14601 (PNE-509)
- site survey for Project Cabriolet, preshot geologic evaluation of, 22:51125 (PNE-966)
- terrain corrections for borehole gravimetry in, computer program for, 22:40283 (UCRL-50420)
- tritium content in Sedan crater soil and ejecta in, measurement of residual, 22:12465 (UCRL-50360)
- underground explosion in open tunnel, results of Marvel event, 22:8243(R) (UCRL-50008-67-4)
- use of nuclear explosives in, for recovering natural gas in Gasbuggy, 22:4301
- uses in Australia, feasibility study of, 22:48975
- uses of nuclear explosions in, review of, 22:30744
- uses of nuclear explosives in, review of peaceful, 22:42928
- waste disposal in nuclear cavities in, feasibility study of, 22:27942 (PNE-3008)
- water resource development in , feasibility study of, 22:27942 (PNE-3008)
- water resource development in, nuclear excavation technology for, 22:42929
- water wave damage from nuclear excavation of interoceanic canal in, 22:30736 (NVO-99-24)

Plum Brook Reactor
- see NASA Research Reactor

PLUMBOB OPERATION
- fallout distribution at Nevada Test Site from, 22:18963 (BNWL-481-1, pp 93-101)
- meteorological analysis of, for fallout transport studies, 22:18956 (BNWL-481-1, pp 68-73)

PLUMES
- behavior of smoke stack, effects of atmospheric conditions on, (E), 22:47240 (NYO-3685-14)
- depletion by ground surface sorption, one-dimensional parabolic diffusion equation for calculation of, 22:40253 (AECL-2787, pp 602-14)
- diffusion of particles of, effects of atmospheric and ground conditions on, 22:45195 (TID-24190, pp 189-255)
- diffusion of stack, effects of meteorological conditions on, 22:45194 (TID-24190, pp 117-88)
- diffusion of stack, in lower atmosphere, fundamental theories of, 22:45193 (TID-24190, pp 65-116)
- properties of smoke, use in atmospheric diffusion and transport studies, 22:45192 (TID-24190, pp 13-63)
- rise and diffusion of Brookhaven, at medium range, 22:40232 (AECL-2787, pp 252-62)
- rise and diffusion of, from tall stacks, effects of lakebreezes on, 22:40229 (AECL-2787, pp 215-28)
- rise and trajectory of, from high stacks, comparison of theory and observations, 22:40260 (NP-17543)
- rise from tall stacks, formulas for prediction of, 22:40223 (AECL-2787, pp 1-20)
- tracking of NERVA rocket reactor exhaust, lidar equipment and method for, 22:47241 (UCRL-13358)
- use of smoke, in atmospheric diffusion studies in nuclear installation site suuvey, 22:45356 (TID-24190, pp 257-300)

PLUTO (Harwell, England)
- see DIDO Reactors

PLUTO REACTORS (TORY)
- testing of II-C, control and performance instrumentation systems for, 22:42343 (UCRL-7036(Pt.6))

PLUTONATES
- see also Barium Indium Plutonates

PLUTONIUM
- see also Actinides
- absorption of fission products of, by plants, 22:51445
- abundance in meteorites, 22:4995
- alpha emission by, determination of activity from, in urine using sorption on glass fiber filter paper, 22:51633
- amalgamation in lithium citrate solution, electrolytic,

22:18748
analysis for americium-241 by α and γ spectroscopy, 22:44982(T) (RFP-Trans-49)
analysis for americium-241 by solvent extraction using dibutyl butylphosphonate and alpha counting, 22:21018 (ARH-SA-1)
analysis for gallium by atomic absorption spectrometry, 22:42584 (ARH-SA-13)
analysis for impurities by direct current arc method, spectrographic, 22:35758
analysis for impurities, review on methods for, 22:8033
analysis for impurities, spectrographic, 22:21645(R) (BMI-1826)
analysis for iron by spectrophotometry after liquid--liquid extraction, 22:10172 (LA-3781)
analysis for neodymium-148 by isotope-dilution mass spectrometry, 22:1949 (GEAP-5354)
analysis for nitrogen, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for palladium and rhodium after liquid-liquid extraction using Aliquat-336 by flame photometry, 22:8024
analysis for plutonium by differential spectrophotometry, 22:10174 (PG-Report-290(Rev.))
analysis for silicon, emission spectrographic, 22:1956(R) (MLM-1405)
analysis for uranium by amperometric titration, 22:25240 (PG-Report-827)
analysis for uranium by differential linear sweep oscillographic polarography, 22:33242
analysis of aqueous solutions of, for free acids using EDTA complex, 22:27576
analysis of nitric acid solutions of, for free acid, potentiometric, 22:22938(T) (EURFNR-418)
analysis of nitric acid solutions of, for free acid using ammonium fluoride as complexing agent, 22:39981 (EUR-3934)
analysis of solutions of, for free acid by direct acidimetry, 22:27530 (CEA-N-816, pp 9-65)
analysis of solutions of, for free acid, citrate and iodate methods for, 22:18693 (LA-3876)
analysis of solutions of, for nitrates, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of, containment practices in laboratories for, 22:22931 (NBL-243)
analysis of, spectrographic, 22:16356 (KR-116)
auditing and accounting methods for, at Battelle Memorial Institute, 22:608 (CONF-661011, pp 74-9)
bibliography on technology of, 22:1914 (BNWL-525)
bibliography on technology of, 22:1915 (BNWL-550)
bibliography on technology of, 22:7937 (BNWL-619)
bibliography on technology on, 22:3967 (BNWL-573)
binding to proteins in blood serum in vitro, 22:51466
binding to proteins, plutonium-239 tracer studies of, 22:51372
book: Complex Compounds of Transuranides, 22:37755
book: Nuclear Fuel Metallurgy. Uranium, Plutonium, and Thorium: Properties and Technology. (In Russian), 22:43574
book: Plutonium Handbook. A Guide to the Technology, Vol. I, 22:2087
book: Plutonium Handbook, A Guide to the Technology, Vol. 2, 22:8198
book: Uncommon Metals, 22:10981
breeding in Yankee Power Reactor of, measurement of, 22:22771
buildup in large power reactors, changes in system dynamic characteristics from, (T), 22:14179
buildup in pebble bed reactors, calculational procedures for determining, 22:46902 (JUL-542-RG)
burnup of, determination of neodymium-148 as measure of, 22:1949 (GEAP-5354)
chemical properties of, 22:2088
chemical properties of, 22:2089
chemical reactions in solutions, review of, 22:2090
chemistry of molten, 22:2090
chromatographic behavior of, in mixtures of hydrochloric or nitric acids in alcohols, 22:50974
cleaning of, electrolytic process for, 22:23749(P)
combustion in fluorine, products of, 22:25321 (ANL-7375, pp 95-134)
combustion of metal and compounds of, airborne particle release from, 22:43014 (BNWL-SA-1735)
complexes of, preparation and properties of, 22:2090
complexes with 2,3-dimercaptosuccinonitrile, preparation of, 22:30515
complexes with 8-quinolinol and its derivatives, preparation and stability of, 22:16541
complexes with 8-quinolinol, formation of, 22:33332
complexes with chloride- and oxygen-containing ligands, charge transfer transitions in, 22:37745
complexes with diethyldithiocarbamate, preparation of, 22:27652
complexes with diethyldithiocarbamate, spectra of, ir, 22:27652
complexes with ethyl xanthate, preparation of, 22:30515
complexes with glycolic acid, stability of, 22:30551
complexes with methylenebis(dihexylphosphine oxide), kinetic studies of, 22:27893
complexes with N,N-diethyldithiocarbamic acid, preparation and infrared spectra of, 22:30515
complexes with N-phenylbenzohydroxamic acid, formation of, 22:33332
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with phosphoric acid, effects of concentration on, 22:8072
complexes with salicylic acid, kinetic studies of, 22:27893
complexes with sulfamate ions, spectra of, effects of sulfamic acid on, 22:27658
complexes with toluene-3,4-dithiol, preparation of, 22:30515
complexes with tropolone, preparation of, 22:25440(R) (MLM-1443)
compounds of, analysis for impurities, review on methods for, 22:8033
compounds of, analysis of, for plutonium and its isotopes, accountability methods for, 22:6 (CONF-661011, pp 135-45)
compounds of, preparation, properties, and reactions of, review of, 22:2089
compounds, crystal structure of, equipment for x-ray studies of, 22:27622 (EUR-3897)
compounds, formation of, enthalpy of, 22:52257 (ANL-7425, pp 94-129)
concentration by solvent extraction using tributyl phosphate, 22:35891
concentration by solvent extraction using tridodecylamine, 22:35893
contamination by ruthenium, 22:27856(R) (K-1738)
contamination from, design of monitor for detecting airborne, 22:32961 (ANL-7310, pp 377-430)
contamination of hair and skin of pigs, autoradiographic analysis of, 22:23539
contamination of human lungs, methods for detection of, 22:38298
contamination of industrial facilities, development of instruments for control, 22:23551
contamination of surfaces, determination of limits for, 22:23546
content in igneous rocks, effects of volcanogenic processes on, 22:25506
content of atmosphere in United States during October to December 1966, 22:40690
content of feces, determination of, 22:43301 (AERE-R-5474)
content of freshwater, high sensitivity determination of, 22:43301 (AERE-R-5474)
content of insoluble compounds of, in human lungs, estimation of, by external counting of uranium x rays, 22:21501
content of internal organs of man following occupational exposure, 22:38265 (UCRL-18140, pp 103-22)
content of man in relation to urine, computer calculation of, 22:6803 (ORNL-4168, pp 231-88)
content of nose-blow samples at AERE, correlation of, with content of feces, 22:38249 (BLG-371)
content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
control and procurement of, for FFTR, 22:1851 (BNWL-SA-1388, Suppl.)
cores of reflected and unreflected, criticality data from, 22:32958 (AHSB(S)Handbook-5(Pt.2))
corrosion and oxidation of, review of, 22:2577
corrosion resistance of nuclear materials containing, 22:31357
cost of, effects on boiling and pressurized-water power reactor fuel cycle economics of, 22:53344
critical mass for water-reflected spherical-shaped, measurement of, 22:53417 (LA-DC-9370)
critical mass of water-reflected spheres of, 22:33059
criticality measurements on arrays of nut-type casks containing, 22:12087 (BNWL-472, pp 5.1-16)
crystal optical constants of delta, at 5461 A, ellipsometer measurements of, 22:8773
crystal structure of alpha-phase, at high pressure, 22:8778
cutting and milling of, decontamination of hot cells for, 22:12510(P)
deformation of alpha-phase, mechanisms of, 22:43590 (ANL-7299, pp 201-19)
deposition in man, evaluation of residual, 22:21544
deposition in man, review on methods for controlling and evaluating, 22:8557
detection in human wounds, eddy current detector probe for, 22:19185 (BNWL-SA-1391)
detection in rats, whole-body counting method for, 22:51630
detection in vivo, interpreting counting data for, 22:47311 (BNWL-715(Pt.1), pp 1-15)
detection in wounds, development of surface-contoured semiconductor detectors for, 22:47314 (BNWL-715(Pt.1), pp 41-3)
detection in wounds, low-energy photon detectors for, 22:8340 (RFP-1068)
detection in wounds, use of avalanche-type semiconductor detectors for, 22:45281(R) (NYO-3246-TA-3)
determination by amperometric titration, 22:39987 (PG-Report-832)
determination by potentiostatic coulometry, 22:14457
determination by precipitation with barium sulfate and alpha counting, 22:37656 (UCRL-18140, pp 101-2)

determination by reduction with cerium, 22:25236 (CEA-N-616, pp 20-71)
determination by titration using cerium sulfate solutions, standards in, 22:16414 (LA-3841)
determination for inventory verification at AEC-owned contractor site, 22:47073 (CONF-680506-2)
determination in aluminum--plutonium alloys by x-ray fluorescence, 22:12228(T) (BNWL-tr-24)
determination in aqueous plutonium nitrate solutions, 22:47110(R) (BAW-3714-7)
determination in atmosphere, plant ash, rainwater, and soils, methods for, 22:1945 (CEA-R-3220)
determination in biological and environmental samples, review on radiochemical methods for, 22:8034
determination in biological materials by ion exchange, automatic method for, 22:3998 (CEA-N-819)
determination in debris from Anacostia and Kennebec thermonuclear events in Plowshare project, 22:37657 (UCRL-50441)
determination in dilute solutions by controlled-potential colorimetry, 22:27846 (CEA-N-816, pp 277-323)
determination in dissolver solutions in fuel reprocessing by isotopic-dilution mass spectroscopy, 22:22932 (NP-17233)
determination in environmental samples by alpha spectroscopy, 22:48839
determination in fallout, methods for, 22:1945 (CEA-R-3220)
determination in feces, radiochemical method for, 22:44970 (AERE-AM-103)
determination in FFTF fuel materials, 22:5 (BNWL-SA-1388, pp 10.1-14)
determination in fuel processing solutions, use of in-line alpha counters for, 22:7 (CONF-671012-2)
determination in fuel reprocessing plant streams, 22:16356 (KR-116)
determination in fuel solutions by x-ray fluorescence techniques, 22:44974 (KFK-747)
determination in gallium--plutonium and iron--plutonium alloys by electron microprobe techniques, 22:39988 (RFP-1146)
determination in iron--plutonium uranium carbide cermets by electrochemical methods, 22:33215
determination in iron--plutonium--uranium alloys, potentiometric, 22:25236 (CEA-N-616, pp 20-71)
determination in irradiated thorium dioxide--uranium dioxide fuel, separation procedures in, 22:37641(R) (BAW-3809-2)
determination in neutron-irradiated uranium dioxide by mass spectrometry, 22:45004
determination in nitric acid solutions by titration with hydrogen peroxide, potentiometric, 22:22938(T) (EURFNR-418)
determination in nitric acid solutions, rapid spectrophotometric, 22:21037
determination in nitric acid solutions, spectrophotometric, 22:16416(T) (EURFNR-386)
determination in nitric acid solutions, spectrophotometric, 22:6255 (KFK-610)
determination in organic solvents by solvent extraction using phosphorylated cellulose and scintillation counting, 22:39997
determination in plutonium compounds, accountability methods for, 22:6 (CONF-661011, pp 135-45)
determination in plutonium dioxide by controlled-potential coulometry, 22:40041
determination in plutonium metal by differential spectrophotometry, 22:10174 (PG-Report-290(Rev.))
determination in plutonium nitrate in nitric acid by determining free acidity, 22:39981 (EUR-3934)
determination in plutonium nitrate solutions, 22:47073 (CONF-680506-2)
determination in presence of uranium by x-ray fluorescence techniques, 22:44974 (KFK-747)
determination in process materials, evaluation of neutron detectors for remote, 22:25443 (ANL-7375, pp 46-94)
determination in process streams by differential colorimetry, 22:25241 (RFP-665)
determination in reconstituted fuels, coulometric, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in reprocessing solutions, 22:39984 (KR-126, pp 153-71)
determination in scrap plutonium oxides, calorimetric and wet chemical methods for, 22:30435 (RFP-1122)
determination in solutions by controlled-potential coulometry, 22:36522(R) (BAW-3714-6)
determination in solutions from dissolution of irradiated fuels, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in solutions from processing of irradiated plutonium, 22:37640(T) (ANL-Trans-628, pp 2-50)
determination in SPR-irradiated plutonium dioxide targets, 22:42587 (DP-1157)
determination in sulfuric acid solutions using Arsenazo III, 22:45018
determination in tissues and water, particle track analysis in polycarbonate plastics for, 22:16883
determination in urine by alpha counting, surface-adsorption and ion-exchange procedures in, 22:16384 (AERE-R-5637)
determination in urine by extraction using triisooctylamine and alpha counting, 22:35761
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
determination in urine, use of cellulose ester filtering membranes for, 22:47072 (CEA-R-3492)
determination in waste cartons, 22:47073 (CONF-680506-2)
determination of trace amounts of, by isotopic dilution and mass spectrometry, 22:14434 (ORNL-4196, pp 93-8)
determination of, development of methods for, 22:40156(R) (EURAEC-2031)
determination of, methods for, 22:23114
determination of, polarographic, 22:16682
determination of, review on methods for, 22:8033
determination using Arsenazo, spectrophotometric, 22:10173 (ORNL-TM-2108)
determination using arsenazo, spectrophotometric, 22:14428 (ORNL-4196, pp 33-44)
development for reactor fuels, 22:734
development for reactor fuels, review, 22:12954
development, history, preparation, and toxicity, 22:7048
diffusion and solubility in aluminum, 22:41051
diffusion in epsilon phase, self, 22:49764
diffusion in irradiated alloys, use of alpha particles recorded on thin films to study, 22:40320 (CEA-R-3426)
diffusion in irradiated mixed-oxide fuel rods, (E/T), 22:30343(R) (EURAEC-1992)
diffusion in magnesium fuel element cladding during fusion, 22:27847 (CEA-N-816, pp 324-58)
diffusion in plutonium--uranium alloys at 400 to 550°C, 22:52164(T) (RFP-Trans-52)
disposal of waste solutions of, methods for, 22:8200
dissolution and extraction of, from irradiated fuels, ATI process for, 22:25452 (CEA-N-616, pp 154-214)
dissolution by nitric acid, 22:25452 (CEA-N-616, pp 154-214)
dissolution in hydrochloric acid, heat of, 22:11946(R) (COO-1716-4)
dissolution in hydrofluoric acid--nitric acid systems, rate of electrolytic, 22:30508 (RFP-1136)
dissolution of, 22:2088
distribution between fused salts and liquid metals in fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
distribution between molten magnesium chloride--potassium chloride--sodium chloride and copper--magnesium alloy or magnesium--zinc alloy, 22:25442 (ANL-7375, pp 19-45)
distribution in aqueous sodium and uranyl nitrate solutions during directed crystallization, 22:2038
distribution in flowing sodium in forced convection stainless steel loops, 22:43629(R) (LA-3933)
distribution in liver of rats, 22:51295 (AWRE-O-28/68)
distribution in lungs and pulmonary lymph nodes of dogs, man, and rats following inhalation, 22:21507
distribution in molten plutonium oxide--uranium oxide fuels, 22:8837
distribution in reactor fuel elements, resolution of alpha autoradiography with platinum film insert for determining, 22:44942
distribution of americium between molten chlorides and liquid, 22:12290
distribution of polymerized, in bone marrow, kidney, liver, and spleen of mice following intravenous injection, 22:28537 (ANL-7278, pp 170-84)
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
Doppler effect of, effects of isotopic composition on, 22:27396(R) (AI-AEC-12638)
economics of fuel elements of, in Gargliano and Trino power reactors, 22:22685 (EUR-3890)
economics of, as BWR fuels, 22:6024
effects on animals and man, review of physiological and toxicological, 22:8490
effects on colorimetric determination of zirconium, 22:48817 (MLM-1542)
effects on concurrent reduction and precipitation of uranium from liquid copper--magnesium alloy, 22:25442 (ANL-7375, pp 19-45)
effects on power level operation in fast reactors of, (T), 22:5934 (RT/EC-(67)1)
effects on purification of fluorine by distillation, 22:21047
effects on reactor safety of replacement of fuels of, with uranium-235, 22:53384
effects on solvent properties of tridodecylamine for some fission products and thorium, 22:37862
effects on solvents in nuclear fuel reprocessing, 22:18865 (ORNL-4212)
effects on volatilization of uranium, 22:27852(R) (EURAEC-2011)
elastic moduli at low temperatures, temperature dependence of, 22:44233
electric conductivity at low temperatures of α- and β-, magnetic effects on transverse, (E), 22:672
electric conductivity of alpha-phase, comparison with values for α-manganese, 22:19529
electrochemistry in carbonate solutions on hanging mercury drop electrode, 22:18778
electron binding energy in, beta spectroscopy studies on, 22:37675
electron configuration interaction integrals for Pu I and Pu II, 22:38782
electronic structure of, 22:30531
electronic structure of alpha-phase, 22:43590 (ANL-7299,

pp 201-19)
electrorefining of, fabrication of aluminum oxide and magnesium oxide cell parts for, 22:31442
emittance of spheres of, effects of surface condition and temperature on, 22:15203
encapsulation in welded containers, equipment and procedure for, 22:43540 (LA-3937)
entropy of trivalent, 22:11946(R) (COO-1716-4)
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
equilibrium potentials in molten chlorides, 22:42669
etching of, method for, 22:23748(P)
etching of, process for, 22:21668(P)
evaluation of fuel-element, facility design for, 22:4403
excretion by man, effects of DTPA and EDTA on, 22:28479
excretion in urine of personnel following inhalation, effects of DTPA on, 22:28351
excretion of, body burden determination using data on, 22:27521(R) (ORNL-4236)
fabrication and processing of, criticality in, 22:8202
fabrication methods for water-cooled power reactor fuels of, 22:6037
fabrication of fuel elements of, radiation protection during, 22:1755 (BNWL-SA-1326)
fabrication of mixed powders of enriched uranium and, 22:10075(R) (EURAEC-1929)
fabrication of plates of, for fuel elements for zero-power reactors, 22:36439 (ANL-7365)
fabrication of unalloyed, methods for, 22:8714
fabrication of, design of hood piping, ventilation, and control valve for use in, 22:14654
fabrication of, dissolution of scraps from, 22:18867 (RFP-890)
fabrication of, safety procedures for, 22:36439 (ANL-7365)
fission product yield measurements from fast neutron fission in, gamma scanning techniques for, 22:27487(R) (LA-3880)
fission products of, contamination of terrain by, 22:8529(T) (JPRS-42929, pp 293-330)
fluorination of, fluidized-bed, 22:35881 (ANL-7450, pp 21-38)
fluorination of, thermodynamics of, 22:27852(R) (EURAEC-2011)
formation in fuel elements of heterogeneous thermal reactors, reactivity effects of, (T), 22:50848
formation of hexavalent, during dissolution and boiling of breeder reactor fuels or uranium oxides, catalytic effects of iron on, 22:27845 (CEA-N-816, pp 150-276)
friction of allotropes of, 22:2612(R) (MLM-1402)
fuel assemblies of, use of 05R Monte Carlo code for calculation of neutron multiplication factor in subcritical, 22:33056
fuel availability of, projection of 1968 to 1985, 22:53344
fuel burnup in graphite and water moderated lattices of, computer analysis for optimum, (E/T), 22:22868
fuel cycle parameters for, computer program for variable scheme calculations of, 22:7807 (GEAP-5494)
fuel element fabrication of sintered pellet and granular uranium oxide (UO_2) with varying pitch helical wire of, description of, 22:25194(P)
fuel elements of, design of equipment and facilities for handling irradiated, 22:6512 (EUR-3619)
fuel elements of, fabrication of metal-clad liquid metal-insulated sheathed bar-type, 22:42484(P)
fuel fabrication for fast and thermal reactors of, 22:10010(R) (NP-17126)
fuels of, bibliography on, 22:1883(T) (ANL-Trans-523)
fuels of, cycle performance for fast breeder reactor, 22:35514
fuels of, economics of, 22:14289 (BNWL-635)
fuels of, economics of use in reactors designed for uranium, (T), 22:20780 (BNWL-624, pp 4.1-16)
fuels of, effects of composition on recycling costs of 100 MW(e) sodium cooled fast reactor, 22:5922 (EURFNR-399)
fuels of, effects of composition on stability of steam-cooled fast breeder reactors, 22:5921 (EURFNR-398)
fuels of, effects on physics parameters of boiling- and pressurized-waters reactors of, 22:22658 (BNWL-475)
fuels of, fabrication of, 22:22877
fuels of, neutron reaction rate measurements in, 22:33079
fuels of, use in European reactors of, 22:5931(R) (NP-17110)
fuels of, use in thermal reactor recycling of, 22:10050
grain structure of alpha, electron microscope study of, 22:8770
handling facilities for, air cleaning systems in, 22:150
handling of, review on factors in controlling personnel exposure during, 22:8333
handling of, tables of gamma spectra for consideration in, 22:51042 (CEA-R-3547)
handling procedures for, analysis of safety, 22:25158
handling procedures for, description of safety, 22:14209
handling safety analysis at Rocky Flats Nuclear Safety Facility, 22:2273 (RFP-977)
handling small samples of, design of pneumatic system for, 22:45227
ignition of metallic, factors affecting, 22:19470
impurities in, use of vacuum spark source mass spectrometer for analysis of, 22:25702
inhalation by personnel during fires, 22:28351
inspection of, review on methods for, 22:8327
isotopic variations in MTR-Phoenix zoned core loading of fuel elements of, 22:14289 (BNWL-635)
losses in melting of magnesium--zirconium alloy fuel cladding, 22:8175(T) (ANL-Trans-544)
machining behavior, 22:41028
machining hazards, 22:26032
mechanical properties of, summary of, 22:2632
metabolism in animals and man, 22:38255(R) (EUR-3918)
metabolism in bone and liver of dogs, man, and swine, 22:2479 (BNWL-SA-1252)
metabolism in man, preparation of plutonium-237 for tracer study of, methods for, 22:28385
metabolism in rats, effects of pregnancy on, 22:8478
metallographic facility for, design and operation of glove box, 22:8249 (CONF-670533-9)
metallography of, design of glovebox facility for studies of, 22:14658
metallography of, preparation of samples for, 22:2656
metallurgical properties of nuclear materials containing, 22:31357
metallurgy of, laboratory techniques for studying, 22:2634
migration in mixed-oxide reactor fuels, (E), 22:27397 (ANL-7375, pp 135-59)
mixtures of scrap, methods for measurement of heterogeneous, 22:203 (CONF-661011, pp 104-14)
monitoring during loading of ZPR III, methods for, 22:23553
monitoring in air, use of alpha spectrometer and beta--alpha delayed coincidence method for, 22:28157
monitoring in air, use of semiconductor detector air sampling system for, 22:14752 (RFP-1046)
monitoring of, neutron counters for, 22:35881 (ANL-7450, pp 21-38)
neutron reactions with, 22:3737
neutron slowing down in, inelastic, (T), 22:35211
neutron spectra of, 22:23084 (BNWL-SA-1644)
neutron total cross sections for, calculation of non-Doppler broadened, 22:1763(R) (GEAP-5533)
oxidation and reduction of, 22:37823(T) (ANL-Trans-619)
oxidation and reduction of, in processing of irradiated fuels, effects of acidity on, 22:47224
oxidation at 90°C of, effects of relative humidity on, 22:682
oxidation by nitric acid, 22:25452 (CEA-N-616, pp 154-214)
oxidation of, mechanisms of, 22:12963 (RFP-1056)
oxidation-reduction reactions of, kinetics of aqueous, 22:30520
oxygen-16 ion reactions with, production of nobelium-255 in, 22:30579
performance as reactor fuels, economics of, 22:10449
performance in EBWR fuel elements, 22:6025
phase distribution in production electrorefining, (E), 22:12986 (RFP-1065)
phase studies of allotropic forms of, 22:2627
phase transformation of pure, dilatometric study of delta--gamma, 22:49714(T) (MLM-1547(tr))
phase transformations in cast thermal cycled, 22:10941(P)
phase transformations in, diffusion mechanisms of, 22:28838
photon spectra of, 22:23084 (BNWL-SA-1644)
physical properties and thermal treatment of nuclear materials containing, 22:31357
physical properties of, summary of, 22:2627
plastic deformation of alpha, effect of strain-rate and temperature on, 22:49754
plasticity of β, effects of heat treatment and strain hardening on, 22:23794
precipitation by oxalic acid, method for continuous, 22:25452 (CEA-N-616, pp 154-214)
precipitation from solutions by electrodialysis, 22:25450 (CEA-N-616, pp 86-96)
precipitation of delta-, in thermal cycling of cerium--plutonium alloys, 22:41064
precipitation with uranium in nitric acid solutions, effects of ammonia on, 22:25452 (CEA-N-616, pp 154-214)
preparation by electrolysis in fused chlorides, 22:27847 (CEA-N-816, pp 324-58)
preparation by electrolysis of plutonium trichloride in fused chlorides, 22:25455 (CEA-N-616, pp 295-368)
preparation by reduction of chloride, 22:151
preparation of α recrystallized, using electrorefining, 22:23791
preparation of foils of, development of laboratory equipment for, 22:27951 (FOA-4-4347-24)
preparation of high-purity, 22:43590 (ANL-7299, pp 201-19)
preparation of metallic, calciothermic method for, 22:27848 (CEA-N-816, pp 359-414)
preparation of molten, from fused fluorides by electrowinning, 22:151
preparation of rods of cast, effects of mold temperature on density and microcracking, 22:17085
preparation of thin films of, by vacuum evaporation, 22:21675(T) (UCRL-Trans-10232)

preparation of, conversion processes for, 22:8032
processing of, design of equipment and facilities for chemical and metallurgical, 22:8201
processing of, safety in, 22:8331
production and industrial uses of, predictions for, 22:23709
production and separation of, review of, 22:6363
production and use in Euratom countries, Great Britain, and U.S., estimates to 1975 of, 22:28729
production by direct reduction of oxide, 22:31336 (UCRL-50403)
production by heavy water-moderated water-cooled 500 MW reactors of, analysis of optimum economic, 22:30261
production by reduction of oxide in molten fluoride by aluminum, 22:42808 (CEA-R-3435)
production by US power reactors through 1990, 22:45245 (BNWL-716)
production economics in fast breeder power reactors, 22:5936(T) (JPRS-43265)
production from oxide, electrolytic cell for, 22:33528
production in gas-cooled graphite-moderated natural- and enriched-uranium fueled reactors, effects on core lifetime of, 22:50762
production in heavy water-moderated reactors of, economic aspects of fuel, 22:5914 (AECL-2944)
production in nuclear fuel elements, method for estimating burnup and, 22:14525
production in nuclear reactors, 22:3737
production in thermal reactors for fast reactor fuel, 22:12040
production in thermal reactors, analysis of world market economics for, 22:42212 (TRG-Report-1695)
production of alpha-phase, at high pressure, 22:8778
production of dense, crack-free castings of, for reactor fuel, 22:10941(P)
production of sols of, design of Solex equipment for, 22:25586
production of, 1966 JCAE hearings on, 22:12217
production of, air-contamination control in, 22:27970
production of, dissolution of slag from, 22:18867 (RFP-890)
production of, review of research on, 22:40121
production requirements by 1990 of, analysis of breeder reactor, 22:35691
properties and technology of, review of, 22:43574
properties for nuclear fuels, 22:19645
properties for use as reactor fuel, 22:43663
properties of irradiated, equipment for study of, 22:4377
properties of irradiated, facility design for study of, 22:4320
properties of, data sheets on, 22:8724 (MLM-1441)
protection of personnel during handling and processing of, methods for, 22:4621
purification and concentration of aqueous sulfate solutions of, continuous countercurrent extraction process for, 22:30656(P)
purification by high-temperature slagging processes, 22:6383
purification by solvent extraction using tributyl phosphate, 22:35891
purification by solvent extraction using tridodecylamine, 22:35893
purification by solvent extraction using tridodecylamine, 22:27845 (CEA-N-816, pp 150-276)
purification by tridodecylamine extraction, 22:37824(T) (ANL-Trans-626, pp 1-35)
purification by tridodecylamine extraction, 22:37823(T) (ANL-Trans-619)
purification of, 22:33507
purification of, 22:30664
purification of, 22:33527
purification of, 22:35881 (ANL-7450, pp 21-38)
purification of, 22:45146 (NP-17588)
purification of product, from solvent extraction in fuel reprocessing by ion exchange, 22:40170 (KR-126, pp 229-44)
purification of, ruthenium decontamination factors in, 22:23099(R) (K-L-1780(Pt.23)
purification on silica-gel column of tridodecylamine-extracted, 22:16688
radiation damage to compounds of, self-, 22:2699
radiation dose rates from, after chemical separation, 22:23084 (BNWL-SA-1644)
radiation effects on, 22:36515
radiation effects on fuels of, 22:10050
radiation effects on fuels of, review on, 22:8804
radiation hazards of highly irradiated, 22:19669 (BNWL-624, pp 2.1-32)
radiation protection methods for personnel in laboratory using, 22:36268
radioactivity in reprocessing breeder fuels, 22:10322 (KFK-603)
radioinduced chromosome aberrations in man following exposure to, in criticality accident, γ, 22:38246
radiolysis of nitric acid solutions of, yields of gases from, 22:33372 (BNWL-751)
reaction with iron transport system in human blood serum, 22:21416
reactions of hexavalent, with formaldehyde or formic acid, catalytic effects of iron on, 22:27845 (CEA-N-816, pp 150-276)
reactions of hexavalent, with hydrogen peroxide, 22:27845 (CEA-N-816, pp 150-276)
reactions of hexavalent, with nitrous acid or nitrogen oxide, catalytic effects of iron on, 22:27845 (CEA-N-816, pp 150-276)
reactions of, kinetics and heat treatment parameters of solid-state, 22:2633
reactions with aqueous phosphoric acid, spectral studies on coexistence of tetravalent uranium in, 22:40057
reactions with nitrogen to prepare nonpyrophoric plutonium nitride, 22:15249(P)
reactions with plutonium carbide and ammonia to produce plutonium carbonitride, 22:17165(P)
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity worth of, measurement in ZPR-3 of, 22:30118 (ANL-7438)
recovery from aluminum--plutonium targets, process for, 22:21167
recovery from fibrous insulation and firebrick, 22:12407 (RFP-832)
recovery from fuel processing solutions by precipitation, 22:21776(R) (EURAEC-1937)
recovery from irradiated fuels, projected costs of, 22:44841 (WASH-1082)
recovery from plutonium hexafluorides, effects of presence of fluorine gas on, 22:30118 (ANL-7438)
recovery from reactor fuels, pyrochemical process for, 22:21168
recovery from scrap, use of plastics in plant for, 22:27855 (ISO-SA-22)
recovery from unmeasurable wastes by incineration and total laundering, 22:14560 (NUMEC-1661-1)
recrystallization of α, deformation in, 22:23791
recycle development for, analysis of optimum economic, 22:53344
recycle program for, description of optimum, 22:32896
reduction by hydrogen peroxide in presence of iron, 22:25452 (CEA-N-616, pp 154-214)
reduction in solutions, electrolytic, 22:10262(P)
refining by electrolysis of fused salts, equipment for, 22:38610(P)
removal from animals and man, 22:38194(R) (EUR-3917)
removal of polymerized, from bone and liver of mice, use of DTPA and EDTA for, 22:28537 (ANL-7278, pp 170-84)
research programs on, abstracts of papers on, 22:35726 (BNWL-672)
retention on alumina bed in fluoride volatility process, 22:40150 (ANL-7372)
separation analysis of, in contaminated areas, 22:38298
separation by extraction using sodium amalgams, 22:37718 (UCRL-17989, pp 181-252)
separation from acidic solutions by basic precipitation in presence of acetic acid, 22:4266(P)
separation from americium and promethium by solvent extraction using tridodecylamine, 22:27848 (CEA-N-816, pp 359-414)
separation from americium by slagging process, 22:8187
separation from aqueous solutions by solvent extraction, 22:2090
separation from aqueous solutions by solvent extraction using alkyl-substituted ammonium salts, 22:6376
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from chloride melts by solvent extraction at 180ºC, 22:4255
separation from contaminants in process streams by selective reduction of plutonium hexafluoride, 22:25443 (ANL-7375, pp 46-94)
separation from curium by ion exchange, 22:47152 (BMwF-FBK-68-10)
separation from dilute organic solutions, process for, 22:10351(P)
separation from EL-1 fuel at Eurochemic, 22:45146 (NP-17588)
separation from fast breeder fuels by salt transport, 22:51044 (ANL-7425, pp 19-41)
separation from fast breeder fuels, salt-transport process for, 22:33528
separation from fast breeder reactor fuels, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
separation from fission products and neptunium by ion exchange, 22:6364 (AERE-R-5074)
separation from fission products and uranium, 22:33501
separation from fission products and uranium by ion exchange and fluoride volatility, 22:16695(P)
separation from fission products and uranium by salt-transport processes, 22:6383
separation from fission products and uranium by solvent extraction using TBP in kerosene, 22:25484
separation from fission products and uranium, design of radiometric flow-rate control system for countercurrent, 22:28198(P)
separation from fission products by fluoride volatility process, 22:51045 (ANL-7425, pp 42-93)
separation from fission products by liquid metal extraction in molten salts, 22:51044 (ANL-7425, pp 19-41)
separation from fission products by molten salt--liquid

metal extraction, 22:35880 (ANL-7450, pp 7-20)
separation from fission products by oxide slagging, 22:8187
separation from fission products by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
separation from fission products by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
separation from fission products in nitric acid solutions by solvent extraction using trioctylamine, 22:21166
separation from fission products using 18-stage centrifugal mixer-settler, 22:8250 (DP-MS-67-71)
separation from fission products, design of centrifugal contactor for, 22:25590
separation from fuel reprocessing solvents by extraction using quaternary alkyl ammonium nitrates, 22:16356 (KR-116)
separation from impurities by fluoride volatility process, 22:48900 (RFP-1052)
separation from impurities by fluoride volatility process, 22:48899 (RFP-993)
separation from iron, rare earths, transplutonium elements, and uranium by ion exchange on zirconium phosphate silicate, 22:30678
separation from irradiated ceramic fuel by fluoride volatility process, 22:30647 (EURAEC-1694)
separation from irradiated fuel, effects of solvent degradation on efficiency of Purex process for, 22:16650(T) (ORNL-tr-1902)
separation from irradiated fuels, 22:37823(T) (ANL-Trans-619)
separation from irradiated fuels, 22:37640(T) (ANL-Trans-628, pp 2-50)
separation from irradiated fuels by electrolysis in molten salts, 22:8175(T) (ANL-Trans-544)
separation from irradiated fuels by fluidized-bed fluoride volatility process, 22:30664
separation from irradiated fuels by oxalate precipitation, 22:37823(T) (ANL-Trans-619)
separation from irradiated fuels by Purex process, fast extractors for use in, 22:16643 (KFK-652)
separation from irradiated fuels by salt-transport process, 22:8187
separation from irradiated fuels by solvent extraction using TBP, 22:51046(T) (EURFNR-499)
separation from irradiated fuels by solvent extraction using TBP, 22:27857 (KFK-680)
separation from irradiated fuels by solvent extraction, 22:16356 (KR-116)
separation from irradiated fuels by solvent extraction, 22:8185
separation from irradiated fuels by sorption of its hexafluoride by metal fluorides, 22:30665
separation from irradiated fuels by volatility techniques, pilot plant design studies for, 22:150
separation from irradiated fuels in Purex Process, 22:8185
separation from irradiated fuels, electrolytic processes for, 22:6383
separation from irradiated fuels, electronic control of extraction equipment for, 22:8167 (CEA-R-3224)
separation from irradiated fuels, Eurochemic process for, 22:33506
separation from irradiated fuels, hazards evaluation of fluidized-bed volatility pilot plant for, 22:33487 (ORNL-TM-2092)
separation from irradiated fuels, radiation levels following, 22:23084 (BNWL-SA-1644)
separation from irradiated reactor fuels, 22:35908(P)
separation from irradiated thorium dioxide--uranium dioxide fuel by chromatography and ion exchange, 22:17185(R) (BAW-3809-1)
separation from irradiated uranium by amine extraction, 22:40169 (KR-126, pp 201-28)
separation from irradiated uranium dioxide fuel, fluid-bed fluoride-volatility process for, 22:51062
separation from irradiated uranium, review on, 22:8199
separation from liquid and solid process wastes, method for, 22:8200
separation from low enrichment fuels, use of fluoride volatility process for, 22:7788(R) (ANL-7382)
separation from mixture of plutonium and uranium hexafluorides by volatility process, 22:37825(T) (ANL-Trans-626, pp 36-58)
separation from molten fluoride mixtures, volatility process for, 22:6432(P)
separation from monobutyl phosphate in TBP solvent extraction process, 22:6433(P)
separation from mother liquor from precipitation of plutonium oxalate, methods for, 22:27845 (CEA-N-816, pp 150-276)
separation from natural materials, review of various methods for, 22:23103
separation from neodymium and uranium by ion exchange, 22:1949 (GEAP-5354)
separation from neptunium-237 by cation exchange chromatography, 22:27893
separation from neptunium-237, extraction and ion exchange methods for, 22:25455 (CEA-N-616, pp 295-368)
separation from neutron-irradiated uranium carbide, 22:33501
separation from nitrate solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from nitric acid solutions by solvent extraction using phosphonates and phosphinates, 22:16648 (UJV-1312)
separation from nitric acid solutions by solvent extraction using long-chain alkylammonium nitrates, 22:40188 (KR-128)
separation from nitric acid solutions by solvent extraction using tridodecylamine, 22:40154 (CEA-R-3478)
separation from nitric acid solutions by solvent extraction using hyamine, 22:25236 (CEA-N-616, pp 20-71)
separation from nitric acid solutions by solvent extraction using TBP, 22:33484(T) (EURFNR-463)
separation from nitric acid solutions by solvent extraction using trioctylmethylammonium nitrate, 22:16686
separation from nitric acid solutions by solvent extraction using TBP, 22:14559 (KFK-671)
separation from organic solvents by backwashing using nitrous acid, 22:16689
separation from other actinides and fission products by solvent extraction using nitromethane, 22:33521
separation from other actinides in hydrochloric or nitric acid, paper chromatographic and electrophoretic study of, 22:37832 (CEA-R-3411)
separation from other elements by ion exchange using zirconium phosphate ion exchanger, 22:33208(R) (MLM-1456)
separation from other materials by ion exchange, 22:2090
separation from perchloric acid solutions by solvent extraction using alkyl phosphine oxides, 22:27893
separation from plutonium dioxide--uranium dioxide systems, 22:22930(R) (NBL-242)
separation from protactinium by paper chromatography in hydrochloric acid mixtures with alcohols, 22:51060
separation from Purex acid sludge solutions by solvent extraction using bis(2-ethylhexyl) phosphate, 22:21154 (BNWL-583)
separation from residual analytical solutions by solvent extraction using tridodecylammonium nitrate, 22:27845 (CEA-N-816, pp 150-276)
separation from ruthenium, 22:37837(R) (K-1744)
separation from ruthenium in fluoride volatility process, evaluation of procedures for, 22:35881 (ANL-7450, pp 21-38)
separation from ruthenium, use of transpiration technique for, 22:30118 (ANL-7438)
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from slightly enriched uranium dioxide fuels, extraction cycles for, 22:27845 (CEA-N-816, pp 150-276)
separation from sodium fluoride beds, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
separation from solutions, basic precipitation method for continuous, 22:30670(P)
separation from spent ceramic fuels by fluorination and volatilization, 22:25470(T) (ANL-Trans-590)
separation from spent ceramic fuels by salt transport process, 22:40184 (KR-126, pp 476-93)
separation from spent ceramic fuels, pyrochemical processes for, 22:35880 (ANL-7450, pp 7-20)
separation from spent fuel, development of methods for, 22:27856(R) (K-1738)
separation from spent fuel, use of fluoride volatility process for, 22:12006(R) (ANL-7399)
separation from spent fuels, 22:37837(R) (K-1744)
separation from spent fuels by aquafluor process, 22:40176 (KR-126, pp 361-84)
separation from spent fuels by fluidized-bed fluoride-volatility techniques, 22:33527
separation from spent fuels by halide volatility process, 22:40174 (KR-126, pp 324-41)
separation from spent fuels by pyrometallurgical processes, 22:40182 (KR-126, pp 452-67)
separation from spent fuels by solvent extraction, 22:33507
separation from spent fuels by solvent extraction using tributyl phosphate, electronic control of, 22:23123(P)
separation from spent fuels by solvent extraction, criticality and toxicity problems in, 22:48897 (KFK-709)
separation from spent fuels, efficiency of dry process for, 22:48898(T) (KFK-tr-249)
separation from spent JEEP fuel elements by Purex process, 22:33508
separation from spent oxide fuels by fluoride volatility techniques, 22:35881 (ANL-7450, pp 21-38)
separation from sulfuric acid solutions containing uranium by solvent extraction using amines, 22:45161(P)
separation from thorium by ion exchange, 22:23103
separation from thorium by paper chromatography in nitric acid mixtures with alcohols, 22:51060
separation from thorium in acidic media by solvent

extraction using N-phenylbenzohydroxamic acid, 22:33332
separation from transplutonium elements by thin-layer chromatography using as solvent a tributyl phosphate--benzene mixture, 22:37851
separation from tributyl phosphate or tridodecylamine solutions from solvent extraction process, 22:37872(P)
separation from tridodecylamine by solvent extraction using nitric oxide, 22:25452 (CEA-N-616, pp 154-214)
separation from tridodecylamine by solvent extraction using nitric acid--sulfuric acid solution, 22:27845 (CEA-N-816, pp 150-276)
separation from undissolved uranium fuels by solvent extraction, 22:45162(P)
separation from uranium and fission products by multistep, gradient concentration method, 22:6431(P)
separation from uranium and fission products in fuel reprocessing by solvent extraction, 22:14577(P)
separation from uranium and zirconium by solvent extraction using TBP, effects of aluminum nitrate, nitric acid, and sodium tartrate concentrations on, 22:6409
separation from uranium by fluid-bed fluoride volatility process, 22:6365 (ANL-7362)
separation from uranium by fluoride volatility process, 22:8175(T) (ANL-Trans-544)
separation from uranium by fluoride volatility process, 22:6384
separation from uranium by ion exchange, 22:12427
separation from uranium by oxalate precipitation, 22:33208(R) (MLM-1456)
separation from uranium by oxalate precipitation, 22:42019(R) (MLM-1494)
separation from uranium by selective reduction of plutonium hexafluoride, 22:27847 (CEA-N-816, pp 324-58)
separation from uranium by solvent extraction, 22:18738(R) (MLM-1417)
separation from uranium by solvent extraction, 22:45146 (NP-17588)
separation from uranium by solvent extraction using amines and TBP, 22:16687
separation from uranium by solvent extraction using TBP, 22:21176(P)
separation from uranium by solvent extraction using amines and quaternary ammonium compounds, 22:16687
separation from uranium by TBP extraction, use of tetravalent uranium ions as reductant in, 22:16682
separation from uranium by TBP extraction, use of uranium(IV) nitrate in, 22:16680
separation from uranium by volatilization, 22:27852(R) (EURAEC-2011)
separation from uranium dioxide fuel pellets, fluid-bed fluoride volatility process for, 22:25443 (ANL-7375, pp 46-94)
separation from uranium in reprocessing reactor fuels of high plutonium content, 22:51082
separation from uranium in TBP by sorption on silica gel, 22:149
separation from uranium in TBP extraction process, oxidation and complexing processes for, 22:40168 (KR-126, pp 172-200)
separation from uranium oxide fuels, 22:47222
separation from uranium using EDTA, 22:25440(R) (MLM-1443)
separation from uranium, efficiency of methods for, 22:23103
separation from uranium, extraction and oxidation method for, 22:25452 (CEA-N-616, pp 154-214)
separation from uranium, rate of reactions of nitrous acid with hydrazine or sulfamic acid in nitric acid for control in, 22:40061
separation from uranium, salt-transport step for, 22:151
separation from uranium, use of tetravalent uranium ions as process reductant in, 22:16681
separation from uranium--plutonium fuels, 22:6382
separation from waste material by fluoride volatility process, 22:6369 (RFP-1048)
separation from waste solutions by contact with hydrated titanium oxide, 22:4265(P)
separation from ZPPR unmeasurable wastes, 22:47203(R) (NUMEC-1661-2)
separation of americium and curium from irradiated, by solvent extraction, 22:149
separation of americium, californium, and curium from, hot cell for, 22:49060
separation of neptunium from fission products mixtures of, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
separation of neptunium from, by reversed phase chromatography in nitric acid--tridodecylamine, 22:2171 (CEA-R-3245)
separation of neptunium-237 from, by solvent extraction using tridodecylammonium chloride, 22:27848 (CEA-N-816, pp 359-414)
separation of trace amounts of, from magnesium, method for, 22:27530 (CEA-N-816, pp 9-65)
separation of traces of, from graphite, design of shaft furnace for, 22:27732(P)
separation of transuranium elements from, evaluation of TRU flowsheets, equipment, and procedures for, 22:23101 (ORNL-TM-1938)
separation of uranium-237 from hydrochloric acid solutions of, by solvent extraction using tridodecylammonium chloride, 22:27848 (CEA-N-816, pp 359-414)
separation of, methods for, 22:23114
solubility in alpha-phase uranium at 565°C, 22:49710 (CEA-R-3439)
solubility in hydrochloric acid, thermodynamics of, 22:4147
solubility in iron, analysis of, 22:48790
solubility in magnesium--zinc alloys at 600 to 800°C, 22:25442 (ANL-7375, pp 19-45)
solubility in zinc and zinc--magnesium alloys, 22:24925(R) (ANL-7427)
solubility of, in α-iron at 850 and 880°C, 22:10989
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
solvent properties for chromium, 22:19516 (LA-3850)
solvent properties for chromium, manganese, molybdenum, niobium, thulium, titanium, vanadium, and zirconium, 22:38555
solvent properties for selected metals at 700 to 1000°C, thermodynamics of, 22:40053 (LA-3951)
sorption by uranium dioxide gel, 22:2016(R) (BAW-3714-4)
sorption from gastrointestinal tract of miniature swine, 22:45406
spectra in calcium fluoride single crystals, 22:30543
spectra of, electric field splitting of inner atomic levels observed from photoelectron and internal-conversion, (E), 22:52541
spectra of, emission, 22:2018(R) (BMwF-FBK-67-76)
spectra of, relative isotopic shift in arc, (E), 22:17347
structure of samples containing, x-ray diffraction studies of, 22:27622 (EUR-3897)
supply for FFTF fuel fabrication, administrative aspects of, 22:726 (BNWL-SA-1388, pp 13.1-3)
supply-and-demand of, forecast of world-wide, 22:48693
tensile properties of β, relations with strain hardening of, 22:23794
thermal capacity of allotropes and electrorefined, 22:2612(R) (MLM-1402)
thermal capacity of alpha-phase, comparison with values for α-manganese, 22:19529
thermodynamic properties determination from vaporization analysis, 22:6138(R) (LA-3820)
ultrasonic attenuation at low temperatures, as evidence for cooperative electron transition, 22:44233
use as fast and thermal fuel, safety aspects of recycle, 22:53386
use as fuel for water-cooled power reactors, economics of, 22:6037
use as fuel in reactors, 22:10075(R) (EURAEC-1929)
use as fuel, comparison of uranium and, 22:14289 (BNWL-635)
use as power reactor fuel, investigation of, 22:25007
use as reactor fuel, potential for, 22:606 (CONF-661011, pp 8-10)
use for fast breeder reactor fuel, evaluation of requirements for, 22:7804 (EURFNR-422)
use for fuel in fast and thermal reactors, 22:10010(R) (NP-17126)
use for power reactor fuel, development program for, 22:20778(R) (BNWL-624)
use for thermal reactor fuel, Phoenix program for, (E/T), 22:27459 (BNWL-634, pp 3.1-27)
use in BWR fuel elements, evaluation of, 22:6021
use in pressurized-water reactor fuel elements, 22:6022
use in water-cooled thermal power reactor fuels, review of physics data for, 22:37407 (BNWL-801)
uses for reactor fuels of, description of, 22:30200
vapor pressure of, 22:37713 (LA-3902)
vaporization of, mass-spectrometric studies of enthalpy of, 22:37713 (LA-3902)
viscosity of, 22:28796
x-ray counting of, isotopic composition effects on, 22:47313 (BNWL-715(Pt.1), pp 29-38)
x-ray emission at 8 to 75 A, 22:5122
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640

PLUTONIUM ALLOYS AND SYSTEMS
analysis for iron by spectrophotometry after liquid--liquid extraction, 22:10172 (LA-3781)
corrosion and oxidation of, review of, 22:2577
fabrication of, methods for, 22:8714
metallography of, preparation of samples for, 22:2656
phase studies on, review of, 22:21650
properties, 22:36495
properties and behavior of, review of, 22:2655
radiation effects on, 22:36515
radiation testing of liquid, in-pile loops for, 22:35600 (LA-3832)
^{239}Pu--U, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
Ag--Pu, phase studies of, 22:2655
Al--Pu, analysis for plutonium by x-ray fluorescence, 22:12228(T) (BNWL-tr-24)
Al--Pu, burnup at high exposures, data on, 22:11004 (BNWL-CC-905)
Al--Pu, dissolution of, 22:149

Al--Pu, dissolution of fuel elements of, 22:37640(T) (ANL-Trans-628, pp 2-50)
Al--Pu, mechanical properties of delta-stabilized, 22:2632
Al--Pu, phase diagrams and properties, 22:36495
Al--Pu, phase studies of, 22:2655
Al--Pu, physical properties of, 22:2627
Al--Pu, processing solutions of, by vitrification, 22:27849 (CEA-N-816, pp 415-80)
Al--Pu, radiation dose rates from in-pile exposure samples of, shielding requirements for, 22:19669 (BNWL-624, pp 2.1-32)
Al--Pu, radiation effects on fuels of, review on, 22:8804
Al--Pu, recovery of plutonium from, process for, 22:21167
Al--Pu, separation of contaminants and transuranium elements from targets of, methods for, 22:25455 (CEA-N-616, pp 295-368)
Al--Pu, tensile strength and hardness of, 22:2632
Al--Pu, use as target for production of transcurium elements, irradiation conditions for, 22:25455 (CEA-N-616, pp 295-368)
Al--Pu, waste solutions from processing of, calcination of, 22:27849 (CEA-N-816, pp 415-80)
Al--Pu-base, fabrication and use of nuclear fuels of, 22:8715
Al-base--Pu, casting and Zircaloy-2 encapsulation as fuel elements, 22:43552
Al-base--Pu, fabrication and use of nuclear fuels of, 22:8715
Am--Pu, phase studies of, 22:2655
As--Pu, phase studies of, 22:2655
Au--Pu, phase studies of, 22:2655
B--Pu, phase relations in, 22:2699
B--Pu, phase studies of, 22:2655
Ba--Pu, phase studies of, 22:2655
Be--Pu, phase diagram, 22:10986(T) (JPRS-43479)
Be--Pu, phase diagrams and properties, 22:36495
Be--Pu, phase studies of, 22:2655
Be--Pu, preparation for neutron sources, 22:5707 (BARC-294)
Bi--Pu, phase studies of, 22:2655
C--N--Pu, phase diagram, 22:52259 (CEA-R-3536)
C--O--Pu, phase studies, 22:31505
C--Pu, phase relations in, 22:2699
C--Pu, phase studies, 22:41122
C--Pu, phase studies, 22:31471
C--Pu, phase studies of, 22:2655
C--Pu, physical properties of, 22:2627
C--Pu--U, phase diagram, 22:17113 (JAERI-1144)
C--Pu--U, transpiration of, 22:52257 (ANL-7425, pp 94-129)
C--Pu--U, vapor pressure of, 22:52257 (ANL-7425, pp 94-129)
C--Pu--U-base, preparation of deoxidized, method for, 22:21755(P)
Ca--Pu, phase studies of, 22:2655
Ce--Co--Pu, fuels of, fission gas venting to sodium coolant from encapsulated liquid, 22:4730 (LA-3766)
Ce--Co--Pu, phase studies of, 22:2655
Ce--Co--Pu, solvent properties of liquid, for tantalum, 22:10918
Ce--Co--Pu, viscosity of, 22:28796
Ce--Fe--Pu, phase studies, 22:734
Ce--Ni--Pu, phase studies, 22:734
Ce--Pu, densities of liquid, effects of temperature on, 22:2612(R) (MLM-1402)
Ce--Pu, electric conductivity of, effects of precipitation of delta-plutonium on, 22:41064
Ce--Pu, mechanical properties of delta-stabilized, 22:2632
Ce--Pu, phase studies of, 22:2655
Ce--Pu, physical properties of, 22:2627
Ce--Pu, precipitation of delta-plutonium in, by thermal cycling, 22:41064
Ce--Pu-base, diffusion of cerium in delta-stabilized, at 403 to 528°C, 22:47682
Co--Pu, phase studies of, 22:2655
Cr--Pu, phase diagrams and properties, 22:36495
Cr--Pu, phase studies of, 22:2655
Cs--Pu, phase studies of, 22:2655
Cu--Pu, phase studies of, 22:2655
dodecane--HNO_3--Pu--tridodecylamine, phase studies of, 22:40154 (CEA-R-3478)
Fe--Mn--Pu, phase studies of, 22:2612(R) (MLM-1402)
Fe--Pu, analysis of intermetallic compound, using electron probe microanalyzers, 22:2625
Fe--Pu, analysis of, electron-microprobe, 22:39988 (RFP-1146)
Fe--Pu, mechanical properties of, summary of, 22:2632
Fe--Pu, phase diagrams and properties, 22:36495
Fe--Pu, phase studies at 1142 and 1165°C, 22:10989
Fe--Pu, phase studies of, 22:2655
Fe--Pu, physical properties of, 22:2627
Fe--Pu, viscosity of, 22:28796
Fe--Pu--U, analysis for carbon, impurities, iron, and plutonium, methods for, 22:25236 (CEA-N-616, pp 20-71)
Fe--Pu--U, phase studies of, 22:2655
Fe--Pu-base, fabrication and use of nuclear fuels of, 22:8715
fissium--Pu--U, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
fissium--Pu--U, mechanical properties of, 22:2632
fissium--Pu--U, properties of unclad fuel elements of, 22:5945
fizzium--Pu--U, radiation effects on fuels of, review on, 22:8804
fizzium--Pu--U-base, enthalpy and thermal capacity of, 22:19538
fizzium--Pu--U-base, transformation kinetics during annealing, 22:19537
Ga--Pu, alpha-phase precipitation in delta-phase, effects of cold treatment at -80°C on, 22:8769
Ga--Pu, analysis of intermetallic compound, using electron probe microanalyzers, 22:2625
Ga--Pu, analysis of, electron-microprobe, 22:39988 (RFP-1146)
Ga--Pu, formation heats of intermetallic compounds of, methods of determining, 22:31364
Ga--Pu, heat treatment of, 22:2633
Ga--Pu, mechanical properties of delta-stabilized, 22:2632
Ga--Pu, phase studies of, 22:2655
Ga--Pu-base, diffusion coefficients of annealed couples of, 22:19567
Ga--Pu-base, elastic constants at low temperatures of delta-phase, 22:41071
Ga--Pu-base, grain growth in, anneal--strain effects on, 22:4779
Ga--Pu-base, growth of large crystals of, using modified solidification technique, 22:28761
Ga--Pu-base, hardness at room temperature to 415°C, 22:21685 (BNWL-682)
Ga--Pu-base, tensile properties at -60, 30, and 77°C, 22:2622
Ga--Pu-base, thermal capacity at low temperatures of delta-phase, 22:41071
Ge--Pu, phase studies of, 22:2655
H--Pu, phase diagrams and properties, 22:36495
H--Pu, phase relations in, 22:2699
Hf--Pu, phase studies of, 22:2655
Hf--Pu-base, phase transformation kinetics of, beta-to-alpha, 22:41067
Hg--Pu, phase diagrams and properties, 22:36495
Hg--Pu, phase studies of, 22:2655
In--Pu, phase studies of, 22:2655
K--Pu, phase studies of, 22:2655
La--Pu, phase studies of, 22:2655
Li--Pu, phase studies of, 22:2655
Mg--Pu, phase studies of, 22:2655
Mg--Pu, physical properties of, 22:2627
Mg--Pu--Zn, thermodynamic properties of, 22:25442 (ANL-7375, pp 19-45)
Mn--Pu, phase studies of, 22:2655
Mo--Pu, phase diagrams and properties, 22:36495
Mo--Pu, phase studies of, 22:2655
Mo--Pu--U, analysis for plutonium, accountability methods for, 22:6 (CONF-661011, pp 135-45)
Mo--Pu--U, analysis of solutions of, for impurities, spectrographic, 22:22930(R) (NBL-242)
Mo--Pu--U, ignition and combustion characteristics of reactor fuels of, (E), 22:30297 (ARH-471)
Mo--Pu--U, phase studies of, 22:2655
Mo--Pu--U, radiation effects on fuels of, review on, 22:8804
Mo--Pu--U, tensile strength and hardness of, 22:2632
Mo--Pu--U, thermal properties of, measurement of, 22:30386
Mo--Pu--U-base, fabrication into ZPPR fuel elements, 22:43627 (ANL-7299, pp 14-113)
Mo--Pu--U-base, stainless steel jacketed plates of, design and fabrication of, (E), 22:15153 (ANL-7313)
N--Pu, phase relations in, 22:2699
Na--Pu, phase studies of, 22:2655
Nb--Pu, phase diagrams and properties, 22:36495
Nb--Pu, phase studies of, 22:2655
Ni--Pu, phase studies of, 22:2655
Ni--Pu, physical properties of, 22:2627
Np--Pu, phase studies of, 22:2655
Np--Pu, physical properties of, 22:2627
O--Pu, phase diagrams and properties, 22:36495
O--Pu, physical properties of, 22:2627
O--Pu, sublimation of vapor phases in, partial heats of, 22:22653(R) (ANL-7419)
O--Pu--U, phase diagram, 22:17113 (JAERI-1144)
O--Pu--U, phase diagram of, 22:43663
O--Pu--U, phase studies of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, phase studies of, 22:17168 (STI/DOC-10/79)
O--Pu--U, phase studies of, 22:31509
O--Pu--U, thermodynamic properties of, 22:17168 (STI/DOC-10/79)
O--Pu--U, thermodynamic properties of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, transpiration of, 22:52257 (ANL-7425, pp 94-129)
O--Pu--U, vapor pressure of, 22:52257 (ANL-7425, pp 94-129)
Os--Pu, phase studies of, 22:2655
P--Pu, phase relations in, 22:2699
Pb--Pu, phase studies of, 22:2655
Pd--Pu, phase studies of, 22:2655

Pd--Pu--Rh--Ru--U, formation in irradiated plutonium dioxide--uranium dioxide fuels, 22:17152
Pu--rare earths, phase studies of, 22:2655
Pu--Rb, phase studies of, 22:2655
Pu--Re, phase studies of, 22:2655
Pu--Rh, phase studies of, 22:2655
Pu--Ru, phase studies of, 22:2655
Pu--Ru, thermodynamic properties of intermetallic $PuRu_2$, 22:31463
Pu--S, phase relations in, 22:2699
Pu--Sb, crystal structure of intermetallic compounds in, 22:37720
Pu--Sb, preparation, crystal structure, and melting points of, 22:8061
Pu--Sc, phase studies of, 22:2655
Pu--Sn, formation heats of intermetallic compounds of, methods of determining, 22:31364
Pu--Sn, phase studies of, 22:2655
Pu--Sr, phase studies of, 22:2655
Pu--Ta, phase diagrams and properties, 22:36495
Pu--Ta, phase studies of, 22:2655
Pu--Th, hardness of, 22:2632
Pu--Th, phase diagrams and properties, 22:36495
Pu--Th, phase studies, 22:43520 (ANL-7299, pp 138-43)
Pu--Th, phase studies of, 22:2652
Pu--Th, phase studies of, 22:2655
Pu--Th, physical properties of, 22:2627
Pu--Th, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
Pu--Th, radiation effects on fuels of, review on, 22:8804
Pu--Th, radiation effects on mechanical and physical properties of, analysis of thermal neutron, 22:53456 (BNWL-861)
Pu--Th--U, phase studies, 22:43520 (ANL-7299, pp 138-43)
Pu--Th--U, properties of unclad fuel elements of, 22:5945
Pu--Th--U, thermal conductivity at 300, 600, and 800°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Pu--Th-base, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Pu--Th-base--U, radioinduced swelling of, effects of cladding on, 22:43520 (ANL-7299, pp 138-43)
Pu--Th-base--U, thermal conductivity at 100 to 800°C, 22:43520 (ANL-7299, pp 138-43)
Pu--Ti, phase studies of, 22:2655
Pu--Ti, reactions of, kinetics of solid-state, 22:2633
Pu--Ti--U, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--Ti--U, phase studies, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, compatibility with stainless steel and vanadium-base alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--Ti--U-base, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Pu--Tl, phase studies of, 22:2655
Pu--U, analysis for impurities, spectrographic, 22:21645(R) (BMI-1826)
Pu--U, burnup of, hot cells for study of, 22:4417
Pu--U, densities of liquid, effects of temperature on, 22:2612(R) (MLM-1402)
Pu--U, diffusion of plutonium and uranium in, at 400 to 550°C, 22:52164(T) (RFP-Trans-52)
Pu--U, fuel burnup in graphite and heavy water moderated lattices of, computer analysis of, (E/T), 22:22832
Pu--U, hardness of, 22:2632
Pu--U, mechanical properties of, summary of, 22:2632
Pu--U, neutron flux perturbation in single fuel elements of, method for calculation of, 22:1874
Pu--U, phase diagrams and properties, 22:36495
Pu--U, phase equilibria of, effects of zirconium on, 22:2612(R) (MLM-1402)
Pu--U, phase studies of, 22:2655
Pu--U, physical properties of, 22:2627
Pu--U, preparation of solutions of irradiated and reconstituted fuels of, for analysis, 22:25236 (CEA-N-616, pp 20-71)
Pu--U, radiation effects on fuels of, review on, 22:8804
Pu--U, reactions of, kinetics of solid-state, 22:2633
Pu--U, viscosity as a function of reciprocal temperature, 22:2612(R) (MLM-1402)
Pu--U, viscosity as function of composition, 22:2612(R) (MLM-1402)
Pu--U--Zr, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--U--Zr, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
Pu--U--Zr, phase diagram, 22:31385
Pu--U--Zr, phase equilibria of, 22:2612(R) (MLM-1402)
Pu--U--Zr, phase studies, 22:34065(R) (MLM-1445)
Pu--U--Zr, phase studies, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Pu--U--Zr, phase-equilibrium states for, measurement of, 22:30386
Pu--U--Zr, phases of solid-solution reactions of, 22:43627 (ANL-7299, pp 14-113)
Pu--U--Zr, power performance of fuels of, analysis of optimum, 22:46928 (WASH-1106)
Pu--U--Zr, radiation effects on, 22:16265(R) (ANL-7403)
Pu--U--Zr, radiation effects on, 22:7788(R) (ANL-7382)
Pu--U--Zr, radiation effects on, postirradiation analyses of, 22:12006(R) (ANL-7399)
Pu--U-base, diffusion at 410 to 640°C in, 22:49710 (CEA-R-3439)
Pu--U-base, enthalpy and thermal capacity of, 22:19538
Pu--U-base--Zr, compatibility with stainless steel and vanadium-base cladding materials at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, enthalpy and thermal capacity of, 22:19538
Pu--U-base--Zr, fabrication of fuel pins of, methods development, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--U-base--Zr, radiation effects on clad, at 4.7 to 5.1 at. percent burnup, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Pu--V, analysis for vanadium, spectrophotometric, 22:14421 (LA-3843)
Pu--V, phase diagrams and properties, 22:36495
Pu--V, phase studies of, 22:2655
Pu--W, phase diagrams and properties, 22:36495
Pu--W, phase studies of, 22:2655
Pu--Y, phase studies of, 22:2655
Pu--Zn, crystals structure of intermetallic Pu_3Zn_{22}, 22:38581
Pu--Zn, phase studies of, 22:2655
Pu--Zn, physical properties of, 22:2627
Pu--Zr, diffusion in, effects phase transformations on, 22:4796 (CEA-R-3275)
Pu--Zr, hardness of, 22:2632
Pu--Zr, mechanical properties of, summary of, 22:2632
Pu--Zr, phase diagram of, analysis of equilibrium, 22:52197 (BNWL-402)
Pu--Zr, phase diagrams and properties, 22:36495
Pu--Zr, phase studies of, 22:2655
Pu--Zr, properties of, data sheets on, 22:8724 (MLM-1441)
Pu--Zr, radiation effects on fuels of, review on, 22:8804
Pu--Zr, reactions of, kinetics of solid-state, 22:2633

PLUTONIUM ARSENIDES
crystal structure of, 22:37720
preparation, crystal structure, and melting points of, 22:8061
preparation, properties, and reactions of, review of, 22:2089

PLUTONIUM BORIDES
preparation, properties, and phase relation of, review of, 22:2699

PLUTONIUM BROMIDES
complexes of, preparation and spectra of, 22:30542
complexes with hexamethylphosphoric triamide and triphenylphosphine oxide, preparation and properties of, 22:37722
preparation of anhydrous, by dehydration of hexahydrates, 22:45046
structure of anhydrous, crystal and molecular, 22:45046

Plutonium(IV) Calcium Fluorides
see Calcium Plutonium Fluorides $CaPuF_6$

PLUTONIUM CARBIDE NITRIDES
production by reactions of ammonia with plutonium and plutonium carbide, 22:17165(P)

PLUTONIUM CARBIDES
crystal structure and thermodynamics of, 22:23007 (UJV-1832)
crystal structure of, 22:31505
crystal structure of room temperature Pu_2C_3, neutron diffraction determination of, 22:27487(R) (LA-3880)
electric conductivity and thermoelectric power at 298 to 1000°K, 22:43631 (ANL-7299, pp 120-37)
electric conductivity of, 22:26085
extrusion through graphite dies at 1600 to 2400°C, process for, 22:8811(P)
fabrication of fuel elements of, methods for, 22:8816(P)
melting behavior of, analysis up to 1660°C of, 22:50841(R) (LA-3993)
physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
physical properties of reactor fuels of, 22:17113 (JAERI-1144)
preparation and high-temperature properties of substoichiometric, 22:43629(R) (LA-3933)
preparation by conversion of oxides, 22:36543 (ANL-7450, pp 39-74)
preparation by fluidized--bed technique, 22:24925(R) (ANL-7427)
preparation by metal--methane reaction, 22:36543 (ANL-7450, pp 39-74)
preparation by reaction of aluminum with plutonium halides, 22:8817(P)
preparation by reaction of plutonium halides with carbon and reducing metal, 22:23883(P)
preparation, crystal structure, and melting points of, 22:8061
preparation, properties, and phase relation of, review of, 22:2699
preparation, properties, and reactions of, review of,

22:2089
properties as fuel material, chemical research on, 22:25144
properties of, data sheets on, 22:8724 (MLM-1441)
properties of, literature survey on, 22:21759 (LA-3799)
PuC--UC, reactions with methane, thermodynamics of, 22:25321 (ANL-7375, pp 95-134)
radiation effects on fuels of, review on, 22:8804
radiation effects on niobium-zirconium clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on stainless steel clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on, literature survey of in-pile, 22:21759 (LA-3799)
reactions with ammonium and plutonium to produce plutonium carbonitride, 22:17165(P)
reactions with austenitic steels at 650 to 1050°C, 22:23852 (CEA-R-3353)
reactions with nitrogen at 400°C, 22:52259 (CEA-R-3536)
sintering process for production of high density compacts at temperatures below 1700°C, 22:745(P)
stabilization of fuel of, using chromium, 22:23840(P)
thermal conductivity of, 22:26085
thermal conductivity of, effects of fission products, hydrogen, oxygen, porosity, and sintering on, 22:768 (LA-DC-9059)
thermal diffusivity of, (E), 22:22653(R) (ANL-7419)
thermal diffusivity, analysis at 500 to 1500°C of, 22:48790
thermodynamic properties, 22:43646 (ANL-7299, pp 220-6)
thermodynamic properties of, 22:31508
thermodynamic properties of PuC and Pu_2C_3, 22:31463
thermodynamic properties of, design of cryostat for studying, 22:10204(R) (COO-1149-102)
thermodynamic properties of, mass-spectrometric studies of, 22:36543 (ANL-7450, pp 39-74)
vaporization of, 22:23007 (UJV-1832)
^{239}PuC--UC, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
Cr--PuC--ThC, fuels of, composition optimization for cladding compatability, 22:19642(P)
Cr--PuC--UC, fuels of, composition optimization for cladding compatability, 22:19642(P)
N--PuC--UC, phase diagram, 22:52259 (CEA-R-3536)
NbC--PuC, preparation of improved fuels of, 22:52251(P)
NbC--PuC--UC, preparation of improved fuels of, 22:52251(P)
Pu_2C_3--U_2C_3, compatibility with stainless steel at 800°C, 22:53463(R) (UNC-5217)
Pu_2C_3--U_2C_3, radiation effects on thermal properties and stress analysis of Type 304 stainless steel- and Incoloy 800-clad mixed, calculation of neutron, (T), 22:46923 (UNC-5219)
PuC_2--UC_2, phase studies, 22:41122
PuC--Ru--UC, analysis for ruthenium, 22:7986 (AERE-R-5617)
PuC--TaC, phase relations and properties of, 22:2699
PuC--UC, burnup and performance of sodium-bonded, in-pile, 22:8807(R) (WCAP-3791-10)
PuC--UC, burnup of chromium-modified fuel pins of, relations with power, 22:38626(R) (WARD-3791-18)
PuC--UC, burnup of fuel pins of, chemical analysis of, 22:7787 (AERE-R-5309)
PuC--UC, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
PuC--UC, burnup of, effects of fuel density on, 22:30386
PuC--UC, chemical properties of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, compatibility of sodium bonded fuels of, with Type 316 stainless steel at 750°C, 22:43629(R) (LA-3933)
PuC--UC, compatibility of sodium-bonded fuels with cladding materials, 22:6138(R) (LA-3820)
PuC--UC, compatibility of sodium-bonded, with cladding materials, 22:27487(R) (LA-3880)
PuC--UC, compatibility with austenitic and nickel-base cladding alloys at high temperatures, 22:31458
PuC--UC, compatibility with cladding materials at 700 to 800°C, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, compatibility with Incoloy 800 and stainless steel cladding at 800°C, 22:4877
PuC--UC, compatibility with jacketing materials, 22:9988(R) (ANL-7391)
PuC--UC, compatibility with stainless steel at 800°C, 22:53463(R) (UNC-5217)
PuC--UC, compatibility with stainless steel, niobium, or vanadium cladding, 22:36509 (CONF-671005-7)
PuC--UC, compatibility with Type 316 stainless steel-cladding of sodium bonded, evaluation of, 22:50841(R) (LA-3993)
PuC--UC, corrosion by flowing and static sodium at 700°C in 2200 hr exposures, 22:43629(R) (LA-3933)
PuC--UC, densities for fuel pellets of, effects of processing on, 22:21674(R) (WARD-3791-12)
PuC--UC, fabrication and properties of compacted, effects of refractory metal additions on, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, fabrication and testing of high-density fuel pellets of, 22:53463(R) (UNC-5217)
PuC--UC, fabrication and welding of irradiation test pins of, 22:21674(R) (WARD-3791-12)
PuC--UC, fabrication of fuel elements of, methods for, 22:8816(P)
PuC--UC, fabrication of pellet-shaped, effects of techniques on quality, 22:50841(R) (LA-3993)
PuC--UC, fabrication of pellets of, 22:36543 (ANL-7450, pp 39-74)
PuC--UC, fission products diffusion from pelleted, in liquid sodium, 22:43629(R) (LA-3933)
PuC--UC, fuel element compatibility for liquid sodium-bonded, analysis of metal-clad, 22:39790(R) (UNC-5201)
PuC--UC, fuel element fabrication of, quality control in pellet-type, 22:39790(R) (UNC-5201)
PuC--UC, fuel elements of, design parameters for optimum fast breeder power reactor, (E/T), 22:39810
PuC--UC, high temperature properties of, 22:27487(R) (LA-3880)
PuC--UC, integrity of stainless steel clad, effects of bubble size in sodium bonding on, 22:4910
PuC--UC, loading into GETR irradiation pins, 22:38626(R) (WARD-3791-18)
PuC--UC, loading irradiation capsules with pellets of, facility for, 22:43629(R) (LA-3933)
PuC--UC, loading pellets of, into cladding tubes, (E), 22:8807(R) (WCAP-3791-10)
PuC--UC, performance of driver fuels of, analysis for FTR optimum, 22:27457 (BNWL-513)
PuC--UC, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
PuC--UC, phase relations and properties of, 22:2699
PuC--UC, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
PuC--UC, physical properties of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, physics parameters for Prototype Fast Reactor fuel of, analysis of, 22:18512
PuC--UC, power performance of, analysis of optimum, 22:46928 (WASH-1106)
PuC--UC, preparation and high-temperature properties, 22:43629(R) (LA-3933)
PuC--UC, preparation and properties of chromium carbide stabilized, 22:45806(R) (WARD-3791-21)
PuC--UC, preparation and properties of reactor fuels of, 22:6138(R) (LA-3820)
PuC--UC, preparation by hydrogen reduction method, 22:27487(R) (LA-3880)
PuC--UC, preparation by precipitation from plutonium nitrate--uranium nitrate using sucrose, 22:19609(R) (NYO-3713-3)
PuC--UC, preparation of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, preparation of fuels of, fluidized-bed process for, 22:25321 (ANL-7375, pp 95-134)
PuC--UC, production of pellets of, (E), 22:8807(R) (WCAP-3791-10)
PuC--UC, production of pellets of, methods for, 22:38626(R) (WARD-3791-18)
PuC--UC, radiation effects at 19,000 to 32,000 MWd/t, fast neutron, 22:4911
PuC--UC, radiation effects at 640°C on clad, in-pile, 22:4912
PuC--UC, radiation effects measurements on, 22:24925(R) (ANL-7427)
PuC--UC, radiation effects of pellets of, fast and thermal neutron, 22:36509 (CONF-671005-7)
PuC--UC, radiation effects on clad sodium bonded fuel elements of, in-pile, 22:45806(R) (WARD-3791-21)
PuC--UC, radiation effects on clad, at 5900 MWd/t burnup, 22:43629(R) (LA-3933)
PuC--UC, radiation effects on compacted, in-pile, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, radiation effects on EBR-2 driver fuel elements, analysis of neutron, 22:50841(R) (LA-3993)
PuC--UC, radiation effects on fuels of, 22:7788(R) (ANL-7382)
PuC--UC, radiation effects on fuels of, review on, 22:8804
PuC--UC, radiation effects on niobium-zirconium clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, radiation effects on physical properties of metal-clad, analysis of fast neutron, 22:39790(R) (UNC-5201)
PuC--UC, radiation effects on physical properties of metal-clad helium-bonded, analysis of fast neutron, 22:39789 (UNC-5198)
PuC--UC, radiation effects on stainless steel clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, radiation effects on thermal properties and stress analysis of Type 304 stainless steel- and Incoloy 800-clad, calculation of neutron, (T), 22:46923 (UNC-5219)
PuC--UC, radiation effects on, description of optical examination methods for neutron, 22:27497
PuC--UC, radiation effects on, literature survey of in-pile, 22:21759 (LA-3799)
PuC--UC, radioinduced swelling of, in-pile, 22:771
PuC--UC, reactions at 800°C with cladding materials, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, reactivity of fluidized-bed powder of, with helium atmosphere in glove box, 22:25321 (ANL-7375, pp

95-134)
PuC--UC, thermal conductivity of, 22:768 (LA-DC-9059)
PuC--UC, thermal diffusivity of, (E), 22:22653(R) (ANL-7419)
PuC--UC, thermal diffusivity, analysis at 500 to 1500°C of, 22:48790
PuC--UC, thermal properties of, analysis at 1600 to 2500°C of, 22:50841(R) (LA-3993)
PuC--ZrC, phase relations and properties of, 22:2699
PLUTONIUM CARBONATES
preparation, properties, and reactions of, review of, 22:2089
PLUTONIUM CARBONITRIDES
PuCN--UCN, fabrication by arc melting and casting for use as reactor fuels, 22:28777(R) (BMI-1837)
PuCN--UCN, preparation by arc melting and casting, 22:15261(R) (BMI-1819)
PuCN--UCN, preparation by casting and melting, 22:720 (BMI-1809, Sect.A)
PuCN--UCN, radioinduced swelling of, in-pile, 22:771
PLUTONIUM CHLORIDES
complexes of, preparation and spectra of, 22:30542
PLUTONIUM CHLORIDES $PuCl_3$
electrolysis in potassium chloride--sodium chloride eutectic, preparation of plutonium by, 22:25455 (CEA-N-616, pp 295-368)
reduction to metal, 22:151
solubility in water, thermodynamics of, 22:4147
thermodynamic properties, 22:31463
$CaCl_2$--KCl--$MgCl_2$--$PuCl_3$--UCl_3, properties as breeder fuel, 22:4130
KCl--NaCl--$PuCl_3$, distribution of americium between liquid plutonium and molten, 22:12290
KCl--NaCl--$PuCl_3$, plutonium equilibrium potential in, 22:42669
NaCl--$PuCl_3$, plutonium equilibrium potential in, 22:42669
PLUTONIUM CHLORIDES $PuCl_4$
complexes with dimethyl sulfoxide, stability, properties, and infrared spectra of, 22:16522
PLUTONIUM CITRATES
sorption and metabolism in rats, effects of age on, 22:10675 (BNWL-480, pp 21-54)
PLUTONIUM FLUORIDES
see also Cesium Plutonium Fluorides
see also Rubidium Plutonium Fluorides
compounds with other metal fluorides, preparation of, 22:8186
determination by neutron counting in fluoride volatility process, 22:48811 (ANL-7402)
diffusion of heated powders of, in air, 22:37708 (BNWL-786)
dissociation of PuF, energy of, 22:50963
handling of, radiation protection of personnel in, 22:10321 (EURAEC-1938)
heating of, airborne particle release from, 22:43014 (BNWL-SA-1735)
reactions to prepare oxides, 22:25470(T) (ANL-Trans-590)
separation from ruthenium fluoride by volatilization, 22:25443 (ANL-7375, pp 46-94)
sorption by metal fluorides, evaluation of candidate fluorides for, 22:30665
sublimation of PuF_3 from 1243 to 1475°K, enthalpy and vapor pressure of, 22:50963
volatility of, 22:8169(R) (EURAEC-1934)
CsF--PuF_5, preparation and structure of, 22:30555
PuF_5--RbF, preparation and structure of, 22:30555
PLUTONIUM FLUORIDES PuF_3
fuel for molten-salt reactor of, chemical feasibility of, 22:53282 (ORNL-TM-2256)
solubility of, analysis of, (T), 22:53282 (ORNL-TM-2256)
PLUTONIUM FLUORIDES PuF_4
see also Calcium Plutonium Fluorides $CaPuF_6$
criticality in processing equipment, analysis of configuration parameters for, 22:50808 (RFP-1206)
dehydration of crystal hydrates of, in flowing dehydrated hydrofluoric acid, 22:4139
fluorination in fluidized bed, production of plutonium hexafluoride in kilogram quantities by, 22:30568
fluorination to plutonium hexafluoride, 22:45026 (ORNL-TM-2306)
fluorination with fluorine and interhalogens, 22:8186
formation by reactions of chlorine monofluoride with and without oxygen with plutonium dioxide, 22:4230(R) (EURAEC-1920)
reactions with sodium fluoride, products of, 22:25443 (ANL-7375, pp 46-94)
separation from ruthenium fluoride by pyrohydrolysis and oxidation, 22:25443 (ANL-7375, pp 46-94)
volatilization by chlorine trifluoride, mechanism of, 22:4230(R) (EURAEC-1920)
LiF--PuF_4, preparation and structure of, 22:30555
NaF--PuF_4, criticality calculations for, 22:45143 (K-1734)
NaF--PuF_4, preparation and structure of, 22:30555
PLUTONIUM FLUORIDES PuF_6
criticality calculations for, 22:45143 (K-1734)
criticality in processing equipment, analysis of configuration parameters for, 22:50808 (RFP-1206)
crystal structure of, electron-diffraction study of, 22:33436
decomposition of volatile, mechanism of radiation and thermal, 22:51062
determination of volatile, method for, 22:25454 (CEA-N-616, pp 246-94)
plutonium recovery from, effects of presence of fluorine gas on, 22:30118 (ANL-7438)
production from plutonium tetrafluoride, 22:45026 (ORNL-TM-2306)
production of kilogram quantities of, by fluorination of plutonium tetrafluoride in fluidized bed, 22:30568
purification of, evaluation of fluid-bed fluoride volatility process for, 22:30118 (ANL-7438)
purification of, fluoride sorption-desorption system for, 22:30665
radiolysis of, self-, 22:37837(R) (K-1744)
radiolytic decomposition of, self-, 22:12399 (K-L-1780(Pt.22))
reactions of gaseous, with hydrogen and water vapor to produce plutonium dioxide, 22:45026 (ORNL-TM-2306)
reactions with cesium fluoride, fluorination of products of, 22:25443 (ANL-7375, pp 46-94)
reactivity and thermal stability of, comparison of, 22:45072
recovery in second fluorination cycle of bromine-halide volatility process, cold trap design for, 22:51134 (K-L-2963)
reduction by bromine trifluoride, 22:25443 (ANL-7375, pp 46-94)
reduction to tetrafluoride by hydrogen or iodine, 22:48899 (RFP-993)
release in fuel reprocessing plant, safety aspects, 22:51045 (ANL-7425, pp 42-93)
separation from fission products by sublimation, 22:25443 (ANL-7375, pp 46-94)
separation from metal fluoride mixtures using hydrofluoric acid, method for, 22:35886(P)
separation from uranium hexafluoride by selective reduction, 22:25454 (CEA-N-616, pp 246-94)
separation from uranium hexafluoride by selective thermodecomposition, 22:25454 (CEA-N-616, pp 246-94)
separation from uranium hexafluoride by selective reduction, 22:47213
separation of impurities from, 22:23106
sorption by sodium fluoride, 22:51045 (ANL-7425, pp 42-93)
sorption by sodium fluoride, 22:25443 (ANL-7375, pp 46-94)
thermal decomposition to tetrafluoride in process streams, estimation of rates of, 22:4229 (ANL-7347)
HF--PuF_6, criticality calculations for homogeneous, 22:45143 (K-1734)
PuF_6--UF_6, phase studies of, 22:150
PuF_6--UF_6, separation of plutonium and uranium from, volatility process for, 22:37825(T) (ANL-Trans-626, pp 36-58)
PLUTONIUM HALIDES
preparation, properties, and reactions of, review of, 22:2089
reactions with carbon and reducing metal to yield plutonium carbides, 22:23883(P)
PLUTONIUM HYDRIDES
phase studies of, 22:2655
preparation, properties, and phase relation of, review of, 22:2699
preparation, properties, and reactions of, review of, 22:2089
reactions with nitrogen to prepare nonpyrophoric plutonium nitride, 22:15249(P)
PLUTONIUM IONS
disproportionation of tetravalent, stoichiometry of, 22:16483 (MLM-1482)
distribution between nitric acid and TBP, 22:14559 (KFK-671)
distribution between nitric acid and TBP, 22:33484(T) (EURFNR-463)
effects on electrolytic reduction of uranyl ions in solution, 22:10261(P)
entropy of, 22:4147
hydrolysis of, 22:2090
hydrolysis of, development of equipment for, 22:27677
oxidation by nitrate, 22:2016(R) (BAW-3714-4)
oxidation of tetravalent to hexavalent, using manganese dioxide, 22:18743(T) (EURFNR-417)
oxidation states of, 22:2090
preparation and stability of heptavalent, 22:14486(T) (ANL-Trans-574)
preparation of colloidal solutions of tetravalent, 22:21750 (EUR-3737)
reactions in sodium carbonate solutions on hanging mercury drop electrode, 22:18778
reactions with Arsenazo, effects of valence on, 22:10173 (ORNL-TM-2108)
reduction by tetravalent uranium in TBP, 22:16682
reduction by uranium(IV) nitrate, 22:45146 (NP-17588)
reduction in uranyl solutions, electrolytic, 22:10261(P)
reduction of hexavalent, by hydrogen peroxide in nitric, perchloric, or sulfuric acids, 22:16479 (CEA-R-3168)
reduction of hexavalent, by hydrogen peroxide in nitric, perchloric, or sulfuric acids, 22:50951(T) (RFP-Trans-47)
reduction of hexavalent, by nitrite in nitrate system, 22:33293 (ARH-SA-12)

spectra in calcium fluoride crystals, effects of plutonium decay on, (E), 22:20055

PLUTONIUM ISOTOPES

content of precipitation in United States during 1966 to 1967, 22:28506
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
decay of, 22:3737
decay properties of, tables and charts on, (E), 22:7723
determination in biological and environmental samples, review on radiochemical methods for, 22:8034
determination in fuel elements by mass spectroscopy, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in reactor fuels, mass spectrographic, 22:25236 (CEA-N-616, pp 20-71)
determination of, radiometric, 22:44973 (JINR-P7-3855)
determination of, x-ray--alpha coincidence circuits for, 22:47312 (BNWL-715(Pt.1), pp 20-9)
distribution in irradiated natural uranium oxide (UO_2) fuel rods, (E/T), 22:20943
excretion, effects of alginates, citrate ions, fluorides, and hexametaphosphate on, 22:45508(R) (PG-Report-826)
fission of, spontaneous, 22:3737
gamma dose to reprocessed reactor fuels from, calculation of, 22:23247(T) (EURFNR-385)
gamma spectra of, 22:51042 (CEA-R-3547)
handling of, review on factors in controlling personnel exposure during, 22:8333
inhalation by rats, kinetics of, 22:8477
metabolism by man following inhalation, 22:30935 (SZS-16/67)
neutron capture cross section calculations using revised mass formula, fast, (T), 22:30021
neutron dose rates from spheres of metallic, calculation of, 22:1755 (BNWL-SA-1326)
neutron dose to reprocessed reactor fuels from, calculation of, 22:23247(T) (EURFNR-385)
neutron fission of, review of, (E/T), 22:3738
neutron reactions with, review of, (E/T), 22:3738
properties of, review of, 22:3737
radiation dose from, at groundlevel during 1954 to 1966 and 1967 to 1971, calculation of, 22:40716
recovery from power reactor fuels, economics of, 22:49032
retention by rats, effects of complexing agents on, 22:8480
separation of, 22:37938 (ORNL-4271)
shielding requirements for, measurements for γ and neutron, 22:1755 (BNWL-SA-1326)
spectra of 238 through 242, isotopic shift in, (E), 22:17347

PLUTONIUM ISOTOPES Pu-236

burnup analyses for, 22:1778(R) (WCAP-6085)
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
determination in plutonium-238 by alpha pulse height analysis, 22:37687
determination in plutonium-238, two techniques for, 22:25440(R) (MLM-1443)
determination in plutonium-238-enriched plutonium dioxide, 22:39985 (MLM-1486)

PLUTONIUM ISOTOPES Pu-237

preparation from uranium-235 for metabolic studies in man, methods for, 22:28385

PLUTONIUM ISOTOPES Pu-238

alpha decay in calcium fluoride crystals, effects on optical spectra, (E), 22:20055
alpha decay of, energy release in, (T), 22:32622
alpha emission by, effects of, on gastrointestinal tract of pigs, 22:49536
alpha emission by, shielding of, in artificial isotope-powered heart, 22:31275
alpha spectra of, energies of intense lines in, (E), 22:35357
analysis for plutonium-236 by alpha pulse height analysis, 22:37687
analysis for plutonium-236, two techniques for, 22:25440(R) (MLM-1443)
analysis of oxide-incorporated heat sources of, for impurities using gamma spectroscopy, (E), 22:18704
availability, characteristics, and cost of, for use as power sources, 22:8307
burnup analyses for, 22:1778(R) (WCAP-6085)
contamination of laboratory equipment by, 22:38261(R) (SC-CR-67-2845)
content in air and water discharged at Mound Laboratory in 1967, 22:21205(R) (MLM-1464)
content in atmosphere from SNAP-9A failure, measurement for use in evaluation of satellite reentry, 22:35943(R) (TLW-3803-1)
content in fallout from Russian nuclear explosions, 22:42879
content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
content in monthly precipitation in US cities, 1965 to 1967, 22:25530 (HASL-193, pp II.1-30)
content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
content in seasonal stratospheric samples collected during 1964 to 1967 in northern and southern hemispheres, 22:21201 (HASL-184, pp I.53-118)
content in stratosphere from SNAP-9A reentry burnup, 22:4362
content in surface air samples at stations along 80th meridian west from 76° north to 63° south, 22:21203 (HASL-184, pp II.6-25)
content in surface atmosphere at western hemisphere land sites, 1965 to 1968, 22:25531(R) (HASL-193(App.))
content in wounds, response of thallium-activated sodium iodide scintillation detector for determining, 22:37995 (SC-TM-68-416)
content of airborne particulates in U. S. during 1965, 22:25850
content of atmosphere from SNAP-9A re-entry burnup, 22:21200 (HASL-184, pp I.2-10)
content of atmosphere in United States during Jan. to March 1967, 22:23515
content of liver, lymph nodes, and spleen of beagles following ingestion of labeled microspheres, 22:51305 (LA-3848, pp 75-96)
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
deposition in Australia and United States during 1965 to 1968, 22:40661(R) (HASL-197)
deposition in deep respiratory tissue, carcinogenic risk from, 22:33819 (UCRL-50387)
determination in radioactive waste, method for, 22:1956(R) (MLM-1405)
determination in steel drums containing radioactive waste by gamma scintillation spectroscopy, 22:43080
determination in waste cans, 22:33208(R) (MLM-1456)
fission of, low-mass atom production in fast-neutron, 22:46859 (ANL-7434)
gamma dose rate from 15-W heat source of, 22:25440(R) (MLM-1443)
gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
gamma emission by, acute and chronic effects of, on man from isotope-powered artificial heart, 22:31275
gamma emission by, effects of, on gastrointestinal tract of pigs, 22:49536
global distribution of, from SNAP-9A satellite failure, 22:12439 (AERE-R-5575)
half-life of, calorimetric decay measurements of, 22:25440(R) (MLM-1443)
hazards from use of, as biomedical power source, 22:4604 (LA-3696)
heat sources of, subcritical neutron multiplication measurements of, 22:2307 (MLM-1416(DEL-1))
inhalation by rats in relation to survival, 22:10825 (BNWL-480, pp 55-83)
isotopic shift measurements for, 22:13250
monitoring of Mound Laboratory area, environmental, 22:45183 (MLM-1522)
neutron absorption and fission cross sections and resonance integrals for, thermal, (E), 22:27089 (DP-MS-67-118)
neutron absorption cross section and resonance integral, (E), 22:3710
neutron emission by, acute and chronic effects of, on man from isotope-powered artificial heart, 22:31275
neutron emission by, refining methods for reduction of, 22:30784
neutron emission rate from thermal power sources of, 22:30783
neutron fission cross section and resonance parameters at 18 eV to 1 MeV, (E), 22:20578 (WASH-1079)
neutron fission cross section and resonance widths at 0.02 to 100 eV, (E), 22:18292
neutron fission cross sections at 1.0, 1.5, 3.0, and 14.9 MeV, (E), 22:20571 (LA-DC-9188)
neutron spectra from oxide-incorporated heat sources of, 22:8304
neutron spectra of, in metal and oxide, 22:25440(R) (MLM-1443)
neutron total cross section and resonance parameters at 0.008 to 6500 eV, (E), 22:3710
oxygen-18 reactions (O-18,5n) with, nobelium-252 production by, (E), 22:3696 (JINR-P7-3556)
production by neutron reactions (n,γ) with neptunium-237 and uranium-235, 22:18851
production by US power reactors through 1990, 22:45245 (BNWL-716)
production costs in water reactors, (T), 22:15141 (BNL-50057, pp 79-100)
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in power reactors, economic aspects of, 22:119
production in reactors, neutron cross sections for calculating, (E/T), 22:27089 (DP-MS-67-118)
production of, description of neptunium secondary irradiation process for increased, 22:24933 (BNWL-SA-1529)
production using neptunium, fabrication of targets for, 22:8702 (BNWL-519)
properties as fuel for radioisotope-powered cardiac pacemaker, 22:32578 (TID-24373(Pt.2))
properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
properties for use as heat source for silver--zinc

    - batteries, 22:37952
  - properties for use as survival suit heat source, 22:37949
  - properties of, data sheets on, 22:8724 (MLM-1441)
  - radiation dose to human skin following, contamination by microspheres, 22:38261(R) (SC-CR-67-2845)
  - radiation dose to man following ingestion or inhalation of oxide particles containing, α and γ, 22:23509(R) (SC-CR-67-2729)
  - radiation dose to man from, following inhalation of labeled particles, α, γ, and neutron, 22:38261(R) (SC-CR-67-2845)
  - reactivity worth of, temperature coefficient of, (E), 22:5744
  - refining for biomedical application, 22:30784
  - separation of uranium-234 from aged, ion exchange method for, 22:1956(R) (MLM-1405)
  - shipping of, design and testing of container for, 22:43016 (DPSPU-67-30-9)
  - sorption from intestines of miniature swine, effects of plutonium oxide particle size on, 22:10676 (BNWL-480, pp 85-97)
  - sorption of oxide-incorporated, by gastrointestinal tract of pigs, 22:49536
  - spectra of thermal power sources of, neutron energy, 22:30783
  - use as α source, 22:14680
  - use as heat source for electric power generation, performance characteristics for, 22:19051
  - use as heat source for implantable circulatory support system, 22:40318 (AGN-8258)
  - use as heat source in Brayton cycle power generator, criticality analysis for, 22:51179 (MLM-1532)
  - use as heat source in cardiac pacemaker, 22:36002(R) (NUMEC-3731-13)
  - use as heat source in thermionic generator, 22:21982 (CEA-R-3418)
  - use as heat source in thermoelectric generators, 22:10514
  - use as heat source in waste management system for space flight, 22:16745
  - use as power source for artificial heart, calculation of radiation dose rate to man and determination of acute and chronic effects from, 22:31275
  - use as power source for heart pacemaker, 22:49029
  - use as power source for implanted circulatory assist device, gamma and neutron dose to body during, 22:31069
  - use as power source in Brayton cycle system for Manned Orbital Research Laboratory, 22:19054
  - use as power source in cardiac pacemaker, 22:30782
  - use as power source in mechanical heart for implantation in man, 22:30789
  - use as radioactive source in radiometric manometer, 22:6664
  - use as reference source for determining radiation hazard to man from re-entry of isotopic power devices, 22:38293
  - use in cardiac pacemaker batteries, 22:33616
  - use in power source for artificial heart, shielding considerations in, (T), 22:31907
  - valence stability of, in dilute nitric acid, 22:40148

- PLUTONIUM ISOTOPES Pu-239
  - abundance in nature, 22:25516
  - activation detectors of, preparation for capture-to-fission measurements in EBWR of, 22:32961 (ANL-7310, pp 377-430)
  - alpha cross section for, effects on ZPR-3 reactivity of, 22:30118 (ANL-7438)
  - alpha decay in calcium fluoride crystals, effects on optical spectra, (E), 22:20055
  - alpha decay scheme of, γ spectra for, (E), 22:7715
  - alpha emission by, dosimetry of, in relation to production of bone tumors in rats, 22:38483
  - alpha emission by, effects of, on blood of rats, 22:49503
  - alpha emission by, effects of, on mitotic index of cells in lungs following inhalation, 22:45508(R) (PG-Report-826)
  - alpha emission by, effects of, on radiation dose to beagle dogs following inhalation of aerosols, 22:23503 (BNWL-SA-1540)
  - alpha emission by, effects of, on synthesis of androgens in beagles, 22:43244
  - alpha emission by, tumorigenic effects of, on bones of dogs, 22:47581
  - alpha spectra of, energies of intense lines in, (E), 22:35357
  - alpha spectra, (E), 22:7737
  - alpha value evaluation for sodium reactivity measurements, (E/T), 22:24926(R) (APDA-214)
  - capture cross section of, error analysis for, 22:32970(R) (GEAP-5584)
  - capture-to-fission ratio for, effects on fast breeder reactor performance of, 22:32791
  - carbon-12 reactions (C-12,5n) with, production of fermium-246 by, (E), 22:14016
  - contamination of lacerated human finger, efficiency of medical treatment for, 22:33807 (AEEW-M-613(Rev.1))
  - content and particle size distribution in Hanford facilities air, (E), 22:12473 (BNWL-495)
  - content and particle size distribution in Hanford plant facilities air, 22:25568 (BNWL-481-3, pp 97-101)
  - content in fallout from Chinese and Soviet nuclear explosions, (E), 22:27920
  - content in fallout from Russian nuclear explosions, 22:42879
  - content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
  - content in monthly precipitation in US cities, 1965 to 1967, 22:25530 (HASL-193, pp II.1-30)
  - content in stratospheric fallout, 22:8224
  - content in surface air samples at stations along 80th meridian west from 76° north to 63° south, 22:21203 (HASL-184, pp II.6-25)
  - content in surface atmosphere at western hemisphere land sites, 1965 to 1968, 22:25531(R) (HASL-193(App.))
  - content of air, lungs, and lymph nodes during 1964 and 1965, 22:40678
  - content of airborne particulates in U. S. during 1965, 22:25850
  - content of atmosphere in Massachusetts during 1965 to 1966, 22:28500
  - content of atmosphere in United States during Jan. to March 1967, 22:23515
  - content of atmosphere, lungs, and lymphnodes in relation to radiation hazards to man, 22:40721
  - content of diet of man during 1965, 22:28500
  - content of dogs, following inhalation, whole-body counting of inhaled, 22:8558
  - content of human lungs, use of protactinium-233 to determine, 22:28472
  - content of human tissues in Boston during 1965 to 1966, 22:28500
  - content of lungs of dogs, ratio of, to americium-241 content following inhalation, 22:10825 (BNWL-480, pp 55-83)
  - content of milk and total diet of man in United States, 22:28513
  - content of milk during 1965, 22:28500
  - content of urine, AERE sampling and analysis program for determining, 22:49174 (AERE-M-2005)
  - content of wounds, measurement of, by gamma emission of americium-241, 22:4627
  - decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
  - decontamination of organisms by chelating agents, 22:51564 (CEA-R-3519)
  - deposition in Australia and United States during 1965 to 1968, 22:40661(R) (HASL-197)
  - deposition in deep respiratory tissue, carcinogenic risk from, 22:33819 (UCRL-50387)
  - detection by direct measurement, evaluation of equipment and procedures for, 22:49343
  - detection in breath of dogs from deposits in lungs, 22:51622
  - detection in human wounds, performance of probe for, 22:6804 (ORNL-4168, pp 289-311)
  - determination by ion exchange and liquid scintillation counting, 22:42583 (AD-665357)
  - determination in aqueous solutions, effects of radioactive impurities on liquid scintillation, 22:40018
  - determination in fuel elements by neutron-transmission methods, 22:4035
  - determination in fuel materials, review of nondestructive methods for, 22:18705
  - determination in irradiated samples using slowing-down-time lead spectrometer, 22:33221
  - determination in plutonium compounds, accountability methods for, 22:6 (CONF-661011, pp 135-45)
  - determination in stratospheric fallout by α spectroscopy, 22:8224
  - determination in urine, methods for, 22:51468
  - deuteron fission at 20 and 50 MeV, range of fragments from, (E), 22:20659
  - deuteron fission of, anisotropy of, (E), 22:20578 (WASH-1079)
  - deuteron reactions (d,pf) at 12.5 MeV, correlation of kinetic energy and fission-fragment angular anisotropy in, (E), 22:20643
  - deuteron reactions (d,pf) with, angular correlations in, (E), 22:37359
  - diffusion in highly sintered aluminum oxide at 1200 to 1450°C, 22:11050
  - dissolution of, design of subcritical apparatus for, 22:166(P)
  - distribution and interaction with constituents of blood in dogs, 22:36204
  - distribution and metabolism of, in rats following inhalation of its compounds, 22:14954
  - dose to bone and whole body of children following nuclear explosion, 22:40669 (UCRL-70894)
  - dose to bone marrow of rabbits following injection of labeled plutonium nitrate, 22:10736
  - effects on reactivity of bare plutonium-239 critical sphere, analysis of, (E/T), 22:35636
  - electron reactions at 20 to 60 MeV, neutron yields from, (E), 22:32584
  - energy levels of, K = 1/2 rotational, (T), 22:20664
  - excretion by man, method for statistical evaluation of, 22:38266 (UCRL-18140, pp 123-43)

excretion in urine by man, methods for calculation of safe limits of, 22:6811
fission cross section of, error analysis for, 22:32970(R) (GEAP-5584)
fission of, production of K x rays by slow-neutron, 22:27836
fission of, yield of barium-138 and cerium-142 in thermal, 22:16316(R) (GEAP-5505)
fission products of, activity of, (T), 22:29991
fission resonance integrals of, 22:16316(R) (GEAP-5505)
fuel cost uncertainties for, effects on liquid sodium-cooled fast power reactor development of, 22:50733 (GEAP-5635)
fuels for rocket reactors of, analysis of shutdown after-cooling rate of, (T), 22:18542 (HW-84412)
gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
gamma emission by, effects of, on blood of rats, 22:49503
gamma emission by, effects of, on radiation dose to beagle dogs following inhalation of aerosols, 22:23503 (BNWL-SA-1540)
gamma emission by, effects of, on synthesis of androgen in beagles, 22:43244
gamma emission by, tumorigenic effects of, on bones of dogs following injection, 22:47581
gamma spectra of, 22:14433 (ORNL-4196, pp 66-89)
half-life and specific power of, calorimetric determination of, 22:30788
inhalation by beagle dogs in relation to taurine content of urine, 22:10825 (BNWL-480, pp 55-83)
inhalation by man following exposure to fresh fallout, dose to respiratory tract from, 22:33821
inhalation by man, hazards from, 22:40678
inhalation by rats in relation to survival, 22:10825 (BNWL-480, pp 55-83)
inhalation in relation to α-radioinduced neoplasms in lungs of beagles, 22:10825 (BNWL-480, pp 55-83)
injection into finger during glove box procedure, accidental, 22:21552
isotopic shift measurements for, 22:13250
measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
metabolism by swine, 22:14925
metabolism in animals and man, 22:38194(R) (EUR-3917)
metabolism in rats, effects of adrenalin, diuretics, and EDTA on, 22:12787
metabolism in swine, effects of administration route on, 22:47468
monitoring in air in presence of radon and daughters, alpha monitor for, 22:2349 (ORNL-TM-2011)
monitoring in air, design of semiconductor detector air sampling system for, 22:30843
monitoring of, development of scintillation detector for, 22:30825(R) (UCRL-50007-67-3)
neutron absorption and fission cross sections at 0.01 eV to 30 keV, (E), 22:48423 (RPI-328-133, pp 1-34)
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture and fission cross sections and resonance integrals at 0.005 to 23 keV, (E), 22:42011(T) (BNL-tr-219)
neutron capture and fission cross sections at 0.1 to 90 keV, data evaluation for, (T), 22:53168 (JAERI-1162)
neutron capture and fission cross sections from thermal to 30 keV, (E), 22:20576 (ORNL-TM-2159)
neutron capture and fission resonance integrals at 0.005 to 20 keV, (E), 22:37364
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratio at 0.005 to 23 keV, measurements using time-of-flight method, (E), 22:37364
neutron capture-to-fission ratio at 0.005 to 23 keV, (E), 22:42011(T) (BNL-tr-219)
neutron capture-to-fission ratio at 0.01 to 30 kev, (E), 22:35285(R) (AERE-PR/NP-13)
neutron capture-to-fission ratio at 0.01 to 30 keV, method for measuring, (E), 22:35345
neutron capture-to-fission ratio at 0.454 to 24.8 keV, measurements using lattice reactivity experiments, (E), 22:32589
neutron capture-to-fission ratio at 10 to 1000 keV, (E), 22:18298
neutron capture-to-fission ratio for, calculation using channel theory, (T), 22:20655
neutron capture-to-fission ratio for, resonance, (E), 22:42016 (KAPL-P-3438)
neutron capture-to-fission ratio for, thermal, (E), 22:44680(R) (IN-1189)
neutron capture-to-fission ratio in, 22:53454 (BNWL-828)
neutron capture-to-fission ratio in fast PCTR spectra, integral measurements of, (E), 22:35288 (BNWL-774)
neutron capture-to-fission ratio measurements in fast reactor spectra, (E/T), 22:35650
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross section analysis of, computer program for, 22:25075 (APDA-201)
neutron cross section ratios as a function of fuel burnup of, correlation of effective, 22:12085 (BNWL-472, pp 3.1-33)
neutron cross sections and eta values at 0.01 to 30 keV, (E), 22:18291
neutron cross sections and resonance parameters for, data evaluations for, 22:35295 (TPM-RFR-682)
neutron cross sections at 0.001 to 14 MeV, data compilation on, 22:50599 (LA-3528)
neutron cross sections at 1 to 10 MeV, calculations using local spherical optical model, (T), 22:35349
neutron cross sections for, evaluation using least-squares method of correcting for integral data, (T), 22:35344
neutron cross sections for, resonance parameters for evaluating self-shielding effects on, (T), 22:32626
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission and total cross sections and resonance parameters at 0 to 440 eV, (E), 22:24863(T) (BNL-tr-197)
neutron fission at 0.01 eV to 10 keV, measurements of average ν for, (E), 22:48423 (RPI-328-133, pp 1-34)
neutron fission at 0.15 to 1.5 MeV, fission-fragment angular distributions in, (E), 22:53209
neutron fission at 1.5 to 15 MeV, prompt neutron emission in, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission at 2 MeV, neutron spectra for, (E), 22:11948(R) (NP-17216)
neutron fission at 4 to 14.8 MeV, prompt anti ν for, (E), 22:9847 (FOA-4-4318-22)
neutron fission at 4 to 14.8 MeV, prompt neutron emission in, (E), 22:14029
neutron fission cross section and resonance parameters at 0.004 to 6 keV, (E), 22:18296
neutron fission cross section at 14 to 90 eV, resonance parameters from multilevel analysis of, (E), 22:14048
neutron fission cross section at 2 keV, measurements using fission chambers, (E), 22:32588
neutron fission cross section at 400 to 406 eV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission cross section near 83 eV, multilevel analysis of, (T), 22:30012
neutron fission cross sections at 0.3 to 2.5 MeV, relative, (E), 22:32621
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission cross sections from 0.1 to 10 keV, 22:24926(R) (APDA-214)
neutron fission in thermal reactors, absorption cross sections and yields of fission products for, (E/T), 22:18289
neutron fission of, angular anisotropy of, (E/T), 22:14095
neutron fission of, delayed γ energy spectra from, (E), 22:37337 (AD-801007)
neutron fission of, effects of nucleon pairing correlations on angular anisotropy of, (T), 22:14080(T) (ANL-Trans-550)
neutron fission of, emission of long-range α particles and light nuclei in thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission of, energy distribution of long-range α particles in thermal, (E), 22:32634
neutron fission of, fission-neutron spectra from thermal, (E), 22:16046
neutron fission of, fission-product activities for, (T), 22:20569 (HNS-1229-77)
neutron fission of, fission-product charge distributions and yields in, (E), 22:46761 (APED-5398)
neutron fission of, fission-product yields from thermal, (E), 22:3690 (GEAP-5356)
neutron fission of, fragment energies and yields from, (E), 22:5817(R) (NYO-GEN-72-28)
neutron fission of, iodine-135 yield and fission-product absorption cross sections in, (E), 22:16045
neutron fission of, ν values for prompt neutron emission in, (E), 22:18250
neutron fission of, product decay from fast, (E/T), 22:5827
neutron fission of, range of fragments from thermal, (E), 22:20659
neutron fission of, survey of yields from fast and thermal, 22:20559 (AERE-R-5086)
neutron fission of, ternary thermal, (E), 22:9855(R) (ORO-2843-12)
neutron fission of, time dependence of fission-product β activity from thermal, (E), 22:7714
neutron fission of, tritium yields from, (T), 22:37312 (ANL-7450, pp 105-7)
neutron fission of, tritium yields in fast, (T), 22:53165 (ANL-7425, pp 190-2)
neutron fission of, yields of fission products in thermal, (E), 22:44680(R) (IN-1189)
neutron fission parameters for, survey of, 22:22612
neutron fission rates in ZPR-3, 22:14251(R) (BNWL-534)
neutron fission width for, energy and spin dependence of, (T), 22:20655
neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
neutron reactions (n,α) with, survey on thermal, (E),

22:48521 (JAERI-1158, pp 123-4)
neutron reactions $(n,\gamma f)$ with, detection of slow, (E), 22:39644
neutron reactions at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
neutron resonance cross sections for, calculations using channel fission theory, (T), 22:1655 (NAA-SR-12515)
neutron resonance parameter correlation and interpretation of eta/ν below 20 eV, (E/T), 22:5825
neutron resonance parameters at 0 to 300 eV, (T), 22:53168 (JAERI-1162)
neutron resonance parameters for, correlations of, (T), 22:14066
neutron resonance parameters for, review, (E/T), 22:3738
neutron resonance parameters for, updated library of, 22:37277 (AI-AEC-Memo-12645)
neutron resonance self-shielding factors at high temperature, calculations using ladder method, (T), 22:35348
neutron resonance spins for, methods for determining, (E), 22:18294
neutron resonances at 22 to 100 eV, spin assignments for, (E), 22:48423 (RPI-328-133, pp 1-34)
neutron scattering at 0.2, 0.3, and 0.4 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron scattering at low energy, (E), 22:48423 (RPI-328-133, pp 1-34)
neutron total cross section and resonance parameters at 4 to 700 eV, (E), 22:18296
neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
neutron yields from electron accelerator targets of, (E), 22:18557 (GA-8087)
nuclear magnetic moment, (E), 22:5864
oxygen-16 and oxygen-18 reactions with, effects of N = 152 subshell on nobelium-isotope production by, (E), 22:18210 (JINR-D7-3548, pp 65-70)
oxygen-18 reactions (O-18,4n) at 90 MeV, cross section and mean GAMMA/sub n//GAMMA/sub f/ ratio for, (E), 22:46760(T) (ANL-Trans-636)
oxygen-18 reactions (O-18,5n) at 96 MeV, cross section and mean GAMMA/sub n//GAMMA/sub f/ ratio for, (E), 22:46760(T) (ANL-Trans-636)
oxygen-18 reactions (O-18,5n) with, production of nobelium-252 by, (E), 22:39646
photofission at 5 to 8 MeV, fission-fragment angular distribution near threshold for, (E), 22:18275
physics parameters of fuel assemblies of, analysis of Doppler effects in ZPR-III, 22:30303 (GEAP-5271)
production by proton irradiation of uranium at 50 MeV in Harwell Cyclotron, 22:48871 (AERE-R-5790)
production of, review of various methods for, 22:23103
proton fission at 1 to 9 GeV, cross section for, (E, 22:46804
radiation dose and tissue burden from inhalation of, by man, derivation of equations for, 22:51566 (IDO-12067)
radiation dose to man from inhalation of, following Palomares nuclear accident, α and γ, 22:43318
radiation dose to man from, in lungs following inhalation of palladium-103-labeled aerosols, use of proportional counter for measurement of soft x, 22:43300 (AERE-PR/HPM-12)
radiation effects on transmutations in, analysis of neutron, 22:32893
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reactivity worth in FTR core, (E/T), 22:27460 (BNWL-634, pp 4.1-55)
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
reactivity worth of, temperature coefficient of, (E), 22:5744
removal from platinum plates by immersion in concentrated hydrochloric acid, 22:14574
resonance parameters for, 22:33086 (ANL-7310, pp 431-511)
retention in kidneys, liver, and spleen of beagle dogs, effects of dose rate on long-term, 22:28336
separation from actinide and rare earth isotopes by ion exchange chromatography using zirconium phosphate, 22:10335
separation from fission products by ion exchange and liquid scintillation counting, 22:42583 (AD-665357)
separation of, comparison of methods for, 22:42583 (AD-665357)
shipping methods for, IAEA requirements for, 22:28041
shipping of, design of container and packaging for, 22:14744
sorption by skin tissues of swine, 22:14925
thermal neutron fission of, analysis of mass balance in CANDU-type reactor, 22:37400 (AECL-3109)
toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
uptake and metabolism by animals and man, 22:8644
uptake by A. falcatus, 22:23138
uptake by bones of rabbits, effects of, on content of DNA and RNA, 22:25971
uptake by fetuses and placenta of rats following injection, effect of chemical form on, 22:30948
uptake by man following inhalation, 22:33715 (SZS-15/67)
uptake of plutonium nitrate-incorporated, by bone marrow of rabbits, 22:10736
use as α source, 22:14680
use as neutron source in well logging equipment for ground water hydrology studies, 22:19066
use for microradiography of bone cross sections to determine surface/volume ratio, 22:31003
use in activation detectors for thermal neutron spectrum determination, 22:25141
use in combination with glass fibers in radiation sources, 22:42979(P)
use in nuclear fuel rods, 22:49817(R) (EURAEC-2036)
use of electrode of, for measuring solvation energy of aqueous uranyl chloride in butyl phosphate systems, 22:23010
x radiation from, design of scintillation detector system for monitoring, 22:21307 (AERE-HP/M-139)

PLUTONIUM ISOTOPES Pu-240
alpha decay of, α-γ coincidence spectra from, (E), 22:35336
alpha spectra of, energies of intense lines in, (E), 22:35357
alpha spectra, (E), 22:1646 (IS-1683)
carbon-12 reactions (C-12,4n) with, production of fermium-248 by, (E), 22:14016
content in fallout from Russian nuclear explosions, 22:42879
content in monthly precipitation in US cities, 1965 to 1967, 22:25530 (HASL-193, pp II.1-30)
content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
content in stratospheric fallout, 22:8224
content of airborne particulates in U. S. during 1965, 22:25850
content of atmosphere in United States during Jan. to March 1967, 22:23515
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
deposition in Australia and United States during 1965 to 1968, 22:40661(R) (HASL-197)
determination in fuel elements by neutron-transmission methods, 22:4035
determination in stratospheric fallout by α spectroscopy, 22:8224
deuteron fission (d,f) at 7.6 to 14 MeV, fragment energy spectra from, (E), 22:16049
deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
energy-level transitions in, total internal conversion coefficients for E2, (E), 22:50611
fission of, half-life for spontaneous, (E), 22:3727
fission of, prompt neutron emission in spontaneous, (E), 22:18290
fission of, prompt neutron emission in spontaneous, (E), 22:18248
fluorescence, Auger, and Coster--Kronig yields from L_2 subshell of, 22:31646
fuel cost uncertainties for, effects on liquid sodium-cooled fast power reactor development of, 22:50733 (GEAP-5635)
gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
half-life and specific power of, calorimetric determination of, 22:30788
isomeric transition in, half-life for, (E), 22:27184
isotopic shift measurements for, 22:13250
neutron absorption cross sections of, formulation using TEMPEST code, 22:21776(R) (EURAEC-1937)
neutron capture resonances at 38 to 820 eV, radiative widths for, (E), 22:32598
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross section ratios as a function of fuel burnup of, correlation of effective, 22:12085 (BNWL-472, pp 3.1-33)
neutron cross section resonance broadening at 1.05 eV with temperature, (T), 22:30343(R) (EURAEC-1992)
neutron cross sections and resonance parameters at 0.01 eV to 15 MeV, data evaluation for, 22:22578 (IA-1152)
neutron cross sections and resonance parameters for, ENDF/B data evaluation for, 22:48508 (APDA-218)
neutron cross sections and resonance parameters for, evaluated data on, 22:35347
neutron cross sections at 0.001 to 14 MeV, data compilation on, 22:50599 (LA-3528)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission cross section at 0.2 to 8 keV, resonance structure and widths for, (E), 22:27095
neutron fission cross section for, interpretation of subthreshold, (T), 22:42064
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron resonance integrals in square lattices containing, Dancoff correction effects on, 22:12085 (BNWL-472, pp 3.1-33)
neutron resonance of, effects of temperature on, 22:49817(R) (EURAEC-2036)

neutron resonance parameters at 0.8 to 5 keV, (E), 22:18293
neutron resonance parameters at 38 to 1500 eV, (E), 22:32597
neutron resonance parameters for, review, (E/T), 22:3738
neutron resonance parameters for, updated library of, 22:37277 (AI-AEC-Memo-12645)
neutron resonance self-shielding factors at high temperature, calculations using ladder method, (T), 22:35348
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
neutron total cross section and resonance parameters at 20 to 800 eV, (E), 22:18293
neutron total cross section at 20 to 5700 eV, (E), 22:32597
nuclear deformation energies of, (T), 22:30077
nuclear pairing energy in plutonium-239 fast neutron fission, (E), 22:53209
photofission at 5 to 8 MeV, fission-fragment angular distribution near threshold for, (E), 22:18275
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:3688 (FEI-73)
photofission at 5 to 8 MeV, fission-fragments angular distributions from, (E), 22:42010(T) (ANL-Trans-639)
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
reactivity worth of, measurement in plutonium nitrate solution of, 22:25078 (CEA-R-3367)
reactivity worth of, temperature coefficient of, (E), 22:5744
use as tracer in measuring self-diffusion in plutonium, 22:49764

PLUTONIUM ISOTOPES Pu-241
activation detectors of, preparation for capture-to-fission measurements in EBWR of, 22:32961 (ANL-7310, pp 377-430)
alpha decay of, α-γ and γ-γ coincidence spectra for, (E), 22:53182
alpha spectra of, energies of intense lines in, (E), 22:35357
beta decay energy of, calorimetric measurement of average, (E), 22:27115
beta decay of, half-life for, (E), 22:48549
content in stratospheric fallout, 22:8224
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
determination in plutonium compounds, accountability methods for, 22:6 (CONF-661011, pp 135-45)
determination in stratospheric fallout by α spectroscopy, 22:8224
energy levels of, neutron single-particle, (E), 22:27087(R) (ANL-7405)
fission by thermal neutrons, yields from, 22:47074(R) (IN-1215)
fission yields of cesium and stable neodymium isotopes from irradiated, thermal, 22:16316(R) (GEAP-5505)
fuel cost uncertainties for, effects on liquid sodium-cooled fast power reactor development of, 22:50733 (GEAP-5635)
gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
half-life, (E), 22:1662
isotopic shift measurements for, 22:13250
neutron capture-to-fission ratio for, resonance, (E), 22:42016 (KAPL-P-3438)
neutron cross section ratios as a function of fuel burnup of, correlation of effective, 22:12085 (BNWL-472, pp 3.1-33)
neutron cross sections and resonance parameters at 0.01 eV to 15 MeV, data evaluation for, 22:22578 (IA-1152)
neutron cross sections and resonance parameters for, evaluated data on, 22:35347
neutron fission at 0.5 to 14.8 MeV, prompt anti ν for, (E), 22:9847 (FOA-4-4318-22)
neutron fission at 0.5 to 14.8 MeV, prompt neutron emission in, (E), 22:14029
neutron fission cross section at 2 keV, measurements using fission chambers, (E), 22:32588
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission of, fission-product charge distributions and yields in, (E), 22:46761 (APED-5398)
neutron fission of, fission-product yields from thermal, (E), 22:3690 (GEAP-5356)
neutron fission of, iodine-135 yield and fission-product absorption cross sections in, (E), 22:16045
neutron fission of, ν values for prompt neutron emission in, (E), 22:18250
neutron fission of, survey of yields from fast and thermal, 22:20559 (AERE-R-5086)
neutron fission of, tritium yields from, (T), 22:37312 (ANL-7450, pp 105-7)
neutron fission of, tritium yields in fast, (T), 22:53165 (ANL-7425, pp 190-2)
neutron fission parameters for, survey of, 22:22612
neutron resonance self-shielding factors at high temperature, calculations using ladder method, (T), 22:35348
neutron scattering cross sections and resonance parameters at 1 to 30 eV, (E), 22:20577 (UCRL-70826)
neutron scattering cross sections and resonance spins at 1 to 30 eV, (E), 22:53193
properties as fuel for radioisotope-powered cardiac pacemaker, 22:32578 (TID-24373(Pt.2))
reactivity worth of, temperature coefficient of, (E), 22:5744
shipping methods for, IAEA requirements for, 22:28041
thermal neutron fission of, analysis of mass balance in CANDU-type reactor, 22:37400 (AECL-3109)

PLUTONIUM ISOTOPES Pu-242
alpha spectra of, energies of intense lines in, (E), 22:35357
decay kinetics calculations for radioisotope-powered cardiac pacemaker, (T), 22:32577 (TID-24373(Pt.1))
deuteron fission at 14 MeV, fragment energy spectra from, (E), 22:16049
deuteron reactions (d,2n) with, isomeric cross-section ratio for americium-242 from, (E/T), 22:22606
deuteron reactions (d,2nγ) at 7 to 13 MeV, fission properties of isomeric americium-242 from, (E/T), 22:1735
deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
fission of, mass distribution of fission fragments from spontaneous, (E), 22:53216
fission of, mass-yield distribution of iodine isotopes from spontaneous, (E), 22:1678
fission of, prompt neutron emission in spontaneous, (E), 22:18248
fuel cost uncertainties for, effects on liquid sodium-cooled fast power reactor development of, 22:50733 (GEAP-5635)
isotopic shift measurements for, 22:13250
neon-22 ion reactions with, production of element 104 in, 22:12342(T) (JPRS-44045)
neon-22 reactions (Ne-22,4n) and (Ne-22,α4n) with, cross sections for, (E), 22:39632 (JINR-P7-3835)
neutron absorption cross section for, thermal, (E), 22:37341 (IN-1132)
neutron absorption resonance integral and s-wave strength function at 0.008 to 8000 eV, (E), 22:37341 (IN-1132)
neutron capture and fission cross sections and resonance integrals for, recommended values for therma', 22:39627 (BNL-50082, pp 19-24)
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross sections and resonance parameters at 0.01 eV to 15 MeV, data evaluation for, 22:22578 (IA-1152)
neutron cross sections and resonance parameters for, evaluated data on, 22:35347
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron resonance parameters for, review, (E/T), 22:3738
neutron resonance self-shielding factors at high temperature, calculations using ladder method, (T), 22:35348
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
neutron total cross section at 0.008 to 8000 eV, 22:37341 (IN-1132)
neutron total cross sections and resonance parameters at 0.008 to 8000 eV, (E), 22:20578 (WASH-1079)
nuclear deformation energies of, (T), 22:30081
oxygen-16 and oxygen-18 reactions with, effects of N = 152 subshell on nobelium-isotope production by, (E), 22:18210 (JINR-D7-3548, pp 65-70)
oxygen-16 reactions (O-16,4n) at 89 MeV, cross section and mean GAMMA/sub n//GAMMA/sub f/ ratio for, (E), 22:46760(T) (ANL-Trans-636)
oxygen-16 reactions (O-16,5n) at 96 MeV, cross section and mean GAMMA/sub n//GAMMA/sub f/ ratio for, (E), 22:46760(T) (ANL-Trans-636)
oxygen-18 reactions (O-18,4n) at 88 MeV, cross section and mean GAMMA/sub n//GAMMA/sub f/ ratio for, (E), 22:46760(T) (ANL-Trans-636)
oxygen-18 reactions (O-18,5n) at 96 MeV, cross section and mean γ(n)/γ(f) ratio for, (E), 22:46760(T) (ANL-Trans-636)
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:3688 (FEI-73)
photofission at 5 to 8 MeV, fission-fragment angular distribution near threshold for, (E), 22:18275
photofission at 5 to 8 MeV, fission-fragments angular distributions from, (E), 22:42010(T) (ANL-Trans-639)
reactivity worth of, temperature coefficient of, (E), 22:5744

PLUTONIUM ISOTOPES Pu-243
energy levels of, neutron single-particle, (E), 22:27087(R) (ANL-7405)

PLUTONIUM ISOTOPES Pu-244
abundance in early solar system, (T), 22:4995
content in Bruderheim chondrite, (T), 22:34236
content in meteorites, use in age estimation, 22:6462
decay products of, in chondrites, (T), 22:36627

- existence in early solar system, (E/T), 22:1678
- half-life and type of decay of, 22:42698
- occurrence in early solar system, (T), 22:38668
- particle-track evidence for extinct, in meteorites, 22:15314
- production in supernovae, (T), 22:23910 (ORO-2529-17)
- separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)

PLUTONIUM ISOTOPES Pu-245
- beta decay scheme of, β, γ, and x-ray spectra for, (E), 22:9870
- purification of, 22:14433 (ORNL-4196, pp 66-89)

PLUTONIUM ISOTOPES Pu-246
- purification of, 22:14433 (ORNL-4196, pp 66-89)

PLUTONIUM NITRATES
- analysis for free acid using ammonium fluoride as complexing agent, 22:39981 (EUR-3934)
- analysis for plutonium by determination of acidity, 22:39981 (EUR-3934)
- analysis of, 22:5 (BNWL-SA-1388, pp 10.1-14)
- analysis of aqueous solutions of, for plutonium, 22:47110(R) (BAW-3714-7)
- analysis of solutions of, for plutonium, 22:47073 (CONF-680506-2)
- conversion to plutonium, processes for, 22:8032
- distribution between TBP and nitric acid, 22:51046(T) (EURFNR-499)
- distribution between TBP and nitric acid, 22:27857 (KFK-680)
- heating of solutions of, airborne particle release from, 22:43014 (BNWL-SA-1735)
- neutron spectra measurements in, experimental apparatus and techniques for thermal, 22:53414 (GA-8805)
- preparation, properties, and reactions of, review of, 22:2089
- shipping and storage of, evaluation of polyethylene bottles for, 22:45212 (ARH-SA-18)
- solutions of, measurement of critical parameters for, 22:33063
- sorption by tissues of swine, effects of chilling and tourniquets on, 22:10677 (BNWL-480, pp 99-106)
- storage of stabilized, in sealed ampoules, 22:22930(R) (NBL-242)
- uptake of plutonium-239-labeled, by bone marrow of rabbits, 22:10736

PLUTONIUM NITRATES Pu(NO$_3$)$_4$
- critical thickness measurements on bare and reflected slabs of, 22:12087 (BNWL-472, pp 5.1-16)
- criticality of slab-shaped, analysis of, 22:42164(R) (BNWL-775)
- inhalation by rats, kinetics of, 22:8477
- HNO$_3$--Pu(NO$_3$)$_4$--TBP, phase studies on, by distribution coefficient measurements, 22:6408

PLUTONIUM NITRIDES
- crystal structure of, 22:37720
- decomposition of, mass-spectrometric studies of enthalpy of, 22:37713 (LA-3902)
- electric and thermal properties of fuel specimens of, 22:720 (BMI-1809, Sect.A)
- fabrication of fuel elements of, methods for, 22:8816(P)
- fabrication, properties, and structure of, 22:64
- formation of, calculation of heat of, 22:21645(R) (BMI-1826)
- formation of, enthalpy of, 22:37713 (LA-3902)
- fuel cycle economics of, for fast breeder reactors, (T), 22:22659 (BNWL-606)
- phase behavior and thermodynamic properties of, review on, 22:17176 (ORNL-TM-2106)
- phase studies of, 22:2655
- physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
- preparation and high-temperature properties of high-density, 22:43629(R) (LA-3933)
- preparation of nonpyrophoric, 22:15249(P)
- preparation, crystal structure, and melting points of, 22:8061
- preparation, properties, and phase relation of, review of, 22:2699
- preparation, properties, and reactions of, review of, 22:2089
- properties as fuel material, chemical research on, 22:25144
- properties of, data sheets on, 22:8724 (MLM-1441)
- radiation effects on chemical properties of fuels of, reactor, 22:64
- radiation effects on fuels of, review on, 22:8804
- radiation effects on, self-, 22:6138(R) (LA-3820)
- reactions with carbon at 1100°C, 22:52259 (CEA-R-3536)
- reactions with Incoloy, Inconel, and stainless steel cladding at high temperatures, 22:720 (BMI-1809, Sect.A)
- thermal conductivity of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- thermodynamic properties measurements on PuN, 22:27487(R) (LA-3880)
- thermodynamic properties of PuN, 22:31463
- thermodynamic properties of, galvanostatic potential determination of, 22:47111 (LA-3945)
- vapor pressure at 1985 to 2300°K, 22:720 (BMI-1809, Sect.A)
- vaporization of, kinetics and thermodynamics of, 22:15261(R) (BMI-1819)
- PuN--UN, analysis for nitrogen content, Micro-Kjeldahl, 22:28777(R) (BMI-1837)
- PuN--UN, burnup under fast reactor conditions, testing of, 22:28777(R) (BMI-1837)
- PuN--UN, compatibility of clad, with sodium at 650°C, 22:13044 (BNWL-473, pp 3.1-21)
- PuN--UN, compatibility of sodium-bonded fuels with cladding materials, 22:6138(R) (LA-3820)
- PuN--UN, compatibility of sodium-bonded, with cladding materials, 22:27487(R) (LA-3880)
- PUN--UN, compatibility with cladding materials at 1000°C, 22:21645(R) (BMI-1826)
- PuN--UN, compatibility with Incoloy 800 cladding, in sodium bonded test capsules at 1000°C, 22:28777(R) (BMI-1837)
- PuN--UN, compatibility with Inconel 625 cladding in sodium bonded test capsules at 1000°C, 22:28777(R) (BMI-1837)
- PuN--UN, compatibility with liquid sodium and stainless steel at high temperatures, 22:15261(R) (BMI-1819)
- PuN--UN, compatibility with niobium--zirconium cladding in liquid sodium, 22:15261(R) (BMI-1819)
- PuN--UN, compatibility with ORNL stainless steel cladding in sodium bonded test capsules at 1000°C, 22:28777(R) (BMI-1837)
- PuN--UN, compatibility with Type 304 stainless steel, through sodium bond, 22:41085 (BNWL-SA-1666)
- PuN--UN, compatibility with Type 316 stainless steel-cladding of sodium bonded, evaluation of, 22:50841(R) (LA-3993)
- PuN--UN, compatibility with types 304 and 316 stainless steel cladding in sodium bonded test capsules, at 1000°C, 22:28777(R) (BMI-1837)
- PuN--UN, development and preparation for fast breeder reactor fuel, 22:8739 (ORNL-4170, pp 97-102)
- PuN--UN, electric and thermal properties of fuel specimens of, 22:720 (BMI-1809, Sect.A)
- PuN--UN, fabrication for reactor fuels by sintering, 22:720 (BMI-1809, Sect.A)
- PuN--UN, fabrication of fuel elements of, methods for, 22:8816(P)
- PuN--UN, fabrication of fuels of, effects of ball-milling at 32 to 64 hr on, 22:28777(R) (BMI-1837)
- PuN--UN, fabrication of irradiation specimens of, 22:720 (BMI-1809, Sect.A)
- PuN--UN, melting behavior, 22:41085 (BNWL-SA-1666)
- PuN--UN, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
- PuN--UN, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
- PuN--UN, preparation by carbothermic reduction of oxides, 22:41085 (BNWL-SA-1666)
- PuN--UN, preparation of fuel elements of, description of carbothermic reduction process for, 22:32815
- PuN--UN, properties for use in fuels, review, 22:21650
- PuN--UN, properties of sintered fuels of, 22:21645(R) (BMI-1826)
- PuN--UN, radiation effects on fuels of, review on, 22:8804
- PuN--UN, radiation effects on, at sodium-cooled fast reactor temperatures, 22:21645(R) (BMI-1826)
- PuN--UN, radiation effects under fast reactor operating conditions, in-pile, 22:720 (BMI-1809, Sect.A)
- PuN--UN, radiation testing of fuel pins of, in ETR, 22:13044 (BNWL-473, pp 3.1-21)
- PuN--UN, radioinduced swelling during 12 MTR cycles, in-pile, 22:28777(R) (BMI-1837)
- PuN--UN, radioinduced swelling of, in-pile, 22:771
- PuN--UN, reactions with Incoloy, Inconel, and stainless steel cladding at high temperatures, 22:720 (BMI-1809, Sect.A)
- PuN--UN, sintering behavior of carbothermic and metal-derived, 22:41085 (BNWL-SA-1666)
- PuN--UN, sintering mixed powdered, effects of uranium nitride additions on, 22:28777(R) (BMI-1837)
- PuN--UN, sintering techniques for fabrication of fuels of, 22:15261(R) (BMI-1819)
- PuN--UN, thermal conductivity at 200 to 1600°C, 22:41085 (BNWL-SA-1666)
- PuN--UN, thermal conductivity of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- PuN--UN, thermal diffusivity at 300 to 1100°C, 22:28777(R) (BMI-1837)
- PuN--UN, thermal diffusivity of, effects of stoichiometry on, 22:21645(R) (BMI-1826)
- PuN--UN, thermal expansion at 20 to 1175°C, 22:28777(R) (BMI-1837)
- PuN--UN, thermal performance of, analysis of fast reactor fuel, 22:32818
- PuN--UN, thermal stability at 1300 to 2000°C, 22:720 (BMI-1809, Sect.A)
- PuN--UN, vapor pressure at 2020, 2050, 2120, and 2130°K, 22:28777(R) (BMI-1837)
- PuN--UN, wetting by liquid sodium, 22:15261(R) (BMI-1819)

PLUTONIUM OXALATES
- diffusion of heated powders of, in air, 22:37708 (BNWL-786)
- dissolution of suspensions of, by aluminum and iron, 22:27845 (CEA-N-816, pp 150-276)

- heating of, airborne particle release from, 22:43014 (BNWL-SA-1735)
- precipitation of, 22:45146 (NP-17588)
- precipitation of, design of continuous operation apparatus for, 22:50956(P)
- preparation, properties, and reactions of, review of, 22:2089
- stability constants for, review on, 22:27682

PLUTONIUM OXALATES Pu(C$_2$O$_4$)$_2$
- plutonium oxalate--thorium oxalate, magnetic susceptibility of, 22:18792

PLUTONIUM OXIDES
- analysis for fluorides, electrolytic, 22:18686 (BNWL-601)
- analysis for iron and nickel, method for, 22:25236 (CEA-N-616, pp 20-71)
- analysis for plutonium, calorimetric and wet chemical methods for, 22:30435 (RFP-1122)
- deposition from molten salt bath, electro-, 22:151
- diffusion of heated powders of, in air, 22:37708 (BNWL-786)
- effects on retention of plutonium-239 in lungs of beagles, 22:10825 (BNWL-480, pp 55-83)
- fabrication of standard of, for use in chemical analysis, 22:25236 (CEA-N-616, pp 20-71)
- handling of, radiation protection of personnel in, 22:10321 (EURAEC-1938)
- heating of, airborne particle release from, 22:43014 (BNWL-SA-1735)
- machining behavior, 22:41028
- neutron slowing down in, inelastic, (T), 22:35211
- oxygen potentials of nonstoichiometric, galvanic cells and gas-equilibration techniques for measuring, 22:4116
- phase diagram of, comparison with rare earth oxides, 22:4888 (EUR-3563)
- phase studies of, 22:17168 (STI/DOC-10/79)
- phase studies of, 22:43663
- phase studies of, 22:2655
- phase studies of, metallographic and x-ray, 22:4889 (EUR-3564)
- physical properties of reactor fuels of, 22:17113 (JAERI-1144)
- preparation from fluorides, 22:25470(T) (ANL-Trans-590)
- preparation of stable low nitrate sols of, method for, 22:52244(P)
- preparation, properties, and phase relation of, review of, 22:2699
- preparation, properties, and reactions of, review of, 22:2089
- reduction by calcium to produce plutonium metal, 22:31336 (UCRL-50403)
- reduction in molten fluoride mixture by aluminum, 22:42808 (CEA-R-3435)
- size measurement of aerosols of, using cascade impactor, 22:25537
- surface contamination levels for environmental plutonium-239, physical and biological aspects of, 22:51562 (BNWL-SA-1510)
- surface reactions with oxygen in hot-stage electron microscope, 22:36550
- thermodynamic properties of nonstoichiometric, 22:4882
- thermodynamic properties of, review of, 22:17168 (STI/DOC-10/79)
- vapor pressure of, 22:43663
- BeO--PuO$_2$--ThO$_2$, development of fuels of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- PuO$_2$--ThO$_2$, fuel elements for pebble bed reactors, design and economics of dispersion of, 22:22716
- PuO$_2$--UO$_2$--ZrO$_2$, physical properties of sintered pellets of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))

PLUTONIUM OXIDES PuO
- crystal structure and thermodynamics of, 22:23007 (UJV-1832)
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- phase studies by metallography and x-ray diffraction, 22:31509
- preparation by reduction of plutonium dioxide by hydrogen, 22:31509
- thermodynamic properties of, mass-spectrometric studies of, 22:36543 (ANL-7450, pp 39-74)
- vaporization of, 22:23007 (UJV-1832)

PLUTONIUM OXIDES PuO$_2$
- ablation of microspheres of, testing in hyperthermal arc tunnels, 22:42977(R) (SC-PR-68-451)
- alpha spectra from microspheres of 238, 22:42977(R) (SC-PR-68-451)
- analysis for impurities in microspheres of, 22:21645(R) (BMI-1826)
- analysis for plutonium by controlled-potential coulometry, 22:40041
- analysis of irradiated, for transcurium elements, 22:14419 (DP-1137)
- analysis of plutonium-238-enriched heat sources of, for impurities using gamma spectroscopy, (E), 22:18704
- analysis of plutonium-238-enriched, for impurities by gamma spectroscopy, 22:8 (DPSPU-66-30-12)
- analysis of plutonium-238-enriched, for plutonium-236, 22:39985 (MLM-1486)
- analysis using α-reaction γ spectra, (E), 22:18704
- burnup in BR-5 research reactor fuel elements, analysis of efficiency of, 22:27470(T) (JPRS-45100)
- coating microspheres of, feasibility of pyrocarbon, 22:10434 (LA-3814)
- coating with graphite, 22:724 (BMI-1809, Sect.C)
- coating with pyrolytic carbon, 22:724 (BMI-1809, Sect.C)
- criticality calculations for, 22:45143 (K-1734)
- criticality in processing equipment, analysis of configuration parameters for, 22:50808 (RFP-1206)
- criticality of plutonium-238-containing, for use as Brayton cycle heat source, 22:51179 (MLM-1532)
- crystal structure and thermodynamics of, 22:23007 (UJV-1832)
- density of spheroids of, determination by mercury displacement method, 22:17098 (AEEW-M-797)
- dissolution by sodium peroxide--sodium hydroxide fusion, 22:40041
- dissolution in nitric acid solutions, effects of sintering conditions on, 22:42810(T) (EURFNR-471)
- dissolution in nitric acid solutions, effects of sintering conditions on, 22:25460 (KFK-673)
- dissolution of, 22:33208(R) (MLM-1456)
- dissolution of microspheres of, efficiency of leaching agents for, 22:21645(R) (BMI-1826)
- dissolution of, bibliography and data compilation on, 22:37714 (MLM-1513)
- dissolution of, factors affecting acid, 22:33529
- distribution in mixed-oxide fuel elements, variation of radial, (E), 22:30343(R) (EURAEC-1992)
- effects on gastrointestinal tract of rats, pathological, 22:49331
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- evaporation and thermodynamic behavior of substoichiometric, at high temperatures, 22:31477
- fabrication of clad fuel elements of incorporating metal powder, 22:49814(P)
- fabrication of fuel elements of, methods for, 22:8816(P)
- fabrication of fuel elements of, process facility description and cost estimates for, 22:18581 (BNWL-273(Vol.2))
- fabrication of pyrolytic carbon coated, 22:724 (BMI-1809, Sect.C)
- failure of uncoated microspheres of plutonium-238-containing, in helium at 1300°F and 2500 psi pressure, 22:47304 (SC-CR-68-3640)
- fluorination at 28 to 300°C, 22:48900 (RFP-1052)
- fluorination by bromine pentafluoride, 22:6365 (ANL-7362)
- fluorination by chlorine trifluoride or fluorine, 22:30647 (EURAEC-1694)
- fluorination with chlorine trifluoride, 22:33527
- fluorination with fluorine and interhalogens, 22:8186
- fuel elements of, molar enthalpy changes for various temperature drops in, 22:30118 (ANL-7438)
- fuel fabrication of pyrolytic-carbon-coated spheres of, effects of temperature on, 22:42200(R) (ORNL-4200)
- fuel pellets of, results of fluorination of, 22:9988(R) (ANL-7391)
- fuel rod of, analysis of lattice parameters for heavy water-moderated, (E/T), 22:22837
- fuels of, economic aspects of efficiency of, 22:5914 (AECL-2944)
- gamma dose rates from, computer program for calculation of, 22:31060 (MLM-1460)
- grain structure of, electron microscope study of, 22:8770
- homogeneity of vibratory-compacted, γ attenuation method for inspection of, 22:14739
- hygroscopicity of, 22:12963 (RFP-1056)
- isotopic exchange of oxygen with plutonium-238-enriched, 22:33367
- isotopic heat sources of, neutron spectra from, 22:8304
- magnetic susceptibility at 4 to 1000°K, (E), 22:41665
- melting by passing electric current through pellets of, method and apparatus for, 22:744(P)
- melting equipment for, design of electric, 22:38615(P)
- melting point of, 22:43648(R) (GEAP-5634)
- metallography of plasma-fired microspheres of, 22:8805 (CONF-670533-8)
- neutron dose rate from, evaluation of, 22:31060 (MLM-1460)
- neutron generation in plutonium-238-enriched, effects of oxygen-16 content on, 22:27629 (MLM-1462)
- oxygen-16 exchange between oxygen and, at 700 and 850°C, 22:27629 (MLM-1462)
- particle size of, in relation to α-radiosensitivity of intestines of miniature swine, 22:10676 (BNWL-480, pp 85-97)
- particle size of, in relation to plutonium-238 sorption from intestines of miniature swine, 22:10676 (BNWL-480, pp 85-97)
- phagocytosis in peritoneal cavity of rats, effects of DTPA and particle size on, 22:10677 (BNWL-480, pp 99-106)
- phase relations of, 22:43646 (ANL-7299, pp 220-6)
- physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
- preparation of carbon-coated spheres of, for compatibility testing, 22:28777(R) (BMI-1837)
- preparation of dense microspheres of, by sol-gel process, 22:43643

preparation of gel microspheres from sols of, 22:4151(P)
preparation of microspheres and sols of, equipment and methods for, 22:12476 (ORNL-TM-1978)
preparation of microspheres of, 22:21750 (EUR-3737)
preparation of microspheres of plutonium-238-enriched, by sol-gel process, 22:26071 (MLM-1450)
preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
preparation of shaped particles of, for reactor fuel, 22:11036(P)
preparation of sols of, 22:43643
preparation of sols of, 22:26073 (ORNL-TM-2205)
preparation of sols of, 22:47110(R) (BAW-3714-7)
preparation of spheres of, using mechanical shaping and sintering, 22:724 (BMI-1809, Sect.C)
preparation of spheres of, using plasma torch, 22:724 (BMI-1809, Sect.C)
preparation of spheres of, using Sol Gel process, 22:724 (BMI-1809, Sect.C)
production and stability of microspheres of, 22:8805 (CONF-670533-8)
production by chemical vapor deposition from hydrogen, plutonium hexafluoride, and water vapor, 22:45026 (ORNL-TM-2306)
properties of microspheres of, 22:15261(R) (BMI-1819)
properties of microspheres of, 22:21645(R) (BMI-1826)
properties of vaporized aerosols of, 22:5950
properties of, data sheets on, 22:8724 (MLM-1441)
radiation dose rates from in-pile exposure samples of, 22:19669 (BNWL-624, pp 2.1-32)
radiation effects on, 22:15261(R) (BMI-1819)
radiation effects on carbon coated, in-pile, 22:15261(R) (BMI-1819)
radiation effects on fuels of, review on, 22:8804
radiation effects on glass-bearing and graphite-impregnated fuels of, review on, 22:8804
radiation effects on plutonium-242-enriched, yields of americium, curium, and fission products from, 22:42587 (DP-1157)
radiation effects on pyrolytic-carbon coated pellets of, 22:724 (BMI-1809, Sect.C)
radiation effects on, electron microprobe analysis of, 22:7788(R) (ANL-7382)
radiation effects on, self-, 22:6138(R) (LA-3820)
radiation testing of fuel particles of, 22:5932(R) (NP-17118)
radioinduced fission gas release from carbon-coated particulate, in-pile, 22:28777(R) (BMI-1837)
reactions with chlorine monofluoride with and without oxygen, formation of plutonium tetrafluoride by, 22:4230(R) (EURAEC-1920)
reactions with molten salts at 800°C, 22:25442 (ANL-7375, pp 19-45)
reactivity of uranium dioxide--water lattices with, temperature coefficients of, (E/T), 22:5746
reduction in molten salt--liquid metal system, 22:151
retention by lungs of beagle dogs, effects of particle size on, 22:10676 (BNWL-480, pp 85-97)
separation from uranium dioxide by electrolysis in fused salt baths, 22:30669
separation of uranium from, using fluoride volatility process, 22:42806 (ANL-7412)
size distribution of encapsulated microspheres of, effects of high-velocity impact on, 22:42995 (MLM-1499)
solubility in nitric acid, catalytic effects of sodium dicyanamide on, 22:1956(R) (MLM-1405)
solubility of plasma torch produced microspheres of, in water, 22:42977(R) (SC-PR-68-451)
sorption by intestines of rats, effects of age and particle size on, 22:10676 (BNWL-480, pp 85-97)
sorption of plutonium-238 enriched, by gastrointestinal tract of pigs, 22:49536
specific heat of, 22:34065(R) (MLM-1445)
spectra of, infrared absorption, 22:19648 (EUR-3739)
stability of sols of, 22:43643
stoichiometry of, effects of heat treatments on, 22:21645(R) (BMI-1826)
strength of microspheres of, effects of size on compressive, 22:52262 (MLM-1540)
testing of pyrolytic carbon coated, 22:724 (BMI-1809, Sect.C)
thermal capacity at 300 to 1100°K, 22:2612(R) (MLM-1402)
thermal conductivity at 250 to 1000°C, 22:11051
thermodynamic properties of, 22:30118 (ANL-7438)
thermodynamic properties of, mass-spectrometric studies of, 22:36543 (ANL-7450, pp 39-74)
thermodynamics at oxygen-to-plutonium ratio range of 1.73 to 2.00, at 2050 to 2650°C, 22:26038(R) (GEAP-5395)
uptake of aerosols of plutonium-238-incorporated, following inhalation by man, 22:38261(R) (SC-CR-67-2845)
vaporization heats, 22:43631 (ANL-7299, pp 120-37)
vaporization of, 22:23007 (UJV-1832)
vaporization of, aerosal agglomeration and formation from, 22:15141 (BNL-50057, pp 79-100)
vaporization of, enthalpy of, 22:52257 (ANL-7425, pp 94-129)
vaporization of, ultrahigh-vacuum effusion apparatus for, 22:52257 (ANL-7425, pp 94-129)

$^{239}PuO_2$--UO_2, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
Al_2O_3--PuO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
Al--PuO_2, fabrication into fuel elements having aluminum cladding, 22:26025(P)
BeO--PuO_2--ThO_2--UO_2, reprocessing fuel of, 22:149
fission products--PuO_2--UO_2, fluorination of pellets of, in fluidized bed, 22:25443 (ANL-7375, pp 46-94)
graphite--PuO_2, stability of fuel elements of, at high temperatures, 22:38597 (AECL-2783)
H_2O--PuO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
Ho_2O_3--PuO_2, phase diagrams, 22:2703 (KFK-597)
MeO/sub x/--PuO_2, phase studies of, 22:17168 (STI/DOC-10/79)
MgO_2--PuO_2, preparation, properties, and phase relations of, 22:2699
MgO--PuO_2, radiation effects on fuels of, review on, 22:8804
Na--PuO_2--UO_2, aerosol behavior simulation for accidents in liquid sodium-cooled fast breeder, analysis of, 22:53262 (BNL-12757)
polystyrene--PuO_2, criticality of bare and plexiglass-reflected rectangular parallelepipeds of 5 hydrogen to plutonium ratio, measurement of, 22:37530 (BNWL-SA-1630)
polystyrene--PuO_2, criticality of rectangular-shaped lattices of, analysis of, 22:42164(R) (BNWL-775)
polystyrene--PuO_2, criticality studies of homogeneous systems of, 22:6114
PuO_2--stainless steel, fabrication of, 22:7050
PuO_2--stainless steel, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--stainless steel--UO_2, fabrication of cermet fuels of, 22:8810
PuO_2--Th, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--ThO_2, power density of solid-solution radioisotopic fuels of, 22:49785 (LA-DC-9686)
PuO_2--ThO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
PuO_2--ThO_2, preparation of microspheres of, by sol-gel process, 22:43643
PuO_2--ThO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
PuO_2--ThO_2, preparation, properties, and phase relations of, 22:2699
PuO_2--ThO_2, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--ThO_2, radiation effects on fuels of, review on, 22:8804
PuO_2--ThO_2, radiation testing of metal-clad fuels of, in-pile, 22:8823 (ORNL-4170, pp 211-26)
PuO_2--ThO_2, reactions with rhenium--tungsten thermocouples at 2215 to 2290°C, 22:645 (AECL-2768)
PuO_2--ThO_2, sintering of, densification and solid solution formation in, 22:45802 (AERE-M-1964)
PuO_2--ThO_2-base, radiation effects testing of, in-pile, 22:23904 (CONF-660524-, pp 463-73)
PuO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
PuO_2--UO_2, analysis for characterizing FFTF fuels of, 22:5 (BNWL-SA-1388, pp 10.1-14)
PuO_2--UO_2, analysis for zirconium, spectrographic, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, analysis of irradiated, electron-microprobe, 22:36543 (ANL-7450, pp 39-74)
PuO_2--UO_2, analysis of irradiated, for solid fission products, 22:4023
PuO_2--UO_2, burnup analysis of NaK-cooled type-316 and type--347 stainless steel clad fuel rods of, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, burnup characteristics in BR-5 (USSR) Reactor fuel elements of, during 1964, 22:18571
PuO_2--UO_2, burnup of fuel elements of, calculation from isotopic composition in Saxton Power Reactor, (E/T), 22:27417(R) (WCAP-3385-14)
PuO_2--UO_2, burnup of irradiated, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, burnup of liquid sodium-cooled fast reactor fuel of, analysis of, 22:18511
PuO_2--UO_2, burnup of type 316 stainless steel clad fuel pins of, analysis of, 22:17189
PuO_2--UO_2, burnup of type 316 stainless steel-clad, gamma scan analysis of, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, burnup of vibrationally compacted, effects of internal pressure buildup on, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, burnup performance of stainless steel-clad tungsten carbide (W_2C)-coated pellet-type, effects of fabrication and stoichiometry on, 22:39783(R) (NUMEC-3432-32)
PuO_2--UO_2, burnup performance of Type 316 stainless steel-clad, analysis of 125,000 MWd/Te, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, compaction of powdered, into fuel test bodies, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, compatibility of clad, with sodium at 650°C, 22:13044 (BNWL-473, pp 3.1-21)
PuO_2--UO_2, compatibility of sodium-bonded Type 316 stainless steel-clad, analysis of interface, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, contamination of equipment and laboratory by,

from glove box explosion and fire, 22:2320 (BNWL-464)
PuO_2--UO_2, criticality of water-moderated lattices of, 22:49817(R) (EURAEC-2036)
PuO_2--UO_2, cycle management of sodium-cooled fuel rods of, economics of, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, cycle performance in European fast reactors, development program for optimum, 22:35500
PuO_2--UO_2, decomposition pressures of, 22:43663
PuO_2--UO_2, density control in mixed fuels of, 22:4860
PuO_2--UO_2, density control of, using 5 to 20 percent precursor additive, 22:7032(R) (NUMEC-3524-43)
PuO_2--UO_2, design of driver fuel pins for FTR using, 22:1848 (BNWL-SA-1388, pp 3.1-41)
PuO_2--UO_2, design of pellets of, for FTR fuel elements, 22:1848 (BNWL-SA-1388, pp 3.1-41)
PuO_2--UO_2, development and fabrication of sol-gel, for fast reactor fuel, 22:8704 (ORNL-4170, pp 124-7)
PuO_2--UO_2, development and testing for fast reactor fuel, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, development and testing for fast reactor fuel, review of, 22:49800
PuO_2--UO_2, development for reactor fuels, 22:13063(R) (EURAEC-1885)
PuO_2--UO_2, diffusion in, 22:43663
PuO_2--UO_2, diffusion in fuels of, effects on liquid sodium-cooled fast reactor kinetics of, 22:37402 (ANL-7450, pp 75-89)
PuO_2--UO_2, diffusion in, at 2673°K, 22:31476
PuO_2--UO_2, diffusion of fission products from irradiated, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, dissolution in molten chlorides, 22:8187
PuO_2--UO_2, dissolution in nitric acid solutions, effects of sintering conditions on, 22:25460 (KFK-673)
PuO_2--UO_2, dissolution in nitric acid solutions, effects of sintering conditions on, 22:42810(T) (EURFNR-471)
PuO_2--UO_2, dissolution of clad ceramic, by liquid ammonia and mineral acids, 22:19670 (BNWL-624, pp 6.1-20)
PuO_2--UO_2, dissolution of irradiated fuels of, by nitric acid, 22:27845 (CEA-N-816, pp 150-276)
PuO_2--UO_2, dissolution of Zircaloy-clad, in nitric acid--nitrate--hydrochloric acid systems, 22:6382
PuO_2--UO_2, effects of zoning of, on performance as reactor fuel, 22:6016
PuO_2--UO_2, fabrication and coating of fuel particles of, 22:8810
PuO_2--UO_2, fabrication and properties of nuclear fuels of, 22:8810
PuO_2--UO_2, fabrication and testing of fuel rods of, 22:34125 (EURAEC-1999)
PuO_2--UO_2, fabrication and testing of high-density fuel pellets of, 22:53463(R) (UNC-5217)
PuO_2--UO_2, fabrication and testing of, for use as reactor fuel, 22:30343(R) (EURAEC-1992)
PuO_2--UO_2, fabrication by vibratory compaction, 22:8809
PuO_2--UO_2, fabrication for FFTF fuel, criticality safety in, 22:748 (BNWL-SA-1388, pp 11.1-26)
PuO_2--UO_2, fabrication into nuclear fuel rods, 22:49817(R) (EURAEC-2036)
PuO_2--UO_2, fabrication into rods for in-pile radiation testing, 22:732 (EURFNR-318)
PuO_2--UO_2, fabrication of, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, fabrication of clad fuel elements of, incorporating metal powder, 22:49814(P)
PuO_2--UO_2, fabrication of fuel elements for Prototype Fast Reactor, 22:14209
PuO_2--UO_2, fabrication of fuel elements of, description of, 22:27423
PuO_2--UO_2, fabrication of fuel elements of, methods for, 22:8816(P)
PuO_2--UO_2, fabrication of fuel pellets of, description of, 22:30200
PuO_2--UO_2, fabrication of pellets of, by cold pressing and sintering, 22:725 (BMI-1809, Sect.E)
PuO_2--UO_2, fabrication of sintered flat cylindrical rings of, description of vibration-compaction, 22:37577(P)
PuO_2--UO_2, fabrication of sintered spherical pellets of, quality control using autoradiography of, 22:27489(R) (NUMEC-3524-47)
PuO_2--UO_2, fabrication of, density control in, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, fast fission factor for water-cooled graphite-moderated lattice of, calculation of, 22:42164(R) (BNWL-775)
PuO_2--UO_2, fission product aggregates in, composition of, 22:17152
PuO_2--UO_2, fission product distribution in Incoloy 800-clad and Type 316 and Type 347 stainless steel-clad, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, fission product release from Type 316 and Type 347 stainless steel-clad sodium-bonded, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, fluorination by bromine pentafluoride or chlorine trifluoride, 22:6384
PuO_2--UO_2, fluorination by bromine pentafluoride or chlorine trifluoride, 22:8186
PuO_2--UO_2, fluorination by chlorine fluorides, fluidized-bed, 22:8169(R) (EURAEC-1934)
PuO_2--UO_2, fluorination by chlorine trifluoride, 22:40156(R) (EURAEC-2031)
PuO_2--UO_2, fluorination of fuels of, using bromine pentafluoride, 22:21078
PuO_2--UO_2, fluorination of irradiated, 22:51045 (ANL-7425, pp 42-93)
PuO_2--UO_2, fluorination of irradiated, minimization of retention of plutonium and uranium on alumina bed in, 22:40150 (ANL-7372)
PuO_2--UO_2, fluorination of irradiated, techniques of fluidized-bed, 22:21172
PuO_2--UO_2, fluorination with fluorine, chlorine trifluoride, or bromine trifluoride, fluidized-bed, 22:150
PuO_2--UO_2, fuel burnup of, METHUSELAH--AIMAZ calculation of SGHW-type reactor, 22:30319
PuO_2--UO_2, fuel cladding failure of, analysis of Incoloy 800 and Hastelloy, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, fuel cycle management of, comparison of zoned and unzoned core, 22:42164(R) (BNWL-775)
PuO_2--UO_2, fuel element cluster of, physics measurement analysis of gas-cooled reactor two- and three-ring, (E/T), 22:22762
PuO_2--UO_2, fuel element conceptual design development for FFTF, literature survey discussion of, 22:50795 (BNWL-645)
PuO_2--UO_2, fuel elements of Zircaloy 2-clad, burnup performance of HBWR, 22:48646 (HPR-102)
PuO_2--UO_2, fuel elements of, analysis of burnup in ingot from EBR-2, 22:32817
PuO_2--UO_2, fuel elements of, analysis of burnup of Halden Boiling Reactor, 22:35464(R) (HPR-99)
PuO_2--UO_2, fuel elements of, design parameters for optimum fast breeder power reactor, (E/T), 22:39810
PuO_2--UO_2, fuel elements of, effects of burnup on gas pressure buildup in, 22:32814
PuO_2--UO_2, fuel fabrication for SEFOR hexagonal channel, description of pellet-type, 22:44889(R) (GEAP-5629)
PuO_2--UO_2, fuel loading for PRCF reactor of, physics measurements for critical, (E/T), 22:32743(R) (BNWL-739)
PuO_2--UO_2, fuel meltdown simulation of Fast Test Reactor, use of MARS computer code for effects of configuration and enrichment on, 22:37554 (APDA-209)
PuO_2--UO_2, fuel performance in fast reactors, analysis of, 22:48657 (TID-24680)
PuO_2--UO_2, fuel pin center temperature measurement, thermocouple configuration for DFR and DMTR, 22:44811 (CONF-660521-6)
PuO_2--UO_2, fuel pins of, electron microprobe analysis of irradiated, 22:12006(R) (ANL-7399)
PuO_2--UO_2, fuel rod fabrication costs for boiling and pressurized-water reactors, RODCOST computer program for, 22:44809 (BNWL-789)
PuO_2--UO_2, fuel system for fast reactor, calculation of optimum economic, (T), 22:46961
PuO_2--UO_2, fuels elements of, physics measurements on water-moderated, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
PuO_2--UO_2, fuels of, economic aspects of efficiency of, 22:5914 (AECL-2944)
PuO_2--UO_2, fuels of, fabrication of FTR and Nuclear Proof Test Facility, 22:30299 (BNWL-SA-1750)
PuO_2--UO_2, grinding to produce controlled-size particles for fuel elements, mill for, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, heat of fission of, analysis of, 22:50841(R) (LA-3993)
PuO_2--UO_2, homogeneity of 2 and 3 wt percent plutonium dioxide additive, (E), 22:7032(R) (NUMEC-3524-43)
PuO_2--UO_2, integrity of stainless steel clad, effects of bubble size in sodium bonding on, 22:4910
PuO_2--UO_2, irradiation testing of FTR fuel pins of, in EBR-2, 22:42358 (BNWL-650)
PuO_2--UO_2, irradiation testing of particulate fields of, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, kinetics for trisected FTR core of, calculation of optimum, 22:42164(R) (BNWL-775)
PuO_2--UO_2, mechanical mixing and precipitation of, for fabrication into fuels, 22:7048
PuO_2--UO_2, meltdown of vibrationally compacted, relations with reactor power limit, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, melting behavior of nonstoichiometric, (E/T), 22:11044 (GEAP-5358)
PuO_2--UO_2, melting behavior of solid solutions of, 22:43648(R) (GEAP-5634)
PuO_2--UO_2, melting by passing electric current through pellets of, method and apparatus for, 22:744(P)
PuO_2--UO_2, melting failure of, effects of power transients on fuel element, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, melting of, 22:8837
PuO_2--UO_2, melting point of, effects of burnup on, 22:33172
PuO_2--UO_2, melting point of, nonstoichiometric effects on, 22:33171
PuO_2--UO_2, melting point of, radiation effects on, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, microstructure of, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, microstructure of compacted, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, neutron buckling measurements in heavy water moderated exponential piles fueled with, effects of coolants on, 22:33027
PuO_2--UO_2, neutron distribution in heavy water-moderated fuel rods of, foil activation analysis of thermal,

22:25082 (DP-1122)
PuO_2--UO_2, oxidation and sintering of, role of oxygen-metal ratio in, 22:7036
PuO_2--UO_2, particle size distribution in sintered powders of, 22:737
PuO_2--UO_2, performance at 50,000 MWd/t burnup, 22:4913
PuO_2--UO_2, performance in power reactors, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, performance of fuels of, at 120,000 MWd/t burnup, 22:4914
PuO_2--UO_2, performance of Type 304 and Type 347 stainless steel-clad mixed, metallographic analysis of 27 to 36 kW/ft power level, 22:50731 (GEAP-5556)
PuO_2--UO_2, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
PuO_2--UO_2, phase studies, 22:21650
PuO_2--UO_2, phase studies of, 22:52257 (ANL-7425, pp 94-129)
PuO_2--UO_2, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
PuO_2--UO_2, physics measurements for uniform rod clusters of, 22:18471
PuO_2--UO_2, physics parameters for Prototype Fast Reactor fuel of, analysis of, 22:18512
PuO_2--UO_2, plutonium distribution in molten, 22:8837
PuO_2--UO_2, plutonium homogeneity in, determination by autoradiography, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, porosity and density of irradiated sintered powder of, effects of organic additives on, 22:27488(R) (NUMEC-3524-39)
PuO_2--UO_2, power performance of, analysis of optimum, 22:46928 (WASH-1106)
PuO_2--UO_2, preparation and high temperature properties of, 22:27487(R) (LA-3880)
PuO_2--UO_2, preparation and high-temperature properties of, 22:43629(R) (LA-3933)
PuO_2--UO_2, preparation by sol-gel process, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, preparation of fast reactor fuels of, using gel-addition process, 22:19608(R) (BAW-3714-5)
PuO_2--UO_2, preparation of irradiated thin disks of, for electron microscopy, 22:43670
PuO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
PuO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:43643
PuO_2--UO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
PuO_2--UO_2, preparation of, gel-addition process for, 22:2016(R) (BAW-3714-4)
PuO_2--UO_2, preparation of, sol-gel process for, 22:738
PuO_2--UO_2, preparation, properties, and phase relations of, 22:2699
PuO_2--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--UO_2, processing of irradiated stainless steel-clad, nonaqueous methods for, 22:47213
PuO_2--UO_2, production method for dense compacts of, 22:28914(P)
PuO_2--UO_2, production of blended powders of, 22:19618(P)
PuO_2--UO_2, production of dry granular fuels of, methods for, 22:21758(P)
PuO_2--UO_2, production of fuel elements of, method for, 22:34105(P)
PuO_2--UO_2, production of particulate fuel of, by gel-addition process, 22:36522(R) (BAW-3714-6)
PuO_2--UO_2, properties of stainless steel- and Zircaloy-clad, as water-moderated reactor fuel, 22:6017
PuO_2--UO_2, radiation effects on assemblies of sintered pellet fuel elements of, 22:32985
PuO_2--UO_2, radiation effects on clad, in-pile, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, radiation effects on compacts of, in-pile, 22:21725 (BNWL-SA-1624)
PuO_2--UO_2, radiation effects on fuel pins of, fast-flux in-pile, 22:19672 (GEAP-5570)
PuO_2--UO_2, radiation effects on fuels of, review on, 22:8804
PuO_2--UO_2, radiation effects on high power density fuels of, in-pile, 22:19513 (BNWL-SA-1623)
PuO_2--UO_2, radiation effects on hot pressed pellets of, in-pile, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on mechanical properties of Hastelloy X- and Type 316 stainless steel-clad, analysis of fast neutron, 22:42200(R) (ORNL-4200)
PuO_2--UO_2, radiation effects on pellets and powders of, transient in-pile, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on stainless steel-clad rods of, transient in-pile, 22:31526 (GEAP-4469)
PuO_2--UO_2, radiation effects on Type 316 or Type 347 stainless steel clad fuel elements of, in-pile, 22:27423
PuO_2--UO_2, radiation effects on vibrationally compacted, fast neutron, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on vibrationally compacted fuels of, 22:53454 (BNWL-828)
PuO_2--UO_2, radiation effects on, analysis of neutron, 22:32743(R) (BNWL-739)
PuO_2--UO_2, radiation effects on, description of optical examination methods for neutron, 22:27497
PuO_2--UO_2, radiation effects on, effects of method of preparation on, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, radiation effects on, electron microprobe analysis of, 22:24925(R) (ANL-7427)
PuO_2--UO_2, radiation effects on, in-pile, 22:2707 (BNWL-SA-1346)
PuO_2--UO_2, radiation effects on, neutron, 22:21776(R) (EURAEC-1937)
PuO_2--UO_2, radiation effects on, relations of pellet stoichiometry with in-pile, 22:49772(R) (NUMEC-3432-44)
PuO_2--UO_2, radiation effects testing fast reactor fuels, in-pile, 22:8845 (EURFNR-423)
PuO_2--UO_2, radioinduced gas release and pressure buildup in, relations with burnup and specific power under in-pile conditions, 22:2707 (BNWL-SA-1346)
PuO_2--UO_2, reactions with chlorine trifluoride or fluorine, 22:25470(T) (ANL-Trans-590)
PuO_2--UO_2, reactions with Incoloy-800 and stainless steel at 1400°F, 22:4739
PuO_2--UO_2, reduction by copper--magnesium alloy in molten salt, 22:51044 (ANL-7425, pp 19-41)
PuO_2--UO_2, reprocessing fuel of, by chloride-volatility techniques, 22:150
PuO_2--UO_2, reprocessing fuel of, by fluoride-volatility techniques, 22:150
PuO_2--UO_2, reprocessing fuels of, salt-cycle methods for, 22:6383
PuO_2--UO_2, reprocessing irradiated Zircaloy-clad fuels of, distribution of ruthenium hexafluoride in process stream during, 22:25443 (ANL-7375, pp 46-94)
PuO_2--UO_2, reprocessing of fuels of, 22:47223
PuO_2--UO_2, reprocessing of irradiated, 22:33527
PuO_2--UO_2, reprocessing of irradiated, fluidized-bed process for, 22:23099(R) (K-L-1780(Pt.23)
PuO_2--UO_2, reprocessing of irradiated, salt-transport process for, 22:33528
PuO_2--UO_2, reprocessing of stainless steel-clad fast breeder fuels of, 22:23108
PuO_2--UO_2, reprocessing of stainless steel-clad, salt-transport techniques for, 22:23107
PuO_2--UO_2, reprocessing using chlorine trifluoride and fluorine, effects of fission products on, 22:4230(R) (EURAEC-1920)
PuO_2--UO_2, separation of contaminants from fuels of, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
PuO_2--UO_2, separation of plutonium from, by fusion and ion exchange, 22:22930(R) (NBL-242)
PuO_2--UO_2, sintering behavior of, effect of stoichiometry on, 22:24925(R) (ANL-7427)
PuO_2--UO_2, surface areas of coprecipitated and mechanically blended, effects of zirconium dioxide on, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2, thermal conductivity at 800 to 1900°C, 22:19625 (GEAP-4879)
PuO_2--UO_2, thermal conductivity for 1000 MW(e) LMFBR fuel of, at 0 to 5000°F, 22:9990(R) (BAW-1312)
PuO_2--UO_2, thermal conductivity in compacted powder reactor fuels of, (E/T), 22:27485 (EURAEC-1998)
PuO_2--UO_2, thermal conductivity of, 22:28934
PuO_2--UO_2, thermal conductivity of, 22:43663
PuO_2--UO_2, thermal conductivity of Type 316 and Type 347 stainless steel-clad, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, thermal conductivity of varying stoichiometry of, measurement of, 22:48790
PuO_2--UO_2, thermal conductivity of, effects of temperature and stoichiometry on, (E/T), 22:50731 (GEAP-5556)
PuO_2--UO_2, thermal expansion of fuel elements of, effects of stoichiometry on, 22:4878
PuO_2--UO_2, thermal expansion of stoichiometric, 22:13060 (BNWL-473, pp 4.1-9)
PuO_2--UO_2, thermal migration studies of, analysis of, 22:53260 (ANL-7425, pp 130-71)
PuO_2--UO_2, thermal properties of pellets of, 22:30200
PuO_2--UO_2, thermal properties of, effects of stoichiometry on, 22:30386
PuO_2--UO_2, thermodynamic properties of nonstoichiometric solid solutions in, 22:4882
PuO_2--UO_2, thermodynamic properties of solid-solution, 22:31479
PuO_2--UO_2, thermodynamic properties of, for reactor fuels, 22:31480
PuO_2--UO_2, transient radiation effects on, neutron radiography analysis of, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, transient radiation effects on, temperature distribution from, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, use in fuel rods, comparison with uranium dioxide fuel, 22:7048
PuO_2--UO_2, volatility of, effects of plutonium concentration on, 22:45141(R) (EURAEC-2030)
PuO_2--UO_2--ZrO_2, crystal structure of, effects of annealing, oxidation, and sintering on, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, phase studies of, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, properties as reactor fuel, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, radiation effects on, tests for evaluation of, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, surface areas of coprecipitated and

mechanically blended, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2-base, phase diagrams and thermal properties of, 22:19649(R) (NUMEC-3505-30)
PuO_2--UO_2-base, radiation effects on low-density rods of, at 12,000 MWd/t, 22:41125 (BNWL-SA-1679)
PuO_2--UO_2-base, thermal conductivity of stoichiometric and nonstoichiometric, at 0 to 2000ºC, 22:41096 (CEA-R-3488)
PuO_2--UO_2-base--ZrO_2, analysis for carbon, by gas chromatography, 22:19649(R) (NUMEC-3505-30)
PuO_2--UO_2-base--ZrO_2, phase diagrams and thermal properties of, 22:19649(R) (NUMEC-3505-30)
PuO_2--UO_2-base--ZrO_2, radiation effects on, in-pile, 22:19649(R) (NUMEC-3505-30)
PuO_2--ZrO_2, power density of solid-solution radioisotopic fuels of, 22:49785 (LA-DC-9686)
PuO_2--ZrO_2, preparation, properties, and phase relations of, 22:2699
PuO_2--ZrO_2, radiation effects on fuels of, review on, 22:8804
PLUTONIUM OXIDES Pu_2O_3
crystal structure and thermodynamics of, 22:23007 (UJV-1832)
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
vaporization of, 22:23007 (UJV-1832)
PLUTONIUM PHOSPHATES
preparation, properties, and reactions of, review of, 22:2089
PLUTONIUM PHOSPHIDES
crystal structure of, 22:37720
electric conductivity and thermoelectric power at 298 to 1000ºK, 22:43631 (ANL-7299, pp 120-37)
electric conductivity of, 22:26085
phase studies of, 22:2655
physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
preparation of uranium carbide mixtures of, for fast breeder reactor fuels, 22:11037(P)
preparation, crystal structure, and melting points of, 22:8061
preparation, properties, and phase relation of, review of, 22:2699
preparation, properties, and reactions of, review of, 22:2089
thermal conductivity and thermal capacity at 25 to 650ºC, 22:45818
thermal conductivity of, 22:26085
Plutonium Production Reactors
see Reactors, Production
PLUTONIUM RECYCLE CRITICAL FACILITY
control elements in, effects of Lucite on negative reactivity worth of hollow cadmium rod, 22:16269 (BNWL-618)
control rod worth measurements in, endogenous pulsed source technique for, 22:53454 (BNWL-828)
control rods for Phoenix-fueled, calibration of, 22:22804(R) (BNWL-685)
coolant loss effects on reactivity variations in, 22:12085 (BNWL-472, pp 3.1-33)
core for, description of critical mockup of MTR-Phoenix fueled, 22:22804(R) (BNWL-685)
core loading and testing in, using Phoenix fuel, 22:12085 (BNWL-472, pp 3.1-33)
core loadings for, reactivity measurements for uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:32743(R) (BNWL-739)
Phoenix fuel elements in, power distributions in, 22:14289 (BNWL-635)
physics characteristics of MTR Phoenix-fuel core mockup in, 22:27459 (BNWL-634, pp 3.1-27)
physics measurements on plutonium oxide (PuO_2)--uranium oxide (UO_2)--water lattices in, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
power peaking calculations in water moderated plutonium oxide (PuO_2)--uranium oxide (UO_2) fueled cores in, 22:12085 (BNWL-472, pp 3.1-33)
reactivity calculations for Phoenix core in, 22:12085 (BNWL-472, pp 3.1-33)
reactivity temperature coefficients of PRTR Batch Core loading in, (E/T), 22:53454 (BNWL-828)
reactivity worth measurements of Phoenix core in, 22:14251(R) (BNWL-534)
safety system for, reactivity worths of, 22:22804(R) (BNWL-685)
temperature coefficient of reactivity measurements in Phoenix-fueled, 22:22804(R) (BNWL-685)
void measurements in Phoenix-fueled, 22:22804(R) (BNWL-685)
Plutonium Recycle Reactor Experiment
see Plutonium Recycle Test Reactor
PLUTONIUM RECYCLE TEST REACTOR
component corrosion surveillance for, description of inspection methods and results through December 1967, 22:42163 (BNWL-726)
coolant-flow instabilities in, effects of boiling on, 22:51174
cooling system decontamination process for, description of primary, 22:22805 (BNWL-711)
cooling system decontamination, description of process for primary, 22:22816 (HW-75557(Rev.)(Del.))
cooling system of, radioactivity buildup measurements in primary, 22:53454 (BNWL-828)
core for, interim critical tests on Batch, 22:22804(R) (BNWL-685)
core lifetime for, use of Phoenix fuels in calculations of, 22:14289 (BNWL-635)
critical tests in, analysis of Batch Core, 22:53454 (BNWL-828)
criticality calculations for, effects of using Phoenix fuels on, 22:14289 (BNWL-635)
fuel burnup in, effects of cross section uncertainties on, 22:20906 (BNWL-SA-1485)
fuel burnup of, analysis of radiation effects in, 22:32743(R) (BNWL-739)
fuel burnup testing of plutonium oxide (PuO_2)--uranium oxide (UO_2) rods in, 22:20779 (BNWL-624, pp 3.1-159)
fuel element failure incident at, health physics aspects of recovery and decontamination following, 22:37529 (BNWL-752)
fuel element failure on September 29, 1965 in, fission product monitoring for, 22:32744 (BNWL-SA-668)
fuel element performance in, burnup effects on plutonium dioxide--uranium dioxide, 22:2707 (BNWL-SA-1346)
Fuel Element Recycle Test Facility for, measurement of fuel element reactivity worths in, 22:14251(R) (BNWL-534)
Fuel Element Rupture Test Facility of, irradiation testing of mixed-oxide fuels in, 22:53454 (BNWL-828)
fuel element testing in, status of high power density plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:53454 (BNWL-828)
fuel elements for, effects of burnup on gas pressure buildup in plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:32814
fuel elements for, physics characteristics of thorium-containing, (T), 22:20905 (BNWL-624, pp 5.1-16)
fuel elements for, pressure measurement equipment for, 22:19669 (BNWL-624, pp 2.1-32)
fuel elements for, reactivity worth measurements for, 22:22804(R) (BNWL-685)
fuel elements in, boiling burnout limits for 8-rod, (E/T), 22:20905 (BNWL-624, pp 5.1-16)
fuel elements in, effects on reactivity of plutonium variation in, 22:22804(R) (BNWL-685)
fuel elements in, irradiation of plutonium, 22:6124
fuel for, physics characteristics of plutonium Phoenix, (T), 22:27459 (BNWL-634, pp 3.1-27)
fuel for, physics characteristics of thorium--uranium, (T), 22:27459 (BNWL-634, pp 3.1-27)
fuel rod powers in core and FERTF channels in, measurement of relative, 22:12085 (BNWL-472, pp 3.1-33)
loading system for, description of off-load, 22:46921 (TID-24679(Vol.2))
loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
moderator system of, effects of heavy water solutions of boric acid on, 22:19670 (BNWL-624, pp 6.1-20)
modifications to, 22:20905 (BNWL-624, pp 5.1-16)
neutron fluxes in, ratios of axial peak-to-average, 22:14251(R) (BNWL-534)
neutron photoproduction calculations for heavy water moderated 19-rod fuel clusters in, 22:12085 (BNWL-472, pp 3.1-33)
operation during December 1967 to February 1968, description of, 22:32743(R) (BNWL-739)
operation experience of, description of, 22:30232
operation with high-power-density core, effects of boric acid on corrosion and boron deposition in, 22:10911 (BNWL-520)
operations during 1961 to 1962, description of, 22:22816 (HW-75557(Rev.)(Del.))
operations history of, total, 22:1821
operations summary for March through May 1968, 22:53454 (BNWL-828)
Phoenix fuel loadings for, lattice characteristics of, 22:14289 (BNWL-635)
Phoenix fuels for, variation of effective neutron multiplication with enrichment of, 22:14289 (BNWL-635)
power testing in, use of uranium dioxide--2 percent plutonium dioxide fuel for, 22:6125
pressure tubes in, creep behavior of Zircaloy-2, 22:17154
pressure tubes of, crack propagation characteristics of Zircaloy-2, 22:53454 (BNWL-828)
reactivity variation with burnup of Batch Core fuel in, (T), 22:53454 (BNWL-828)
temperature coefficient of reactivity measurements in, 22:22804(R) (BNWL-685)
PLUTONIUM SELENIDES
crystal structure of, 22:37720
phase studies of, 22:2655
preparation, crystal structure, and melting points of, 22:8061
PLUTONIUM SILICIDES
phase studies of, 22:2655
physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
preparation, properties, and phase relation of, review of, 22:2699
preparation, properties, and reactions of, review of, 22:2089

PLUTONIUM SUBCRITICAL EXPERIMENT
  operations during April to June 1966, description of, 22:39880(R) (GEAP-5193)
  physics measurements for 264-rod lattice in, description of, 22:39880(R) (GEAP-5193)
PLUTONIUM SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  preparation, properties, and reactions of, review of, 22:2089
PLUTONIUM SULFIDES
  analysis for sulfur, amperometric, 22:8015
  crystal structure determination, 22:6138(R) (LA-3820)
  crystal structure of, 22:37720
  electric conductivity and thermoelectric power at 298 to 1000°K, 22:43631 (ANL-7299, pp 120-37)
  electric conductivity of, 22:26085
  fabrication, properties, and structure of, 22:64
  phase studies of, 22:2655
  physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
  preparation, crystal structure, and melting points of, 22:8061
  preparation, properties, and phase relation of, review of, 22:2699
  preparation, properties, and reactions of, review of, 22:2089
  radiation effects on chemical properties of fuels of, reactor, 22:64
  thermal conductivity and thermal capacity at 25 to 650°C, 22:45818
  thermal conductivity of, 22:26085
  PuS--US, analysis for sulfur, amperometric, 22:8015
  PuS--US, crystal structure, 22:31523
PLUTONIUM TELLURIDES
  crystal structure of, 22:37720
  phase studies of, 22:2655
  preparation, crystal structure, and melting points of, 22:8061
  preparation, properties, and reactions of, review of, 22:2089
PLUTONIUM TUNGSTATES
  preparation of, wet method for, 22:33334
  solubility in acetate and ethanol solutions, 22:33334
PLUTONIUM URANIUM CARBIDES
  Fe--PuUC, analysis of cermets of, for carbon, iron, plutonium, and uranium by electrochemical methods, 22:33215
PLUTONYL IONS
  effects on fluorine determination by titration with thorium nitrate, 22:48815 (FOA-4-4363)
  force constants of, equations for using uranyl ions for estimation of metal--oxygen, 22:14497
PLUTONYL NITRATES
  spectra of aqueous solutions of, effects of dimethylformamide, dimethyl sulfoxide, and nitric acid on, 22:27650
  HNO_3--$PuO_2(NO_3)_2$--TBP, phase studies on, by distribution coefficient measurements, 22:6408
PLUTONYL PERCHLORATES
  spectra of aqueous solutions of, effects of dimethylformamide, dimethyl sulfoxide, and perchloric acid on, 22:27650
PM-1
  see Army Reactors (PM-1)
PM-2
  see Army Reactors (PM-2)
PM-3
  see Army Reactors (PM-3)
PMMA
  see Methacrylic Acid, Methyl Ester, Polymers
Pneumatic Pulse Generators
  see Pulse Generators (Pneumatics)
PNEUMATIC SYSTEMS
  see also Pulse Generators (Pneumatics)
  control system for reactor rabbit, design of electronic, 22:23358 (IA-1128, pp 185-212)
  design for automatically transferring samples between irradiation and detection positions, 22:35973 (LA-3862)
  design for target positioning and removal in Lyon synchrocyclotron, 22:29809
  design for transfer of small radioactive samples, 22:45227
  design of sample rotator and transfer, for linac irradiations, 22:1544
  development for positioning and removal of targets from JINR proton synchrocyclotron, 22:26736 (JINR-P6-3773)
  exit time of rabbit in, use of sodium-24 for measuring, 22:24788 (IA-1128, pp 55-77)
PNPF
  see Piqua Power Reactor
PODOPHYLLIC ACID, 2-ETHYLHYDRAZIDE
  effects on x-radiosensitivity of tumors in mice, 22:17031
POINT BEACH POWER REACTOR, UNIT 1
  accidents in, analyses of effects of hypothetical, 22:20787 (DOCKET-50266-3)
  ACRS subcommittee questions on, answers to, 22:20790 (DOCKET-50266-6)
  containment structure for, design criteria for and location of penetrations in, 22:20787 (DOCKET-50266-3)
  containment system for, design loadings for, 22:20785 (DOCKET-50266-1)
  containment system for, design of tendons and penetrations in, 22:20785 (DOCKET-50266-1)
  containment system for, preliminary safety analysis of, 22:20791 (DOCKET-50266-7)
  containment vessel for, seismic design and loadings for, 22:20788 (DOCKET-50266-4)
  containment vessel for, structural analysis and surveillance program for, 22:20789 (DOCKET-50266-5)
  control systems and instrumentation for, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  coolant for, fission product inventory under maximum burnup conditions in, 22:20787 (DOCKET-50266-3)
  cooling system for, preliminary safety analysis of design of, 22:20791 (DOCKET-50266-7)
  core for, preliminary safety analysis of design of, 22:20791 (DOCKET-50266-7)
  design parameters for, 22:22712 (STI/PUB-174)
  electrical systems for, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  emergency and auxiliary systems for, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  Emergency Core Cooling System for, efficiency evaluation of, 22:20788 (DOCKET-50266-4)
  engineered safeguards for, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  ownership of, change of, 22:20786 (DOCKET-50266-2)
  radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  site for, evaluation of, 22:20792 (DOCKET-50266-8)
  site for, preliminary safety analysis of, 22:20791 (DOCKET-50266-7)
  site for, seismicity analysis and design criteria for, 22:20792 (DOCKET-50266-8)
  site for, test pile data for, 22:20788 (DOCKET-50266-4)
  steam and power conversion system for, preliminary safety analysis of, 22:20792 (DOCKET-50266-8)
  structures for, seismic design criteria for, 22:20789 (DOCKET-50266-5)
POINT BEACH POWER REACTOR, UNIT 2
  accident in, safety analysis of postulated steam-line-break, 22:18407 (DOCKET-50301-1)
  containment structure for, stress deformation calculations for liner for, 22:24950 (DOCKET-50301-3)
  containment system for, integrity during post coolant loss accident of, 22:18407 (DOCKET-50301-1)
  core for, blowdown effects as function of time in, 22:18407 (DOCKET-50301-1)
  design-basis accident in, radiation exposure doses during control room access after, 22:18407 (DOCKET-50301-1)
  Emergency Core Cooling System for, development program for spray additive for, 22:24950 (DOCKET-50301-3)
  emergency procedures for, detailed, 22:18407 (DOCKET-50301-1)
  emergency systems for, description of external electricity supply to, 22:18407 (DOCKET-50301-1)
  reactivity control and shutdown margin for, 22:24950 (DOCKET-50301-3)
  regulatory action on, AEC, 22:44854
  structures at, loading combinations and safety margins for class I, 22:20805 (DOCKET-50301-2)
  structures at, seismic classification of class I, 22:20805 (DOCKET-50301-2)
Point Charge
  see Electric Charges
POISONING
  (See also toxic substances.)
  see also Metabolism
  see also Mustard Gas
  see also Phosgene
  see also Toxicity
Poisoning, Reactor
  see Reactor Control Systems
POLAND
  disposal of radioactive waste in, research on treatment methods for, 22:21301
  granite deposits near Strzegom, radioactivity of, 22:30702
  nuclear energy research in, 1961--1963, 22:25232
  personnel dosimetry with film badges during 1966, summary of, 22:49126 (CLOR-68)
  radiation monitoring in, improved method for environmental, 22:6445
  radiation protection standards in, for handling of sealed gamma sources in laboratories, 22:23588
  radiation sources in, use of low-energy γ and x, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
  radioisotope uses in, 22:8318
  radon-222 content in troposphere at Warsaw, effects of fog on, 22:23166
  strontium-90 content of soils in southern, 1962, 22:4275
  Vistula River and waste water mixing in, radioisotopic method for studies of, 22:48926
Polarimeters
  see Polariscopes
POLARISCOPES
  calibration of Compton, computer program for determining asymmetry ratio for, 22:25656
  construction of two-cell photoelectric, (E), 22:15281

  data sensing and recording system for three-dimensional scattered-light, circuit for, 22:21378 (ORNL-4219, pp 18-28)
  description of reflecting, for measuring polarization of ultraviolet synchrotron radiation, 22:28202 (DESY-68/12)
  design and operation of charged-particle, for use with magnetic spectrometer, 22:23370
  design and performance of liquid helium, for measuring polarization of neutrons at 2 to 20 MeV, 22:28230
  design and performance of neutron, with high-energy resolution, 22:40484 (INR-P-897)
  design and performance of two-sodium iodide-crystal summing, for gamma--gamma linear polarization measurements, 22:14887
  design for isobaric analog state spin measurements, 22:36154
  design for soft x rays, 22:36066
  design of fast-neutron, utilizing neutron scattering by alpha particles, 22:2467
  design of high-resolution neutron, using (n,α) scattering as polarization analyzer, 22:45363
  design of linear and circular, for gamma rays, 22:8356
  design of liquid--helium time-of-flight neutron, with spin rotating solenoid, 22:6692
  performance of liquid helium analyzer in fast neutron, calculation of, 22:28259
  sensitivity of Compton, optimization of, 22:25653
  use in detection of strain in tube envelope glass immersed in liquid, 22:7942 (GEPP-13)
  use of Compton, for linear polarization measurements of gamma rays, 22:25650
  use with annular analyzer for measuring proton polarization from helium-3 reactions (He-3,p) with carbon-12, 22:4500 (JINR-P15-3504)
Polarographic Analysis
    see Polarography
POLAROGRAPHS
  design of controlled-potential dc voltammeter, 22:14425 (ORNL-4196, pp 1-12)
  design of remotely operated, for determining uranium in process waste solutions, 22:8009
  design of solid-state, engineering drawings for, 22:16379
POLAROGRAPHY
  design of remotely controlled apparatus for, 22:4059(P)
  developments in organic, review on, 22:25293
  developments in, review on, 22:25312
  mercury drop time in, design of control system for, 22:16380
  method for detection of quinoids from bone marrow and liver of rats, 22:49512
  methods for determination of oxygen in liquid sodium coolant, 22:31390
  methods for metal corrosion measurement, 22:21665
  performance of vertical-orifice rapid Teflon dropping-mercury electrode in, 22:14428 (ORNL-4196, pp 33-44)
  precision of single-cell first-derivative dc, 22:14425 (ORNL-4196, pp 1-12)
  techniques for organic compounds, 22:10123(R) (COO-1148-112)
  techniques in nonaqueous solvents, 22:10122 (COO-256-77)
  use for detection for radiation protection, 22:31096
  uses of Kalousek, in analysis, 22:34
POLARONS
    (An electron in an ionic crystal which moves with its accompanying distortion of the lattice. It has an effective mass greater than the electron.)
    see also Electrons
    see also Phonons
POLISHING
    see also Cleaning
    see also Electrolytic Polishing
  device for specimen, design of hot cell, 22:12518(P)
  machine for sealing headers for NRU Reactor pressure vessel, description of remote-control, 22:44902
  method for preparation of thin specimens of ceramic materials, 22:28886 (BNWL-652)
POLLEN
  deposition and transport of, use of radioactive aerosols to study, 22:14590
  radiation effects on development of, of tomatoes, effects of dose on x, 22:21636
  radiation effects on fertility of apple, γ, 22:52033
  radiation effects on fertility of tobacco, fast neutron and x, 22:49303
  radiation effects on fertility of, in tomatoes, effects of seed exposure on x, 22:33973
  radiation effects on fertility of, of hybrids of Dactylis glomerata, x, 22:47522
  radiation effects on tomato, effects of, on ploidy of seeds, γ or uv, 22:52029
  radiation effects on tomato, genetic γ, 22:17050(R) (EUR-3606)
  radiation effects on, from tomato plants, combined effects of heat treatment on x, 22:49299
  radiation effects on, of arboreous plants, mutagenic, 22:45499
  radiation effects on, of corn, photoreactivation of uv, 22:47501 (NP-17136)
  radiation effects on, of corn, uv, 22:23484(R) (COO-1512-5)
  radiation effects on, of fruit trees, effects of, on productivity, γ, uv, and x, 22:45481
  radiation effects on, of Lilium and maize, mutagenic β, 22:31044
  radiation effects on, of maize, latent γ, 22:6926
  radiation effects on, of pines, latent γ, 22:19313
  radiation effects on, of Streptocarpus wendlandii, latent x, 22:40647
  radiation effects on, of tobacco, comparison of, with effects on seed and seedlings, γ, 22:38500
  radiation effects on, of tobacco, effects of dose on γ and x, 22:28704
  radiation effects on, of tomato, α, 22:49638
  radiation effects on, of tomatoes, latent x, 22:21635
  radiation effects on, of wheat, combined effects of nuclear stage on aberrant γ, 22:49301
  radiation processing of maize, for use in bee feeding, γ, 22:31312
  radioinduced aberrations of chromatids in, of Tradescantia species, α, γ, proton, and x, 22:28421
  radioinduced aberrations of chromosomes of mature, of Tradescantia bracteata, effects of LET and oxygen on γ and x, 22:12832
  radioinduced abortiveness of, of wheat, effects of repeated doses on γ, 22:47523
  radioinduced chromosome aberrations in, of Tradescantia, effects of 5-fluorodeoxyuridine on x, 22:19322
  radioinduced mutations in, of cottonwood trees for use in hybridization, γ, 22:49307
Pollucites
    see Cesium Aluminum Silicates
POLLUTION
  atmospheric, model of Washington, D. C., to Boston corridor, 22:40233 (AECL-2787, pp 263-70)
  atmospheric, problems to large urban populations from, 22:40234 (AECL-2787, pp 271-4)
  control and effects of environmental, from pesticides, 22:27916 (BNL-12401)
  control of thermal water, by thermal energy industries, 22:27514 (BNWL-SA-1546)
  effects of organic, on radioisotope transport in surface waters, 22:42849 (ORO-490-16)
  evaluation of thermal, of Columbia River from Ben Franklin Dam, 22:33184 (BNWL-733)
  measurement and prediction of Columbia River Basin thermal, due to hydraulic power dams, 22:30405 (BNWL-719)
  petrochemical, of aquatic systems, carbon isotope ratios as indexes of, 22:35928
  protection of society against, of food and environment, 22:42876
  thermal, of Illinois River water, effects of Dresden II and III reactor operation on, 22:30689 (BNWL-728)
Polonides
    see Polonium Alloys and Systems
POLONIUM
  Auger electron lines in beta spectra of radon-220, detection of very weak, 22:50619
  book: Uncommon Metals, 22:10981
  chemistry of, review of, 22:2170
  complexes with citric acid, EDTA, NTA, oxalic acid, tartaric acid, and TTA, solvent extraction studies on stability constants of, 22:6389
  compounds of, from decay of bismuth-210 in tris(p-sulfamoylphenyl)bismuthine, 22:37821
  compounds of, preparation and chemical properties of, 22:2170
  determination in perchloric acid by direct coulometry, 22:8018
  distribution in lungs and pulmonary lymph nodes of dogs, man, and rats following inhalation, 22:21507
  hazards to man, protection against, 22:8554
  metabolism by man, 22:8554
  precipitation with coagulating metal hydroxides, 22:51067
  properties of, data sheets on, 22:8724 (MLM-1441)
  radioactivity standards of, users' guide for, 22:33474 (NP-17502)
  recoil ranges in aluminum and aluminum oxide at 6 to 12 MeV, (E), 22:14049
  separation from bismuth, 22:23751(P)
  separation from bismuth by solvent extraction using Aliquat-336, 22:33494
  separation from bismuth by solvent extraction using dibutyl carbitol, 22:18861 (BNWL-584)
  separation from bismuth oxide by volatilization at 580 to 780°C, 22:144
  separation from bismuth, adsorption process for, 22:23127(P)
  separation from irradiated bismuth by solvent extraction using TBP, 22:147
  separation from lead, 22:33208(R) (MLM-1456)
  separation from lead by electroplating, 22:42019(R) (MLM-1494)
  separation from nitric acid solutions by solvent extraction using Aliquat-336, 22:33494
  separation from nitric acid solutions of irradiated bismuth by solvent extraction using dibutyl carbitol, 22:6370
  separation from tellurium in nitric acid solutions by paper chromatography, 22:30677

  vapor pressure of, 22:144
POLONIUM ALLOYS AND SYSTEMS
  Gd--Po, properties of, data sheets on, 22:8724 (MLM-1441)
  Gd--Po--Ta, properties of, data sheets on, 22:8724 (MLM-1441)
POLONIUM CHLORIDES
  distribution of $PoCl_4$, in Colorado loam and podzol, 22:42977(R) (SC-PR-68-451)
POLONIUM, DIBROMODIMESITYL-
  preparation using Grignard reaction, 22:27678
POLONIUM, DICHLORODIMESITYL-
  preparation using Grignard reaction, 22:27678
POLONIUM, DIMESITYL-
  preparation using Grignard reaction, 22:27678
POLONIUM, DIMESITYLOXO-
  preparation using Grignard reaction, 22:27678
POLONIUM HYDROXIDES
  coagulation with other metal hydroxides, 22:51067
POLONIUM ISOTOPES Po-197
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-198
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-199
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-200
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-201
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-202
  alpha decay, (E), 22:30032
POLONIUM ISOTOPES Po-203
  alpha decay, (E), 22:30032
  gamma spectra for, (E), 22:53169(R) (PPAD-647-D)
POLONIUM ISOTOPES Po-204
  alpha decay, (E), 22:30032
  electron-capture decay of, γ spectra for, (E), 22:42013 (JINR-E7-3868)
  yields from argon-40- and neon-20-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)
POLONIUM ISOTOPES Po-205
  electron-capture decay scheme of, γ spectra for, (E), 22:53169(R) (PPAD-647-D)
POLONIUM ISOTOPES Po-206
  yields from argon-40- and neon-20-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)
POLONIUM ISOTOPES Po-208
  energy levels of, (E), 22:27166
  energy levels of, spin-parity assignments for, (E), 22:48551
  energy-level transitions in, conversion coefficients and multipolarities of, (E), 22:48551
  yields from argon-40- and neon-20-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)
POLONIUM ISOTOPES Po-209
  determination in polonium-210 by gamma spectrometry, 22:33208(R) (MLM-1456)
  half-life of, 22:33208(R) (MLM-1456)
POLONIUM ISOTOPES Po-210
  alpha emission by, dosimetry of, in man following cigarette smoking, 22:38275
  alpha emission by, effects of, on kidney function in dogs, 22:51776
  alpha emission by, effects of, on rats following injection, 22:49502
  alpha emission by, in bone and reproductive organs of man, measurement of, 22:2517
  alpha emission by, pathologic effects of, on blood vessels in kidneys of rats following injection, 22:23628
  analysis for polonium-209 by gamma spectrometry, 22:33208(R) (MLM-1456)
  availability, characteristics, and cost of, for use as power sources, 22:8307
  content in air and water discharged at Mound Laboratory in 1967, 22:21205(R) (MLM-1464)
  content in atmosphere and rainwater at Toulouse, France, 22:183
  content in human bones and teeth in New England, 22:2220
  content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
  content in potable waters in Illinois, 22:2207
  content in stratospheric fallout, 22:8224
  content in surface seawater, Dec. 1966 to Nov. 1967, 22:10404 (CU-3139-1(App.A))
  content in urine of man, method for determination of, 22:40717
  content of blood, liver, and lungs of man, effects of tobacco content on, 22:23521
  content of bone, muscle, and rumen of caribou and reindeer in Alaska, 22:10776
  content of bones of man in Far North USSR during 1965, 22:33803 (A-AC-82/G/L-1190)
  content of cigarette tobacco, effects of, on incidence of lung neoplasms in man, 22:10756 (COO-1540-5)
  content of cured and green tobacco leaves, fresh vegetables, and soil, 22:38287
  content of ecosystems, 22:28447 (ANL-7278, pp 304-13)
  content of marine plankton off South African coast during 1965 to 1966, 22:6817
  content of tissues in man, 22:40692
  content of tobacco products, 22:23521
  content of tobacco, determination of, 22:2511
  content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
  deposition from perchloric acid, 22:8018
  determination in air and rainwater, 22:35750
  determination in airborne dusts by electrochemical displacement, 22:21046
  determination in biological materials, radiochemical method for, 22:38287
  determination in rat tissues, effects of dry ashing in muffle furnace on, 22:25263
  determination in stratospheric fallout by α spectroscopy, 22:8224
  determination in urine by alpha counting, 22:21029 (SC-M-67-3044)
  determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
  distribution in soils, equilibrium coefficients for, 22:40659(R) (COO-1733-1)
  effects on adrenals, pituitary, and thyroid of rats, α and γ, 22:47606
  effects on calcium, potassium, and sodium content of rabbit tissues, 22:47611
  effects on guinea pigs, effects of time on anaphylactic, 22:33912
  effects on guinea pigs, use of Hoigne's method for determination of autosensitization processes following, 22:15056
  effects on radiation body burdens of man, 22:33800 (A-AC-82/G/L-1182)
  energy levels and transitions from electron-capture decay of astatine-210, (E), 22:20618
  energy levels from lead-208 $(\alpha,2n)$ reactions, g-factors and E2 transition probabilities for, (E), 22:27166
  excretion in urine by man, methods for calculation of safe limits of, 22:6811
  fission barrier for, (E/T), 22:30022
  fission saddle point in alpha reactions with lead-206, pairing effects at, (E), 22:39640 (UCRL-17989, pp 127-57)
  gamma emission by, dosimetry of, in man following cigarette smoking, 22:38275
  gamma emission by, effects of, on kidney function in dogs, 22:51776
  gamma emission by, effects of, on metabolism of electrolytes by rabbits and rats in relation to function of adrenal cortex, 22:49608
  gamma emission by, effects of, on rats following intratracheal injection, 22:49502
  gamma emission by, pathologic effects of, on blood vessels in kidneys of rats following injection, 22:23628
  half-life and type of decay of, 22:42698
  inhalation by rats, effects of, on incidence of neoplasms, 22:2537
  metabolism in kidney bean plants, effects of citrate ions, 2,4-D, and salts on, 22:6728
  monitoring of Mound Laboratory area, environmental, 22:45183 (MLM-1522)
  neutron production by, in soils, 22:30705
  performance as α-source, for use in x ray excitation, 22:249(R) (NYO-3491-2)
  performance as heat source for SNAP-29, 22:42977(R) (SC-PR-68-451)
  preparation by neutron irradiation of bismuth, purification by solvent extraction using dibutyl carbitol in, 22:6370
  production in power reactors, economic aspects of, 22:119
  properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
  properties of, data sheets on, 22:8724 (MLM-1441)
  proton decay of, particle identification using multiple scattering in nuclear emulsion, (E), 22:35305
  purification from irradiated bismuth, 22:18861 (BNWL-584)
  radiation dose to man following ingestion or inhalation of oxide particles containing, α and γ, 22:23509(R) (SC-CR-67-2729)
  radioactive contamination following rupture of unsealed source of, calculation of, 22:49339
  radioactive halos of, in biotites, 22:33556
  removal from fault water by coagulation with metal hydroxides, 22:51067
  removal from human skin, effectiveness of unithiol for, 22:43333
  safety characteristics of, used in space vehicle propulsion systems in launch-abort environment, 22:30776 (SC-CR-67-2801)
  transfer to man from contaminated dairy pasture through milk, 22:33811 (COO-1733-2)
  uptake by fish from ecosystem, 22:28447 (ANL-7278, pp 304-13)
  uptake by man following inhalation, 22:33715 (SZS-15/67)
  uptake by plants from soils, 22:45422
  uptake by tobacco plants, mechanism for, 22:6830
  uptake from soil by vegetable fruits and leaves, analysis of, 22:40659(R) (COO-1733-1)
  use as α source, 22:14680
  use as heat source for electric power generation,

performance characteristics for, 22:19051
use as heat source in thermoelectric generators, 22:6543
use as radiation source for static electric charge removal, 22:33613
use as SNAP-3 heat source, 22:47293 (MND-P-2368)
use as tracer to study propagation of ice crystals in clouds, 22:51188
yields from argon-40- and neon-20-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)

POLONIUM ISOTOPES Po-211
fission saddle point in alpha reactions with lead-207, pairing effects at, (E), 22:39640 (UCRL-17989, pp 127-57)
production of isomeric, in heavy ion-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)

POLONIUM ISOTOPES Po-212
fission barrier for, (E/T), 22:30022
production of isomeric, in heavy ion-induced fission of uranium-238, (E), 22:22582 (JINR-P7-3710)

POLONIUM ISOTOPES Po-213
uptake by man following inhalation, 22:33715 (SZS-15/67)

POLONIUM ISOTOPES Po-214
distribution in atmosphere, methods for measuring, 22:2235
energy-level scheme from bismuth-214 gamma spectra, (E), 22:20658
energy-level spins and transitions, (E), 22:3714
energy-level transitions in, internal conversion coefficients and multipolar character of, (E), 22:20662
gamma spectra of, measurement using lithium-drifted germanium detector, (E), 22:3714

POLONIUM ISOTOPES Po-215
gamma spectra of, line intensities in, (E), 22:44746
gamma spectra, (E), 22:20656

POLONIUM ISOTOPES Po-216
half-life of, 22:1956(R) (MLM-1405)

POLONIUM ISOTOPES Po-218
content in air, filtering efficiency of fibrous material for, 22:27580
content of air in uranium mines, measurement of, 22:45561
content of atmosphere in uranium mines, method for measurement of, 22:8544
content of uranium mines, determination of, by alpha spectrometry, 22:19328(R) (COO-1500-5)
deposition on alfalfa, effects of relative humidity and wind speed on, 22:21460(R) (COO-1171-82)
diffusion coefficient of, in relation to inhalation hazards in mines, effects of water molecule interactions on, 22:31092
distribution in atmosphere, methods for measuring, 22:2235
distribution in closed volume of air, effects of walls on, 22:51106
radioactive halos of, in biotites, 22:33556
recoil in air, relations with alpha spectra of daughter products, 22:51105

POLONIUM OXIDES
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704

POLONIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

POLYCRYSTALS
diffusion in, determination using beta sources, 22:31399
fracture mechanisms of, 22:23712
slip effects on ductility of cph metal, 22:43591 (ANL-7299, pp 227-37)

Polyethylene
see Ethylene Polymers

POLYMERIZATION
acrylamide, induced by free radicals in γ-irradiated tissue homogenates from rats, 22:28297
book: Radiation Effects and Radiative Grafting Polymerization in Fibers, in Russian, 22:40128
book: Radiation Polymerization, in Russian, 22:18856
conference on macromolecular chemistry, Prague, 1965, Part 5, 22:14537
equipment for, use of tracer techniques to measure polymer flow through, 22:14708
kinetics at high pressure, 22:4194
kinetics of solid-state, 22:4195
kinetics of solid-state, 22:4213
mechanisms for adsorbed monomers, 22:8087(R) (COO-1580-3)
preirradiation techniques of graft, in various solvents, 22:51031
radiation effects on, of acrylamide in tadpole tissues, x, 22:28296
radiation effects on, of corn and potato starch, effects of dose on γ, 22:49238
radiation processes in, developments in, 22:51016
radioinduced, 22:8153
radioinduced curing of coatings by, design of electron-emission system for, 22:23207(P)
radioinduced emulsion, γ, 22:23036(R) (TID-24281)
radioinduced ionic, rate constants for, 22:8101(T) (AEC-tr-6908, pp 117-29)
radioinduced, equipment for high-pressure, 22:6333
radioinduced, ESR studies of, 22:47197
radioinduced, in solution and solid phase, 22:4216
radioinduced, kinetics of solid-state, 22:48887
radioinduced, of textile fibers, review on problems in, 22:8091(T) (AEC-tr-6908, pp 18-24)
radioinduced, requirements for industrial-scale, 22:8152
radioinduced, review of research on, 22:8089(T) (AEC-tr-6908)
radioinduced, role of free radicals in, 22:47182
radioinduced, use of radioisotopes for industrial-scale, 22:47297
use of γ radiation in organic monomer, 22:12534 (BNL-50084)

POLYMERS
see also Acrylamide Polymers
see also Acrylic Acid Polymers
see also Acrylonitrile Polymers
see also Amide Polymers
see also Butadiene Polymers
see also Butene Polymers
see also Ethylene Polymers
see also Propene Polymers
see also Silicone Polymers
see also Styrene Polymers
see also Vinyl Alcohol Polymers
adhesive properties of polycarbonate, 22:36555 (LA-3890)
book: Advances In Materials Science, 22:21715
book: Chemistry and Technology of Synthetic High-Molecular-Weight Compounds. Carbon-Chain Polymers, in Russian, 22:18857
conference on, Prague, Aug. 30 to Sept. 4, 1965, 22:4148
dimer, radioinduced, in cultured mammalian cells, dark repair of uv, 22:31217
flow through polymerization equipment, use of tracer techniques to measure, 22:14708
formation of, use of isotopic tracer to study reactions during, 22:71
fracture mechanisms of glasslike high, 22:23712
fracture toughness testing of glassy carbonate, 22:26100 (UCRL-17911)
free radicals in, developments of, in Sweden, 22:14468
Moessbauer spectra of polycrystalline, temperature effects on line asymmetries of quadrupole doublets in, (E), 22:11542
molecular weight of, use of radioisotopes in determining, 22:4135
neutron inelastic scattering on, analysis of low-frequency motions from, (E/T), 22:24472
performance of Lexan polycarbonate, as glass backing for explosion shields, 22:3972 (LA-3769)
production of irradiation-crosslinked tubes of, 22:37817(P)
properties of, conference on, 22:40103
proton polarization in, by solid effect, (E/T), 22:3601
pyrolysis of, mass spectrometric analysis of products from, 22:14401(R) (UCRL-13332)
radiation chemistry of, 22:27832
radiation effects in vacuum on tensile properties of films of, gamma, 22:36556 (N-68-16474)
radiation effects on, 22:40119
radiation effects on chemical reactions in, LET effects on, 22:14515(R) (COO-1614-1)
radiation effects on chemical, physical, and mechanical properties of, review of, 22:10306
radiation effects on creep of H-film, 22:19682(R) (UCRL-13328)
radiation effects on crosslinking of, review on, 22:27786
radiation effects on electric conductivity of insulating, 22:42793
radiation effects on electric conductivity of, x, 22:33401
radiation effects on films of, γ, 22:33374(T) (CEA-tr-X-635)
radiation effects on gel production in, 22:8140
radiation effects on high, reactivities of free radicals from, 22:4165
radiation effects on luminescence of solutions of synthetic, uv and x, 22:28294
radiation effects on origin of biological, 22:25790
radiation effects on oxime and peroxide, protective effects of chemicals on, 22:6322
radiation effects on permanent set and hot extrusion, 22:14518(R) (ORO-2418-4)
radiation effects on solid, survey of, 22:25412
radiation effects on static electricity on surfaces of, 22:6359(P)
radiation effects on, conference on, Pittsburgh, Pa., March 29 and 30, 1966, 22:6341
radiation effects on, in food, 22:40990
radiation effects on, in solution, 22:25415
radiation effects on, review of, 22:6342
radiation effects on, review of, 22:8848(T) (AEC-tr-6920)
radiation effects on, review of research on, 22:8089(T) (AEC-tr-6908)
radiation heating of large blocks of, factors affecting γ, (E/T), 22:52304
radiation research on, progress in Japanese, 22:42702(T) (AEC-tr-6937)
radiation resistance of, for use as electric insulators, 22:25375 (ORNL-4229, pp 183-7)
radiation-accelerated creep of polycarbonate,

22:19682(R) (UCRL-13328)

- radioinduced crosslinking of ionic, 22:6348
- radioinduced crosslinking of, effects of acetylene on, 22:21139(P)
- radioinduced formation of, 22:18856
- radioinduced formation of, 22:36004
- radioinduced formation of, 22:23055
- radioinduced formation of dimer, in cytidylyl-(3'-5') cytidine, reaction scheme for uv, 22:51436
- radioinduced formation of dimer, in pyrimidines, effects of complexing with purines on uv, 22:25791
- radioinduced formation of pyrimidine dimer, in DNA, effects of non-thymidine dimers on photoreactivation of uv, 22:21424
- radioinduced formation of trans-syn dimer, of thymine in DNA, identification and photoreactivation of uv, 22:47464
- radioinduced formation of, requirements for industrial-scale, 22:8152
- radioinduced formation of, review of research on, 22:8089(T) (AEC-tr-6908)
- radioinduced free radical formation and trapping in, 22:14515(R) (COO-1614-1)
- radioinduced graft polymerization on inorganic substances, review on, 22:45095(R) (RLO-2043-2)
- radioinduced grafting of monomers on, γ, 22:25418
- radioinduced grafting of vinyl or vinylidene radicals on ester- or phenyl-activated halogen-containing, 22:14554(P)
- radioinduced grafting of, in textile production, review on problems in, 22:8091(T) (AEC-tr-6908, pp 18-24)
- radioinduced luminescence in, effects of cysteine, propylgallate, and temperature on γ and x, 22:28302
- radioinduced luminescence of, 22:14519(T) (CEA-tr-R-1907)
- radioinduced polymerization of, developments in, 22:51016
- radioinduced pyrimidine dimer, use of excision or photoreactivation for repair of uv, 22:49223
- radioinduced pyrimidine dimer, uv, 22:28288 (ORNL-4100, pp 166-77)
- radiolysis of, ESR studies of γ, 22:47197
- radiolysis of, LET effects in, 22:25415
- spectra of nuclear irradiated, NMR, 22:48885
- strontium-90--yttrium-90 complexes with high molecular weight, in soil samples, 22:6795(R) (COO-414-6)
- testing polyethylene--polypropene--silicon, for sealing high-pressure carbon dioxide vessels, 22:45833
- thermal expansion and transition in, radiometric studies of, 22:27562
- uracil-uracil dimer, radioinduced, in polynucleotides, uv, 22:43223
- use of Imidite 850, for beryllium joining, 22:13052
- use of tetrafluoroethylene-g-isothiocyanatostyrene, in discs for radioimmunossay of hormones, 22:23464

- Polymorphonuclear Leukocytes
  - see Leukocytes
- POLYOXYETHYLENE GLYCOL
  - radioinduced crosslinking of, gamma, 22:40109(P)
- POLYOXYMETHYLENES
  - heat transfer from surfaces of, improved liquid wetting angle effects on, 22:10495(P)
  - polymers, radiolysis at low temperatures, ESR studies on free radicals from, 22:42720(T) (AEC-tr-6937, pp 184-91)
  - preparation by radioinduced polymerization of trioxane in presence of methylenesuccinic acid anhydride, 22:35845(P)
  - radiation effects on stability of highly crystalline, 22:35855(P)
  - radiation effects on, at -196°C, ESR spectral studies on effects of dose and heat treatments on electron, 22:8130
  - radiation effects on, at -196°C, ESR studies of effects of dose and heat treatments on electron, 22:42715(T) (AEC-tr-6937, pp 133-44)
  - radioinduced amorphous defects and chain scission in crystals of, x, 22:27751
  - radioinduced graft polymerization of Celcon or Delrin filaments onto styrene, effects of N,N-dimethylformamide or methanol on rate of γ, 22:8094(T) (AEC-tr-6908, pp 42-7)
  - radioinduced graft polymerization of Delrin filaments onto styrene, effects of acids, alkali, and heat on products of γ, 22:8095(T) (AEC-tr-6908, pp 48-55)
  - radioinduced grafting of copolymers of, with alkylene oxides or cyclic formal or vinyl monomers to vinyl compounds, 22:51037(P)
  - radiolysis at low temperatures, ESR spectral studies on free radicals formed by, 22:8134
  - radiolysis of polyoxydecamethylene at low temperatures, ESR spectral studies on free radicals formed by, 22:8134
  - radiolysis of polyoxydecamethylene at low temperatures, ESR studies of free radicals from, 22:42720(T) (AEC-tr-6937, pp 184-91)
- POLYPHENYL SYSTEMS
  - analysis of reactor coolants of, 22:12224 (NP-17239)
  - coolant oxidation and thermal decomposition of OMP, analysis of Piqua Power Reactor, 22:46856 (AI-AEC-12696)
  - coolants of Santowax OM, WR, and OMP, performance analysis of heavy water-moderated organic-cooled 1000 MW(e) power reactor, 22:50741 (WASH-1083)
  - heat transfer properties of OM2, (E), 22:14295 (RISO-162)
  - neutron diffusion and rethermalization in Santowax-R, thermal, (E), 22:29874
  - radiation effects on physical properties of Santowax WR, measurement at 300 to 427°C of fast neutron and γ, (E/T), 22:42388 (MIT-334-94)
  - radiolysis of Santowax WR, neutron, 22:4172
- POLYPHENYLS
  - see also Biphenyl
  - see also Quaterphenyl
  - see also Terphenyl
  - analysis of decomposition products of reactor coolants of, by gas chromatography, review on, 22:37667
  - coke deposition in Piqua Power Reactor from, analysis of, 22:10006(R) (NAA-SR-12561)
  - corrosive effects on structural materials, review, 22:21651
  - heat transfer in, correlation of non-boiling, 22:52303 (CONF-660553-10)
  - neutron scattering in reactor moderators of, calculations of thermal, 22:30380
  - neutron scattering model for, (T), 22:32437
  - pyrolysis of, mass spectrometric analysis of volatile products from, 22:21052 (CONF-660553-6)
  - radiation effects on stability of partially hydrogenated, 22:42770
- POLYPHOSPHATES
  - sodium, effects on storage properties of γ-irradiated fish, 22:52117
- Polyphosphoantimonic Acids
  - see Heteropoly Acids
- POLYSACCHARIDES
  - see also Amyloses
  - see also Cellulose
  - see also Chitin
  - see also Glucans
  - see also Glycogen
  - see also Heparin Sodium
  - see also Inulin
  - see also Lipopolysaccharides
  - see also Pectins
  - see also Starches
  - activity of γ-irradiated lysozyme against, 22:43230
  - characterization of cell wall, in rough-uv mutants of Salmonella typhimurium, 22:51508
  - content of hyaluronic acid derivatives in muco-, of myxofibrosarcomas, 22:28284 (ORNL-4100, pp 127-34)
  - content of yeasts, effects of, on radiosensitivity, 22:52019
  - distribution in embryos of Vanda sp, 22:40953(R) (UH-235-P-6-5)
  - isolation of muco-, from bone and cartilage of calves, 22:28537 (ANL-7278, pp 170-84)
  - muco-, radiation effects on content of, in intestinal submucosa following therapy of cervical carcinoma, γ, 22:2536
  - radiation effects on content of acid muco-, in rabbit ears, 22:51335
  - radiation effects on content of, of human skin, effects of age on solar uv, 22:49241
  - radiation effects on localization of acid muco-, in absorptive cells of rat intestines, acute x, 22:49273
  - radiation effects on, from yeasts, effects of, on soil aggregates, 22:40543
  - radiation effects on, review of, 22:49224
  - radioinduced free radicals in, charged particle, 22:28368
  - separation from bone, use of hyalurinidase for in vitro, 22:49204
  - sorptive properties of porphyran, for ruthenium, 22:12456 (PG-Report-819)
- POLYSORBATE 80
  - radioprotective effects of, on Escherichia coli, γ, 22:33987
- Polystyrene
  - see Styrene Polymers
- Polythene
  - see Ethylene Polymers
- Polyvinyl Alcohol (PVA)
  - see Vinyl Alcohol Polymers
- Poly(vinyl chloride) (PVC)
  - see Ethylene, Chloro-, Polymers
- Ponds
  - see Surface Waters
- Pongamol
  - see 1,3-Propanedione, 1-(4-Methoxy-5-Benzofuranyl)-3-Phenyl-
- POODLE (USAEC-USAF)
  - see Nuclear Auxiliary Power Systems
- Pool Critical Assembly (PCA)
  - see Bulk Shielding Facility
- Pool Test Reactor (PTR)
  - see Reactors, Swimming-Pool
- Poplar Trees (Populus)
  - see Populus under Angiospermidae
- POPSY
  - see Critical Assemblies
- POPULATIONS

see also Epidemiology
see also Genetics
see also Statistics
book: Radiation and the Evolution of Populations, 22:40655
casualty estimation of urban, from multiple nuclear explosions, 22:35968
cesium-137 content of human, in Switzerland during 1964, 22:21500
cesium-137 content of male, in Norway during 1964 to 1966, comparison of, to aviation personnel, 22:45532
determination of home range of pocket mice, at Nevada Test Site, 22:33776 (COO-1336-6)
determination of mosquito, using phosphorus-32, 22:17003
dynamics of jackrabbit, in Utah, 22:1918(R) (COO-1329-6)
education of American, concerning fallout, responsibility for, 22:51604
element analysis in benthic infaunal, in relation to partitioning of iron, samarium, scandium, and zinc, 22:43311(R) (PRNC-85)
exposure of midwest USA, to radium in drinking water, 22:2208
fallout hazards to, responsibilities of physicians in relation to, 22:51606
fission products dose to offsite, from nuclear reactor tests during 1965, measurement of thyroid and whole-body, 22:23519
food supplies of domestic animals and human, in post attack environment, vulnerability of, 22:38263 (TID-24459)
genetic drift in human, in Central African Republic and Italy, 22:38193(R) (EUR-3912)
genetic load in natural, of Drosophila, 22:40617(R) (NYO-3096-26)
incidence of leukemia in human, exposed to atomic bombings of Japan, 22:10835
information on fallout contamination of, role of news media in, 22:51608
potassium-40 content of human, in Switzerland during 1964, 22:21500
protection against blast and fallout, economics of active and passive defense systems for, 22:16791 (ORNL-TM-2041)
radiation dose from re-enetry of rocket reactors to, effect of destruct mechanism on, (E/T), 22:30280 (NUS-277)
radiation dose to human, effect of source on, 22:4666
radiation dose to human, from dental and medical uses in United States, x, 22:28613
radiation dose to human, from fallout through 1962, 22:43345
radiation dose to human, ICRP standards for recommendations for maximum, 22:28471
radiation dose to human, of USA during 1962, effects of nuclear weapons testing on, 22:10775
radiation dose to human, on Marshall Islands accidentally exposed to fallout from nuclear explosions in 1954, 22:14906 (BNL-50057, pp 123-37)
radiation dose to, in vicinity of Hanford, use of dietary habits for estimating, 22:51560 (BNWL-706)
radiation doses to, from peaceful use of nuclear explosions, 22:51568 (K-1752)
radiation effects on dynamics of, of Drosophila melanogaster, effects of temperature on x, 22:21611
radiation effects on genetic fitness of, of mice, quantitative x, 22:45472(R) (NYO-1979-27)
radiation effects on genetic load of rat, x, 22:40652
radiation effects on genetic variation in, of alfalfa, x, 22:49306
radiation effects on genetics of, in corn, thermal neutron, 22:23484(R) (COO-1512-5)
radiation effects on human, exposed to atomic bombing of Hiroshima and Nagasaki, report of ABCC on pathological, 22:51670(R) (ABCC-66-67)
radiation effects on human, exposed to atomic bombings at Hiroshima and Nagasaki, review of carcinogenic, genetic, and pathological, 22:15048
radiation effects on human, genetic, 22:51499
radiation effects on human, of Marshall Islands exposed to fallout during 1954, late, 22:43360
radiation effects on human, quantitative evaluation of ionizing, associated with Project Ketch, 22:51876 (UCID-15325)
radiation effects on hybrid and inbred, genetic analysis of x, 22:45492
radiation effects on incidence of cancer and leukemia in, of Japan, 22:4652
radiation effects on incidence of proteinuria in human, exposed to bombing of Hiroshima and Nagasaki, 22:51685
radiation effects on variability of morphology and physiology in, of wheat, recurrent x, 22:49639
radiation effects on viability coefficients of chromosomes in, of Drosophila, x, 22:10745
radiation effects on, of animals at Nevada Test Site, 22:19306
radiation effects on, of Drosophila melanogaster, effects of dose fractionation on genetic and mutagenic γ, 22:36238
radiation effects on, of L cells, recovery from lethal x, 22:43423
radiation effects on, of mice, dominant lethal γ, 22:31036
radiation effects on, of mice, effects of genotypes on x, 22:40616(R) (NYO-1979-26)
radiation effects on, of rodents at Nevada Test Site, 22:25800 (UCLA-12-668, pp 37-58)
radiation effects on, of salamanders, x, 22:6771(R) (NYO-3554-6)
radiation hazard to human, from re-entry of isotopic power devices, 22:38293
radiation hazards to human, at Chalk River National Laboratory during April to June 1968, research on, 22:51556 (AECL-3158)
radiation monitoring of northern New England, 22:2220
radiation protection of human, from fallout, criteria for establishment of, 22:25834
radiation protection of, in environs of nuclear installations, 22:21532
radiation protection of, in France during transport of gamma sources, standards for, 22:36265
radiation protection of, in Sweden, development of institute for, 22:40728
radiation protection programs for, in Belgium, 22:21518
radioactivity in Federal Republic of Germany during second quarter of 1967, 22:33820
radioactivity in Federal Republic of Germany during first quarter of 1967, 22:38290
radioinduced chromosome aberrations in, of Drosophila, elimination of γ, 22:51517
radioinduced explosion of aphid, in Brookhaven Forest, chronic γ, 22:8500
radioinduced fractional-lethal mutations in, calculation of, 22:36225
radioinduced genetic variability in inbred, of Drosophila, effects of, on fitness, x, 22:51537
radioinduced injuries in human, following contamination from satellite impact, model for prediction of, 22:43429
radioinduced mutations in, biological model for analysis of x, 22:36243
radioinduced mutations in, of Drosophila, review of, 22:8509
radioinduced mutations in, of mice, method for comparison of spontaneous to, 22:43295
radioisotope content of aquatic, methods for determination of, 22:17002 (UCRL-50347)
radioisotope uptake from food by, of Czechoslovakia, cesium-137 and strontium-90, 22:51655
radium-226 content of human, in Switzerland during 1964, 22:21500
reduction of mouse, in field enclosures, effects of escape and predation on, 22:14979(R) (COO-1406-2)
standards for protection of, against radioactive aerosols, 22:23508 (SC-M-67-2973)
survival of, in postattack environment, program for, 22:33809 (BNWL-SA-1509)
synthesis phase of growing cell, use of double labeled bone marrow cells from dogs and man to measure duration of, 22:43349 (UCSF-10-P-2-39, pp 125-260)
PORCELAIN ENAMELS
(A glassy composition fused to metal or another enamel.)
see also Glazes
use for coating manganese-activated calcium fluoride for thermoluminescent dosimetry, 22:14857
PORIFERA
ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Ephydatia meyeni, radioinduced denaturation of DNA of, effects of, on uv absorption curves, 22:51407
gold-198 uptake by marine, in comparison to uptake of stable gold, 22:51405
POROSIMETERS
design and performance of radiometric mercury, using gamma absorption, 22:19175
design for oxide film defects determination, 22:41118
use of gamma-absorption radiometric mercury, for determining carbon porosity, 22:19176
POROSITY
see also Permeability
determination from particle size data, statistical model for, 22:36535 (LA-3938)
effect on thermal conductivity of uranium dioxide, 22:2694
measurement of porous solids, gamma absorption method for, 22:21287 (CEA-R-3204)
POROUS MATERIALS
see also Graphite
gas diffusion and flow in, approximate equations for, 22:10115 (AERE-R-5492)
radon diffusion in multilayered assemblies of, 22:10355 (MIT-952-4, pp 300-38)
PORPHINE
see also Porphyrins
PROPHINE, α,β,γ,delta-TETRAPHENYL-
complexes with metals, γ radiolysis of, 22:16610
radiolysis of, γ, 22:16610
PORPHINESULFONIC ACID, α,β,γ,delta,-TETRAPHENYL
distribution of carbon-14- and tritium-labeled, in tissues of rats, 22:8447
labeling with carbon-14 or tritium for use in tumor localization, 22:8447
PORPHOBILINOGEN SYNTHASE
activity in plants, effects of EDTA, iron, pH, and

proteins on, 22:16972(R) (COO-1287-5)

PORPHYRINS

see also Chlorophyll

see also Cytochromes

see also Hematoporphyrin

see also Hemoglobin

see also Protoporphyrins

complexes with iron, Moessbauer spectroscopy of, 22:20994(R) (NYO-3859-2)

complexes with manganese, oxidation and reduction reactions of, 22:12200 (UCRL-17853)

content of skin of man in relation to uv photosensitivity and porphyria, 22:25987

effects on chemistry of manganese ions, 22:12200 (UCRL-17853)

ferric, determination of Moessbauer and nuclear magnetic resonance spectra of, 22:25717(R) (NYO-3859-1)

ferric, measurement of low-temperature magnetic susceptibility of, 22:25717(R) (NYO-3859-1)

radiation effects on, in aqueous solution, mechanism of recovery from, 22:23425

separation of nonvolatile, by hyperpressure gas chromatography, 22:45155

synthesis in plants, role of enzymes and iron in, 22:16972(R) (COO-1287-5)

synthesis of primordial, 22:33734

Portable Gas-Cooled Reactor

see Army Reactor (ML-1)

PORTLAND CEMENTS

shielding properties of, with cadmium and samarium additions, 22:43671

Ports

see Harbors

PORTUGAL

radiation processing of food in, 22:52123

uranium ore processing in, status of, 22:18985

uranium production and sales in, 22:10344

uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)

Position Indicators

see Displacement Gages

POSITIONING

configuration of reactor loading machine multiple-row varying-number receiving coils for electromagnetic exciter coil varying-frequency monitor for, description of, 22:48784(P)

POSITRON BEAMS

monitoring of, single-foil secondary emission monitors for, 22:46684

polarization in strong-focusing synchrotrons, resonance depolarization effects on, 22:15892

production in Stanford Linear Accelerator, design of equipment for, 22:14635

POSITRON CAMERAS

(Devices for detection of annihilation γ rays from positron emitters usually in tissues)

see also Scintillation Cameras

design and performance for clinical diagnosis, 22:19371

developments in scintillation, survey of, 22:38056

performance of scintillation, in comparison to rectilinear scanners, 22:38055

POSITRONIUM

see also Electron Pairs

annihilation at low temperatures, Zeeman effect in, (T), 22:5127

annihilation of triplet, in organic liquids, correlation with electronic and structural properties, (E), 22:19746

annihilation of, correlation between decay lifetimes and angular distributions in two-photon, (E), 22:5817(R) (NYO-GEN-72-28)

binding energy of molecular, 22:38785

chemical reactions of, mathematical analysis of, 22:16640

decay ${}^1S_0 \to 3\gamma$, charge conjugation invariance and Carruthers theorem for, 22:48265

energy levels of positronium--proton system, ground-state, 22:5129

existence of bound-state system proton--electron--positron, 22:9033

formation in positron reactions with hydrogen atoms, cross section for, (T), 22:13219

hyperfine structure of, test of quantum electrodynamics from relativistic treatment of, 22:46516

motion in liquified gases, bubbles due to zero-point, (E), 22:17374

physical chemistry of, review, 22:52538

positron annihilation on negative ions of, 22:31648

production and physical properties, review of, 22:49990

production in matter, electric field effects on, (T), 22:47833

production in molecular substances, electric field effects on, 22:50047

production in positron scattering on hydrogen, (T), 22:952

production in positron--hydrogen collisions, cross sections for, (T), 22:17351

production of, Born approximation for, (T), 22:17354

production of, perturbation theory for singularities in quantum electrodynamics for, 22:29751

production under astrophysical conditions, 22:20175 (NP-17317)

reactions with chlorine, chemical properties of, 22:34279

scattering of ortho-, by helium, quenching in, (T), 22:50006

theory for, Wigner--Weisskopf method in, 22:7461

thermalization by elastic collisions in rare gas moderators, (T), 22:19754

POSITRONIUM COMPOUNDS

energy levels of positronium--proton system, ground-state, 22:5129

existence of bound-state system proton--electron--positron, 22:9033

POSITRONS

see also Electron Pairs

see also Electrons

see also Positron Beams

abundance in cosmic radiation, (T), 22:17434

abundance in primary cosmic radiation, (E), 22:5157

annihilation as probe for many-body effects in metals, 22:50257

annihilation by electrons in carbon--carbon and carbon--hydrogen bonds in hydrocarbons, momentum distributions in, (T), 22:13252

annihilation in alkylbenzenes and ionic crystals, rate measurements of, 22:52511

annihilation in aluminum and silicon, angular distribution of radiation from, (T), 22:36722

annihilation in aluminum--copper alloys, Fermi surface analysis from, 22:15581

annihilation in annealed and deformed nickel alloys, (E), 22:17367

annihilation in antimony and indium, angular distribution of gamma quanta from, (E), 22:41303

annihilation in bismuth, mercury, and bismuth--mercury alloys, angular correlation of, (E), 22:9090

annihilation in compounds and elements, tables of data on, 22:52536

annihilation in condensed matter, lifetime and effective electron number in, (E), 22:50001

annihilation in condensed media, (E), 22:26207

annihilation in crystalline anthracene and benzene, effect of impurities on, (E), 22:2778 (NYO-3661-5)

annihilation in decane and hexane, momentum distributions in, (E/T), 22:13252

annihilation in deformed nickel alloys, angular distribution of photons from, (E), 22:52513

annihilation in ferromagnetic metals, structure analysis from, 22:36703(R) (AD-666453)

annihilation in gold, lead, tantalum, tin, and uranium, total cross sections for single-quantum, (E), 22:36723

annihilation in helium, calculation of, 22:24049

annihilation in lead at 300 keV, cross section for radiationless, (E/T), 22:43921

annihilation in lithium single crystals, relation of Fermi surface to angular correlation of radiation from, (E), 22:7173

annihilation in magnetized iron and nickel, rates of two-photon, (E), 22:45958

annihilation in metal hydrides, delayed coincidence system study of lifetimes from, (E), 22:38732

annihilation in metals, review, 22:31607

annihilation in Naton plastic scintillator, correlation between decay lifetime and angular distribution in, (E), 22:37281(R) (NYO-72-191)

annihilation in powdered magnesium oxide, anomalous magnetic quenching of three-photon, (T), 22:17368

annihilation in rare earth metal single crystals, angular correlation of photons from, (E/T), 22:24436

annihilation in rare earth single crystals, photon angular distributions from, 22:24024 (CONF-670502-, pp 487-94)

annihilation in selenium, tellurium, and their alloys, (E), 22:11508

annihilation in silicon, symmetry elements of Brillouin zone observed by, (E/T), 22:9478

annihilation in sodium single crystals, Fermi-surface shape and velocity dependence of annihilation probability from, 22:7172

annihilation in solid and liquid metals, angular correlation of gamma rays from, (E), 22:15372

annihilation in solids, higher-shell contributions and polarization correlations in, (T), 22:17380

annihilation in solids, ladder-graph approximation for, 22:17378

annihilation interactions of, use of lithium-drifted germanium detectors for measurements of, 22:33630 (AD-663113)

annihilation lifetime spectra of, methods for data reduction in analysis of, 22:29193

annihilation of cosmic, gamma spectra from, (T), 22:36759 (N-68-22925)

annihilation of, algorithm for solution of pair pulse spectra from, 22:11213

annihilation of, lectures on, 22:13257

annihilation of, magnetic field effects on two-photon, 22:52495

annihilation on electrons in ferromagnets, gamma angular distributions from, 22:5097

annihilation on negative positronium ions, 22:31648

annihilation radiation from zinc single crystals at 250°C, angular correlation of, (E), 22:49992 annihilation radiation of, angular correlation calculations from Hartree--Fock, orbitals for, 22:36733

annihilation rate in argon, temperature dependence of, (E), 22:52533

annihilation rate of, in solid and liquid metals, (E), 22:52532

annihilation rate of, method for computation of time-dependent, 22:2779 (NYO-3661-11)

annihilation spectra of, measurement using germanium (lithium) detector, (E), 22:31611

annihilation with halogenide ions, (E), 22:49993

annihilation, one-particle representation and many-body solution for, 22:31607

anti ν/sub μ/ + e^+ $\to$ anti ν/sub e/ + μ^+, differential cross sections and μ^+ polarization from, 22:13725

book: Positron Annihilation, 22:13257

bound states in alkali halides, (E), 22:9073

capture by nuclei, neutrino emission in stars from, (T), 22:13106

chemical reactions of, use of, in study of chemical kinetics and radiation chemistry, 22:120

decay of heavy, $e^+ \to e^+ + 2\nu$/sub e/, (T), 22:44384 (IFVE-STF-67-57-K)

decay of heavy, $e^+ \to \mu^+ + \nu$, (T), 22:44384 (IFVE-STF-67-57-K)

decay of heavy, $e^+ \to \pi^+ + \nu$, (T), 22:44384 (IFVE-STF-67-57-K)

detection in coincidence with gamma radiation, equipment for measurement of, 22:51247

detection in coincidence with gamma rays, method for, 22:23273

detection of high-energy, performance of lead fluoride Cherenkov detector for, 22:28122

detection of, design of coincidence annihilation-gamma scintillation detector for, 22:40359 (INP-605/PL)

distribution in cascade showers, (T), 22:21919

emission in μ^-, μ^+, π^-, π^+, and π^0 decay, formula for kinetic mass for, 22:29646

existence of anomalous, upper limits for, (E), 22:26553

flux in cosmic radiation, (T), 22:43945

g factor of, (E/T), 22:9080

galactic intensity of cosmic-ray, (T), 22:9124

generation of, in cosmic-ray processes, (T), 22:29102

interaction $e^+ + e^- \to 2\gamma$ at high energies, γ circular polarization in, (T), 22:13709

interactions anti ν/sub μ/ + e^+ $\to$ anti ν/sub e/ + μ^+, μ polarization from, (T), 22:3321

interactions anti ν/sub μ/ + e^+ $\to$ anti ν/sub e/ + μ^+, two- and four-component theory for, 22:22376

interactions $e^+ + e^- \to (2n+1)\pi$, test for ΔI less than or equal to 1 in, 22:46368

interactions $e^+ + e^- \to 2\gamma$, at high energies in colliding beams, quantum electrodynamics for polarization of finite particles in, 22:39318

interactions $e^+ + e^- \to 2\gamma$, quantum electrodynamics predictions for, 22:48360

interactions $e^+ + e^- \to 3\gamma$, quantum electrodynamics predictions for, 22:48360

interactions $e^+ + e^- \to 3\pi$, method for deriving angular correlations in, 22:41774 (NP-17531)

interactions $e^+ + e^-$ $\to$ antiparticle + particle in colliding beams, infrared corrections for, 22:11623

interactions $e^+ + e^- \to e^+ + e^-$, frame-dependence of cross sections for, 22:26591 (JINR-P2-3590, pp 81-5)

interactions $e^+ + e^- \to e^- + e^+$, magnetic spectrometer for measuring Bhabha scattering parameter for, 22:16900

interactions $e^+ + e^- \to e^- + e^+$, proposed for Adone experiment with charge recognition for, 22:48205 (ISS-68/20)

interactions $e^+ + e^- \to e^+ + e^-$, use in determining validity of quantum electrodynamics and electron nature of mesons (μ), 22:11576

interactions $e^+ + e^- \to e^+ + W^- + \nu$/sub e/ in colliding beams, asymmetry in, (T), 22:24586

interactions $e^+ + e^- \to e^- + W^+ + \nu$/sub e/ in colliding beams, asymmetry in, (T), 22:24586

interactions $e^+ + e^-$ $\to$ eta + γ, effect of rho^0 and ω^0 interference on cross sections for, (T), 22:24606

interactions $e^+ + e^- \to \gamma + \gamma$ under astrophysical conditions, γ spectra from, (T), 22:20175 (NP-17317)

interactions $e^+ + e^- \to \gamma + \gamma$, calculation of matrix elements with anomalous magnetic moment and polarization effects for, 22:20177

interactions $e^+ + e^- \to \gamma + \gamma$, use in determining validity of quantum electrodynamics and electron nature of mesons (μ), 22:11576

interactions $e^+ + e^- \to \gamma$ at very high energies, total bremsstrahlung spectrum for, (T), 22:13704

interactions $e^+ + e^- \to \gamma$ in eight-dimensional space, (T), 22:5535

interactions $e^+ + e^-$ $\to$ hadrons at high energies, asymptotic behavior of total cross section for, (T), 22:7466 (ITEF-493)

interactions $e^+ + e^-$ $\to$ hadrons at high energies, total annihilation cross sections for, (T), 22:1408

interactions $e^+ + e^- \to \mu^+ + \mu^- + \gamma$, nonlocal interaction theory with polarization for, 22:9532

interactions $e^+ + e^- \to \mu^+ + \mu^-$ at high energies in colliding beams, quantum electrodynamics for polarization of finite particles in, 22:39318

interactions $e^+ + e^- \to \mu^+ + \mu^-$ in Adone, 22:11826

interactions $e^+ + e^- \to \mu^+ + \mu^-$ in colliding beams, calculation of radiative corrections for, 22:11622

interactions $e^+ + e^- \to \mu^+ + \mu^-$, use in determining validity of quantum electrodynamics and electron nature of mesons (μ), 22:11576

interactions $e^+ + e^-$ $\to$ N* + anti N*, differential cross sections for colliding-beam, (T), 22:29667

interactions $e^+ + e^- \to \nu$ + anti ν at high energies, calculations using intermediate vector mesons for cross sections of, 22:3348

interactions $e^+ + e^- \to \nu$ + anti ν, neutrino-pair exchange in, 22:20205

interactions $e^+ + e^- \to \nu$ + anti ν, stellar energy loss from, 22:50355

interactions $e^+ + e^- \to p$ + anti p, use of Adone storage ring for determining baryon form factors from, 22:11828

interactions $e^+ + e^- \to \pi^0 + \gamma$, effect of rho^0 and ω^0 interference on cross section for, (T), 22:24606

interactions $e^+ + e^- \to \pi^0$(eta) + γ at 2 x 350 to 2 x 400 MeV, quark model for rho^0 and ω interference in cross section of, 22:34897 (NP-17476)

interactions $e^+ + e^- \to \pi^+ + \pi^-$ and $e^+ + e^- \to \pi^0 + \gamma$, coherent rho--$\omega$ interference in, 22:48271

interactions $e^+ + e^- \to \pi^+ + \pi^-$ at 2 x 290 to 2 x 510 MeV, preliminary results of spark chamber study of cross sections for, (E), 22:22275 (CONF-670923-, pp 376-86)

interactions $e^+ + e^- \to \pi^+ + \pi^-$ at 775 MeV, scintillation counter and spark chamber study of, (E), 22:7419 (LAL-1181)

interactions $e^+ + e^- \to \pi^+ + \pi^-$ at 775 MeV, scintillation counter and spark chamber study of cross section for, (E), 22:9499

interactions $e^+ + e^- \to \pi^+ + \pi^-$, current-algebra prediction for cross section for, 22:39348

interactions $e^+ + e^- \to \pi^+ + \pi^-$, π charge structure and $\pi\pi$ phase shift from, 22:24600

interactions $e^+ + e^- \to \pi^+ + \pi^-$, π form factor from, 22:48289

interactions $e^+ + e^- \to \pi^+ + \pi^-$, SU(2) x SU(2) chiral symmetry for rho$\pi\pi$ coupling from, (E/T), 22:35055

interactions $e^+ + e^-$ $\to$ rho $\to$ $\pi^+ + \pi^-$, cross sections for photoproduction of rho from, 22:9554

interactions $e^+ + e^-$ $\to$ rho$^-$ + rho$^+$, electromagnetic form factors from, (T), 22:13711

interactions $e^+ + e^-$ at 1.52 to 2.62 MeV, differential cross section for, (E), 22:46314

interactions $e^+ + e^-$ at ultra high energies, polarization effects in annihilation, (T), 22:39320

interactions $e^+ + e^-$ in Cambridge Synchrotron, 22:32254 (CEAL-2000, pp 112-18)

interactions $e^+ + e^-$ in colliding beams, differential cross sections for spin-3/2 baryon pair production in, (T), 22:24587

interactions $e^+ + e^-$ in colliding beams, soft photon emission from, (T), 22:29659

interactions $e^+ + e^-$ in complex space, 22:11621

interactions $e^+ + e^-$ in storage rings, physics of, 22:11818

interactions $e^+ + e^-$ using polarized beams, general formula for two-particle production in, 22:37119

interactions $e^+ + e^-$, angular correlations for 3π production in, 22:24579

interactions $e^+ + e^-$, beam bypass design for Cambridge Synchrotron for providing, 22:32255 (CEAL-2000, pp 119-22)

interactions $e^+ + e^-$, Bethe--Salpeter equation for, 22:53019

interactions $e^+ + e^-$, double-logarithmic asymptotics of bremsstrahlung amplitudes in backward, 22:1409

interactions $e^+ + e^-$, form factors from colliding-beam, 22:11611

interactions $e^- + e^+$, infrared corrections for colliding beam experiments on, 22:3320

interactions $e^+ + e^-$, infrared radiative corrections for resonant processes in, (T), 22:44353 (LNF-68/26)

interactions $e^+ + e^-$, production and decay chains of meson resonances from colliding-beam, 22:50326

interactions $e^+ + e^-$, quantum electrodynamics with external current and potential for, 22:32200

interactions $e^+ + e^-$, quasipotential description in quantum field theory of, 22:24592

interactions $e^+ + e^-$, radiative corrections to resonant particle production in colliding-beam, (T), 22:39326

interactions $e^+ + e^-$, rho^0 width from production in, 22:39416

interactions $e^+ + p \to e^+ + p$ at 0.2 to 20.0 GeV, cross section relative to $e^- + p \to e^- + p$ interactions, (E), 22:22270 (CONF-670923-, pp 102-8)

interactions $e^+ + p \to e^+ + p$, general expression for differential cross section for polarization dependence of, (T), 22:39329

interactions $e^+ + p \to e^+ + p$, scintillation counter study of backward, (E), 22:7420 (LAL-1183)

interactions $e^+ + p \to e^+ + p$, scintillation counter study of cross sections for backward, (E), 22:13639

interactions $e^+ + p$ at 1.700 GeV, Cherenkov and scintillation counter and spark chamber study of cross sections for elastic, (E), 22:3240

interactions $e^+ + p$ at 800 and 1200 MeV, cross section for elastic, (E), 22:20115

interactions $e^+ + p$, model for renormalizable theory for weak, 22:48280
interactions $e^+ + p$, ratio of cross sections for elastic $e + p$ and, 22:44302
interactions $e^+ + p$, renormalizable theory of weak interactions for, 22:44386 (ITEF-580)
interactions $e^+ + p$, two-photon exchange effects in, 22:11611
interactions ν/sub e/ + $e^+ \rightarrow$ anti ν/sub μ/ + μ^+, μ polarization from, (T), 22:3321
interactions ν/sub e/ + $e^+ \rightarrow \nu$/sub μ/ + μ^+, μ polarization from, (T), 22:3321
interactions ν/sub e/ + $e^+ \rightarrow \nu$/sub μ/ + μ^+, two- and four-component theory for, 22:22376
interactions ν/sub μ/ + $e^+ \rightarrow$ anti ν/sub e/ + μ^+, μ polarization from, (T), 22:3321
interactions of, conference on, 22:22342 (CONF-670923)
interactions with electron gas, momentum distribution in, (T), 22:9040
lifetime in gases and liquids, quenching cross section of oxygen molecules for, (T), 22:29228
lifetime in solids, transistorized time-to-amplitude converter for measuring, 22:16961
lifetime in water, temperature dependence of, 22:17415
lifetimes in metal hydrides, delayed coincidence system study of, (E), 22:38732
magnetic moment of, (g − 2) experiments for measuring, 22:46512
mass in metal, review of effective, (E/T), 22:26205
mass of, particle composition method for determining, (T), 22:29646
mass of, rheon-particle calculations for, 22:20160
momentum spectra from $K^+ \rightarrow \pi^0 + e^+ + \nu$ decay, (E), 22:15666
motion in gravitational field, (E/T), 22:1486
motion in single crystals, effects of lattice structure on, 22:26475
motion in storage rings, linear theory of, 22:26745
motion within closed metallic container, 22:29651
ν/sub e/ + $e^+ \rightarrow \nu$/sub μ/ + μ^+, differential cross sections and μ^+ polarization from, 22:13725
physical chemistry of, review, 22:52538
polarization in crossed beams, characteristic, (T), 22:17920
production and acceleration of, design of electron linear accelerator for, 22:41908(P)
production conversion yield differential in electron reactions with converter materials, 22:24760
production conversion yield in electron reactions with targets at 2.0 to 4.0 MeV and 24.5 MeV, 22:24762
production in electron reactions with aluminum, beryllium, and platinum at 500 MeV, ionization chamber spectrometer, and scintillation and Cherenkov counter study of trident and quartet, (E), 22:26547 (SLAC-PUB-330)
production in electron reactions with beryllium, beryllium—iron, and iron at 16 and 18 GeV, yields of, (E), 22:20113
production in photon interactions in aluminum, carbon, copper, and lead at 1.2 to 4.0 GeV, total cross section for, (E), 22:34832
production of heavy, in $\nu + p \rightarrow n + e^+$ interactions, (T), 22:44384 (IFVE-STF-67-57-K)
reactions of high-energy, astrophysical implications of, (T), 22:29102
reactions with atomic hydrogen and helium, adiabatic approximation and conditions for bound states for, 22:52493
reactions with helium and hydrogen atoms, variational bounds in low energy, (T), 22:38723 (N-68-19039)
reactions with hydrogen atoms, cross section for positronium formation in, (T), 22:13219
reactions with hydrogen, elastic P-wave scattering phase shifts calculation for, 22:38790
reactions with hydrogen, resonance possibility in, 22:38793
reactions with targets in storage rings, calculations for, 22:5696
scattering by helium and hydrogen atoms at zero energy, calculations for elastic, 22:24050
scattering by helium and hydrogen, corrections to polarization potential in calculation of, 22:21879
scattering from atomic hydrogen, coupled-states method for calculating s-wave, (T), 22:41370
scattering from atoms, coupled-states method for calculating, (T), 22:41370
scattering from atoms, variational bounds for, (T), 22:41373
scattering from hydrogen and helium atoms, variational bounds for, (T), 22:41373
scattering of, nonadiabatic target distortion in low-energy, 22:7132 (ORNL-4168, pp 119-82)
scattering on hydrogen, positronium formation in, (T), 22:952
scattering on hydrogen, positronium production in, (T), 22:17351
solar modulation of cosmic-ray, (T), 22:9124
spectra from internal pair production in nuclear E1 transitions, (E/T), 22:20599
spectra from pair production at photon energies below 2.5 MeV, (T), 22:44790
spectra of galactic cosmic-ray secondary, energy, (T), 22:17432
spectra, source-supporting effect on shape of time annihilation, (E), 22:9476
spectrum of secondary, produced in interstellar space by primary cosmic radiation, (T), 22:9126
synchrotron emission from relativistic, in solar flares, (T), 22:17341
wave function for, in solids, assumption-independent single-particle, 22:36722

POTASH
see also Potassium Carbonates
see also Potassium Hydroxides
see also Potassium Oxides

POTASSIUM
see also Alkali Metals
abundance in hypersthene achondrite and pallasite meteorites, age estimation from, 22:19689
abundance in photosphere, (E), 22:23932
abundance in stony meteorites, (E), 22:13128
abundance of, solar, (T), 22:13206
abundance ratio to chlorine in seawater by high pressure difference chromatography, 22:37649(R) (NYO-3838-1)
accumulation by maize, selection of populations according to differences in, 22:33712(R) (NYO-2744-53)
activation analysis of, in blood serum and inner ear fluid of man, neutron, 22:21406 (KFKI-6/1967)
analysis for oxygen, calibration of electrochemical sensors for, 22:12677 (ANL-7380, pp 118-22)
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
argon atom reactions with excited atoms of, cross sections for transitions between fine structure components in, 22:11205
argon-ion sputtering at 28 keV, energy spectra from, 22:948
atomic beams of, design of cathode-sputtering system for production of 0.2- to 45-eV, 22:43900
atomic weight of, based on carbon-12 = 12, 22:42698
availability and reserve in Missouri soils, isotopic exchange and calcium exchange studies of, 22:42662
boiling in forced and natural convection flow, (E), 22:51170
boiling superheats of, effects of deactivation pressure on, 22:37900 (BNL-50082, pp 153-80)
boiling thermodynamics of liquid, review on, 22:19509 (AERE-R-5436)
book: Alkali Metal Handling and Systems Operating Techniques, 22:15206
book: Uncommon Metals, 22:10981
cavitation phenomena in liquid, review, 22:52180
cesium content in salts of, use of neutron activation analysis for determining, 22:4468
cesium-137 ratio to, in cattle, 22:43235
chromatographic behavior on cerium phosphate paper, 22:153
compatibility with heat resisting alloys for power cycle heat transfer loops, review, 22:43533
compounds of, radiometric studies of effects of potassium-40 on, 22:42608
compounds with uranyl bromides and/or chlorides, infrared spectra of, 22:2042
condensation in meteorites, (T), 22:5023
condensation of vaporous, heat transfer coefficient during, 22:25608 (NP-17416)
content and distribution in Adams County, Colorado surface soils, 22:27904
content and distribution in earth, method for determination of, 22:23146
content in Australian granitic rocks, 22:25521
content in Baltic Shield rocks, use in age estimation, 22:6474
content in BNL area milk, 1965, 22:40258 (BNL-50093)
content in ores, gamma well logging method for measuring, 22:35934
content in peridotite inclusions and host basalts, neutron activation analysis and gamma spectrometry methods for determination of, 22:27899
content in Rotondo granite, radiometric measurements on, 22:10391
content in soils of northeast and east-central Georgia, 22:48939
content in terrestrial material, use of gamma spectroscopy for determining, 22:2413
content of aquatic plants, 22:19301
content of diet of children in 1966, 22:28523
content of diet of isopods, effects of, on cesium-134 metabolism, 22:6759
content of diet, effects of, on cesium-134 retention in rats, 22:28341
content of diet, effects of, on cesium-137 retention by rats, 22:10675 (BNWL-480, pp 21-54)
content of erythrocytes, plasma, and urine of diseased, normal, or pregnant man, 22:51297 (COO-119-238)
content of frog muscle, effects of quinine on, 22:14970
content of Green and Round Lakes, Fayetteville, New York, 22:45182
content of hearts in frogs, effects of, on radiosensitivity, 22:31132
content of human blood, effects of radiotherapy on, 22:45436
content of human body, calibration of whole-body counter

for measuring, 22:38297
content of human body, determination of, using plastic counter, 22:49420
content of human milk, ratio of cesium-137 content to, 22:456
content of man in Colorado, whole-body, 22:21460(R) (COO-1171-82)
content of man in relation to intake, use of whole-body counting to determine, 22:38218
content of man with muscular dystrophy, 22:25962(R) (COO-119-236)
content of man, determination of long-term whole-body, 22:51305 (LA-3848, pp 75-96)
content of man, effects of age and sex on, 22:33804 (A-AC-82/G/L-1193)
content of man, performance of computers for rapid analysis of data from isotope dilution, whole-body counting determination of, 22:19281
content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
content of milk in Colorado during 1962 to 1967, fallout, 22:21460(R) (COO-1171-82)
content of milk in Czechoslovakia during 1965 and 1966, relation of cesium-137 content to, 22:40682
content of plasma of atomic bomb survivors with multiple myelomas, 22:4643
content of soils, effects of, on uptake of cesium by sudan grass, 22:33745
content of surface waters of British Isles during 1961 to 1966, effects of, on cesium-137 content of flesh of brown trout, 22:28460
content of tissues of cattle, 22:43235
content of water, effects of, on strontium-89 accumulation by brown algae, 22:43232
corrosive and erosive effects on turbine blades, facility for testing, 22:4738
corrosive effects of liquid, on niobium--zirconium alloys and Type 316 stainless steel, (E), 22:32926 (GMAD-3078-32(Vol.2))
corrosive effects of liquid, on tantalum at 1800°F, 22:23719
corrosive effects on aluminum oxide and beryllium oxide at 870°C and 2 atm pressure, 22:36521
corrosive effects on molybdenum, niobium, and tantalum alloys, 22:647(R) (BNL-50077)
corrosive effects on niobium, effects of interstitial oxygen on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
corrosive effects on refractory alloys at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
corrosive effects on refractory metals at 1000 to 1300°C of liquid, analysis of, 22:30388
corrosive effects on T-111 alloys, stress, 22:38535(R) (N-68-11650)
critical temperatures and vapor density of, 22:19521 (UCID-15269)
crystal stacking fault energies at 90°K, 22:38570
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deficiency in hearts isolated from frogs, effects of, on activity, 22:15068
density of liquid and vapor, to critical point, method for estimation of, 22:51173
deposition from nonaqueous solvents, rotating disk electrode system for, 22:25226 (UCRL-17957)
deposits in Poland, radiometric well logging location of, 22:48923
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in gallium arsenide, activation, 22:1969
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in silicon oxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination at face of mines, beta-backscattering method for, 22:28194
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by counting natural radioactivity, 22:10178
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
determination by x-ray fluorescence methods, 22:1957 (ORNL-IIC-10(Vol.1), pp 336-55)
determination in agricultural samples by neutron activation methods, 22:39990 (TID-24581)
determination in biological materials by neutron activation methods, 22:35766
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in bismuth--tellurium ore, 22:18721
determination in blood by neutron activation methods, 22:12259
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in chloride and nitrate media using sodium cyanotriphenylborate, gravimetric, 22:18707
determination in clay and glass by measurement of β and γ radioactivity, 22:25272
determination in geologic materials, equipment and procedures for, 22:48914(R) (COO-689-100)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in iron meteorites, 22:35749
determination in iron meteorites by neutron activation methods, 22:42618
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in ocean water at two Atlantic stations, atomic absorption method for, 22:27563
determination in oceanic and continental peridotite nodules by neutron activation, 22:50947
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in plutonium dioxide using α-reaction γ spectra, 22:18704
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in rice plants by neutron activation, 22:33286
determination in rice plants by neutron activation methods, 22:50
determination in rocks by high-resolution gamma spectroscopy, 22:44980 (NYO-3756-2, Sect. G)
determination in rocks of Canadian Shield, computer pulse analyzer system for analysis of gamma spectra from aerial surveying for, 22:28241
determination in salmon tissues by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in scandium, spectroscopic, 22:18727
determination in silicates by flame photometry, 22:22960
determination in soil solutions, activation, 22:1998
determination in soils, plants, and fertilizers by gamma spectra from potassium-41, 22:18697
determination in surface water samples, flame photometric method for, 22:51084 (SZS-8/68)
determination in tissues by neutron activation methods, 22:10200
determination in ultrabasic rocks by neutron activation, 22:48842
determination in uranium and its compounds by atomic absorption spectroscopy, 22:16411 (GAT-507)
determination in uranium and uranium compounds by atomic absorption, 22:45014
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of a visual complexometric, 22:33273
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of, in field by gamma spectroscopy, 22:2414
determination simultaneously with sodium, polarographic, 22:30547
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in mercury, coefficients of, 22:21688 (COO-1352-25)
diffusion in molybdenum, review, 22:21651
diffusion in sodium at 0 to 98°C, tracer studies of, 22:17121
diffusion of sodium in, at 0 to 64°C, tracer studies of, 22:17121
distribution in earth mantle basic rocks, 22:2201
distribution in food chains in forest ecosystems, 22:6772 (ORNL-4168, pp 61-118)
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in Italian volcanic rocks, effect of volcanic processes on, 22:30729
distribution in New Hampshire granite, 22:2199
distribution in U.S. Atlantic and Gulf beach sands, 22:2202
effects as vapor on performance of low-pressure thermionic converters, 22:11292 (ANL-7377)
effects on β- and γ-radiosensitivity of activity of frog heart, 22:15059
effects on calcium-45 in vitro uptake and retention by smooth muscle of guinea pigs, 22:51339
effects on cation balance and metabolic rate in rats, 22:21460(R) (COO-1171-82)
effects on cesium absorption on marine sediments, 22:21222
effects on cesium-134 metabolism in mule deer, 22:14908 (COO-1156-25)
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on electric conductivity of argon plasma, 22:5361

effects on electric conductivity of flame plasma, 22:41565
effects on electric conductivity of plasma, (E), 22:17636
effects on electric conductivity of rare gas plasmas, (T), 22:24319
effects on erosion of refractory zirconium oxide ceramics, 22:12985
effects on graphite reactions with oxygen, 22:41140
effects on nicotine-induced calcium-45 uptake and contracture of sartorius muscle from frogs, 22:6737
effects on rare gas constricted positive column discharges, 22:1237
effects on rate of cesium-134 secretion in milk of lactating cows, 22:21460(R) (COO-1171-82)
effects on sodium extrusion from muscles of frogs, 22:45387
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
effects on tenia coli of guinea pigs, effects of, on calcium-45 uptake, 22:49207
effects on x-radiosensitivity of sunflower seedlings, 22:43478
effects on yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 78-96)
electric conductivity of liquid, experimental and theoretical, 22:43565(R) (COO-841-15)
electron elastic scattering at 0.5 to 1.2 eV by, ratio of spin-exchange to full cross section for, (E), 22:43907
electron inelastic scattering at 34 keV in thin foils, (E), 22:17394
electron reactions with atomic, energy loss spectra and collision cross sections and oscillator strengths for 40- to 200-eV, (E/T), 22:43931
electron reactions with atomic, ionization cross sections for, (T), 22:17362
electron reactions with, ionization by slow, 22:43885
electron reactions with, octupole transitions in excitation by, 22:52487
electron scattering by, elastic differential spin-exchange cross sections for slow, 22:7154
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electronic properties of, ultrasonic measurement of, 22:21696(R) (ORO-2861-5)
energy levels of atomic, nonadiabatic corrections to, 22:9006
energy levels of atomic, rare-gas-induced m/sub j/ mixing in oriented 4^2P/sub 1/2/, 22:9048
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
erosive effects of liquid, on metals for nuclear reactors, 22:52126 (BNL-50127)
erosive effects of vaporous, on nickel-plated stainless steel turbine blades, 22:8698
erosive effects on turbines, literature survey on, 22:36432 (ORNL-TM-2088)
exchange in kidneys of dogs, effects of rate of, on potassium-42 excretion, 22:28319
exchange with other cations on clinoptilolite, heulandite, or synthetic zeolite, 22:25447 (BNWL-481-3, pp 54-9)
exchange with sodium in man, isotopic equilibration method for determining effects of heart disease on, 22:6832 (CONF-661010)
excretion by beagle dogs, effects of cesium, lithium, or rubidium chlorides on, 22:30936 (UCRL-50405)
fertilization of potted plants, effects of, on cesium-137 uptake, 22:43313 (RISO-170)
flow of liquid, superheat required for incipient boiling in convective, 22:49020
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
heat transfer to Haynes 25 Alloy, rates in pumped loops, 22:15141 (BNL-50057, pp 79-100)
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
injection in zirconium oxide, design of equipment for, 22:12985
interactions of atoms of, with magnetic fields, resonant-frequency shift in, (E), 22:988
ion exchange by chromium, titanium, and zirconium phosphates, 22:12291
magnetoresistance measurements on single-crystal, using helicon waves, 22:15566(R) (NYO-2150-40)
measurement of exchangeable, in human body by isotopic dilution method using potassium-42, 22:51438
metabolism by cattle, effects of diet on, 22:30978
metabolism by man, effects of magnesium on, into human lipoproteins, 22:12864(R) (ORO-2401-10)
metabolism in chicks, effects of rubidium on, 22:21460(R) (COO-1171-82)
metabolism in fish in Clinch River and White Oak Lake, 22:6772 (ORNL-4168, pp 61-118)
neutron activation in compact fast reactor coolant, radiation dose rates from, (T), 22:39782 (N-68-20355)
neutron coherent scattering amplitude for, (E), 22:53074
neutron cross sections for γ production on, data format for, 22:37306 (AD-665359)
neutron cross sections for, data files on, 22:37310 (AD-665363)
neutron differential elastic scattering cross sections at 2 to 8 MeV, (E), 22:3653
neutron total cross section at 1.8 to 8.3 MeV, (E), 22:3653
neutron total cross section at 14.7 MeV, measurement using transmission method, (E), 22:13987
neutron total cross section at 5.0 to 8.5 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
nuclear reaction parameters for, data compilation on, 22:29977
oxidation by dry oxygen as a function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
performance as working fluid in fluidic acoustic resonant thermometer using frequency beating technique, 22:21000 (SAN-639-7)
performance as working fluid in Rankine cycle space power plants, effects on condenser and radiator design, 22:25573 (ORNL-TM-2081)
performance as working fluids for 300 kW(e) Rankine cycle space power plants, 22:21234 (ORNL-TM-2118)
phase properties of, determination of, 22:32735 (ANL-7310, pp 249-375)
photo-ionization absorption continua for vapors of, 22:29201
physical and thermodynamic properties of, review of, 22:17100 (BNL-50089)
plasma of highly ionized, recombination coefficients in, (E), 22:39128
plasma of, condensation and electric conductivity of, 22:1162
plasma of, confinement time in Q devices, (E), 22:44080
plasma of, cross-field diffusion in Q devices, 22:34581 (SIT-2813-46)
plasma of, cross-field diffusion of quiescent, (E), 22:31828
plasma of, diagnostics using electrostatic probes, 22:19946 (MATT-520)
plasma of, diffusion in Q device, (E), 22:26352 (NYO-2813-39)
plasma of, drift instability suppression in hf fields, (E/T), 22:50206
plasma of, electron- and proton-beam interactions with, oscillations from, 22:13458
plasma of, Fermi-liquid effects in, (T), 22:24328
plasma of, flute oscillations in mirror-confined, (E/T), 22:3141
plasma of, graphical compilation of properties of, 22:3049 (SIT-2813-42)
plasma of, ion-cyclotron instability in collisionless, 22:52837
plasma of, microinstabilities and diffusion processes in thermal, (E/T), 22:24367
plasma of, Q device for diagnosing, 22:9290
plasma of, thermal conductivity of, pressure and temperature effects on, (E/T), 22:9328
plasma of, thermodynamic functions at 2,000 to 25,000°K and 10^{-4} to 100 atm, (T), 22:26411
plasma of, transverse diffusion of Q, (E), 22:24283(R) (SIT-2813-44)
plasma of, turbulent diffusion of thermal, (E), 22:17617
polarizability measurements of atoms of, 22:34242 (CCO-1112-164)
polarographic behavior in cyclic propylene ester of carbonic acid, 22:30547
potassium atom reactions with excited atoms of, cross sections for transitions between fine structure components in, 22:11205
potassium-41/potassium-39 abundance ratios in, mass-spectrometric determination of, 22:18723
preparation of pure monocrystalline, 22:21696(R) (ORO-2861-5)
properties of anodes of, for use in organic electrolyte battery, 22:27522 (SC-CR-67-2855)
properties of, data tabulations on thermophysical, 22:31343 (AGN-8195(Vol.1))
proton reactions at 0.5 to 2 keV with vapor of, charge exchange in, 22:7162
proton reactions at 2 to 30 keV with, energy dependence of H(2s) production in (E), 22:1011
proton reactions at 2 to 50 keV with, cross sections for charge exchange in, (E), 22:21845 (NYO-2962-6, pp 63-9)
proton reactions at 2.5 to 22 keV with vapor of, charge components and cross sections for charge exchange in, (E), 22:34283
pumps for, performance of helical electromagnetic induction, (E), 22:8256 (ORNL-TM-1793)
radiation effects on content of, in blood and urine of man following radon inhalation therapy for hypertension, 22:51959
radiation effects on content of, in erythrocytes following in vitro exposure of blood, x, 22:51477

radiation effects on content of, in human blood, electron and γ, 22:19407
radiation effects on content of, in rabbit tissues, comparison of chemical effects to polonium-210 α and γ, 22:47611
radiation effects on content of, in rats, cobalt-60 γ, 22:45664
radiation effects on content of, in serum of dogs following kidney exposure and unilateral nephrectomy, x, 22:38227
radiation effects on content of, in spleen cells of mice, low-dose x, 22:45508(R) (PG-Report-826)
radiation effects on distribution of, in tissues of mice, combined effects of tourniquet injury on x, 22:25979
radiation effects on flux of, in excised onion roots, micropotometric determination of x, 22:28705
radiation effects on metabolism of, in rabbits and rats in relation to adrenal cortex function, acute polonium-210 γ, 22:49608
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioisotopes produced by cosmic radiation during space flight, 22:19400(R) (BNWL-531-1)
Rankine cycle nuclear space power systems utilizing liquid, development of 0.25 to 10 MW(e), 22:37552 (CONF-680802-1)
reactions of atomic, with argon, helium, krypton, neon, and xenon, cross sections for fine-structure transitions in, (E/T), 22:2800
reactions of atomic, with molecular gases, excitation transfer and quenching in, (E), 22:13242
reactions of, spin-exchange cross sections for atomic, (E/T), 22:26264
reactions of, total cross sections for atomic, (E), 22:19775
reactions with argon and helium at 0.5 to 40 eV, total cross sections for molecular, (E), 22:19774
reactions with atoms at 6 to 2300 eV, quantum effects on cross sections for, (E/T), 22:19771
reactions with deuterium and hydrogen bromides, angular and velocity distribution of potassium bromide from crossed-beam, (E), 22:5112
reactions with methyl iodide in molecular beams, review, (E/T), 22:15375
reactions with molecular chlorine, kinetics of crossed beam, (E), 22:41314
reactions with molybdenum surfaces, temperature dependence of ion adsorption from, (E), 22:38746
reactions with niobium and oxygen, vacuum distillation technique for recovery of products from, 22:25342
reactions with oxygen and tantalum, vacuum distillation technique for recovery of products from, 22:25342
reactions with oxygen, vacuum distillation technique for recovery of products from, 22:25342
reactions with potassium ions at 10 to 500 eV, total cross sections for resonant charge exchange in, (E), 22:47826
reactions with rare gas atoms, mixing in ^{2}P state in inelastic, (T), 22:29284
reactions with scandium chloride to produce scandium metal, 22:34021
replacement of indigenous interlayer, in biotites, illites, muscovites and phlogopites, 22:3968(R) (COO-1680-3)
scattering from oxygen, differential spin-exchange, 22:7153
scattering of atoms of, by helium at 0.35 to 16.5 eV, total-cross-section measurements for, 22:937 (AGARD-CP-12(Vol.1), pp 411-22)
scattering on sulfur dioxides, angular distributions from, 22:8994 (TID-24203, pp 1-3)
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation by ion exchange, role of complexation reactions in, 22:33517
separation from aqueous acid solutions by solvent extraction using nitrobenzene and nitromethane, comparison of, 22:6415
separation from aqueous solutions by solvent extraction using 1-phenyl-3-methyl-4-capryl-2-pyrazolin-5-one, 22:33495
separation from arsenic by paper chromatography, 22:25257
separation from cesium by paper chromatography, 22:4248
separation from metals simultaneously with other alkali metals, ion exchange, 22:37866
separation from other alkali metals by solvent extraction using bis(2-ethylhexyl) phosphate, effects of 4-sec-butyl-2(α-methylbenzyl)phenol on, 22:16691
separation from other alkali metals, chromatographic, 22:45173
separation from other alkali metals, ion exchange, 22:37867
separation from other metals and other alkali metals by ion-exchange paper chromatography, 22:18881
separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
separation from titanium by paper chromatography, 22:25258
separation from titanium by paper chromatography, 22:25257
separation from tungsten by paper chromatography, 22:25257
separation of trace sodium from, by solvent extraction using tetrathiocyanatodianilinechromate, 22:35913
separation of various elements from, by sorption from acetic acid on Dowex 1-X8, 22:35914
separation of, by contact ionization in magnetoplasma device, 22:1260
solvent properties for copper, electrode potentials and surface characteristics in high-current-density, 22:45029 (UCRL-18043, pp 7-105)
solvent properties of liquid, for transition metals, 22:15187 (UCRL-50315)
sorption by manganese dioxide from nitric acid, 22:157
sorption from acetic acid on Dowex 1-X8, 22:35914
spectra of highly ionized, solar, (E), 22:34293
spectra of hyperfine structure of 4p ^{2}P/sub 3/2/ and 5p ^{2}P/SUB $_3$/2/ terms in, (E/T), 22:45939
spin-change collisions with cesium in crossed atomic beams, 22:41300
Stark effect constants for, quadratic, (T), 22:26204
superconducting properties of, calculation from normal state data, 22:39021
surface tension of liquid, in ultrahigh vacuum, (E), 22:17459
testing for use as fluid in beryllium heat pipes, method for compatability, 22:19033(R) (LA-3881)
thermal conductivity of vapor of, 22:25207 (COO-1352-28)
thermal conductivity of vapors of, at 500 to 3000°K, (E/T), 22:13002 (CU-2660-37)
thermal diffusion of liquid, 22:42654(R) (NYO-2082-18)
thermodynamic properties at 0.1 to 100 atm and 2500°K, 22:19522 (UCID-15271)
transport through membranes of frog sartorius muscle, effects of barium and strontium cations on, 22:8461
ultrasonic attenuation in, 22:29593
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
uptake by roots of barley, effects of uranyl ion on, 22:422 (RLO-1547-4)
use as journal bearing lubricant, friction and wear tests on bearing materials in high vacuum to 1200°F, 22:8826
use as working fluid in Rankine cycle nuclear space power systems, 22:37903 (CONF-680802-3)
use as working fluid in Rankine cycle space power plant, 22:51137 (ORNL-TM-2080)
use as working fluid in stainless steel heat pipes, (E), 22:33595(R) (LA-3941)
use of vapors of, for charge exchange to produce negative helium-ion beams of 1.5 to 2.5 μA, 22:5701
vapor pressure and surface tension of, data tabulations on, 22:10945 (EUR-3653)
vapor pressure of, method of measurement of, 22:12214(T) (UCRL-Trans-10198)
vapor quality of liquid, design of meter to measure, 22:40492
vapor quality of, design of delay line oscillator fluidic device for determining, 22:30893 (TID-24501)
vaporization in forced convection at 1800 to 2100°F, 22:647(R) (BNL-50077)
vaporization of liquid, to critical point, method for calculation of, 22:51173
viscosity at 900 to 1500°K, method for prediction of, 22:8753
viscosity of vapors of, 22:14478 (CU-2660-39)
viscosity of vapors of, to 1000°C and 0.4 to 5 atm, 22:38554
void growth in liquid, x-ray attenuation method for measurement of, (E), 22:21283
xenon-ion sputtering at 28 keV, energy spectra from, 22:948
zero point energy of crystals of, 22:20051

POTASSIUM ACID ARSENATES
spectra of monocrystalline, at 20 to 300°K, ir absorption, 22:16532

POTASSIUM ACID PHOSPHATES
dielectric constant for, at high temperatures, 22:24408 (IA-1128, pp 21-54)
electric conductivity of pure and sulfate-activated deuterium-labeled and normal, isotope effects on, 22:4123
ferroelectric phase transition in fully deuterated, (E), 22:11944(R) (AECL-2780)
neutron diffraction analysis of deuterium-substituted, critical scattering in, (E), 22:46729(R) (AECL-3157)
neutron scattering by, cross sections for, 22:24408 (IA-1128, pp 21-54)
phase transitions in deuterated and normal, isotope effects in high-temperature, 22:8083
phonon frequency distribution in fully deuterated, measurement using neutron scattering, 22:11944(R) (AECL-2780)
polarization of deuterated and normal, spontaneous, 22:24408 (IA-1128, pp 21-54)
proton dynamics in paraelectric, (E), 22:7378
radiation damage in KH_2PO_4, ESR study of domain switching in x, 22:12347
radiation effects on thermoluminescence of, x, 22:30635
radiation effects on, oxidation states and recoils formed by thermal-neutron, 22:42724 (COO-1618-8)
spectra of deuterated and normal, monocrystalline, at 20 to 300°K, ir absorption, 22:16532

  spectra of ferroelectric phase transitions in, ir, 22:24408 (IA-1128, pp 21-54)
  KH_2PO_4--KI, use as chemical dosimeter for electron and gamma radiation, 22:2435
POTASSIUM ACID SELENITES
  preparation and properties of, effects of deuterium on, 22:40085
POTASSIUM ACID SULFATES
  effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
POTASSIUM ALCOHOLATES
  see also Potassium tert-Butoxide
  see also Potassium Ethoxide
  see also Potassium Methoxide
POTASSIUM ALLOYS AND SYSTEMS
  Ar--K, electric conductivity and electron temperatures in seeded plasma of, (E), 22:39052
  Ar--K, electron temperature measurement in plasma jets of, using electric currents, 22:34608
  Ar--K, electron temperature measurements in streaming plasma with electric current at 2000°K, 22:44086 (IPP-3/69)
  Ar--K, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
  Ar--K, ionization by dc electric fields and metastable nitrogen molecules, 22:34680
  Ar--K, plasma electric conductivity in crossed electric and magnetic fields, 22:3017 (IPP-3/59)
  C--K, phase equilibria of $C_{10}K$ in, 22:15141 (BNL-50057, pp 79-100)
  Cs--K--Na--Sb, use for photoelectric surface in photomultiplier tube, 22:12582
  Cs--K--Sb, use of CsK_2Sb as photomultiplier cathodes operating at temperatures up to 175°C, 22:40502
  graphite--K, phase equilibria and thermodynamic properties of, 22:4898
  graphite--K, phase equilibria measurements of, 22:38510 (BNL-50082, pp 93-152)
  He--K, electric conductivity and electron temperature in seeded plasma of, 22:39052
  He--K, plasma electric conductivity in crossed electric and magnetic fields, 22:3017 (IPP-3/59)
  Hg--K, electromotive force and total vapor pressure of, effects of composition and temperature on, 22:17102 (CU-2660-34)
  K--Kr, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
  K--Na, compatibility with niobium--zirconium alloys in high-temperature radiator loops, 22:31327
  K--Na, compatibility with type 316 stainless steel in high-temperature radiator loops, 22:31327
  K--Na, contaminants in simulated SNAP-8 loops, control of, 22:40307 (N-68-11912)
  K--Na, corrosive effects on uranium at 900°C, 22:13077 (BNWL-473, pp 6.1-20)
  K--Na, crystal structure of, determination by neutron and x-ray diffraction, 22:28820
  K--Na, effects of eutectic, on in-loop service performance of Type 316 stainless steel at 1400°F, 22:52140
  K--Na, effects on burnup of type-316 and type-347 stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel rods, analysis of, 22:25083(R) (GEAP-5541)
  K--Na, effects on temperature of argon plasma, in electric fields, 22:3036
  K--Na, electric conductivity of circulating, design of indicator for, 22:34049
  K--Na, electromigration at 80 to 280°C in liquid, effects of temperature on, 22:45765(R) (RPI-1044-18)
  K--Na, electrostatic probe measurements in flow of argon seeded with, 22:44097
  K--Na, flow in loops, design of device for measuring temperature during, 22:12481
  K--Na, flow of, measurement using SNAP-10 magnetic pump, 22:23197 (ORNL-TM-2073)
  K--Na, heat transfer from liquid, design of heat exchanger for air dump, 22:10484 (ORNL-4159)
  K--Na, heat transfer in 60 to 1600 Peclet Number range in single tube heat exchanger, 22:12522
  K--Na, heat transfer to flowing, from heated rod bundles, 22:12526
  K--Na, oxidation by dry oxygen as a function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
  K--Na, preparation of liquid weightless double lenses of gallium and, 22:42654(R) (NYO-2082-18)
  K--Na, radiation monitoring of SNAP-8 coolant, analysis of, 22:18543 (NAA-SR-Memo-11131)
  K--Na, thermodynamic measurements on, equipment for, 22:12271(R) (COO-1707-1)
  K--Na, use as lubricant for tilting pad bearings, 22:23196 (NYO-3363-7(Vol.2))
  K--Na, use in MHD induction generators, 22:31678
  K--Na, vapor quality of liquid, design of meter for measuring, 22:40492
  K--Na, void fraction measurements in vertical two-phase flow of, description of methods for, (E), 22:51172
  K--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  K--Pu, phase studies of, 22:2655
  Na--K, temperatures of flowing, in vertical pipes with constant heat flux, 22:28006
POTASSIUM AMERICIUM FLUORIDES
  crystal structure of $K_7Am_6F_{31}$, 22:2080
POTASSIUM AMIDES
  effects on deuterium concentration by ammonia--hydrogen eschange system, 22:16696(P)
  effects on deuterium exchange between gaseous hydrogen and liquid ammonia containing amines, 22:40195(P)
  reactions with uranium tetrachloride, 22:4141
POTASSIUM ASTATIDES
  thermal properties at 0 to 300°K, 22:45078
POTASSIUM AZIDES
  reactions of recoil carbon-14 in neutron-irradiated, 22:12339(R) (COO-1620-2)
POTASSIUM BERYLLIUM FLUORIDES
  K_2BeF_4--K_3YF_6, phase diagram of, 22:45079
POTASSIUM BORATES
  radiation effects on recoil bromine-82g distribution in neutron-irradiated, γ, 22:12384
POTASSIUM BROMATES
  krypton-83 Moessbauer effect in, (E), 22:9477
  krypton-83 Moessbauer effect studies on, (E), 22:1292 (IA-1132)
  Moessbauer effect of krypton-83 in, produced by beta decay of bromine-83, 22:24408 (IA-1128, pp 21-54)
  radiation effects on thermal decomposition of, 22:15231
  radiation effects on, distribution of bromine-82g recoils in various bromine oxidation states, neutron, 22:12384
POTASSIUM BROMIDES
  see also Potassium Uranyl Bromides
  angular and velocity distribution from crossed-beam reactions of potassium with deuterium and hydrogen bromides, (E), 22:5112
  bremsstrahlung absorption in different thicknesses of, (E), 22:9451
  bromine NMR in single crystals of, quadrupole effects in, (E), 22:11540
  bromine-82 exchange between platinum bromide complexes containing ammonia and, mechanism of, 22:30574
  color centers in, analysis using pulsed electron beams, 22:11516
  effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
  effects on reactions of recoil chromium-51 in potassium chromates, 22:25398
  electron reactions with films of, energy loss and optical constants for 51-keV, (E/T), 22:41355
  electron reactions with, energy loss in, (E), 22:29204
  electron spin resonance spectra of uv-irradiated single-crystal, doped with KSH and KSeH, (E/T), 22:41649(T) (NRC-TT-1311)
  field gradients at bromine nuclei around substitutional chlorine ion in, NMR measurements of, 22:20084
  krypton ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
  krypton-83 Moessbauer effect in, (E), 22:9477
  krypton-83 Moessbauer effect studies on, (E), 22:1292 (IA-1132)
  Moessbauer effect of krypton-83 in, produced by beta decay of bromine-83, 22:24408 (IA-1128, pp 21-54)
  neutron reactions with, at 500 keV, 22:3169(R) (NYO-3822-2)
  oxygen molecular ion (O_2^-) ENDOR in, 22:50225 (UR-3388-10)
  photoeffect quantum yields from, (E), 22:38799
  proton energy loss spectra in single crystals of, effects of crystal orientation on 6-72-MeV, 22:46248
  radiation effects on crystals of, monochromatic x, 22:47448(R) (PRNC-69)
  radiation effects on, at 20°K, x, (E), 22:13605
  radioinduced activator centers in europium-activated crystals of, structure of x, 22:9442
  radioinduced color centers in, Stark effect in x-, 22:22199 (COO-1105-128)
  radioinduced color centers in, temperature dependence of F, K, and M bands in x, 22:52894
  radioinduced defects in crystals of, evidence for Frenkel, x, (E), 22:37045
  radioinduced defects in, temperature effects on x, 22:1331
  radioinduced F centers at 78°K in crystals of, effects of bromine K edge energy on x, (E), 22:44206 (CONF-680902-3)
  radioinduced F centers in, at 78 and 300°K and 13.4 or 14.1 keV, x-, (E), 22:31945 (TID-24503)
  radioinduced F centers in, effects of bromine K-shell ionization on formation of x, (E), 22:5421 (PRNC-106)
  radioinduced Frenkel defects in low-temperature, x-, 22:31981
  radioinduced luminescence and photoluminescence in europium-activated crystals of, mechanism of x, 22:9441
  radioinduced scintillations in thallium-activated, temperature dependence of relative quantum efficiency of F- and Tl°-, 22:34769
  radioinduced volume expansion of, low temperature x-, 22:22236
  spectra of lithium-doped, lithium isotope effects on far infrared, (E/T), 22:24432
  spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  spectra of, isotope effects on role of oxygen impurity

centers in, 22:8062

- temperature dependence of the brightness of x-ray luminescence and optical flash in activated phosphors of, (E), 22:3188
- volume changes on mixing aqueous solutions of, with tetraalkylammonium bromides, effects of deuterium in water on, 22:23011
- xenon ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
- KBr--KI, spectra of mixed crystals of, far-infrared absorption, 22:3168 (NYO-2391-64)

POTASSIUM tert-BUTOXIDE

- deuterium exchange between fluorene and, in 2-methyl-2-propanol, mechanism of, 22:37725
- deuterium exchange between furan or methylfurans and, in dimethyl sulfoxide solutions, 22:45042
- effects on deuterium exchange between methyl sulfoxide and phenyl ether, diphenylmethane, furan, methyl phenyl sulfide, thiophene, or toluene, catalytic, 22:45087
- reactions with 3-halopentanes in 2-methyl-2-butanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
- reactions with fluorene in 2-methyl-2-propanol, mechanism of autoxidation,✓ 22:37725
- 2-methyl-2-propanol--methyl sulfoxide--potassium tert-butoxide, proton transfer reactions in, deuterium kinetic isotope effects in, 22:6301

POTASSIUM CARBONATES

- analysis for oxygen by neutron activation, 22:30457
- effects as seed on combustion products of methane and residual oil in air, 22:26275
- effects on electric conductivity of nitrogen plasma, 22:39126
- radiolysis of frozen aqueous solutions of, EPR spectral studies on γ, 22:33424
- reactions with americium for separation from curium, 22:18877
- use in separation of americium and curium, 22:21090 (DP-1109)

POTASSIUM CERIUM FLUORIDES

- crystal structure of, 22:25328 (ORNL-4229, pp 50-67)

POTASSIUM CHLORATES

- analysis for water, microchemical method for, 22:9(R) (NBS-TN-425)
- effects on electric conductivity of nitrogen plasma, 22:52769 (AD-672249)
- effects on uptake of technetium by brain tissues, choroid plexus, and thyroid gland in man, 22:36325
- radioinduced decomposition of crystalline, yields in γ, 22:10278
- radioinduced infrared and ultraviolet absorption bands in, effects of optical and thermal bleaching on x, (E), 22:7385
- radiolysis of, yields in electron, 22:16589
- spectra of x-irradiated, infrared absorption, 22:44241

POTASSIUM CHLORIDES

- see also Potassium Uranyl Chlorides
- analysis for chloride, coulometric, 22:9(R) (NBS-TN-425)
- bremsstrahlung absorption in different thicknesses of, (E), 22:9451
- bremsstrahlung transmission at 10 MeV, effect of crystal thickness and beam diameter on, (T), 22:21892
- color center wave functions in, crystal field effects on F, 22:41642 (COO-1197-31)
- color centers in crystals of, effects of hydrostatic pressure and temperature on, (T), 22:9440
- color centers in crystals of, mechanism of conversion of F to M and R centers, 22:20038(R) (COO-1052-9)
- color centers in strontium-activated monocrystal of, Stark effect of Z, (E/T), 22:47383 (TID-24640)
- color centers in sulfur-containing crystals of, optical absorption and photochemical properties of SH', S', and S'', (E), 22:15574(T) (NP-tr-1614)
- color centers in, analysis using pulsed electron beams, 22:11516
- content of growth solutions for paramecia, effects of, on uv-radiosensitivity of osmoregulation, 22:15121
- corrosive effects on stressed titanium--aluminum--molybdenum--vanadium alloy at 650°F, 22:28733 (DP(NASA)-941)
- defects in crystals of, polarization energy for, (T), 22:7350(R) (NYO-3657-2)
- defects in crystals of, Stark effect on F-center emission band, (E/T), 22:15567 (NYO-3564-9)
- defects in, Stark splitting of R-center, (E/T), 22:3167 (NYO-2150-34)
- deformation of single crystals of x-irradiated luminescence caused by, 22:5452
- diffusion of argon-39 and -41 in neutron-irradiated single crystals of, 22:3197
- effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
- effects on hydrolysis of hydrated thorium tetrafluoride at 700°C, 22:37719(T) (UCRL-Trans-10235)
- effects on leachability of radium from uranium ores, 22:25478
- effects on reactions of recoil chromium-51 in potassium chromates, 22:25398
- effects on recovery of Streptomyces sp. from lethal and mutagenic doses of uv radiation, 22:23690
- effects on retention of cesium-137 in muscles of rats, 22:43249
- effects on rubidium-86 uptake by corn root segments, 22:33775
- effects on separation of strontium-90 and yttrium-90 using alkylarylsulfonic acid foams, 22:45166
- effects on temperature of maximum density of normal and heavy water, 22:42684
- effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
- electron reactions at 10 to 50 keV with single crystals of, quasi-elastic ejection of valency electrons in, (T), 22:50036
- electron reactions at 4 to 12 keV with films of, secondary electron emission in, (E/T), 22:49988 (SLAC-86)
- electron reactions with, energy loss in, (E), 22:29204
- electron spin resonance spectra of cyanogen radicals and lithium ions in, 22:15566(R) (NYO-2150-40)
- electron spin resonance spectra of uv-irradiated single-crystal, doped with KSH and KSeH, (E/T), 22:41649(T) (NRC-TT-1311)
- epitaxial growth of fcc metals on ultrahigh vacuum-cleaved, role of surface defects in, 22:48196
- equation-of-state calculations for, numerical problems with Grueneisen ratios in, 22:26453 (UCRL-70670(Rev.1))
- ion channeling in crystals of, computer simulation studies of chloride, potassium, and sodium, 22:37033
- ion-induced electron emission from single crystals of, incident angle dependence of 70- to 700-eV helium and neon, (E), 22:50251
- krypton depth distribution in, after sputtering at low energies, 22:52893
- krypton ion ranges in, measurement using sputtering technique, 22:26222
- krypton ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
- lithium ion (Li^+) defects in, dynamics and thermal properties of molecular models of, 22:5419 (NYO-2391-24)
- mixing with fused lithium chloride, heat of, 22:31502
- neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
- neutron total cross sections at 30 to 650 keV, (E), 22:20578 (WASH-1079)
- oxygen molecular ion (O_2^-) ENDOR in, 22:50225 (UR-3388-10)
- phase distribution of americium and plutonium with, as molten-salt electrolyte for electrorefining of plutonium, (E), 22:12986 (RFP-1065)
- phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
- photoeffect quantum yields from, (E), 22:38799
- production of high-purity, 22:14482 (ORNL-4196, pp 90)
- radiation effects on 0.4-4°K thermal conductivity of crystals of, evidence for colloid formation in gamma, 22:44207 (COO-1629-8)
- radiation effects on color centers in crystals of, neutron, (T), 22:9440
- radiation effects on color centers of iodine- and iodine--lead-activated, x, 22:36964 (AD-665980)
- radiation effects on cyanide-doped, ESR study of $(CN)_2^-$ radical from γ, 22:12369
- radiation effects on dislocation density and hardness of crystalline, ionizing, 22:34094
- radiation effects on electric conductivity of, gamma and x, (E), 22:34748
- radiation effects on fracture surface energy of crystals of, gamma, 22:20038(R) (COO-1052-9)
- radiation effects on fracture surface energy of single crystals of, γ and x, 22:33431
- radiation effects on microhardness of whisker crystals of, x, (E), 22:46241
- radiation effects on single crystals of, photostimulated exoemission of electrons excited by electron, (E), 22:41655
- radiation effects on thermal conductivity of single-crystal, at 0.4 to 4.0°K, gamma, (E), 22:20040(R) (COO-1629-3)
- radiation effects on, at 20°K, x, (E), 22:13605
- radiation effects on, chemical state of sulfur-35 from neutron, 22:45105
- radiation effects on, production of sulfur-35 in neutron, 22:35874
- radioinduced activator centers in europium-activated crystals of, structure of x, 22:9442
- radioinduced color center formation in, x, (E/T), 22:48192
- radioinduced color centers and thermoluminescence in crystals of, gamma and x, (E), 22:34748
- radioinduced color centers in crystals of, chemical method for studying, 22:34770
- radioinduced color centers in crystals of, effects of temperature and simultaneous exposure to light on production of x, (E), 22:13551
- radioinduced color centers in pure and calcium-doped crystals of, effects of deformation on gamma, (E), 22:17825
- radioinduced color centers in, relations with photomobility of dislocations from gamma, 22:49864
- radioinduced color centers in, Stark effect in x-,

22:22199 (COO-1105-128)
radioinduced coloration of, containing calcium ion impurities, x, (E), 22:41659
radioinduced defect production and annihilation in, gamma, 22:9466
radioinduced defects in, 22:5420(R) (NYO-3842-1)
radioinduced defects in crystals of, comparison with magnesium oxides, electron, (E), 22:31938 (BNL-50083, pp 410-19)
radioinduced defects in crystals of, evidence for Frenkel, x, (E), 22:37045
radioinduced defects in single crystals of, mechanism of thermal annealing of, x, (E), 22:34795
radioinduced defects in whisker crystals of, effects of surface-to-volume ratio on production of x, (E), 22:46241
radioinduced defects in, slow electron, (T), 22:22240
radioinduced F centers in crystals, simultaneous production and bleaching of x, (E), 22:11559
radioinduced F centers in fiber crystals of, kinetics of accumulation of x, (E), 22:41684
radioinduced F centers in, at 78°K, x-, (E), 22:31945 (TID-24503)
radioinduced F centers in, energy required for x, (E), 22:5421 (PRNC-106)
radioinduced formation of phosphorus-32 in, effects of thermal annealing on valence distribution in neutron, 22:18831
radioinduced formation of phosphorus-32 in, valence distribution in neutron, 22:18830
radioinduced Frenkel defects in low-temperature, x-, 22:31981
radioinduced Frenkel defects in, production and thermal annealing of x, (E), 22:13594
radioinduced hole centers in iodide-containing, crystals of ESR and optical studies of ICl^- V/sub K/, x, 22:44230
radioinduced luminescence and photoluminescence in europium-activated crystals of, mechanism of x, 22:9441
radioinduced scintillations in thallium-activated, temperature dependence of relative quantum efficiency of F- and Tl^0-, 22:34769
radioinduced stabilization of copper atoms in crystals of, EPR study of x, (E), 22:22219
radioinduced volume expansion of, low temperature x-, 22:22236
reactions of aqueous solutions of, with alumina--chromia catalysts, 22:4066(R) (COO-1354-13)
reactions with thorium at 800 to 970°C, equilibrium constant and thermodynamics of, 22:35781
reactions with uranium oxides UO_3 and U_3O_8, properties of diuranates from, 22:40089
scattering of molecular beams of, by hydrogen bromide, iodomethane, krypton, and xenon, velocity dependence of total cross sections for, (E), 22:11235
separation of boron from, 22:33208(R) (MLM-1456)
shear properties of single crystals of, effect of neutron or gamma irradiation on, (E), 22:46205
sound attenuation in pure and lithium-containing, ultrasonic, 22:13534 (NYO-2471-31)
spectra at 80°K on thin films of, Cl^- L_{23} absorption, (E), 22:46228
spectra of, effects of heavy water as solvent on far-infrared, 22:16520
temperature dependence of the brightness of x-ray luminescence and optical flash in activated phosphors of, (E), 22:3188
use of films of, for detection of relativistic particles, 22:40361(T) (SLAC-Trans-84)
vapor pressure of, development of isopiestic apparatus for measuring, 22:23003 (IA-1128, pp 97-146)
xenon ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
yields in gamma-radioinduced decomposition of crystalline potassium chlorate, 22:10278
$AlCl_3$--KCl, decomposition voltage of molten, 22:1939(T) (AI-Trans-257)
$AlCl_3$--KCl, density of molten, 22:1939(T) (AI-Trans-257)
$AlCl_3$--KCl--NaCl--$NbCl_5$, phase diagrams of, 22:12307
$AlCl_3$--KCl--NaCl--$TaCl_5$, phase diagrams of, 22:12307
$CaCl_2$--KCl--$MgCl_2$--$PuCl_3$--UCl_3, properties as breeder fuel, 22:4130
$CeCl_3$--KCl, thermodynamic properties at 825°C, 22:37707 (BNL-50082, pp 27-39)
CsCl--KCl, radiation effects on, oxidation states of recoil radioiodine from proton, 22:25389
CuCl--KCl, solvent properties of molten, for uranium, plutonium, americium, and curium, 22:4255
KCl--KF, separation of boron from, 22:25440(R) (MLM-1443)
KCl--KF, separation of boron from, method for, 22:1956(R) (MLM-1405)
KCl--KF--K_2NbF_7--Nb_2O_5, electrolysis of molten, electrowinning of niobium by, 22:19492
KCl--KNO_3, molal volume and refractive index of aqueous solutions of, 22:23003 (IA-1128, pp 97-146)
KCl--LaOCl, phase studies on, 22:33353
KCl--LiCl, capacity measurements on, development of dropping bismuth electrode for, 22:37707 (BNL-50082, pp 27-39)
KCl--LiCl, effects of molten eutectic of, on polarographic behavior of rare earth and yttrium chlorides, 22:27690
KCl--LiCl, performance as bath for separation of plutonium dioxide from uranium dioxide, 22:30669
KCl--LiCl, purification of molten, by column crystallization and zone melting, 22:16670
KCl--LiCl, reactions of molten, with plutonium dioxide at 800°C, 22:25442 (ANL-7375, pp 19-45)
KCl--LiCl, solvent properties for chlorine, effects of temperature on, 22:37707 (BNL-50082, pp 27-39)
KCl--LiCl--UCl_3, use in separation of uranium from molybdenum, niobium, and zirconium by electrolysis, 22:25454 (CEA-N-616, pp 246-94)
KCl--$MgCl_2$, Raman spectrum of fused, 22:36774 (ANL-7450, pp 90-104)
KCl--$MgCl_2$--MgF_2--NaCl, phase disengagement studies on entrainment of metals in, 22:22653(R) (ANL-7419)
KCl--$MgCl_2$--NaCl, cerium distribution between magnesium--zinc alloy and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, containment of copper--magnesium in, by silicon carbide, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, corrosive effects of, in mixture with copper--magnesium--uranium on molybdenum, niobium, and TZM alloy, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, corrosive effects of, in system with copper--magnesium--uranium on vitreous carbon crucibles at 700°C, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, effects on cerium transport from copper--magnesium alloy to magnesium--zinc alloy, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, neptunium distribution between copper--magnesium alloys and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, phase disengagement studies on entrainment of metals in, 22:22653(R) (ANL-7419)
KCl--$MgCl_2$--NaCl, plutonium distribution between copper--magnesium alloy or magnesium--zinc alloy and, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, reactions of molten, with plutonium dioxide at 800°C, 22:25442 (ANL-7375, pp 19-45)
KCl--$MgCl_2$--NaCl, sorption by Fiberfrax, 22:25442 (ANL-7375, pp 19-45)
KCl--NaCl, corrosive effects of molten equimolar, on zirconium, 22:2583
KCl--NaCl, electrolysis of plutonium trichloride in, preparation of plutonium by, 22:25455 (CEA-N-616, pp 295-368)
KCl--NaCl--NaF, complexes of uranium in melts of, 22:8078
KCl--NaCl--$PbCl_2$, electromotive force of, effects of uranium tetrachloride on, 22:33318
KCl--NaCl--$PuCl_3$, distribution of americium between liquid plutonium and molten, 22:12290
KCl--NaCl--$PuCl_3$, plutonium equilibrium potential in, 22:42669
KCl--$PbCl_2$, chlorine-36 exchange between molten, and chlorine gas, 22:4124
KCl--$PbCl_2$, transport number for chloride ions in, tracer studies on, 22:27619 (CEA-N-816, pp 90-101)
KCl--PrOCl, phase studies on, 22:33353
LiCL--KCl, performance of eutectic, in scrubbing process for purification of tungsten hexachloride, 22:4749 (BM-RI-6984)
LiF--KCl, phase diagram calculation for reciprocal system, 22:52556 (ANL-7425, pp 172-89)

POTASSIUM CHLOROPALLADATES
effects on radioinduced polymerization of butadiene, 22:33387

POTASSIUM CHLORORHODATES
reactions with pyridine, effects of deuterium on catalyzed, 22:10241

POTASSIUM CHROMATES
annealing of chromium-51 recoil fragments in reactor-irradiated pellets of, in contact with boric acid pellets, 22:12363
electron spin resonance of gamma- and neutron-irradiated, 22:32007
radiation effects on phosphate-doped crystals of, annealing of thermal-neutron, 22:33396
radiation effects on thermal degradation of K_3CrO_8, x, 22:18847
radiation effects on, effects of isothermal annealing on fast-neutron and γ, 22:12362
radioinduced chromium-51 enrichment in, neutron, 22:14527
radioinduced thermal annealing of neutron-irradiated, chemical effects of electron- and γ-, 22:27827
radiolysis of, ESR study of γ and neutron, 22:2098 (IFA-ESR-16)
reactions of recoil chromium-51 in, effects of alkali metal halides on, 22:25398
use in potentiometric determination of uranium in phosphoric acid, 22:1968(T) (CEA-tr-X-630)
use in potentiometric titration of molybdenum and vanadium, 22:16418
use in separation of fission products from kerosene degraded by nitric acid, 22:4245
use in standardization of ceric sulfate solutions, 22:8055

POTASSIUM COBALT CYANIDES

  complexes with chromium, relaxation processes in, spectral studies on, 22:37712(R) (COO-773-15)
POTASSIUM COBALT FERROCYANIDES
  structure of, electron-graphic and electron-microscopic studies on, 22:35825
POTASSIUM COBALT FLUORIDES
  magnon-phonon interaction in single crystals of, at low temperature, (E), 22:11944(R) (AECL-2780)
POTASSIUM COPPER FERROCYANIDES
  structure of, electron-graphic and electron-microscopic studies on, 22:35825
POTASSIUM CURIUM FLUORIDES
  preparation and crystal structure of $K_7Cm_6F_{31}$, 22:2080
POTASSIUM CYANATES
  radioinduced defects in crystals of, ESR and optical absorption studies of electron and gamma, 22:17725(R) (NYO-2047-42)
POTASSIUM CYANIDES
  effects on radioisotope uptake by tracheal cells of guinea pigs, 22:12804
  effects on repair of uv-induced lesions in Escherichia coli, 22:51526
  ion rotational motion in doped potassium chloride single crystals, (E), 22:35293(R) (ORNL-4230)
  radiation effects on, ESR study of $(CN)_2^-$ radical from γ, 22:12369
  radiolysis of, yields in neutron, 22:45100
POTASSIUM DEUTERIDES
  thermodynamics of, 22:12958
POTASSIUM DICHROMATES
  HF--H_3PO_4--$K_2Cr_2O_7$, use as solvent in spectrophotometric determination of nitrogen in refractory metals and alloys, 22:16448
POTASSIUM DIOXOPENTAFLUOROURANATE
  reactions with oxalate ions, 22:33325
POTASSIUM DITHIONATES
  radiolysis of solid, gamma, 22:25436
POTASSIUM ETHOXIDE
  reactions with 2-(2,4-dinitrophenoxy)ethanol in dioxane, formation of spiro Meisenheimer complexes by, 22:96(R) (RRL-2310-214)
  reactions with 3-halopentanes in ethanol, effects of deuterium on cis- and trans-2-pentene formation by, 22:27719
POTASSIUM FERRICYANIDES
  effects on sorption of uranium by ion exchange resins, 22:30566
  iron-57 Moessbauer effect in, (E), 22:46273
  iron-57 Moessbauer effect in, magnetic hyperfine structure from, (E), 22:15577
  Moessbauer spectra at 0.025 to 0.04°K, (E), 22:11496
  reactions of alkaline aqueous solutions of, in argon and helium atmospheres, comparison of gamma radiolysis with silent discharge, 22:4181
POTASSIUM FERROCYANIDES
    see also Potassium Cobalt Ferrocyanides
  crystal structure of deuterated, neutron diffraction studies of, 22:43596 (ANL-7299, pp 280-9)
  determination by redox method using neutron-activated silver, 22:40021
  iron-57 Moessbauer effect in solidified aqueous solutions at -191 to 0°C, (E), 22:46255
  precipitation of cadmium, cobalt, copper, and zinc by, conditions for, 22:35793
  use in determination of thorium by amperometric titration, 22:48825
  use in titrimetric determination of cerium, 22:16434
POTASSIUM FLUORIDES
    see also Potassium Cobalt Fluorides
    see also Potassium Iron Fluorides
    see also Potassium Manganese Fluorides
    see also Potassium Niobium Fluorides
    see also Potassium Protactinium Fluorides
    see also Potassium Thorium Fluorides
    see also Potassium Uranium Fluorides
    see also Potassium Uranyl Fluorides
  defects in crystals of, Stark effect on F-center emission band, (E/T), 22:15567 (NYO-3564-9)
  effects on hydrogen yields in radiolysis of deuterated methanol, 22:23034 (IA-1128, pp 78-96)
  effects on separation of trace amounts of rare earths from uranium by ion exchange, 22:47215
  effects on survival of Escherichia coli, combined effects of γ radiation on, 22:40967
  effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
  electron reactions with, energy loss in, (E), 22:29204
  fluoride chemical shifts in, effects of deuterium in solvent on, 22:16510
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
  radiation effects on electron stabilization in neutral, vitreous, aqueous solutions of, at -196°C, EPR studies on γ, 22:23060
  radiation effects on, at 20°K, x, (E), 22:13605
  radioinduced reactions with organic compounds, preparation of fluorine-18-labeled compounds by γ, 22:27804
  spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  BeF_3--KF--NaF, corrosive effects on Croloy 9M and Hastelloy N at 610°C, 22:8696 (ORNL-4170, pp 192-205)
  H_2O--KF--MoO_3, phase studies and compound formation in, 22:45080
  H_2O--KF--UO_3, phase studies and compound formation in, 22:45080
  H_2O--KF--WO_3, phase studies and compound formation in, 22:45080
  HF--H_2O--KF, fluorine-19 NMR chemical shift in, effects of deuterium on, 22:27673
  KBF_4--KF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:47112 (ORNL-4254, pp 88-173)
  KCl--KF, separation of boron from, 22:25440(R) (MLM-1443)
  KCl--KF, separation of boron from, method for, 22:1956(R) (MLM-1405)
  KCl--KF--K_2NbF_7--Nb_2O_5, electrolysis of molten, electrowinning of niobium by, 22:19492
  KF--LiF, electroplating of zirconium on uranium from molten, 22:52143 (BNWL-825)
  KF--LiF--NaF, electrochemical properties of molten, 22:10139(R) (ORO-3518-4)
  KF--LiF--NaF, electroplating of zirconium on uranium from molten, 22:52143 (BNWL-825)
  KF--LiF--NaF, voltammetry in molten, 22:10139(R) (ORO-3518-4)
  KF--PaF_4, preparation and structure of, 22:30555
  KF--YF_3, phase diagram of, 22:45079
POTASSIUM FLUOROBORATES
  preparation of high-purity, 22:25327 (ORNL-4229, pp 3-21)
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
  solvent properties for fluorides, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:47112 (ORNL-4254, pp 88-173)
POTASSIUM FLUORONIOBATES
  $NiSO_4$--K_2NbF_7, performance as electrolyte for deposition of nickel--niobium coating on iron and steel, 22:17087
POTASSIUM FLUOROSILICATES
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
POTASSIUM FLUOROURANATES
  paramagnetic resonance of single crystals of, 22:50980
POTASSIUM HALIDES
  color centers in, empirical relationships for emission energies and lifetimes of F, 22:13537 (ORNL-TM-2054)
  positron annihilation rates in crystals of, (E), 22:52511
POTASSIUM HYDRIDES
  positron lifetime in, delayed coincidence system study of, (E), 22:38732
  thermodynamics of, 22:12958
POTASSIUM HYDROXIDES
  effects on gaseous yields in photolysis and radiolysis of nitrous oxide in alcohol solutions, 22:23034 (IA-1128, pp 78-96)
  effects on yields in gamma radiolysis of methanol solutions containing nitrous oxide, 22:10281
  isotopic exchange between gaseous deuterium and aqueous solutions of, 22:40097
  radiation effects on heavy and light water solutions of, spectral studies on γ, 22:23060
  reactions with tungsten surfaces, passivation and polishing, 22:52136
  solvent properties for beryllium, 22:27845 (CEA-N-816, pp 150-276)
  KOH--NaOH, radiolysis of aqueous solutions of, formation of solvated electrons in pulsed-electron, 22:42795
POTASSIUM INDIUM CHLORIDES
  radiation effects on, electrophoretic behavior of complexes from neutron, 22:45094 (LFEN-78)
POTASSIUM IODATES
  effects on active transport of iodine-131 in respiratory tract of guinea pigs and rats, 22:431
  radiolysis of, yields in electron, 22:16589
POTASSIUM IODIDES
  bremsstrahlung absorption in different thicknesses of, (E), 22:9451
  bremsstrahlung transmission at 10 MeV, effect of crystal thickness and beam diameter on, (T), 22:21892
  effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
  effects on γ-radiosensitivity of DNA, 22:45397
  effects on iodine-131 content of body and thyroid of rats, 22:19254
  effects on iodine-131 uptake by thyroid gland of man, 22:8458
  effects on reactions of recoil chromium-51 in potassium chromates, 22:25398
  effects on uptake of iodine-131 and iodine-132 by human thyroid gland, 22:38340
  iodine-131 exchange between 1-iodo-2,4-dinitronaphthalene or 1-iodo-2,4-dinitrobenzene and, effects of solvent

on, 22:10244
  iodine-131 exchange between iodohippuric acid and, 22:25341
  krypton ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
  luminescence of, photon- and γ-induced, 22:29560
  oxygen molecular ion (O_2^-) ENDOR in, 22:50225 (UR-3388-10)
  photoeffect quantum yields from, (E), 22:38799
  radiation effects on, oxidation of negative iodine ions from 400-keV electron and gamma, 22:2435
  radioinduced activator centers in europium-activated crystals of, structure of x, 22:9442
  radioinduced color centers in crystals of, optical spectral studies of pulsed electron, (E), 22:48163
  radioinduced color centers in, Stark effect in x-, 22:22199 (COO-1105-128)
  radioinduced defects in, slow electron, (T), 22:22240
  radioinduced hole color centers in thallium-activated, capture of x-, (E), 22:5441
  radioinduced luminescence and photoluminescence in europium-activated crystals of, mechanism of x, 22:9441
  radioinduced luminescence in natural and indium-activated, decay characteristics of x, 22:26526
  radioinduced metastable color centers in crystals of, bleaching effects on spectra of gamma, 22:20038(R) (COO-1052-9)
  radioinduced scintillations in thallium-activated, temperature dependence of relative quantum efficiency of F- and Tl^0-, 22:34769
  radioprotective effects of, 22:45437
  radioprotective effects of, on rabbits, combined effects of immunization on, 22:49382
  spectra of silver-doped, silver isotope effects on far infrared, (E/T), 22:24432
  spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  temperature dependence of the brightness of x-ray luminescence and optical flash in activated phosphors of, (E), 22:3188
  xenon ion reactions up to 85 keV with, inert gas diffusion and release in, (E), 22:17774
  H_2SO_4--KI, separation of antimony from, by solvent extraction using benzene, 22:16658
  HgI_2--KI, Raman spectrum at 130°C, 22:36774 (ANL-7450, pp 90-104)
  HgI_2--KI, spectrum at 130°C, Raman, 22:52556 (ANL-7425, pp 172-89)
  KBr--KI, spectra of mixed crystals of, far-infrared absorption, 22:3168 (NYO-2391-64)
  KH_2PO_4--KI, use as chemical dosimeter for electron and gamma radiation, 22:2435
POTASSIUM IONS
  channeling in potassium chloride and sodium chloride crystals, computer simulation studies of, 22:37033
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  diffusion in nitrogen and hydrogen at low energies, drift velocities from, (E), 22:29293
  effects on cesium emission intensity in hydrogen flames with various mixtures of nitrogen--oxygen, 22:27573
  effects on cesium fixation and sorption by layer silicate minerals, 22:35923(R) (NYO-2955-15)
  effects on electrolyte coagulation and stability of aquosol of antimony trisulfide, 22:4095
  effects on physiology of ureteral muscle of guinea pigs, 22:43240
  effects on retention of sodium ions by erythrocyte membranes, 22:19238(R) (NYO-3148-12)
  effects on rubidium-86 uptake by corn root segments, 22:33775
  effects on solvent extraction separation of cerium or yttrium from hydrochloric acid using bis(2-ethylhexyl) ester of phosphoric acid, 22:42844
  electron reaction with, ionization cross section for $K^+ + e \to K^{2+} + 2e$ to 3.0 keV, 22:36721
  elution from alfalfa, 22:21460(R) (COO-1171-82)
  energy levels of, nonadiabatic corrections to, 22:9007
  exchange equilibria of, between molten sodium nitrate and sodium zeolite A, 22:42832
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  mobility in gaseous hydrogen, 22:38791
  motion in potassium plasma, in electric fields, 22:52807
  radiation effects on content of, in blood plasma and cerebrospinal fluid of rabbits, protective effects of cystamine against, 22:51903
  radiation effects on content of, in blood serum of man, 22:4694
  radiation effects on content of, in yeasts, effects of, on activity of cocaetokinase, x, 22:43219
  radiation effects on permeability of erythrocyte membranes of man to, x, 22:23426
  radiation effects on transport of, in rat liver mitochondria, electron, 22:440
  radiative association in the ionosphere, (T), 22:13328
  range of channeled, in tungsten single crystals, temperature effects on maximum, (E), 22:26478
  ranges in gold above 100 keV, measurement using chemical film technique, 22:26223
  reactions with deuterium and hydrogen molecules, time-of-flight measurements of inelastic energy losses in, 22:47825
  reactions with deuterium molecules, reaction rate determination from ion mobility measurements, 22:41376
  reactions with helium atoms at 0.8 to 9.0 keV, excitation of K II resonance lines in, (E), 22:50038
  reactions with hydrogen molecules, reaction rate determination from positive ion mobility measurements, 22:41376
  reactions with molecular nitrogen, transfer of rotational and vibrational energies in, (E), 22:21895
  reactions with potassium atoms at 10 to 500 eV, total cross sections for resonant charge exchange in, (E), 22:47826
  scattering by molybdenum monocrystals at 0.3 to 4 keV, coefficients for, 22:5128
  scattering on molybdenum monocrystals, energy spectra of secondary ions from, (E/T), 22:21894
  separation of radioactive, from sodium, use of spacers for electrophoretic, 22:161
  sorption by roots of plants, effects of uranyl ions on, 22:8494
  sorption on molybdenum surfaces subjected to potassium atomic beams, (E), 22:38746
  uptake by Chlorella pyrenoidosa, 22:21011(R) (UCB-34-P-5-47)
  uptake by roots of barley, effects of respiration on, 22:21011(R) (UCB-34-P-5-47)
POTASSIUM IRIDIUM CHLORIDES
  analysis of neutron-irradiated, for radioactive iridium compounds by chromatographic and electrophoretic methods, 22:33400
POTASSIUM IRON FERROCYANIDES
  structure of, electron-graphic and electron-microscopic studies on, 22:35825
POTASSIUM IRON FLUORIDES
  iron-57 Moessbauer effect in, relaxation and exchange induced quadrupole effects in, (E), 22:1361
  iron-57 Moessbauer high-pressure isomer shift measurements in $KFeF_3$, 22:17803
POTASSIUM IRON SULFATES
  crystal field splitting in Tutton salt, from Moessbauer studies, (E), 22:26459
POTASSIUM ISOTOPES
  effects on molecular crosslinking in organisms, relation of, to aging, 22:49193
  energy-level parameters for, data compilation for, (E), 22:9819
  nuclear reaction and level parameters for, data compilation on, 22:29977
  separation by electromigration in cation exchange membrane, 22:42842
POTASSIUM ISOTOPES K-36
  nuclear mass excess from reaction Q-value measurements, (E), 22:9845
POTASSIUM ISOTOPES K-37
  energy level at 2750 keV, branching ratio and spin of, (E), 22:3671
  energy level of, position of T = 3/2, (E), 22:53124
  energy levels and mass from potassium-39 (p,t) reactions at 45 MeV, (E), 22:20555
  energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631
  energy levels of, T = 3/2 quartet, (E), 22:53129
  nuclear magnetic moment, (E), 22:32519
  spectra of, hyperfine splitting in, (E), 22:32519
POTASSIUM ISOTOPES K-38
  energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
  production in alpha reactions with titanium-50, (E), 22:11956
POTASSIUM ISOTOPES K-39
  abundance ratio to potassium-41 in potassium metal, mass-spectrometric determination of, 22:18723
  alpha differential elastic scattering cross section at 22 to 29 MeV, optical-model analysis of angular distributions for, (E/T), 22:20499 (INP-577/PL)
  alpha differential elastic scattering cross section at 22 to 29 MeV, resonance in, (E), 22:27062
  alpha inelastic scattering at 42 MeV, angular distributions for, (E/T), 22:44668
  alpha reactions (α,d) and (α,t) at 31 MeV, angular distributions for, (E), 22:32574 (MIT-2098-422, pp 95-105)
  content of cells and extracellular fluid in relation to potassium-41, 22:28311
  deuteron differential inelastic scattering cross sections at 15 MeV, angular distributions for, (E), 22:35252
  deuteron reactions (d,α) at 4.5 to 5.3 MeV, angular distributions and excitation functions for, (E), 22:26932(R) (NP-17434)
  deuteron reactions (d,α) at 4.55 to 5.32 MeV, statistical analysis of cross sections for, (E), 22:41992
  deuteron reactions (d,α) at 4.9 to 5.3 MeV, differential cross sections and α spectra for, (E), 22:11948(R) (NP-17216)
  deuteron reactions (d,He-3) at 34.5 MeV, angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)

deuteron reactions (d,He-3) at 34.5 MeV, cross sections and Q-value for, (E), 22:50584
energy levels from alpha inelastic scattering, (E), 22:26929(R) (COO-1420-139)
energy levels from α inelastic scattering, spin-parity assignments for, (E/T), 22:44668
energy levels from calcium-40 (n,d) reactions, (E), 22:5798
energy levels from deuteron inelastic scattering, collective core excitation in low-lying, (E), 22:35252
energy levels from proton inelastic scattering at 7.12 to 8.51 MeV and calcium-42 (p,α) reactions at 10.6 to 11.1 MeV, (E), 22:15986
energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631
energy levels of, electronic g factors for, 22:9056
exchange with potassium-42, between soil and solution, 22:42662
helium-3 differential elastic scattering cross section at 18 MeV, angular distribution for, (E), 22:27009
helium-3 elastic scattering at 12, 14, and 16 MeV, angular distributions for, (E), 22:9835
helium-3 reactions (He-3,d) at 14 MeV, angular distributions for, (E), 22:9835
helium-3 reactions (He-3,d) at 18 MeV, (E), 22:26980
helium-3 reactions (He-3,d) at 30 MeV, angular distributions of differential cross sections for, (E), 22:9800(R) (COO-535-571)
helium-3 reactions (He-3,d) with, angular distributions for, (E), 22:39604 (CONF-670970-, pp 179-228)
helium-3 reactions (He-3,p) with, angular distributions for, (E), 22:39604 (CONF-670970-, pp 179-228)
helium-3 reactions (He-3,p) with, γ spectra from, (E), 22:20578 (WASH-1079)
helium-3 reactions (He-3,t) at 18 MeV, differential cross sections for, (E), 22:27009
hyperfine structure and lifetimes of 4^2P/sub 3/2/ and 5^2P/sub 3/2/ states of, (E), 22:41364
neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
neutron capture by, γ spectra from thermal, (E), 22:26995
neutron capture by, Moessbauer effect of 29.4 keV γ ray from thermal, (E), 22:5791
neutron differential inelastic scattering cross sections at 1.82 to 3.96 MeV, (E), 22:20556
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron reactions (n,2α) at 14 MeV, effective cross section for, (E), 22:50579
neutron reactions (n,2n) at 13.4 to 15.0 MeV, cross sections for, (E), 22:39622
neutron reactions (n,2n) at 14.2 MeV, activation cross section for, (E), 22:18180
neutron reactions (n,2n) at 14.2 MeV, cross section for, (E), 22:32530
neutron reactions (n,2n) at 14.2 MeV, statistical-model calculations of cross section for, (T), 22:20686
neutron reactions (n,d) at 14.4 MeV, differential cross sections for, (E), 22:5798
neutron reactions (n,γ) with, Moessbauer measurements on potassium-40 from, 22:39204
neutron reactions (n,pγ) at 1.82 to 3.96 MeV, differential cross sections for, (E), 22:20556
nuclear magnetic dipole moment of, measurement using magnetic resonance with density corrections, (E), 22:50563
proton reactions (p,α) and (p,γ) at 2.8 to 6.1 MeV, calcium-40 energy levels from, (E), 22:11937
proton reactions (p,γ) at 0.5 to 2.9 MeV, γ angular correlations and spectra from, (E), 22:22559 (NP-17384)
proton reactions (p,γ) at 1.24 to 1.58 MeV, γ spectra from, (E), 22:18123(R) (RLO-1925-11)
proton reactions (p,γ) with, resonances in, (E), 22:11948(R) (NP-17216)
proton reactions (p,He-3) at 45 MeV, argon-37 mass and energy levels from, (E), 22:20555
proton reactions (p,t) at 45 MeV, potassium-37 mass and energy levels from, (E), 22:20555
proton reactions (rho,γ) at 2.9 to 6.0 MeV, excitation function for, (E), 22:39617
quadrupole moment, (E/T), 22:41364
reactions between atoms of, cross sections for spin exchange in, (E), 22:2817
reactions with potassium-39 atoms, spin-exchange cross sections for, (E), 22:45963
reactions with potassium-39, EPR measurements of spin-exchange cross sections for, 22:31594 (COO-1112-159)
spectra of, intensity modulation at ground-state hyperfine frequency, 22:5079
POTASSIUM ISOTOPES K-40
abundance in Norton County achondrite, (E), 22:13166
beta emission by naturally-occurring, dose to human bone from, 22:8552
bremsstrahlung emission by, in man, gamma spectra in range of, 22:8556
content in Bay of Banyuls sediments, 22:35955
content in California and Nevada minerals and rocks, use in age estimation, 22:6472
content in Indian milk, 22:6488
content in man and large animals, design of 4π liquid scintillation whole-body counter for measuring, 22:19104
content in man, gamma-spectra analysis techniques for determining, 22:4458(R) (NYO-3136-4)
content in man, use for determining lean body mass, 22:25636
content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
content in soil and vegetation of Pelindaba, South Africa environs, 22:180 (PEL-89)
content in volcanic rocks, use in age estimation, 22:6473
content of dairy feeds in Colorado during 1967, 22:21460(R) (COO-1171-82)
content of fetal and neonatal tissues in animals and man, mechanisms of selectivity for, 22:23462
content of honey in Roumania, 22:15011
content of leaves of poplar in comparison to content of alder, reed, and willow, 22:19304
content of man in relation to body mass, use of whole-body counters for study of, 22:38405
content of man in Switzerland during 1964, effects of age, locality, and sex on, 22:21500
content of man, effects of age and sex on, 22:38302
content of man, effects of muscle and nutritional diseases on whole-body, 22:10762 (MIT-952-4, pp 202-19)
content of man, effects of thyroid disease on, whole-body counting method for determining, 22:51308 (ORAU-106, pp 171-93)
content of man, effects of, on natural photon emission, 22:488 (AEEW-M-715)
content of man, methods of measuring whole-body, 22:4614
content of man, performance of gamma spectrometers for measurement of whole-body, 22:49337
content of man, use of whole-body counters to measure, 22:514
content of milk in California, Oregon, and Washington during 1966, 22:23518
content of milk in North and South America during 1966, 22:25850
content of milk in North and South America during 1966, 22:23522
content of milk in North and South America during 1967, 22:28523
content of milk in Oklahoma and Texas during 1966, 22:23520
content of milk, γ spectroscopy of, 22:33835
content of mussels in Columbia River, 22:40614(R) (RLO-2047-2)
content of plants used for drugs, 22:2490
content of thyroid glands in human population of Marshall Islands exposed to fallout during 1954, 22:43360
content of vegetables in USSR, 22:43326
determination by radiometric methods, 22:42608
determination in animals, design of whole-body scintillation counter for, 22:28130(P)
determination in biological materials, 22:42608
determination in infants, design of 4π plastic scintillation whole-body counter for, 22:36074
determination in iron meteorites, (E), 22:21797
determination in iron meteorites, (E), 22:7082
determination in liquids, applicability and sensitivity of G--M detectors for, 22:19116
determination in man using whole-body liquid scintillation detector, 22:14758
determination in meteorites, (E), 22:7081
determination in oysters, spectrophotometric, 22:50913
determination in Saint Severin meteorite, (E), 22:7080
deuteron differential inelastic scattering cross sections at 15 MeV, angular distributions for, (E), 22:35252
effects on detection of radioisotopes in seawater, 22:2256
effects on measurement of specimens in biosphere, 22:21461
effects on properites of potassium compounds, radiometric studies of, 22:42608
effects on radiation body burdens of man, 22:33800 (A-AC-82/G/L-1182)
electron-capture decay energy for, (E), 22:13973
electron-capture decay probabilities for, (E), 22:5802
energy level at 1.64 MeV, lifetime and spin-parity assignment for, (E), 22:27043
energy levels from argon-40 (He-3,t) reactions, 2p-2h, (E), 22:44663
energy levels from deuteron inelastic scattering, collective core excitation in low-lying, (E), 22:35252
energy levels from shell-model calculations, (T), 22:7770
energy levels of, effects of angular momentum on, (T), 22:14020
gamma emission by, effects of, on tissues of seals, 22:51386
gamma emission by, use of, for estimation of whole-body potassium content of man, 22:38297
gamma energies of, measurements for calibration standards, (E), 22:50582
mass difference of 1478 +- 5 keV from argon-40, (E), 22:5817(R) (NYO-GEN-72-28)
Moessbauer effect of 29.4-keV γ ray from potassium-39 thermal neutron capture, (E), 22:5791

Moessbauer measurements with, from neutron capture in potassium-39, (E), 22:39204
monitoring in environment at Pelindaba South Africa during 1966, 22:10763 (PEL-160)
neutron reactions (n,α) and (n,p) with, cross sections and Q-value for thermal, (E), 22:13973
neutron--proton interactions in, residual, (T), 22:44648
nuclear charge distribution for ground and first excited states of, measurement using Moessbauer effect, (E), 22:5791
nuclear quadrupole moment of, from resonance radiation studies of potassium-I spectrum, (E/T), 22:45939
use for determining body composition of cattle and swine, 22:21460(R) (COO-1171-82)
use for determining lean body mass and fat content of human females, 22:28448 (NYO-2147-13, pp 64-71)

POTASSIUM ISOTOPES K-41
abundance ratio to potassium-39 in potassium metal, mass-spectrometric determination of, 22:18723
content of cells and extracellular fluid in relation to potassium-39, 22:28311
determination in iron meteorites, (E), 22:7082
deuteron reactions (d,α) at 7.5 MeV, α spectra and Q-value for, (E), 22:18181
deuteron reactions (d,He-3) at 23 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
deuteron reactions (d,p) with, proton spectra from, (E), 22:32513(R) (ANU-P-400)
energy levels from argon-40 proton elastic scattering, spins and widths of, (E), 22:7677
energy levels from calcium-42 (t,α) reactions, spin--parity assignments for, (E), 22:50590
energy levels from shell-model calculations, (T), 22:7770
energy levels of, isobaric analog, (E), 22:44660
helium-3 reactions (^{3}He,d) at 11 MeV, absolute cross sections and spectroscopic information for, (E), 22:48482
helium-3 reactions (He-3,γ) at 2 to 33 MeV, excitation function for, (E), 22:41999
helium-3 reactions (He-3,γ) at 5 to 33 MeV, excitation function for, (E), 22:27075
helium-3 reactions (He-3,p) at 13 MeV, angular distributions and excitation functions for, (E), 22:13960
helium-3 reactions (He-3,p) at 13 MeV, differential cross sections for, (E), 22:32516 (MIT-2098-422, pp 43-68)
neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
neutron capture by, γ spectra from thermal, (E), 22:26995
neutron capture by, γ spectra from thermal, (E), 22:35293(R) (ORNL-4230)
neutron capture by, Q-value for, (E), 22:45093 (COO-1618-9)
neutron capture cross section at 0.005 to 3 MeV, (E), 22:32596
neutron differential inelastic scattering cross sections at 1.82 to 3.96 MeV, (E), 22:20556
neutron reactions (n,α) and (n,p) at 14.2 MeV, activation cross sections for, (E), 22:18180
neutron reactions (n,α) and (n,p) at 14.2 MeV, cross sections for, (E), 22:32530
neutron reactions (n,α) and (n,p) at 14.8 MeV, cross sections for, (E), 22:48499
neutron reactions (n,α) at 14.2 MeV, statistical-model calculations of cross section for, (T), 22:20686
neutron reactions (n,α) in fast reactor spectrum, cross section for, (E), 22:41997
neutron reactions (n,p) at 14.2 MeV, statistical-model calculations of cross section for, (T), 22:20686
proton reactions (p,α) at 2.1 to 2.5 MeV, angular distributions and excitation functions for, (E), 22:15976
proton reactions (p,α), (p,γ), and (p,n) at 1.40 to 1.75 MeV, resonances in, (E), 22:13962
proton reactions at 1.8 to 2.2 MeV, resonances in, (E), 22:7680

POTASSIUM ISOTOPES K-42
beta and gamma decay energies from potassium-41 neutron capture, total, (E), 22:45093 (COO-1618-9)
beta decay of, β shape factor for, (E), 22:53105
beta energy yield from, use of Geiger--Mueller detectors for determining, 22:6592
beta transitions in, β-γ correlation study of first-forbidden, (E), 22:15973
content of man, methods of measuring whole-body, 22:4614
content of urine in dogs following injection into renal artery, effects of rate of exchange of potassium in kidneys on, 22:28319
energy levels from potassium-41 (d,p) reactions, (E), 22:32513(R) (ANU-P-400)
energy levels from potassium-41 thermal neutron capture, (E), 22:35293(R) (ORNL-4230)
energy levels from potassium-41 thermal neutron capture, spins of, (E), 22:26995
energy levels from shell-model calculations, (T), 22:7770
evaluation for scanning brain tumors, 22:38361
exchange with potassium-39 in soil, 22:42662
gamma emission by, use of, for estimation of whole-body potassium content of man, 22:38297
gamma emissions from, in plant tissues, use of liquid scintillation spectrometer for counting, 22:503
measurement in man, physiological factors affecting calibration of whole-body counters for, 22:21460(R) (COO-1171-82)
metabolism by guinea pigs, 22:12761(T) (UCRL-Trans-10179)
metabolism in crickets, 22:6772 (ORNL-4168, pp 61-118)
production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
production by neutron irradiation of element, minimizing cost function for, 22:30609
production in Australia, 22:42761
retention in rats, 22:51308 (ORAU-106, pp 171-93)
separation from aqueous solutions using hydrous manganese oxides and manganese oxide--iron oxide, electrophoretic, 22:14581
uptake from soil by plants, chemical and physical factors affecting, 22:423(R) (TID-23955)
use for calibrating potassium-40 measurements, 22:514
use for measurement of cerebral blood circulation in monkeys, 22:40768
use for measurement of exchangeable potassium in man, 22:51438
use in measurement of exchangeable potassium in body, 22:14462
use in radiopharmaceuticals, determination of half-life and radiation-emission for, 22:23586
use of potassium chloride-incorporated, for scanning of human brain for localization of intracranial neoplasms, 22:31198
yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

POTASSIUM ISOTOPES K-43
beta decay of, γ branching ratios and spectra for, (E), 22:29965
energy levels from calcium-44 (t,α) reactions, spin--parity assignments for, (E), 22:50590
preparation from calcium-43, 22:23399 (IA-1128, pp 213-19)
production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)

POTASSIUM ISOTOPES K-44
energy levels from shell-model calculations, (T), 22:7770

POTASSIUM ISOTOPES K-45
energy levels from calcium-46 (t,α) reactions, spin--parity assignments for, (E), 22:50590
nuclear magnetic moment and spin of, measurement using atomic-beam magnetic-resonance technique, (E), 22:50597

POTASSIUM ISOTOPES K-46
energy levels from shell-model calculations, (T), 22:7770

POTASSIUM ISOTOPES K-47
energy levels from calcium-48 (d,He-3) reactions at 34.4 MeV, (E), 22:20505
energy levels from calcium-48 (t,α) reactions, spin--parity assignments for, (E), 22:50590
energy levels of, calculation of proton single-hole, (T), 22:37378
energy levels of, calculations using shell model with Hamada--Johnston potential, (T), 22:18173

POTASSIUM MANGANESE FLUORIDES
electron resonance studies of critical fluctuations in, (E/T), 22:24412 (UCRL-18119)
magnetic excitations in cobalt-substituted, at low temperature, (E), 22:46729(R) (AECL-3157)

Potassium Metaniobates
see Potassium Niobates

POTASSIUM METHOXIDE
effects on deuterium exchange between carbon acids and methyl sulfoxide--methanol, catalytic, 22:21065
effects on deuterium exchange between dimethyl sulfoxide--methanol and phenylmethanes, 22:21064
reactions with 2-(2,4-dinitrophenoxy)ethanol in benzene and dioxane, formation of spiro Meisenheimer complexes by, 22:96(R) (RRL-2310-214)

POTASSIUM NEPTUNIUM FLUORIDES
crystal structure of $K_7Np_6F_{31}$, 22:2080
preparation of, 22:30517

POTASSIUM NEPTUNYL FLUORIDES
preparation of, 22:30517

POTASSIUM NICKEL FERROCYANIDES
structure of, electron-graphic and electron-microscopic studies on, 22:35825

POTASSIUM NIOBATES
preparation and structure of single crystal K_3NbO_4, 22:49811
preparation, properties, and structure of single-crystal, $K_4Nb_6O_{17}$, 22:49811

POTASSIUM NIOBIUM FLUORIDES
see also Potassium Fluoroniobates
KCl--KF--K_2NbF_7--Nb_2O_5, electrolysis of molten, electrowinning of niobium by, 22:19492

POTASSIUM NITRATES
analysis for nitrogen-15, infrared spectrometric method for, 22:12232
cesium-137 leaching from sandy clay soils by, effects of high-level waste salts on, 22:21298 (DP-1124)
electromigration of sodium-22 and -24 in molten, isotope

- effects in, 22:27710
- radiation effects on aqueous solutions of, alpha, beta, and γ, 22:42731(T) (RFP-Trans-36)
- radiation effects on, paramagnetic resonance spectra of nitrogen dioxide in γ, 22:105
- radiolysis of crystals of, effects of semiconductor impurities on, 22:33398
- radiolysis of, effects of metal oxide semiconductor impurities on rate of, 22:30632
- solvent properties for water, voltammetric studies on, 22:23003 (IA-1128, pp 97-146)
- strontium-90 leaching from sandy clay soils by, effects of high-level waste salts on, 22:21298 (DP-1124)
- KCl--KNO_3, molal volume and refractive index of aqueous solutions of, 22:23003 (IA-1128, pp 97-146)
- KNO_3--$LiNO_3$--$NaNO_3$, effects on anodic oxidation of tantalum above 300ºC, 22:23003 (IA-1128, pp 97-146)
- KNO_3--$NaNO_3$, preparation of colloidal silver in, 22:25374 (ORNL-4229, pp 22-49)
- KNO_3--$NaNO_3$, voltammetry in molten, 22:10139(R) (ORO-3518-4)

POTASSIUM NITROSODISULFONATES
- radiolysis of deaerated aqueous solutions of, radical yields from γ, 22:18817

POTASSIUM OXALATES
- see also Potassium Uranium Oxalates
- complexes with cobalt, radiation effects on, γ and neutron, 22:21148
- radiolysis of, kinetics of γ, 22:47168
- spectra of partly deuterated hydrate of, isotope effects in NMR, 22:30537

POTASSIUM OXIDES
- determination of potassium-40-labeled, in salts and bases, radiometric, 22:25683
- electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
- use in removal of coatings from fuel particles, one-step process for, 22:12500(P)
- CeO_2--K_2O--PbO--SiO_2, radiation resistant glass of, gamma, 22:17194(P)
- GeO_2--K_2O, radioinduced defects in glasses of, ESR study of paramagnetic states of electron, gamma, and neutron, 22:44213 (ORNL-TM-2264)
- K_2O--U_2O_5, compound formation and structure in, 22:12316
- K_2O--U_2O_5, magnetic properties of, 22:12318

POTASSIUM PERCHLORATES
- radioprotective effects of, on thyroid of man before cerebral scintiscanning, iodine-131 β, 22:36313
- yields in gamma-radioinduced decomposition of crystalline potassium chlorate, 22:10278

POTASSIUM PERIODATES
- preparation of iodine-131-labeled, using xenon difluoride, method for, 22:4227(T) (ANL-Trans-538)

POTASSIUM PERMANGANATES
- decomposition of crystals of, by flash photolysis and flash heating, 22:8038(R) (COO-1684-2)
- radiation effects on rate of thermal decomposition of, γ, 22:27810
- radiation effects on thermal decomposition of, γ, 22:12351
- radiation effects on thermal degradation of, x, 22:18847
- reactions of recoil manganese-56 in, Szilard--Chalmers, 22:25395
- reactions with oxalate ions, oxidation, 22:27845 (CEA-N-816, pp 150-276)

Potassium Peroxylamine Disulfonate
- see Potassium Nitrosodisulfonates

POTASSIUM PERRHENATES
- spectra of, nuclear quadrupole resonance, 22:18806(R) (COO-1385-21)

POTASSIUM PHOSPHATES
- see also Potassium Acid Phosphates
- distribution of phosphorus-32-labeled, in roots of barley, effects of microorganisms on, 22:21414
- effects on leachability of radium from uranium ores, 22:25478
- polymers, radiation effects on polymerization of glasses of, ESR studies on, 22:4180
- radiation effects on ESR spectra of crystalline, relation of oxygen vacancies to gamma, (E), 22:20046
- radiation effects on, effects of, on yeasts, x, 22:28720
- radioinduced thermoluminescence of, effects of phase transitions on x, 22:16593

POTASSIUM PLATINUM THIOCYANATES
- sulfur-35 exchange between platinum thiocyanate complexes and, 22:10290

POTASSIUM PLUTONIUM FLUORIDES
- crystal structure of $K_7Pu_6F_{31}$, 22:2080

POTASSIUM PROTACTINIUM FLUORIDES
- crystal structure of $K_7Pa_6F_{31}$, 22:2080

POTASSIUM SELENOCYANATES
- reactions with thorium chloride, effects of solvent on complexes formed by, 22:8073

POTASSIUM SILICATES
- performance as protective coating for titanium, zirconium, or their alloys, 22:41009(P)
- radiation effects on glasses of, EPR spectra of γ, 22:33393

POTASSIUM SODIUM TARTRATES
- radiation damage in, relation to use of x rays for structure studies, x, (E), 22:20053
- radiation effects on Barkhausen effect in crystals of, γ and x, 22:18843
- radiation effects on seignettoelectric properties of crystals of, γ, 22:18842
- radiation effects on spontaneous polarization in ferroelectric Rochelle salt, sodium-23 NQR study of gamma, 22:48160
- radioinduced mechanical property changes in, gamma, 22:11493(T) (JPRS-42628, pp 30-42)
- radioinduced radicals in single crystal, ESR study of structure of gamma, 22:7359
- radioinduced radicals in single-crystal, ESR study of structure of gamma, 22:52876

POTASSIUM SODIUM THORIUM FLUORIDES
- crystal structure of, 22:25328 (ORNL-4229, pp 50-67)

Potassium Space
- see Extracellular Space

POTASSIUM SULFATES
- see also Potassium Acid Sulfates
- see also Potassium Uranyl Sulfates
- chemical properties of, for MHD generator seed, 22:5200
- decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
- effects as seed on combustion products of methane and residual oil in air, 22:26275
- effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
- effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
- radiation effects on monocrystals of, ESR studies on x, 22:47162
- radiation effects on surface charge of, method for measuring β and γ, using metal sol, 22:30612
- radioinduced defects in crystals of, EPR studies on γ, 22:23059
- sulfur-35 isotopic exchange between crystalline--solution system of, effects of solid phase radioactivity on, 22:2041
- surface charge of sulfur-35-labeled, method for measuring, using metal sol, 22:30612

POTASSIUM SULFIDES
- diffuse transition and melting in, 22:23013
- heat content and entropy of, from 298 to 1260ºK, 22:23013

POTASSIUM SULFITES
- complexes with uranyl oxalates, preparation and properties of, 22:10256
- radioprotective effects of, against decomposition of atropine, 22:4721

POTASSIUM TANTALATES
- preparation and structure of single-crystal K_3TaO_4, 22:49811

POTASSIUM TARTRATES
- see also Potassium Sodium Tartrates

POTASSIUM TETRABORATES
- corrosive effects on aluminum, measurement of, 22:32789(R) (WAPD-MRP-124)

POTASSIUM TETRATHIONATE
- thermal capacities of, 22:10204(R) (COO-1149-102)

POTASSIUM THIOCYANATES
- radioinduced reactions with heptene and hexene to produce esters, γ and x, 22:37804
- radiolysis of, yields from gamma, 22:37805

POTASSIUM THORIUM ACID NITRATES
- structure of crystalline hydrates of, ir spectral studies on, 22:12300

POTASSIUM THORIUM FLUORIDES
- crystal structure of $K_7Th_6F_{31}$, 22:2080

POTASSIUM THORIUM FORMATES
- preparation and properties of, 22:33322
- spectra of, ir, 22:37764

POTASSIUM THORIUM NITRATES
- structure of crystalline hydrates of, ir spectral studies on, 22:12300

POTASSIUM THORIUM SULFITES
- stability of hydrated, thermal, ir, and NMR studies of thermal, 22:8074

POTASSIUM URANIUM FLUORIDES
- crystal structure of, 22:25328 (ORNL-4229, pp 50-67)
- crystal structure of $K_7U_6F_{31}$, 22:2080
- paramagnetic resonance spectra of KUF_6, 22:18769
- preparation of, 22:30517

POTASSIUM URANIUM OXALATES
- complex ions of, in potassium oxalate solutions, ion exchange method for measuring size of charge of, 22:30567

POTASSIUM URANIUM SULFATES
- preparation of anhydrous, 22:16494

POTASSIUM URANYL BROMIDES
- spectra of, ir, 22:2042

POTASSIUM URANYL CHLORIDES
- bonding and interactions in, ir spectral studies on, 22:12299
- spectra of, ir, 22:2042

POTASSIUM URANYL FERROCYANIDES
- structure of, electron-graphic and electron-microscopic studies on, 22:35825

POTASSIUM URANYL FLUORIDES
- oxygen--uranium bond distance in, estimation of, from infrared spectra, 22:27713
- spectra of, ir, 22:14489

POTASSIUM URANYL OXIDES

oxygen--uranium bond distance in, estimation of, from infrared spectra, 22:27713
POTASSIUM URANYL SULFATES
effects on luminescence of fluorinated glass, 22:8832
fluorescence decay of, 22:37738
fluorescence of, effects of deuterium from heavy water on, 22:42667
spectra of, ir and luminescence, 22:12304
spectral studies on, use of, in chemical analysis, 22:12304
POTASSIUM YTTRIUM FLUORIDES
K_2BeF_4--K_3YF_6, phase diagram of, 22:45079
POTASSIUM ZINC FERROCYANIDES
structure of, electron-graphic and electron-microscopic studies on, 22:35825
Potatoes (Solanum)
see Solanum under Angiospermidae
POTENTIOMETERS
control of, design of equipment for, 22:14900
POTENTIOMETRIC ANALYSIS
developments in, review on, 22:25302
Potting Compounds
see Sealing Materials
POWDER METALLURGY
book: Powder Metallurgy of Electrical Contacts, 22:49703
book: Vibratory Compacting: Principles and Methods, Volume 2, 22:2564
compacting of ceramics and metals at high temperatures, by isostatic hot pressing, 22:36440(T) (EURFNR-473)
compaction of unheated powders at high velocities in small press, 22:43562
conference on role of, in nuclear technology, London, Nov. 16 and 17, 1967, 22:6950
development review, 22:34022
developments in and present state of, review, 22:49682
developments in, review of recent, 22:34020
fabrication and properties of superalloys, 22:10978
fabrication techniques, use of high pressure for, 22:49702
materials for, characterization of, 22:38534 (LA-3894)
mechanisms of compacting powders, equations for pressure, 22:10987(T) (UCRL-Trans-10186)
method for fabricating ceramic fuel elements, 22:8814(P)
method for fabricating cermets, equipment and procedure for isostatic hot pressing, 22:49813
method for fabrication of fuel elements of uniform density and thickness, 22:7052(P)
method for fabrication of HFIR fuel elements, 22:632 (ORNL-4108)
method for isostatic hot pressing of powders, 22:34099 (KFK-708)
method for preparing beryllium oxide from beryllium sulfates, 22:8813(P)
method of producing beryllium-aluminum base alloys, 22:6974(P)
method of producing tungsten metal shapes by isostatic pressing, 22:640(P)
method of sintering metal powder particles having inert surface films, 22:4761(P)
methods for fabricating reactor fuel elements, 22:27960
methods for finely-divided alloys, carbides, metals, and oxides, 22:28730(P)
methods for high-energy impaction of powdered beryllium oxide and beryllium oxide--uranium oxide mixes, 22:746(P)
methods for metal matrix--fiber composites, 22:41023
methods for reactor materials fabrication, review of, 22:217
methods for reactor materials, review of, 22:21676
methods for shaping precipitation-hardenable stainless steels by, 22:19490 (NASA-SP-5086)
methods for slip casting powdered superalloys, 22:34005
methods for superalloy powders, 22:34048
production and properties of nuclear materials formed by, review of, 22:38602(T) (JPRS-45339)
properties of hot pressed steatite bodies, (E), 22:34098 (JEN-190-DMe/I-18)
research on, review of, 22:8719
use in production of components for reactor cores, 22:6951
use of scanning electron microscopy in research on composite materials fabricated by, 22:49838 (AWRE-O-43/68)
uses in nuclear technology, 22:41014
variables affecting sintered ferrous parts, 22:34005
POWDER RIVER BASIN (WYO.)
uranium deposits in, iron selenide content of, 22:27930
POWDERS
see also Particles
analysis for boron, radiometric methods for, 22:27898
analysis of metallic, methods for, 22:37679
beta scattering by, effects of particle size on, 22:33614
compacting nuclear fuel, design of equipment for densely, 22:6520(P)
density of, equipment for measuring, 22:30436(R) (UCRL-50006-68-1)
echo phenomena in normal and superconducting metal, (E), 22:31747
fabrication by vibration compaction, 22:7052(P)
friction condition in uncompacted metal, relations with powder density, 22:10968
friction index and pressing characteristics of copper and 316 stainless steel, effects of oxidation on, 22:651 (LA-3739)
preparation for x-ray diffraction, encapsulation method for, 22:10935
preparation of finely-divided alloy, carbide, metal, or oxide, process for, 22:28730(P)
production of 0.44 to 840 micron spheroidal uranium, 22:12998(P)
production of small particle size metal, with high surface area, 22:12996(P)
properties of commercial-grade of niobium carbide, tantalum carbide, and zirconium carbide, specifications of, 22:751 (LA-3653)
radioinduced molecular grafting sites in natural and synthetic, for enhancement of economic properties, cobalt-60 γ, 22:23692 (AECL-2706, pp 50-9)
sintering method and mold for compacting, 22:638(P)
specifications and standards for refractory, methods of establishing, 22:38534 (LA-3894)
specifications for molding, for use in high explosives, 22:14400 (UCID-15258)
structure factors for, fixed-scattering-angle neutron spectrometer for determining, 22:14822 (RISO-164)
POWER
see also Electric Power
see also Nuclear Power
see also Reactors, Power
see also Solar Power
see also Tidal Power
economics of nuclear fusion, 22:29461 (ORNL-TM-2204)
requirements for Argentine, 22:3834 (NP-16981)
requirements for Buenos Aires area, prediction of, 22:3841 (NP-16989)
POWER BURST FACILITY
control rod reactivity worth measurements in, description of core configuration for, 22:1857 (GEMP-560)
control system for, testing of prototype hydraulic transient rod drive for, (E/T), 22:44890(R) (IDO-17270)
fuel elements for, analysis of neutron radiation effects on mechanical properties of type 304 stainless steel-clad calcium oxide (CaO_2)--uranium oxide (UO_2)--zirconium oxide (ZrO_2), (E/T), 22:35596(R) (IDO-17260)
fuel rod reaction force in, instrumentation for testing, 22:51276(R) (IDO-17269)
fuel rods for TREAT, description of tests in, 22:6095(R) (IDO-17245)
fuel rods for, parameters of SPERT-F type, 22:1857 (GEMP-560)
fuel testing for, out-of-pile, 22:11068
SS materials accountability procedures, 22:6204 (IDO-17246)
Power Components Reactor
see Savannah River Components Test Reactor
POWER CYCLES
analysis of self-generating Brayton, computer program for performance, 22:19035 (UCRL-70827)
boilers for Rankine, design of once-through liquid entrainment and vortex generator, 22:51137 (ORNL-TM-2080)
description of alternate hybrid fossil--nuclear fueled MHD, 22:43952 (BNL-12569)
design and performance of liquid-metal circulation loop for MHD ac-to-dc conversion, 22:2889(P)
design and vehicle integration of plutonium-238-fueled Brayton, for Manned Orbital Research Laboratory, 22:19054
design of 10 MW(e) lithium--boiling potassium Rankine, for nuclear-electric space propulsion, 22:30282 (UCRL-50382)
design of liquid metal Rankine, for nuclear space power, 22:42345 (UCRL-70863)
design of magnetohydrodynamic, using gas--liquid emulsion, 22:47868(P)
design of radioisotope powered Brayton, 22:33615
design of radioisotope powered Rankine, 22:33615
design of radioisotope powered Sterling--Phillips, 22:33615
development for nuclear space power systems, review of, 22:16259
development for space, using refractory metals, 22:41057
development of Brayton, for radioisotope-powered generators, 22:14676 (SC-DC-67-2119)
development of cesium Rankine, for space applications, 22:21234 (ORNL-TM-2118)
development of closed Rankine, for use in RISE, 22:16743
development of liquid metal heat transfer systems for space, 22:12975
development of organic Rankine, for space uses, 22:30768(R) (SAN-651-57)
development of organic Rankine, for space uses, 22:45221(R) (SAN-651-65)
development of potassium Rankine, for space applications, 22:21234 (ORNL-TM-2118)
energy recovery in MHD--steam, by chemical conversion, 22:52580
evaluation and testing of Brayton, for gas-bearing turbocompressors, 22:2269(R) (NYO-3237-8)
heat source development for 25 kW plutonium-238-fueled Brayton, for use in space, 22:51179 (MLM-1532)

heat transfer and fluid flow in Rankine, measurement of, 22:10486(R) (SAN-677-19)
heat transfer limitations in dynamic converters, 22:19820
heat transfer loop materials for, compatibility with alkali metals, 22:43533
organic 1 to 15 kW(e) Rankine-cycle, design of optimum 0.5 to 0.1 psia turbine exhaust jet-condenser for, (E/T), 22:42339 (AGC-3484)
performance of Brayton closed-loop, effects of working gas on, 22:2270 (NYO-3237-9)
performance of gas-bearing turbocompressor in closed Brayton-type, 22:45219 (NYO-3237-10)
performance of liquid metal Rankine, factors affecting steady state and transient, 22:47285(R) (SAN-677-29)
performance of mercury Rankine, factors affecting, 22:35992(R) (SAN-677-25)
performance of Rankine liquid metal, effect of boiler surface conditions on, (E), 22:10485(R) (SAN-677-15)
performance of Rankine, with magnetohydrodynamic generators, 22:52574
performance of Rankine, with MHD converters, 22:34327
radiator design limitations for dynamic converters, 22:19819
radiators for nuclear potassium Rankine, comparison of load-bearing and nonload-bearing, 22:35974 (N-68-10050)
review for magnetocaloric converters, 22:43953 (EUR-4039)
steam conditions for optimum fast breeder reactor, analysis of initial, 22:46949
thermodynamic properties of Rankine, computer program for calculating, 22:50885 (CTC-2)
turboalternators for Rankine, development of centrifugal and dynamic seals for, 22:27958
use of Brayton and Rankine, in nuclear power plants, 22:8266
use of modified Stirling, in circulatory support system, 22:40318 (AGN-8258)
working fluid for, testing monoisopropylbiphenyl, 22:4342(R) (PRP-67-1184)
working fluids for organic Rankine, evaluation of biphenyl and biphenyl--biphenyl ether eutectic as, (E), 22:10506(R) (SAN-651-43)
working fluids for organic Rankine, evaluation of biphenyl and biphenyl--biphenyl ether eutectic as, (E), 22:25617(R) (SAN-651-49)

POWER PLANTS
  see also Nuclear Power Plants
  see also Steam Power Plants
  see also Submarine Power Plants
closed-cycle MPD, prospects for, 22:5186
coal and fly ash from Australian Pyrmont, radium α content of, 22:12448
control systems for, description of instrumentation for, 22:22756
cost comparisons with nuclear, in Argentina, 22:3839 (NP-16986)
design and economics of thermonuclear, 22:9407
design and operation of first Soviet magnetohydrodynamic, 22:11293
design and performance of emergency, for nuclear power plants, 22:33593
design and performance of experimental MHD, 22:15389
design and performance of MHD, using potassium carbonate-seeded combustion products, (E), 22:5181(T) (CEA-tr-R-1904)
design of MHD, 22:41406(P)
design of MHD, 22:43957(P)
design of MHD--steam cycle system with increased efficiency, 22:47872(P)
design of thermal, with MHD generator and waste heat utilization, 22:7197(P)
design of, using MHD generator, 22:41404(P)
design of, using MHD generators, 22:7195(P)
design of, using MHD generators, 22:11297(P)
design using MHD generator topping with steam bottoming, 22:2885
development and economics of fossil-fueled, for electric power production and seawater desalination, 22:14627
development aspects of hydroelectric, 22:18486
development of hydroelectric, discussions on, 22:18499
development of MHD, review of, 22:17440
development of nuclear-powered MHD, review of basic studies and prospects for, 22:43974
development of open-cycle MHD, review of, 22:1037
economic potentials of conventional, 22:25132 (LA-DC-9519)
economics in Argentina of conventional, analysis of, 22:3838 (NP-16985)
economics of conventional and nuclear, comparison of, 22:14201
economics of hybrid process heat reactor--magnetohydrodynamic generator coupled, 22:22792 (BNL-12319)
electricity production from Italian hydroelectric, economic analysis of, 22:1814
heaters for MHD, design of pre-, 22:15393(P)
magnetohydrodynamic, status of production of electricity by, 22:7188 (FOA-4-4325-55)
MHD generator use in, review, 22:47871
open-cycle MHD, economics and thermal efficiency of large-scale, 22:5187
operation of experimental MHD, 22:1033(T) (JPRS-42454)
performance of closed-cycle MHD, (T), 22:13288
performance of MHD, 22:29320
rock stresses at Morrow Point underground, effects of earthquakes and explosions on, 22:25557 (SA-6)
steam production for, design of improved boiler for, 22:6519(P)
use for electricity production, summary and economics of future, 22:48649 (NEB-SS-21)

Power Reactor Development Co. Reactor
  see Fermi Fast Breeder Reactor

Power Reactors
  see Reactors, Power

POWER SUPPLIES
  (See also specific instruments and various components, e.g., Electron Tubes.)
  see also Accelerator Tubes
  see also Current Regulators
  see also Electric Power
  see also Electron Tubes
  see also Voltage Regulators
circuit for regulated 1725 V, for use with portable alpha survey meter, 22:21377 (ORNL-4219, pp 4-17)
circuits for rf power amplifiers for LAMPF linac, fault protection, 22:37227 (LA-DC-9446)
control system for amplifiers for rf, for LAMPF linac, 22:37226 (LA-DC-9445)
delay line modes of resonance in electron synchrotron magnet, excitation and elimination of, 22:11792
description of 200-MHz, for Alvarez section of LAMPF linac, 22:37229 (LA-DC-9452)
design and performance of stabilized high-voltage, for photomultipliers, 22:47421
design for 300-GeV proton synchrotron, 22:1521 (CERN-563(Vol.1))
design for accelerators, 22:18071(P)
design for bombardment-type electron sources, 22:11849(P)
design for dual pulse generator and discriminator, engineering drawings for, 22:28256
design for magnet of FIAN electron synchrocyclotrons, 22:32411
design for NINA 4-GeV electron synchrotron, 22:12653
design for producing intense magnetic fields, 22:21264
design for proton synchrotrons, use of superconducting storage coils in, 22:11797
design for standard nuclear instrument modules, 22:19193 (TID-20893(Rev.2))
design of 10-kW space, using nuclear reactor and out-of-pile thermionic converter, 22:24090 (LA-3813)
design of 300 kW dc variable current and voltage, engineering drawings for, 22:19229
design of 4-MW system for magnet coils, 22:21244
design of 5- to 25-kV, 22:38161
design of current-controlled thyristor, for magnets of Harwell synchrotron, 22:44560
design of high stability step programmed, for beam extraction magnets of Nimrod, 22:11795
design of high-voltage, for semiconductor detectors, 22:36056
design of highly-regulated, containing regulated current and voltage supplies, 22:23358 (IA-1128, pp 185-212)
design of inductive energy storage system using ignitron switching, 22:2474
design of mercury rectifier, for magnets, 22:21248
design of precision stabilized dc, for accelerator magnets, 22:11794
design of pulsed, for high frequency light sources, 22:4311 (UCRL-17621)
design of silicon rectifier, for magnets, 22:21249
design of stabilized high-voltage, for proportional counter, 22:47326(P)
design of static, for larged pulsed magnets of 300-GeV accelerator, 22:11789
design using thermoelectric generators, 22:7191(P)
development for constant high magnetic fields, 22:21253
development of 805-MHz, for LAMPF linac, 22:37225 (LA-DC-9444)
development of capacitive discharge, for producing 2.5-MG magnetic fields, 22:21262
development of radioisotope-fueled, for implantable circulatory support devices, 22:47294(R) (TID-24349)
efficiency of flux pump, for superconducting magnets, 22:51138 (ORNL-TM-2351)
network stabilization in accelerator magnet, design of saturated inductor for, 22:11790
operation and maintenance for fission chamber and preamplifier, 22:30821 (ORNL-TM-1638(Pt.17))
repair of utility electric and gas, after nuclear explosion damage, 22:37623 (AD-665307)
stabilization of magnet, for NINA electron synchrotron, 22:11791

PPO
  see Oxazole, 2,5-Diphenyl-

PRAIRIE ISLAND POWER REACTOR, UNIT 1
  (560 Mw(e))
auxiliary and emergency systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
blowdown analysis for, 22:18391 (DOCKET-50282-2)
containment spray systems for, safety analysis of,

  22:18391 (DOCKET-50282-2)
  containment structure for, design of, 22:24947 (DOCKET-50282-7)
  containment system for, analyses of capability of, 22:24948 (DOCKET-50282-8)
  containment system for, safety analysis of, design of, 22:18390 (DOCKET-50282-1)
  containment systems for, design of, 22:24946 (DOCKET-50282-6)
  containment vessel for, design analyses for, 22:20802 (DOCKET-50282-5)
  control systems and instrumentation for, design analysis of, 22:24947 (DOCKET-50282-7)
  coolant loss accidents in, analysis of, 22:20802 (DOCKET-50282-5)
  cooling system for, radioisotope content in, 22:18392 (DOCKET-50282-3)
  cooling system for, safety analysis of design of, 22:18390 (DOCKET-50282-1)
  design of, safety analysis of, 22:18390 (DOCKET-50282-1)
  design parameters for, 22:20802 (DOCKET-50282-5)
  electrical systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  engineered safety systems for, description of, 22:20802 (DOCKET-50282-5)
  instrumentation and control systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  operation parameters for, 22:20802 (DOCKET-50282-5)
  operations procedures for, safety aspects of, 22:18391 (DOCKET-50282-2)
  power increases in, startup test program for, 22:24948 (DOCKET-50282-8)
  radiation doses at, models for calculating, 22:18392 (DOCKET-50282-3)
  radiation protection and radioactive waste handling at, safety analysis of, 22:18391 (DOCKET-50282-2)
  safety injection system for, safety analysis of, 22:18391 (DOCKET-50282-2)
  shield building for, effects of variation of vent system parameters for, 22:24948 (DOCKET-50282-8)
  site for, geology and seismology of, 22:18392 (DOCKET-50282-3)
  siting of, safety analysis of, 22:18390 (DOCKET-50282-1)
  steam and power conversion systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  structures at, damping factors for, 22:20801 (DOCKET-50282-4)
  structures for, seismic design of, 22:24946 (DOCKET-50282-6)

PRAIRIE ISLAND POWER REACTOR, UNIT 2
  (560 Mw(e))
  auxiliary and emergency systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  blowdown analysis for, 22:18391 (DOCKET-50282-2)
  containment spray systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  containment structure for, design of, 22:24947 (DOCKET-50282-7)
  containment system for, analyses of capability of, 22:24948 (DOCKET-50282-8)
  containment system for, safety analysis of design of, 22:18390 (DOCKET-50282-1)
  containment systems for, design of, 22:24946 (DOCKET-50282-6)
  containment vessel for, design analyses for, 22:20802 (DOCKET-50282-5)
  control systems and instrumentation for, design analysis of, 22:24947 (DOCKET-50282-7)
  coolant loss accidents in, analysis of, 22:20802 (DOCKET-50282-5)
  cooling system for, radioisotope content in, 22:18392 (DOCKET-50282-3)
  cooling system for, safety analysis of design of, 22:18390 (DOCKET-50282-1)
  design of, safety analysis of, 22:18390 (DOCKET-50282-1)
  design parameters for, 22:20802 (DOCKET-50282-5)
  electrical systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  engineered safety systems for, description of, 22:20802 (DOCKET-50282-5)
  instrumentation and control systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  operation parameters for, 22:20802 (DOCKET-50282-5)
  operations procedures for, safety aspects of, 22:18391 (DOCKET-50282-2)
  power increases in, startup test program for, 22:24948 (DOCKET-50282-8)
  radiation doses at, models for calculating, 22:18392 (DOCKET-50282-3)
  radiation protection and radioactive waste handling at, safety analysis of, 22:18391 (DOCKET-50282-2)
  safety injection system for, safety analysis of, 22:18391 (DOCKET-50282-2)
  shield building for, effects of variation of vent system parameters for, 22:24948 (DOCKET-50282-8)
  site for, geology and seismology of, 22:18392 (DOCKET-50282-3)
  siting of, safety analysis of, 22:18390 (DOCKET-50282-1)
  steam and power conversion systems for, safety analysis of, 22:18391 (DOCKET-50282-2)
  structures at, damping factors for, 22:20801 (DOCKET-50282-4)
  structures for, seismic design of, 22:24946 (DOCKET-50282-6)

PRASEODYMIUM
  see also Rare Earths
  abundance of, solar, (T), 22:23982
  analysis for hydrogen, spectral-isotopic method for, 22:19534
  analysis of, 22:27694
  atomic weight of, based on carbon-12 = 12, 22:42698
  cathodoluminescent properties in yttrium oxide, 22:22996 (CONF-670502-, pp 271-82)
  complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
  complexes with 2,4-pentanedione, preparation of, 22:25459 (KFK-672)
  complexes with 2,4-pentanedione, structure of, 22:14566 (ORO-2124-12)
  complexes with acetates, spectrophotometric studies of, 22:42605
  complexes with aluminon, structure and stability of, 22:14501
  complexes with o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]benzenearsonic acid, spectrophotometric studies on, 22:1993
  compounds with 2,2,6,6-tetramethyl-3,5-heptanedione, spectra of, vapor-phase, 22:30530
  compounds with singlet crystal field ground state, magnetic susceptibility of, 22:24381 (CONF-670502-, pp 48-57)
  crystal structure of, comparison of layer stacking sequence with praseodymium trialuminide, 22:2650
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
  determination as orthovanadate, conductometric method for, 22:47099
  determination as oxide by fast neutron activation, 22:6282
  determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
  determination by neutron activation techniques, 22:47079
  determination by photon activation methods, 22:27591
  determination by separation from cerium by precipitation and counting, 22:18908
  determination in alkali medium in presence of cetylpyridinium bromide by spectrophotometry using Xylenol Orange, 22:40000
  determination in cerium oxide, spectrographic, 22:4054
  determination in cerium oxide, spectrophotometric, 22:4054
  determination in phosphate rocks by atomic-absorption flame photometry, 22:2001
  determination in rare earth mixtures by aerosol-spark method, 22:6281
  determination in solutions of rare earths by x-ray spectral fluorescence, 22:27581
  determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
  determination in yttrium oxide by spectrophotoluminescence, 22:8025
  determination in yttrium oxide matrix by cathode-ray-excited emission spectroscopy, 22:25270
  determination in zinc sulfide matrix by cathode-ray-excited emission spectroscopy, 22:25270
  determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
  determination of traces of, in yttrium oxides, spectrographic, 22:22950
  determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
  determination using o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]-benzenearsonic acid, spectrophotometric, 22:1993
  determination using octamethylpyrophosphoramide, spectrochemical, 22:30468
  determination using sodium orthovanadate, potentiometric, 22:30477
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
  effects on superconductors, 22:52689
  energy level multiplets of Pr III $4f^{2}5d$, overlapping, 22:45936
  energy levels of, quadrupole shielding and antishielding factors for atomic, 22:5070
  gamma resonance scattering using neutron capture beams, spectra for, (E), 22:48510 (IA-1097)
  hardening and recrystallization of, effects of impurities on, 22:4756
  ionization potential of, surface ionization comparison

measurement of first, 22:24458
ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
magnetic properties at low temperatures, (E), 22:39164 (NYO-3454-22, Paper 3)
melting point of, effects of 6th period metal additions on, 22:2560(R) (IS-RD-11)
meson (π) reactions with, 4f--3d x rays from, 22:47838
neutron capture by, upper limit for strength functions of d-neutrons in, (T), 22:32592
neutron paramagnetic scattering cross section at 0.001 to 0.12 eV, (T), 22:22537
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
neutron total cross sections at 6 eV to 250 keV, (E), 22:18225
nuclear level densities from neutron inelastic scattering, (E/T), 22:27217
precipitation with ferric hydroxide, 22:51070
preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
preparation of, procedures and equipment for, 22:27694
properties for laser action, 22:24391 (CONF-670502-, pp 228-38)
reactions with nitrate ions and water, spectral studies on effects of solvents on, 22:45010
separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
separation from aminopolyacetic acids and/or carboxylic acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:33542
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:48904
separation from cerium and neodymium by solvent extraction chromatography using dinonylnaphthalenesulfonic acid--hydrochloric acid and sodium perchlorate--TBP, 22:6392
separation from cerium by precipitation, 22:18908
separation from cerium by solvent extraction using primary amine with diethylenetriaminepentaacetic acid, 22:10319 (BM-RI-7100)
separation from cerium by solvent extraction using bis(2-ethylhexyl) phosphate, 22:18908
separation from cerium using sulfuric acid--ammonium acetate mixture, 22:33511
separation from cerium, lanthanum and neodymium by complexing with hydrazodiacetic acid and ion exchange, 22:30662
separation from dysprosium, lanthanum, and thulium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from mineral acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from neodymium by solvent extraction using primary amine with diethylenetriaminepentaacetic acid, 22:10319 (BM-RI-7100)
separation from neodymium by Szilard-Chalmers effect in EDTA or DTPA complexes, 22:40157 (JINR-P12-3886)
separation from nitric acid by solvent extraction using trialkylphosphine oxide, 22:18876
separation from ores, 22:40191
separation from other rare earths, 22:23090 (CONF-670502-, pp 692-700)
separation from other rare earths by ion exchange, 22:6277
separation from other rare earths by ion-exchange chromatography, 22:18888
separation from rare earths by ion exchange using EDTA in acid media, 22:42846
separation from rare earths by oxalate decomposition, method for, 22:30552
separation from rare earths by solvent extraction using naphthenic acids, 22:27868
separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
separation from ytterbium by solvent extraction using mixtures of thenoyltrifluoroacetone and TBP, 22:51049
separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
separation of thorium and uranium from trivalent, by ion exchange, 22:142
separation of trace amounts of, from uranium by ion exchange, effects of fluorides on, 22:47215
solvation number of, in solution, equations for calculating, 22:23003 (IA-1128, pp 97-146)
sorption by manganese dioxide from nitric acid, 22:157
sorption in the presence of polyaminopolycarboxylic acids, kinetics of ion-exchange, 22:23022
spectra of Pr V at 840 to 2250 A, (E), 22:26247
spectra of, $L\alpha_{1,2}$, (E), 22:9014
thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
vapor pressures at 1724 to 1874°K, 22:10924(R) (DRI-2437)
x-ray absorption spectra for, soft, 22:3209
x-ray emission spectra of, self-absorption effects in soft, (E), 22:7149
PRASEODYMIUM ACETATES
preparation of anhydrous, 22:23000 (CONF-670502-, pp 366-73)
PRASEODYMIUM ALLOYS AND SYSTEMS
Al--Ce--Pr, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
Al--Dy--Pr, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
Al--Ho--Pr, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
Al--La--Pr, magnetic and crystallographic properties at low temperatures, (E), 22:39165 (NYO-3454-22, Paper 4)
Al--Nd--Pr, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
Al--Pr, crystal structure of intermetallic compound $PrAl_3$ in, 22:6299
Al--Pr, crystal structure of intermetallic $PrAl_3$, 22:2650
Al--Pr, magnetic and crystallographic properties of intermetallic $PrAl_2$ and $PrAl_3$, (E), 22:39165 (NYO-3454-22, Paper 4)
Al--Pr, magnetic properties of intermetallic Pr_2Al, Pr_3Al, and Pr_4Al at 4 to 300°K, (E), 22:39166 (NYO-3454-22, Paper 5)
Al--Pr, magnetic properties of intermetallic, (E/T), 22:48162
Al--Pr, magnetic properties of $PrAl_2$, (E), 22:48197
Al--Pr--Y, magnetic and crystallographic properties at low temperatures, (E), 22:39165 (NYO-3454-22, Paper 4)
Bi--Pr, thermal capacity measurements on intermetallic compounds in, at 4 to 300°K, 22:35823
Bi--Pr, thermal capacity of intermetallic PrBi, at 1.5 to 300°K, 22:23756 (CONF-670502-, pp 546-55)
Co--Fe--Pr, crystal structure of, 22:23821
Co--Ni--Pr, phase studies of, 22:23821
Co--Pr, magnetic and crystallographic properties of $PrCo_5$, (E), 22:26511
Fe--Ni--Pr, crystal structure of, stability of, 22:23821
Ga--Pr, phase studies on intermetallic compounds of, 22:2649
Gd--Pr, crystal structure, stability, and axial ratios of, 22:696
Ge--Pr, preparation of intermetallic PrGe, $PrGe_2$, and Pr_5Ge_3, 22:10958
La--Pr, magnetic susceptibilities at low temperatures, (E), 22:39164 (NYO-3454-22, Paper 3)
Nd--Pr, alloying behavior and phase studies of, 22:10924(R) (DRI-2437)
Nd--Pr, phase diagram, 22:10924(R) (DRI-2437)
Nd--Pr, phase studies of, 22:705
Nd--Pr, production by fused salt electrolysis, 22:21677
Nd--Pr, production by fused-salt electrolysis, commercial, 22:23729 (CONF-670502-, pp 728-39)
Ni--Pr, magnetic properties of intermetallic $PrNi_2$ at 4 to 300°K, 22:41061
Ni--Pr, thermal capacity measurements on intermetallic compounds in, at 4 to 300°K, 22:35823
Ni--Pr, thermal capacity of intermetallic $PrNi_2$, at 1.5 to 300°K, 22:23756 (CONF-670502-, pp 546-55)
Ni--Pr--Y, magnetic properties at 4 to 300°K, 22:41061
Pr--Pt, conduction-electron polarization at inequivalent Pt sites in, (E/T), 22:9460
Pr--Pt, magnetic properties of intermetallic $PrPt_2$, 22:4778
Pr--Pt, magnetic susceptibility of intermetallic $PrPt_2$ and $PrPt_5$ at 80 to 300°K, (E), 22:15599
Pr--Pt, phase studies of, 22:19566
Pr--Pt, platinum-195 NMR at 80 to 300°K in intermetallic $PrPt_2$ and $PrPt_5$, (E), 22:15599
Pr--Tb, crystal structure and magnetic susceptibility of, 22:36491
Pr--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
Pr--Th, magnetic properties of solid solutions in, at 85 to 300°K, 22:34067
Pr--Th, phase equilibria in, 22:34067
Pr--Y, crystal structure, stability, and axial ratios of, 22:696
Pr--Y, magnetic susceptibilities at low temperatures, (E), 22:39164 (NYO-3454-22, Paper 3)
PRASEODYMIUM BORIDES
electronic properties of PrB_6, (E/T), 22:44268
magnetic properties of PrB_6, 22:5434
PRASEODYMIUM BROMIDES
preparation of anhydrous, by dehydration of hexahydrates, 22:45046
spectra of, vapor-phase, 22:30530
structure of anhydrous, crystal and molecular, 22:45046
PRASEODYMIUM CARBIDES
hydrolysis of, products of, 22:16514
PRASEODYMIUM CARBONATES
preparation from anhydrous acetates, 22:23000 (CONF-670502-, pp 366-73)
PRASEODYMIUM CHLORIDE OXIDES
production by reactions of fused chlorides with oxygen, 22:33353
KCl--PrOCl, phase studies on, 22:33353

PRASEODYMIUM CHLORIDES
  charge exchange effects in crystal field of, 22:5424
  dielectric dispersion functions for, fitting of reststrahlen data by adjusting poles and zeros in, 22:52856
  gamma--gamma angular correlation in, effect of crystal field on, (T), 22:5439
  preparation by reaction of praseodymium oxide with carbon tetrachloride, 22:2560(R) (IS-RD-11)
  reactions with aluminum in 2-propanol, formation of aluminum praseodymium isopropoxide by, 22:33300
  reactions with oxygen, production of praseodymium chloride oxide by, 22:33353
  spectra of ion-pair transitions in crystals of, (E/T), 22:7358
PRASEODYMIUM FLUORIDES
  see also Sodium Praseodymium Fluorides
  crystal structure of, 22:31997
  fluorine-19 NMR spectrum in single crystals of, temperature dependence of components of, (E), 22:46231
  magnetic susceptibility of, at 80 to 300°K, 22:23003 (IA-1128, pp 97-146)
  preparation of, 22:31997
  spectra of, 22:31997
  sublimation pressures of, 22:45799 (UCRL-18043, pp 155-82)
  thermodynamic properties of, at high temperatures, 22:14495
  volatility in molten beryllium fluoride--lithium fluoride systems, 22:10324 (ORNL-TM-2058)
  volatility in molten-salt fuel reprocessing, 22:27861 (ORNL-4204, pp 60-7)
PRASEODYMIUM HYDRIDES
  crystal lattice parameters for, 22:17809
  crystal structure at 4 to 300°K, 22:24380 (CONF-670502-, pp 36-47)
  Curie--Weiss behavior at 4 to 300°K, 22:24380 (CONF-670502-, pp 36-47)
  magnetic susceptibilities at 4 to 300°K, 22:24380 (CONF-670502-, pp 36-47)
  magnetic susceptibility at 4 to 300°K in fields up to 21 kOe, (E), 22:17809
PRASEODYMIUM HYDROXIDES
  precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6375
  preparation of, 22:22991 (CONF-670502-, pp 175-86)
PRASEODYMIUM IODATES
  precipitation from homogeneous solutions by double complexation and replacement, logarithmic distribution coefficients of fractional, 22:8054
PRASEODYMIUM IODIDES
  spectra of, vapor-phase, 22:30530
PRASEODYMIUM IONS
  analytical wave functions for, approximate, (T), 22:7157
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  effects on γ-induced thermoluminescence in lanthanum fluorides, 22:1315
  energy level transitions in yttrium oxides, calculation of spontaneous emission probabilities for, 22:36724
  energy levels and magnetic moments, calculated, 22:39164 (NYO-3454-22, Paper 3)
  energy levels in LaF$_3$, spontaneous emission probabilities and quantum efficiencies of $^1D_2$ and $^3P_0$, 22:38773
  energy levels in trichloride crystals, lifetimes of, (E), 22:50244
  energy levels of Pr IV, effects of intra-atomic magnetic interactions on, (T), 22:29227
  magnetic moments of, 22:39165 (NYO-3454-22, Paper 4)
  magnetic susceptibility in cerium oxides at 85 to 300°K, 22:34801
  radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622
  spectra corresponding to transitions of pairs of, in praseodymium chloride crystals, (E/T), 22:7358
PRASEODYMIUM ISOTOPES
  masses of stable, measurements of, (E), 22:48570
PRASEODYMIUM ISOTOPES Pr-136
  beta and electron-capture decay of, (E), 22:5815 (JINR-P6-3468)
  beta and electron-capture decay scheme of, β and γ spectra and log-ft values for, (E), 22:37344 (JINR-P6-3823)
  energy levels from neodymium-136 decay, spin-parity assignments and transition multipolarities for, (E), 22:37344 (JINR-P6-3823)
PRASEODYMIUM ISOTOPES Pr-138
  beta and electron-capture decay of, γ spectra for, (E), 22:3695 (JINR-P6-3541)
  beta and electron-capture decay scheme of isomeric, conversion-electron and γ spectra and log-ft values for, (E), 22:39666
  beta and electron-capture decay scheme of, γ spectra and log-ft values for, (E), 22:18273
  beta decay scheme of, γ spectra for, (E), 22:27175
  energy levels from neodymium-138 decay, (E), 22:3695 (JINR-P6-3541)
  nuclear spin and parity of isomeric, (E), 22:39666
PRASEODYMIUM ISOTOPES Pr-139
  beta and electron-capture decay of, γ spectra from, (E), 22:1667
  beta and electron-capture decay scheme of, γ spectra for, (E), 22:5841
  half-life, 22:50642
PRASEODYMIUM ISOTOPES Pr-141
  beta spectra for, endpoint energy of, (E), 22:24835(R) (BARC-305)
  deuteron reactions (d,p) with, cross section and Q-value for, (E), 22:50612
  energy level at 145 keV, lifetime and E2 transition probability for, (E), 22:14038
  energy level at 7.632 MeV from γ resonance scattering, spin-parity assignment for, (E), 22:24881
  energy level transitions in, γ single and coincidence spectra for, (E), 22:50656
  energy levels from beta decay of cerium-141, (E), 22:7674
  energy levels from cerium-140 proton elastic scattering, spin-parity assignments for isobaric analog, (E), 22:42069
  energy levels from cerium-140 proton elastic scattering, spin-parity assignments for isobaric analog, (E), 22:42039
  energy levels from cerium-141 decay, (E), 22:32566 (COO-1112-167)
  energy levels from decay of isomeric neodymium-141, spins of, (E), 22:42026
  energy levels from fast neutron inelastic scattering, (E), 22:27218
  energy levels from gamma resonance scattering, (E), 22:24854 (IA-1128, pp 12-20)
  energy levels from neodymium-141 decay, spins and parities of, (E), 22:5850
  energy levels from neutron inelastic scattering, (E), 22:11948(R) (NP-17216)
  energy levels from neutron inelastic scattering, spin assignments for, (E), 22:50643
  energy levels from proton inelastic scattering by cerium-140, isobaric analog, (E), 22:11949(R) (ORO-2972-47)
  energy levels of, spin-parity assignments and transition multipolarities for, (E), 22:27107
  energy-level transition from isobaric analog state, E1, (E), 22:42092
  energy-level transitions from fast neutron inelastic scattering, (E), 22:26932(R) (NP-17434)
  energy-level transitions from neodymium-141 decay, (E), 22:53095 (BMwF-FBK-68-11)
  fission yield of, determination of fast, 22:27477 (ANL-7375, pp 178-9)
  gamma resonance scattering at 6.12 MeV, spectra for, (E), 22:24854 (IA-1128, pp 12-20)
  gamma resonance scattering using thermal neutron capture by iron, (E), 22:24881
  neutron absorption and scattering cross sections for, thermal, (E), 22:18281
  neutron capture at 14 MeV, activation cross section for, (E), 22:9889
  neutron capture at 30 keV, γ transition strengths in, (E), 22:27100
  neutron capture by, γ spectra for thermal, (E), 22:50612
  neutron capture by, γ spectra from resonance, (E), 22:22580 (JINR-P3-3696)
  neutron capture by, γ spectra from resonance, (E), 22:29988(T) (ANL-Trans-605)
  neutron capture cross section at 0.005 to 3 MeV, (E), 22:32596
  neutron differential elastic and inelastic scattering cross sections at 0.2 to 2.5 MeV, angular distributions for, (E), 22:11948(R) (NP-17216)
  neutron differential elastic and inelastic scattering cross sections at 0.2 to 2.5 MeV, (E), 22:27218
  neutron differential elastic scattering cross section at 8 MeV, angular distribution for, (E), 22:20564 (CONF-680307-13)
  neutron inelastic scattering at 0.5 to 2.3 MeV, γ spectra from, (E), 22:26932(R) (NP-17434)
  neutron inelastic scattering at 2.9 MeV, γ spectra from, (E), 22:50643
  neutron reactions (n,2n) at 12.6 to 19.6 MeV, excitation function for, (E), 22:42006
  neutron reactions (n,2n) at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron reactions (n,3n) at 18.2 to 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
  neutron reactions (n,p) and (n,2n) at 14 MeV, activation cross sections for, (E), 22:9889
  neutron reactions (n,p) and (n,t) at 14.8 MeV, cross sections for, (E), 22:48559
  neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
  neutron strength function and scattering radius at 0 to 6 keV, (E), 22:18285
  neutron strength function and scattering radius at 0 to 6000 eV, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron total cross section at 0.001 to 1.0 eV, (E), 22:18281
  neutron total cross section at 2.5 to 4.5 MeV, fluctuations in, (E), 22:20537
  nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104

nuclear magnetic resonance in praseodymium sulfate single crystals, 22:11511
photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
photon reactions (γ,n) at 9 to 17 MeV, cross sections for, (E), 22:16030
photon reactions (γ,n) at threshold to 17.5 MeV, vibrational splitting of giant dipole resonance in, (E), 22:27222
proton decay from isobaric analog states, (E), 22:20632
PRASEODYMIUM ISOTOPES Pr-142
beta decay scheme of, γ spectra for, (E), 22:32566 (COO-1112-167)
energy levels from praseodymium-141 (d,p) and (n,γ) reactions, spin--parity assignments for, (E), 22:50612
energy levels from praseodymium-141 resonance neutron capture, (E), 22:29988(T) (ANL-Trans-605)
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
half-life of, chemical effects on, (E), 22:29983 (MIT-905-108, pp 1-32)
isomeric transition in, half-life and multipolarity of, (E), 22:11944(R) (AECL-2780)
PRASEODYMIUM ISOTOPES Pr-143
diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
energy level at 57 keV, g-factor measurement using perturbed angular correlations, (E), 22:32640
energy level at 57 keV, g-factor measurement using integral reversed field method of perturbed angular correlation, (E), 22:46781
energy levels at 351 keV from cerium-143 decay, spin-parity assignment for, (E), 22:39679
energy levels at 57 and 351 keV, lifetimes of, (E), 22:24835(R) (BARC-305)
energy levels from beta decay of cerium-143, (E), 22:7720
energy levels from unified-model in intermediate coupling calculations, (T), 22:1684
energy levels of, spin-parity assignments and transition multipolarities for, (E), 22:27107
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
separation by ion exchange in alcohol--water solutions containing aluminum or lithium nitrates or nitric acid, 22:35905
PRASEODYMIUM ISOTOPES Pr-144
beta decay of, β--γ angular and circular polarization correlations in, (E), 22:53105
beta decay of, γ-γ angular and linear polarization correlations in, (E), 22:48509(R) (BMwF-FBK-68-22)
beta decay scheme, (E), 22:9891
beta emission by, effects of, on uptake and retention of calcium-45, molybdenum-99 and strontium-89 in cattle, sheep, and swine, 22:40831 (ORO-657, pp 46-64)
beta energy yield from, use of Geiger--Mueller detectors for determining, 22:6592
beta transition in, search for pseudoscalar interaction in, (E), 22:3708
beta transitions in, first-forbidden, (T), 22:27232
beta--gamma directional correlations for, inner bremsstrahlung correction to first-forbidden, (E), 22:48533
deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
distribution in tissues of dogs, guinea pigs, rabbits and rats, 22:8473
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
fallout at Leningrad from 1954 to 1965, 22:12453
gamma emission by, effects of, on uptake and retention of calcium-45, molybdenum-99, and strontium-89 in cattle, sheep, and swine, 22:40831 (ORO-657, pp 46-64)
inhalation by man following exposure to fresh fallout, dose to respiratory tract from, 22:33821
separation from plutonium dioxide--uranium dioxide fuels, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
toxicity in sheep, 22:40831 (ORO-657, pp 46-64)
PRASEODYMIUM ISOTOPES Pr-145
energy levels from beta decay of cerium-145, (E), 22:11974
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
PRASEODYMIUM ISOTOPES Pr-146
beta decay of, β--γ and γ--γ coincidence spectra for, (E), 22:50645
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
energy-level transitions from cerium-146 decay, conversion coefficients for, (E), 22:44728
nuclear spin and parity of ground state of, (E), 22:50645
yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
PRASEODYMIUM ISOTOPES Pr-147
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
PRASEODYMIUM ISOTOPES Pr-148
beta decay scheme, (E), 22:11974
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
PRASEODYMIUM MOLYBDATES
crystal structure of, relations with oxysulfides, 22:4893
PRASEODYMIUM NITRATES
complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
separation by solvent extraction using TBP, thermochemical studies on, 22:18907
PRASEODYMIUM OXALATES
thermal decomposition of $Pr_2(C_2O_4)_3$, catalytic effects of cerium on, 22:30552
PRASEODYMIUM OXIDES
chemical hysteresis among phases of, 22:31995
diffusion of oxygen in, 22:42650 (COO-1109-35)
effects on oxidation of hydrogen, effects of oxygen mobility on catalytic, 22:6304
effects on pH functions of glass electrodes, 22:16536
electric conductivity and dielectric breakdown in thin films of, 22:24400 (CONF-670502-, pp 591-602)
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
phase diagram of, comparison with plutonium oxide, 22:4888 (EUR-3563)
phase studies by x-ray diffraction techniques, 22:42650 (COO-1109-35)
phase studies of, theory of solid-state, 22:31995
precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
preparation of single crystals of, 22:42650 (COO-1109-35)
preparation of sols, gels, and microspheres of, 22:22991 (CONF-670502-, pp 175-86)
reactions with americium oxides, solid-state, 22:30548
reactions with carbon tetrachloride for conversion to chloride, 22:2560(R) (IS-RD-11)
solubility in boron oxide--strontium oxide systems at 1100°C, 22:41123
spectra of, ultraviolet and visible, 22:42650 (COO-1109-35)
thermal capacities of nonstoichiometric, 22:10204(R) (COO-1149-102)
thermal conductivity at low temperatures, 22:41108
CeF_3--Pr_2O_3, phase studies, 22:17178
Nb_2O_5--Pr_2O_3, phase studies, 22:49839
Nb_2O_5--Pr_2O_3, phase studies of, 22:21769
Nb_2O_5--Pr_2O_3, properties of, electric and thermal, 22:21769
O--Pr_2O_3, phase studies of, tensimetric, 22:42650 (COO-1109-35)
Pr_2O_3--UO_3, molecular structure of hydrated, 22:34119
Pr_2O_3--W, thermoemission of, 22:754
Pr_2O_3--zircon, electrochemical properties as MHD electrode, 22:11295
Pr_2O_3--ZrO_2, preparation and structure of, 22:36546
PrO_2--TbO_2, phase studies of, use of isobaric techniques in, 22:23897 (CONF-670502-, pp 200-12)
PRASEODYMIUM OXYSULFIDES
crystal structure of, relations with structure of lanthanum oxychlorides and lanthanium molybdates, 22:4893
PRASEODYMIUM PHOSPHIDES
magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
Praseodymium Sodium Fluorides
see Sodium Praseodymium Fluorides
PRASEODYMIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
praseodymium-141 NMR spectra in single crystals of, 22:11511
PRASEODYMIUM SULFIDES
thermodynamic properties of Pr_3S_4, 22:27515 (COO-1182-24)
vaporization of Pr_3S_4, 22:27515 (COO-1182-24)
PRASEODYMIUM URANATES
crystal structure of, 22:30523
preparation of, 22:30523
stability of, thermal, 22:30523
PRASEODYMIUM VANADATES
crystal structure and preparation, (E), 22:49812
PRCF
see Plutonium Recycle Critical Facility
PRDC Reactor
see Fermi Fast Breeder Reactor
Pre-Buggy Event
see Plowshare Project
Pre-Gnome Event
see Plowshare Project
PREAMPLIFIERS
see also Amplifiers
circuit for charge-sensitive FET, for operation in vacuum, 22:21377 (ORNL-4219, pp 4-17)
circuit for low-noise wide-band current, for use with

semiconductor detectors, 22:21377 (ORNL-4219, pp 4-17)
description for p-i-n semiconductor detectors, 22:10551
description of charge-sensitive, with high resolution, 22:12707
description of germanium FET low-noise, for use in semiconductor detectors, 22:37998 (UCRL-17989, pp 261-95)
design and performance for semiconductor detectors, 22:33689 (ZfK-121, pp 1-133)
design and performance of high-resolution cooled system of detectors and, for detection of charged particles, 22:315
design and performance of low-noise charge, for lithium-drifted germanium detectors, 22:49091
design and performance of low-noise, using germanium junction FET's for semiconductor detectors, 22:14755 (UCRL-18005)
design and performance of low-noise, using germanium FET's for silicon detectors, 22:2350 (UCRL-17818)
design and performance of nuvistor, for semiconductor detectors, 22:51220 (IAE-1453)
design for fission chamber, 22:51276(R) (IDO-17269)
design for small capacity germanium detectors, 22:47336
design for use with silicon detectors for conversion electron and x-ray spectroscopy, 22:19134 (JINR-P13-3718)
design of charge-sensitive low noise FET, for improved ionization counter resolution, engineering drawings for, 22:14819
design of FET, for solid-state detectors, engineering drawings for, 22:28125
design of high-speed low-noise FET, for coincidence measurements with lithium-drifted germanium detectors, 22:51276(R) (IDO-17269)
design of low-noise charge-sensitive, for use with germanium detectors, (E), 22:5817(R) (NYO-GEN-72-28)
design of low-noise, for semiconductor detectors, 22:37971 (AI-AEC-Memo-12706)
design of wide-band low-noise charge sensitive, engineering drawings for, 22:30919
development of low-noise charge-sensitive, 22:37281(R) (NYO-72-191)
development of low-noise charge-sensitive, for lithium-drifted germanium radiation detectors, 22:10541 (MIT-952-4, pp 267-99)
electric properties of FET-input, used with semiconductor detectors, 22:40430
electron tube design for low-noise, 22:36146
noise level of FET, for gamma spectroscopy, 22:38079
performance of cooled FET, with extremely low noise, 22:38138 (CONF-670545, pp 62-7)
power supply for fission chamber, operation and maintenance of, 22:30821 (ORNL-TM-1638(Pt.17))
resolution of FET, in spectroscopy unit, 22:12708
response of charge-sensitive, for use with semiconductor detectors, use of pulse transformers for improving, 22:14749 (KFK-617)
theory for processing pulses from semiconductor detectors, 22:37978 (CONF-670545, pp 36-56)
use of charge-sensitive, in fast Moessbauer data-acquisition system, 22:2397 (ORNL-IIC-10(Vol.1), pp 142-56)
use of germanium FET, with lithium-drifted germanium detectors for gamma and x-ray spectroscopy, 22:19136 (UCRL-17901)

PRECIPITATES
activation of water-cooled reactor crud, analysis of, (T), 22:35426 (BNWL-676)
deposition in pipe and channel walls, effects of turbulent flow on, (T), 22:33175
production in water-cooled reactor of crud, analysis of, (T), 22:35426 (BNWL-676)
sedimentation rates of inorganic, in coastal and open ocean waters in relation to thorium-234 distribution measurements, 22:49182 (TID-24637)

Precipitation, Atmospheric
see Atmospheric Precipitation

Precipitation, Chemical
see Chemical Precipitation

PRECIPITATORS
see also Cascade Impactors
see also Cyclone Separators
see also Electrostatic Precipitators
see also Particle Precipitators
design of continuous, for use with plutonium oxalates, 22:50956(P)

Precusors, Delayed-Neutron
see Fission Products

PREDNISONE
radioprotective effects of, on skin of man, uv, 22:45594

PREFERRED ORIENTATION
radiation effects on, of calcium phosphate crystallites in bone, x, 22:12803

PREGNA-1,4-DIENE-3,20-DIONE, 9-FLUORO-11β,17,21-TRIHYDROXY-16β-METHYL, 17-VALERATE
radioprotective effects of, on skin of swine, x, 22:33852

PREGNANCY
actinide content of fetus following administration to rats during, 22:10675 (BNWL-480, pp 21-54)
cerium-144 distribution in fetal and newborn rats following administration during, 22:10675 (BNWL-480, pp 21-54)
effects on blood circulation in human uterus, measurement of, using xenon-133 and external counting, 22:25948
effects on cesium-137 metabolism in rats, combined effects of ferric cyanoferrates on, 22:30980
effects on content of potassium and rubidium of humans, 22:51297 (COO-119-238)
effects on hematopoiesis in rabbits following chronic uptake of iron-59, 22:21600
effects on iodine-132 metabolism by man, 22:47487
effects on plutonium metabolism in rats, 22:8478
function of kidneys in man with toxemia of, use of iodine-131-labeled Hippuran for study of, 22:15026
iodine-131 metabolism by rabbits during, 22:10687
radiation effects on central nervous system of human embryos and fetuses exposed during, review of, 22:47609
radiation effects on fetuses during, in man and mice, x, 22:6879
radiation effects on fetuses of mice exposed at different stages of, effects of dose on x, 22:6882
radiation effects on incidence of complications of, in medical personnel, x, 22:45513
radiation effects on mice during, combined effects of dose and season on teratogenic, x, 22:31270
radiation effects on term of, in mice, effects of dose and paternal exposure on x, 22:15073
radiodiagnosis during human, review of hazards from x, 22:4668
radiodiagnosis of abdominal, in man, use of technetium-99 and scintillation counter for, 22:31169
radiography during, dose to maternal gonads from, 22:2513
radiography during, effects of, on mother and fetus following iodine-132, technetium-99 γ, and x, 22:51799
radioinduced bone malformations in fetuses of mice following exposure during, x, 22:33968
radioinduced maternal dysfunction during, in rats, effects of progesterone treatment on x, 22:38350
radioisotope scanning for localization of human placenta during, use of technetium-99-labeled pertechnetate and γ cameras for, 22:38359
radiotherapy of human cervical carcinoma during, effects of, on excretion of estriol and vaginal cytology, acute γ, 22:51928
scintiscanning of kidneys and ureters during human, radiation dose to fetus during iodine-131 β and γ, 22:36339
stage at time of exposure in mice, effects of, on x-radiosensitivity of mutation frequency in mice, 22:8498 (CONF-670305-, pp 81-7)

Presses
see Hydraulic Presses

PRESSURE
see also High-Pressure Systems
see also Osmotic Pressure
see also Pressure Gages
see also Pressure Vessels
see also Pumps
see also Seals and Glands
see also Vapor Pressure
distribution on blunt bodies at hypersonic speeds, effects of impinging shock wave on, 22:49015 (FFA-115)
distribution over blades of swept compressor cascades at Mach 0.3 to 0.9, (E), 22:23214(T) (K-Trans-28)
effect of bearing lubricant, on cavitation erosion of journal bearings, (E), 22:8271
effect of contact, on leakage flow rate between surfaces in elastic contact, (T), 22:8276
effect of static axisymmetric, on elastic stability of thin orthotropic ogival shells, 22:10143 (SC-CR-67-2709)
effect of surface, on friction characteristics of graphite and graphite--metal combinations, 22:8751
effect on Fermi surface of graphite, 22:8844
effect on heat transfer in water with forced circulation, 22:12519 (EUR-3658)
effect on heat transfer through carbon felts, (E/T), 22:2295 (KFK-638)
effects of 160 to 500 kbar, on phase transformations in uranium tetrafluoride, 22:15269
effects of atmospheric, on intensity variations of cosmic photons at sea level, (E), 22:19803
effects of ultra-high, on mechanical properties of reactor materials, 22:19580 (BNWL-455, Paper 12.1-100)
effects on creep and plastic deformation in thin tubes, 22:28810
effects on deformation of salt structures in radioactive waste disposal sites, (E), 22:16792 (ORNL-TM-2102)
effects on dimensional stability of fuel element cladding, cycling internal, 22:3859
effects on eardrums of animals following detonation of explosives, 22:38335 (DASA-2064)
effects on laminar heating of leading edge of flat plates, 22:37929 (SC-RR-68-133)
effects on pigment dispersal in fish scale melanocytes treated with D_2O, 22:19273
effects on powder compacting, (T), 22:10987(T) (UCRL-Trans-10186)
effects on properties of hot pressed steatite bodies, (E), 22:34098 (JEN-190-DMe/1-18)

effects on relativistic cosmological models, (T), 22:23937
effects on uptake of tritium-labeled thymadine by Arbacia eggs, hydrostatic, 22:434
generation during foaming of polyurethan resin, measurement of, 22:3979 (R-67-ND-8)
generation in sodium and water coolants by dispersal of high temperature reactor fuel particles, (E/T), 22:27397 (ANL-7375, pp 135-59)
measurement in γ-irradiated or heated explosives, apparatus for, 22:25428
measurement of fuel rod fission gas, instrumentation for HWOCR in-pile, 22:627 (AI-CE-72)
measurement of pore water, in Pre-Gondola I cratering site tests, 22:197 (PNE-1104)
measurement of shock wave, at large distances from atmospheric nuclear explosions, 22:47259 (SC-DC-2342)
measurement of static, effects of density, heat transfer, and orifice size on, 22:234 (ORNL-TM-1975)
measurement of transient, in partially confined nonmetallic fluids in rapidly heated tubes, 22:8293 (ANL-7337)
measurement of ultrahigh, equipment for, 22:19580 (BNWL-455, Paper 12.1-100)
measurements in underground nuclear explosion cavities, 22:200
measurements of ANL atmospheric, fifteen year data compilation of, 22:40256 (ANL-7084, pp 275-497)
measurements of ANL atmospheric, fifteen-year data compilation of, 22:40255 (ANL-7084, pp 31-274)
measurements of ANL atmospheric, in relation to Chicago Midway and O'Hare International Airports, fifteen-year data compilation of, 22:40257 (ANL-7084, pp 499-671)
relations with temperature in uranium phases, (E), 22:2651
role in causing injuries following nuclear explosions, 22:6861
suppression system for reactor containment structures, description of, 22:18651(P)
suppression systems, description of reactor containment structure, 22:33119(P)
thermomolecular differences in, accommodation coefficients for measurement of, 22:28013 (MLM-1430)
use of hydrostatic and pneumatic, for pressure vessel tests, 22:40343
use of hydrostatic, for testing gas and oil pipelines, 22:40340

PRESSURE DROP
see also Fluid Flow
see also Gas Flow
see also Liquid Flow
calculation for large desalination plant condenser tube bundles, computer program for, 22:23198 (TID-24347)
calculation in pressurized water loop with and without boiling, LUPO computer program for, 22:10482 (EUR-3643)
effects on heat transfer in turbulent boundary layers, 22:21271 (FFA-113)
effects on liquid film thickness in adiabatic two-phase flow, (T), 22:35995
measurement for air flowing through randomly packed beds, 22:229 (AAEC/E-178)
measurement in PLUTO of, effects of forced convective coolant flow on, 22:10068
measurement of heat transfer coefficient, in two-phase flow systems, (E), 22:27994 (GEAP-5417(Vol.2))
measurement of heat transfer coefficient, in two-phase flow systems, (E), 22:27993 (GEAP-5417(Vol.1))
measurement of isothermal, design of loop for, 22:10490 (WAPD-TM-386)
measurement of potassium--sodium, flowing in loops, design of device for, 22:12481
measurements in subcooled boiling water systems, 22:42962(R) (NYO-3679-4)
measurements in subcooled boiling water systems, 22:42963(R) (NYO-3679-5)
measurements on herringbone finned cans, 22:40303 (CEA-R-3425)
rates in tubular fuel elements, effects of surface roughness on, 22:12527

PRESSURE GAGES
see also Manometers
see also Vacuum Gages
calibration of quartz piezoelectric, for hydrogen bubble chambers, 22:40460 (DESY-68/30)
configuration of heat variation transducer with acoustic signal, description of contained-liquid, 22:42543(P)
description of miniaturized, for LMFBR environment, 22:14127 (ANL-7380, pp 63-4)
design and performance of miniaturized ADIT, for pressure buildup measurements of reactor fuel elements, 22:30906
design and performance of radiation-resistance, for NERVA Reactor, 22:30925
design and testing of 100,000-psi eddy-current, 22:12686 (UCRL-50341)
design of absolute, for operation down to 2°K, 22:28253
design of alpha radiometric, for high altitude constant level balloon flights, 22:38123
design of etched manganin, for shock pressure measurements in high noise environments, engineering drawings for, 22:45365
design of miniature, for measuring gas pressures in reactor fuel pins, 22:12670 (ANL-7380, pp 65-9)
design of radiometric, using semiconductor detectors, 22:40476(P)
fission gas piston-actuated acoustic transducer for electromagnetic chart recorder, description of fuel element, 22:39946(P)
performance in EFFBR coolant system, 22:14124 (ANL-7380, pp 29-36)
protective device for radioactive solution, description of, 22:16962(P)
radiation hazards to personnel during use of γ radiometric, for testing boilers, 22:45579

PRESSURE SYSTEMS
see also High-Pressure Systems
design of high, to study effects of hydrostatic pressure on hexagonal metals, 22:2274(R) (RPI-3820-1)
design of pulse, for transducer evaluation, 22:18672 (UCID-15266)

PRESSURE VESSELS
see also Tanks
see also Vessels
analysis of prestressed concrete, method for strength, 22:33125
annealing of SM-1A reactor A350-LF1 steel, description of in-place, 22:53402
Beznau Power Reactor, description of, 22:42237
book: Pressure Vessel Design and Analysis, 22:12499
calandria, with standpipe terminated pressure tubes, 22:14362(P)
cap cables in Wylfa reactor, protective hydrocarbon compound for, 22:12984
channels in reactor, description of multiple coolant and instrumentation, 22:30399(P)
cladding for, stress analysis of composite steel plate, 22:28799
cladding process for, arc strip, 22:15164
closures for, design of, 22:10469(P)
concrete, description of central column secured reactor core with peripheral expansion supports in, 22:37574(P)
concretes for prestressed reactor, properties of heat resistant, 22:28970(R) (BMI-X-10233)
concretes for prestressed, deformation measurements on, 22:10076 (GA-7097(Suppl.))
configuration of 2000 MW(e) Molten Salt Breeder Reactor, design parameters for, 22:48652 (ORNL-4254, pp 50-87)
configuration of dumbbell-shaped upright, description of maritime reactor, 22:48716(P)
configuration of inner skin-sealed C-shaped end-capped multiple-member outer shell, description of, 22:42564(P)
configuration of low-carbon nickel steel-lined heat-insulated prestressed concrete, description of, 22:53478(P)
configuration of maritime reactor water level control, description of interior convex-bottom, 22:50781(P)
configuration of multi-section cylindrical prestressed concrete, description of, 22:39922(P)
configuration of water-cooled reactor concrete hot-liner, description of reference design, 22:44831(T) (ORNL-tr-1966-d)
construction for gas-cooled graphite-moderated power reactors, standards for steel, 22:30183
construction for water-moderated reactors, 22:32804
construction of prestressed concrete, for Fort St. Vrain Power Reactor, 22:30149 (GA-8623)
construction of reactor, use of concrete in, 22:48665
construction using high-grade thick Japanese steel, 22:2620
containment structure for, description of glass filament, 22:37498(P)
coolant loss accidents for boiling- and pressurized-water reactors, analysis of void formations on shock wave effects during, 22:27399(R) (BMI-1835)
coolant loss prevention, description of vertical axial plate dividers for, 22:10029(P)
cooling channels for, design of, 22:1837(P)
cover lifting device for, description of liquid-sealed, 22:14329(P)
crack analysis for, elastic and plastic methods of, 22:39892 (AD-663882)
crack growth in, acoustic emission method for detection of, (E), 22:51190 (BNWL-SA-1772(Pt.1))
cracks in Japanese Power Demonstration Reactor, analysis of hair, 22:30197
creep behavior of thick-walled, finite element method for analysis of, 22:27961
creep in prestressed concrete, mathematical analysis of, 22:19011
creep rupture of steel for, 22:28805
deformation of low-alloy steel, effects of fatigue on, 22:43570 (RD/B/N-1050)
description of concentric spherical heterogeneous reactor, 22:20883(P)
description of concrete, with reactor refueling access tubes secured against axial movement, 22:20893(P)
description of coolant tube-lined prestressed concrete, for gas-cooled reactors, 22:3877(P)
description of cylindrical prestressed concrete reactor, with tensioned-cable connected end slabs, 22:25193(P)

description of cylindrical prestressed concrete, with cable-anchored ends, 22:10098(P)
description of dual-wall evacuated space-separated, for pressurized liquid-cooled reactors, 22:14355(P)
description of lined prestressed concrete cylindrical, 22:12152(P)
description of multiple pair, with paired rows of pressure tubes, 22:16242(P)
description of NERVA, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
description of prestressed concrete reactor, 22:20964(P)
description of prestressed concrete, for 550 MW integral unit gas cooled reactor, 22:3852
description of prestressed concrete, for Ft. St. Vrain Power Reactor Unit 1, 22:32808
description of prestressed concrete, for gas-cooled reactors, 22:18625(P)
description of prestressed concrete, for reactor core, 22:6049(P)
description of reactor, with enclosed steam generator, 22:33118(P)
description of reinforced concrete, for reactor, heat exchanger, and moderator tank, 22:12067(P)
description of reinforced concrete, for reactor, heat exchanger, and moderator tank, 22:12068(P)
description of Scandinavian prestressed concrete, 22:22718
description of spherical, for integral reactors, 22:25179(P)
description of twin-wall gas cooled high pressure, 22:16235(P)
description of two-region thermal barrier-separated, with upper region surge tank, 22:22887(P)
description of water-separated multi-layer concrete, with unstressed inner shell and prestressed outer shell, 22:14313
description with magnetically fastened pre-selected pressure rupture ports, 22:20967(P)
description with water--sealed gas--insulated inner wall for water cooled reactors, 22:20891(P)
design analysis of Halden Boiling Reactor, detailed, 22:35463 (HPR-95)
design and fabrication for reactors, 22:27450
design and fabrication of prestressed concrete, for water-cooled reactors, 22:27436
design and performance of Japanese reactor, 22:30805
design and performance of metal, for water-cooled reactors, 22:19600
design and testing of SNAP-21, 22:2309(R) (MMM-3691-23)
design and testing of SNAP-21, 22:42973(R) (MMM-3691-35)
design and testing of SNAP-21, 22:19045(R) (MMM-3691-26)
design and testing of steel, for reactors, 22:27499
design calculations for reactor, techniques for, 22:3946
design criteria and quality control for gas-cooled reactor prestressed concrete, 22:22855 (GA-8511)
design criteria for, AEC proposed, 22:22884
design for explosive gas mixtures, effect of detonation wave reflection on, (T), 22:12168 (KAPL-M-7026)
design of 1000 MW(e) prestressed concrete reactors, optimum, 22:25009
design of concrete, mechanical engineering aspects of, 22:6045
design of graphite-moderated reactor, effects of concentric annular coolant gas conduits on, 22:1837(P)
design of large prestressed concrete, (E), 22:19007(T) (ORNL-tr-1877)
design of light water power reactor, development of, 22:44841 (WASH-1082)
design of metal-lined concrete, with fluid-tight seals, 22:12511(P)
design of operationally safe reactor, 22:30804
design of power plant, elastic--plastic method for, 22:42936 (RD/B/N-1105)
design of prestressed concrete, for 1000 MW(e) BWR, 22:24999
design of prestressed concrete, for boiling water reactors, 22:19004 (EURAEC-1943)
design of prestressed concrete, for high pressure gas-cooled reactors, 22:12471 (AAEC/TM-390)
design of steel, for water-cooled reactors, 22:10082 (ORNL-NSIC-21)
design of Swedish, 22:1807
design of Tsuruga Power Reactor, 22:32855
design safety recommendations for France power reactors prestressed concrete, analysis of, 22:44832(T) (ORNL-tr-1966-e)
design, fabrication, and inspection of prestressed concrete, literature review on, 22:27953 (ORNL-4227)
design, fabrication, and inspection of steel, 22:30800
design, fabrication, testing, and certification of nuclear, ASME specifications for, 22:37920
designs of prestressed concrete, for heavy water-moderated gas-cooled reactors, 22:1790
development of heat-resistant prestressed concrete, 22:15267(R) (BMI-X-10220)
development of heat-resistant prestressed concrete, for reactors, 22:8248(R) (BMI-X-10215)
development of prestressed concrete, in the United Kingdom, 22:6186
development of steel cylindrical reactor, 22:3936 (ZJE-9-67)
development program for prestressed concrete, description of testing studies in, 22:33099 (ORNL-TM-2179)
development programs for prestressed concrete, comparison of Europe and U. S, 22:48775
disassembly of PM-2, remote equipment for, 22:4410
ductility of Yankee Power Reactor type A-302-B steel, neutron radiation effects on, (E/T), 22:35413 (AD-661803)
ducts for concrete, description of water-cooled vermiculite-insulated open-ended access, 22:37606(P)
earthquake-proof characteristics of reinforced concrete, 22:3854
economics of prestressed concrete, for heavy water-moderated gas-cooled reactors, 22:1790
effects of liquid sodium environment on fast reactor, 22:18503
effects on costs of nuclear power production, 22:44841 (WASH-1082)
embrittlement of steel for, effect of plastic fatigue on, 22:2609 (EURAEC-1892)
end slabs for prestressed concrete, pressure testing of, 22:12485
enlargement of reactor, research on, 22:3945
fabrication and operation of steel, embrittlement effects on, 22:30807
fabrication and testing of SNAP-21, 22:36000(R) (MMM-3691-30)
fabrication criteria for prestressed concrete, for power reactors, 22:37455
fabrication for reactor atmosphere cleanup systems, 22:28037(R) (NYO-841-12)
fabrication for reactors, 22:7915 (NUCLEX-66)
fabrication methods for Hinkeley Point-2 Reactors, 22:46947
fabrication of deep-drawn tantalum alloy T-111, 22:47289 (AI-AEC-12712)
fabrication of double bottomed stainless steel, for EL-4 power reactor, 22:2279(T) (WAPD-Trans-76)
fabrication of first Czechoslovakian nuclear power plant, 22:7811 (NUCLEX-66, Paper 3)
fabrication of heavy water-cooled and -moderated boiling reactor prestressed concrete, description of, 22:30266
fabrication of laminated steel, calculations for, 22:30354
fabrication of metal-lined concrete, use of flexible connector members and cooling pipes in, 22:37595(P)
fabrication of multi-section steel, with ferro-concrete top, 22:14344(P)
fabrication of prestressed concrete, for power reactors, 22:27437
fabrication of reactor, properties of welds used in, 22:634
fabrication of reactor, use of welding for, 22:633
fabrication of SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
fabrication of stainless steel, description of forging and welding, 22:39797
fabrication of steel, for water-cooled reactors, 22:10082 (ORNL-NSIC-21)
fabrication of steel, quality control techniques for, 22:16228
fabrication of Tsuruga Power Reactor, 22:32855
fabrication problems of stainless steel, description of Fukushima Power Reactor Unit 1, 22:53326
failure mechanisms and performance of steel, review of, 22:30802
failure of PM-2A reactor A350-LF3 steel, mechanical properties analysis for, 22:42196 (NRL-6739)
failure of, stress-wave analysis technique for detection of incipient, 22:16313 (CONF-671011-, pp 127-62)
failure testing of PM-2A reactor, analysis of fatigue crack and fracture, (E), 22:35414 (AD-663133)
failure testing of through and flush-type nozzles for, analysis of high stress and low cycle, 22:53465
failures in nuclear power plants, bibliography on, 22:3816 (CEA-Bib-79)
flaw detection in reactor, using acoustic emission analysis, 22:16247 (CONF-671011-, pp 107-126)
fracture mechanics of irradiated and unirradiated manganese--molybdenum steel, testing of, 22:16326(R) (WCAP-3677-6)
fracture testing of Tokai-mura Power Reactor, analysis of double tension, Robertson, and ESSO, 22:27448
fracture toughness of nonirradiated and irradiated steel, analysis of, 22:27491 (WAPD-TM-565)
fracture transition temperature of Halden Boiling Reactor, testing analysis for brittle, 22:20816 (HPR-94)
functions and inspection of reactor, 22:30798
head cover seal for, description of flexible bellows, 22:12154(P)
headers for NRU Reactor, description of remote-controlled grinding and polishing machine for sealing, 22:44902
heat treatment of welded steel, method of, 22:49736(P)
inspection and operation of reactor, problem areas of, 22:30808
inspection of Dresden Power Reactor Unit 1, description of nondestructive in-service, 22:53343
inspection of LACBWR, description of ultrasonic equipment for in-service, 22:42209 (SWRI-1228-P-11-8)
inspection of reactor, conference on recurring, 22:30797 (STI/DOC-10/81)

inspection of steel reactor, conditions for Swedish, 22:30801
inspection program for LACBWR, description of in-service, 22:42208 (SWRI-1228-P-11-7)
inspection programs for reactor, review of, 22:30799
inspection programs for steel reactor, review of, 22:30809
installation equipment and procedures for, description of, 22:48798
instrumentation requirements for measurement of mechanical and vibrational displacements of FFTF, 22:50802 (BNWL-818)
irradiation testing of specimen materials in Garigliano Power Reactor for, description of, 22:18418 (EURAEC-1985)
liner for AGR, description of construction of, 22:22728
liners for Wylfa reactor, fabrication of steel plate, 22:12992
material properties of thick-walled reactor, heat treatment for improving, 22:7917 (NUCLEX-66, Paper 2)
materials for British power reactor, requirements for corrosion resistance of, 22:47660 (CONF-671007-2)
materials for high-strength, 22:15181 (GEMP-1002, pp 108-22)
materials for low- and intermediate-pressure reactor, properties of Swedish steels as, 22:31370
materials for reactor, program for determination of properties of, 22:10524(R) (ORNL-4176)
materials for reactor, use of nickel steel as, 22:2671
materials surveillance program for LACBWR, evaluation of, 22:42207 (SWRI-1228-P-11-6)
mechanical properties of prestressed concrete, at high temperatures, 22:4327
mechanical properties of prestressed concrete, design testing of, 22:30149 (GA-8623)
mechanical properties of prestressed concrete, effects of thermal stress on, 22:18589(T) (ORNL-tr-1876)
mechanical properties of prestressed concrete, model analysis of, 22:42200(R) (ORNL-4200)
mechanical properties of steel, analysis of, 22:25098(R) (ORNL-TM-2164)
metal plate design for nuclear, 22:48997
models of prestressed concrete reactor, design of, 22:15232 (ORNL-P-3595)
motion during excursions of EVESR, semi-empirical approach for estimating, 22:3891 (GEAP-5164)
mounts for water-cooled and -moderated maritime reactor, description of multiple curved duct-connected dry and wet well, 22:48717(P)
nozzle configurations for, high-stress low-cycle fatigue testing of, 22:6174
nozzles for, analytical and experimental studies for, 22:7816(R) (ORNL-TM-2057)
nozzles in cylindrical and spherical, design procedures, stress analysis, and flexibility of radial, (E/T), 22:30347 (TID-24342)
penetration sealing in Oldbury Reactor, performance of metallic foil, 22:7859
penetrations in, design of closure for, 22:10469(P)
pressure release mechanisms for HWOCR, analysis of, 22:3813(R) (AI-CE-54)
pressure stresses on simulated heavy-section steel, 22:1772(R) (ORNL-TM-1986)
pressure test on full-scale model of Bohunice reactor, 22:35525
pressure testing of Czechoslovakia carbon dioxide-cooled heavy water-moderated reactor, description of, 22:42230
pressure testing of prestressed concrete, to 1720 psig, 22:16315 (GA-7301)
prestressed concrete for 600 MW(e) heavy water reactors, 22:30234
prestressed concrete reactor, description of model for, 22:10076 (GA-7097(Suppl.))
prestressed concrete reactor, overpressure testing of liner and tendons in, 22:10076 (GA-7097(Suppl.))
prestressed concrete, description of Hinkley Point-2 Reactors, 22:46971
prestressed concrete, evaluation for gas-cooled fast breeder reactors of, 22:35466 (KFK-689)
prestressing of gas- and water-cooled reactors concrete, use of steel rings for, 22:44829(T) (ORNL-tr-1966-b)
prestressing of large concrete, development of jack method for circumferential, (E), 22:19007(T) (ORNL-tr-1877)
properties of prestressed concretes, 22:20830
radiation effects on brittleness of PM-2A reactor, destructive testing for neutron, 22:53401
radiation effects on brittleness of PM-2A reactor, destructive testing for neutron, 22:53403
radiation effects on Charpy V-notch and tensile specimens of Type A302-B steel, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on ductility of Type A302-B steel, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on fatigue strength of, in-pile, 22:19585 (NRL-6620)
radiation effects on ferrite steel, neutron, 22:52225
radiation effects on hardness of steels for, 22:19520(R) (RISO-151)
radiation effects on impact properties of mild steel in HWBR, neutron, 22:17146 (HPR-91)
radiation effects on materials for, availability of data on, 22:35658(R) (AD-663879)
radiation effects on mechanical properties of ASTM A302-B type steel, for reactors, 22:19576 (BNWL-455, Paper 6.1-9)
radiation effects on MH-1 A, surveillance program for, 22:35561 (AD-663550)
radiation effects on Otto Hahn reactor, fast neutron, 22:37508
radiation effects on steel for, neutron, 22:4812(R) (ORNL-4195)
radiation effects on steel, annealing of neutron, 22:43615(R) (BNWL-710)
radiation effects on steel, fast neutron, 22:19598
radiation effects on steel, neutron, 22:4811(R) (AD-646662)
radiation effects on steels and welds in Elk River reactor, neutron, (E), 22:30159 (SWRI-1228-P-9-15)
radiation effects on steels for, relations with hydrogen content, 22:43613 (ANL-7299, pp 144-9)
radiation effects on transition temperature of type A302B steel, neutron, (T), 22:13038 (WAPD-TM-471(Add.1))
radioinduced embrittlement of reactor, effects of heat treatments on neutron, 22:19588
reinforced concrete, configuration of cylindrical earthquake-proof circumference-ringed, 22:48755(P)
safety criteria for reactor prestressed concrete, 22:20945
sealing system for fluid-containing, design of leak-tight, 22:12517(P)
seals for access port of, description of coaxial pipe plug-, 22:30402(P)
seals for NRU, remote cleanup equipment for, 22:4409
seals for, description of high pressure coolant, 22:6182(P)
shock generation due to reactivity excursion in water-cooled reactors, 22:3870
skirt-support junctions for, two- and three-dimensional photoelastic test stress analysis of, 22:14303
sleeve separator for submerged core and surrounding boiler in pressurized-water reactor, description of vertical cylindrical, 22:37476(P)
specifications for water-cooled reactor prestressed concrete, 22:25011
steel for nuclear, properties of ASTM-A302B, 22:23786
steel for reactor, fracture toughness testing of A302-B, 22:10944(R) (COO-1477-9)
steel for, annealing effects on tensile properties of Type A350-LF1, 22:43620 (NRL-6721)
steel for, creep-rupture strength of HT 70, 22:43589
steel for, tensile properties of carbon and nickel, 22:17147 (NRL-6649)
steel plates for, testing of, 22:30806
steels for reactor, evaluation of, 22:15173(R) (EURAEC-1963)
steels for reactor, fracture testing of, 22:3935(R) (WCAP-3677-5)
steels for reactor, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
steels for reactor, testing low-alloy, 22:52160 (EURAEC-2051)
steels for, fatigue cracking parameters of, 22:23763 (KAPL-3383)
steels for, fracture behavior for, 22:7816(R) (ORNL-TM-2057)
steels for, hydrogen embrittlement effects on, 22:10089
steels for, materials properties and integrity of, 22:7816(R) (ORNL-TM-2057)
steels for, notch effects on fatigue resistance of, 22:23767
steels for, radioinduced embrittlement of, 22:36508(R) (AD-661229)
sterilization of soils using moist heat, effects of, on content of bacterial nutrients, 22:26021
strain dynamics analysis under internal blast loading, effectiveness of reduced-scale model tests for, (E/T), 22:44918 (CONF-660669-1)
strength of large reactor, optimum shapes for maximum, 22:7916 (NUCLEX-66, Paper 1)
stress analysis of nuclear prestressed concrete, finite element method for, 22:40335
stress analysis of nuclear prestressed concrete, finite element method for, 22:40336
stress analysis of thick-walled reactor, use of SEAL--SHELL-2 computer program for, 22:12484
stress determination in cylindrical models of, (E), 22:27498
stress-relief annealing of reactor, 22:10430 (EURAEC-1762)
stress-relief annealing of reactor, 22:51140(T) (WAPD-Trans-95)
stresses at openings in thin-walled cylindrical, photoelastic method for determination of, 22:2317 (TID-24106)
structural characteristics of spherical prestressed concrete, under pressure and temperature loading, failure test data on, 22:22864 (TRG-Report-1204(Suppl.1))
structural characteristics of spherical prestressed concrete, under pressure and temperature loading, concrete mix and prestressing cable specifications for,

22:22863 (TRG-Report-1204(Pt.5))
  structural characteristics of spherical prestressed concrete, under pressure and temperature loading, instrumentation, construction and tensioning, and testing methods for, 22:22861 (TRG-Report-1204(Pt.3))
  structural characteristics of spherical prestressed concrete, under pressure and temperature loading, calculation methods for prediction of long-term, 22:22862 (TRG-Report-1204(Pt.4))
  structural characteristics of spherical prestressed concrete, under pressure and temperature loading, (E/T), 22:22859 (TRG-Report-1204(Pt.1))
  structural characteristics of spherical prestressed concrete, under pressure and temperature loading, test results on, 22:22860 (TRG-Report-1204(Pt.2))
  structural materials for reactor, tensile properties and Charpy V-notch data for A533 Grade B Class 1 steel, 22:44926(R) (WCAP-3677-8)
  support skirt of reactor, thermal conductivity measurements in, (T), 22:1829
  support structure for reactor, design of load-absorbing, 22:10097(P)
  support structures for pressure tubes in, description of liquid-cooled, 22:25163(P)
  surveillance program for power reactor, description of proposed, 22:53341
  surveillance test program for JPDR, description of, 22:37483
  temperature control in prestressed concrete, description of permeable barrier coolant flow regulator for, 22:37591(P)
  temperature effects on strength of reactor prestressed concrete, 22:44917(R) (BMI-X-10236)
  tensile properties of prestressed concrete, model testing for, 22:33099 (ORNL-TM-2179)
  testing for embrittlement of stainless steel, ultrasonic, 22:11005 (BNWL-SA-1467)
  testing for radioinduced embrittlement in, design of ultrasonic equipment for, 22:40493
  testing half-scale steel, fracture, 22:42997 (SwRI-1228-P-5-46)
  testing of half-scale model of SEFOR, for coolant flow and vibration characteristics, (E), 22:22696 (GEAP-5440)
  testing of reactor, acoustic emission method for flaw detection in nondestructive, 22:51276(R) (IDO-17269)
  testing of SNAP-21A, 22:28014(R) (MND-3322-7)
  testing of SNAP-21A, hydrostatic pressure method for, 22:23223 (MND-3322-25(Vol.2))
  testing of, use of Dextir data acquisition system for monitoring large numbers of strain gages for, 22:21380 (ORNL-4219, pp 61-7)
  testing steels for, methods for fracture toughness, 22:19512 (BNWL-455, Paper 8.1-6)
  testing welds in, review of methods for, 22:40343
  thermal barrier design for concrete, to prevent overheating, 22:6180(P)
  thermal insulation for boiling reactor concrete, description of water-cooled, 22:37495(P)
  thermal insulation for power reactor prestressed concrete, development of, 22:53303
  thermal insulation for prestressed concrete, description of stainless steel pad--foil sandwich, 22:44830(T) (ORNL-tr-1966-c)
  thermal insulation for prestressed concrete, thermal conductivity of materials for, (E), 22:24999
  thermal insulation for, description of interlocking V-shape seals for multiple metal sheets, 22:37592(P)
  thermal insulation for, description of nonvertically-seamed multiple block external, 22:53475(P)
  tube and header arrangement in superheating reactor, description of, 22:33116(P)
  tube and header arrangement in superheating reactor, description of, 22:33115(P)
  tube and header arrangement in superheating reactor, description of, 22:33117(P)
  tube and header arrangement in superheating reactor, description of, 22:33114(P)
  tube plates for reactor, fabrication method for, 22:10474(P)
  ultrasonic inspection of irradiated steel, method for, 22:12556 (BNWL-473, pp 10.1-12)
  welding procedures for first Czechoslovakian nuclear power plant, 22:7812 (NUCLEX-66, Paper 4)
  welding procedures for Type A302B thick-wall, 22:52149
  welds of thick plates for, methods for inspection of, 22:40342
Pressurized-Water Reactors
    see Reactors, Pressurized-Water
PRESSURIZERS
    see also Compressors
  dynamics in pressurized-water reactors, 22:32804
  equilibrium in water reactor, thermodynamic models of, 22:4348
  performance of Shippingport, comparison of results from TOPS computer program and experiment during load loss of, 22:18480
  steam pressure regulation in water-cooled reactor primary circuit, use of heat exchanger for, 22:42265(P)
PRETHROMBINASE
  activity in blood vessels, of rabbits during radiation sickness, 22:8437
PRICEITE
  use in preparation of resin-matrix shielding materials, 22:15549(P)
Primates
    see common names for specific animals, or Mammalia for general references
PRINCETON SYNCHROTRON
    (Princeton Univ. - Pennsylvania Univ. Proton Accelerator)
  beam injector for, proposal for 75-MeV alternating-gradient synchrotron booster for use as, 22:37233 (PPAD-646-D)
  beam monitoring system for, design of tuned cavity, 22:32364 (PPAD-640-E)
  beam monitoring systems at, description of, 22:46675
  targets for, destructive testing of hydrogen, 22:29793
Priscilla Burst
    see Plumbob Operation
Probability
    see Statistics
Probes (Electric)
    see Electric Probes
Probes (Electron)
    see Electron Probes
Probes (Magnetic)
    see Magnetic Probes
PROCAINE
  effects on blood pressure of irradiated rats, 22:19364
  effects on cardiovascular and respiratory responses of cats, effects of cystamine on, 22:31245
  radioprotective effects of, on human skin during radium therapy, α, 22:28549
  radiosterilization of, effects of, on biological activity, γ, 22:52105
Procedures
    see Equipment and Procedures
Process Development Pile
    see Savannah River Reactor Mockup
PROCESS EQUIPMENT
    (See also particular kinds and components of equipment.)
  design of plutonium, 22:8201
  development of nuclear analysis techniques for on-line, 22:21236 (ORO-2980-16)
  performance of continuous, 22:25442 (ANL-7375, pp 19-45)
Processes
    see Separation Processes
PROCLORPERAZINE
  use for treatment of nausea following radiotherapy, 22:45599
PRODIGIOSINE
  effects on Serratia marcescens, photosensitizing, 22:52047
Producer Gas
    see Manufactured Gas
Production Reactors
    see Reactors, Production
Proflavine
    see Acridine, 3,6-Diamino-
Progesterone
    see Hormones, Sex--progesterone
Projects
    see Operations and Projects
PROLINE
  determination of carbon-14-labeled, in ninhydrin reaction products from amino acid analyzer by scintillation counting, 22:37659
  mutations for deficiency of, induced in Escherichia coli by radiotoxins, 22:51522
  nitrogen-15 content of, in wheat kernels, 22:14968
  polymers, radiation chemistry of, in aqueous solutions, 22:8675
  polymers, spectra in heavy and light water solutions as function of temperature, ir, 22:2057
  radiation effects on acceptor function of RNA specific to, x, 22:23421
  radiation effects on uptake of, by cultures of guinea pig skin, laser, 22:30962
  radiolysis of aqueous solutions of, γ, 22:48881
  reactions of tritium-labeled, with enzymes, spurious isotope effects in, 22:37756
  toxicity of tritium-labeled, in Escherichia coli, 22:51458
PROLINE, HYDROXY-
  radiation effects on content of, in lungs of rats, x, 22:10825 (BNWL-480, pp 55-83)
  radiolysis of aqueous solutions of, γ, 22:48881
PROLYL-tRNA SYNTHETASE
  activation of amino acid analogues by, 22:20982(R) (COO-1498-4)
PROMAZINE
  effects on leukopenia induced in rabbits by toxin extracted from x-irradiated blood cells, 22:19437
PROMETHAZINE
  effects on sodium-24 permeability from blood into tissues of cats, 22:49258
  effects on uv-radiosensitivity of skin, 22:40770
PROMETHIUM
    see also Rare Earths
  chemistry of, 22:25322 (BMwF-FBK-68-03)
  complexes with

- [(carboxymethylimino)bis(ethylenenitrilo)]tetraacetic acid, stability constants for, 22:30578
- complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
- complexes with N-phenylbenzohydroxamic acid, formation of, 22:33332
- compounds of, preparation and crystal chemistry of, 22:2018(R) (BMwF-FBK-67-76)
- compounds, preparation and structure of, 22:25322 (BMwF-FBK-68-03)
- crystal chemistry of, 22:2018(R) (BMwF-FBK-67-76)
- crystal structure model of, 22:23835
- crystal structure of, comparison of layer stacking sequence with promethium trialuminide, 22:2650
- determination in irradiated thorium dioxide--uranium dioxide fuel, separation procedures in, 22:37641(R) (BAW-3809-2)
- determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
- diffusion of fission-product, in dense sintered aluminum oxide, 22:2693
- distribution in hydrochloric acid, coefficients for, 22:42625
- energy levels of neutral, electronic, (E), 22:26249
- energy levels of, effects of intra-atomic magnetic interactions on, (T), 22:29227
- fabrication methods for, for use in heat sources, 22:2305 (BNWL-SA-1309)
- hardening and recrystallization of, effects of impurities on, 22:4756
- ionization potential of, surface ionization comparison measurement of first, 22:24458
- ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
- preparation of, 22:2018(R) (BMwF-FBK-67-76)
- purification by ion exchange, properties of NTA as replacement for DTPA in, 22:16642 (BNWL-680, pp 7-12)
- separation by solvent extraction using phosphoorganic compounds, spectral studies on effects of extraction structure on, 22:6412
- separation from carboxylic acids and mixtures with aminopolyacetic acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
- separation from europium and yttrium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
- separation from europium by ion exchange chromatography, 22:37856
- separation from irradiated thorium dioxide--uranium dioxide fuel by chromatography and ion exchange, 22:17185(R) (BAW-3809-1)
- separation from mineral acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
- separation from neodymium and samarium by ion exchange, 22:2188
- separation from neodymium and samarium by ion exchange, 22:33488(T) (WAPD-Trans-89)
- separation from neodymium by ion exchange, 22:21121
- separation from neodymium by ion exchange, 22:23068
- separation from neodymium by ion exchange, 22:25440(R) (MLM-1443)
- separation from neodymium by ion exchange using α-hydroxyisobutyric acid as eluent, 22:23120
- separation from rare earths by solvent extraction using naphthenic acids, 22:27868
- separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
- separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
- separation of plutonium from, by solvent extraction using tridodecylamine, 22:27848 (CEA-N-816, pp 359-414)
- spectra of, emission, 22:2018(R) (BMwF-FBK-67-76)
- use in production of luminescent zinc silicate bodies, 22:21084(P)

PROMETHIUM ALLOYS AND SYSTEMS
- Al--Pm, crystal structure of intermetallic $PmAl_3$, 22:2650

PROMETHIUM CHLORIDES
- hydrolysis of vapor-phase, thermodynamics of, 22:14476 (BMwF-FBK-67-87)
- hydrolysis of, vapor-phase, 22:2018(R) (BMwF-FBK-67-76)

PROMETHIUM ISOTOPES Pm-139
- beta and electron-capture decay of, half-life and γ spectra for, (E), 22:35302
- decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)

PROMETHIUM ISOTOPES Pm-140
- beta and electron-capture decay of isomeric, half-life and γ spectra for, (E), 22:35302
- decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)
- isomeric transition in, (E), 22:16007 (JINR-P6-3540)

PROMETHIUM ISOTOPES Pm-141
- beta and electron-capture decay of, half-life and γ spectra for, (E), 22:35302
- decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)

PROMETHIUM ISOTOPES Pm-142
- beta decay scheme, (E), 22:32604
- beta decay scheme, (E), 22:32605
- energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735

PROMETHIUM ISOTOPES Pm-143
- electron-capture decay of, gamma and conversion-electron spectra from, (E), 22:1650 (JINR-P6-3471)
- energy level at 273 keV, lifetime measurement using delayed coincidence technique, (E), 22:24884
- energy levels from beta and electron-capture decay of samarium-143, (E), 22:20582
- energy levels from neodymium-142 proton elastic scattering, spins of isobaric analog, (E), 22:27214
- energy levels from samarium-143 decay, (E), 22:1667
- energy levels from samarium-144 (t,α) reactions at 12.9 MeV, (E), 22:32657
- energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
- metabolism in man, effects of administration route and DTPA on, 22:40513 (BNWL-SA-1915)

PROMETHIUM ISOTOPES Pm-144
- electron-capture decay of, gamma and conversion-electron spectra from, (E), 22:1650 (JINR-P6-3471)
- electron-capture decay of, γ coincidence spectra for, (E), 22:50629
- electron-capture decay of, γ--γ coincidence spectra for, (E), 22:50628
- energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
- gamma spectra of, singles and coincidence, (E), 22:48526

PROMETHIUM ISOTOPES Pm-145
- energy levels and transitions from electron-capture decay of samarium-145, (E), 22:14018
- energy levels of, calculations using unified model with intermediate-coupling approximation, (T), 22:11977
- energy-level lifetimes and E2 transition probabilities for, (E), 22:20602
- energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735

PROMETHIUM ISOTOPES Pm-146
- beta and electron-capture decay of, gamma and conversion-electron spectra from, (E), 22:1650 (JINR-P6-3471)
- beta decay of, half-life and β and γ spectra for, (E), 22:1643 (AD-646588)
- energy levels and beta and electron-capture decay schemes of, evaluated data on, (E), 22:22596

PROMETHIUM ISOTOPES Pm-147
- bremsstrahlung production by, use in x-ray fluorescence method for mail sorting, 22:10522
- content in pitchblende from Africa, 22:35950
- determination of, laboratory blank experience in, 22:37653 (UCRL-18140, pp 13-36)
- distribution in beagle dogs following inhalation, 22:10825 (BNWL-480, pp 55-83)
- effects on emission spectra excitation in metals by β particles, 22:27844
- elution of small amounts of, by hydrochloric and lactic acids, chromatographic, 22:16509
- energy level at 413 keV, spin assignment from fast-slow γ sum-coincidence measurements, (E), 22:9879
- energy level at 531 keV, lifetime and transition probabilities for, (E), 22:32644
- energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
- energy levels and transitions from beta decay of neodymium-147, (E), 22:7707
- energy levels from beta decay of neodymium-147, (E), 22:1629
- energy levels from neodymium-147 decay, spin assignments and multipole mixing ratios for, (E), 22:32646
- energy levels from unified-model in intermediate coupling calculations, (T), 22:1684
- energy levels of, calculations using unified model with intermediate-coupling approximation, (T), 22:11977
- energy-level lifetimes and E2 transition probabilities for, (E), 22:20602
- energy-level transitions from beta decay of neodymium-147, (E), 22:1673
- energy-level transitions from neodymium-147 decay, multipolarities of, (E), 22:14054
- half-life and type of decay of, 22:42698
- half-life of, (E), 22:24845
- Moessbauer effect for 91-keV γ transition in, measurement of, (E), 22:35289 (DP-MS-67-14)
- neutron resonance parameters at 15 to 65 eV, (E), 22:20578 (WASH-1079)
- neutron total cross section and resonance parameters at 1.6 to 200 eV, (E), 22:14001 (RPI-328-100, pp 1-56)
- neutron total cross section and resonance parameters at 1.6 to 200 eV, (E), 22:20578 (WASH-1079)
- neutron total cross section and resonance parameters at 0.008 to 200 eV, (E), 22:39637 (RPI-328-123, pp 1-17)
- order regarding registration of, used as radiation source in instruments in United Kingdom, 22:31112
- performance as heat source in microthruster for space, 22:19044 (MLM-1437)
- performance in high-temperature heat sources, 22:4360
- production by neutron irradiation of neodymium, 22:21121
- production by US power reactors through 1990, 22:45245 (BNWL-716)
- production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
- production in power reactors, economic aspects of, 22:119

production of carrier-free, by irradiation of neodymium oxide, 22:23068
properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
properties for use as heat source for radioisojet, 22:33612
properties for use as heat sources, 22:8260
purification cell for, equipment and operational changes for, 22:16769 (BNWL-680, pp 2-4)
radiation dose to man following ingestion or inhalation of oxide particles containing, β and γ, 22:23509(R) (SC-CR-67-2729)
resonance parameters for, fast-chopper measurements of, 22:12094(R) (IN-1126)
separation by ion exchange in alcohol--water solutions containing aluminum or lithium nitrates or nitric acid, 22:35905
separation by solvent extraction using naphthenic acid, 22:35904
separation from actinide and rare earth isotopes by ion exchange chromatography using zirconium phosphate, 22:10335
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
sorption from gastrointestinal tract of miniature swine, 22:45406
testing as power source incorporated in promethium sesquioxide, 22:33604 (BNWL-SA-1796)
thermal diffusivity in promethium oxide--samarium oxide solid solutions, 22:17166 (BNWL-680, pp 19-20)
uptake by man following inhalation, 22:33715 (SZS-15/67)
uptake by plants in Landes, France during 1964, autoradiography study of fallout, 22:31066
use as beta source to excite fluorescence in alloys, 22:50943
use as bremsstrahlung source in application of x-ray fluorescence to mail sorting, 22:259 (ORNL-IIC-10(Vol.2), pp 786-804)
use as β source for radioluminescence, 22:12544(T) (UCRL-Trans-10181)
use as heat source for electric power generation, performance characteristics for, 22:19051
use as heat source in guidance system of Advanced Manned Strategic Aircraft, 22:28010(R) (BNWL-681)
use as heat source in radiovoltaic and radiophotovoltaic direct energy converters, 22:6543
use as heat source, processing methods for, 22:2305 (BNWL-SA-1309)
use as power source for artificial heart, acute and chronic radiation effects on man from, 22:31275
use as power source in mechanical heart for implantation in man, 22:30789
use as radiation source for static electric charge removal, 22:33613
use as source in beta diffraction analysis, evaluation of, 22:23218 (COO-1239-15)
use in development of radiation-stimulated light sources, 22:14433 (ORNL-4196, pp 66-89)
use in photoelectric conversion systems, 22:33616
use in radiography, 22:40808
use in radiography, evaluation of, 22:4634
use in zinc sulfide luminous compounds, 22:47291 (BMwF-FBK-68-07)

PROMETHIUM ISOTOPES Pm-148
beta decay of, β--γ directional correlations in, (E), 22:50647
beta decay of, β-γ and γ-γ directional correlations in, (E), 22:44726
beta decay of, gamma and conversion-electron spectra from, (E), 22:1650 (JINR-P6-3471)
beta transitions in, β-γ directional correlations for first-forbidden, (E/T), 22:27234
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
yields of ground-state and isomeric, in uranium-235 thermal neutron fission, (E), 22:42065

PROMETHIUM ISOTOPES Pm-149
energy level at 114 keV, magnetic moment from perturbed γ angular correlations, (E), 22:27194
energy level at 114 keV, magnetic moment of, (E), 22:24835(R) (BARC-305)
energy levels from beta decay of neodymium-149, (E), 22:11976
energy levels from unified-model in intermediate coupling calculations, (T), 22:1684
energy levels of, calculations using unified model with intermediate-coupling approximation, (T), 22:11977
energy-level spins and transitions from neodymium-149 β decay, (E), 22:20605
energy-level transition probability for, E2, (E), 22:20602
neutron absorption cross section for, thermal, (E), 22:20405 (CONF-680307-17)
yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)

PROMETHIUM ISOTOPES Pm-151
beta decay of, samarium-151 energy levels from, (E), 22:11976
energy levels, (E), 22:9867
energy-level lifetimes and E1 ΔK = 0 transition probabilities for, (E), 22:27123
neutron absorption cross section for, thermal, (E), 22:20405 (CONF-680307-17)
production of, 22:25440(R) (MLM-1443)

PROMETHIUM ISOTOPES Pm-153
gamma spectra for, line energies and intensities in, (E), 22:53095 (BMwF-FBK-68-11)

PROMETHIUM OXALATES
crystal structure of decahydrates of, 22:2018(R) (BMwF-FBK-67-76)
crystal structure of hydrated, 22:14476 (BMwF-FBK-67-87)
precipitation of, 22:16478 (BNWL-680, pp 12-19)
solubility in nitric acid solutions, effects of pH, temperature, and complexing agents on, 22:16478 (BNWL-680, pp 12-19)
stability constants for, review on, 22:27682

PROMETHIUM OXIDES
fabrication of pellets of, by cold sintering and pressing, 22:28010(R) (BNWL-681)
particle size of as-produced, in oxalate decomposition processes, 22:17101 (BNWL-680, pp 25-6)
preparation of high-specific-activity promethium-147-enriched, 22:31444
preparation of microspheres of, by sol-gel process, 22:31444
preparation of microspheres of, by sol-gel process, 22:4859
properties of, electric and thermal, 22:33604 (BNWL-SA-1796)
solubility in fresh and saline water, temperature effects on, 22:17156 (BNWL-680, pp 20-4)
stability of sintered pellets of Pm_2O_3, in water, 22:17156 (BNWL-680, pp 20-4)
thermal diffusivity of, effects of decay samarium-147 on, 22:17166 (BNWL-680, pp 19-20)
use in heat source for radioisojet thruster, 22:37950
use in heat sources of, 22:2305 (BNWL-SA-1309)
Pm_2O_3--Sm_2O_3, electric and thermal properties of, 22:33604 (BNWL-SA-1796)
Pm_2O_3--Sm_2O_3, stability of compacts of, in water, 22:17156 (BNWL-680, pp 20-4)
Pm_2O_3--W, fabrication for radioisotopic heat sources, 22:4360

Prominences
see Solar Prominences

Prompt Neutrons
see Neutrons, Prompt

PRONASE
effects on digestion of thyroid homogenates, 22:466

PROOF TEST FACILITY
(Fuel element test assembly at Pawling, N.Y.)
design of, safety analysis of, 22:18552 (DOCKET-50290-1)
nuclear incidents in, safety analysis of, 22:18552 (DOCKET-50290-1)
operations procedures for, safety analysis of, 22:18552 (DOCKET-50290-1)
owners of, fiscal balance sheets concerning, 22:18553 (DOCKET-50290-2)
safety instrumentation for, design of, 22:18553 (DOCKET-50290-2)
siting of, safety analysis of, 22:18552 (DOCKET-50290-1)
technical specifications for, 22:18552 (DOCKET-50290-1)
technical specifications for, modifications to, 22:18554 (DOCKET-50290-3)

Proof Test Facility (Core mockup for Fast Test Reactor)
see Fast Test Reactor

Propadiene
see Allene

Propamine
see Amphetamine

PROPANE
bubble density and growth in bubble chambers filled with, 22:12629 (CERN-67-26(Vol.2), pp 405-12)
deuterium exchange reactions with hydrogen in, on fuel-cell electrode, mechanism of, 22:33346
effects of deuterated, on γ-radiolysis of cyclohexane, 22:27760
effects on yields from radiolysis of ammonia, 22:2127
energy level transitions in, forbidden electronic, (E), 22:11193 (CALT-532-20)
hydrogen-ion range in, at 5 to 50 keV, (E/T), 22:999
photolysis of deuterated and normal, effects of hydrogen sulfide and nitric oxide on mechanism and yields in, 22:35869
photolysis of gaseous and liquid deuterium-labeled and normal, mechanism of uv, 22:33375(R) (COO-1528-26)
photolysis of, mechanism and yields in, 22:35869
photolysis of, uv, 22:48872(R) (CALT-532-37)
production in radiolysis of acetonitrile, mechanism of, 22:37775 (BNL-50082, pp 40-78)
proton range in, biological effects from, (E), 22:29271
radiation effects on, reaction intermediates of carbon-11 recoil atoms in proton, 22:14528
radiolysis of gaseous, calculation of radiation-chemical yields in, 22:2128
radiolysis of liquid, effects of dose, phase, and temperature on radical yields from γ, 22:18833
radiolysis of liquid, γ, 22:27840
radiolysis of liquid, non-radical reactions in γ, 22:21103
radiolysis of rare gas-sensitized liquid, kinetics of, 22:2155
radiolysis of rare gas-sensitized, ionic fragmentation

patterns for, 22:2161
radiolysis of, ionic fragmentation patterns for, 22:2161
radiolysis of, perturbed orbital energies in, 22:12358
reactions of ionized, with helium and hydrogen, 22:5809(R) (ANL-7354)
reactions of solid, with tritium atoms produced by electron impact on tritium gas, products from, 22:10240
reactions with carbon atoms formed in radiolysis of carbon dioxide, 22:18820
refractive indices of liquid, used in bubble chambers at 17.4 to 65.8°C and 7.6 to 23.4 atm pressure, 22:16909
solid, melting phenomena in, (T), 22:1123
spectra of, effects of deuterium on infrared, 22:12295
use in arresting gas detonations and fires in nuclear cavities, 22:12458 (MSAR-67-187)
use of tritiated, for measurement of oil--gas displacement in oil shales, 22:14692
use of tritiated, to measure permeability of thick membranes to liquid hydrocarbons, 22:28977
yields from radiolysis of 2-methylpropane, 22:8143
yields from radiolysis of liquid butyl methyl ether, effects of diphenylpicrylhydrazyl on, 22:42718(T) (AEC-tr-6937, pp 170-5)
yields in gamma radiolysis and uv photolysis of liquid nitroethane, 22:10298
yields in gamma radiolysis of 2,2,4- and 2,3,4-trimethylpentane, effects of postirradiative additions of iodine on, 22:99
yields in gamma radiolysis of liquid nitromethane, 22:10297
yields in radiolysis of cyclopentane, 22:50998
yields in radiolysis of gaseous cyclohexane, effects of nitric oxide on, 22:35836
yields in radiolysis of liquid butyl methyl ether, effects of diphenylpicrylhydrazyl on, 22:8133
N_2O--propane, radiolysis of gaseous, effects of alcohols on yields from γ, 22:10285
N_2O--propane, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
N_2O--propane, radiolysis of, effects of methyl bromide on methane and nitrogen yields in, 22:96(R) (RRL-2310-214)
N_2O--propane--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
NH_3--propane, radiolysis of, yield of hydrogen atoms from γ, 22:42781
O--propane, use in explosive mixtures for driver in four-inch shock tubes, 22:25626 (ORNL-TM-2094)
propane--rare gases, radiolysis of, γ, 22:27840
PROPANE, 1-BROMO-
effects on production of free radicals in γ-radiolysis of organic glasses, 22:27756
radiation effects on cavitation threshold of, neutron, 22:27748
radiolysis of glassy, polycrystalline, at 77°K, ESR spectral studies on γ, 22:2111
reactions with electrons, 22:37780(R) (RRL-2310-242)
bromobenzene--1-bromopropane, bromine-82 isomeric transition in, chemical effects from, 22:37820
PROPANE, 1-CHLORO-
effects on γ-induced luminescence from phosphors in cyclohexane, 22:27759
effects on nitrogen yields from γ-radiolysis of cyclohexane--nitrous oxide solutions, 22:27759
reactions with recoil tritium, kinetics of, 22:16628
PROPANE, 2-CHLORO-
radiolysis at 77°K, EPR studies of free radicals formed by, 22:30633
reactions with recoil tritium, kinetics of, 22:16628
PROPANE, 2-CHLORO-2-METHYL-
dehydrochlorination in acetonitrile, effects of deuterium on, 22:12322
radiolysis at 77°K, EPR studies of free radicals formed by, 22:30633
solvolysis in various solvent mixtures, effects of deuterium on, 22:18784
PROPANE, 1,2-DICHLORO-
chlorine-36 exchange between lithium chloride and, in methanol, 22:10316
preparation of chlorine-36-labeled, by exchange reactions with labeled lithium chloride, 22:10316
PROPANE, 2,2-DIMETHYL-
isotopic exchange between deuterium and, effects of desorption and diffusion on, 22:8059
radiation effects on, ESR study of radicals from γ and x, 22:27816
radiation effects on, reaction intermediates of carbon-11 recoil atoms in proton, 22:14528
radiolysis of liquid, effects of ion scavengers on fragmentation of excited ions in γ, 22:10274
radiolysis of, effects of molecular structure on free-ion yield from γ, 22:42757
reactions of recoil tritium with, 22:40130
reactions with recoil tritium atoms, effects of various scavenger--moderator combinations on HT yields from, 22:45125
thermal cracking of, effects of temperature on kinetic isotope effects in, 22:16481 (COO-1540-7)
yields from radiolysis of 2-methylpropane, 22:8143
carbon tetrachloride--2,2-dimethylpropane, x-ray diffraction studies on, at 0°C, 22:8041 (ORNL-4203)
PROPANE, HEPTAFLUORO-2-(TRIFLUOROMETHYL)-
radiolysis of, yields in γ, 22:18836
PROPANE, 1-IODO-
radiolysis of glassy, polycrystalline, at 77°K, ESR spectral studies on γ, 22:2111
PROPANE, 2-IODO-
radioinduced reactions with hexane and iodine-129, iodine-128- and -130-labeled organic yields in neutron, 22:101
PROPANE, 1-IODO-2-METHYL-
iodine-131 exchange between molecular iodine in hexachlorobutadiene and, 22:25369
PROPANE, 2-METHYL-
photochlorination of, effects of tritium on, 22:18774
photolysis of gaseous, effects of deuterium on, 22:16607
radiation effects on, ESR study of radicals from γ and x, 22:27816
radiolysis of gaseous, role of superexcited molecules in, 22:16607
radiolysis of, effects of density on fragmentation of excited ions in γ, 22:10273
radiolysis of, perturbed orbital energies in, 22:12358
reactions with recoil carbon-11, effects of oxygen on, 22:12393
reactions with recoil tritium, effects of deuterium and phase on, 22:27755
yields from radiolysis of 2-methylpropene, 22:8143
yields in gamma radiolysis and uv photolysis of liquid nitroethane, 22:10298
yields in radiolysis of gaseous cyclohexane, effects of nitric oxide on, 22:35836
H_2S--2-methylpropane, photolysis of, effects of deuterium on, 22:16607
PROPANE, 2-NITRO-
reactions with 2,6-lutidine, effects of deuterium on, 22:6309
tritium exchange between 2,4,6-trimethylpyridine and, 22:40070
PROPANE, OCTAFLUORO-
radiolysis of, yields in γ, 22:18836
PROPANE, 1,1,2,3,3-PENTACHLORO-
yields in radiolysis of chloroform by pulse from nuclear explosion, 22:40132
Propanedioic Acid
see Malonic Acid
1,2-PROPANEDIOL
HF--1,2-propanediol, effects of ion exchange of elements on Dowex 50 x 8, 22:10341
1,3-PROPANEDIOL, 2-AMINO-2-HYDROXYMETHYL-
analysis for impurities, coulometric, 22:9(R) (NBS-TN-425)
1,2-PROPANEDIOL, 2-METHYL-1,1-DIPHENYL-
conversion to 3,3-diphenyl-2-butanone, effects of deuterium on kinetics of, 22:35815
1,3-PROPANEDIONE, 1,3-DIPHENYL-
complexes with copper and indium in mixtures with other β-diketones, stability constants for, 22:37776 (BNL-50082, pp 79-92)
complexes with europium and terbium with and without piperidine, effects of deuterium on luminescence of, 22:18764
complexes with europium and triethylene, fluorescence of americium-241-doped, 22:42792
effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
use in fluorimetric determination of europium and terbium in monazites, 22:33220
1,3-PROPANEDIONE, 1-(4-METHOXY-5-BENZOFURANYL)-3-PHENYL-
complexes with uranium, magnetic, spectral, and thermal properties of, 22:27705
1-PROPANESULFONIC ACID, 2,3-DIMERCAPTO-
effectiveness for removal of polonium-210 from human skin, 22:43333
effects on content of ammonia in brain tissue of rats, 22:19394
radioprotective effects of, on antigenicity of ascites tumor cell transplants in mice, x, 22:28611
radioprotective effects of, on cells of Ehrlich's ascites carcinomas, x, 22:38354
radioprotective effects of, on hypophyseal-adrenal cortex system of dogs and rats, x, 22:25896
radioprotective effects of, on mice, γ, 22:38354
radioprotective effects of, on mice, γ, 22:28611
1-PROPANETHIOL, 3-AMINO-
hydrochloride, radiolysis of aqueous solutions of,, 22:6357
2-PROPANETHIOL, 1-AMINO-
effects on oxidative phosphorylation in rat liver mitochondria, 22:25893
radioprotective effects of, on mice, effects of oxygen on, 22:25889
1-PROPANETHIOL, 2-METHYL-
deuterium exchange between methanol and, in carbon tetrachloride, 22:33305
deuterium exchange between methanol and, in gaseous phase, 22:33305
1,2,3-Propanetriol
see Glycerol
1-PROPANOL
beta scattering by aqueous solutions of, effects of

- atomic number and bonds on, 22:124
- effects on crystallization and stability of disodium salt of adenosine triphosphate, 22:4070 (UR-49-866)
- effects on mechanism of formation of phosphorus-32-labeled alkyl phosphates in neutron irradiated carbon tetrachloride, 22:30596
- effects on yields in gamma radioinduced polymerization of ethylene at 30ºC, 22:45130
- effects on yields in gamma-radioinduced polymerization of ethylene, 22:2105
- radiation effects on, reactions of recoil carbon-11 from bremsstrahlung, 22:25435 (IS-T-216)
- radioinduced oxidation of, mechanism for γ, 22:18832
- radiolysis of gaseous, effects of pressure and temperature on γ, 22:2158
- radiolysis of glasses of, spectral studies on production of trapped electrons in γ, 22:51008
- radiolysis of, primary ionization processes in γ, 22:27778
- reactions with chlorine-38 recoil atoms, yields in, 22:30611
- reactions with hydrogen, rate constant for, 22:2085
- refractive properties of, piezo-optic coefficients of, 22:23003 (IA-1128, pp 97-146)
- sorption by Type 316 stainless steel, ellipsometer measurements on, 22:45029 (UCRL-18043, pp 7-105)
- spectra of normal and deuterated, assignments of vibrational, 22:35801
- vapor pressure of, effects of deuterium on, 22:42665
- vapor pressure of, effects of deuterium on, 22:10249
- HCl--1-propanol, effects on chromatographic behavior of various inorganic ions, 22:16673
- HF--1-propanol, effects on ion exchange of elements on Dowex 50 x 8, 22:10341

2-PROPANOL
- decomposition in radioactive yttrium-90- and -91-labeled oxides, 22:2106
- decomposition of, neutron radiation effects on catalytic effects of neodymium oxide on, 22:40116
- effects on crystallization and stability of disodium salt of adenosine triphosphate, 22:4070 (UR-49-866)
- effects on γ-induced polymerization and telomerization of ethylene, 22:4166
- effects on γ-radiolysis of potassium nitrosodisulfonate, 22:18817
- effects on hydrogen yields from γ-irradiation of sulfuric acid glass, 22:37791
- effects on hydrolysis of acetate and nitrate of didodecylamine, 22:27845 (CEA-N-816, pp 150-276)
- effects on yields from gaseous γ-radiolysis of alkane--nitrous oxide mixture, 22:10285
- effects on yields in gamma radioinduced polymerization of ethylene at 30ºC, 22:45130
- effects on yields in gamma-radioinduced polymerization of ethylene, 22:2105
- effects on yields of methane in γ radiolysis of methyl bromide and iodide in alkaline solutions, 22:33447
- efficiency of blending solutions of, containing dioxane and toluene, for scintillation counting of aqueous tritium, 22:16433
- photochemical oxidation by uranyl perchlorate in aqueous acid medium, kinetics of, 22:10234
- positron annihilation in, (E), 22:26207
- radiation effects on electron capture in aqueous solutions of, at 77ºK, γ, 22:4209
- radiation effects on, reactions of recoil carbon-11 from bremsstrahlung, 22:25435 (IS-T-216)
- radioinduced luminescence in hexene solutions at 77ºK, γ, 22:25406
- radioinduced reaction with ethylene to produce tertiary alcohols, 22:51035(P)
- radiolysis of, effects of acid, temperature, and nitrous oxide on hydrogen yields from γ, 22:18819
- radiolysis of, effects of benzophenone on yields from γ, 22:2153
- radiolysis of, effects of hydrogen sulfide and nitrous oxide on, 22:2156
- reactions with chlorine-38 recoil atoms, yields in, 22:30611
- reactions with hydrogen, rate constant for, 22:2085
- use with hydrochloric acid--hydrofluoric acid mixture for chromatographic separation of ions, 22:30570
- vapor pressure of, effects of deuterium on, 22:42665
- vapor pressure of, effects of deuterium on, 22:10249
- yields in γ radiolysis of frozen acetone, 22:33425
- bromobenzene--2-propanol, radiolysis of, γ, 22:27785
- HF--2-propanol, effects on ion exchange of elements on Dowex 50 x 8, 22:10341
- O--2-propanol, radiolysis of sulfuric acid solutions of, hydrogen atom reactions in γ, 22:47199

1-PROPANOL, 2-AMINO-
- effects on separation of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amine carbonate in methanol solutions, 22:133 (CU-755-4, Paper IIB)

1-PROPANOL, 2,3-DIMERCAPTO-
- effects on excretion of mercury-203-labeled chlormerodrin by mice, 22:51370

PROPANOL, 3-(DIOCTYLAMINO)-
- solvent properties for niobium and tantalum, 22:18903
- solvent properties for niobium and tantalum in hydrofluoric acid solutions, 22:51080

1-PROPANOL, 2-METHYL-
- effects on gamma radioinduced polymerization of 2-furanacrolein, 22:18821
- effects on yields in gamma radioinduced polymerization of ethylene at 30ºC, 22:45130
- effects on yields in gamma-radioinduced polymerization of ethylene, 22:2105
- efficiency of blending solutions of, containing dioxane and toluene, for scintillation counting of aqueous tritium, 22:16433

2-PROPANOL, 2-METHYL-
- deuterium exchange between 4-biphenylyl-α-methoxytoluene and, kinetics of, 22:21063
- deuterium exchange between 4-biphenylylmethyl p-tolyl ether and deuterated, 22:35816
- effects on yields in gamma radioinduced polymerization of ethylene at 30ºC, 22:45130
- effects on yields in gamma-radioinduced polymerization of ethylene, 22:2105
- vapor pressure of, effects of deuterium on, 22:42665
- vapor pressure of, effects of deuterium on, 22:10249
- 2-methyl-2-propanol--methyl sulfoxide--potassium tert-butoxide, proton transfer reactions in, deuterium kinetic isotope effects in, 22:6301
- HCl--2-methyl-2-propanol, effects on chromatographic behavior of inorganic ions, 22:16674

1-PROPANOL, 3-PHENYL-
- radiolysis of, EPR spectra of radicals from, 22:18848

2-PROPANOL, 1,1,1-TRICHLORO-2-METHYL-
- radiation effects on aqueous solutions of, effects of packaging on cobalt-60 γ, 22:40992
- radiation effects on stability and viscosity of aqueous solutions of, effects of glass and polyethylene packaging on γ, 22:40599
- radiation effects on, evaluation as method of sterilization, γ, 22:27823

2-Propanone
- see Acetone

2-PROPANONE, 1-CYCLOPROPYL-
- deuterium exchange in, acid-catalyzed, 22:27708

PROPELLANTS
- see also Jet Engine Fuels
- atmospheric pollution from rocket, at Vandenberg Air Force Base, 22:12159 (BNWL-572(Vol.1))
- flame propagation in gap in solid, 22:10163(T) (LA-tr-67-88)
- gage for measuring mass of gaseous, for spacecraft, development of radiometric, 22:43132 (STL-539-0001)
- gage for space vehicle, optimum source-detector configuration for zero-g radiometric cryogenic, 22:43138
- mass aboard orbiting space vehicle, gamma radiometric system for measuring, 22:38131
- measurement of quantity of, in space vehicles, radiometric gage for, 22:30884
- protection against chemical missile-, medical standards for, 22:40719
- use of solid, in MHD generators, (E), 22:52566

Propenal
- see Acrolein

PROPENE
- alpha particle range in, effects of phase on, 22:45508(R) (PG-Report-826)
- effects on hydrogen yields in electron radiolysis of deuterated and normal in solid state ethanol at -196ºC, 22:18827
- effects on ion recombination processes in hexane radiolysis, 22:30591(R) (RRL-2310-231)
- effects on x-radiolysis of water vapor containing methanol, 22:35853
- effects on yields from pulse radiolysis of ammonia, 22:27771
- effects on yields from radiolysis of ammonia, 22:2127
- formation by isomerization of cyclopropane, effects of pressure and temperature on carbon-13 isotope effects in, 22:80
- photolysis of sulfur hexafluoride in presence of, ESR spectra of free radicals produced by, 22:96(R) (RRL-2310-214)
- polymerization of, effects of high pressure on radical, 22:4194
- radioinduced polymerization of, with ethylene, 22:4213
- radiolysis of deuterated, in liquid methane at -181 to -94ºC, yields in, 22:96(R) (RRL-2310-214)
- radiolysis of mixtures of deuterated and normal, γ, 22:42782
- radiolysis of, hydrogen yields in γ, 22:18824
- radiolysis of, role of hot hydrogen atoms and superexcited states in γ, 22:42782
- reactions of condensed films of, with ground-state oxygen atoms at 90ºK, effects of deuterium on, 22:16557
- reactions of solid, with tritium atoms produced by electron impact on tritium gas, products from, 22:10240
- reactions with deuterium or heavy water on titanium dioxide catalyst, kinetics of, 22:2066
- reactions with recoil tritium atoms, in excess perfluorocyclobutene, abstraction yields from, 22:33404
- solid, melting phenomena in, (T), 22:1123
- spectra of deuterated, internal rotation splitting in

- microwave, 22:35800
- yields in gamma radiolysis of 2,2,4- and 2,3,4-trimethylpentane, effects of postirradiative additions of iodine on, 22:99
- yields in low conversion radiolysis of methane, effects of alkenes and oxygen on, 22:35862
- yields in radiolysis of cyclopentane, 22:50998
- yields in radiolysis of vaporous methylcyclohexane, effects of additives on, 22:102
- yields of labeled and unlabeled, in radiolysis of gaseous deuterated and normal cyclohexane, effects of nitric oxide on, 22:35836
- 1-butene--N_2O--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- 1-butene--propene, reactions of condensed films of, with ground-state oxygen atoms at 90°K, effects of deuterium on, 22:16557
- chloroethylene--propene, radioinduced polymerization of, ir spectra of copolymers from γ, 22:42743
- N_2O--propane--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- N_2O--propene, radiolysis of gaseous, nitrogen yields in gamma, 22:2117
- propene--vinyl alcohol, polymers of, radioinduced grafting to conjugated dienes, electron, 22:16631(P)

PROPENE, 1,3-DIPHENYL-
- oxidation of deuterium-labeled, by selenium dioxide, isotopic effects in, 22:37766

PROPENE, HEXACHLORO-
- chlorine-36 exchange between aluminum chloride and, in dichloromethane solution, 22:12321

PROPENE, HEXAFLUORO-
- radioinduced addition reactions with alcohols and ethers, NMR spectral studies on yields in, 22:21095
- radioinduced graft polymerization of, with polycaproamide, polyethylene terephthalate, and polypropylene fibers, adhesion properties in γ, 22:10300
- radioinduced polymerization with tetrafluoroethylene, γ, 22:42736
- hexafluoropropene--tetrafluoroethylene polymers, radiation effects on dielectric properties of, γ, 22:33463
- hexafluoropropene--tetrafluoroethylene, radioinduced polymerization of, ESR studies on free radicals formed in γ, 22:21100
- hexafluoropropene--tetrafluoroethylene, radioinduced polymerization of, ESR studies on free radicals formed in, 22:21099

PROPENE, 2-METHYL-
- radioinduced grafting on poly(vinyl chloride), by ionic mechanism, electron and, 22:2107
- radioinduced polymerization in 3-methylpentane glass at 77°K, mechanism of electron, 22:42716(T) (AEC-tr-6937, pp 145-57)
- radioinduced polymerization of glassy solutions of, in methylcyclohexane, yields of products in γ, 22:113
- radioinduced polymerization of liquid, yields of products in γ, 22:113
- radioinduced polymerization of, carbonium mechanism in γ, 22:47180
- radioinduced polymerization of, effects of zinc oxide on rate of, 22:4177
- radioinduced polymerization of, in 3-methylpentane glass at 77°K, mechanism of electron, 22:8131
- radioinduced polymerization of, with 3-methylpentane at 77°K, ESR spectral studies on γ, 22:8105(T) (AEC-tr-6908, pp 154-6)
- radioinduced polymerization of, with or without 3-methylpentane, effects of anhydrous conditions on, 22:8096(T) (AEC-tr-6908, pp 56-63)
- radioinduced polymerization of, with sulfur dioxide, 22:8098(T) (AEC-tr-6908, pp 74-8)
- radioinduced polymerization of, with sulfur dioxide at -78 and -196°C, 22:4171
- radioinduced polymerization on silica gel at 77°K, ESR studies on mechanism of γ, 22:23040
- radiolysis of, effects of nitrogen monoxide on yields from γ, 22:8143
- reactions with deuterium or heavy water on titanium dioxide catalyst, kinetics of, 22:2066
- spectra of deuterated and normal, ir and Raman, 22:48870
- dimethylsilane--methylpropene, radiolysis of, 22:21091 (JLI-3655)

PROPENE, 2-METHYL-, POLYMERS
- radiation effects on, ESR studies of free radicals from uv, 22:25414
- radiation effects on, role of nitrous oxide atmosphere in γ, 22:6344
- radioinduced free radical formation in, γ and uv, 22:6353
- radioinduced grafting with chloroethylene polymers and aromatic monomers, 22:47194(P)

Propene Oxide
- see Propylene Oxide

PROPENE POLYMERS
- fiber beds of, efficiency for removing aerosol particles from gas streams, (E), 22:25567 (BNWL-481-3, pp 94-6)
- properties of foamed, 22:33408(P)
- radiation effects at -196°C on thermolumenescence of, 22:42785
- radiation effects on bacteria on syringes of, fast electron, 22:19463
- radiation effects on graft polymerization of, with poly(butyl methacrylate), poly(methyl methacrylate), and polystyrene, structural effects on γ, 22:40145
- radiation effects on stabilized, 22:23056
- radiation effects on subsequent polymerization with 4-vinylpyridine, 22:51031
- radiation effects on temperature dependence of electric conductivity of, γ, 22:42735
- radiation effects on thermal conductivity of, γ, 22:4208
- radiation effects on, ESR studies on configuration and decay of free radicals produced by γ, 22:123
- radiation effects on, oxygen uptake in γ, 22:8093(T) (AEC-tr-6908, pp 33-41)
- radiation effects on, role of nitrous oxide atmosphere in γ, 22:6344
- radioinduced crosslinking of, effects of sulfur chloride on, 22:14544
- radioinduced formation of foamed, 22:33408(P)
- radioinduced free radical formation in, γ and uv, 22:6353
- radioinduced graft polymerization of fibers of, with acrylic acid, effects of aftertreatments on properties of products of γ, 22:21094
- radioinduced graft polymerization of, with chlorotrifluoroethylene and hexafluoropropene, adhesion properties in γ, 22:10300
- radioinduced graft-polymerization of acrylonitrile on fibers of, 22:35843(P)
- radioinduced grafting of alkyl methacrylates onto, γ, 22:25427
- radioinduced grafting of styrene on, γ, 22:25418
- radioinduced grafting of vinylpyrrolidone on, γ, 22:25418
- radioinduced polymerization with vinyl chloride or vinylidene chloride, γ, 22:42754
- radioinduced sulfochlorination of liquid, breakdown of crystal structure in γ, 22:27784
- radioinduced sulfochlorination of powders of, electron microscopic studies of compounds formed by, 22:27789
- radioinduced vapor-phase graft polymerization of fibers of, with solid acenaphthylene or acrylamide, γ, 22:27821
- radiolysis in nitrous oxide, γ, 22:21117
- radiolysis of, effects of molecular weight, oxygen content, and segmental mobility of polymer chains on, 22:33454
- radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)
- testing polyethylene--polypropene--silicon, for sealing high-pressure carbon dioxide vessels, 22:45833
- use as solid particle track detector, 22:327
- use for windows of gas-filled ionization chambers, for x-ray detection, 22:38020
- polyethylene--polypropylene, testing Nordel, for use in reactor O rings, 22:34128 (BNWL-736)

PROPENE, 3,3,3-TRIFLUORO-
- tetrafluoroethylene--3,3,3-trifluoropropene, radioinduced copolymerization of, effects of pressure and temperature on γ, 22:27762

Propenoic Acid
- see Acrylic Acid

2-Propen-1-ol
- see Allyl Alcohol

PROPERDIN
- radiation effects on titer of, in serum of man, x, 22:545

PROPERTIES
- (Use more specific term)
- see also Electric Properties
- see also Magnetic Properties
- see also Mechanical Properties
- see also Molecular Properties
- see also Tensile Properties
- see also Thermal Properties
- see also Thermodynamic Properties
- see also Thermoelectric Properties

β-Propiolactone
- see Hydracrylic Acid, β-Lactone

PROPIOLIC ACID, (CHLOROPHENYL)-
- hydration of 25°C in deuterated and normal water--sulfuric acid solutions, isotope effects in, 22:4104

PROPIOLIC ACID, (3,4-DICHLOROPHENYL)-
- hydration of 25°C in deuterated and normal water--sulfuric acid solutions, isotope effects in, 22:4104

PROPIOLIC ACID, (METHOXYPHENYL)-
- hydration of 25°C in deuterated and normal water--sulfuric acid solutions, isotope effects in, 22:4104

PROPIOLIC ACID, PHENYL-
- hydration of 25°C in deuterated and normal water--sulfuric acid solutions, isotope effects in, 22:4104

PROPIOLIC ACID, TOLYL-
- hydration of 25°C in deuterated and normal water--sulfuric acid solutions, isotope effects in, 22:4104

PROPIONALDEHYDE
- beta scattering by aqueous solutions of, effects of atomic number and bonds on, 22:124
- production by radiolysis of 1-propanol, 22:27778
- radioinduced reactions with uranyl ions in aqueous and nonaqueous solutions, mechanism of uv, 22:35871

PROPIONAMIDE

radiation effects on, EPR study of reactions of oxygen and sulfur dioxide with radicals from γ, 22:27749
radiation effects on, ESR study of free radicals from x, 22:48884
reactions of irradiated, with oxygen, products of, 22:37775 (BNL-50082, pp 40-78)
separation of traces of radioactive acetamide from, by zone refining, 22:8191
PROPIONAMIDE, N-BUTYL-
polymers, radioinduced oxidation by aromatic amines and ethers, mechanisms of, 22:27781
PROPIOAMIDINE, 3,3'-DITHIOBIS-
radioprotective effects of, against genetic damage in mice, x, 22:40900
PROPIONATES
see also Ammonium Uranyl Propionates
PROPIONIC ACID
complexes with uranium, stability constants for, 22:47119
deuterium exchange between heavy water and, 22:12327
radiolysis of, adsorbed on silica gel, ESR study of γ, 22:47171
Propionic Acid, 2-Amino-
see Alanine
Propionic Acid, 3-Amino-
see β-Alanine
Propionic Acid, 2-Amino-2-hydroxy-
see Serine
Propionic Acid, 2,3-Dihydroxy-
see Glyceric Acid
PROPIONIC ACID, 3,3',3'',3'''-(ETHYLENEDIPHOSPHINIDYNE)-TETRA-
complexes with rare earths, preparation of, 22:40059
Propionic Acid, 2-Hydroxy-
see Lactic Acid
PROPIONIC ACID, 3-IODO-
effects on x-radiosensitivity of alcohol dehydrogenase from yeasts, 22:21445
radiosensitizing effects of, on activity of alcohol dehydrogenase, x, 22:43218
PROPIONIC ACID, 2-MERCAPTO-
complexes with rare earths, stability of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with rare earths, thermodynamic properties of, 22:21054 (ORO-1797-11, pp 1-113)
radioprotective effects of derivatives of, on mice, 22:43378
PROPIONIC ACID, 3-MERCAPTO-
complexes with rare earths, stability of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with rare earths, thermodynamic properties of, 22:21054 (ORO-1797-11, pp 1-113)
Propionic Acid, 2-Methyl-
see Isobutyric Acid
Propionic Acid, 3-Phenyl-
see Hydrocinnamic Acid
PROPIONIC ACID, 3,3',3''-PHOSPHINIDYNETRI-
complexes with rare earths, preparation of, 22:40059
complexes with thorium and uranium, preparation of, 22:40059
PROPIONITRILE
production in radiolysis of acetonitrile, mechanism of, 22:37775 (BNL-50082, pp 40-78)
yields in gamma radiolysis of acetonitrile, effects of scavengers on, 22:16573
benzonitrile--propionitrile, dielectric constant and loss factor of, 22:16363(R) (ORO-2840-4)
benzonitrile--propionitrile, electric properties of, 22:14388 (ORO-2840-5)
PROPIONITRILE, 2,2'-AZOBIS[2-METHYL-
effects on polymerization of 2-vinyl-1,3-dioxolane, properties of products in, 22:112
effects on polymerization of vinylcarbazole, mechanism of, 22:35841
effects on uv-radioinduced polymerization of 4-methyl-1-pentene, 22:8097(T) (AEC-tr-6908, pp 64-73)
thermal decomposition of, effects of deuterium on formation of radicals in, 22:50987
thermal decomposition of, in chlorobenzene or toluene solution, deuterium isotope effects in, 22:10217
PROPIOPHENONE
hydrochloride, distribution of tritium-labeled, in tissues of guinea pigs following subcutaneous injection, 22:31006
PROPIOPHENONE, p-AMINO-
effects on survival of mice exposed to hyperbaric oxygen, 22:8561(R) (COO-1223-10)
radioprotective effects of, on oral cavity and tongues of mice, 22:15038
PROPIOPHENONE, 4'-AMINO-
radioprotective effects of topically applied, against oral radiation death in mice, whole-body x, 22:43367
PROPIOPHENONE, 3-PIPERIDINO-
radioprotective effects of, on mice and rats, combined effects of morphine on, 22:25863
PROPOLIS
radioprotective effects of, on survival of mice, 22:10791
use for treatment of radiation injuries in mice, 22:10791
PROPULSION
see also Jet Propulsion
see also Rocket Motors
colloid, for space vehicles, 22:13300
electric systems for space, performance of cesium-contact, 22:13297
electric systems for space, review of, 22:25594
electric systems for, review of, 22:16377
electric, magnetic field effect on space-charge neutralization in, (T), 22:9141
electric, testing for SERT I flight, 22:13298
electrothermal and hybrid electrothermal--electromagnetic, performance of, 22:13302
ion thruster for, optimization of Giessen, 22:5046(T) (NP-tr-1599)
ion thruster, design and performance of hollow-cathode plasma-bridge neutralizer for 20-cm mercury, 22:52581
nuclear electric, review of thermionic, 22:30284
nuclear reactors for ship, Euratom catalog of, 22:4303 (EUR-3568)
photovoltaic cells for space, development of, 22:13306
plasma accelerator development for space, 22:13303
plasma accelerator for space vehicle, electron cyclotron resonance, 22:13301
plasma jet, development of motors for, 22:12216
plasma thrustor for space, performance of, 22:36909 (N-68-16396)
radioisojet thruster for space vehicle, nuclear safety analysis of promethium oxide-fueled, 22:37950
radioisotope heat sources for space vehicle, review of developments in, 22:14733
radioisotope subliming solid system for space vehicle, design of low thrust, 22:37947(P)
radioisotope thrusters for space vehicle, development of primary and auxiliary, 22:37939 (WASH-1095)
reactors to supply power for electric, design of 10 MW(e) Rankine-cycle lithium-cooled uranium nitride (UN)-fueled, 22:30282 (UCRL-50382)
systems evaluation for space, gravitational losses in, (T), 22:25593
thruster development for space, use of radioisotopes in, 22:246 (N-67-18580)
PROPYL ETHER
N--propyl ether, electric discharge in, deuterium isotope effects on laser action from, 22:50982
Propyl Alcohol
see 1-Propanol
PROPYLAMINE
β-mercapto-, radioprotective effects of, on deoxyribonucleoprotein, 22:47566
β-mercapto-, radioprotective effects of, on formation of folinic acid in pigeon liver, γ, 22:47627
β-mercapto-, radioprotective effects of, on molecular structure of solutions of deoxyribonucleoprotein, 22:47565
derivatives of, radioprotective effects of, on mice, 22:49391
deuterium exchange and racemization of deuterated 9-methylfluorenyl compounds with, 22:27672
deuterium exchange between N,N,9-trimethylfluorenecarboxamides and, in tetrahydrofuran, 22:27670
effects on separation of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amine carbonate in methanol solutions, 22:133 (CU-755-4, Paper IIB)
racemization with N,N,9-trimethylfluorenecarboxamides in tetrahydrofuran, effects of dueterium on, 22:27670
radioprotective effects of, on survival of mice, effects of oxygen content on γ, 22:49391
vapor pressure of, effects of deuterium on, 22:10249
PROPYLAMINE, N,1-DIMETHYL-
photoreduction of benzophenone by, 22:10213
PROPYLAMINE, 2-METHYL-
effects on separation of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amine carbonate in methanol solutions, 22:133 (CU-755-4, Paper IIB)
PROPYLAMINE, N,N,1-TRIMETHYL-
photoreduction of benzophenone by, 22:10213
Propylene
see Propene
PROPYLENE OXIDE
radiation effects on, at 77°K, ESR spectral studies on free radicals produced by electron, 22:8129
radiation effects on, at 77°K, ESR studies of free radicals from electron, 22:42714(T) (AEC-tr-6937, pp 117-32)
radioinduced polymerization in methylene chloride or 2-methyltetrahydrofuran, effects of additives on electron or γ, 22:51032
radioinduced polymerization of liquid, under anhydrous conditions, γ, 22:8122
radioinduced polymerization of liquid, under anhydrous conditions, 22:42707(T) (AEC-tr-6937, pp 54-8)
reactions with trialkyl- and trialkoxyboroxins, mechanism and products of, 22:22898 (MLM-1440)
PROPYNE
deuterium exchange reactions between water and, enrichment of water-d by, 22:135 (CU-755-4, Paper IIIB)
deuterium exchange reactions between water and, enrichment of water-d by, 22:134 (CU-755-4, Paper

IIIC)
  effects on γ-radiolysis of methane, 22:27774
  electron capture by, deuterium isotope effects in dissociative resonance, 22:8050
  energy level transitions in, forbidden electronic, (E), 22:11193 (CALT-532-20)
  yields from radiolysis of 2-methylpropane, 22:8143
2-PROPYN-1-OL
  spectra of, effects of deuterium on internal rotation of microwave, 22:35799
PROSPECTING
    see also Aerial Surveying
    see also Exploration
    see also Geochemical Prospecting
    see also Geophysical Prospecting
  equipment for petroleum, development of neutron generator, 22:11754
  gamma--gamma logging method for, for copper, iron, and manganese ores, 22:6499
  radioisotopic methods for, 22:51091
PROSTATE GLAND
  accumulation of iodine-131-labeled diethylstilbestrol diphosphate in, of man, diagnostic use of, 22:10814
  blood flow through, of dogs, xenon-133 measurement of, 22:10694
  radiodiagnosis of adenocarcinomas of, in man, use of strontium-85 photoscanning for, 22:51814
  radiodiagnosis of carcinomas of, in man, phosphorus-32 β, 22:38365
  radioinduced tumors in, of rats, 120 MeV proton, 22:23668
  radiotherapy of neoplasms of, in dogs and man, use of cobalt-60, phosphorus-32 and tantalum-182 implants for, 22:15030
Prostigmine
    see Neostigmine
PROTACTINATES(V)
  methyltriphenylarsonium hexaiodo-, preparation and properties of, 22:2055
PROTACTINIUM
    see also Actinides
  alpha emission by, determination of activity from, in urine using sorption on glass fiber filter paper, 22:51633
  chemistry of, review of, 22:50958
  chromatographic behavior of, in mixtures of hydrochloric or nitric acids in alcohols, 22:50974
  complexes with 2,4-pentanedione in perchloric acid solutions, 22:30576
  complexes with 2,4-pentanedione, solvent extraction studies on distribution and formation constants of, 22:6388
  complexes with citric acid, structure of, 22:40083
  complexes with orthophosphoric and trichloroacetic acids, solvent extraction method for calculating constants of, 22:6387
  content in Caucasus neovolcanic rocks, age determination from, 22:18919
  determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
  determination in proton-irradiated protactinium-231, 22:16668
  diffusion coefficient in thorium oxide (ThO_2) and thorium oxide (ThO_2)--uranium oxide (UO_2), analysis of lattice, 22:48790
  diffusion in thorium dioxide and thorium dioxide--uranium dioxide solid solution, 22:15255
  distributions between liquid bismuth--uranium alloy and molten lithium fluoride--thorium fluoride system, 22:25374 (ORNL-4229, pp 22-49)
  electronic structure of, 22:30531
  losses in fuel reprocessing, 22:33514
  preparation of solid trivalent, by decomposition of protactinium pentaiodide, 22:8082
  reduction by thorium in presence of iron surface, 22:25374 (ORNL-4229, pp 22-49)
  separation from acidic solutions by solvent extraction, effects of acetone and alcohols on, 22:40198
  separation from actinium, thorium, and uranium, 22:16668
  separation from aqueous acid solutions by solvent extraction, 22:12414
  separation from aqueous solutions by solvent extraction using alkyl-substituted ammonium salts, 22:6376
  separation from elements 92 through 96 by paper chromatography in hydrochloric acid mixtures with alcohols, 22:51060
  separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
  separation from hydrochloric, nitric, and sulfuric acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33493
  separation from irradiated thorium by sorption by glass, 22:8196
  separation from irradiated uranium by sorption by glass, 22:8196
  separation from molten fluoride salts, 22:42828(P)
  separation from molten fluorides by reductive extraction using molten bismuth, 22:25374 (ORNL-4229, pp 22-49)
  separation from molten-salt reactor fuel, 22:47204 (ORNL-4254, pp 241-78)
  separation from MSRE fuel by reductive extraction by bismuth, 22:47112 (ORNL-4254, pp 88-173)
  separation from neutron-irradiated colloidal thorium hydroxide by recoil, 22:48895 (CEA-R-3493)
  separation from niobium, tantalum, and zirconium by precipitation using hydrogen peroxide, 22:37849
  separation from nitric acid--sulfuric acid solution by solvent extraction using tridodecylamine, 22:25455 (CEA-N-616, pp 295-368)
  separation from other actinides in hydrochloric or nitric acid, paper chromatographic and electrophoretic study of, 22:37832 (CEA-R-3411)
  separation from other metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
  separation from perchlorate solutions by solvent extraction using thenoyltrifluoroacetone, 22:30651(T) (UCRL-Trans-10243)
  separation from perchloric acid by solvent extraction with TTA, 22:30661
  separation from perchloric acid solutions by solvent extraction using 2,4-pentanedione, 22:30576
  separation from spent Molten Salt Breeder Reactor fuel, 22:6383
  separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
  separation from thorium, 22:6382
  separation from thorium anion exchange, 22:2175 (NP-17077)
  separation from thorium by paper chromatography in hydrochloric acid mixtures with alcohols, 22:51060
  separation of tetra- and pentavalent, by coprecipitation with thorium fluoride and other compounds, 22:8177
  solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
  sorption by manganese dioxide from nitric acid, 22:157
  spectra of, survey of, 22:45918 (AERE-R-5731)
  x-ray fluorescence yields for, L-shell, (E), 22:44685
PROTACTINIUM ALLOYS AND SYSTEMS
  C--Pa, phase studies, 22:31471
PROTACTINIUM BROMIDE OXIDES
  crystal structure of, 22:16515
  crystallographic properties of, 22:16500
  preparation of, 22:16500
  spectra of, infrared, 22:16500
  spectra of, ir, 22:2055
PROTACTINIUM BROMIDES
  crystal structure of, 22:16515
PROTACTINIUM CHLORIDE OXIDES
  crystallographic properties of, 22:16500
  preparation of, 22:16500
  spectra of, infrared, 22:16500
PROTACTINIUM CHLORIDES
  complexes with dimethyl sulfoxide, stability, properties, and infrared spectra of, 22:16522
  vapor pressure of, 22:2018(R) (BMwF-FBK-67-76)
PROTACTINIUM FLUORIDES
    see also Potassium Protactinium Fluorides
    see also Rubidium Protactinium Fluorides
  alkali metal fluorides--PaF_5, preparation and structure of, 22:30555
PROTACTINIUM FLUORIDES PaF_4
  KF--PaF_4, preparation and structure of, 22:30555
  LiF--PaF_4, preparation and structure of, 22:30555
  NaF--PaF_4, preparation and structure of, 22:30555
  PaF_4--RbF, preparation and structure of, 22:30555
PROTACTINIUM IODIDE OXIDES
  crystallographic properties of, 22:16500
  preparation of, 22:16500
  preparation, properties, and spectra of, 22:2055
  spectra of, infrared, 22:16500
PROTACTINIUM IODIDES
  decomposition of PaI_5, preparation of protactinium(III) by, 22:8082
  determination in carbonates by ion exchange and alpha spectrometry, 22:6271
  preparation, properties, and spectra of, 22:2055
PROTACTINIUM IONS
  chemistry of aqueous solutions of penta- and tetravalent, 22:50958
  hydrolysis constant of pentavalent, second, 22:18756
  hydrolysis of tetravalent, 22:30651(T) (UCRL-Trans-10243)
  hydrolysis of tetravalent, in perchloric acid solutions, 22:18755
  magnetic interaction integrals for Pa II, tables of, 22:29226
  polymerization of tetravalent, in perchloric acid solutions, 22:18755
PROTACTINIUM ISOTOPES
  beta decay, 22:20975(R) (BMwF-FBK-67-89)
  decay properties of, tables and charts on, (E), 22:7723
  neutron capture cross section calculations using revised mass formula, fast, (T), 22:30021
PROTACTINIUM ISOTOPES Pa-231
  alpha decay of, conversion--electron and γ spectra for, (E), 22:42019(R) (MLM-1494)
  alpha decay of, conversion-electron and γ spectra for, (E), 22:42043
  alpha decay of, gamma energies from, 22:25440(R) (MLM-1443)

alpha spectra of, energies of intense lines in, (E), 22:35357
analysis for niobium, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
analysis of proton-irradiated, for actinium, protactinium, thorium, and uranium, 22:16668
bromine-79 reactions (Br-79,xn) at 400 to 480 MeV, calculation of cross sections for, (T), 22:1690
bromine-81 reactions (Br-81,xn) at 420 to 500 MeV, calculation of cross sections for, (T), 22:1690
contamination of laboratory personnel, effects of DTPA on, 22:40514 (CONF-670965-2)
content in Pleistocene shells, open system model for radioactive age estimation using, 22:6463
content ratio with thorium-230 in ocean sediments, use for age estimation, 22:45180(R) (ORO-3622-2)
decay schemes for, 22:43320
determination in pitchblende using solvent extraction and ion exchange, 22:37676
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
distribution in human tissues following accidental inhalation, 22:43320
energy-level transitions from thorium-231 β decay, (E), 22:20575 (NP-17285)
energy-level transitions from thorium-231 decay, conversion coefficients and multipolarities of, (E), 22:16014 (NP-17208)
energy-level transitions in, L-shell internal conversion studies of 58.5-keV, (E), 22:44685
half-life and type of decay of, 22:42698
half-life, (E), 22:14030
metabolism, use of whole-body counters to study, 22:43300 (AERE-PR/HPM-12)
neutron cross sections and resonance parameters at 0.001 eV to 15 MeV, data sets for, 22:16001 (GA-7462)
purification of, 22:6382
use in ratio with thorium-230 for measuring growth rates in manganese nodules, 22:16390 (COO-1540-8)
PROTACTINIUM ISOTOPES Pa-233
beta decay of, Auger, conversion-electron, and γ spectra from, (E), 22:3744
determination in acid solutions by solvent extraction and gamma spectrometry or beta counting, 22:7985 (AERE-AM-105)
energy levels from neptunium-237 decay, (E), 22:39638 (UCRL-17989, pp 1-41)
energy levels of, lifetime measurements using delayed coincidence technique, (E), 22:11950(R) (ORO-3624-1)
energy-level transitions from thorium-233 decay, (E), 22:37365
energy-level transitions from thorium-233 decay, (E), 22:44719
gamma spectra, (E), 22:9859
isomeric transition from neptunium-237 decay, half-life for, (E), 22:37371
neutron capture resonance integral, (E), 22:3701 (WAPD-TM-612)
neutron cross sections and resonance parameters at 0.001 eV to 15 MeV, data sets for, 22:16001 (GA-7462)
preparation of carrier-free by sorption by glass, 22:8196
production by neutron irradiation of thorium carbonate, 22:44970 (AERE-AM-103)
production of, relations with thorium dioxide neutron capture resonance changes, 22:17190
recoil from neutron reactions with thorium, 22:48895 (CEA-R-3493)
separation from hydrochloric acid solutions by solvent extraction using alcohols, 22:2181
separation from molten fluorides in MSRE of, method for, 22:12035(R) (ORNL-4191)
uptake and metabolism by animals and man, 22:8644
use for measurement of plutonium-239 contamination of human lungs, 22:28472
PROTACTINIUM ISOTOPES Pa-234
beta decay of, β--γ and γ--γ coincidence spectra for, (E), 22:50635
beta decay of, γ spectra for, (E), 22:53218
beta decay of, γ spectra from, (E), 22:27184
production of millicurie amounts of, 22:33382
PROTACTINIUM ISOTOPES Pa-236
beta spectra, 22:20975(R) (BMwF-FBK-67-89)
gamma spectra, 22:20975(R) (BMwF-FBK-67-89)
PROTACTINIUM ISOTOPES Pa-237
beta spectrum of, 22:20975(R) (BMwF-FBK-67-89)
gamma spectra, 22:20975(R) (BMwF-FBK-67-89)
PROTACTINIUM ISOTOPES Pa-238
beta spectra, 22:20975(R) (BMwF-FBK-67-89)
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
x-ray spectra, 22:20975(R) (BMwF-FBK-67-89)
PROTACTINIUM OXALATES
properties of, 22:2077
spectra of, ir and uv, 22:2077
PROTACTINIUM OXIDES
Pa_2O_5--rare earth oxides, phase studies of, 22:4895
Protactinium Potassium Fluorides
see Potassium Protactinium Fluorides
Protactinium Rubidium Fluorides
see Rubidium Protactinium Fluorides
PROTAMINES
radiation effects on recombination of unpaired electrons in, effects of temperature on γ and uv, 22:49176(T) (JPRS-43645, pp 95-7)
radioprotective effects of stellin, on mice, cobalt-60 γ,
22:25864
sulfates, reactions with hydrated electrons, effects of polyanions on, 22:42783
Protection From Radiation
see Radiation Protection
PROTECTIVE CLOTHING
see also Clothing
book: Means of Individual Protection for Work with Radioactive Materials, 22:40731
design and efficiency of laser, for eyes, 22:38252 (CONF-660573-, pp 97-109)
design for protection against nuclear weapons, 22:8528(T) (JPRS-42929, pp 208-65)
design for protection against radioactive aerosols, 22:40662(T) (JPRS-43578)
design of disposable plastic, for protection against radioactive dusts, 22:10765(T) (LB/G-2598)
design of ventilated, for protection against dusts, low temperatures, and x radiation, 22:49341
development of plutonium-238-heated, for underwater swimmers, 22:37949
efficiency for use in environment contaminated by radioactive aerosols, comparison of natural and synthetic fibers for, 22:40677
efficiency in tritium-contaminated atmosphere, 22:45527
heating suits for swimmers in cold water, development of radioisotope heated, 22:47295(P)
heating suits for swimmers in cold water, development of radioisotope heated, 22:47296(P)
material for, flexible shielding, 22:43523(P)
shielding properties of, against tritium absorption by skin of man, 22:8527 (SC-DC-67-2191)
use at Savannah River Production Reactors, description of, 22:35455 (DPSPU-66-30-13)
use for maintenance of liquid metal-cooled fast reactor liquid sodium cooling system, description of, 22:46960
use for radiation protection of personnel against atmospheric contamination in laboratories, 22:45575
use in decontamination of plutonium laboratory after glove box explosion and fire, 22:2320 (BNWL-464)
use of disposable plastic suits and hoods with positive air supply as, 22:51567(R) (IN-1205)
use of polyvinyl chloride, effects of, on tritium uptake by skin, 22:14999 (AECL-2699)
Protective Construction (Shelters)
see Shelters
Protective Masks
see Protective Clothing
PROTECTIVE OINTMENTS
see also Eucerite
see also Petrolatum
use for treatment of uv-irradiated human skin, 22:28641
Protective Structures
see Shelters
PROTEINASES
effects on cytochrome C, 22:40556
PROTEINS
see also Albumins
see also Antigens
see also Casein
see also Collagen
see also Crystallins
see also Cytochromes
see also Elastin
see also Enzymes
see also Fibrin
see also Gelatin
see also Globins
see also Globulins
see also Gluten
see also Glycoproteins
see also Histones
see also Interferon
see also Keratins
see also Lipoproteins
see also Lysins
see also Mucoproteins
see also Myoglobin
see also Myosin
see also Nucleoproteins
see also Peptides
see also Peptones
see also Phosphoproteins
see also Properdin
see also Protamines
see also Prothrombin
see also Toxins
see also Transferrin
analysis in man with myeloma nephrosis following exposure to atomic bombings of Hiroshima and Nagasaki, 22:8580
analysis of basic, use of disc gel electrophoresis for, 22:51304 (LA-3848, pp 21-61)
analysis of peptides in, of vertebrates, 22:12160(R) (CALT-642-3)
analysis of ribosome, isolated from tissues of mammals, 22:38193(R) (EUR-3912)
analysis of, sequence, 22:14429 (ORNL-4196, pp 44-54)

binding of cobalt-57-labeled transcobalamin, by vitamin B_{12} in human blood serum, 22:21442
binding of iodine-131-labeled triiodothyronine to, for use in diagnosis of thyroid function in vitro, 22:4632(T) (AERE-Trans-1073)
binding of p-hydroxymercuribenzoate by, of Micrococcus radiodurans, 22:23410(R) (NYO-3319-17)
binding to americium and plutonium in vitro, tracer studies of, 22:51372
calcium binding by, in blood serum in rabbits, 22:30999
carbon-12 content of, of plankton, 22:40609
comparison of light chain of myeloma, with lambda-type Bence-Jones, 22:28397 (ANL-7278, pp 144-69)
complexes with chlorophyll, determination of structure of, 22:14905 (BNL-50057, pp 111-22)
content in blood serum, densitometer for electrophoretic determination of, 22:2453 (ORNL-IIC-10(Vol.1), pp 282-97)
content of biuret-reacting, in kidneys of mice and rats, effects of uranyl nitrate on, 22:38219
content of blood in chipmunks, effects of sex on, 22:6769(R) (NYO-2579-17)
content of blood serum in human populations exposed to atomic bombing of Hiroshima, 22:6839
content of blood serum in irradiated and normal rats following immunization with liver and spleen tissue extracts, 22:25771
content of diet of burros, effects of, on γ-radiosensitivity of foals, 22:40829 (ORO-657, pp 18-34)
content of diet of mice, effects of, on yttrium-91 metabolism, 22:43210
content of diet, effects of, on biosynthesis and catabolism of plasma albumins in rats, 22:30993
content of diet, effects of, on zinc uptake by calves, 22:40831 (ORO-657, pp 46-64)
content of disulfides in, of ascites tumor cells, 22:21565
content of Escherichia coli, combined effects of benzopyrene and light on, 22:28289 (ORNL-4100, pp 178-201)
content of freshwater fish, for use as food for human population in postattack environment, 22:12861
content of Haplopappus gracilis, effects of, on sensitivity to radiomimetic compounds, 22:31139
content of iodine-131-labeled, in plasma of man following radiotherapy of thyroid carcinomas, 22:28584
content of Micrococcus radiodurans, determination of rate of increase in, 22:23410(R) (NYO-3319-17)
content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
content of serum of beagle dogs, 22:28622 (ANL-7278, pp 95-131)
content of yolk, in eggs of fish, 22:28283 (ORNL-4100, pp 75-96)
determination in foods by neutron activation methods, 22:4022
determination of antibacterial, in lysosomes of polymorphonuclear leukocytes, 22:20998(R) (ORO-3628-1)
dietary, effects on x-radiosensitivity of sarcomas of mice and rats, 22:40856
digestion by cattle and sheep, bibliography on role of microorganisms in, 22:20997 (ORNL-TM-1973)
digestion of, effects of photoinactivated enzymes on, 22:14907 (COO-875-80)
distribution in embryos of Vanda sp, 22:40953(R) (UH-235-P-6-5)
distribution of basic, in Chinese hamster ovary cells, 22:51304 (LA-3848, pp 21-61)
effects on activity of coacetokinase in yeasts, effects of potassium and sodium ions on, 22:43219
effects on γ-radiosensitivity of Staphylococcus aureus, 22:15125(R) (RLO-1730-2)
effects on uv- and x-radioinduced liberation of lambda prophage, 22:40974
effects on uv-radiosensitivity of tobacco mosaic virus RNA, 22:49266
effects on x-radiosensitivity of DNP, 22:28389
effects on x-radiosensitivity of mammalian cells, synthesis of, 22:49519
electrophoresis of, 22:14429 (ORNL-4196, pp 44-54)
energy migration in, following excitation of indole groups, pathways for, 22:43205(R) (COO-894-30)
formation of calcium-binding, in intestine and kidney of rachitic animals, effects of vitamin D on, 22:30408 (NYO-2147-13, pp 28-52)
fraction of iodinated, of hyperplastic thyroid gland, ultracentrifugal, 22:40517(R) (ORO-1643-89)
fractionation of serum, use of electrophoretic, for diagnosis of hepatic diseases, 22:6216(R) (ORO-3461-9)
genetic variations in Bence-Jones, 22:28397 (ANL-7278, pp 144-69)
hydrolysis in liver and spleen of animals in relation to radiosensitivity, 22:19269
incorporation of heavy atoms, 22:28289 (ORNL-4100, pp 178-201)
iodine-131 uptake by human blood serum, effects of dose to thyroid gland on, 22:38443
labeling with chromium-51, 22:38195(R) (NYO-3515-3)
loss of enteral serum, in man with exudative gastroenteropathy, 22:19255
measurement in food products by activation determination of nitrogen, 22:1961 (ORO-2980-17)
metabolism in amphibian eggs, effects of heavy water on, 22:43448
metabolism in liver of rats, carbon-14 tracer study of, 22:28273 (ANL-7278, pp 219-49)
metabolism in man, construction of lead-shielded whole-body scintillation detector for tracer study of, 22:19392
metabolism in Nicotiana glutinosa, effects of photoreactivation of tobacco mosaic virus on, 22:4706(R) (RLO-1952-2)
metabolism of deuterium-labeled, review of, 22:2489
molecular structure of, use of two-dimensional models for determination of, 22:28274 (ANL-7278, pp 250-82)
nitrogen-15 content of, in wheat kernels, 22:14968
nuclear magnetic resonance spectrum of, design of whole-body spectrometer for detection of, 22:45279 (LA-3966)
phosphorus-32 content of, in Drosophila, 22:23463
plutonium binding to, in blood serum, in vitro, 22:51466
radiation chemistry of, effects of free radicals on, 22:30930(R) (COO-690-29)
radiation effects on activity of saliva parotin-A, in rabbits, x, 22:51437
radiation effects on biosynthesis of, in lungs of rabbits, ionizing, 22:45437
radiation effects on components of, in rat serum, whole-body x, 22:463
radiation effects on content of C-reactive, in malignant and normal human tissues, electron, γ, and photon, 22:45407
radiation effects on content of disulfides and sulfhydryls of, in rat tissues, ionizing, 22:51485
radiation effects on content of iodine-127-labeled, in human blood serum, iodine-131 β and γ, 22:51400
radiation effects on content of serum, in rabbits, combined effects of pyridoxine on x, 22:6850
radiation effects on content of soluble, in myocardium of rats, whole-body x, 22:40579
radiation effects on content of, in barley leaves, effects of kinetin on x, 22:28342
radiation effects on content of, in black-eyed pea seedlings, effects of seed exposure on fission neutron and γ, 22:21638
radiation effects on content of, in blood of chipmunks, 22:6769(R) (NYO-2579-17)
radiation effects on content of, in blood of young chickens, x, 22:47587
radiation effects on content of, in blood serum of dogs, chronic, 22:47452
radiation effects on content of, in blood serum of mice, protective effects of ginseng extract against x, 22:36330
radiation effects on content of, in blood serum of man, 22:4694
radiation effects on content of, in blood serum of rabbits, high and low energy x, 22:28387
radiation effects on content of, in bone marrow of rats, x, 22:45414
radiation effects on content of, in brain and spinal cord of rats, prenatal x, 22:447
radiation effects on content of, in corn and pea meals, effects of seed irradiation on, γ, 22:23705
radiation effects on content of, in corn following treatment of seed, effects of fertilizers on γ, 22:33749
radiation effects on content of, in erythrocyte stroma in rabbits, x, 22:40824(T) (JPRS-44070, pp 19-23)
radiation effects on content of, in hypertrophic kidney of rats, γ, 22:40920
radiation effects on content of, in intestines of rats, x, 22:40595
radiation effects on content of, in plants, effects of growth conditions on γ, 22:31281
radiation effects on content of, in plasma of rabbits, γ, 22:43234
radiation effects on content of, in rye grass, γ, 22:47507
radiation effects on content of, in serum of rabbits with nephritis, x, 22:6751
radiation effects on content of, in serum of rats, whole-body x, 22:40909
radiation effects on content of, in spleen of mice, protective effects of bone marrow transplants against x, 22:19251
radiation effects on content of, in stomach of rats, x, 22:49226
radiation effects on content of, in supernatant of liver fractions from rats, sulfur-35 β, 22:12807
radiation effects on content of, in thymus of rats, whole-body γ, 22:40540
radiation effects on digestion of, laser, 22:4570
radiation effects on distribution of phosphorus-32 in blood serum, proton, 22:52001
radiation effects on electrophoretic behavior of, from lungs of rats, x, 22:51423
radiation effects on electrophoretic characteristics of, in stored meats, γ, 22:45437
radiation effects on electrophoretic properties of, γ, 22:15023
radiation effects on excretion of muco-, diagnostic value of x, 22:33879

radiation effects on fractions of, in blood, bone marrow, and liver of rats, 22:446
radiation effects on hydrolysis of, by blood of dogs and rats, x, 22:23429
radiation effects on hydrolysis of, in blood of mice, whole-body, 22:19261
radiation effects on incorporation of sulfur-35-labeled-methionine into, of rabbit duodenum, 22:45437
radiation effects on iodine-131 uptake by, in membranes of Escherichia coli following exposure in medium containing labeled iodoacetic acid, γ, 22:33730
radiation effects on localization of injected, in tissues of rabbits, effects of inflammation on x, 22:6712(R) (COO-1172-7)
radiation effects on metabolism of, 22:6711 (BARC-287)
radiation effects on metabolism of, in leaves of peas, γ, 22:23461
radiation effects on metabolism of, in mammals, ionizing, 22:16979
radiation effects on metabolism of, in synchronous cultures of Chinese hamster cells, relation of, to reproduction, ionizing, 22:25713 (COO-78-163, pp 64-125)
radiation effects on molecular weight of components of molecules of, γ, 22:23408(R) (NYO-2735-8)
radiation effects on pepsin and trypsin susceptibility of heat-coagulated egg white, γ, 22:28306
radiation effects on photoluminescence of, review of uv, 22:33710(T) (JPRS-41315, pp 4-15)
radiation effects on quality of, in meats, 22:52061 (CONF-670945)
radiation effects on ratio of, to DNA in slime molds, 22:43480
radiation effects on recombination of unpaired electrons in, γ and uv, 22:33747
radiation effects on sedimentation of, uv, 22:36161
radiation effects on serum, in man following therapy, 22:6839
radiation effects on serum, in relation to atherosclerosis, uv, 22:45645
radiation effects on serum, of mice, effects of thymectomy on x, 22:28379
radiation effects on serum, of mice, immunoelectrophoretic analysis of mixed gamma-neutron and 14 MeV neutron, 22:30960
radiation effects on soluble, in tissues of brain and intestinal walls of rats, 22:28696
radiation effects on structural, in fish, 22:4722
radiation effects on sulfhydryl groups in phosvitin and vitellin, of hen eggs, x, 22:23439
radiation effects on susceptibility of, in erythrocyte cell membranes to enzymatic hydrolysis, x, 22:23442
radiation effects on synthesis of kidney soluble, in rabbits, electrophoretic and tracer study of x, 22:33739
radiation effects on synthesis of plasma, in rabbits, tracer study of acute, 22:43250
radiation effects on synthesis of plasma, in rats, whole-body fast neutron, 22:6752
radiation effects on synthesis of, at various sites in HeLa cells, uv microbeam, 22:36217
radiation effects on synthesis of, by Escherichia coli, effects of glucose, histidine, thymine, or uracil starvation on uv, 22:47451
radiation effects on synthesis of, by liver mitochondria of rats, whole-body x, 22:453
radiation effects on synthesis of, by ribosomes, γ, 22:33993
radiation effects on synthesis of, by synchronous HeLa and human leukemic cells, tracer study of x, 22:8436(R) (NYO-910-58)
radiation effects on synthesis of, in Azotobacter, γ, 22:21428
radiation effects on synthesis of, in Chinese hamster cells, effects of age on x, 22:25786
radiation effects on synthesis of, in cotyledons of peanut seeds, x, 22:31014
radiation effects on synthesis of, in Ehrlich ascites cells, γ, 22:14917
radiation effects on synthesis of, in Escherichia coli, effects of energy, thymine, or uracil starvation on uv, 22:40566
radiation effects on synthesis of, in fetal rat liver, effects of dose on x, 22:12897 (SZS-12/67)
radiation effects on synthesis of, in granular cells of human epidermis, uv, 22:10726
radiation effects on synthesis of, in hamster cells, x, 22:28274 (ANL-7278, pp 250-82)
radiation effects on synthesis of, in L cells of mice, effects of tritium-labeled thymidine on β, 22:19274
radiation effects on synthesis of, in mammary tumor cells of mice, x, 22:36360
radiation effects on synthesis of, in man in relation to tryptophan excretion patterns, x, 22:45508(R) (PG-Report-826)
radiation effects on synthesis of, in mitochondria of ripening pear fruits, γ, 22:49637
radiation effects on synthesis of, in peanut seedlings, effects of seed exposure on x, 22:40959
radiation effects on synthesis of, in pre-immunized rats in relation to albumin and globulin content of serum, 22:25771
radiation effects on synthesis of, in rabbits with nephritis, x, 22:6751
radiation effects on synthesis of, in radiosensitive mutants of Saccharomyces, uv and x, 22:38240
radiation effects on synthesis of, in seeds of barley, γ, 22:28709
radiation effects on uptake of leucine by, of sea urchin eggs, γ, 22:12799
radiation effects on uptake of, by lymph nodes, spleen, and thymus of guinea pigs, x, 22:14975
radiation effects on water solubility of, from rat liver, γ, 22:52091
radiation effects on, determination of, by uv fluorescence spectra, 22:36176
radiation effects on, effects of irradiation atmosphere on γ, 22:45133
radiation effects on, effects of sodium benzoate and sodium glutamate on γ, 22:40108
radiation effects on, EPR study of effects of glycine on γ, 22:28366
radiation effects on, γ, 22:25388
radiation effects on, in fish embryos, x, 22:51353
radiation effects on, in food, review of, 22:49676
radiation effects on, in foods, 22:31306
radiation effects on, in human blood plasma, γ, 22:52096
radiation effects on, in papaya, γ, 22:45737
radiation effects on, in rat skin, chromatographic and electrophoretic analysis of x, 22:51886
radiation effects on, in urine of rats, γ, 22:51384
radiation effects on, of DNA, effects of, on type of mutation induced in genes, uv, 22:25784
radiation effects on, of phi X 174 phage following treatment with 5-bromouracil, uv, 22:47558
radiation effects on, of wheat flour, effects of dose on γ, 22:49665
radiation effects on, review of, 22:49224
radioinduced changes in covalent bonds and secondary and tertiary structures of globular and fibrous, 22:25779
radioinduced denaturation of, in tobacco mosaic virus, uv, 22:8663
radioinduced free radicals in dry, distribution of γ, 22:14938
radioinduced free radicals in, charged particle, 22:28368
radioinduced free radicals in, EPR spectra of uv, 22:47459
radioinduced hybridization of, x, 22:47476
radioinduced increase of, in corn and radishes, effects of seed exposure on x, 22:38499(T) (JPRS-44845)
radioinduced leakage of, from intestines of mice, neutron and x, 22:49557
radioinduced leakage of, from lysosomes, γ, 22:19256
radioinduced loss of, from foods, 22:47659
radioinduced loss of, in irradiated food preserved by ionizing radiation, 22:43514
radioinduced luminescence in, effects of cysteine, propylgallate, and temperature on γ and x, 22:28302
radioinduced luminescence of, 22:14519(T) (CEA-tr-R-1907)
radioinduced mutations for variation in, of tobacco, effects of seed exposure on β, 22:31017 (BNL-10549)
radiolysis in aqueous solutions, γ, 22:52097
radiolysis in meat products in relation to taste, 22:8673
radiolysis in yeasts, effects of copper ions on, 22:19458
radiolysis of, use of tritiated hydrogen sulfide in determination of free radicals from γ, 22:8144
radioprotective effects of tobacco mosaic virus, against inactivation of infectivity of RNA, uv, 22:28321
reactions with injected plutonium-239 in blood of dogs, 22:36204
role in uv-radioinduced inactivation of thromboplastin, 22:47588
selenium-75 uptake by blood plasma, of rats from labeled methionine, 22:30979
separation by centriphoresis, 22:14429 (ORNL-4196, pp 44-54)
separation by thin-layer chromatography, 22:14428 (ORNL-4196, pp 33-44)
separation of ribosomal, by electrophoresis, 22:7953(R) (NYO-910-61)
stability of tritium-labeled, in metabolic processes, 22:51461
strontium binding by, in blood serum in rabbits, 22:30999
structural integrity of, effects of, on fluorescence of phycoerythrin, 22:43205(R) (COO-894-30)
synthesis during conjungation of Escherichia coli, 22:28404 (ORNL-4100, pp 97-103)
synthesis during development of sea urchin eggs, 22:38193(R) (EUR-3912)
synthesis during mitotic cycle of sea urchin eggs, effects of puromycin on, 22:25712 (COO-78-163, pp 39-63)
synthesis during mitotic cycle of slime mold, electrophoretic and tracer study of, 22:25713 (COO-78-163, pp 64-125)
synthesis during spermatogenesis in Drosophila, effects of inhibitors on, 22:28668
synthesis in bacteria and animals, reaction mechanisms

  for, 22:51302(R) (HUX-2643-42)
  synthesis in biological systems, 22:38192(R) (EUR-3607)
  synthesis in cell cultures from pituitary gland of rats, effects of hypothalamic extracts on, 22:12175(R) (NYO-3827-3)
  synthesis in cells of chicks, effects of RNA-oncogenic virus on, 22:51302(R) (HUX-2643-42)
  synthesis in mitochondria of Tetrahymena, mechanisms of, 22:1926(R) (NYO-3588-6)
  synthesis in radioresistant mutants and wild types of Escherichia coli, effects of p-fluorophenylalanine on, 22:45733
  synthesis in viruses, 22:2502 (AECL-2665)
  synthesis in vitro, functions of DNA, RNA, and RNA-polymerase in, 22:40615(R) (EUR-3889)
  synthesis of lens, in cultured epithelial cells, 22:28283 (ORNL-4100, pp 75-96)
  synthesis of, effects of RNA species on, 22:28286 (ORNL-4100, pp 153-9)
  synthesis of, role of, in radiation repair processes of bacteria, 22:33752
  thorium-232 uptake by, in rat liver, 22:51371
  tritium uptake by, of brain in monkeys, 22:40572
  zinc-65 content of, in maize seedlings, 22:45403

PROTHROMBIN
  radiation effects on content of, in human blood, ionizing, 22:52008

Protium
  see Hydrogen

PROTON BEAMS
  see also Proton Beams (anti p)
  acceleration of, design of isochronous cyclotron for, 22:29800
  charge exchange systems for neutralizing, carbon dioxide and magnesium, 22:15333
  interactions with arc discharge helium and hydrogen plasma, energy losses in, (E), 22:39124
  interactions with potassium plasma, oscillations from, 22:13458
  monitoring by nuclear reactions, effect of thick targets on, 22:15895
  polarization by strong interaction scattering in storage rings, 22:44555
  polarization in 3-GeV synchrotron, depolarization effects on, 22:15883(T) (ANL-Trans-570)
  polarization in weak-focusing constant-field cyclic accelerators, (T), 22:39529
  polarization of, design of system for, 22:7592
  polarization of, effects of synchrocyclotron acceleration on, 22:9739
  production of low emittance, with single gap accelerator and duoplasmatron ion source, 22:11771
  production of monoenergetic, design of isochronous cyclotron for, 22:46569 (JINR-P9-3932)
  pulsing of, design and performance of microwave system for, 22:5700
  reactions with magnesium vapors, device for neutralization in, 22:24030(T) (NP-tr-1642)
  space-charge effects in linacs, computer program for particle motion including, 22:22481 (BNL-12307)
  use for industrial radiography, 22:28034
  use in microanalysis of alloys for elements of low atomic number, 22:30427 (BNL-50083, pp 192-202)

PROTON BEAMS (anti p)
  contamination of 7-GeV/c, in BNL bubble chamber, use of delta-ray spectrum for determining, 22:36100
  interactions anti p + p $\rightarrow$ baryon + baryon + meson, quark model for cross-section relations between, 22:50375
  interactions anti p + p, π and N form factors from multiple quark analysis of consistency relations among diffraction cross sections for, (T), 22:32116

PROTON CROSS SECTIONS
  cosmic-ray fragmentation, for interstellar space, (T), 22:19810

PROTON-SCATTERING ANALYSIS
  equipment for, design of microscope, 22:43168

PROTON SOURCES
  beam polarization from Lamb-shift polarized, static field method for enhanced, 22:37268
  design of 0.5 keV, 22:32389
  design of polarized, by excitation of 2S(1/2) metastable states, 22:7592
  design of polarized, for 40-MeV linac, 22:39525
  design of polarized, for pressurized Van de Graaff accelerators, 22:5699
  hydrogen transformation efficiency in high-current, 22:32385

PROTON SPECTROMETERS
  amplifier and pulse analyzer for silicon semiconductor, used for spectroscopy on lunar surface, 22:12599
  calculations for recoil, from n + p $\rightarrow$ n + p interactions at high energies, 22:4470 (HASL-186)
  calibration of magnetic, up to 1670 MeV/c, 22:47359 (CALT-68-153)
  design and performance of high-resolution silicon, 22:352
  design for satellites Proton-1 and 2, (E), 22:11284
  design of lithium-drifted germanium total-absorption, for 100-MeV protons, 22:349
  design of satellite-borne silicon surface-barrier range-energy, for 6- to 100-MeV protons, 22:28151
  design of silicon surface-barrier satellite-borne, for 0.1- to 1.0- and 0.8- to 6.0-MeV protons, 22:28150
  resolution in scattering experiments at 1 GeV, 22:24826 (BNL-12342)

Proton Synchrotrons
  see Synchrotrons

PROTONS
  abundance in low-energy primary cosmic radiation, (E), 22:34310
  abundance in primary cosmic radiation relative to deuterons and helium-3 and -4 at 60 to 220 MeV/N, counter--telescope study of, (E), 22:29317
  abundance in primary cosmic radiation, (E), 22:21964
  abundance in primary cosmic radiation, (E), 22:36757 (N-68-10507)
  abundance in primary cosmic radiation, (T), 22:24086
  abundance in solar wind, (E), 22:17340
  abundance in topside ionosphere, thermal diffusion effects on, (T), 22:17532
  abundance in upper atmosphere, (T), 22:13323
  abundance near Venus, (T), 22:34135 (AD-662227)
  acceleration during magnetic storm on April 18, 1965, (E), 22:13344
  acceleration in sunspots, (T), 22:23917
  acceleration of solar-wind, at bow shock, (E), 22:47983
  acceleration of, development of accelerator using swept beam of electrons for, 22:46601 (UCRL-18103, pp 219-23)
  angular and energy distribution of, produced by dissociation of molecular hydrogen ions, (E), 22:17396
  angular distribution assymetry from polarized deuteron reactions (d,p) with beryllium in MeV range, device for measuring, 22:11755
  atomic stopping powers for, measurement using (p,n) reactions, (E), 22:30039
  atomic stopping powers in cadmium, indium, silver, and tin at 3.75 to 5.5 MeV, (E), 22:30039
  attenuation by silicon, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
  capture by carbon-14 at 352, 527, and 634 keV, nitrogen-15 energy levels and transitions from, (E), 22:1597(R) (COO-1120-68)
  capture by lithium-6 at 0.8 to 1.8 MeV, beryllium-7 energy levels and transitions from, (E), 22:1597(R) (COO-1120-68)
  capture by silicon-30, phosphorus-31 energy levels and transitions from, (E), 22:1597(R) (COO-1120-68)
  channeling in copper at 5 to 500 keV, computer calculations on, (T), 22:26471
  channeling in copper single crystals, observation by characteristic extreme uv emission, 22:1363
  channeling in crystals, analysis of impurity atoms from characteristic x rays, 22:31994
  channeling in crystals, star patterns from, (E), 22:31921 (BNL-50083, pp 125-41)
  channeling in crystals, theory for, 22:29549
  channeling in crystals, use in defect studies, (E/T), 22:26488
  channeling in germanium and silicon crystals, feeding into and escape from channels in, (E), 22:31917 (BNL-50083, pp 45-57)
  channeling in germanium, calculations using diffraction model for, 22:11548
  channeling in gold, tungsten, and uranium dioxide at 2 to 30 MeV, 22:11537
  channeling in quartz single crystals at 415 keV, (E), 22:34753
  channeling in silicon at 3 MeV, 22:11537
  channeling in silicon single crystals, anomalous energy losses of 1.5-MeV, (E), 22:17812
  channeling in silicon, energy-loss distribution for, 22:17420
  channeling in silicon, review, 22:37003
  channeling in silicon, use in crystal wafer orientation of, (E), 22:1339
  channeling in thin [111] gold crystals, 22:29575
  channeling of, angular limit to classical description of, 22:29546
  channeling through gold, energy structure in axial 30-keV, 22:52879
  channeling through silicon crystals at 2 MeV, 22:7395
  characteristics of auroral, (T), 22:47941
  characteristics of solar-wind, Vela 4 measurements, (E), 22:41266
  charge exchange with metal vapor jets at 5 to 40 keV, 22:26233
  charge of, inequality with electrons, (E), 22:11573
  charge of, possible check through high-precision frequency measurements for Gamow time-dependence of, 22:22361
  charge-exchange lifetimes in outer radiation belt, (E), 22:36800 (AD-666964)
  collision cascades of, energy distribution in, 22:25403
  collisions with ribonuclease, measurement of inactivation cross sections for elastic, 22:45508(R) (PG-Report-826)
  content of space environment, hazards of, to manned missions, 22:6919
  correlations p--n in complex nuclei, effects on cross section for meson (π) reactions (π^+,π^0) and (π^-,π^0), 22:3460
  coupling with neutrons, mixed representations in U(3) x

U(3) for parameters of axial-vector, 22:24704
cutoff rigidity spectrum between 12 and 40 GeV of cosmic-ray, (E), 22:31667
density in environment of Venus, (E), 22:13147
detection aboard OGO-I and III satellites, ionization chamber for, 22:43041
detection and discrimination from low-energy electrons, double layered scintillation detector consisting of thallium-activated cesium iodide evaporated on plastic NE-102 for, 22:40420
detection and discrimination from mesons (π) in cosmic radiation by energy loss in proportional detectors, 22:36044
detection and discrimination from other charged particles, operation of semiconductor detectors in E--ΔE configuration for, 22:38010
detection and discrimination of, two-counter, 22:47337
detection and measurement in space, equipment and methods for, 22:49093
detection and measurement of 1- to 20-keV, in aurorae, design of cylindrical electrostatic analyzers for, 22:28096
detection and measurement of 5- to 80-MeV, aboard OGO-F satellite, 22:29306
detection efficiency using silicon and germanium detectors, nuclear reaction correction for, 22:14796
detection of 3.5- to 315-MeV, response of lithium-drifted silicon detectors for, 22:28093
detection of cosmic, at energies near or greater than 100 GeV, use of gas proportional detector for, 22:365
detection of solar-wind, on lunar surface, suppression of uv sensitivity of detector for, 22:51230
detection of, 40- to 220-MeV, response of plastic scintillator NE 102 for, 22:2354
detection of, calibration of satellite-borne semiconductor system for, 22:23293
detection of, efficiency of channel electron multipliers for, 22:40408
detection of, light output of NE-213 phosphors for, 22:16888
detection of, response of organic scintillators for, 22:49087
detection using germanium and silicon detectors, nuclear reaction efficiency corrections for, 22:13927(R) (USC-136-132)
diffraction by thin single-crystal films, channeling in, (T), 22:44226
diffusion across magnetopause, (T), 22:47965
diffusion in magnetosphere, effect of conjugate-point wave phenomena on radial, (T), 22:38922
diffusion in magnetosphere, radial, (T), 22:36792 (AD-662579)
diffusion in nickel and titanium, determination by condensation method, 22:26203(T) (NP-tr-1631)
diffusion in nickel and titanium, determination by condensation method, (E), 22:7166
diffusion of solar, in interplanetary magnetic field, (T), 22:13282
discrimination from deuterons, design of semiconductor detection system for, 22:2358
distribution in magnetosphere, (E), 22:43999
distribution in plasmasphere, (E), 22:15414
dose determinations of high-energy, for radiation protection, depth, (T), 22:31901
dose distribution in low atomic number materials, 22:15018
dose distribution in water at 260 and 660 MeV, quality factor, (E), 22:1287 (JINR-P9-3369)
dose entering spacecraft from external sources, determination of, 22:49652
dose to astronauts during space flight, use of induced radioisotope measurements to determine, 22:43394 (BNWL-531-3)
dose to astronauts, use of nuclear emulsions for determining, 22:31241
dose to tissues, calculation of buildup of, 22:38315
dose-depth measurements in phantoms, after homogeneous irradiation, 22:45515
dosemetry of, research on, 22:11980(R) (UCLA-10-P-18-4)
dosimetry and quality factor measurements of, equipment for, 22:28181
dosimetry by silicon diodes, 22:12859
dosimetry in man, use of chromosome aberration frequency for, 22:8526 (CONF-670305-, pp 382-90)
dosimetry in polystyrene tissue-equivalent phantoms, high-energy, 22:15005
dosimetry in relation to production of tumors in rats, 22:38483
dosimetry of 3-GeV, in tissue-equivalent phantoms using activation detectors, 22:21356 (CEA-R-3376)
dosimetry of absorbed, using photographic method, 22:40680
dosimetry of high-energy, use of activation detectors as dosimeters for, 22:6658
dosimetry of, effects of hydrogen interactions on radial, 22:4600 (BNL-11877)
dosimetry of, use of chemical dosimeters for, 22:12652
drift in partial ring current, westward, (T), 22:43991
effects at 10 MeV on crystal structure of iridium at 5°K, 22:45745 (UCRL-18043, pp 107-53)
effects in intermetallic superconductors with β-tungsten crystal structure, 22:14547(P)
effects of 0.05- to 1.0 MeV, on useful lifetime of surface-barrier silicon detectors, 22:28268
effects of 0.8- to 5.0-MeV, on performance of surface-barrier silicon detectors, 22:40512
effects of 22-MeV, on aluminum- and boron-doped silicon solar cells, 22:38187 (N-68-19924)
effects of 4.6-MeV, on silicon solar cells, thermal annealing of damage, 22:12701
effects of 4.7-MeV, on crystals and aqueous solutions of ammonium perchlorate, 22:25385
effects of 40-MeV, on lithium-drifted germanium detectors, 22:40400
effects of 45-MeV, on N--P silicon junctions, 22:4563
effects of 50-keV to 1-MeV on surface-barrier silicon detectors, 22:36156 (N-68-15364)
effects of 660-MeV, on rare earth complexes with DTPA, Szilard-Chalmers effect in, 22:40105 (JINR-P12-3887)
effects of channeled, on silicon, energy spectra from, 22:16966
effects of flare-produced, on ionization state of D region, 22:24150
effects of solar flare, on power output of silicon solar cells, 22:40510 (N-68-20944)
effects of Van Allen belt, on lifetimes of solar cells, computer calculations of, 22:39148
effects on acromegaly in man, therapeutic, 22:47620
effects on acromegaly in man, therapuetic, 22:49386
effects on activity of DNAase, effects of energy level of charged particle on, 22:25781
effects on activity of RNAase, 22:12818
effects on activity of RNAase, effects of dose and temperature on, 22:45424
effects on aluminum at 10 to 200 keV, blistering, 22:29576
effects on animals and plants, review of high-energy, 22:38474
effects on animals, cyclotron beam scanning and collimation for studying, 22:30868 (UCRL-17751, pp 53-80)
effects on Apollo telescope mount photographic film, 22:38186 (N-68-11465)
effects on auroral excitation, spectral intensity ratios from, (E), 22:13341
effects on biochemical activity of hemolytic antibodies, for determination of molecular structure, 22:10685
effects on biological materials at 5 to 100 keV from recoil, (E), 22:29271
effects on biological materials, effects of dose distribution on RBE in comparison to γ and x, 22:38476
effects on blistering and pitting in aluminum and gold, 22:4846
effects on blood count and mortality of rats, effects of dose on 120 MeV, 22:28645
effects on blood of rats, in comparison to effects of x rays, 22:15078
effects on brain of cats and rats, edemateous, 22:40863
effects on brain of man, histological analysis of high energy, 22:12934
effects on capillaries of brain in rabbits, pathological, 22:23598 (UCRL-17481, pp 154-70)
effects on cells in liver of mice protective effects of cysteamine against mutagenic, 22:17040
effects on cesium chloride and mixed cesium chloride--alkali metal halide crystals, 22:25389
effects on chemical reactions in polymers, 22:14515(R) (COO-1614-1)
effects on Chlorella, review of, 22:47538
effects on choline content of liver of rats, effects of dose on, 22:47490
effects on chromatids of pollen in Tradescantia, aberrant, 22:28421
effects on chromosomes in bone marrow and spermatogonia of mice, RBE for aberrant, 22:21478
effects on chromosomes in cornea of mice, aberrant, 22:33929
effects on chromosomes in lymphocytes of man, aberrant, 22:8526 (CONF-670305-, pp 382-90)
effects on chromosomes in pea seeds, aberrant, 22:481
effects on chromosomes of Crepis capillaris, RBE for aberrant, 22:21488
effects on chromosomes of leukocytes of man, aberrant, 22:36248
effects on chromosomes of man, aberrant, 22:51549
effects on chromosomes of mice and rats, protective effects of chemical agents against aberrant, 22:47554
effects on chromosomes, mechanisms of effects of LET and OER on, aberrant, 22:25818
effects on conditioned reflexes of mice, 22:12753(T) (NASA-TT-F-413, pp 130-45)
effects on conditioned reflexes of rats, comparison of, with fast neutron and γ, 22:12755(T) (NASA-TT-F-413, pp 158-74)
effects on content of choline in liver of rats, effects of dose on, 22:21434
effects on copper and gold thick foils, production and annealing of defects from, (E), 22:39160 (N-68-21219)
effects on copper and tungsten at 15 to 20°K, 22:2666(R) (NYO-3653-2)
effects on corn, RBE for cytogenetic, 22:12838
effects on creep of thorium at 273 to 473°K, 22:25133 (NAA-SR-12549)

effects on crystalline trypsin, EPR spectral studies on radicals produced by, 22:2144
effects on cyclopropane, 2,2-dimethylpropane, methane, and propane, reaction intermediates of carbon-11 recoil atoms in, 22:14528
effects on defect clusters in copper and gold, 22:43614 (ANL-7299, pp 290-308)
effects on defect clusters in gold at 0.5 to 100 MeV, 22:21739
effects on degradation of titanium oxide coatings at low pressures, 22:17191
effects on diabetes retinitis, comparison of therapeutic, to effects of hypophysectomy, 22:31150
effects on distribution of phosphorus-32 in blood serum proteins, brain, and liver of rats, 22:52001
effects on DNA in Escherichia coli, target theory interpretation of, 22:36218
effects on dogs and rats, effects of dose fractionation on RBE for, 22:23652
effects on dogs, mice, and rats, RBE of high energy, 22:23670
effects on dogs, protective effects of head shielding against, 22:45552
effects on duration of mitosis in cells of cornea of mice, 22:33929
effects on electric resistivity of copper and gold thick foils, (E), 22:39160 (N-68-21219)
effects on Escherichia coli and mice, RBE for, 22:8519 (CONF-670305-, pp 155-73)
effects on Escherichia coli, review of lethal and mutagenic, 22:40622
effects on ethylene, 22:2119
effects on fluorite electric conductivity and optical absorption, 660-MeV, (E), 22:26507
effects on formation of stacking faults in thin films of copper at 70 to 300°C, 22:23851
effects on function of endocrine glands and incidence of obesity in rats, 22:33961
effects on gadolinium and neodymium, production of neutron-deficient rare earth isotopes by, 22:33391
effects on head of rabbits, neuropathological 2.2-GeV, 22:47592
effects on histamine content of tissues in rats, effects of dose on, 22:25726
effects on impurity diffusion in germanium at 600°C, (E), 22:37015
effects on ionization of thin layers of tissue-like gases, 22:6311 (BNWL-SA-1396)
effects on ionosphere of low-energy, production of sporadic-E by, (T), 22:22006
effects on iridium, field ion microscope study of damage from, 22:39188
effects on iron-59 content of blood plasma and erythrocytes in dogs, effects of altitude and hypoxia on, 22:31209 (UCRL-17751, pp 81-141)
effects on isomerization of 2-butene in benzene solution, 22:16606
effects on luminescence spectra of lithium hydride crystals, (E), 22:46239
effects on lysozyme and RNAase, ESR analysis of, 22:12820
effects on mammalia, beam defocusing at ORNL Isochronous Cyclotron for studying, 22:35174 (ORNL-4217, pp 96-118)
effects on mammals and man, review of therapeutic, 22:12892
effects on mammals and man, therapeutic evaluation of high energy, 22:12893
effects on man, remote pathogenic, 22:31239
effects on mice, RBE for high energy, 22:12929
effects on mice, test for selection of compounds for protection against, 22:25867
effects on mitosis in epithelium of mice, effects of dose on, 22:14989
effects on molecules, theoretical studies on activating, 22:25400
effects on monkeys, high-energy, 22:8525 (CONF-670305-, pp 318-28)
effects on monkeys, somatic, 22:12926
effects on morphology of nasal mucosa and survival of rats, 22:51992
effects on Mylar capacitors, 22:416(R) (AD-648643)
effects on n- and p-type silicon at 20, 40, and 158 MeV, annealing of, (E), 22:46197 (N-68-25392)
effects on olivine and enstatite at 2 keV, (E), 22:43811
effects on olivine at 2 keV, (E), 22:11186
effects on photometric properties of aluminum, scandium, and silicon oxides at 2 keV, (E), 22:34800
effects on plants during space flight, 22:12899(T) (N-67-29205, pp 77-82)
effects on plants, RBE of 126 and 660 MeV, 22:36273
effects on potato seeds, protective effects of propyl gallate against, 22:45639
effects on primates, acute somatic, 22:12927
effects on primates, RBE for, 22:12928
effects on rats, effects of dose on 120-MeV, 22:23668
effects on rats, RBE for 120 MeV, 22:23668
effects on reflectance of aluminum, magnesium, and nickel, 22:49771 (N-68-23560)
effects on reflectance of coated aluminum and nickel solar mirrors, 22:31440
effects on refractive index of fused silica at 1.5 MeV, (E/T), 22:46203
effects on resistivity of silicon, depth dependence of 6.3-MeV, 22:26524
effects on righting reflex of frogs, 22:31209 (UCRL-17751, pp 81-141)
effects on silicon carbide single crystals, dependence on particle energy and surface state of luminescence from, (E), 22:39182
effects on silicon dioxide--zirconium dioxide pigment, 22:11093
effects on silicon n--p transitions at 400 keV and 6.3 MeV, annealing of, (E), 22:15634
effects on silicon solar-cell surfaces at 0.4 to 27.5 keV, (E), 22:13580
effects on silicon surface-barrier detectors at 5, 20, and 40 MeV, 22:47443 (N-68-24660)
effects on skin of mice, pathological, 22:51934
effects on skin of rats, carcinogenic 13 MeV, 22:40852
effects on sodium fluoride crystals, annealing of defects from, (E), 22:44250
effects on solar cell power output, thermal annealing of, 22:24419
effects on solar cell power systems, 22:41400 (N-68-16191)
effects on space flight personnel, factors affecting, 22:6847
effects on spacecraft thermal control materials, 22:11094
effects on stability of silicon semiconductor detectors as spectrometric devices, 22:2477
effects on stable elements in bodies of astronauts, 22:19400(R) (BNWL-531-1)
effects on storage life of food, comparison of, with other forms of ionizing radiation, 22:49669
effects on structure of DNA in Escherichia coli, by tie fast, 22:40598
effects on testes of mice, RBE for mutagenic, 22:19408
effects on testes of mice, RBE of genetic, 22:51908
effects on thin silver films, 22:44259
effects on tissues adjacent to bone, use of polythene phantom to study recoil, 22:516
effects on transistors and solar cells, 22:19231
effects on tungsten (100) surface at 50 to 225 keV, electron emission in, (E), 22:17402
effects on ultrastructure of liver cells of monkeys, 22:6756
effects on water, effects of LET on, 22:23034 (IA-1128, pp 78-96)
effects on zinc-activated zinc oxides, deterioration depth, energy loss, and light output in, (E), 22:13586
electric charge of, constancy of, 22:5131
electric charge of, cosmological consequences of excess, (T), 22:31564
electric charge of, time variation of, 22:5132
electric dipole moment of, experimental test of, (T), 22:7424
electric polarizability from $\gamma + N \to \gamma + N$ interactions, method for derivation of low-energy theorem for, 22:44364
electron capture below 100 MeV from deuterium 1s and helium $1s^2$ levels, cross sections for, (T), 22:29262
electron capture by, calculation of cross sections for, using Born approximation, 22:52482
electron capture from argon, nitrogen, and oxygen atoms, Born estimates for, 22:29263
electron pickup in metallic films at 7 to 40 keV, (E), 22:50044
emission during solar maximum, (T), 22:43725
emission for A = 50 hyperfragments, kinematical calculation of $\Lambda + n$ and $\Lambda + p$ stimulated interactions for energy spectra of, 22:9625
emission from heavy primary interactions in emulsion, mean free path for, (E), 22:24074
emission from meson (π) reactions with xenon at 9 GeV in bubble chamber, energy and emission angle for, (E), 22:17865 (INR-P-844/VI/PH)
emission from nucleon reactions with aluminum, lead, and oxygen at 750 to 2000 MeV, analytic representation of spectra for, 22:46459 (ORNL-TM-2277)
emission from p + p interactions at 24 GeV/c, isobar production effects on transverse momentum from, (T), 22:13768
emission from solar flare of July 7, 1966, (E), 22:52345
emission from solar flare of Sept. 2, 1966, (E), 22:52408
emission from solar flare on March 24, 1966, (E), 22:878
emission from solar flares, (E), 22:879
emission from solar flares, prediction of, 22:52308 (AD-669347)
emission in July 7 to 9, 1966 solar flare, 0.5- to 20-MeV, (E), 22:43792
emission in solar flare of Jan. 28, 1967, (E), 22:36694
emission in solar flares, (E), 22:49976
emission in solar radio burst of Mar. 6, 1968, (E), 22:52379
emission in uranium-235 neutron fission, (E), 22:14023
emission of 10-MeV, from Sun, (T), 22:8974
emission of recoil, in interactions of high-energy secondary cosmic particles, 22:7443
emission of solar, relation to solar x-ray and radio bursts, (E), 22:19685 (CONF-670953-1)

energy distribution of recoil, in tissues and tissue-equivalent materials, performance of silicon detectors in determining, 22:37988 (CONF-670545-, pp 178-84)
energy flux in inner radiation zone, (E), 22:13368
energy loss at 5 to 24 GeV/c in nuclear emulsions, 22:11575
energy loss in aluminum at 7.27 MeV, absolute measurement of, (E), 22:35277
energy loss in gold and iron crystal foils, channeling effects on, (E), 22:29540 (COO-1053-9)
energy loss in gold crystals at 400 keV, effects of mosaic spread and twinning on, (E), 22:26476
energy loss in thin silicon detectors at 730 and 45 MeV, (E), 22:11547
energy loss spectra of 6.72-MeV, in sodium chloride and potassium bromide single crystals, effects of crystal orientation on, 22:46248
energy losses in copper single crystals, effects of crystallographic orientation on, (E), 22:5809(R) (ANL-7354)
energy losses in silver foils at 0.2 to 40 keV, (E), 22:17756
energy measurements of 200- to 600-MeV, use of nuclear emulsions for, 22:6645
energy range in bubble chambers, analytical formulas for calculating, 22:30865
energy spectra at 10^{10} to 10^{13} eV recorded with Proton-1 and -2 spectrometers, (E), 22:11284
energy spectra at 10^{10} to 10^{14} eV recorded by Proton-1 and -2 ion calorimeters, (E), 22:11285
energy spectra in auroral zone, satellite measurements of, 22:5267
energy spectra in Sept. 2, 1966, solar particle event, (E), 22:38654 (N-68-17252)
energy spectra of cosmic, at 100 to 2000 MeV, solar modulation of differential, 22:38823 (N-68-16723)
energy spectra of cosmic, at 100 to 2000 MeV/nucleon, 22:45975
energy spectra of high-energy cosmic, in atmosphere, (T), 22:21931
energy spectra of, produced in collisional dissociation of fast H_2^+ ions, (E), 22:50058
energy spectrum, intensity, and temporal variations in ionosphere of solar, (E), 22:11326
energy versus magnetic field strength x orbit radius at 10^5 to 1.2 x 10^6 G.cm for, table of, 22:20364 (CEA-R-3383)
energy-exchange rate with electrons in solar-wind, collisional, (T), 22:21829
energy-loss distributions in thin carbon and gold foils at 0.3 to 3 MeV, (E), 22:32513(R) (ANU-P-400)
energy-loss functions for, in planetary gases, (T), 22:13243
excitation of carbon dioxide by impact at 30 to 600 keV, (E), 22:9070
flow into and from the magnetotail, (T), 22:41471
flux in inner belt on Dec. 19, 1961, (E), 22:34374
flux in magnetosphere, (E), 22:34357(R) (AD-663234)
flux in outer radiation belt, rapid increases of, (E), 22:31711
flux in ring current, (E), 22:38894 (N-68-19786)
flux increase in magnetosphere, spectra and time histories of rapid low-energy, (E), 22:41442 (N-68-18191)
flux measurements of high-energy, using (p,3pn) reaction with aluminum-27, 22:29818
flux of 1 to 5-MeV solar, measurement by Zond-3, Venera-2, and Venera-3, (E), 22:11276
flux of 5 x 10^{19} eV cosmic, evidence for existence of, (E), 22:41385
fluxes in inner radiation belt, nuclear emulsion study of, 22:40365
fluxes of 0.31- to 10-MeV, in magnetosphere and magnetotail, (E), 22:13343
form factor as function of vector-boson resonances, electric, 22:29663
form factor from e + d quasi-elastic interactions at high energies, counter telescope, spectrometer, Cherenkov, and shower counter study of magnetic, (E), 22:29614 (DESY-68/14)
form factor from Regge cut model of p + p interaction, electromagnetic, 22:50410
form factor in time-like region, inversion formula for calculating, 22:22358
form factor of, effect on quasi-potential of e + p interactions, 22:9542
form factor of, electric, 22:29657
form factor of, theory of electromagnetic, 22:24595
form factors for elastic e + p interactions, 22:3326
form factors for, magnetic, (E), 22:13641
form factors for, SU(3) x SU(3) symmetry for, 22:9653
form factors for, theory for Hofstadter--Wilson formula for electromagnetic, 22:32087
form factors from anti $p + p \to e^+ + e^-$ interactions at 1.50 and 2.50 GeV/c, spark chamber study of electric and magnetic, (E), 22:15677
form factors from e + p scattering at high energies, electromagnetic, (T), 22:50328
form factors of, depression in charge density from dipole fit deviations of electromagnetic, 22:48261
form factors of, electromagnetic, 22:46362
form factors of, electromagnetic, 22:11626
form factors of, three-pole formula for electromagnetic, (T), 22:22366
geomagnetic cutoff for low-energy solar, (E), 22:13338
hydromagnetic-wave interaction with trapped, particle distribution and solution to steady-state equation for, (T), 22:48022
injection into magnetosphere, asymmetric, (T), 22:17517
intensity distribution of cosmic, near 100 km, 22:38836
intensity gradients of cosmic, radial, (E), 22:5154
intensity in auroral substorms, (E), 22:22056
intensity in auroral, (T), 22:52637
intensity in geomagnetic tail, (E), 22:22048
intensity measurements by alpha counting of irradiated gold foils, (E), 22:30020
intensity of auroral-zone, during magnetic disturbance, (E), 22:41483
intensity variations in South Atlantic anomaly, (T), 22:17494
intensity variations in stratosphere of cosmic, (E), 22:11274
intensity variations of, in aurorae, rapid, (E), 22:15417
intensity, spectra, and angular distribution in aurora, rocket measurement of, 22:1064
interaction of flare-produced, with solar material, (T), 22:17341
interaction with electrons in solar atmosphere, gravitational radiation power calculation for, 22:39486
interaction with hydromagnetic waves in the magnetosphere, (T), 22:41461
interaction with microwave photons, (T), 22:45915
interactions anti p + p at 2 to 3 GeV/c, review of quasi-two-body final states and multiple particle production in, 22:32121
interactions $K^- + p \to$ anti $K^0 + n$, $\Delta S = -\Delta Q$ parameter for anti K^0 leptonic decays from, 22:44318
interactions anti K + p, current-algebra calculation of Λ to Σ ratio in isospin-1 s-wave, 22:9604
interactions anti $K^0 + p \to \Lambda + \pi$ and anti $K^0 + p \to \Sigma + \pi$ in quark model, Λ to Σ ratio in, 22:17967
interactions anti $K^0 + p \to \Lambda + \pi^+$, current algebra calculation of Λ/Σ ratio in I = 1 state for s-wave, (T), 22:7504 (NP-17150)
interactions anti $K^0 + p \to \Sigma^0 (\Sigma^+) + \pi^+ (\pi^0)$, quark model for Λ/Σ ratio in, 22:13753 (LPTHE-TH-226)
interactions anti $K^0 + p \to \Sigma^0(\Sigma^+) + \pi^+(\pi^0)$, current algebra calculation of Λ/Σ ratio in I = 1 state for s-wave, (T), 22:7504 (NP-17150)
interactions anti $\nu + p \to e^+ + \pi^0 + p$, generalized Ward--Takahashi identities and current algebra for, 22:13681
interactions anti $\nu + p \to \Lambda + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to \mu^+ + \Lambda^0(\Sigma^0)$, cross sections for, 22:7484
interactions anti $\nu + p \to \mu^+ + n(\Lambda)$ at high energies in nuclei, W effects in, (T), 22:29669
interactions anti $\nu + p \to n + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to n + \mu^+$, pseudoscalar coupling constant from absorption cross section for, 22:34943
interactions anti $\nu + p \to \Sigma^0 + l^+$ at high energies, polarization effects in, 22:1416 (IAE-1241)
interactions anti $\nu + p \to Y + l^+$ at high energies, polarization effects in, (T), 22:1416 (IAE-1241)
interactions anti $\nu + p$, asymptotic equality with $\nu + p$ interactions for cross sections for multiple hadron production from, (T), 22:17910 (JINR-P2-3647)
interactions anti $\nu + p$, possibility of W strong interactions in, (T), 22:22377
interactions anti ν/sub e/ + $p \to n + e^+$, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
interactions anti ν/sub e/ + p, cross section for, (T), 22:37389
interactions anti ν/sub μ/ + $p \to n + \mu^+$, spin dependence of, (T), 22:11635
interactions anti p + n at rest, tests of SU(6)/sub W/ and SU(3) predictions for annihilation, 22:22390
interactions anti $p + p \to 2$ mesons, SU(3) x SU(3) and SU(6)/sub W/ symmetry for, 22:9662
interactions anti $p + p \to 2\pi^0$ at 1.00 to 2.50 GeV/c, differential cross sections for, 22:15677
interactions anti $p + p \to 2\pi^+ + 2\pi^- + \pi^0$ at 1.2 GeV/c, $\pi\pi$ scattering effects in, (T), 22:39372 (CERN-68-7(Vol.1), pp 595-8)
interactions anti $p + p \to 2\pi^+ + 2\pi^- + \pi^0$, isosinglet resonance decay in, (T), 22:9581 (IS-T-210)
interactions anti $p + p \to 2\pi^+ + 2\pi^- + \pi^0$, phase-space distributions for 4π decay of isosinglet resonance in, 22:46410
interactions anti $p + p \to 2\pi^+ + 2\pi^- + \pi^0$, spin, symmetry, and polarization in isosinglet resonance four pion decay in, (T), 22:37134
interactions anti $p + p \to 3\gamma$, test of linearity of quantum electrodynamics equations from cross section of, (T), 22:48360
interactions anti $p + p \to 3\pi^0$ at 1.00 to 2.50 GeV/c, upper limits for cross sections for, (E), 22:15677
interactions anti $p + p \to 3\pi^+ + 3\pi^- + \pi^0$ at 1.2 and 2.5 GeV/c, $\pi\pi$ scattering effects in, (T), 22:39372 (CERN-68-7(Vol.1), pp 595-8)

interactions anti p + p $\rightarrow 3\pi^+ + 3\pi^- + \pi^0$ at 5.7 GeV/c in bubble chamber, production of rho, ω, A_1, and A_2 in, (E), 22:22305
interactions anti p + p $\rightarrow 3\pi^+ + 3\pi^-$ at 2.5 GeV/c, meson resonance production in, (E), 22:39373 (CERN-68-7(Vol.2), pp 281-302)
interactions anti p + p $\rightarrow 4\pi$ at 1.2 GeV/c, A_2^+, A_2^-, rho^0, and f^0 production in, (E), 22:26563
interactions anti p + p $\rightarrow$ anti K + K + nπ at 3 to 4 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:3271
interactions anti p + p $\rightarrow$ anti K + K + π + π, box singularity effects on, (T), 22:3398
interactions anti p + p $\rightarrow$ anti K^0 + K^0 at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p $\rightarrow$ anti $\Lambda + \Lambda + \pi^+ + \pi^-$, box singularity effects on, (T), 22:3398
interactions anti p + p $\rightarrow$ anti N + N + nπ, angular distributions and cross sections for,, 22:17860
interactions anti p + p $\rightarrow$ anti n + n at 5 GeV/c in emulsions, preliminary results for cross section for, (E), 22:39261
interactions anti p + p $\rightarrow$ anti n + n at 5 to 9 GeV/c, magnet spark chamber study of differential and total cross sections for, (E), 22:34970
interactions anti p + p $\rightarrow$ anti n + n, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)
interactions anti p + p $\rightarrow$ anti N* + N + π, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow$ anti N* + N*, Regge-pole model for pion-exchange, 22:7494
interactions anti p + p $\rightarrow$ anti p + p at 5 GeV/c in emulsions, preliminary results for, (E), 22:39261
interactions anti p + p $\rightarrow$ anti p + p at 5.9 to 9.8 GeV/c, scintillation counter telescope and optical spark chamber study of cross sections for, (E), 22:39271 (CERN-68-7(Vol.1), pp 571-9)
interactions anti p + p $\rightarrow$ anti p + p at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions anti p + p $\rightarrow$ anti p + p at high energies, unitarity condition for imaginary part of amplitude for large-angle, 22:13743
interactions anti p + p $\rightarrow$ anti p + p at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, 22:37143
interactions anti p + p $\rightarrow$ anti p + p, dispersion theoretic calculation of two-π exchange effects on amplitude of forward, 22:39383
interactions anti p + p $\rightarrow$ anti p + p, polarization experiments for CPT invariance test in, 22:24707 (JINR-P2-3716)
interactions anti p + p $\rightarrow$ anti p + p, test of C, T, and CPT invariance from, 22:3499
interactions anti p + p $\rightarrow$ anti $\Sigma^+ + \Sigma^-$, quark model and multiple-scattering formalism for, 22:52985
interactions anti p + p $\rightarrow$ anti $\Xi^0 + \Xi^0$, quark model and multiple-scattering formalism for, 22:52985
interactions anti p + p $\rightarrow$ anti Y + Y + mπ, angular distributions and cross sections for, 22:17860
interactions anti p + p $\rightarrow$ baryon + baryon + meson, quark model for cross-section relations between, 22:50375
interactions anti p + p $\rightarrow \Delta^{++}(1236)$ + anti $\Delta^{++}(1236)$ at 5.7 GeV/c, differential cross section and decay angular distributions for, (T), 22:11665
interactions anti p + p $\rightarrow \Delta^{++}(1236)$ + anti$\Delta^{--}(1236)$, Regge-pole model for π exchange in, 22:26657
interactions anti p + p $\rightarrow e^+ + e^-$ at 1.50 and 2.50 GeV/c, spark chamber study of proton electric and magnetic form factors from upper limits for, (E), 22:15677
interactions anti p + p $\rightarrow \gamma + \gamma$ at 1.50 GeV/c, differential cross section for, (E), 22:15677
interactions anti p + p $\rightarrow \gamma + \gamma$ at 2.50 GeV/c, upper limit for differential cross sections for, (E), 22:15677
interactions anti p + p $\rightarrow h^0$ + rho^0, CP nonconservation in, 22:20236
interactions anti p + p $\rightarrow$ K + anti K + nπ (n = 3,4) at 1.2 GeV/c, production of K*(890), rho, ω, eta, and D(1280) in, (E), 22:32059
interactions anti p + p $\rightarrow$ K + anti K* (anti K + K*) below Kπ threshold, upper limit for J/sup P/ = 0^+, S = +1 K* production in, (E), 22:48218
interactions anti p + p $\rightarrow$ K* + anti K + nπ, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow K_1^0 + K_1^0 + \pi^0$ at rest in hydrogen bubble chamber, (K anti K) and (Kp) system production from, (E), 22:5502
interactions anti p + p $\rightarrow K_1^0 + K_2^0 + \gamma$, strong interaction theory from cross section for, 22:20233
interactions anti p + p $\rightarrow K_1^0 + K^+ (K^-) + \pi^- (\pi^+)$ at rest in hydrogen bubble chamber, (K anti K) and (Kp) system production from, (E), 22:5502
interactions anti p + p $\rightarrow K^+ + K^- + \gamma$, strong interaction theory from cross sections for, 22:20233
interactions anti p + p $\rightarrow K^- + K^+$ at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p $\rightarrow \Lambda$ + anti Λ, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\rightarrow \Lambda$ + anti Σ^0, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\rightarrow m_1\pi^+ + m_2\pi^- + m_3\pi^0 + m_4$K at 0 to 7 GeV/c, (T), 22:3378 (INP-555/PL/PH, pp 1-15)
interactions anti p + p $\rightarrow$ n + anti n at high energies, Regge pole models with branching in j-plane for differential cross sections for, 22:39377
interactions anti p + p $\rightarrow$ n + anti n, conspiracy of singularities in complex angular momentum plane for, 22:11688
interactions anti p + p $\rightarrow$ n + anti n, Regge-pole analysis of, 22:5603
interactions anti p + p $\rightarrow$ N* + anti N*, method for representing joint decay distributions from, (T), 22:39405 (TPJU-15/67)
interactions anti p + p $\rightarrow$ N* + anti N*, use of statistical tensors for joint decay angular distributions in, 22:24629
interactions anti p + p $\rightarrow$ nπ + K + anti K, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow$ nπ at 1.61 to 5.70 GeV, model for π angular distributions from, 22:15760 (LYCEN-6751)
interactions anti p + p $\rightarrow$ nπ, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow$ nπ, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
interactions anti p + p $\rightarrow \omega$ + nπ, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow \pi^+ + e^-$ + anti ν/sub e/, preparations for study of W^- production from, (E), 22:13642
interactions anti p + p $\rightarrow \pi^+ + \pi^- + \gamma$, strong interaction theory from cross sections for, 22:20233
interactions anti p + p $\rightarrow \pi^+ + \pi^- + m\pi^0$, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)
interactions anti p + p $\rightarrow \pi^+ + \pi^- + \pi^0$ at rest in hydrogen bubble chamber, (E), 22:34855
interactions anti p + p $\rightarrow \pi^+ + \pi^- + \pi^0$ at rest, analysis of, (E), 22:39382
interactions anti p + p $\rightarrow \pi^+ + \pi^- + \pi^0$ below 1 GeV, cosmic gamma spectrum from, (T), 22:20125 (NP-17315)
interactions anti p + p $\rightarrow \pi^+ + \pi^- + \pi^0$, Feynman diagrams for angular distributions for, 22:15761 (LYCEN-6757)
interactions anti p + p $\rightarrow \pi^+ + \pi^+ + \pi^- + \pi^-$ at rest, π angular correlations in, (T), 22:3380 (INP-555/PL/PH, pp 31-50)
interactions anti p + p $\rightarrow \pi^- + \pi^+$ at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p $\rightarrow \pi^+ + \pi^-$, Feynman diagrams for angular distributions for, 22:15761 (LYCEN-6757)
interactions anti p + p $\rightarrow$ rho + nπ, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow \Sigma^0$ + anti Σ^0, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\rightarrow \Sigma^+$ + anti Σ^-, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\rightarrow \Sigma^+(1385)$ and anti $\Sigma^+(1385)$ at 5.7 GeV/c, differential cross section and decay angular distributions for, (T), 22:11665
interactions anti p + p $\rightarrow$ Y + anti N + K, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\rightarrow$ Y + anti Y + nπ, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
interactions anti p + p $\rightarrow$ Y + anti Y* + π, angular distributions and cross sections for, 22:17860
interactions anti p + p above 10 GeV, optical model of, 22:35017
interactions anti p + p at 0.2 to 1.0 GeV, energy dependence of angular correlation effect in multiple π production from, (T), 22:1431
interactions anti p + p at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti p + p at 1 to 7 GeV/c, multiple π production in, (T), 22:24637
interactions anti p + p at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions anti p + p at 1.2 GeV/c, production of rho^0, f^0, A_2^+ and A_2^- in four-prong annihilation, (E), 22:39258
interactions anti p + p at 1.2 to 1.6 GeV/c, total cross sections for, (E), 22:26560
interactions anti p + p at 1.23 to 1.65 GeV/c, comparison of dip-bump structure in elastic, 22:50376
interactions anti p + p at 1.6 to 2.2 GeV/c, differential cross sections for elastic, (E), 22:52933
interactions anti p + p at 1.6 to 70 GeV/c, statistical model with angular momentum conservation for, 22:29684 (DESY-68/10)
interactions anti p + p at 1.73 to 2.97 GeV/c, differential cross sections and polarization distributions for elastic, (E), 22:46330
interactions anti p + p at 1.88 to 3.00 GeV, effect of SU(3) invariance on meson production in, (E), 22:11654
interactions anti p + p at 300 to 700 MeV/c in bubble

chamber, study of differential cross sections in backward, (E), 22:52934
interactions anti p + p at 50 to 150 MeV, partial-wave analysis of amplitude for, (E/T), 22:24640
interactions anti p + p at 50 to 180 MeV, differential cross sections for charge-exchange, (E), 22:24543
interactions anti p + p at 6 GeV/c, differential cross sections for elastic, (E), 22:41746
interactions anti p + p at 6.9 GeV/c in bubble chamber, angular distribution and cross section for, (E), 22:39257
interactions anti p + p at 6.94 GeV/c, cross sections for π production and elastic, (E), 22:50291
interactions anti p + p at 63 to 175 MeV, differential cross sections for elastic, (E), 22:24544
interactions anti p + p at 7 to 12 GeV/c, differential cross sections for elastic, (E/T), 22:46430
interactions anti p + p at high energies, 22:3371
interactions anti p + p at high energies, dispersion relation calculation of real part of forward amplitude for, 22:48309
interactions anti p + p at high energies, multiple-scattering corrections to Pomeranchuk on exchange in elastic, 22:46397
interactions anti p + p at high energies, quark model for large-angle elastic, 22:46389
interactions anti p + p at high energies, resonance production in, (T), 22:20174 (NP-17316)
interactions anti p + p at rest, relative annihilation rates of, (E/T), 22:15765
interactions anti p + p at rest, statistical model for particle production in, 22:24647
interactions anti p + p at rest, statistical model with SU(3) symmetry for multiple particle production in, 22:32139
interactions anti p + p at rest, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions anti p + p at rest, tests of SU(6)/sub W/ and SU(3) predictions for annihilation, 22:22390
interactions anti p + p at small momentum transfer, Regge-pole model for elastic, 22:15779
interactions anti p + p below 286 MeV under astrophysical conditions, upper limits and selection rules for gamma production in, (T), 22:20174 (NP-17316)
interactions anti p + p in sakaton triplet model, 22:15752
interactions anti p + p to 300 MeV, OBE potential models for, 22:26644
interactions anti p + p, analysis of multiplicity of π production in annihilation, 22:24642
interactions anti p + p, effects of resonance scattering on charge-exchange and elastic, 22:52979
interactions anti p + p, energy dependence of angular correlations in, 22:3379 (INP-555/PL/PH, pp 17-29)
interactions anti p + p, generalized quark model for cross sections and spin density matrix elements for strangeness-exchange, 22:29693
interactions anti p + p, predictions and validity of forward dispersion relations for amplitudes of, 22:15785 (BNL-12058)
interactions anti p + p, production of neutral pseudoscalar and vector mesons in annihilation, (T), 22:22387
interactions anti p + p, π and N form factors from multiple quark analysis of consistency relations among diffraction cross sections for, (T), 22:32116
interactions anti p + p, semistrong C violation with $\Delta I = 3$ in annihilation, 22:29738
interactions at 3.0 to 7.0 GeV/c with large momentum transfer, review of two-body, (E), 22:39268 (CERN-68-7(Vol.1), pp 252-89)
interactions at high energies, forbidden or strongly suppressed, (T), 22:44339(T) (ANL-Trans-650)
interactions d + p at 3 to 24 MeV using polarized beams, phase-shift analysis of, (T), 22:39576 (CEA-R-3392)
interactions d + p at 52 MeV, n--p scattering length from, (E), 22:48442 (KFK-608)
interactions e + p → e + Δ(1236) at 1.5 to 6 GeV, magnetic spectrometer measurement of cross sections for, (E), 22:50274 (DESY-68/42)
interactions e + p → e + Δ(1236), Δ(1236) → p + π^0, $\gamma p\Delta$ vertex form factor from, (E), 22:52919
interactions e + p → e + n + π^+ at 2.2 GeV, π^+ form factor from, (E), 22:24522
interactions e + p → e + n + π^+ near Δ(1236) resonance, π form factor and angular distributions from, (E/T), 22:34830
interactions e + p → e + n + π^+, cross sections for polarized virtual photon production of π^+ in, (E), 22:29618
interactions e + p → e + n + π^+, π^+ electromagnetic form factor for asymmetry in, 22:26592 (JINR-P2-3774)
interactions e + p → e + n + π^+, π^+ form factor from, (T), 22:7472
interactions e + p → e + n + π^+, spark chamber study of, (E), 22:17844 (DESY-F-32/3)
interactions e + p → e + n + W^+, cross section for, (T), 22:24616
interactions e + p → e + n, cross sections and π form factors from, (E), 22:5491
interactions e + p → e + N* in symmetric quark model, form factors for, 22:34911
interactions e + p → e + N*, symmetric quark model with Coulomb potential for, 22:50338
interactions e + p → e + p + γ at 900 MeV, cross sections for wide-angle, (E), 22:48206 (LNF-68/46)
interactions e + p → e + p + γ, test of quantum electrodynamics from virtual photon Compton effect in, 22:48256 (LNF-68/38)
interactions e + p → e + p + π^0 at 2.2 GeV, π^0 form factor from, (E), 22:24522
interactions e + p → e + p + π^0 at energy region of Δ(1236) resonance, differential cross sections for, (E), 22:26552
interactions e + p → e + p + π^0, γNN^* form factor and multipole amplitudes from analysis of, 22:26609
interactions e + p → e + p + π^+ + π^- at 4.9 GeV, spark chamber study of rho^0 production from, (E), 22:13634 (DESY-67/41)
interactions e + p → e + p at 0.7 to 25.0 GeV/c, magnetic spectrometer and total-absorption shower counter study of cross sections for, (E), 22:11569 (SLAC-PUB-372)
interactions e + p → e + p, general expression for differential cross section for polarization dependence of, (T), 22:39329
interactions e + p → e + p, three-pole formula for proton form factors from, (T), 22:22366
interactions e + p → e + π^+ + n at 0.7 to 3 GeV, spark chamber and threshold Cherenkov counter study of, (E), 22:11567 (DESY-67/31)
interactions e + p → e' + π^+ + n in spark chamber, cross section for π^+ production in, (E), 22:9500
interactions e + p → e + rho^0 + p at 4.9 GeV, differential cross section for γ + p → rho^0 + p interactions from, (E), 22:15716
interactions e + p at 0.1 to 0.6 (GeV/c)^2, resonance production from, (E), 22:3343
interactions e + p at 180°, experimental arrangement for studying, 22:6642 (LAL-1182)
interactions e + p at 4.0 to 17.8 GeV, cross sections and magnetic form factors for elastic, (E), 22:13641
interactions e + p at 5 GeV, search for heavy electron in inelastic, (E), 22:22283
interactions e + p at 938 to 1400 MeV, one-quadrupole spectrometer study of cross sections for inelastic, (E), 22:22279 (DESY-67/34)
interactions e + p at high energies, electromagnetic form factors from, (T), 22:50328
interactions e + p at high energies, polarization and cross sections for, (T), 22:17903
interactions e + p at high momentum transfer, inequality for inelastic backward, 22:5550
interactions e + p at ultrahigh energies, polarization effects in, (T), 22:39320
interactions e + p in CERN ISR storage ring, 22:32350 (CEAL-2000, pp A135-8)
interactions e + p on polarized targets, π angular distribution from production in, (T), 22:50322
interactions e + p to 1.1 GeV, analysis of inelastic, (E/T), 22:11614
interactions e + p with polarized protons at 3.98 to 5.98 GeV, time reversal invariance in inelastic, (E), 22:52917
interactions e + p, angular distribution of meson pair production in, (T), 22:1411
interactions e + p, cross sections for electromagnetic polarized, (T), 22:22367
interactions e + p, cross sections for inelastic, (E), 22:34833
interactions e + p, cross sections for inelastic, (T), 22:1412
interactions e + p, effect of proton structure on quasi-potential of, 22:9542
interactions e + p, electromagnetic form factor of protons from, 22:11626
interactions e + p, electromagnetic form factors from, 22:3326
interactions e + p, experimental methods and equipment for elastic, 22:11611
interactions e + p, form factors from inelastic, 22:11611
interactions e + p, longitudinal γ contribution to π production from, (E), 22:13635 (LAL-1185)
interactions e + p, longitudinal photon contribution to π production in, (E), 22:26550
interactions e + p, meson and baryon resonance production in, 22:46375
interactions e + p, model for renormalizable theory for weak, 22:48280
interactions e + p, nucleon electromagnetic structure determination from, (T), 22:13718
interactions e + p, ratio of cross sections for elastic e^+ + p and, 22:44302
interactions e + p, renormalizable theory of weak interactions for, 22:44386 (ITEF-580)
interactions e + p, separation of infrared contributions to radiative corrections in terms of exponential factor for, 22:29654 (DESY-68/16)
interactions e + p, two-photon-exchange contribution to elastic, 22:44367
interactions e^+ + e^- → p + anti p, use of Adone storage ring for determining baryon form factors from,

22:11828
interactions $e^- + p \to e^- + n + \pi^+$, angular distribution for, (T), 22:3313
interactions $e^- + p \to e^- + n\pi^+$ ($n = 1, 2 \ldots$) at 700 to 900 MeV, magnetic spectrometer scintillation telescope study of cross sections of, (E), 22:3244
interactions $e^- + p \to e^- + p + \pi^0$, angular distribution for, (T), 22:3313
interactions $e^- + p \to e^- + p + \pi^+ + \pi^-$ at 700 to 900 MeV, magnetic spectrometer and scintillation telescope study of cross sections for, (E), 22:3244
interactions $e^- + p \to e^- + p$ at 0.2 to 20.0 GeV, cross section relative to $e^+ + p \to e^+ + p$ interactions, (E), 22:22270 (CONF-670923-, pp 102-8)
interactions $e^+ + p \to e^+ + p$ at 0.2 to 20.0 GeV, cross section relative to $e^- + p \to e^- + p$ interactions, (E), 22:22270 (CONF-670923-, pp 102-8)
interactions $e^+ + p \to e^+ + p$, general expression for differential cross section for polarization dependence of, (T), 22:39329
interactions $e^- + p \to e^- + p$, scintillation counter study of backward, (E), 22:7420 (LAL-1183)
interactions $e^- + p \to e^- + p$, scintillation counter study of cross sections for backward, (E), 22:13639
interactions $e^+ + p \to e^+ + p$, scintillation counter study of backward, (E), 22:7420 (LAL-1183)
interactions $e^+ + p \to e^+ + p$, scintillation counter study of cross sections for backward, (E), 22:13639
interactions $e^- + p$ at 1.700 GeV, Cherenkov and scintillation counter and spark chamber study of cross sections for elastic, (E), 22:3240
interactions $e^+ + p$ at 1.700 GeV, Cherenkov and scintillation counter and spark chamber study of cross sections for elastic, (E), 22:3240
interactions $e^+ + p$ at 800 and 1200 MeV, cross section for elastic, (E), 22:20115
interactions $e^+ + p$, model for renormalizable theory for weak, 22:48280
interactions $e^+ + p$, ratio of cross sections for elastic $e + p$ and, 22:44302
interactions $e^+ + p$, renormalizable theory of weak interactions for, 22:44386 (ITEF-580)
interactions $e^+ + p$, two-photon exchange effects in, 22:11611
interactions $\gamma + p \to$ anti K + K + p, mass distributions in anti KK system for, 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to \Delta(1236) + \pi^-$ at 4.8 to 6.0 GeV, $\Delta(1236)$ production cross sections and decay angular distributions for, (E), 22:5490
interactions $\gamma + p \to \Delta^{++} + \pi^- \to p + \pi^+ + \pi^-$ below 0.8 GeV, (T), 22:34896 (DESY-68/7)
interactions $\gamma + p \to \Delta^{++} (\Delta^0) + \pi^- (\pi^+)$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to$ eta $+ p$ at 775 to 850 MeV, Cherenkov counter study of angular distribution for, (E), 22:20117
interactions $\gamma + p \to$ eta $+ p$ from threshold to 970 MeV, S-matrix analysis of amplitudes for, 22:3338
interactions $\gamma + p \to$ eta $+ p$, cross section for, (T), 22:22359
interactions $\gamma + p \to$ eta $+ p$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \mathrm{eta}^0 + p$ at 6 to 16 GeV, cross sections for, (E), 22:41726
interactions $\gamma + p \to \gamma + p$ at 300 MeV, spark chamber and scintillation counter study of cross sections for Compton, (E), 22:11577
interactions $\gamma + p \to \gamma + p$ at 450 to 1400 MeV, spark chamber and counter study of differential cross section for, (E), 22:29617
interactions $\gamma + p \to \gamma + p$ at 450 to 1400 MeV, spark chamber and counter study of differential cross section for, (E), 22:29617
interactions $\gamma + p \to \gamma + p$ at 550 to 1130 MeV, differential cross sections for Compton, (E), 22:15750
interactions $\gamma + p \to K^+ + \Lambda$ and $\gamma + p \to K^+ + \Sigma^0$ at 2.88 to 6.1 GeV, ratio of cross sections for, (E), 22:11570
interactions $\gamma + p \to K^+ + \Lambda$ at 1 to 1.12 GeV, magnetic spectrometer study of Λ polarization from, (E), 22:3250
interactions $\gamma + p \to K^+ + \Lambda$ at 940 and 975 MeV, counter telescope study of cross section for, (E), 22:3243
interactions $\gamma + p \to K^+ + \Lambda$ at 940 and 975 MeV, counter telescope study of cross section for, (E), 22:3243
interactions $\gamma + p \to K^+ + \Lambda$, coherent-droplet model for, (T), 22:9539
interactions $\gamma + p \to K^+ + \Lambda(1405)$ at 1.485 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Lambda(1520)$ at 1.730 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Lambda(\Sigma)$ above 3 GeV, review of experiments on, 22:22274 (CONF-670923-, pp 309-36)
interactions $\gamma + p \to K^+ + \Lambda(\Sigma)$, conspiracy and evasion in, 22:37113
interactions $\gamma + p \to K^+ + \Lambda(\Sigma^0)$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to K^+ + \Lambda^0 (\Sigma^0)$ at 3.4 to 5.0 GeV, gas Cherenkov counter study of cross sections for, (E), 22:9502
interactions $\gamma + p \to K^+ + \Lambda^0$ at 0.950 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Sigma(1385)$ at 1.445 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to K^+ + \Sigma^0$ at 1.080 GeV, differential cross sections for, (E), 22:9498
interactions $\gamma + p \to l^+ + l^-$, corrections to cross sections for C-noninvariant, (T), 22:17901
interactions $\gamma + p \to \Lambda + K^+$ at high energies, Regge-pole model for, 22:17904
interactions $\gamma + p \to \Lambda(\Sigma^0) + K^+$, quark model for cross sections for, 22:50336
interactions $\gamma + p \to \Lambda^0 + K^+$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \mu^- + \mu^+ + p$ at 850 MeV, scintillation counter telescope study of cross section of, (E), 22:22288
interactions $\gamma + p \to \mu^- + \mu^+ + p$, test of quantum electrodynamics from asymmetry of μ pairs in, (E), 22:39232 (AD-668169)
interactions $\gamma + p \to n + \pi^+$ at 165 to 230 MeV, differential cross sections for, (E), 22:32043
interactions $\gamma + p \to n + \pi^+$ at 500 to 800 MeV, cross sections for, (E), 22:24521
interactions $\gamma + p \to n + \pi^+$ at high energies, mechanism without conspiracy for, (T), 22:22362
interactions $\gamma + p \to n + \pi^+$ at high energies, Regge-pole model for, 22:17899
interactions $\gamma + p \to n + \pi^+$ at high energies, Regge-pole model for, 22:17904
interactions $\gamma + p \to n + \pi^+$, current algebra for, 22:13767
interactions $\gamma + p \to \omega + p$ at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to \omega + p$, DWBA and diffraction model for, 22:41767 (DESY-68/23)
interactions $\gamma + p \to \omega(\mathrm{phi}) + p$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to \omega(\mathrm{phi}) + p$, optical theorem for, 22:41768 (DESY-68/28)
interactions $\gamma + p \to p + 2\pi^+ + 2\pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + 3\pi^+ + 3\pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p +$ eta (X^0) at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p +$ eta at 0.8 to 1.45 GeV, cross sections for, (E), 22:52914
interactions $\gamma + p \to p +$ eta, use of poles and resonances for chi^2 fits to, 22:15811
interactions $\gamma + p \to p + n\pi$ at 800 MeV, resonance production from, (E), 22:13637
interactions $\gamma + p \to p + \omega + \pi^+ + \pi^-$ at 2.5 to 5.8 GeV, cross sections for ω production in, (E), 22:32044
interactions $\gamma + p \to p + \omega$ at 1 to 5 GeV, cross sections as function of energy for , (T), 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p + \omega$ at 2.1 to 5.8 GeV, cross sections for ω production in, (E), 22:32044
interactions $\gamma + p \to p + \omega^0$ at 6.5 to 17.8 GeV, differential cross sections for, (E), 22:44307
interactions $\gamma + p \to p + \omega^0$ at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p +$ phi $+ \pi^+ + \pi^-$ at 3.5 to 5.8 GeV, cross sections for phi production in, (E), 22:32044
interactions $\gamma + p \to p +$ phi at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p +$ phi at 2.5 to 5.8 GeV, cross sections for phi production in, (E), 22:32044
interactions $\gamma + p \to p + \mathrm{phi}^0$ at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p + \pi^0$ at 163 to 234 MeV, phenomenological analysis of, 22:13699
interactions $\gamma + p \to p + \pi^0$ at 163, 212, and 234 MeV, π^0 angular distributions from, (E), 22:1378
interactions $\gamma + p \to p + \pi^0$ at 4.0 to 5.8 GeV at small angles, Cherenkov counter study of differential cross section for, (E), 22:17847
interactions $\gamma + p \to p + \pi^0$ at 450 to 600 MeV, scintillation counter telescope and spark chamber study of recoil proton polarization in, (E), 22:44306
interactions $\gamma + p \to p + \pi^0$ at 500 to 1000 MeV, polarization of recoil protons in, (E), 22:39238
interactions $\gamma + p \to p + \pi^0$ at 660 to 780 MeV, backward anomaly in, (E), 22:34824 (AD-448108)
interactions $\gamma + p \to p + \pi^0$ at 750 and 1450 MeV, spark chamber study of recoil proton polarization in, (E), 22:24523
interactions $\gamma + p \to p + \pi^0$ at 750 to 1450 MeV/c, scintillation counter and spark chamber study of energy dependence of recoil proton polarization in, (E), 22:20112
interactions $\gamma + p \to p + \pi^0$, SU(3) symmetry and Regge pole model for, 22:48347
interactions $\gamma + p \to p + \pi^+ + \pi^- + \pi^0$ above 1.1 GeV, mass distributions in 3π system for, 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p + \pi^+ + \pi^- + \pi^0$ below 1.1 GeV, resonance production from review of, (E), 22:13720

interactions $\gamma + p \to p + \pi^+ + \pi^-$ at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p + \pi^+ + \pi^-$ at 450 to 1000 MeV, Δ(1236) isobar excitation mechanism for, (E/T), 22:46316
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 1 GeV in hydrogen bubble chamber, preliminary results for total cross section and Δ(1236) production in, (E), 22:34828 (LNF-68/21)
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 1 GeV, isobaric model for proton angular distributions from, (T), 22:32090
interactions $\gamma + p \to p + \pi^+ + \pi^-$ below 5.8 GeV in hydrogen bubble chamber, rho^0 production from, (E), 22:20110(T) (SLAC-Trans-79)
interactions $\gamma + p \to p + \pi^+ + \pi^-$, below 1.4 GeV, review of resonance production from, 22:13720
interactions $\gamma + p \to p +$ rho$^0 + \pi^+ + \pi^-$ at 3.5 to 5.8 GeV, cross sections for rho^0 production in, (E), 22:32044
interactions $\gamma + p \to p +$ rho^0 (ω) at 0.3 to 5.8 GeV in hydrogen bubble chamber, cross sections for, (E), 22:39235 (DESY-68/8)
interactions $\gamma + p \to p +$ rho^0 at 1 to 5 GeV, cross sections as function of energy for, (E), 22:48202(R) (BMwF-FBK-68-01)
interactions $\gamma + p \to p +$ rho^0 at 2 to 5.8 GeV, cross sections for rho^0 production in, (E), 22:32044
interactions $\gamma + p \to p +$ rho^0 at 6.5 to 17.8 GeV, differential cross sections for, (E), 22:44307
interactions $\gamma + p \to p +$ rho^0 at high energies, current algebra and Regge pole model for, 22:24594
interactions $\gamma + p \to p + W +$ anti W, analytical expression for cross section of, (T), 22:44351(T) (ANL-Trans-649)
interactions $\gamma + p \to$ phi $+ p$ at 14 and 16 GeV, spectrometer study of upper limit for, (E), 22:24515
interactions $\gamma + p \to$ phi $+ p$ at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to$ phi$^0 + p$ at 9 to 16 GeV/c, modified vector-dominance model for cross sections for, 22:50335
interactions $\gamma + p \to \pi + \Delta$ in Regge pole model, π conspiracy in, 22:39369
interactions $\gamma + p \to \pi + p$, contribution of Mandelstam branch cuts from Reggeon exchange to, (T), 22:3455
interactions $\gamma + p \to \pi^0 + n$ in energy region below first resonance, multipole analysis of, 22:26604
interactions $\gamma + p \to \pi^0 + p$ at 0.8 to 5.5 GeV, cross sections for π^0 production in backward direction in, (E), 22:11571
interactions $\gamma + p \to \pi^0 + p$ at 0.8 to 5.5 GeV, scintillation counter study of resonance production from, (E), 22:13633 (DESY-67/36)
interactions $\gamma + p \to \pi^0 + p$ at 180 to 470 MeV, use of fixed-t dispersion relations for, 22:24603
interactions $\gamma + p \to \pi^0 + p$ at 240 to 420 MeV, polarization of recoil protons from, (E), 22:29615
interactions $\gamma + p \to \pi^0 + p$ at 5 GeV/c, polarized differential cross sections for, (T), 22:46458
interactions $\gamma + p \to \pi^0 + p$ at 500 to 1000 MeV, recoil proton polarization from, 22:26549
interactions $\gamma + p \to \pi^0 + p$ at 535 to 850 MeV, analysis of π production in second resonance region in, (T), 22:5537
interactions $\gamma + p \to \pi^0 + p$ at 6 to 16 GeV, cross sections for, (E), 22:41726
interactions $\gamma + p \to \pi^0 + p$ at 650 to 1750 MeV, differential cross sections for, (E), 22:48210
interactions $\gamma + p \to \pi^0 + p$ at high energies in Regge-pole model, inconsistency of crossover phenomena with, (T), 22:3310
interactions $\gamma + p \to \pi^0 + p$ at low energies, ω and B exchange in, 22:24602
interactions $\gamma + p \to \pi^0 + p$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \pi^0 + p$, coherent-droplet model with long-range π exchange for, (T), 22:9539
interactions $\gamma + p \to \pi^0 + p$, low-energy theorem from current algebra for amplitude of, 22:46363
interactions $\gamma + p \to \pi^0 + p$, $\pi^0 \to \gamma + \gamma$, total-absorption lead glass Cherenkov detector for studying, 22:371
interactions $\gamma + p \to \pi^0 + p$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \pi^0 + p$, review of pion exchange in, 22:24684
interactions $\gamma + p \to \pi^0 + p$, vector dominance hypothesis and Regge pole exchange for, 22:48273
interactions $\gamma + p \to \pi^- + \Delta(1236)$ at 0.9 to 1.3 GeV, scintillation and Cherenkov counter study of cross sections for, (E), 22:3247
interactions $\gamma + p \to \pi^+ + \Delta^{++}(1236)$ using polarized photons, ππ production in, (E), 22:39321
interactions $\gamma + p \to \pi^+ + n$ at 0.01 to 2 (GeV/c)^2 , spectrometer study of forward peak in, (E), 22:7426
interactions $\gamma + p \to \pi^+ + n$ at 0.9 to 3.2 GeV, cross sections for backward T^+ production in, (E), 22:48209
interactions $\gamma + p \to \pi^+ + n$ at 180 to 470 MeV, use of fixed-t dispersion relations for, 22:24603
interactions $\gamma + p \to \pi^+ + n$ at 180 to 500 MeV, π^+ angular distribution from, (T), 22:17907
interactions $\gamma + p \to \pi^+ + n$ at 2 GeV, absorption corrections in, 22:13697
interactions $\gamma + p \to \pi^+ + n$ at 2.6 to 6 GeV in deuterium bubble chamber, (E), 22:34827 (DESY-68/22)
interactions $\gamma + p \to \pi^+ + n$ at 2.7 and 4.9 GeV, forward peak in cross section for, (E), 22:13632 (DESY-67/35)
interactions $\gamma + p \to \pi^+ + n$ at 3 GeV/c, violation of quark model sum rule in, (T), 22:22363
interactions $\gamma + p \to \pi^+ + n$ at 3.4 and 5 GeV, cross section for π^+ production in, (E), 22:39237
interactions $\gamma + p \to \pi^+ + n$ at 3.4 and 5.0 GeV, Cherenkov counter study of differential cross sections for, (E), 22:3239
interactions $\gamma + p \to \pi^+ + n$ at 300 to 750 MeV, differential cross sections for, (E), 22:46313
interactions $\gamma + p \to \pi^+ + n$ at 300 to 750 MeV, magnetic spectrometer and counter telescope study of differential cross section of, (E), 22:24514 (LAL-1186)
interactions $\gamma + p \to \pi^+ + n$ at 390 MeV, polarization of recoil neutron from, (E), 22:26555
interactions $\gamma + p \to \pi^+ + n$ at 4 and 8 GeV/c, vector-dominance model comparison of $\pi^- + p \to$ rho$^0 + n$ and, 22:34916
interactions $\gamma + p \to \pi^+ + n$ at 5 GeV/c, polarized differential cross sections for, (T), 22:46458
interactions $\gamma + p \to \pi^+ + n$ at 5 to 16 GeV, differential cross sections for π^+ production in, (E), 22:13640
interactions $\gamma + p \to \pi^+ + n$ at 500 to 1350 MeV, magnetic spectrometer study of eta production from, (E), 22:3246
interactions $\gamma + p \to \pi^+ + n$ at 535 to 850 MeV, analysis of π production in second resonance region in, (T), 22:5537
interactions $\gamma + p \to \pi^+ + n$ at high energies, absorption effects in, (T), 22:26601
interactions $\gamma + p \to \pi^+ + n$ at high energies, cross sections for, (E), 22:44308
interactions $\gamma + p \to \pi^+ + n$ at high energies, rho exchange for absorption effects in, 22:13692 (DESY-67/37)
interactions $\gamma + p \to \pi^+ + n$ below 16 GeV, vector dominance model for comparison with $\pi^- + p \to$ rho$^0 + n$ interactions below 16 GeV, 22:29652 (DESY-68/6)
interactions $\gamma + p \to \pi^+ + n$ below 230 MeV, (E), 22:39342
interactions $\gamma + p \to \pi^+ + n$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to \pi^+ + n$ in energy region below first resonance, multipole analysis of, 22:26604
interactions $\gamma + p \to \pi^+ + n$ in Regge pole model, differential cross sections for, 22:3324
interactions $\gamma + p \to \pi^+ + n$ in Regge pole model, π conspiracy in, 22:39369
interactions $\gamma + p \to \pi^+ + n$ near threshold, divergence conditions for, (T), 22:20185
interactions $\gamma + p \to \pi^+ + n$, coherent-droplet model with long-range π exchange for, (T), 22:9539
interactions $\gamma + p \to \pi^+ + n$, conspiracy and evasion in, 22:37113
interactions $\gamma + p \to \pi^+ + n$, double-Regge-exchange conspiracy for π^+ production in, 22:34928
interactions $\gamma + p \to \pi^+ + n$, Lorentz invariance in Reggeization of π trajectory in, 22:39336
interactions $\gamma + p \to \pi^+ + n$, Regge-pole model for pion-exchange, 22:7494
interactions $\gamma + p \to \pi^+ + n$, review of experiments and theory for, 22:11609 (NP-17221)
interactions $\gamma + p \to \pi^+ + n$, review of pion exchange in, 22:24684
interactions $\gamma + p \to \pi^+ + n$, vector dominance and quark model relation for polarization in, 22:41769 (DESY-68/33)
interactions $\gamma + p \to \pi^+ + n$, vector-meson dominance analysis of, 22:26664
interactions $\gamma + p \to \pi^- + N^{*++}$ at high energies, cross sections for, (E), 22:44308
interactions $\gamma + p \to \pi^- + \pi^+ + p$ at 0.85 to 1.21 GeV, differential cross sections for, (E), 22:46315
interactions $\gamma + p \to \pi^- + \pi^+ + p$ at 0.9 to 1.3 GeV, scintillation and Cherenkov counter study of cross sections for, (E), 22:3247
interactions $\gamma + p \to \pi^+ + \pi^- + p$ at 16 GeV, cross sections for rho^0 production in, (E), 22:48212
interactions $\gamma + p \to \pi^- + \pi^+ + p$ below 750 MeV, counter and spark chamber study of Δ (1236) production in, (E), 22:24513 (INSJ-107)
interactions $\gamma + p \to$ rho $+ p$, cross sections for, 22:9554
interactions $\gamma + p \to$ rho $+ p$, optical theorem for, 22:41768 (DESY-68/28)
interactions $\gamma + p \to$ rho $+ p$, optical theorem for lower limit on cross sections for, 22:44354
interactions $\gamma + p \to$ rho $+ p$, two-pion exchange contributions to absorptive amplitude for, 22:3424
interactions $\gamma + p \to$ rho$^0 + p$ at 14 and 16 GeV, spectrometer study of upper limit for, (E), 22:24515
interactions $\gamma + p \to$ rho$^0 + p$ at high energies, composite hadron models for, 22:5532
interactions $\gamma + p \to$ rho$^0 + p$ below 6 GeV, models for, 22:22345 (CONF-670923-, pp 337-75)
interactions $\gamma + p \to$ rho$^0 + p$, differential cross section

from e + p interaction at 4.9 GeV, (E), 22:15716
interactions γ + p → rho^0 + p, strong-absorption model for spin independence of, (T), 22:13691 (DESY-67/32)
interactions γ + p → rho$^+$ + n, rho$^+$ → π$^+$ + π^0, rho$^+$ Regge-trajectory-exchange model for, 22:44360
interactions γ + p → Σ^0 + K$^+$ in Regge pole model, differential cross sections for, 22:3324
interactions γ + p → Σ^0 + K$^+$, SU(3) symmetry and Regge pole model for differential cross section at zero angle, 22:48347
interactions γ + p → Σ$^+$ + K^0, dispersion sum rules for Σ$^+$ magnetic moment from, 22:9537
interactions γ + p → vector meson + p, cross sections for, (T), 22:46448
interactions γ + p above 3 GeV, review of experiments on, 22:22274 (CONF-670923-, pp 309-36)
interactions γ + p at 0.05 to 5.0 GeV in hydrogen bubble chamber, total cross section for hadron production in, (E), 22:41721 (DESY-68/31)
interactions γ + p at 0.5 and 5.0 GeV, total cross section for hadron production in, (E), 22:50278
interactions γ + p at 0.5 to 45 GeV, kinematics tables for, 22:7421 (SLAC-77)
interactions γ + p at 1.5 to 6 GeV, review of strange particle production from, 22:22273 (CONF-670923-, pp 254-69)
interactions γ + p at 200 to 450 MeV, π$^+$ production by linearly polarized, (E), 22:29616
interactions γ + p at 220 to 380 MeV, cross section for backward production of π^0 in, (E), 22:11574
interactions γ + p at 290 to 550 MeV in hydrogen bubble chamber, π$^+$ production at 0° and forward angles from, (E), 22:1377
interactions γ + p at 4 GeV in bubble chamber, meson (eta^0) production from, (E), 22:52922
interactions γ + p at 4.8 to 6.0 GeV in hydrogen bubble chamber, production of multipion final states in, (E), 22:34908
interactions γ + p at 60 to 750 MeV, differential cross section for Compton, 22:13705
interactions γ + p at 850 MeV, magnetic spectrometer of asymmetric μ pair production in, (E), 22:22276 (CONF-670923-, pp 409-51)
interactions γ + p at high energies in hydrogen bubble chamber, strange particle production from, (E), 22:13638
interactions γ + p at high energies, review of meson production in, (E), 22:39234 (CERN-68-7(Vol.1), pp 556-70)
interactions γ + p at high energies, vector dominance model for sum rule connecting photon--vector transition and meson--nucleon interaction with cross section of, 22:20173 (JINR-P2-3704)
interactions γ + p below 150 MeV, analysis of experimental data for Compton, 22:20111
interactions γ + p below 234 MeV, multipole analysis of π^0 production in, (T), 22:29662
interactions γ + p below 6 GeV in bubble chamber, resonance production from, (E), 22:15660 (DESY-67/40)
interactions γ + p in GeV range, design and performance of on-line data acquisition system for studying, 22:367
interactions γ + p near threshold, π^0 production in, 22:20182
interactions γ + p on polarized targets, π angular distribution from production in, (T), 22:50322
interactions γ + p, Adler--Fubini sum rule for, 22:48263
interactions γ + p, meson and baryon resonance production in, 22:46375
interactions γ + p, multiple pion production in, (E/T), 22:17897
interactions γ + p, parity doublet conspiracy of pion from finite energy sum rules in π$^+$ production in, 22:20183
interactions γ + p, polarization effects on production of symmetric lepton pairs in, 22:34904
interactions γ + p, polarization in vector dominance model for π production in, 22:39419
interactions γ + p, quark model relations for differential cross sections of, 22:44382
interactions γ + p, Regge pole model for vector meson production in, 22:37109
interactions γ + p, review of S not equal to 0 baryon resonances in, 22:32057
interactions γ + p, SU(3) symmetry and Regge pole model for differential cross section relations for π$^+$ and K$^+$ production in, 22:48347
interactions γ + p, subtraction constants in sum rules for Compton, 22:15714
interactions in emulsions at 24 BeV, (E), 22:2831
interactions in graphite at 24 GeV/c, neutron production in, (E), 22:26559
interactions in nuclear emusions at 6.2 and 28 GeV/c, production of fast deuterons and tritons in, (E), 22:34846
interactions K + p → K + Δ(1236), Roy model for behavior of diffraction maximum in, 22:17956
interactions K + p → K + N*, Regge-pole model for, 22:32165
interactions K + p → K* + p at 2.64 GeV/c in absorption model, dynamic reference system for, 22:5568
interactions K + p at 20 to 10 GeV, analysis of three-body final states in, (E/T), 22:3408 (INP-555/PL/PH, pp 79-99)
interactions K + p at 7 to 15 GeV/c, differential cross sections for elastic, (E/T), 22:46430
interactions K + p at high energies, 22:3371
interactions K + p at high energies, 36-plet 2$^+$ meson exchange for total cross section for, 22:5626
interactions K + p at high energies, multiple-scattering corrections to Pomeranchuk exchange in, 22:46397
interactions K + p at high energies, relations among cross sections for inelastic, (T), 22:15789 (JINR-P2-3649)
interactions K + p at high energies, review of research on, 22:44328(R) (ORO-2504-127)
interactions K + p in sakaton triplet model, 22:15752
interactions K + p, cross sections for elastic, (E/T), 22:22394
interactions K + p, experimental tests of SU(3) predictions for, (T), 22:7544 (ORO-2504-112)
interactions K + p, high-energy sum rule for forward elastic, 22:3444
interactions K + p, review of resonance production from, 22:9591
interactions K + p, review of S not equal to 0 baryon resonances in, (E), 22:32057
interactions K^0 + p → K^0 + π^0 + negative-parity isobar, cuts in complex l-plane for, (T), 22:20248
interactions K^0 + p → K$^+$ + π$^-$ + negative-parity isobar, cuts in complex l-plane for, (T), 22:20248
interactions K^0 + p → Λ + π$^+$, quark model for Λ/Σ ratio in, 22:13753 (LPTHE-TH-226)
interactions K^0 + p → Σ^0 + π$^+$ at 300 MeV/c in hydrogen bubble chamber, (E), 22:13670
interactions K^0 + p at 168 to 343 MeV/c, scintillation counter study of total cross sections for, (E), 22:15680 (ORO-2504-117)
interactions K$_2^0$ + p → K$_1^0$ + p at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445
interactions K$_2^0$ + p → K$_1^0$ + p at 300 MeV/c in hydrogen bubble chamber, (E), 22:13670
interactions K$_2^0$ + p → K$_1^0$ + p at high energies, Reggeized ω exchange in, 22:44426
interactions K$_2^0$ + p → Λ + π$^+$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445
interactions K$_2^0$ + p → Λ^0 + π$^+$ at 300 MeV/c in hydrogen bubble chamber, Σ (1385) production from, (E), 22:13670
interactions K$_2^0$ + p → Σ^0 + π$^+$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445
interactions K$_2^0$ + p at 168 to 343 MeV/c, total cross sections for, (E), 22:34856
interactions K$^-$ + (2p) → Λ^0 + p in light nuclei, pair absorption model for, 22:29721
interactions K$^-$ + (2p) → Σ^0 + p in light nuclei, pair absorption model for, 22:29721
interactions K$^-$ + (pn) → Λ^0 + n in light nuclei, pair absorption model for, 22:29721
interactions K$^-$ + (pn) → Σ$^-$ + p in light nuclei, pair absorption model for, 22:29721
interactions K$^-$ + p → anti K + N + π at 1.33 GeV/c, anti K*(890) Δ(1236), Λ(1520), and Σ(1760) production in, (E), 22:34853
interactions K$^-$ + p → anti K + N at 780 to 1220 MeV/c in hydrogen bubble chamber, resonance production from, (E), 22:5507
interactions K$^-$ + p → anti K + π + N at 4.1 and 5.5 GeV/c in bubble chamber, K*(890) and K*(1400) production and decay from, (E), 22:20148
interactions K$^-$ + p → anti K*^{0} + n at 3 GeV/c, violation of quark model sum rule in, (T), 22:22363
interactions K$^-$ + p → anti K^0 + n at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445
interactions K$^-$ + p → anti K^0 + n at 5.0 GeV/c, model for, 22:50391
interactions K$^-$ + p → anti K^0 + n, real to imaginary ratio of forward amplitude of, 22:29707
interactions K$^-$ + p → anti K^0 + n, Regge pole theory for amplitude of, 22:20258
interactions K$^-$ + p → anti K^0 + n, Regge poles and SU(3) symmetry for, 22:1439
interactions K$^-$ + p → anti K^0 + n, Regge-pole analysis of, 22:46433
interactions K$^-$ + p → anti K^0 + n, rho + R Regge-pole model for, 22:9594
interactions K$^-$ + p → anti K^0 + n, SU(3) predictions for, 22:46490
interactions K$^-$ + p → anti K^0 + π$^-$ + π^0 + p at 4.1 and 5.5 GeV/c in bubble chamber, K*(890) and K*(1400) production and decay in, (E), 22:20148
interactions K$^-$ + p → anti K^0 + π$^-$ + π^0(π$^+$) + N at 4.1 to 5.5 GeV/c, K*(890) and K*(1400) production and decay from, (E), 22:24563
interactions K$^-$ + p → anti K^0 + π$^-$ + π$^+$ + n at 4.1 and 5.5 GeV/c in bubble chamber, K*(890) and K*(1400) production and decay from, (E), 22:20148
interactions K$^-$ + p → anti K^0(K$^-$) + π$^-$(π$^+$) + N at 4.1 to 5.5 GeV/c, K*(890) and K*(1400) production and decay from, (E), 22:24563
interactions K$^-$ + p → baryon + meson + meson, quark model for cross-section relations between, 22:50375
interactions K$^+$ + p → Δ^{++}(1236) + K*^{0}(890) at 12.7 GeV/c,

density matrix elements for $\Delta^{++}(1236)$ and $K^{*0}(890)$ decay from, (E/T), 22:48229 (UR-875-251)
interactions $K^- + p \to \gamma + \Lambda$, electromagnetic coupling of Y^{*0} resonances from, (T), 22:35007
interactions $K^- + p \to \gamma + \Lambda$, electromagnetic couplings of baryons from Y_0^* production from, (T), 22:1405 (TH-210)
interactions $K^+ + p \to K + N + \pi$ at 3 GeV/c, analysis of, (E), 22:50390
interactions $K^+ + p \to K + N + \pi$ at 3 GeV/c, $K^*(892)$ and $\Delta(1236)$ production in, (E/T), 22:50390
interactions $K^+ + p \to K + \pi + N$ at 735 and 785 MeV/c in hydrogen bubble chamber, search for kappa (725) in, (E), 22:3422
interactions $K^+ + p \to K + \pi + N$ at 860 to 1360 MeV/c, cross sections and partial-wave analysis of KN^* and K^*p final states from, (E), 22:26564 (UCRL-18131)
interactions $K^+ + p \to K + \pi + \pi + p$ at 5.5 GeV/c in bubble chamber, analysis of $K^*\pi$ system in, (E/T), 22:34861
interactions $K^+ + p \to K^* + p$ at 1 GeV/c in hydrogen bubble chamber, upper limits for scalar K^* production in, (E), 22:39281 (UCRL-18206)
interactions $K^- + p \to K^* + \pi^+ + n$ at 6 GeV/c, angular correlations in, (T), 22:3420
interactions $K^+ + p \to K^{*0} + \Delta(1236)$, Regge-pole model for π exchange in, 22:26657
interactions $K^+ + p \to K^{*0}(890) + \Delta(1236)$ at 10 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:39274 (CERN-68-7(Vol.2), pp 121-34)
interactions $K^+ + p \to K^{*+}(1420) + p$ at 10 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:39274 (CERN-68-7(Vol.2), pp 121-34)
interactions $K^- + p \to K^{*-}(890) + p$ at 3 GeV/c, absorption model analysis of, 22:5590
interactions $K^+ + p \to K^{*+}(890) + p$ at 3 GeV/c, absorption model analysis of, 22:5590
interactions $K^+ + p \to K^0 + \Delta(1236)$ at 10 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:39274 (CERN-68-7(Vol.2), pp 121-34)
interactions $K^+ + p \to K^0 + \Delta^{++}(1236)$ at 12.7 GeV/c, density matrix elements for $\Delta^{++}(1236)$ decay from, (E/T), 22:48229 (UR-875-251)
interactions $K^+ + p \to K^0 + \Delta^{++}(1236)$ at threshold, phase shifts for, (T), 22:15798
interactions $K^+ + p \to K^0 + \Delta^{++}(1236)$, Regge pole fit for, 22:3428
interactions $K^+ + p \to K^0 + n + \pi^+ + \pi^+$ at 4.97 GeV/c in hydrogen bubble chamber, K^* production from, (E), 22:9517
interactions $K^+ + p \to K^0 + n + \pi^+ + \pi^+$ at 4.97 GeV/c in hydrogen bubble chamber, $K^*(1660)$ production from, (E), 22:9516
interactions $K^- + p \to K^0 + n$ below 20 GeV/c, rho' Regge trajectory for, 22:39413
interactions $K^- + p \to K^0 + n$, at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $K^- + p \to K^0 + n$, Roy model for behavior of diffraction maximum in, 22:17956
interactions $K^+ + p \to K^0 + p + n\pi$ ($n = 3,4$) in hydrogen bubble chamber at 3.5 GeV/c, production and decay of K^*, ω, and eta in, (E), 22:11597
interactions $K^+ + p \to K^0 + p + \pi^+ + \pi^0$ at 4.97 GeV/c in hydrogen bubble chamber, K^* production from, (E), 22:9517
interactions $K^+ + p \to K^0 + p + \pi^+ + \pi^0$ at 4.97 GeV/c in hydrogen bubble chamber, $K^*(1660)$ production from, (E), 22:9516
interactions $K^+ + p \to K^0 + p + \pi^+$ at 12.7 GeV/c in hydrogen bubble chamber, preliminary results for anti Y, Y, and quasi-two-body final states from, (E), 22:3269 (UR-875-218)
interactions $K^+ + p \to K^0 + p(n) + 2\pi$ at 3.5 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39291
interactions $K^+ + p \to K^0 + p(n) + \pi$ at 3.5 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39291
interactions $K^+ + p \to K^0 + \pi^+ +$ negative-parity isobar, cuts in complex l-plane for, (T), 22:20248
interactions $K^- + p \to K^0 + \Xi^0$, quark model and multiple-scattering formalism for, 22:52985
interactions $K^+ + p \to K^0\ (K^+) + p + \pi^+ + \pi^0\ (\pi^-)$ at 12.7 GeV/c in hydrogen bubble chamber, preliminary results for anti Y, Y, and quasi-two-body final states from, (E), 22:3269 (UR-875-218)
interactions $K^- + p \to K^- + n + \pi^+ + \pi^+ + \pi^-$ at 4.6 and 5 GeV/c, resonance production, mass distribution, angular distribution, and cross sections in, (E), 22:52944
interactions $K^- + p \to K^- + N + \pi^+ + \pi^+ + \pi^-$ at 4.6 and 5.0 GeV/c, cross sections for resonance production in, (E), 22:29627 (IS-T-225)
interactions $K^+ + p \to K^+ + \omega + p$ at 4.9 and 9 GeV/c in bubble chamber, multi-Regge model for meson (ω) production in, (E/T), 22:50295 (UCRL-18321)
interactions $K^- + p \to K^- + p +$ phi at 3.8 GeV/c, properties of final states from, (E), 22:11601
interactions $K^- + p \to K^- + p + \pi^+ + \pi^- + \pi^0$ at 4.6 and 5 GeV/c, resonance production, mass distribution, angular distribution, and cross sections in, (E), 22:52944
interactions $K^- + p \to K^- + p + \pi^+ + \pi^- + \pi^0$ at 4.6 and 5.0 GeV/c, cross sections for resonance production in, (E), 22:29627 (IS-T-225)
interactions $K^- + p \to K^- + p + \pi^+ + \pi^-$ at 2.63 and 2.70 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:7440 (COO-1195-45)
interactions $K^+ + p \to K^+ + p + \pi^+ + \pi^-$ at 4.97 GeV/c in hydrogen bubble chamber, $K^*(1660)$ production from, (E), 22:9516
interactions $K^+ + p \to K^+ + p + \pi^+ + \pi^-$ at 4.97 GeV/c in hydrogen bubble chamber, K^* production from, (E), 22:9517
interactions $K^- + p \to K^- + p$ at 0 to 250 MeV/c in emulsions, total cross section for, (E), 22:17875
interactions $K^- + p \to K^- + p$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445
interactions $K^- + p \to K^- + p$ at 0.8 to 1.2 GeV/c, model of diffraction and resonant scattering for, 22:5584
interactions $K^- + p \to K^- + p$ at 5.9 to 9.8 GeV/c, scintillation counter telescope and optical spark chamber study of cross sections for, (E), 22:39271 (CERN-68-7(Vol.1), pp 571-9)
interactions $K^- + p \to K^- + p$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $K^+ + p \to K^+ + p$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $K^- + p \to K^- + p$ at 780 to 1220 MeV/c, resonance production from, (T), 22:5507
interactions $K^+ + p \to K^+ + p$ at 80 to 280 MeV/c in hydrogen bubble chamber, differential cross sections for, (E), 22:34850
interactions $K^- + p \to K^- + p$ at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions $K^+ + p \to K^+ + p$ at high energies, unitarity conditions for imaginary part of amplitude for large-angle, 22:13743
interactions $K^- + p \to K^- + p$ at high energies, unitarity condition for imaginary part of amplitude for large-angle, 22:13743
interactions $K^+ + p \to K^+ + p$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $K^- + p \to K^- + p$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $K^+ + p \to K^+ +$ phi $+ p$ at 4.9 and 9 GeV/c in bubble chamber, meson (phi) production in, (E/T), 22:50295 (UCRL-18321)
interactions $K^+ + p \to K^+ + \pi^0 +$ negative-parity isobar, cuts in complex l-plane for, (T), 22:20248
interactions $K^- + p \to K^- + \pi^0 + p$, kinematics of momentum transfers in, (T), 22:48316
interactions $K^+ + p \to K^+ + \pi^- + \Delta^{++}$ (1236) at 4.6 and 9 GeV/c, one pion exchange modified by absorption effects in, (T), 22:34983 (UCRL-18201)
interactions $K^+ + p \to K^+ + \pi^+ + n$ at 3 GeV/c, double-peripheral model for differential cross sections for, 22:29701
interactions $K^+ + p \to K^+ + \pi^- + N^{*++}$, method for $K\pi$ phase shift analysis for, 22:1443
interactions $K^- + p \to K^- + \pi^- + \pi^+ + p + \pi^0$ at 4.6 and 5.0 GeV/c, A_1^0 production in, (E), 22:7449
interactions $K^+ + p \to K^+ + \pi^- + \pi^+ + p$ at 2.75 and 3.2 GeV/c, differential cross sections for, (E), 22:48224 (COO-1195-130)
interactions $K^- + p \to K^- + \pi^+ + \pi^- + p$ at 4.1 and 5.5 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:13652 (COO-1195-111)
interactions $K^- + p \to K^- + \pi^+ + \pi^- + p$ at 5.5 GeV/c in hydrogen bubble chamber, resonance production in anti K $\pi\pi$ system in, (E), 22:29637
interactions $K^- + p \to K^- + \pi^+ + \pi^- + p$ at 5.5 GeV/c, generalized Deck effect and anti $K^{**}(1300)$ production in, (E), 22:11589
interactions $K^- + p \to K^- + \pi^- + \pi^+ + \pi^0 + p$ at 4.6 and 5.0 GeV/c, 3π (960) enhancement in, (E), 22:39282
interactions $K^- + p \to K^- + \pi^- + \pi^+ + \pi^+ + n$ at 4.6 and 5.0 GeV/c, 3π (960) enhancement in, (E), 22:39282
interactions $K^- + p \to K^+ + \Xi^-$, quark model and multiple-scattering formalism for, 22:52985
interactions $K^- + p \to K^+ + \Xi^-$, Regge pole model for double charge-exchange in, 22:46400
interactions $K^- + p \to K^{*0}(890) + n$ at 11.2 GeV/c, cross sections and density matrix elements for, (E), 22:48232
interactions $K^- + p \to l^+ + l^- + n$, radiative corrections for vector meson production and decay in, (T), 22:32070
interactions $K^- + p \to \Lambda + 2\pi^- + 2\pi^+ + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, strangeness-zero meson production from, (E), 22:7447
interactions $K^- + p \to \Lambda + 2\pi^- + 2\pi^+$ at 6 GeV/c in hydrogen bubble chamber, strangeness-zero meson production from, (E), 22:7447
interactions $K^- + p \to \Lambda +$ eta at 1.2 to 1.7 GeV/c, total and differential cross sections for, (E), 22:5511
interactions $K^- + p \to \Lambda +$ eta at 1.22, 1.51, and 1.7 GeV/c, model with K^* and n exchange for, (E/T), 22:32158
interactions $K^- + p \to \Lambda +$ eta' at 3 GeV/c, $I = 0$ eta$\pi\pi$ and rhoγ enhancements in, (E), 22:29635
interactions $K^- + p \to \Lambda +$ eta at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560
interactions $K^- + p \to \Lambda + f^*$ at 5.5 GeV/c in hydrogen

bubble chamber, (E), 22:1391

interactions $K^- + p \to \Lambda + \omega$ at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560

interactions $K^- + p \to \Lambda +$ phi at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560

interactions $K^- + p \to \Lambda +$ phi at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Lambda + \pi$ and $K^- + p \to \Sigma + \pi$ in quark model, Λ to Σ ratio in, 22:17967

interactions $K^- + p \to \Lambda + \pi^0$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445

interactions $K^- + p \to \Lambda + \pi^0$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Lambda + \pi^0$ at 850 to 1150 MeV/c in hydrogen bubble chamber, exchange amplitude contributions to, (E), 22:50297 (UCRL-18411)

interactions $K^- + p \to \Lambda + \pi^+ + \pi^0 + \pi^-$ at 2.1 to 2.7 GeV/c in hydrogen bubble chamber, $\Sigma(1385)$ and rho production from, (E), 22:15682 (UCRL-18041)

interactions $K^- + p \to \Lambda + \pi^+ + \pi^- + \pi^0$ at 5.5 GeV/c, production and decay of $X^0(959)$ in, (E), 22:48237

interactions $K^- + p \to \Lambda + \pi^+ + \pi^-$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445

interactions $K^- + p \to \Lambda + \pi^+ + \pi^-$ at 1.7 GeV/c, production and decay of $\Sigma(1660)$ from, (E), 22:52941

interactions $K^- + p \to \Lambda + \pi^+ + \pi^-$ at 2.1 to 2.7 GeV/c in hydrogen bubble chamber, $\Sigma(1385)$ and rho production from, (E), 22:15682 (UCRL-18041)

interactions $K^- + p \to \Lambda + \pi^+ + \pi^-$ at 670 to 910 MeV, cross sections for $\Sigma(1690)$ production in, (E), 22:52939

interactions $K^- + p \to \Lambda + \pi^+ + \pi^-$, $\Sigma(1660)$ production and sequential decay from, (E), 22:48231

interactions $K^- + p \to \Lambda +$ rho^0 at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560

interactions $K^- + p \to \Lambda + X^0$ at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560

interactions $K^- + p \to \Lambda + X^0$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Lambda + (n - 1)\pi$ $(3 < n < 9)$ at 5 to 16 GeV/c, Reggeized multipheral model for, 22:46427

interactions $K^- + p \to \Lambda(1520) + \pi^0$, rescattering model for production angular distributions from, 22:50404

interactions $K^- + p \to \Lambda^0 +$ eta at 740 MeV/c in bubble chamber, (E), 22:34834

interactions $K^- + p \to \Lambda^0 + \pi^0$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Lambda^0 + \pi^+ + \pi^- + \pi^0$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Lambda^0 + \pi^+ + \pi^- + \pi^0$ at 776 to 1200 MeV/c in hydrogen bubble chamber, Λ^0 lifetime determination from, (E), 22:20119

interactions $K^- + p \to \Lambda^0 + \pi^+ + \pi^-$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Lambda^0 + \pi^+ + \pi^-$ at 776 to 1200 MeV/c in hydrogen bubble chamber, Λ^0 lifetime determination from, (E), 22:20119

interactions $K^- + p \to \Lambda^0\ (\Sigma^0) + \pi^+ + \pi^-$ at 4.6 to 5.0 GeV in hydrogen bubble chamber, $\Sigma(1660)$ and $\Sigma(1695)$ production in, (E), 22:20139

interactions $K^- + p \to n +$ anti K^0 at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to n + K^{*0}(890)$ at 4.1 to 10 GeV/c, natural and unnatural parity exchange contributions to cross sections for, (T), 22:46458

interactions $K^- + p \to N + \pi + K^*$ peripheral model for πK^* enhancement in, (T), 22:24664

interactions $K^- + p \to n$ rho$^0 + Y$, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)

interactions $K^- + p \to n\pi + Y$, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)

interactions $K^- + p \to p +$ anti $K^0 + \pi^-$ at 4.6 to 5.0 GeV in hydrogen bubble chamber, $\Sigma(1660)$ and $\Sigma(1695)$ production in, (E), 22:20139

interactions $K^- + p \to p +$ anti $K^0 + \pi^-$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^+ + p \to p + K + \pi + \pi$ at 12.7 GeV/c, spin-parity assignment for $K\pi\pi(1300)$ from, (E/T), 22:48229 (UR-875-251)

interactions $K^+ + p \to p + K^{*+}(890)$ at 10 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:39274 (CERN-68-7(Vol.2), pp 121-34)

interactions $K^+ + p \to p + K^{*+}(890)$ at 12.7 GeV/c, density matrix elements for $K^{*+}(890)$ decay from, (E/T), 22:48229 (UR-875-251)

interactions $K^- + p \to p + K^{*-}(890)$ at 4.1 to 10 GeV/c, natural and unnatural parity exchange contributions to cross sections for, (T), 22:46458

interactions $K^+ + p \to p + K^+$ at 3.5 GeV/c in hydrogen bubble chamber, baryon exchange in backward, (E), 22:20142

interactions $K^- + p \to \pi^0 + \Lambda$, Regge-pole analysis of, 22:46433

interactions $K^- + p \to \pi^+ + \pi^- + \Lambda$ at 2.24 GeV/c in bubble chamber, $\Sigma(1385)$ production from, (E), 22:3284

interactions $K^- + p \to \pi^+ + \Sigma^-$, contribution of Regge branch points to amplitude of, 22:20263

interactions $K^- + p \to \pi^+ + \Sigma^-$, quark model and multiple-scattering formalism for, 22:52985

interactions $K^- + p \to \pi^- + \Sigma^+$, Regge pole model for, 22:15797

interactions $K^- + p \to \pi^- + \Sigma^+$, Regge-pole analysis of, 22:46433

interactions $K^- + p \to \Sigma + \pi + K^+ + K^-$ at 4.1 and 5.5 GeV/c in hydrogen bubble chamber (E), 22:20137 (COO-1195-116)

interactions $K^- + p \to \Sigma + \pi + \pi^+ + \pi^-$ at 4.6 to 5.0 GeV in hydrogen bubble chamber, $\Sigma(1660)$ and $\Sigma(1695)$ production in, (E), 22:20139

interactions $K^- + p \to \Sigma + \pi + \pi^+ + \pi^-$ interactions at 4.1 and 5.5 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:20137 (COO-1195-116)

interactions $K^- + p \to \Sigma + \pi$ at 4.1 and 5.5 GeV/c in hydrogen bubble chamber, differential cross sections for, (E), 22:20137 (COO-1195-116)

interactions $K^- + p \to \Sigma + \pi$, diquark amplitude from backward, (T), 22:13753 (LPTHE-TH-226)

interactions $K^- + p \to \Sigma(1385) + \pi$, rescattering model for $\Sigma(1385)$ production angular distributions from, 22:50404

interactions $K^- + p \to \Sigma(1660) + \pi^0$, rescattering model for production angular distribution from, 22:50404

interactions $K^- + p \to \Sigma(1660) + \pi^- \to \Sigma^+(\Sigma^-) + \pi^-(\pi^+) + \pi^+ + \pi^-$ at 2.1 to 2.7 GeV/c, parity and spin of $\Sigma(1660)$ from, 22:5512

interactions $K^- + p \to \Sigma^0 + \pi^0$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445

interactions $K^- + p \to \Sigma^0 + \pi^0$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Sigma^0 + \pi^+ + \pi$, kinematics of momentum transfers in, (T), 22:48316

interactions $K^- + p \to \Sigma^0 + \pi^+ + \pi^-$ at 1.7 GeV/c, production and decay of $\Sigma(1660)$ from, (E), 22:52941

interactions $K^- + p \to \Sigma^0 + \pi^+ + \pi^-$ at 6 GeV/c, angular correlations in, (T), 22:3420

interactions $K^- + p \to \Sigma^+ + 2\pi^- + \pi^+ + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, strangeness-zero meson production from, (E), 22:7447

interactions $K^- + p \to \Sigma^- + 2\pi^+ + \pi^- + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, strangeness-zero meson production from, (E), 22:7447

interactions $K^- + p \to \Sigma^- + \pi$, $\Sigma^- \to \pi^- + n$, Σ^- lifetime from, (E), 22:22326

interactions $K^- + p \to \Sigma^+ + \pi^0 + \pi^-$ at 4.6 to 5.0 GeV in hydrogen bubble chamber, $\Sigma(1660)$ and $\Sigma(1695)$ production in, (E), 22:20139

interactions $K^- + p \to \Sigma^+ + \pi^- + \pi^0$ at 2.1 to 2.70 GeV/c in hydrogen bubble chamber, (E), 22:32062 (UCID-3164)

interactions $K^- + p \to \Sigma^+ + \pi^+ + \pi^- + \pi^- + \pi^0$ at 2.1 to 2.70 GeV/c in hydrogen bubble chamber, (E), 22:32062 (UCID-3164)

interactions $K^- + p \to \Sigma^+ + \pi^-$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445

interactions $K^- + p \to \Sigma^- + \pi^+$ at 0 to 550 MeV/c, multichannel phase shift analysis for, 22:1445

interactions $K^- + p \to \Sigma^- + \pi^+$ at 300 to 450 MeV/c in hydrogen bubble chamber, $\Sigma^- \to n + l^- +$ anti ν asymmetry parameter from, (E), 22:32056

interactions $K^- + p \to \Sigma^+ + \pi^-$ at 850 to 1150 MeV/c in hydrogen bubble chamber, (E), 22:13645

interactions $K^- + p \to \Sigma^+ + \pi^-$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Sigma^- + \pi^+$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Sigma^+(1385) + \pi^-$ at 4.1 to 5.5 GeV/c, meson-exchange mechanism for, (E), 22:24560

interactions $K^- + p \to \Sigma^+(1680) + \pi^-$ at 4.1 to 5.5 GeV/c, meson-exchange mechanism for $\Sigma^+(1680)$ production in, (E), 22:24560

interactions $K^- + p \to \Sigma^+(\Sigma^-) + \pi^-(\pi^+) + \pi^0$ at 902 to 990 MeV/c, total cross sections for, (E), 22:24558

interactions $K^- + p \to \Sigma^+(\Sigma^-) + \pi^-(\pi^+)$ at 4.07 and 5.47 GeV/c, differential cross sections for, (E), 22:50306

interactions $K^- + p \to \Sigma^+(\Sigma^-) + \pi^-(\pi^+)$ at 902 to 990 MeV/c, differential cross sections for, (E), 22:24558

interactions $K^- + p \to \Xi + K + m\pi$ at 4.25 GeV/c, resonance production in, (E), 22:39290

interactions $K^- + p \to \Xi + K + n\pi$ at 1.7 to 2.7 GeV/c in hydrogen bubble chamber, (E), 22:15669

interactions $K^- + p \to \Xi + K^+$ at 6 GeV/c in bubble chamber, cross sections for, (E), 22:15684

interactions $K^- + p \to \Xi^0 + K^0$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Xi^0 + K^0$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Xi^- + K^+\ (K^0) + \pi^-\ (\pi^0) + \pi^+$ at 1.7 to 2.7 GeV/c, analysis of Ξ^- and $\Xi(1815)$ decay from, (E), 22:22320

interactions $K^- + p \to \Xi^- + K^-$ at 1.7 to 2.7 GeV/c, analysis of Ξ^- and $\Xi(1815)$ decay from, (E), 22:22320

interactions $K^- + p \to \Xi^- + K^+$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))

interactions $K^- + p \to \Xi^- + K^+$, peripheral model for associated production of Ξ^- in, 22:11685

interactions $K^- + p$ at 0.6 to 2.65 GeV/c, total cross sections for, (E), 22:13654 (RPP/H-31)

interactions $K^+ + p$ at 0.6 to 2.65 GeV/c, total cross section for, (E), 22:26567

interactions $K^+ + p$ at 0.6 to 2.65 GeV/c, total cross sections for, (E), 22:13654 (RPP/H-31)

interactions $K^+ + p$ at 1 GeV/c, K-matrix formalism for,

22:48373
interactions $K^+ + p$ at 1 to 3.5 GeV/c, spin and parity of $Z_1(1910)$ from, (T), 22:5591
interactions $K^+ + p$ at 1.0 to 2.5 GeV/c, spark chamber study of angular distribution and differential cross section of backward elastic, (E), 22:52947
interactions $K^- + p$ at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions $K^+ + p$ at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions $K^- + p$ at 1.33 GeV/c, cross sections and angular distributions of two-body final states from, (E), 22:37083
interactions $K^- + p$ at 1.4 to 2.4 GeV/c, polarization angular distributions and cross sections for elastic, (E), 22:41748
interactions $K^- + p$ at 1.4 to 2.4 GeV/c, spin--parity assignments of $\Lambda(2100)$, $\Sigma(2035)$, and $\Lambda(2350)$ from, (E/T), 22:48233
interactions $K^+ + p$ at 1.4 to 5.0 GeV/c, cross sections for inelastic, (E), 22:17873
interactions $K^- + p$ at 1.7 to 2.75 GeV/c in hydrogen bubble chamber, analysis of $\Xi^- \to \Lambda^0 + e^- +$ anti ν decay from, (E), 22:20122
interactions $K^- + p$ at 10 GeV/c in bubble chamber, Λ production in, (E), 22:32073
interactions $K^- + p$ at 10 GeV/c, cross sections for $K^*(890)$ and $K^*(1420)$ production in, (E/T), 22:29630
interactions $K^- + p$ at 10 GeV/c, mass dependence of differential cross section for, (E), 22:44338
interactions $K^- + p$ at 10 GeV/c, production of Ξ^-, Ω^-, and antibaryons in, (E), 22:24556
interactions $K^- + p$ at 10 GeV/c, total and differential cross sections for elastic and inelastic, (E), 22:50299
interactions $K^+ + p$ at 12.7 GeV/c, search for $S = 1$ and $S = 2$ meson resonances in, (E), 22:46338 (UR-875-250)
interactions $K^+ + p$ at 12.73 GeV/c, comparison of final states in, (E), 22:39276 (CERN-68-7(Vol.2), pp 172-89)
interactions $K^+ + p$ at 140 to 1495 MeV/c, phase-shift analysis of, 22:15808
interactions $K^+ + p$ at 160 to 580 MeV/c, space--time shifts and cross sections for relativistic wave packet collisions for time duration of, 22:15795
interactions $K^+ + p$ at 160 to 580 MeV/c, time shifts for s-wave elastic, 22:20260
interactions $K^- + p$ at 2.45 to 3.30 GeV/c, $I = 1$, 2455- and 2595-MeV resonance production from, (E), 22:20144
interactions $K^- + p$ at 290 to 430 MeV/c in hydrogen bubble chamber, Σ^- and Σ^+ production from, (E), 22:3347 (UCRL-17781)
interactions $K^+ + p$ at 3 GeV/c, absorption model for, 22:37149
interactions $K^+ + p$ at 3 GeV/c, cross section for elastic, (E/T), 22:50390
interactions $K^+ + p$ at 3 GeV/c, unitary S-matrix model for resonance production from, 22:15853
interactions $K^+ + p$ at 3.0 to 5.0 GeV/c, production of Z^* in, (E), 22:50397
interactions $K^+ + p$ at 3.5 and 5 GeV/c, differential cross section for, (E/T), 22:41814
interactions $K^- + p$ at 4.25 GeV/c in hydrogen bubble chamber, resonances, K anti K pairs, and final states from, (E), 22:3268 (ORO-2504-109)
interactions $K^- + p$ at 4.6 and 5.0 GeV/c in hydrogen bubble chamber, Ω^- and Ξ^0 production in, (E), 22:26573
interactions $K^- + p$ at 5.5 GeV/c, Ω^- production and decay in, (E), 22:26569
interactions $K^- + p$ at 6 GeV, angular distributions and cross sections for Λ^0 production in, (E), 22:41750
interactions $K^- + p$ at 6 GeV/c, cross sections for Ω^- production in, (E), 22:20140
interactions $K^- + p$ at 6 GeV/c, differential cross sections for elastic, (E), 22:41746
interactions $K^- + p$ at 780 to 1220 MeV/c, total cross sections for resonance production in, (T), 22:5507
interactions $K^- + p$ at 825 to 1125 MeV/c, sign of $K_2^0 - K_1^0$ mass difference from, (E), 22:11579,
interactions $K^+ + p$ at 860 to 1200 MeV/c, cross section for K^* production in, (E), 22:39285
interactions $K^+ + p$ at 9 GeV/c in hydrogen bubble chamber, L(1740) production from, (E), 22:1387 (UCRL-17833)
interactions $K^+ + p$ at 9 GeV/c, anti YN(2240) enhancement in, (E), 22:22321
interactions $K^+ + p$ at 9 GeV/c, search for $S = 2$ boson resonances in, (E), 22:37087
interactions $K^- + p$ at high energies, quark model for forward double-exchange production cross sections for, 22:22398
interactions $K^+ + p$ at high energies, total cross sections for, (E), 22:22299
interactions $K^- + p$ at high energies, total cross sections for, (E), 22:22299
interactions $K^+ + p$ at low energies, superconvergent dispersion relation for forward, 22:46431
interactions $K^- + p$ at low energies, superconvergent dispersion relation for forward, 22:46431
interactions $K^- + p$ at rest in emulsion nuclei, $\Sigma\pi$ production in, (E), 22:29641
interactions $K^- + p$ at rest in heavy-liquid bubble chamber, reaction processes from, (E), 22:15683
interactions $K^- + p$ at rest, computer program for Lorentz transformation of probability densities for Σ^- production and decay from, (E), 22:15736 (ORO-2504-111)
interactions $K^- + p$ in quark model, production of neutral vector and pseudoscalar mesons in, (T), 22:35009
interactions $K^- + p$ interactions at 3.9 to 5.0 GeV/c, production of $S = -2$ $\Xi(1930)$ resonance in, (E/T), 22:52940
interactions $K^- + p$ to 10 GeV/c, cross sections for inelastic, (E), 22:17873
interactions $K^+ + p$ up to 2 GeV/c, energy-dependent phase-shift analysis of, (E/T), 22:52945
interactions $K^- + p$ with charge exchange, sum rules for neutral meson production in, 22:52982
interactions $K^- + p$ with strangeness exchange, branching ratios for neutral meson production in, 22:52982
interactions $K^+ + p$, at 0.86 to 1.58 GeV/c in bubble chamber, cross sections for elastic and inelastic, (E), 22:50296 (UCRL-18323)
interactions $K^- + p$, CP nonconservation in, 22:20236
interactions $K^+ + p$, determination of coupling constants from π and $\Lambda + \Sigma$ poles in, (T), 22:32154
interactions $K^+ + p$, dispersion relations calculations of forward, 22:24638
interactions $K^+ + p$, forward dispersion relation predictions of differential cross sections for, (E/T), 22:24667
interactions $K^- + p$, forward dispersion relation predictions of differential cross sections for, (E/T), 22:24667
interactions $K^- + p$, generalized quark model for cross sections and spin density matrix elements for strangeness-exchange, 22:29693
interactions $K^- + p$, $K^- p\Lambda$ and $K^- p\Sigma^0$ coupling constant relations from dispersion relation calculations of forward, 22:24638
interactions $K^- + p$, polarization of resonances in peripheral SU(6)/sub W/ model for, 22:3491
interactions $K^+ + p$, polarization of resonances in peripheral SU(6)/sub W/ model for, 22:3491
interactions $K^+ + p$, prediction for ΛKN and ΣKN coupling constants from energy-dependent finite-energy sum rule for, 22:22404
interactions $K^+ + p$, predictions for $K^+ + N$ interactions from SU(3) symmetry for backward, 22:20142
interactions $K^+ + p$, sum-rule analysis of, 22:7517
interactions $K^- + p$, sum-rule analysis of, 22:7517
interactions $K^+ + p$, two-pion exchange contributions to, 22:41812
interactions $K^+ + p$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $K^- + p$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $K^+ + p$, use of current algebra for test of pole-dominance hypothesis for, 22:3441
interactions $\Lambda + p \to \Lambda + p$, one-boson-exchange model for differential and total cross sections for, 22:20274
interactions $\Lambda + p \to n + \Sigma^+$, one-boson-exchange model for differential and total cross sections for, 22:20274
interactions $\Lambda + p \to p + n$, SU(6) symmetry for aplitudes of, 22:48279
interactions $\Lambda + p$ at 110 to 330 MeV/c in hydrogen bubble chamber, cross section measurements for elastic, (E), 22:50289 (ORO-2504-123)
interactions $\Lambda + p$ at 120 to 320 MeV/c, differential and total cross sections for elastic, (E), 22:50305
interactions $\Lambda + p$ at low energies, review of research on, (E), 22:17854
interactions $\Lambda + p$ from $\pi^+ + d \to p + \Lambda + (K\pi)^+$ interactions at 3.65 GeV/c, (2165) enhancement in, (E), 22:46339
interactions $\Lambda + p$ in $A = 50$ hyperfragments, kinematical calculation of energy spectra of fast proton emission from stimulated, 22:9625
interactions $\Lambda + p$, effects of $n + p$ tensor interactions in $\Lambda - H^3$ on parameters for, (T), 22:22412
interactions $\mu + p \to \mu + p + \gamma$, test of quantum electrodynamics from vertical photon Compton effect in, 22:48256 (LNF-68/38)
interactions $\mu + p$ at 1 to 6 GeV, parameters for possible $\mu^+ + \mu^+$ and $\mu^- + \mu^-$ colliding beam interactions from spark chamber study of, (E), 22:22276 (CONF-670923-, pp 409-51)
interactions $\mu + p$ at 1.0 to 6.0 GeV/c, spark chamber and scintillation counter study of differential cross section relation with $e + p$ interactions for elastic, (E), 22:3248
interactions $\mu + p$ at 1.5 to 6.0 GeV/c, cross section for elastic, (E), 22:15665
interactions $\mu + p$ at high energies, lepton charge structure from relation with $e + p$ interactions, (E), 22:13636
interactions $\mu + p$ at high momentum transfer, inequality for backward, 22:5550
interactions $\mu + p$, review of elastic, 22:50345
interactions $\mu^- + p \to \mu^- + p$, general expression for differential cross section for polarization dependence of, (T), 22:39329

interactions $\mu^- + p \to n + \nu$ in meson (μ^-) capture by nuclei, constants for, (T), 22:13717
interactions $\mu^- + p \to n + \nu$ in meson (μ^-) capture by nuclei, neutron asymmetry from, (T), 22:13716
interactions $\mu^- + p \to n + \nu$/sub μ/ + γ, second-kind currents for, (T), 22:13723
interactions $\mu^- + p \to n + \nu$/sub ν/ in nuclear μ^- capture, universal V--A theory for, 22:5577
interactions $\mu^+ + p$, model for renormalizable theory for weak, 22:48280
interactions $\mu^- + p$, model for renormalizable theory for weak, 22:48280
interactions $\mu^+ + p$, renormalizable theory of weak interactions for, 22:44386 (ITEF-580)
interactions $\mu^- + p$, renormalizable theory of weak interactions for, 22:44386 (ITEF-580)
interactions $n + p \to d + \gamma$, parity violation in, 22:9655
interactions $n + p \to \gamma + d$ at 300 to 730 MeV, preliminary results on, (E), 22:44297(R) (UCLA-34-P-106-27)
interactions $n + p \to n + p + 2\pi^+ + 2\pi^- + m\pi^0$ at 2 to 10 GeV in propane bubble chamber, $\Delta^{++}(1236)$ and $\Delta^-(1236)$ production in $p\pi\pi$ effective mass distributions in, (E), 22:44319 (JINR-E1-3940)
interactions $n + p \to n + p + \gamma$ at 208 MeV, cross sections for bremsstrahlung production in, 22:22306
interactions $n + p \to n + p$ at 8 to 30 GeV/c, spark chamber study of cross sections for diffraction, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)
interactions $n + p \to n + p$ at high energies, relativistic calculations for recoil proton spectrometers, 22:4470 (HASL-186)
interactions $n + p \to p + n$ in Regge pole model, π conspiracy in, 22:39369
interactions $n + p \to p + n$, differential cross sections for, (T), 22:46430
interactions $n + p \to p + n$, Regge-pole model for pion-exchange, 22:7494
interactions $n + p$ and $p + p$ at 18.2 and 9.9 MeV, simultaneous phase-shift analysis of, (E/T), 22:11691
interactions $n + p$ at 0.5 to 5.3 MeV, charge-state flipping contribution to cross sections for, (E/T), 22:52930 (KFKI-19/1968)
interactions $n + p$ at 1 to 27 GeV/c, data compilation on, 22:52983
interactions $n + p$ at 1 to 27.0 GeV/c, data compilation for, 22:44320 (NP-17578)
interactions $n + p$ at 1 to 6 GeV, spark chamber study of cross sections for elastic, (E), 22:3263
interactions $n + p$ at 10 GeV/c, total cross section for, (E), 22:53086
interactions $n + p$ at 14 to 27 GeV/c, spark chamber study of total cross sections for, (E), 22:39248 (CERN-68-7(Vol.1), pp 523-36)
interactions $n + p$ at 14 to 27 GeV/c, total cross sections for, (E), 22:17861
interactions $N + p$ at 14.5 and 23.1 MeV, use of polarized proton target for, 22:5501
interactions $n + p$ at 199 MeV, relative differential cross sections and polarization parameters for, (E), 22:22303
interactions $n + p$ at 2 to 10 GeV in bubble chamber, methods of separation of reaction channels in three- and five-prong, (T), 22:39424 (JINR-P1-3881)
interactions $n + p$ at 2.6 GeV/c, two-pion-exchange contributions to, 22:46467
interactions $n + p$ at 200 MeV, differential cross section and polarization for, (E), 22:53092
interactions $n + p$ at 275 to 1500 MeV, use of on-line computer in wire spark chamber study of elastic, 22:47372 (PPAR-3)
interactions $n + p$ at 3 to 6.8 GeV/c, cross sections for elastic, (E), 22:44325
interactions $n + p$ at 630 MeV, spin correlation tensor for polarized, (T), 22:11692
interactions $n + p$ at 7 to 750 MeV, phase-shift analysis of, 22:50417
interactions $n + p$ at high energies, 22:3371
interactions $n + p$ at high energies, total cross sections for, (E), 22:22299
interactions $n + p$ below 350 MeV, potential consistent with boson exchange theory of nuclear forces for, 22:44451
interactions $n + p$ in deuterium (p,pn) reactions, final-state, (E), 22:11903
interactions $n + p$ in Λ-H^3 hyperfragment, effect of $\Lambda + p$ parameters from tensor, (T), 22:22412
interactions $n + p$ in organic single crystals, effective cross sections for, (E), 22:9921 (JUL-Conf-1)
interactions $n + p$ to 350 MeV, phenomenological phase-parameter fits to, 22:15817
interactions $n + p$, generalization of determinant method to continuous channels for S-matrix for, 22:20348
interactions $n + p$, kinematic constraints on Regge-pole residues for charge-exchange, 22:11683
interactions $n + p$, review of pion exchange in charge-exchange, 22:24684
interactions $n + p$, use of sum rules for calculating deuteron binding energy from triplet-S phase-shift in, 22:11689
interactions $\nu + p \to e^- + \pi^+ + p$, generalized Ward-Takahashi identities and current algebra for, 22:13681
interactions $\nu + p \to \mu^- + p + \pi^+$, PCAC hypothesis and Born approximation calculation of cross sections for, 22:11631
interactions $\nu + p \to n + e^+$, heavy e production in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions $\nu + p \to n + \mu^+$, production and lower bound for mass of heavy μ in, (T), 22:44384 (IFVE-STF-67-57-K)
interactions $\nu + p \to n + \mu^+$, spin dependence of, (T), 22:11635
interactions $\nu + p$, asymptotic equality with anti $\nu + p$ interactions for cross sections for multiple hardron production from, (T), 22:17910 (JINR-P2-3647)
interactions $\nu + p$, current algebra for, 22:20171
interactions $\nu + p$, possibility of W strong interactions in, (T), 22:22377
interactions $\nu + p$, saturation of covariant sum rules in quark model for N* production in, 22:15756
interactions $\nu + p$, use of ANL 12-ft hydrogen bubble chamber to study, 22:12607 (CERN-67-26(Vol.1), pp 87-94)
interactions ν/sub e/ $+ p \to n + e^+$, test of lepton quantum number from, 22:9558 (JINR-P2-3601)
interactions of interstellar and intergalactic, production of nucleon isobars and hyperons in, (T), 22:21979
interactions of primary cosmic, in the atmosphere, (T), 22:5176
interactions of solar, with geomagnetic equator, (E/T), 22:47854
interactions of, review of bubble chamber study of many-body, (E), 22:39269 (CERN-68-7(Vol.1), pp 345-79)
interactions of, Roy model for behavior of diffraction maximum in two- and four-pronged, 22:17956
interactions $\omega + p$ from $\gamma + p$ interactions, cross sections for elastic, (T), 22:46448
interactions p + anti $p \to \Lambda$ + anti Λ, spin correlations for, (T), 22:7637(R) (COO-1573-33)
interactions $p + \alpha$ at 1.67 GeV/c, test of Regge cuts in $N + N$ scattering amplitude from spin dependence in, (T), 22:44456
interactions $p + d \to {}^3H + \pi^+ + \pi^0$, possible experiments for test of isospin invariance of, 22:48300
interactions $p + d \to n + p + p + \gamma$ at 197 MeV, cross sections for bremsstrahlung production in, (E), 22:26557
interactions $p + d \to n + p + p + \gamma$ at 197 MeV, gamma detector and spark chamber study of differential cross sections for, (E), 22:15676
interactions $p + d \to p + d + \gamma$ at 197 MeV, cross sections for bremsstrahlung production in, (E), 22:26557
interactions $p + d \to p + d + \gamma$ at 197 MeV, gamma detector and spark chamber study of differential cross sections for, (E), 22:15676
interactions $p + d \to p + d + \pi^+ + \pi^-$ at 1.825 and 2.110 GeV/c in deuterium bubble chamber, baryon exchange and resonance production in, (E), 22:26562
interactions $p + d \to p + d$ at 1 GeV, Sviridov method for real part of amplitude of, (T), 22:29719
interactions $p + d \to p + d$ at 1 to 10 GeV at small angles, tables of differential cross sections for, (E), 22:17852 (JINR-P1-3641)
interactions $p + d \to p + d$ at 1 to 10 GeV, differential cross sections of small-angle, (T), 22:22411(T) (SLAC-Trans-80)
interactions $p + d \to p + d$ at 1 to 10 GeV, tables for differential cross sections of small-angle, 22:48221
interactions $p + d \to p + d$ at 1 to 3.5 GeV, cross section for backward, (E), 22:48222
interactions $p + d \to p + n + p$ at high energies, contribution to $p + d$ interaction cross section from, (T), 22:9615 (INP-575/PL/PH)
interactions $p + d \to t + \pi^+ + \pi^0$, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)
interactions $p + d$ at 1 to 27 GeV/c, data compilation on, 22:52983
interactions $p + d$ at 1 to 3.5 GeV, differential cross sections for elastic, (E), 22:7435 (ITEF-477)
interactions $p + d$ at 1.0 to 2.0 GeV, differential cross sections for elastic, (E), 22:11583
interactions $p + d$ at 1.67 and 18 GeV/c, test of Regge cuts in $N + N$ scattering amplitude from spin dependence in, (T), 22:44456
interactions $p + d$ at 46 MeV, elastic and inelastic, (E), 22:20442
interactions $p + d$ at 8 GeV, real part of $p + n$ amplitude from differential cross sections for elastic, (E), 22:1381
interactions $p + d$ at GeV energies, multiple-scattering formalism for elastic, (T), 22:50414
interactions $p + d$ at high energies, coherent resonance production from, (T), 22:3463
interactions $p + d$ at high energies, contribution of $p + d \to p + n + p$ interactions to cross section for, (T), 22:9615 (INP-575/PL/PH)
interactions $p + d$ at high energy, elastic and inelastic, (T), 22:29898
interactions $p + K \to p + K^*$, contribution of Mandelstam branch cuts from Reggeon exchange to, (T), 22:3455
interactions $p + n \to n + p$ at high energies, Regge pole models with branching in j-plane for differential cross

sections of, 22:39377

interactions $p + n \to n + p$, conspiracy of singularities in complex angular momentum plane for, 22:11688

interactions $p + n \to n + p$, Regge-pole analysis of, 22:5603

interactions $p + n \to p + n + \pi^+ + \pi^-$ at 3.7 GeV/c, exchange mechanism, (E), 22:35293(R) (ORNL-4230)

interactions $p + n \to p + n + \pi^+ + \pi^-$ at 3.7 GeV/c, exchange mechanism for Δ^{++} and Δ^- production in, (E), 22:24542

interactions $p + n \to p + n$ at 0.050 to 200 GeV, real part of amplitude of, (T), 22:39403 (JINR-P2-3850)

interactions $p + n \to p + n$ at 3 to 10 GeV in propane bubble chamber, differential and total cross sections for, (E), 22:17855

interactions $p + n \to p + n$ at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, (E), 22:37143

interactions $p + n \to p + n$, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)

interactions $p + n \to p + \pi^+ + \pi^- + n$ in neon--hydrogen bubble chamber, coherent production of $p\pi^+\pi^-$(1470) enhancement in, (E), 22:41729 (BNL-12674)

interactions $p + n$ above 1 GeV, multiplicity distributions of charged secondary particles in, (E), 22:52931 (KFKI-20/1968)

interactions $p + n$ and $p + p$ at 3 to 7 GeV/c, comparison of differential cross sections for elastic, 22:44454

interactions $p + n$ at 0 to 750 MeV, listings of data for, 22:37161 (UCRL-50426)

interactions $p + n$ at 1 to 10 GeV at small angles, tables of differential cross sections for real part of amplitude for, (E), 22:17852 (JINR-P1-3641)

interactions $p + n$ at 1 to 10 GeV, Glauber deuteron model for real part of amplitude of, (T), 22:22411(T) (SLAC-Trans-80)

interactions $p + n$ at 1 to 10 GeV, real part of amplitude of, (E/T), 22:48221

interactions $p + n$ at 100 keV to 1 GeV, bibliography on, (E/T), 22:52937 (LA-4002)

interactions $p + N$ at 17 and 24 GeV/c in emulsions, velocity-space images for analysis of, (E), 22:22313

interactions $p + n$ at 19.8 GeV/c in emulsions, (E), 22:48330

interactions $p + n$ at 19.8 GeV/c in emulsions, N* production in, (E), 22:39259

interactions $p + n$ at 2 to 10 GeV, neutron spectra and cross sections of inelastic, (E), 22:46323 (JINR-P1-3909)

interactions $p + N$ at 20 GeV in emulsions, analysis of asymmetric separation of charged secondary particles from, (E), 22:32052

interactions $p + n$ at 215 MeV, multi-element scintillation telescope study of asymmetries from double and triple scattering experiment for, (E), 22:20134

interactions $p + n$ at 310 to 700 MeV, polarization parameter for, (E), 22:5503

interactions $p + n$ at 400 MeV, unambiguous phase shift analysis and phase shift energy dependence for, 22:20271 (JINR-E1-3707)

interactions $p + N$ at 600 MeV in nuclei, isobar model for π production and nuclear shape from, (T), 22:24665

interactions $p + N$ at 70 GeV, meson-focusing device for neutrino beam production from, 22:11629 (NP-17198)

interactions $p + n$ at 8 GeV, real part of amplitude for, (E/T), 22:1381

interactions $p + n$ at high energies, 36-plet 2^+ meson exchange for total cross section for, 22:5626

interactions $p + n$ at high energies, cross sections for charge exchange, (E), 22:17858

interactions $p + n$ at high energies, cross sections for elastic, (E), 22:17858

interactions $p + n$ in nuclei, research using odd-odd spherical nuclei, (E/T), 22:1693

interactions $p + n$ neutron form factor from diffraction model of elastic, 22:44383

interactions $p + n$, determination of coupling constants from π and $\Lambda + \Sigma$ poles in, (T), 22:32154

interactions $p + n$, inelastic, (E/T), 22:39262

interactions $p + n$, meson--nucleon coupling constants from forward dispersion relations for, 22:24683

interactions $p + n$, scattering length for, (E), 22:20443

interactions $p + n$, short- and long-range charge independence in, 22:37165

interactions $p + n$, soft-photon theory of bremsstrahlung production in, 22:37116

interactions $p + p \to 2p + 2\pi^+ + 2\pi^-$ $(+\pi^0)$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)

interactions $p + p \to 2p + \pi^+ + \pi^- + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, nonstrange resonance production in, (E), 22:46324 (UCRL-17707)

interactions $p + p \to 2p + \pi^+ + \pi^-$ at 10 GeV/c in hydrogen bubble chamber, N* production in, (E), 22:37074 (DESY-68/17)

interactions $p + p \to 2p + \pi^+ + \pi^-$ at 6 GeV/c in hydrogen bubble chamber, nonstrange resonance production in, (E), 22:46324 (UCRL-17707)

interactions $p + p \to 2\pi^+ + 2\pi^- + \pi^0$ at 28.6 GeV/c in hydrogen bubble chamber, ω production from, (E), 22:15670 (BNL-11993)

interactions $p + p \to d +$ delta$^+$ at 3.8 GeV/c, missing-mass search for delta$^+$(960) in, (E), 22:5504

interactions $p + p \to d + \pi^+ + \pi^0$, possible experiments for test of isospin invariance of, 22:48300

interactions $p + p \to d + \pi^+ + \pi^0$, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)

interactions $p + p \to d + \pi^+$ at 1 to 3 GeV, counter study of differential cross sections for, (E), 22:22304

interactions $p + p \to d + \pi^+$ at 2.8 GeV, single-nucleon exchange model for, (T), 22:32176

interactions $p + p \to d + \pi^+$ at 3 to 13 GeV/c, one-pion-exchange and one-nucleon-exchange models for, 22:48326

interactions $p + p \to d + \pi^+$ at 3.4 to 12.3 GeV/c, forward differential cross sections for, (E), 22:48220

interactions $p + p \to d + x^+$ at 1.55 to 2.9 GeV, Cherenkov and scintillation counter study of rho from, (E), 22:3264

interactions $p + p \to \Delta(1236) + n$ at 2.8 GeV/c, differential cross sections and decay angular distributions for, (E/T), 22:3261

interactions $p + p \to \Delta^{++} + p + \pi^-$ at 6.6 GeV/c, double Regge-pole model analysis of, (E), 22:24539

interactions $p + p \to \Lambda + K^+ + p$ at 6 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:15675

interactions $p + p \to \Lambda + K^+ + p$ at 6 GeV/c in hydrogen bubble chamber, (E), 22:11581 (UCRL-17943)

interactions $p + p \to n + \Delta(1236) + p + \pi^+$ at 6.92 GeV/c, cross sections for, (E), 22:50292

interactions $p + p \to n + \Delta(1236)$ at 2.8 to 10 GeV/c, density matrix elements of $\Delta(1236) \to p + \pi^+$ decay from, (T), 22:35016

interactions $p + p \to n + \Delta^{++}(1236)$, Regge-pole model for π exchange in, 22:26657

interactions $p + p \to n + \Delta^{++}(1920)$ at 6 GeV/c, $\Delta^{++}(1920) \to Y^{*+}(1385) + K^+$ and $\Delta^{++}(1920) \to \Delta^{++}(1236) + \rho^0$, cross sections for, (E), 22:44327

interactions $p + p \to n + p + \pi^+$ at 310 MeV, soft-pion approximation for total cross section of, 22:46470

interactions $p + p \to n + \Sigma^+ + K^+$, one-boson-exchange model for, 22:22414

interactions $p + p \to N^* + N^*$, method for representing joint decay distributions from, (T), 22:39405 (TPJU-15/67)

interactions $p + p \to N^* + N^*$, use of statistical tensors for joint decay angular distributions in, 22:24629

interactions $p + p \to N^* + p$, two-pion exchange contributions to absorptive amplitude for N(1400) and N(1520) production in, 22:3424

interactions $p + p \to p + \Delta^+(1236)$, Regge-pole model for π exchange in, 22:26657

interactions $p + p \to p + \Lambda(\Sigma^0) + K^+$, one-boson-exchange model for, 22:22414

interactions $p + p \to p + n + 2\pi^+ + \pi^-$ at 6 GeV/c in hydrogen bubble chamber, nonstrange resonance production in, (E), 22:46324 (UCRL-17707)

interactions $p + p \to p + n + 3\pi^+ + 2\pi^-$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)

interactions $p + p \to p + n + 3\pi^+ + 2\pi^-$, Satz additive quark model sum rules for cross section for, 22:22308

interactions $p + p \to p + n + \pi^+ + \pi^+ + \pi^+ + \pi^- + \pi^-$ at 10 GeV/c, cross section for, (E), 22:46326

interactions $p + p \to p + n + \pi^+ + \pi^+ + \pi^-$ at 5 GeV/c in hydrogen bubble chamber, N* production from, (E), 22:11587

interactions $p + p \to p + n + \pi^+ + \pi^+ + \pi^-$ at 6 GeV/c in hydrogen bubble chamber, resonance and strange particle production in, (E), 22:32058

interactions $p + p \to p + n + \pi^+$ at 0.5 to 0.7 GeV, peripheral model for, 22:32177

interactions $p + p \to p + n + \pi^+$ at 10 GeV/c in hydrogen bubble chamber, N* production in, (E), 22:37074 (DESY-68/17)

interactions $p + p \to p + n + \pi^+$ at 10 GeV/c in hydrogen bubble chamber, OPE model for $\Delta^{++}(1236)$ production from, (E/T), 22:11594

interactions $p + p \to p + n + \pi^+$ at 28.5 GeV/c, double Regge pole model for π exchange and N(1400) production in, 22:46328

interactions $p + p \to p + n + \pi^+$ at 556 and 660 MeV, analysis of peripheral model for, (T), 22:15813 (JINR-E2-3638)

interactions $p + p \to p + n + \pi^+$ at 556 and 660 MeV, peripheral model for, 22:11687 (JINR-P2-3597)

interactions $p + p \to p + n + \pi^+$ at 6.92 GeV/c, cross sections for, (E), 22:50292

interactions $p + p \to p + n + \pi^+$, synchrotron-radiation model for, 22:11690

interactions $p + p \to p + N^*$ at 3 to 30 GeV/c, angular distributions and cross sections for, (E), 22:17859

interactions $p + p \to p + N^*$ at 3 to 7 GeV, differential cross sections for, (E), 22:11586

interactions $p + p \to p + N^*$ at 3 to 7 GeV/c, cross sections for, (E), 22:37076

interactions $p + p \to p + N^*$, compound structure model and mass shift of P_{11} resonance in, 22:9623

interactions $p + p \to p + N^*$, multiple-scattering formalism for, 22:48320

interactions $p + p \to p + n(p) + \pi^+(\pi^0) + \pi^0$ at 28.5 GeV/c in hydrogen bubble chamber, final states in, (E),

22:41728 (BNL-12673)
interactions $p + p \to p + n(p) + \pi^+(\pi^0) + \pi^0$ at 28.5 GeV/c in hydrogen bubble chamber, single isobar production in, (E), 22:46329
interactions $p + p \to p + n(p) + \pi^+(\pi^0)$ at 28.5 GeV/c in hydrogen bubble chamber, final states in, (E), 22:41728 (BNL-12673)
interactions $p + p \to p + n(p) + \pi^+(\pi^0)$ at 28.5 GeV/c in hydrogen bubble chamber, single isobar production in, (E), 22:46329
interactions $p + p \to p + p + 2\pi^+ + 2\pi^- + \pi^0$, Satz additive quark model sum rules for cross section for, 22:22308
interactions $p + p \to p + p + f^0$ at 10 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:37074 (DESY-68/17)
interactions $p + p \to p + p + \gamma$ at 10 to 200 MeV, potential model for cross section of coplanar and noncoplanar, 22:22418
interactions $p + p \to p + p + \gamma$ at 10.5 MeV, cross section for, (E), 22:32513(R) (ANU-P-400)
interactions $p + p \to p + p + \gamma$ at 10.5 MeV, cross section for bremsstrahlung production in, (E), 22:24518
interactions $p + p \to p + p + \gamma$ at 10.5 MeV, preliminary results for surface barrier counter study of upper limit of cross section of, (E), 22:39233 (ANU-P-407)
interactions $p + p \to p + p + \gamma$ at 20 MeV, cross section for bremsstrahlung production in, (E), 22:24519
interactions $p + p \to p + p + \gamma$ at 20 MeV, cross sections for, (T), 22:24596
interactions $p + p \to p + p + \gamma$ at 3.2 MeV, cross section for bremsstrahlung production in, 22:48269
interactions $p + p \to p + p + \gamma$ at 47 and 65 MeV, cross sections for, (E), 22:35292 (ORNL-4217, pp 1-81)
interactions $p + p \to p + p + \gamma$ at 47, 62, and 65 MeV, cross sections for, (E), 22:50276 (ORNL-TM-2275)
interactions $p + p \to p + p + \gamma$ at 48 MeV, computer-based system for measuring cross sections for, 22:47414
interactions $p + p \to p + p + \gamma$ at 52 MeV, cross section for, (E), 22:27288
interactions $p + p \to p + p + \gamma$ at 62 MeV, cross sections for, (E), 22:26796
interactions $p + p \to p + p + \gamma$, cross sections for, (T), 22:1454
interactions $p + p \to p + p + \gamma$, review of, 22:48258
interactions $p + p \to p + p + nx$, meson bremsstrahlung model with phase space for, 22:22417
interactions $p + p \to p + p + \omega$(eta) at 10 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:37074 (DESY-68/17)
interactions $p + p \to p + p + \omega^0$, double Regge-pole model for, 22:15814
interactions $p + p \to p + p + \pi^0$ at 6.92 GeV/c, cross sections for, (E), 22:50292
interactions $p + p \to p + p + \pi^0$ below 1 GeV, cosmic gamma spectrum from $\Delta^+(1236)$ and fireball production in, (T), 22:20125 (NP-17315)
interactions $p + p \to p + p + \pi^0$, synchrotron-radiation model for, 22:11690
interactions $p + p \to p + p + \pi^+ + \pi^0$ at 28.5 GeV/c in hydrogen bubble chamber, ω^0 production from, (E), 22:7434 (BNL-11980)
interactions $p + p \to p + p + \pi^+ + \pi^- + \pi^0$ at 5 GeV/c in hydrogen bubble chamber, eta, ω, and N* production from, (E), 22:11587
interactions $p + p \to p + p + \pi^+ + \pi^- + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, resonance and strange particle production in, (E), 22:32058
interactions $p + p \to p + p + \pi^+ + \pi^+ + \pi^- + \pi^- + \pi^0$ at 10 GeV/c, cross section for, (E), 22:46326
interactions $p + p \to p + p + \pi^+ + \pi^+ + \pi^- + \pi^-$ at 10 GeV/c, cross section for, (E), 22:46326
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 28.5 GeV/c in hydrogen bubble chamber, final states in, (E), 22:41728 (BNL-12673)
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 28.5 GeV/c in hydrogen bubble chamber, single isobar production in, (E), 22:46329
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 5 GeV/c in hydrogen bubble chamber, N* production from, (E), 22:11587
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 6 GeV/c in hydrogen bubble chamber, resonance and strange particle production in, (E), 22:32058
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 7.9 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39251 (COO-1195-125)
interactions $p + p \to p + p + \pi^+ + \pi^-$ at 8 GeV/c, cross sections for resonance production in, (E), 22:24535
interactions $p + p \to p + p$ at 0.05 to 200 GeV, real part of amplitude of, (T), 22:39403 (JINR-P2-3850)
interactions $p + p \to p + p$ at 1 to 10 GeV at small angles, tables of differential cross sections for, (E), 22:17852 (JINR-P1-3641)
interactions $p + p \to p + p$ at 1 to 10 GeV, differential cross sections of small-angle, (T), 22:22411(T) (SLAC-Trans-80)
interactions $p + p \to p + p$ at 1 to 10 GeV, tables for differential cross sections of small-angle, 22:48221
interactions $p + p \to p + p$ at 11.26 and 30.0 GeV/c, Serber model and Bakamjian--Thomas theory for, 22:3468
interactions $p + p \to p + p$ at 3 to 7 GeV, differential cross sections for, (E), 22:11586
interactions $p + p \to p + p$ at 3 to 7 GeV/c, cross sections for, (E), 22:37076
interactions $p + p \to p + p$ at 3 to 7 GeV/c, magnetic spectrometer and scintillation counter study of, (E), 22:3262
interactions $p + p \to p + p$ at 5 to 20 GeV at large angles, statistical theory for, 22:44450
interactions $p + p \to p + p$ at 635 MeV, angular asymmetry in, (E), 22:13651
interactions $p + p \to p + p$ at 7 to 12 GeV/c at large momentum transfers, structure in angular distribution for, (E), 22:39249 (CERN-68-7(Vol.1), pp 580-94)
interactions $p + p \to p + p$ at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, 22:37143
interactions $p + p \to p + p$ at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions $p + p \to p + p$ at high energies, model for diffraction peak shrinkage in, 22:13741
interactions $p + p \to p + p$ at high energies, unitarity condition for imaginary part of amplitude for large-angle, 22:13743
interactions $p + p \to p + p$ at large momentum transfers, Orear formula for, 22:26671
interactions $p + p \to p + p$ at large momentum transfers, diffraction-like structure in differential cross sections for, (E), 22:32055
interactions $p + p \to p + p$, contribution of Mandelstam branch cuts from Reggeon exchange to, (T), 22:3455
interactions $p + p \to p + p$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $p + p \to p + p(n) + \pi^+ + \pi^- + \pi^0(\pi^+)$ at 10 GeV/c in hydrogen bubble chamber, N* production in, (E), 22:37074 (DESY-68/17)
interactions $p + p \to p + \pi^+ + n$ at 28.5 GeV/c in hydrogen bubble chamber, single isobar production in, (E), 22:46329
interactions $p + p \to p + \Sigma^+ + K^0$, one-boson-exchange model for, 22:22414
interactions $p + p \to \pi^+ + d$ at 5 GeV/c, differential cross section for, (E), 22:15674
interactions $p + p \to \pi^+ + d$ at threshold to 300 MeV, covariant theory of, 22:29717
interactions $p + p \to \pi^+ + d$, relation between $p + p \to \pi^+ + n + p$ interactions and, (T), 22:41828
interactions $p + p \to \pi^+ + n + p$, relation between $p + p \to \pi^+ + d$ interactions and, (T), 22:41828
interactions $p + p$, solution to $^1S_0$-wave equation of, 22:26669
interactions $p + p \to \Sigma^0 + K^+ + p$ at 6 GeV/c in hydrogen bubble chamber, (E), 22:11581 (UCRL-17943)
interactions $p + p \to \Sigma^0 + K^+ + p$ at 6 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:15675
interactions $p + p \to \Sigma^+ + K^0 + p$ at 5 GeV/c, cross section for, (E), 22:26561
interactions $p + p \to \Sigma^+ + K^0 + p$ at 6 GeV/c in hydrogen bubble chamber, (E), 22:11581 (UCRL-17943)
interactions $p + p \to \Sigma^+ + K^0 + p$ at 6 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:15675
interactions $p + p \to \Sigma^+ + K^+ + n$ at 5 GeV/c, cross sections for, (E), 22:26561
interactions $p + p \to \Sigma^+ + K^+ + n$ at 6 GeV/c in hydrogen bubble chamber, (E), 22:11581 (UCRL-17943)
interactions $p + p \to \Sigma^+ + K^+ + n$ at 6 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:15675
interactions $p + p$ above 1 GeV, multiplicity distributions of charged secondary particles in, (E), 22:52931 (KFKI-20/1968)
interactions $p + p$ above 1 GeV/c, data compilation for, (E), 22:37075 (NP-17500)
interactions $p + p$ above 10 GeV, optical model of, 22:35017
interactions $p + p$ and $e + p$ at large momentum transfers, relation between elastic, 22:48257 (LNF-68/40)
interactions $p + p$ and $e + p$ at large momentum transfers, relation between elastic, 22:50415
interactions $p + p$ at 0 to 10 MeV, s-wave shape-dependent scattering parameters for, (T), 22:44780
interactions $p + p$ at 0 to 400 MeV, determination of N--N scattering matrix from, 22:35003
interactions $p + p$ at 0 to 750 MeV, listings of data for, 22:37161 (UCRL-50426)
interactions $p + p$ at 1 GeV, differential cross sections for elastic, (E), 22:26831 (BNL-12344)
interactions $p + p$ at 1 GeV, effect of s-state π--N interaction on partial-wave absorptions in, 22:32174
interactions $p + p$ at 1 GeV, effects of s-state $\pi + N$ interaction on partial-wave absorption in, (T), 22:7524 (ISS-67/25)
interactions $p + p$ at 1 to 32 GeV/c, data compilation on elastic, 22:24538
interactions $p + p$ at 1.3 to 1.5 GeV/c, cross sections for forward elastic, (E), 22:29623
interactions $p + p$ at 1.55 to 2.9 GeV, Cherenkov and scintillation counter study of deuteron production from, (E), 22:3264
interactions $p + p$ at 1.7 GeV/c, $N + N$ correlations in, (E/T), 22:5499 (INP-567/PL/PH)
interactions $p + p$ at 100 keV to 1 GeV, bibliography cn,

(E/T), 22:52937 (LA-4002)
interactions p + p at 12.5 GeV/c, differential cross sections for π^+ and π^- production in, (E), 22:48219
interactions p + p at 12.5 GeV/c, differential cross sections for π, K, and anti p production in, (E), 22:20128
interactions p + p at 12.5 GeV/c, K, π, and anti p production in, (E), 22:39250 (CERN-68-7(Vol.2), pp 262-80)
interactions p + p at 12.5 GeV/c, model of diffraction scattering with π, K, and anti p production for, (E), 22:52932
interactions p + p at 143 MeV, differential cross sections and polarization in, (E), 22:24541
interactions p + p at 2 to 3 GeV/c, review of quasi-two-body final states and multiple particle production in, 22:32121
interactions p + p at 2.5 to 3.0 GeV, differential cross sections for K^+ production in, (E), 22:20132
interactions p + p at 2.85 and 2.40 GeV, K^+ production in, (E), 22:26558
interactions p + p at 20 GeV in emulsions, absorption mean free paths for inelastic, (E), 22:29621
interactions p + p at 20 GeV in thick nuclear emulsions, multiple meson production in, (E), 22:1383
interactions p + p at 20 GeV, secondary particle production in, (E), 22:22300
interactions p + p at 20 MeV, polarization asymmetry in, (E), 22:20438
interactions p + p at 20 MeV, polarization in, 22:50412
interactions p + p at 24 GeV/c, isobar production effects on π and p transverse momentum from, (T), 22:13768
interactions p + p at 28.5 GeV/c in hydrogen bubble chamber, resonance production in two- and four-prong final states from, (E), 22:7434 (BNL-11980)
interactions p + p at 28.6 GeV/c in hydrogen bubble chamber, resonance production in high-multiplicity, (E), 22:15670 (BNL-11993)
interactions p + p at 3 GeV, real part of amplitude from differential cross sections for elastic, (E), 22:1380
interactions p + p at 305 to 415 MeV, spin--spin correlation parameters for, 22:44457
interactions p + p at 310 to 700 MeV, polarization parameter for, (E), 22:5503
interactions p + p at 34 and 46 MeV, bremsstrahlung production cross sections for, (E), 22:20131
interactions p + p at 350 to 750 MeV, determination of N--N scattering matrix from, 22:35014
interactions p + p at 380 to 437 MeV, unambiguous phase shift analysis and phase shift energy dependence for, 22:20271 (JINR-E1-3707)
interactions p + p at 430 MeV, test of time reversal invariance in triple-scattering, (E), 22:52935
interactions p + p at 430 MeV, triple-scattering parameters and polarization in, (E), 22:34843
interactions p + p at 5 to 30 GeV, review of bubble chamber, counter--spark chamber, and theoretical results for, 22:22297 (BNL-12232)
interactions p + p at 50 MeV, phase shifts for, (E/T), 22:13650
interactions p + p at 50 MeV, phase-shift analysis of, (E/T), 22:27280
interactions p + p at 50 MeV, spin correlation parameters for, (E), 22:26806
interactions p + p at 50 to 150 MeV, cross sections for bremsstrahlung production in, 22:9627
interactions p + p at 500 to 1200 MeV, polarization and spin correlation parameters in elastic, (E), 22:11584
interactions p + p at 52 MeV, differential cross section for, (E), 22:26805
interactions p + p at 52.34 MeV, differential cross sections for, (E), 22:24540
interactions p + p at 52.34 MeV, differential cross sections for, (E), 22:13649
interactions p + p at 52.34 MeV, measurement of differential cross sections of, (E), 22:2420
interactions p + p at 6 to 10 MeV, angular distributions for elastic, (E), 22:53087
interactions p + p at 6.92 GeV/c in bubble chamber, partial cross sections for neutral strange particle production in, (E), 22:15673
interactions p + p at 6.92 GeV/c, cross sections for elastic, (E), 22:50292
interactions p + p at 605 MeV spark chamber and scintillation counter study of R parameter and phase shift analysis for triple, (E), 22:5505
interactions p + p at 660 MeV in polarized targets of magnesium lanthanum nitrate, elastic and quasi-elastic, (E), 22:24532 (JINR-E1-3708)
interactions p + p at 660 MeV using polarized targets of lanthanum magnesium nitrate, determination of quasielastic events in, (E), 22:37077
interactions p + p at 7 to 20 GeV/c, differential cross sections for elastic, (E/T), 22:46430
interactions p + p at 8 GeV/c, cross sections for strange-particle production in, (E), 22:46327
interactions p + p at 90°, single Regge-pole fit to differential cross section for elastic, 22:35024
interactions p + p at 98 MeV, cross section and polarization in, (E), 22:35285(R) (AERE-PR/NP-13)
interactions p + p at 98 MeV, differential cross sections and polarization for, (E), 22:37285
interactions p + p at BeV energies, deuteron production in, (T), 22:11248
interactions p + p at high energies, 22:3371
interactions p + p at high energies and large momentum transfer, (T), 22:1457
interactions p + p at high energies and large momentum transfers, contribution of π Regge trajectory to, 22:46472
interactions p + p at high energies and large momentum transfer, narrow dips in cross sections for, 22:32175
interactions p + p at high energies, 36-plet 2^+ meson exchange for total cross section for, 22:5626
interactions p + p at high energies, analysis of hard-core and soft-core repulsive force in elastic, 22:13773
interactions p + p at high energies, angular distribution of elastic, (T), 22:9620
interactions p + p at high energies, comparison of cross sections for strong and electromagnetic, (T), 22:39324
interactions p + p at high energies, cross sections for elastic, (E), 22:17858
interactions p + p at high energies, cross section for elastic, (T), 22:32173
interactions p + p at high energies, diffraction model for asymptotic limit of cross section for, 22:20279
interactions p + p at high energies, dispersion relation calculation of real part of forward amplitude for, 22:48309
interactions p + p at high energies, Gaussian interaction probability density for inelastic, 22:39422 (COO-1112-154)
interactions p + p at high energies, isobar production effects on charge ratio of π, K, and Σ from, (T), 22:13768
interactions p + p at high energies, multi-Regge model for uncorrelated particle production from, 22:13772 (UCRL-17980)
interactions p + p at high energies, multiple-scattering corrections to Pomeranchuk on exchange in elastic, 22:46397
interactions p + p at high energies, O(4,2) model of baryons for, 22:46466
interactions p + p at high energies, phase shifts for, 22:13869
interactions p + p at high energies, phenomenological description of elastic, 22:50468
interactions p + p at high energies, plot of elastic, 22:3457
interactions p + p at high energies, quark coupling in model for, 22:37202 (UCRL-18251)
interactions p + p at high energies, quark model for large-angle elastic, 22:46389
interactions p + p at high energies, relation between transverse momentum dependence of multipion production and elastic, (T), 22:15792
interactions p + p at high energies, relation between phenomenological fits for, 22:46471
interactions p + p at high energies, structure of large-momentum-transfer, 22:13779
interactions p + p at high energies, total cross sections for, (E), 22:22299
interactions p + p at large angles, fifth interaction hypothesis for, 22:46468
interactions p + p at large momentum transfer, Regge theory for high-energy, 22:15816
interactions p + p at low energies, soft core and velocity-dependent potentials for $^1S_0$, 22:30079
interactions p + p at low energy, effects of vacuum polarization on s-wave, (T), 22:22545
interactions p + p at low energy, spin correlation parameters for, (E), 22:20130
interactions p + p at small momentum transfer, Regge-pole model for elastic, 22:15779
interactions p + p below 300 MeV, bounds for correction to Born term for generalized dispersion model for, 22:37163
interactions p + p below 350 MeV, potential consistent with boson exchange theory of nuclear forces for, 22:44451
interactions p + p in carbon-12 (p,2p) reactions, local and nonlocal effective, (T), 22:27243
interactions p + p in deuterium (He-3,t), helium-3 (d,t), helium-3 (He-3,α), and hydrogen (He-3,d) reactions, final-state, (E), 22:29901
interactions p + p in deuterium (p,2p) and helium-3 (p,d) reactions, final-state, (E), 22:26810
interactions p + p in deuterium (p,n) reactions, final-state, 22:26807
interactions p + p in helium (d,2p) reactions, final-state, (E), 22:1733
interactions p + p in quark model, excitation of negative-parity nucleon isobars in, 22:24628
interactions p + p in sakaton triplet model, 22:15752
interactions p + p in secondary emission from meson (π^-) reactions with xenon at 9 GeV in xenon bubble chamber, correlations for, (E), 22:5506 (INR-P-819/VI)
interactions p + p to 350 MeV, phenomenological phase-parameter fits to, 22:15817
interactions p + p with three-particle final states, SU(6) x O(3) quark model for, 22:50381
interactions p + p, calculation of bremsstrahlung

production using Bryan--Scott and Hamada--Johnston potentials, (T), 22:5911
interactions p + p, cross sections for elastic, (E/T), 22:22394
interactions p + p, cross sections for electromagnetic polarized, (T), 22:22367
interactions p + p, cross sections, multiplicity, and angular distributions for multiple-production, (E), 22:17859
interactions p + p, differential cross sections for elastic large-angle, (E/T), 22:39264
interactions p + p, existence of spin-2 Regge recurrence of pole in $^1S_0$ amplitude of, 22:15810
interactions p + p, impact parameter theory for, 22:9700 (NYO-2262-TA-165)
interactions p + p, meson--nucleon coupling constants from forward dispersion relations for, 22:24683
interactions p + p, neutron form factor from diffraction model of elastic, 22:44383
interactions p + p, predictions and validity of forward dispersion relations for amplitudes of, 22:15785 (BNL-12058)
interactions p + p, π and N form factors from multiple quark analysis of consistency relations among diffraction cross sections for, (T), 22:32116
interactions p + p, Regge cuts and Wu--Yang hypothesis for, 22:50410
interactions p + p, representation mixing in U(12) scheme for ratio of N* production to elastic, 22:48296
interactions p + p, scattering length for, (T), 22:26790
interactions p + p, short- and long-range charge independence in, 22:37165
interactions p + p, soft core potential for offshell scattering, (T), 22:27287
interactions p + p, soft-photon theory of bremsstrahlung production in, 22:37116
interactions p + p, test of minimal interaction hypothesis in, 22:11671
interactions p + p, velocity-dependent potential for elastic, 22:44449
interactions p + π → p + A_2, contribution of Mandelstam branch cuts from Reggeon exchange to, (T), 22:3455
interactions phi + p from γ + p interactions, cross sections for, (T), 22:46448
interactions π + d, review of S not equal to 0 baryon resonances in, (E), 22:32057
interactions π + K at 2 to 3 GeV/c, review of quasi-two-body final states and multiple particle production in, 22:32121
interactions π + p → A_1 + p, two-pion exchange contributions to absorptive amplitude for, 22:3424
interactions π + p → A_2 + p, two-pion exchange contributions to absorptive amplitude for, 22:3424
interactions π + p → f^0 + N*, correlations between decay angular distributions of f^0N* from, 22:9600
interactions π + p → Λ(Σ) + rho + K at high energies, Reggion graphs for asymptotic behavior of amplitude of, 22:22403
interactions π + p → N + 3π (5π), multi-Regge-exchange model for shadow elastic interactions in, 22:22392 (INR-P-880/VI/PH)
interactions π + p → N + 7π, multi-Regge-exchange model for shadow elastic interactions in, 22:22392 (INR-P-880/VI/PH)
interactions π + p → N*, analysis of N* final states from, 22:26651 (UCRL-18154)
interactions π + p → ω + Δ(1236), Roy model for behavior of diffraction maximum in, 22:17956
interactions π + p → ω + Δ(1236), two-pion exchange contributions to absorptive amplitude for, 22:3424
interactions π + p → p + 5π at 4 to 16 GeV/c, effect of resonance production on π pair angular distributions in, (T), 22:39272 (CERN-68-7(Vol.1), pp 599-610)
interactions π + p → π + Δ(1236), Roy model for behavior of diffraction maximum in, 22:17956
interactions π + p → π + N, multi-Regge-exchange model for shadow, 22:22392 (INR-P-880/VI/PH)
interactions π + p → π + N*, Regge-pole model for, 22:32165
interactions π + p → π + p at high energies, model for diffraction peak shrinkage in, 22:13741
interactions π + p → π + π + N, rho parameters from, (E/T), 22:39416
interactions π + p → π^0 + n, differential cross section for, (E/T), 22:9518
interactions π + p → π^- + π^- + π^+ + p at 25 GeV/c in hydrogen bubble chamber, preliminary results for multiperipheral processes in, (E), 22:39273 (CERN-68-7(Vol.2), pp 114-19)
interactions π + p → rho + N*, correlations between decay angular distributions of rhoN* from, 22:9600
interactions π + p → rho + N*, energy- and momentum-transfer dependence of cross sections for, (T), 22:34991
interactions π + p → rho + N*, method for representing joint resonance decay distributions from, (T), 22:39405 (TPJU-15/67)
interactions π + p → rho + N*, use of statistical tensors for joint decay angular distributions in, 22:24629
interactions π + p → rho + p at 8 GeV/c in absorption model, dynamic reference system for, 22:5568
interactions π + p above 1 GeV, multiplicity distributions of charged secondary particles in, (E), 22:52931 (KFKI-20/1968)
interactions π + p at 17 GeV in emulsions, angular momentum and momentum transfer squared in inelastic, (E), 22:44324
interactions π + p at 2 to 3 GeV/c, review of quasi-two-body final states and multiple particle production in, 22:32121
interactions π + p at 7 to 20 GeV/c, differential cross sections for elastic, (E/T), 22:46430
interactions π + p at high energies, 22:3371
interactions π + p at high energies, 36-plet 2^+ meson exchange for total cross section for, 22:5626
interactions π + p at high energies, comparison of cross sections for strong and electromagnetic, (T), 22:39324
interactions π + p at high energies, impact-parameter formalism for elastic, (T), 22:24663
interactions π + p at high energies, isobar production effects on charge ratio of π, K, and Σ from, (T), 22:13768
interactions π + p at high energies, multiple-scattering corrections to Pomeranchuk exchange in, 22:46397
interactions π + p at high energies, N* resonance production in, (E/T), 22:3406 (INP-555/PL/PH, pp 51-63)
interactions π + p at high energies, phase shifts for, 22:13869
interactions π + p at high energies, Regge pole model for, 22:7513
interactions π + p at high energies, relation between transverse momentum dependence of multipion production and elastic, (T), 22:15792
interactions π + p at high energies, relations among cross sections for inelastic, (T), 22:15789 (JINR-P2-3649)
interactions π + p at high energies, review of, (E/T), 22:17957
interactions π + p at high energies, use of current algebra and PCAC hypothesis for elastic, 22:15804
interactions π + p below 2 GeV/c, review of experiments and phase shift analysis for, 22:20138 (UCRL-18001)
interactions π + p in quark model, excitation of negative-parity nucleon isobars in, 22:24628
interactions π + p in sakaton triplet model, 22:15752
interactions π + p using polarized target, 400-kJ superconducting magnet for investigating, 22:10602
interactions π + p with three-particle final states, SU(6) x O(3) quark model for, 22:50381
interactions π + p, CAE 90-10 computer-based data acquisition system for polarization parameter measurements in, 22:19155
interactions π + p, cross sections and scattering amplitudes from P and P' Regge parameters for, 22:34989
interactions π + p, cross sections for elastic, (E/T), 22:22394
interactions π + p, effect of sum rule on contribution of rho' and cut to charge-exchange, 22:9599
interactions π + p, experimental tests of SU(3) predictions for, (T), 22:7544 (ORO-2504-112)
interactions π + p, generalized quark model for cross sections and spin density matrix elements for strangeness-exchange, 22:29693
interactions π + p, P and P' Regge parameters from sum rules for, 22:34996
interactions π + p, phase of scattering amplitude from π + d interactions and Glauber formula, 22:50407
interactions π + p, phase shift analysis for nucleon multiresonance production and decay from, 22:13757
interactions π + p, π and N form factors from multiple quark analysis of consistency relations among diffraction cross sections for, (T), 22:32116
interactions π + p, Regge pole and cut in elastic, 22:50396
interactions π + p, review of resonance production from, 22:9591
interactions π + p, use of polarized targets for studying, 22:9715 (CERN-67-24(Vol.4), Paper 3)
interactions π^+ + d → π^+ + π^- + $m\pi^0$ + p + p at 3.65 GeV/c in deuterium bubble chamber, cross sections for, (E), 22:3286
interactions π^+ + p → 2 charged particles + 2 or more neutrals at 1.02 GeV/c in hydrogen bubble chamber, cross section for, 22:3278
interactions π^+ + p → 2p + π^+ + π^- + π^0 at 5.1 GeV/c in deuterium bubble chamber, rhoπ(1636) production in, (E), 22:26571
interactions π^- + p → 2π^- + π^+ + p at 11 GeV/c, predictions of double Regge pole model for quasi-three-body production in, 22:39393 (CERN-68-7(Vol.1), pp 611-47)
interactions π^+ + p → 4 charged particles at 1.02 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:3278
interactions π^- + p → A_2^- + p at 5 GeV/c in hydrogen bubble chamber, (E), 22:46334 (COO-1195-133)
interactions π^- + p → all neutrals at 784 to 5290 MeV/c, spark chamber study of N* production from, (E), 22:3277
interactions π^- + p → anti p + d at 6 GeV/c, spark chamber study of upper limit for cross section for,

(E), 22:3279
interactions $\pi^- + p \to \Delta(1236) + \gamma$, possible test of internal symmetries of electromagnetic current from, (E), 22:1406
interactions $\pi^- + p \to \Delta(1236) + \pi^- + \pi^-$ at 3.2 and 4.2 GeV/c, cross section for, 22:15690
interactions $\pi^+ + p \to \Delta^{++}(1236)$ + eta at 1.48 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:37082
interactions $\pi^+ + p \to \Delta^{++}(1236) + \pi^0$ at 1.34 to 1.68 GeV/c, angular distributions and cross sections for, (E/T), 22:46336 (UCR-34-P-107-72)
interactions $\pi^+ + p \to \Delta^{++}(1236) + \pi^0$ at 2.34 GeV, differential cross sections for, (E), 22:24554
interactions $\pi^+ + p \to \Delta^{++}(1236) + \pi^+ + \pi^- + \pi^0$ at 1.48 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:37082
interactions $\pi^+ + p \to \Delta^{++}(1236) + \pi^+ + \pi^-$ at 1.48 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:37082
interactions $\pi^- + p \to \Delta^{++}(1236) + \pi^- + \pi^-$ at 3.25 GeV/c, $\pi^-\pi^-$ interaction from, (E), 22:48227 (ITEF-590)
interactions $\pi^+ + p \to \Delta^{++}(1236)$ + rho at 1.48 GeV/c in hydrogen bubble chamber, (E), 22:37082
interactions $\pi^+ + p \to \Delta^{++}(1236)$ + rho^0 + rho^0, bi-peripheral model for, 22:13764
interactions $\pi^+ + p \to \Delta^{++}(1236)$ + rho^0 (ω^0) at 5 GeV/c, preliminary results of analysis of, (T), 22:39397 (CERN-68-7(Vol.2), pp 150-71)
interactions $\pi^+ + p \to$ eta + $\Delta^{++}(1236)$, Regge pole predictions for, 22:7519
interactions $\pi^- + p \to$ eta + n and $\pi^- + p \to$ neutrals, eta decay branching ratio from, (E), 22:7425
interactions $\pi^- + p \to$ eta + n at 3 to 18 GeV, Regge pole model for polarization and cross section for, 22:9602
interactions $\pi^- + p \to$ eta + n at 3.20 to 5.00 GeV/c, polarization and F/D coupling ratio for N(2650) for, (T), 22:20258
interactions $\pi^- + p \to$ eta + n at 561 to 1300 MeV, partial wave amplitudes for, (T), 22:17961
interactions $\pi^- + p \to$ eta + n at 593 to 704 MeV, differential cross sections for eta production in, (T), 22:5587
interactions $\pi^- + p \to$ eta + n at 670 to 805 MeV/c, differential cross sections for π charge-exchange and eta production in, (E), 22:15689
interactions $\pi^- + p \to$ eta + n at 763 MeV/c, missing-mass spectrometer study of eta decays from, 22:5493
interactions $\pi^- + p \to$ eta + n, consistency condition for, 22:46428
interactions $\pi^- + p \to$ eta + n, double-pole characteristics of A_2 and n polarization in, 22:50398
interactions $\pi^- + p \to$ eta + N, N* resonant states and decay modes from, 22:9601
interactions $\pi^- + p \to$ eta + n, partial-wave analysis in terms of homogeneous Lorentz group for, 22:7516
interactions $\pi^- + p \to$ eta + n, Regge poles and SU(3) symmetry for, 22:1439
interactions $\pi^- + p \to$ eta + n, Regge-pole analysis of, 22:46433
interactions $\pi^- + p \to$ eta + n, Regge-pole model with L--S coupling for, 22:20264
interactions $\pi^- + p \to$ eta + n, scattering length for, (T), 22:22401
interactions $\pi^- + p \to$ eta + n, SU(3) predictions for, 22:46490
interactions $\pi^- + p \to$ eta^0 + n at 10 GeV/c, differential cross section for, (E), 22:26566
interactions $\pi^- + p \to$ eta^0 + n at 3.2 to 5.0 GeV/c, polarization in, (E), 22:13667
interactions $\pi^- + p \to$ eta^0 + n at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $\pi^- + p \to$ eta^0 + n at 720 MeV in hydrogen bubble chamber, contribution to $\pi^- + \pi^+ \to n + \pi^0$ final state and upper limit for, (E), 22:15687
interactions $\pi^- + p \to$ eta$_s$ + n, real to imaginary ratio of forward amplitude of, 22:29707
interactions $\pi^+ + p \to f^0 + \Delta(1236)$, Regge-pole model for π exchange in, 22:26657
interactions $\pi^- + p \to f^0 + n$ in meson (π^-) reactions with nuclei at 2 to 6 GeV/c, $f^0 \to \pi^+ + \pi^-$ in, (E), 22:13666
interactions $\pi^- + p \to f^0(1250) + n \to \pi^+ + \pi^- + n$ at 4.16 GeV/c, (E), 22:39293
interactions $\pi^- + p \to \gamma + n$ at 54 MeV, total-absorption counter study of differential cross sections for, (E), 22:29636
interactions $\pi^- + p \to \gamma + n$, electromagnetic couplings of baryon resonances from, (T), 22:1405 (TH-210)
interactions $\pi^- + p \to \gamma + n$, electromagnetic couplings of N^{*0} resonances from, (T), 22:35007
interactions $\pi^- + p \to \gamma + \pi^- + p$, γ spectrum in, 22:46421 (JINR-P2-3931)
interactions $\pi^- + p \to K^0 + \Lambda(\Sigma^0)$, Regge-pole analysis of, 22:46433
interactions $\pi^- + p \to K^0 + \Lambda^0\ (\Sigma^0)$ at 6 to 11.2 GeV/c spark chamber study of differential cross sections for, (E), 22:39277 (CERN-68-7(Vol.2), pp 190-207)
interactions $\pi^- + p \to K^0 + \Lambda^0$, Regge pole model for, 22:15797
interactions $\pi^- + p \to K^0 + \Lambda^0(\Sigma^0)$ at 4 GeV/c, spark chamber spectrometer study of forward and backward, (E), 22:7448
interactions $\pi^- + p \to K^0 + \Sigma^0$, Regge pole model for, 22:15797
interactions $\pi^- + p \to K_1^0 + K_1^0 + n$ at 4 and 5 GeV/c, $K_1^0K_1^0$ threshold enhancement in, (E), 22:41745
interactions $\pi^- + p \to K^+ + K^- + n$ at 2.10 GeV/c in bubble chamber, cross section for phi production in, (E), 22:24566
interactions $\pi^- + p \to K^+ + \Sigma^-$, contribution of Regge branch points to amplitude of, 22:20263
interactions $\pi^+ + p \to K^+ + \Sigma^+$, determination of K Σ N parity from, 22:22316
interactions $\pi^- + p \to K^+ + \Sigma^-$, quark model and multiple-scattering formalism for, 22:52985
interactions $\pi^- + p \to K^+ + \Sigma^-$, Regge cut in, 22:3426
interactions $\pi^+ + p \to K^+ + \Sigma^+$, Regge pole model for, 22:15797
interactions $\pi^+ + p \to K^+ + \Sigma^+$, Regge-pole analysis of, 22:46433
interactions $\pi^- + p \to K^+ + \Sigma^-$, resonances in partial-wave projection of Regge pole fit to, 22:44430
interactions $\pi^+ + p \to K^+ + \Sigma^+$, use of polarized target for KΣN parity from, (E), 22:13673
interactions $\pi^+ + p \to K^+ + Y + n\pi$, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
interactions $\pi^- + p \to K^+ + Y^-$ at 1.0 to 2.75 GeV/c, spark chamber study of Y* production from, (E), 22:13658
interactions $\pi^- + p \to l^+ + l^- + n$, radiative corrections for vector meson production and decay in, (T), 22:32070
interactions $\pi^- + p \to \Lambda + K^0 + \gamma$, magnetic moment of Σ^0 - Λ transition from cross section for, (T), 22:29705
interactions $\pi^- + p \to \Lambda + K^0$ at 1.03 and 1.06 GeV/c, spark chamber study of Λ polarization from, (E), 22:9504
interactions $\pi^- + p \to \Lambda + K^0$ at 1.5 GeV/c, cross sections and angular distributions for, (E), 22:24561
interactions $\pi^- + p \to \Lambda + K^0$ at 1.5 to 4.2 GeV/c in hydrogen bubble chamber, cross sections for, (E), 22:5510
interactions $\pi^- + p \to \Lambda + K^0$ at 5 to 12 GeV/c, spark chamber study of backward peak in associated production from, (E), 22:9515
interactions $\pi^- + p \to \Lambda + K^0$ at threshold to 1200 MeV, pole-resonance model for parameters of, 22:50400
interactions $\pi^- + p \to \Lambda + K^0$ near threshold, phenomenological model for, 22:13762
interactions $\pi^- + p \to \Lambda + K^0$, Regge fermion exchange in, 22:46453
interactions $\pi^- + p \to \Lambda + K_1^0 + \pi^0$ at 6 GeV/c in hydrogen bubble chamber, ΛK(1700) enhancement in, (E), 22:3273
interactions $\pi^+ + p \to \Lambda + K^+ + \pi^+$ at 6 GeV/c in hydrogen bubble chamber, ΛK(1700) enhancement in, (E), 22:3273
interactions $\pi^- + p \to \Lambda + K^+ + \pi^-$ at 6 GeV/c in hydrogen bubble chamber, ΛK(1700) enhancement in, (E), 22:3273
interactions $\pi^- + p \to \Lambda + K^+(K^0) + \pi^-(\pi^0)$ at 5.0 GeV/c in hydrogen bubble chamber, (E), 22:41735 (COO-1428-72)
interactions $\pi^- + p \to \Lambda + \pi^0 + K^0$ at 1.508 GeV/c, spark chamber study of Σ(1385) production from, (E), 22:13674
interactions $\pi^- + p \to \Lambda^0 + K^0$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^- + p \to n + (2,3,4,5)\pi^0$ at 1.4 to 4.0 GeV/c, cross sections for, (E), 22:48238
interactions $\pi^- + p \to n + 3\pi^- + 3\pi^+$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)
interactions $\pi^+ + p \to n + 4\pi^+ + 2\pi^-$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)
interactions $\pi^+ + p \to n + 6\pi$, four-momentum transfer distribution in, (T), 22:5596
interactions $\pi^- + p \to n$ + eta near threshold, phenomenological model for, 22:13762
interactions $\pi^- + p \to n$ + eta, eta $\to \pi^+ + \pi^- + \pi^0$, C nonconservation and charge asymmetry in, 22:50392
interactions $\pi^- + p \to n$ + eta, use of poles and resonances for chi^2 fits to, 22:15811
interactions $\pi^- + p \to n$ + eta^0 at 1.4 to 4.0 GeV/c, cross sections for, (E), 22:48238
interactions $\pi^- + p \to n$ + eta^0(ω^0) at 1.5 GeV/c, spark chamber study of photon cascade shower energy estimation for cross sections of, (E), 22:34851
interactions $\pi^- + p \to n + \gamma + \gamma$, method using Lorentz factor for meson resonance identification in, 22:5593
interactions $\pi^- + p \to n + \gamma$ at 200 to 340 MeV, preliminary results on, (E), 22:44297(R) (UCLA-34-P-106-27)
interactions $\pi^- + p \to N + n\pi$ $(n = 1, 2,\ldots)$ at 650 MeV in hydrogen bubble chamber, cross sections for, (E), 22:7446
interactions $\pi^- + p \to N + n\pi$ at 10 GeV/c, cross sections and multiplicity distribution for, (T), 22:29706
interactions $\pi^+ + p \to N + n\pi$ at 4 and 8 GeV/c, cross sections and multiplicity distribution for, (T), 22:29706
interactions $\pi^- + p \to n$ + omega, omega $\to e^+ + e^-$ at 1.67 GeV/c, cross section, decay width, and omega--phi mixing from, (E), 22:48234
interactions $\pi^- + p \to n$ + phi at 1.93 GeV/e, cross section for, (E), 22:46457

interactions $\pi^- + p \to n + \pi^0 + \pi^0$ at 1.5 GeV/c, spark chamber study of photon cascade shower energy estimation for cross sections of, (E), 22:34851
interactions $\pi^- + p \to n + \pi^0$ at 1.4 to 4.0 GeV/c, cross sections for, (E), 22:48238
interactions $\pi^- + p \to n + \pi^0$ at 1.4 to 4.0 GeV/c, differential cross sections for, (E), 22:48239
interactions $\pi^+ + p \to n + \pi^+ + 3\pi^+ + 2\pi^-$, Satz additive quark model sum rules for cross section for, 22:22308
interactions $\pi^- + p \to n + \pi^- + 3\pi^+ + 2\pi^-$, Satz additive quark model sum rules for cross section for, 22:22308
interactions $\pi^- + p \to n + \pi^+ + \pi^- + \gamma$ at 713 MeV/c, scintillation counter and spark chamber study of eta production from, (E), 22:17846
interactions $\pi^- + p \to n + \pi^+ + \pi^- + n\pi^0$ at 7 and 17 GeV/c in nuclear emulsion, angular distributions for, (E), 22:50309
interactions $\pi^+ + p \to n + \pi^+ + \pi^+ + \pi^0$ at high energies, Reggion graphs for asymptotic behavior of amplitude of, 22:22403
interactions $\pi^- + p \to n + \pi^+ + \pi^+ + \pi^- + \pi^-$ at 3.2 and 4.2 GeV/c, cross section for, (E), 22:15690
interactions $\pi^- + p \to n + \pi^+ + \pi^+ + \pi^- + \pi^-$ at 5 and 7.5 GeV/c, 3π mass spectrum from, (E), 22:48225 (COO-1195-132)
interactions $\pi^- + p \to n + \pi^+ + \pi^- + \pi^- + \pi^+$ at 5 GeV/c, mass spectrum for $\pi^-\pi^+\pi^-$ from, (E), 22:37085
interactions $\pi^- + p \to n + \pi^+ + \pi^-$ at 2.05 to 3.22 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:3285
interactions $\pi^- + p \to n + \pi^+ + \pi^-$ at 3.1 to 3.6 GeV/c, resonances in, (E), 22:35285(R) (AERE-PR/NP-13)
interactions $\pi^+ + p \to n + \pi^+ + \pi^+$, N*(1688) production from, (E), 22:3273
interactions $\pi^+ + p \to n + x\pi$ ($x = 1, 2, \ldots$) at 8 GeV/c, four-momentum transfer distribution in, (T), 22:3410 (INR-833/VI)
interactions $\pi^+ + p \to N^* +$ rho^0 at 8 GeV/c, test of π Regge conspiracy with factorization from, (E), 22:37086
interactions $\pi^- + p \to N^{*-} + \pi^+$, PCAC constraint for, 22:32160
interactions $\pi^- + p \to N^{*++} + \pi^- + \pi^-$ at 11 GeV/c, $\pi^- + \pi^- \to \pi^- + \pi^-$ interactions in, (T), 22:34978 (DESY-68/18)
interactions $\pi^- + p \to$ neutral particles at 550 to 1150 MeV, $2\pi^0$, $3\pi^0$, and eta^0 production from, (E), 22:13637
interactions $\pi^- + p \to$ neutrals at 650 MeV in hydrogen bubble chamber, cross sections for, (E), 22:7446
interactions $\pi^- + p \to$ neutrals at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^- + p \to \omega + n$ at 2.10 GeV/c in bubble chamber, cross section for, (E), 22:20149
interactions $\pi^- + p \to \omega + n$, $\omega \to e^+ + e^-$, at 4.0 GeV/c, spark chamber--Cherenkov spectrometer study of cross sections and widths for, (E), 22:1389
interactions $\pi^+ + p \to \omega + N^{*++}$ at 5 GeV/c, projections on exchanged systems with well-defined quantum numbers for, 22:13758
interactions $\pi^+ + p \to \omega^0 + \Delta^{++}$ at 5 GeV/c, natural and unnatural parity exchange contributions to cross sections for, (T), 22:46458
interactions $\pi^- + p \to p + (n--1)\pi$ ($3 < n < 9$) at 5 to 16 GeV/c, Reggeized multipheral model for, 22:46427
interactions $\pi^- + p \to p + 2\pi^+ + 3\pi^- + \pi^0$ at 16 GeV/c in hydrogen bubble chamber, $\Delta^{++}(1236)$, ω^0, and rho^0 production in, (E), 22:22312 (INR-837/VI/PH)
interactions $\pi^- + p \to p + 2\pi^- + \pi^+ + \pi^0$ at 3.9 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:15791 (UH-511-18)
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^- + \pi^0$ at 6.95 and 8.5 GeV/c in hydrogen bubble chamber, multipion resonances (1630) and (1720) production in, (E), 22:44329 (UR-875-248)
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^- + \pi^0$ at 6.95 and 8.5 GeV/c in hydrogen bubble chamber, production of multipion resonances (1630) and (1720) in, (E), 22:22323
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^- + \pi^0$ at 7 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39289
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^- + \pi^0$ at 8.5 GeV/c in hydrogen bubble chamber, A_2 production in, (E), 22:39287
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^-$ at 6.95 and 8.5 GeV/c in hydrogen bubble chamber, multipion resonances (1630) and (1720) production in, (E), 22:44329 (UR-875-248)
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^-$ at 7 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39289
interactions $\pi^+ + p \to p + 2\pi^+ + \pi^-$ at 8.5 GeV/c in hydrogen bubble chamber, (E), 22:39287
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^- + \pi^0$ at 7 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39289
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^- + \pi^0$ at 7 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39289
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^- + \pi^0$ at 8 GeV/c, principal axis method for jet analysis for, (T), 22:20240
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^- (+\pi^0)$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)
interactions $\pi^- + p \to p + 3\pi^- + 2\pi^+ (+\pi^0)$, Satz additive quark model for cross section relations for, 22:29699 (INR-P-881/VI/PH)
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^-$ at 5 GeV/c, $\pi\pi$ scattering effects in, (T), 22:39372 (CERN-68-7(Vol.1), pp 595-8)
interactions $\pi^+ + p \to p + 3\pi^+ + 2\pi^-$ at 7 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:39289
interactions $\pi^+ + p \to p + 5\pi$ at 8 GeV/c, four-momentum transfer distribution in, (T), 22:5596
interactions $\pi^+ + p \to p + 5\pi(6\pi)$ at 8 GeV/c, π distributions in, 22:24550
interactions $\pi^+ + p \to p + 6\pi$ at 8 GeV/c, four-momentum transfer distribution in, (T), 22:5596
interactions $\pi^- + p \to p + A_2^-$ at 3.25 GeV/c in hydrogen bubble chamber, Regge pole model for cross sections of, (E/T), 22:48241
interactions $\pi^- + p \to p +$ anti $p + n$ at 8 GeV/c, cross section for, (E), 22:5515
interactions $\pi^- + p \to p + n\pi$ at 11 GeV/c in hydrogen bubble chamber, preliminary results for, (E), 22:39278 (CERN-68-7(Vol.2), pp 226-43)
interactions $\pi^- + p \to p + \pi +$ rho at 3.25 GeV/c, method for determining spin and parity of A_2 in, (T), 22:44411 (ITEF-557)
interactions $\pi^- + p \to p + \pi^0 + \pi^+ + \pi^- + \pi^-$ at 5 and 7.5 GeV/c, 3π mass spectrum from, (E), 22:48225 (COO-1195-132)
interactions $\pi^- + p \to p + \pi^0 + \pi^- + \pi^+ + \pi^-$ at 5 GeV/c, mass spectrum for $\pi^-\pi^+\pi^-$ from, (E), 22:37085
interactions $\pi^- + p \to p + \pi^0 + \pi^-$ at 2.05 to 3.22 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:3285
interactions $\pi^+ + p \to p + \pi^+ + 2\pi^+ + 2\pi^- + \pi^0$, Satz additive quark model sum rules for cross section of, 22:22308
interactions $\pi^- + p \to p + \pi^- + 2\pi^+ + 2\pi^- + \pi^0$, Satz additive quark model sum rules for cross section of, 22:22308
interactions $\pi^- + p \to p + \pi^- + n\pi$ at 7 and 17 GeV/c in nuclear emulsion, angular distributions for, (E), 22:50309
interactions $\pi^- + p \to p + \pi^- + \omega$ at 3.2 and 4.2 GeV/c, cross section for, (E), 22:15690
interactions $\pi^- + p \to p + \pi^+ + \pi^0 + 2\pi^-$ at 16 GeV/c, resonances at 1250 and 1700 MeV in, (E), 22:50294 (SLAC-PUB-480)
interactions $\pi^- + p \to p + \pi^+ + \pi^0 + \pi^- + \pi^-$ at 3.2 and 4.2 GeV/c, cross section for, (E), 22:15690
interactions $\pi^- + p \to p + \pi^- + \pi^0$, N*(1688) production from, (E), 22:3273
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^- + \pi^0$ at 2.96 GeV/c in hydrogen bubble chamber, production of ω^0, $\Delta^{++}(1236)$, rho$^-$, rho^0, and $\Delta^+(1236)$ in, (E), 22:20145
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^- + \pi^0$ at 3.25 GeV/c in hydrogen bubble chamber, A_2 production from, (E), 22:5516
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^- + \pi^0$ at 3.25 GeV/c in hydrogen bubble chamber, A_2 production and decay from, (E), 22:7441 (ITEF-497)
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 13 to 20 GeV/c in bubble chamber, 3π mass spectrum in, (E), 22:52948
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 16 GeV/c, production and decay of A_1 and A_2 in, (E), 22:48235
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 2.96 GeV/c in bubble chamber, $\Delta^{++}(1236)$, rho^0, and A_2^- production in, (E), 22:20145
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 3.2 and 4.2 GeV/c, cross section for, (E), 22:15690
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 3.25 GeV/c in hydrogen bubble chamber, A_2 production from, (E), 22:5516
interactions $\pi^- + p \to p + \pi^- + \pi^+ + \pi^-$ at 3.25 GeV/c in hydrogen bubble chamber, A_2 production from, (E), 22:7441 (ITEF-497)
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 3.9 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:15790 (UH-511-17)
interactions $\pi^- + p \to p + \pi^+ + \pi^- + \pi^-$ at 5 and 7.5 GeV/c, 3π mass spectrum from, (E), 22:48225 (COO-1195-132)
interactions $\pi^- + p \to p + \pi^- + \pi^+ + \pi^-$ at 5 GeV/c, mass spectrum for $\pi^-\pi^+\pi^-$ from, (E), 22:37085
interactions $\pi^- + p \to p + \pi^- +$ rho^0 at 3.2 and 4.2 GeV/c, cross section for, 22:15690
interactions $\pi^- + p \to p + \pi^-$, polarization in, 22:46453
interactions $\pi^- + p \to p + R^-$ at 11.5 GeV/c using missing-mass spectrometer, structure of R(1700) from, 22:3258
interactions $\pi^+ + p \to p +$ rho at 2.34 GeV, differential cross sections for, (E), 22:24554
interactions $\pi^- + p \to p +$ rho at 4.0 and 8.0 GeV/c, Regge pole model for, 22:9588 (RLO-2041-1)
interactions $\pi^- + p \to p +$ rho$^-$ + rho^0 at 8 GeV/c, production of rho$^-$rho^0 (1710) enhancement in, (E), 22:37089
interactions $\pi^+ + p \to p + x\pi$ ($x = 1, 2, \ldots$) at 8 GeV/c, four-momentum transfer distribution in, (T), 22:3410 (INR-833/VI)
interactions $\pi^+ + p \to p + (n -1)\pi$ ($3 < n < 9$) at 5 to 16

GeV/c, Reggeized multipheral model for, 22:46427
interactions $\pi^- + p \to p(n) + K^0 + K^- + \pi^0 (\pi^+)$ at 3.25 GeV/c, S = 1 $NK\pi$ resonance production in, (E), 22:48240
interactions $\pi^- + p \to p(n) + K^0 + K^- + \pi^0(\pi^+)$ at 3.25 GeV/c, resonance production in, (E), 22:37079 (ITEF-584)
interactions $\pi^- + p \to p(n) + K^+ + K^-$ (anti K^0) $+ \pi^-$, at 3.25 GeV/c, S = 1 $NK\pi$ resonance production in, 22:48240
interactions $\pi^- + p \to p(n) + K^+ + K^-$(anti K^0) $+ \pi^-$ at 3.25 GeV/c, resonance production in, (E), 22:37079 (ITEF-584)
interactions $\pi^- + p \to p(n) + n\pi$ at 3.9 and 4.16 GeV/c, resonance production from, (E), 22:13657
interactions $\pi^- + p \to$ phi + n at 2.10 GeV/c in bubble chamber, cross section for, (E), 22:20149
interactions $\pi^- + p \to$ phi + n at 4.0 GeV/c, spark chamber and Cherenkov gamma spectrometer study of, (E), 22:22280 (JINR-E1-3770)
interactions $\pi^- + p \to$ phi + n, partial width for phi $\to e^+ + e^-$ decay from, (E), 22:34860
interactions $\pi^- + p \to$ phi + n, phi $\to e^+ + e^-$, at 4.0 GeV/c, spark chamber--Cherenkov spectrometer study of cross sections and widths for, (E), 22:1389
interactions $\pi^+ + p \to \pi^0 + \Delta^{++}$, exponential-type residue in Regge pole analysis of, 22:46425
interactions $\pi^+ + p \to \pi^0 + \Delta^{++}$, Regge-pole model with absorptive corrections for, 22:15787 (DESY-68/1)
interactions $\pi^+ + p \to \pi^0 + \Delta^{++}(1236)$, Regge pole model with absorptive corrections for, 22:44443
interactions $\pi^+ + p \to \pi^0 + \Delta^{++}(1236)$, use of O(4) symmetry in partial-wave analysis of, 22:41813
interactions $\pi^- + p \to \pi^0 + n \to \gamma + \gamma + n$ at 54 MeV, total-absorption counter study of differential cross sections for, (E), 22:29636
interactions $\pi^- + p \to \pi^0 + n$ above 5 GeV/c, Regge pole model for, 22:20210 (CERN-67-24(Vol.2))
interactions $\pi^- + p \to \pi^0 + n$ at 2 GeV/c, resonance production from, (T), 22:3414
interactions $\pi^- + p \to \pi^0 + n$ at 2 to 5 GeV/c, interference model for polarization in, (E/T), 22:15801
interactions $\pi^- + p \to \pi^0 + n$ at 2 to 5 GeV/c, Reggeized baryon exchange model predictions for, 22:44429
interactions $\pi^- + p \to \pi^0 + n$ at 2.0 to 5.0 GeV/c, polarization in, (E), 22:13667
interactions $\pi^- + p \to \pi^0 + n$ at 2.4 to 3.8, 6, and 10 GeV/c, differential cross sections for, (E), 22:26566
interactions $\pi^- + p \to \pi^0 + n$ at 2.5 to 6.0 GeV/c, spark chamber study of upper and lower limits for, (E), 22:3279
interactions $\pi^- + p \to \pi^0 + n$ at 3 to 18 GeV, optical model for amplitude of, 22:13755
interactions $\pi^- + p \to \pi^0 + n$ at 5.9 and 11.2 GeV/c, effect of Regge cut on polarization in, 22:50396
interactions $\pi^- + p \to \pi^0 + n$ at 5.9 GeV/c, model for, 22:50391
interactions $\pi^- + p \to \pi^0 + n$ at 5.9 to 11.2 GeV/c, design and performance of triggering device for heavy-plate spark chamber for polarization parameter measurement for, 22:21348 (CEA-R-3357)
interactions $\pi^- + p \to \pi^0 + n$ at 561 and 2106 MeV/c, spark chamber study of forward differential cross sections for, (E), 22:22318
interactions $\pi^- + p \to \pi^0 + n$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $\pi^- + p \to \pi^0 + n$ at 6 to 18 GeV/c, overlap function analysis for, 22:7522
interactions $\pi^- + p \to \pi^0 + n$ at 6 to 25 GeV/c, overlap function analysis of polarization in, 22:48319
interactions $\pi^- + p \to \pi^0 + n$ at 96.6 MeV, lead converter and counter telescope study of differential cross section for, (E), 22:9511
interactions $\pi^- + p \to \pi^0 + n$ at 97.1 MeV, telescope counter study of phase shifts and total cross sections for, (E), 22:9510
interactions $\pi^- + p \to \pi^0 + n$ at high energies, phenomenological analysis of, 22:17962
interactions $\pi^- + p \to \pi^0 + n$ at high energies, real to imaginary amplitude ratio for, (T), 22:20251
interactions $\pi^- + p \to \pi^0 + n$ at high energies, Regge poles and SU(3) for forward, 22:15796
interactions $\pi^- + p \to \pi^0 + n$ at high energies, Regge pole model for, 22:3417
interactions $\pi^- + p \to \pi^0 + n$ at high energies, review of Regge poles in, 22:13750 (CALT-68-145)
interactions $\pi^- + p \to \pi^0 + n$ at high energies, review of experiments for, 22:13756
interactions $\pi^- + p \to \pi^0 + n$ at high energies, single rho Regge-pole exchange model for, 22:50393
interactions $\pi^- + p \to \pi^0 + n$ in hydrogenous substances, (E), 22:15679 (JINR-P13-3653)
interactions $\pi^- + p \to \pi^0 + n$ in Regge-pole model, momentum dependence of amplitude for, 22:17869
interactions $\pi^- + p \to \pi^0 + n$, absorption model with Regge-pole exchange for rho exchange in, 22:48323
interactions $\pi^- + p \to \pi^0 + n$, Argand analysis of Regge amplitudes for resonances in, 22:39399 (IC-68/51)
interactions $\pi^- + p \to \pi^0 + n$, cross section from Regge analysis of $\pi + p$ backward elastic scattering, 22:7508
interactions $\pi^- + p \to \pi^0 + n$, determination of trajectories and residues of rho and rho' Regge poles in, 22:48325
interactions $\pi^- + p \to \pi^0 + n$, differential cross sections for, (T), 22:46430
interactions $\pi^- + p \to \pi^0 + n$, real to imaginary rates of forward amplitude of, 22:29707
interactions $\pi^- + p \to \pi^0 + n$, Regge pole analysis for $13/2^-$ N(2530) production in, 22:39412
interactions $\pi^- + p \to \pi^0 + n$, Regge pole model with absorptive corrections for, 22:44443
interactions $\pi^- + p \to \pi^0 + n$, Regge poles and SU(3) symmetry for, 22:1439
interactions $\pi^- + p \to \pi^0 + n$, Regge-pole analysis of, 22:46433
interactions $\pi^- + p \to \pi^0 + N$, Regge-pole model with absorptive corrections for, 22:15787 (DESY-68/1)
interactions $\pi^- + p \to \pi^0 + n$, Regge-pole model with L--S coupling for, 22:20264
interactions $\pi^- + p \to \pi^0 + n$, resonances in partial-wave projection of Regge pole fit to, 22:44430
interactions $\pi^- + p \to \pi^0 + n$, review of Regge pole theory for, 22:7489 (UCSD-10-P-10-29)
interactions $\pi^- + p \to \pi^0 + n$, secondary Regge contributions to forward, 22:39421
interactions $\pi^- + p \to \pi^0 + n$, SU(3) predictions for, 22:46490
interactions $\pi^+ + p \to \pi^0 + N^{*++}$ at 2.75, 3.54, and 8.0 GeV/c, Regge-pole model for analysis of, (T), 22:29714
interactions $\pi^- + p \to \pi^0 + \pi^0 + n$, s-wave $\pi\pi$ scattering amplitude from, 22:37151
interactions $\pi^- + p \to \pi^0 + \pi^- + p$ at 2.7 and 4.2 GeV/c, $\pi\pi$ s-wave elastic scattering phase shifts from, (E), 22:24562
interactions $\pi^- + p \to \pi^0 + \pi^- + p$ at 500 to 700 MeV, isobar model for partial-wave analysis of, 22:20261
interactions $\pi^- + p \to \pi^0 + \pi^- + p$ at 6 GeV/c in hydrogen bubble chamber, N(1400) production in, (E), 22:11588
interactions $\pi^- + p \to \pi^0(\mathrm{eta}^0) + n$ at 3.0 to 6.0 GeV/c, proposed experiment for spark chamber study of, 22:41740 (COO-1749-2 and Add.)
interactions $\pi^- + p \to \pi^0(\pi^+) + p(n)$ at 4.65 GeV/c in hydrogen bubble chamber, study of nuclear forces from resonance production in, (E), 22:29638
interactions $\pi^- + p \to \pi^+ + \Delta^-$, modified two-pion-exchange model for, 22:37153
interactions $\pi^- + p \to \pi^+ + n$ at high energies, sum rule for Regge pole model for cross section of, 22:37159
interactions $\pi^+ + p \to \pi^+ + p + 4\gamma$ at 2.05 GeV/c using hydrogen target in heavy liquid bubble chamber, search for $\mathrm{eta}^0 \to \pi^0 + \gamma + \gamma$ decay in, (E), 22:5494
interactions $\pi^+ + p \to \pi^+ + p + e^+ + e^-$ at 1.02 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:3278
interactions $\pi^+ + p \to \pi^+ + p$ + eta at 1.48 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:37082
interactions $\pi^+ + p \to \pi^+ + p$ + eta at 1050 and 1170 MeV/c in hydrogen bubble chamber, (E), 22:26565 (UCRL-18141)
interactions $\pi^- + p \to \pi^- + p$ + eta at 1170 MeV/c in hydrogen bubble chamber, (E), 22:26565 (UCRL-18141)
interactions $\pi^- + p \to \pi^- + p + \mathrm{eta}^0$ at 5.0 GeV/c, A_2 production and decay branching ratios from, (E), 22:32072
interactions $\pi^- + p \to \pi^- + p + \gamma$ at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^- + p \to \pi^- + p + \gamma$, $\gamma 3\pi$ vertex and final-state interaction in, (T), 22:24651
interactions $\pi^+ + p \to \pi^+ + p + \gamma$, method for measuring magnetic moment of $\Delta^{++}(1236)$ produced in, (E), 22:20246
interactions $\pi^+ + p \to \pi^+ + p + \gamma$, method for measuring magnetic moment of $\Delta^{++}(1236)$ in, 22:46422(T) (NP-tr-1692)
interactions $\pi^- + p \to \pi^- + p$ + missing mass at 2.05 to 3.22 GeV/c in hydrogen bubble chamber, A_2^- production from, (E), 22:3285
interactions $\pi^- + p \to \pi^- + p$ + neutral particles at 7 GeV/c in propane bubble chamber, small momentum transfer in, (E), 22:9514
interactions $\pi^+ + p \to \pi^+ + p + p$ + anti p at 8.4 GeV/c in hydrogen bubble chamber, pp anti p(3755) enhancement in, (E), 22:20147
interactions $\pi^- + p \to \pi^- + p + \pi^0 + \pi^0$ at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^+ + p \to \pi^+ + p + \pi^0$ at 1.02 GeV/c in hydrogen bubble chamber, $\Delta(1236)$ production from, 22:3278
interactions $\pi^- + p \to \pi^- + p + \pi^0$ at 1.7 GeV/c in hydrogen bubble chamber, test of Ferrari--Selleri form factor for elastic $\pi + \pi$ interactions from, (E/T), 22:3275
interactions $\pi^+ + p \to \pi^+ + p + \pi^0$ at 2.34 GeV/c, rho^+ and N^{*++} production in, (E), 22:22314
interactions $\pi^+ + p \to \pi^+ + p + \pi^0$ at 900 MeV, production mechanism of $\Delta(1236)$ in, (E), 22:11591
interactions $\pi^- + p \to \pi^- + p + \pi^+ + \pi^- + \pi^0$ at 11 GeV/c, analysis of 4π enhancement from, (E), 22:29628
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^- + \pi^0$ at 2.95 to 4.08 GeV/c in hydrogen bubble chamber, $\Delta(2850)$ and double resonance production in, (E), 22:37081 (UCRL-

18254)
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^- + \pi^0$ at 2.95 to 4.1 GeV/c in hydrogen bubble chamber, quasi-two-body final states in, (E), 22:17954
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^- + \pi^0$ at 2.95 to 4.1 GeV/c in hydrogen bubble chamber, B enhancement from, (E), 22:13655 (UCRL-17984)
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^- + \pi^0$ at 3 to 4 GeV/c in hydrogen bubble chamber, cross sections and angular distributions for quasi-two-body final states from, (E), 22:20143
interactions $\pi^- + p \to \pi^- + p + \pi^+ + \pi^- + \pi^0$ at 5 GeV/c in hydrogen bubble chamber, B resonance production in, (E), 22:20136 (COO-1195-110)
interactions $\pi^- + p \to \pi^- + p + \pi^+ + \pi^-$ at 11 GeV/c, analysis of 3π enhancement from, (E), 22:29628
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^-$ at 2.95 to 4.08 GeV/c in hydrogen bubble chamber, Δ(2850) and double resonance production in, (E), 22:37081 (UCRL-18254)
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^-$ at 2.95 to 4.1 GeV/c in hydrogen bubble chamber, quasi-two-body final states in, (E), 22:17954
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^-$ at 2.95 to 4.1 GeV/c in hydrogen bubble chamber, N* production from, (E), 22:13655 (UCRL-17984)
interactions $\pi^+ + p \to \pi^+ + p + \pi^+ + \pi^-$ at 3 to 4 GeV/c in hydrogen bubble chamber, cross sections and angular distributions for quasi-two-body final states from, (E), 22:20143
interactions $\pi^- + p \to \pi^- + p + \pi^- + \pi^+$ at 6 GeV/c, N^{*-}(1700) production and decay in, (E), 22:39283
interactions $\pi^+ + p \to \pi^+ + p$ at 0.050 to 200 GeV, real part of amplitude of, (T), 22:39403 (JINR-P2-3850)
interactions $\pi^- + p \to \pi^- + p$ at 0.050 to 200 GeV, real part of amplitude of, (T), 22:39403 (JINR-P2-3850)
interactions $\pi^+ + p \to \pi^+ + p$ at 1.02 GeV/c in hydrogen bubble chamber, differential cross section for, (E), 22:3278
interactions $\pi^+ + p \to \pi^+ + p$ at 1.48 to 2.93 GeV/c, magnetostrictive wire spark chamber study of cross sections for, (E), 22:20152
interactions $\pi^- + p \to \pi^- + p$ at 1.48 to 2.93 GeV/c, magnetostrictive wire spark chamber study of cross sections for, (E), 22:20152
interactions $\pi^- + p \to \pi^- + p$ at 1.6 to 5.3 GeV/c, N*(3245) production from, (E), 22:3282
interactions $\pi^- + p \to \pi^- + p$ at 1.7 GeV/c, models for differential cross sections of, 22:37150
interactions $\pi^- + p \to \pi^- + p$ at 1.89 and 2.10 GeV/c in bubble chamber, differential cross sections for, (E), 22:24566
interactions $\pi^+ + p \to \pi^+ + p$ at 2 to 8 GeV, model for backscattering in, 22:32723
interactions $\pi^- + p \to \pi^- + p$ at 2.05 to 3.22 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:3285
interactions $\pi^- + p \to \pi^- + p$ at 2.3 and 6.0 GeV/c, spark chamber study of differential cross sections for backward, (E), 22:3281
interactions $\pi^+ + p \to \pi^+ + p$ at 3 to 18 GeV, optical model for amplitude of, 22:13755
interactions $\pi^- + p \to \pi^- + p$ at 3 to 18 GeV, optical model for amplitude of, 22:13755
interactions $\pi^- + p \to \pi^- + p$ at 4.65 GeV/c in hydrogen bubble chamber, study of nuclear forces from cross sections for, (E), 22:29638
interactions $\pi^- + p \to \pi^- + p$ at 410 and 490 MeV, missing-mass spectrometer study of differential cross sections of forward, (E), 22:22310 (CEA-R-3146)
interactions $\pi^+ + p \to \pi^+ + p$ at 410 and 490 MeV, missing-mass spectrometer study of differential cross sections of forward, (E), 22:22310 (CEA-R-3146)
interactions $\pi^+ + p \to \pi^+ + p$ at 5.9 to 14 GeV/c, scintillation counter telescope and optical spark chamber study of cross sections for, (E), 22:39271 (CERN-68-7(Vol.1), pp 571-9)
interactions $\pi^- + p \to \pi^- + p$ at 5.9 to 14 GeV/c, scintillation counter telescope and optical spark chamber study of cross sections for, (E), 22:39271 (CERN-68-7(Vol.1), pp 571-9)
interactions $\pi^+ + p \to \pi^+ + p$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $\pi^- + p \to \pi^- + p$ at 6 to 18 GeV/c, multiple-Regge-pole model for analysis of, 22:50399
interactions $\pi^+ + p \to \pi^+ + p$ at 6 to 18 GeV/c, overlap function analysis for, 22:7522
interactions $\pi^- + p \to \pi^- + p$ at 6 to 18 GeV/c, overlap function analysis for, 22:7522
interactions $\pi^+ + p \to \pi^+ + p$ at 6 to 25 GeV/c, overlap function analysis of polarization in, 22:48319
interactions $\pi^- + p \to \pi^- + p$ at 6 to 25 GeV/c, overlap function analysis of polarization in, 22:48319
interactions $\pi^- + p \to \pi^- + p$ at 600 to 3300 MeV/c, counter hodoscope study of polarization parameter from, (E), 22:11600
interactions $\pi^- + p \to \pi^- + p$ at 650 MeV in hydrogen bubble chamber, cross sections for, (E), 22:7446
interactions $\pi^- + p \to \pi^- + p$ at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^+ + p \to \pi^+ + p$ at 97.1 MeV, telescope counter study of phase shifts and total cross sections for, (E), 22:9510
interactions $\pi^+ + p \to \pi^+ + p$ at high energies and high momentum transfer, angular distribution for backward, (E), 22:13660
interactions $\pi^- + p \to \pi^- + p$ at high energies and high momentum transfer, angular distribution for backward, (E), 22:13660
interactions $\pi^+ + p \to \pi^+ + p$ at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions $\pi^- + p \to \pi^- + p$ at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, optical model for wide-angle, (T), 22:9589(T) (LA-tr-67-111)
interactions $\pi^- + p \to \pi^- + p$ at high energies, optical model for wide-angle, (T), 22:9589(T) (LA-tr-67-111)
interactions $\pi^- + p \to \pi^- + p$ at high energies, phenomenological analysis of, 22:17962
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, phenomenological analysis of, 22:17962
interactions $\pi^- + p \to \pi^+ + p$ at high energies, Regge poles and SU(3) for backward, 22:15796
interactions $\pi^- + p \to \pi^- + p$ at high energies, review of Regge poles in, 22:13750 (CALT-68-145)
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, review of Regge poles in, 22:13750 (CALT-68-145)
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, sum rule for Regge pole model for cross section of, 22:37159
interactions $\pi^- + p \to \pi^- + p$ at high energies, sum rule for Regge pole model for cross section of, 22:37159
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, unitarity condition for imaginary part of amplitude for large-angle, 22:13743
interactions $\pi^+ + p \to \pi^+ + p$ at high energies, upper limit on spin flip amplitude in, (T), 22:17958
interactions $\pi^- + p \to \pi^- + p$ at high energies, upper limit on spin flip amplitude in, (T), 22:17958
interactions $\pi^- + p \to \pi^- + p$, at high energies, unitarity conditions for imaginary part of amplitude for large-angle, 22:13743
interactions $\pi^- + p \to \pi^- + p$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^+ + p \to \pi^+ + p$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^- + p \to \pi^- + p$, eta--n bound state for scattering length and phase shift of s-wave, (T), 22:22401
interactions $\pi^+ + p \to \pi^+ + p$, fermion-exchange mechanisms for backward, (T), 22:32164
interactions $\pi^+ + p \to \pi^+ + p$, modulus above threshold for determination of amplitude of, 22:20242
interactions $\pi^- + p \to \pi^- + p$, modulus above threshold for determination of amplitude of, 22:20242
interactions $\pi^+ + p \to \pi^+ + \pi^0 + p$ and $\pi^+ + p \to \pi^+ + \pi + n$ below 1 GeV, generalized isobar-model analysis of, 22:13760
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 2.1 to 3.2 GeV/c, $\pi\pi$ phase shift analysis from 600 to 1000 MeV for, 22:1444
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 2.15 GeV/c in hydrogen bubble chamber, rho$^-$ production from, (E), 22:3265 (CEA-R-3291)
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 2.77 GeV/c in hydrogen bubble chamber, $\pi^- + \pi^0$ elastic scattering study from, (E), 22:3272
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 2.77 GeV/c, production and decay of rho$^-$ in, 22:20141
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 5.0 GeV/c in bubble chamber, resonance production in, (E), 22:41734 (COO-1428-71)
interactions $\pi^- + p \to \pi^- + \pi^0 + p$ at 650 MeV in hydrogen bubble chamber, cross sections for, (E), 22:7446
interactions $\pi^+ + p \to \pi^+ + \pi^0 + p$ at 968 MeV/c, search for meson decaying into $\pi^+\pi^0$ in, (E), 22:11593
interactions $\pi^- + p \to \pi^- + \pi^0(\pi^+) + p(n)$ at 7.0 and 25 GeV in hydrogen bubble chamber, (E), 22:9512
interactions $\pi^- + p \to \pi^- + \pi^0(\pi^+) + p(n)$ at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^- + p \to \pi^- + \pi^+ + n + 2\pi^0$ at 4 GeV/c in propane bubble chamber, N*(>2000) production from, (E), 22:17866 (JINR-P1-3677)
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ + neutrals at 1.45 to 1.52 GeV/c, spark chamber and scintillation counter study of X^0 production from, (E), 22:17876
interactions $\pi^+ + p \to \pi^+ + \pi^+ + n$ at 1.02 GeV/c in hydrogen bubble chamber, Δ(1236) production from, (E), 22:3278
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 1.085 GeV, spark chamber study of $\pi^+\pi^-$ system from, (E), 22:15685
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 1.38 to 3.00 GeV/c, rho^0 production and decay angular distributions from, (E/T), 22:3437
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 11.2 GeV/c, $\pi^-\pi^+$(946) enhancement in, (E), 22:48232
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 2.1 to 3.2 GeV/c, $\pi\pi$ phase shift analysis from 600 to 1000 MeV for, 22:1444
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 2.10 GeV/c in bubble chamber, cross section for ω production in, (E), 22:24566
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 2.36 GeV/c in hydrogen bubble chamber, asymmetry for rho^0 production

from, (E), 22:13668
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 2.36 GeV/c, angular distribution of $\Delta^-(1236)$ production in, (E/T), 22:24557
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 2.7 and 4.2 GeV/c, $\pi\pi$ s-wave elastic scattering phase (E), 22:24562
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 3.1 to 3.6 GeV/c, sonic spark chamber study of $\pi^+\pi^-$ (1085), f^0, and rho production from, (E), 22:17867 (RPP/H-33)
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 360 and 430 MeV, isobar amplitudes and phase shift for, (T), 22:32145
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 4.0 GeV/c, $I = 0$ $\pi^-\pi^+(1050)$ resonance in, (E), 22:41739 (COO-1428-84)
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 4.16 GeV/c, resonance production in, (E), 22:39293
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 5.0 GeV/c in bubble chamber, resonance production in, (E), 22:41734 (COO-1428-71)
interactions $\pi^+ + p \to \pi^+ + \pi^+ + n$ at 6 GeV/c in hydrogen bubble chamber, N(1400) production in, (E), 22:11588
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 650 MeV in hydrogen bubble chamber, cross sections for, 22:7446
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 8 and 16 GeV/c in heavy-liquid bubble chamber, comparative analysis for, (E), 22:15686
interactions $\pi^- + p \to \pi^- + \pi^+ + n$ at 8 GeV/c, rho^0, f^0, and g^0 production in, (E), 22:5513
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ at 870 MeV, angular distributions of $(\pi^- n)$ system from, 22:20265
interactions $\pi^- + p \to \pi^+ + \pi^- + n$ near threshold, partial-wave amplitudes and differential cross sections for, (T), 22:44431
interactions $\pi^- + p \to \pi^- + \pi^+ + n$, analysis of s-wave $\pi\pi$ amplitudes from, 22:5564
interactions $\pi^+ + p \to \pi^+ + \pi^+ + n$, $\Delta(1920)$ and $\Delta(2420)$ production in, (T), 22:26662
interactions $\pi^- + p \to \pi^- + \pi^+ + n$, method for $\pi\pi$ phase shift analysis for, 22:1443
interactions $\pi^- + p \to \pi^+ + \pi^- + n$, $T = J = 0$ $\pi\pi$ phase shift from, 22:50409
interactions $\pi^+ + p \to \pi^+ + \pi^- + N^{*++}$, method for $\pi\pi$ phase shift analysis for, 22:1443
interactions $\pi^- + p \to \pi^- + \pi^+ + n(p) + \pi^0(\pi^-)$ at 720 MeV in hydrogen bubble chamber, cross sections for, (E), 22:15687
interactions $\pi^+ + p \to \pi^+ + \pi^- + \pi^0 + \Delta^{++}$ at 3 to 4 GeV/c, kinematic origin of H enhancement in, (E), 22:37088
interactions $\pi^- + p \to \pi^- + \pi^- + \pi^+ + p$ at 8 GeV/c in hydrogen bubble chamber, resonance production in, (E), 22:20151
interactions $\pi^+ + p \to \pi^+ + \pi^- + \pi^+ + p$, Monte Carlo calculation of $p\pi^+\pi^+$ (1560) in, 22:32142 (UCID-2752)
interactions $\pi^+ + p \to \pi^+ + \pi^+ + \pi^- + \pi^0 + p$, cross sections for B^+ production in, (E), 22:50369 (UR-875-253)
interactions $\pi^- + p \to \pi^- + \pi^+ + \pi^- + \pi^0 + p$, cross sections for B^- production in, (E), 22:50369 (UR-875-253)
interactions $\pi^+ + p \to \pi^+ + \pi^+ + \pi^+ + \pi^- + n$ at 2.95 to 4.08 GeV/c in hydrogen bubble chamber, $\Delta(2850)$ and double resonance production in, (E), 22:37081 (UCRL-18254)
interactions $\pi^- + p \to \pi^+ + \pi^+ + \pi^- + \pi^- + n$ at 2.96 GeV/c in hydrogen bubble chamber, production of $\Delta^-(1236)$ and rho^0 in, (E), 22:20145
interactions $\pi^- + p \to \mathrm{rho} + n$, $\mathrm{rho} \to e^+ + e^-$, at 4.0 GeV/c, spark chamber--Cherenkov spectrometer study of cross sections and widths for, (E), 22:1389
interactions $\pi^- + p \to \mathrm{rho}\ (\omega) + n$ at 4.0 GeV/c, spark chamber and Cherenkov gamma spectrometer study of, (E), 22:22280 (JINR-E1-3770)
interactions $\pi^- + p \to \mathrm{rho}^0 + \Delta(1236)$ at 3.25 GeV/c in hydrogen bubble chamber, Regge pole model for cross sections of, (E), 22:48241
interactions $\pi^+ + p \to \mathrm{rho}^0 + \Delta(1236)$, Regge-pole model for π exchange in, 22:26657
interactions $\pi^+ + p \to \mathrm{rho}^0 + \Delta^{++}$ at 4, 5, and 8 GeV/c, natural and unnatural parity exchange contributions to cross sections for, (T), 22:46458
interactions $\pi^- + p \to \mathrm{rho}^0 + n$ at 11.2 GeV/c, cross sections and density matrix elements for, (E), 22:48232
interactions $\pi^- + p \to \mathrm{rho}^0 + n$ at 4 and 8 GeV/c, vector-dominance model comparison of $\gamma + p \to \pi^+ + n$ and, 22:34916
interactions $\pi^- + p \to \mathrm{rho}^0 + n$ at 8 GeV/c, momentum transfer dependence of cross sections for, (T), 22:48322
interactions $\pi^- + p \to \mathrm{rho}^0 + n$ below 16 GeV, vector dominance model for comparison with $\gamma + p \to \pi^+ + n$ interactions below 16 GeV, 22:29652 (DESY-68/6)
interactions $\pi^- + p \to \mathrm{rho}^0 + n$ in meson (π^-) reactions with nuclei at 2 to 6 GeV/c, $\mathrm{rho}^0 \to \pi^+ + \pi^-$ in, (E), 22:13666
interactions $\pi^- + p \to \mathrm{rho}^0 + n$, ω Regge-exchange contribution to, 22:7515
interactions $\pi^- + p \to \mathrm{rho}^0 + n$, vector-meson dominance analysis of, 22:26664
interactions $\pi^+ + p \to \mathrm{rho}^0 + N^{*++} \to \pi^+ + \pi^- + \pi^+ + p$ at 3.665 GeV/c, peripheral models for, 22:11680
interactions $\pi^- + p \to \mathrm{rho}^- + p$ at 2.26 GeV/c, spin density matrix elements for rho-decay from, (E), 22:46341
interactions $\pi^- + p \to \mathrm{rho}^- + p$ at 4 GeV/c, absorption model for, 22:7511
interactions $\pi^+ + p \to \mathrm{rho}^+ + p$ at 4.0 and 8.0 GeV/c, Regge pole model for, 22:9588 (RLO-2041-1)
interactions $\pi^+ + p \to \mathrm{rho}^+ + p$, ω Regge-exchange contribution to, 22:7515
interactions $\pi^- + p \to \mathrm{rho}^- + p$, ω Regge-exchange contribution to, 22:7515
interactions $\pi^- + p \to \Sigma^0 + K^0$ at 1.5 GeV/c, cross sections and angular distributions for, (E), 22:24563
interactions $\pi^- + p \to \Sigma^0 + K^0$ at 1.5 to 4.2 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:5510
interactions $\pi^- + p \to \Sigma^0 + K^0$ near threshold, phenomenological model for, 22:13762
interactions $\pi^- + p \to \Sigma^0 + K^0$, contribution of K^* exchange to, (T), 22:46426
interactions $\pi^- + p \to \Sigma^0 + K^0$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^+ + p \to \Sigma^+ + K^{*+}$ at 5.4 GeV/c, angular distributions and differential cross sections for, (E/T), 22:17868
interactions $\pi^- + p \to \Sigma^- + K^+ + \pi^0$ at 5.0 GeV/c in hydrogen bubble chamber, (E), 22:41735 (COO-1428-72)
interactions $\pi^+ + p \to \Sigma^+ + K^+$ at 1.1 GeV/c in nuclear emulsions, Σ^+ polarization from, (E), 22:1390
interactions $\pi^- + p \to \Sigma^- + K^+$ at 1.5 to 4.2 GeV/c in hydrogen bubble chamber, cross section for, (E), 22:5510
interactions $\pi^- + p \to \Sigma^- + K^+$ at 1145 MeV/c, Σ^- polarization in, (E), 22:11596
interactions $\pi^- + p \to \Sigma^- + K^+$ at 1145 MeV/c, Σ^- polarization from, (E), 22:22317
interactions $\pi^- + p \to \Sigma^- + K^+$ at 1170 MeV/c in hydrogen bubble chamber, cross sections for, 22:15691
interactions $\pi^+ + p \to \Sigma^+ + K^+$ at 3.23 GeV/c, angular distributión and Σ polarization from, (E), 22:5514
interactions $\pi^+ + p \to \Sigma^+ + K^+$ at 5.4 GeV/c, angular distributions and differential cross sections for, (E/T), 22:17868
interactions $\pi^+ + p \to \Sigma^+ + K^+$ near threshold, phenomenological model for, 22:13762
interactions $\pi^- + p \to \Sigma^- + K^+$ near threshold, phenomenological model for, 22:13762
interactions $\pi^- + p \to \Sigma^- + K^+$, data tabulation of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^+ + p \to \Sigma^+ + K^+$, data tabulations of kinematics for, 22:48314 (CERN/ECFA-67/16(Vol.3))
interactions $\pi^+ + p \to \Sigma^+ + K^+$, quark model with additivity assumption for backward, 22:5575
interactions $\pi^+ + p \to \Sigma^+ + \pi^0 + K^+$ at 3.2 GeV/c in hydrogen bubble chamber, (E), 22:13672
interactions $\pi^+ + p \to \Sigma^+ + \pi^+ + K^0$ at 3.2 GeV/c in hydrogen bubble chamber, (E), 22:13672
interactions $\pi^- + p \to$ unphysical fermion, upper limit for elementary length from, 22:17965
interactions $\pi^+ + p$ above 1 GeV, statistical model with SU(3) symmetry for multiple particle production in, 22:32139
interactions $\pi^+ + p$ above 1 GeV, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions $\pi^- + p$ above 1 GeV, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions $\pi^+ + p$ at 0.2 to 1.0 GeV, energy dependence of angular correlation effect in multiple π production from, (T), 22:1431
interactions $\pi^+ + p$ at 0.5 to 2.65 GeV/c, total cross sections for, (E), 22:26568
interactions $\pi^- + p$ at 0.5 to 2.65 GeV/c, total cross sections for, (E), 22:26568
interactions $\pi^+ + p$ at 1 GeV, one-pion exchange processes in, (T), 22:9609
interactions $\pi^- + p$ at 1 GeV, one-pion exchange processes in, (T), 22:9609
interactions $\pi^- + p$ at 1 to 10 GeV/c, analysis of elastic and charge-exchange, (E/T), 22:9607
interactions $\pi^+ + p$ at 1 to 10 GeV/c, analysis of elastic, (E/T), 22:9607
interactions $\pi^+ + p$ at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions $\pi^- + p$ at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions $\pi^- + p$ at 1.5 to 20 GeV/c, survey of experimental data on, 22:17872
interactions $\pi^+ + p$ at 1.5 to 20 GeV/c, survey of experimental data on, 22:17872
interactions $\pi^- + p$ at 1.5 to 4.2 GeV/c in hydrogen bubble chamber, strange-particle production in, (E), 22:5509
interactions $\pi^- + p$ at 1.6 to 5.3 GeV/c, differential cross sections at 180° for elastic, (E), 22:11592
interactions $\pi^- + p$ at 1.7 GeV/c, optical model analysis of, (T), 22:9800(R) (COO-535-571)
interactions $\pi^+ + p$ at 1.7 to 7.8 GeV/c, differential cross sections and polarization in backward elastic, (E/T), 22:34865

interactions π^- + p at 1.72 to 2.46 GeV/c, spark chamber study of N(2190) and Δ(2420) production from elastic, (E), 22:3270
interactions π^- + p at 11.5 GeV/c, differential cross section dependence on momentum transfer from missing-mass spectrometer study of, (E), 22:46342
interactions π^- + p at 17.2 GeV/c in emulsions, angular distribution of secondary pions in, (E), 22:34864
interactions π^- + p at 17.2 GeV/c in emulsions, resonances in distribution of residual effective mass in, (E), 22:39294
interactions π^+ + p at 2 to 6 GeV/c, validity of interference model for, 22:17968
interactions π^+ + p at 2 to 6 GeV/c, validity of interference model for, 22:46455
interactions π^- + p at 2 to 6 GeV/c, validity of interference model for, 22:17968
interactions π^- + p at 2 to 6 GeV/c, validity of interference model for, 22:46455
interactions π^- + p at 2.26 GeV/c, cross sections for elastic, (E), 22:50302
interactions π^+ + p at 2.3 to 4.0 GeV/c, spark chamber study of N* production from, (E), 22:3279
interactions π^+ + p at 2.34 GeV/c in bubble chamber, cross sections for elastic, (E), 22:50293 (JINR-P1-4003)
interactions π^+ + p at 2.34 GeV/c in bubble chamber, π and N^{*++} interference in, (E), 22:1388
interactions π^+ + p at 2.34 GeV/c in hydrogen bubble chamber, production and interference of rho^+ and N^{*++} in, (E), 22:24553
interactions π^- + p at 2.5 GeV/c in hydrogen bubble chamber, strange particle production in, (E), 22:29639
interactions π^- + p at 2.5 to 6.0 GeV/c, spark chamber study of N* production from, (E), 22:3279
interactions π^+ + p at 2.75 GeV/c, one-particle exchange model for cross sections of inelastic, 22:9610
interactions π^- + p at 2.75 GeV/c, one-particle exchange model for cross sections of inelastic, 22:9610
interactions π^+ + p at 2.77 GeV/c, resonance production in two-prong, (E), 22:50290
interactions π^- + p at 229 and 318 MeV, phase shift analysis for, 22:3287
interactions π^- + p at 229 to 390 MeV, polarization parameter in elastic, (E), 22:22319
interactions π^- + p at 229 to 390 MeV, scintillation counter study of polarization in, (E), 22:3287
interactions π^- + p at 25 GeV/c in hydrogen bubble chamber, systematic behavior in multiple π production from, (E), 22:9513
interactions π^- + p at 25 GeV/c in hydrogen bubble chamber, preliminary results for cross sections of multiprong, (E), 22:39279 (CERN-68-7(Vol.2), pp 244-61)
interactions π^+ + p at 3 to 4 GeV/c, evidence for existence of H meson from analysis of, 22:46423 (UCRL-18271)
interactions π^- + p at 3.2 and 4.2 GeV/c in hydrogen bubble chamber, multipion final states from, (E), 22:3276
interactions π^- + p at 3.2 and 4.2 GeV/c, cross sections for multipion final states from, (E), 22:15690
interactions π^- + p at 3.48 and 6.13 GeV/c, real part of nuclear amplitude of elastic, (E/T), 22:7445
interactions π^+ + p at 4 and 8 GeV/c, absorption model for, 22:37149
interactions π^+ + p at 4 to 10 GeV/c, scintillation counter and spark chamber study of differential cross sections for, (E), 22:3283
interactions π^- + p at 4 to 10 GeV/c, scintillation counter and spark chamber study of differential cross sections for, (E), 22:3283
interactions π^- + p at 4.16 GeV, s-wave $\pi\pi$ elastic scattering phase shifts from, (T), 22:5578
interactions π^- + p at 4.16 GeV/c in hydrogen bubble chamber, analysis of two-prong, (E), 22:11590
interactions π^- + p at 4.65 GeV/c in hydrogen bubble chamber, study of nuclear forces from resonance production in multipion production in, (E), 22:29638
interactions π^- + p at 4.7 GeV/c, filmless wire spark chamber study of cross sections for, (E), 22:13665
interactions π^- + p at 4.7 GeV/c, magnetostrictive spark chamber for measuring meson (π^-) momentum distribution of, 22:47378
interactions π^- + p at 5 to 10 GeV, production of neutral boron in, (E), 22:37628 (ISS-68/1)
interactions π^- + p at 5.0 and 7.5 GeV/c, 4π enhancements in, (E), 22:48226 (COO-1195-134)
interactions π^- + p at 5.0 GeV/c in bubble chamber, $A_{1.5}$ and A_2 production in, (E), 22:41734 (COO-1428-71)
interactions π^- + p at 5.5 GeV/c in hydrogen bubble chamber, multiple π production in, (E), 22:3260
interactions π^- + p at 5.5 GeV/c in hydrogen bubble chamber, associated production in, (E), 22:39292
interactions π^- + p at 5.9 and 9.9 GeV/c, Δ/sub delta/ Regge trajectory from backward, (T), 22:41817
interactions π^+ + p at 5.9 to 13.7 GeV/c, N/sub α/ and Δ/sub delta/ Regge trajectories from backward, (T), 22:41817
interactions π^+ + p at 5.9 to 17 GeV/c, angular distribution of backward elastic, (E), 22:41744
interactions π^- + p at 5.9 to 17 GeV/c, angular distributions of backward elastic, (E), 22:41744
interactions π^- + p at 550 and 650 MeV, proton polarization from elastic, (E), 22:29631
interactions π^- + p at 6 and 8 GeV/c, differential cross sections for elastic, (E), 22:41746
interactions π^- + p at 6 GeV/c, production of A_2(1269) and A_2(1315) in, (E), 22:48223 (BNL-12769)
interactions π^- + p at 6 GeV/c, resonance peaks in A_2 region from, (E), 22:32071
interactions π^- + p at 6.7 GeV/c, spin--parity analysis for A(1300) and A(1200) production in, (E), 22:39286
interactions π^- + p at 7.0 GeV/c, transverse-momentum and angular distributions in six-prong, (E), 22:52942
interactions π^+ + p at 750 to 3750 MeV/c, scintillation counter study of polarization parameter in elastic, (E), 22:52943
interactions π^+ + p at 765 to 1025 MeV, proton polarization from elastic, (E), 22:29631
interactions π^- + p at 8 and 16 GeV/c, differential cross sections for elastic, (E/T), 22:34859
interactions π^- + p at 8 GeV, formulas for large momentum transfer in, 22:7514
interactions π^+ + p at 8 GeV/c in hydrogen bubble chamber, angular correlations between mesons (π) in 10-prong, (E), 22:29625 (INR-876/VI/PH)
interactions π^+ + p at 8 GeV/c, distinction between peripheral and central many-body, (T), 22:37146 (INR-P-889/VI/PH)
interactions π^+ + p at 8 GeV/c, inelastic partial cross sections for, (T), 22:3409 (INP-555/PL/PH, pp 101-12)
interactions π^+ + p at 8 GeV/c, mass dependence of differential cross sections for, (E), 22:44338
interactions π^+ + p at 8 GeV/c, model of high multiplicity, (E/T), 22:3407 (INP-555/PL/PH, pp 65-73)
interactions π^+ + p at 8 GeV/c, overlap function and shadow elastic scattering from inelastic, (T), 22:24662
interactions π^+ + p at 8 GeV/c, π angular correlations in 10-prong, (E), 22:48236
interactions π^+ + p at 8 GeV/c, resonance production in, (E), 22:24552
interactions π^+ + p at 8 GeV/c, Van Hove overlap function and shadow elastic scattering from inelastic, (T), 22:5573 (INR-825/VI/PH)
interactions π^+ + p at 850 MeV/c in bubble chamber, cross sections for elastic and inelastic, (E), 22:24551
interactions π^- + p at 875 to 1579 MeV/c on polarized target, resonance production in, (E), 22:20146
interactions π^- + p at 875 to 1850 MeV/c, N(1688) and Δ(1920) production from, (E), 22:13661
interactions π^+ + p at 875 to 1850 MeV/c, N(1688) and Δ(1920) production from, (E), 22:13661
interactions π^- + p at high energies in Regge pole theory, coupling zeroes in analysis of, 22:3418
interactions π^+ + p at high energies in Regge pole theory, coupling zeroes in analysis of, 22:3418
interactions π^+ + p at high energies, possible branching effect in p and p' poles in, 22:44437
interactions π^- + p at high energies, possible branching effect in p and p' poles in, 22:44437
interactions π^+ + p at high energies, Regge phenomenology of, 22:46445
interactions π^- + p at high energies, Regge phenomenology of, 22:46445
interactions π^+ + p at high energies, Regge pole model for, 22:3413 (UCRL-17873)
interactions π^- + p at high energies, Regge pole model for, 22:3413 (UCRL-17873)
interactions π^- + p at high energies, Regge-pole analysis of backward peaks in elastic, 22:20249
interactions π^+ + p at high energies, Regge-pole analysis of backward peaks in elastic, 22:20249
interactions π^+ + p at high energies, sum rule for Regge pole model for total cross sections of, 22:37159
interactions π^- + p at high energies, sum rule for Regge pole model for total cross sections for, 22:37159
interactions π^+ + p at high energies, total cross sections for, (E), 22:22299
interactions π^+ + p at high energies, vacuum Regge poles and cuts from amplitudes for elastic, 22:46437
interactions π^- + p at high energies, vacuum Regge poles and cuts from amplitudes for elastic, 22:46437
interactions π^+ + p at low energies, current algebra for, 22:13767
interactions π^+ + p in multi-Regge-exchange model, shadow elastic scattering from, 22:35012
interactions π^- + p in quark model, cross sections for E(1420) production in, (T), 22:35009
interactions π^- + p in quark model, production of neutral vector and pseudoscalar mesons in, (T), 22:35009
interactions π^+ + p through 90°, contribution of Δ/sub delta/ Regge trajectory in s-channel for, 22:9590
interactions π^- + p with charge exchange, sum rules for neutral meson production in, 22:52982
interactions π^- + p, axial-vector current renormalization for, 22:13752 (ITF-67-19)
interactions π^+ + p, axial-vector current renormalization for, 22:13752 (ITF-67-19)
interactions π^- + p, branching ratio for $\omega \to$ neutrals/$\omega \to$ total from, (E), 22:39297
interactions π^- + p, CP nonconservation in, 22:20236

interactions $\pi^+ + p$, cross sections for elastic, 22:17871
interactions $\pi^- + p$, cross sections for elastic and charge-exchange, (E), 22:17871
interactions $\pi^+ + p$, current commutators and mass extrapolations for s- and p-wave amplitudes of, 22:44441
interactions $\pi^- + p$, dips in differential cross sections for elastic, (E/T), 22:44332
interactions $\pi^+ + p$, dips in differential cross sections for elastic, (E/T), 22:44332
interactions $\pi^+ + p$, existence of equal-amplitude points on backward cone, (T), 22:22397
interactions $\pi^- + p$, mass spectra, angular distributions, and cross sections for $g^-(1675)$ and $g^0(1655)$ production in, (E), 22:34858
interactions $\pi^+ + p$, model of infinite Regge recurrences for high-momentum transfer in elastic, 22:24650
interactions $\pi^- + p$, model of infinite Regge recurrences for high-momentum transfer inelastic, 22:24650
interactions $\pi^- + p$, modified Regge representation for backward elastic, 22:3433
interactions $\pi^- + p$, polarization of resonances in peripheral SU(6)/sub W/ model for, 22:3491
interactions $\pi^+ + p$, polarization of resonances in peripheral SU(6)/sub W/ model for, 22:3491
interactions $\pi^+ + p$, predictions for $K^+ + N$ interactions from SU(3) symmetry for backward, 22:20142
interactions $\pi^- + p$, predictions for $K^+ + N$ interactions from SU(3) symmetry for backward, 22:20142
interactions $\pi^- + p$, relation between composite model and Regge pole model for charge-exchange, 22:41816
interactions $\pi^- + p$, superconvergence sum rule from parametrization of N and Δ trajectories, 22:20267
interactions $\pi^+ + p$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $\pi^- + p$, unsubtracted dispersion sum rule for, (T), 22:39409
interactions $\pi^- + p$, $Y = 1$ fermion Regge pole hypothesis for backward, 22:1438
interactions $\pi^+ + p$, $Y = 1$ fermion Regge pole hypothesis for backward, 22:1438
interactions $\pi^- + p$, zero at wrong-signature sense point in backward elastic, 22:44447
interactions rho + p, sum rule for amplitude of, 22:48263
interactions $\text{rho}^0 + p$ from $\gamma + p$ interactions, cross sections for elastic, (T), 22:46448
interactions $\Sigma^- + p \to \Sigma^0(\Lambda^0) + n$, determination of capture ratio, Λ^0 lifetime, and $(\Sigma^- - \Lambda^0)$ mass difference from, (E), 22:41747
interactions $\Sigma^+ + p \to \Sigma^+ + p$, one-boson-exchange model for differential and total cross sections for, 22:20274
interactions $\Sigma^- + p \to \Sigma^- + p$, one-boson-exchange model for differential and total cross sections for, 22:20274
interactions $\Sigma^+ + p$ at low energies, review of research on, (E), 22:17854
interactions $\Sigma^+ + p$ at low energies, review of research on, (E), 22:17854
interactions $\Sigma^- + p$ at low energies, review of research on, (E), 22:17854
interactions $W^+ + p$, Bjorken asymptotic formula for, 22:17923
interactions with electromagnetic fields, model for rho^0 production from, 22:22369 (NYO-1932(2)-130)
interactions with matter at high energies, method for estimation of primary energy from shower parameters, (T), 22:34892
interactions with neutral hydrogen in radiation belts, (T), 22:31720
interactions with positive mesons, accuracy of Tomonaga intermediate coupling approximation for, (T), 22:39411
interactions with protons, cross-section factor for, (T), 22:29124
interactions with vector mesons, polarization in vector dominance models for π production in, 22:39419
irradiation facilities for exposure of laboratory animals, 22:51935
latitude-intensity structure and pitch-angle distributions of low-energy solar, over polar caps, (E), 22:41264
lifetime of, preliminary results for lower limit on, (E), 22:41741 (COO-1749-5)
lifetimes for low-energy, in outer radiation belt, (E), 22:47973
linear energy transfer in dielectric liquids, (T), 22:38800
luminescent processes in gases from bombardment with 5-MeV, (E), 22:5044(R) (ORO-3349-3)
magnetic charge of, (T), 22:45916
magnetic cutoff of extragalactic, in the galactic disk, (T), 22:41384
magnetic moment in U(6,6), 22:9665
magnetic moment of, (E), 22:34245 (TID-24491, pp 1-5)
magnetic moment of, current algebra for ratio for proton and neutron, 22:3490
magnetic moment of, quark model for exchange contribution to, 22:5531
magnetic monopole moment of, use of superconducting quantum interferometer for determination of, (E), 22:50282
mass difference $(K^+ - K^0)/(n - p)$ ratio, field algebra for electromagnetic, 22:26602
mass difference (n - p) for, solutions of model field theoretic equation for, 22:29712
mass difference (n - p) from inelastic e + p interactions, 22:11611
mass difference (n - p), (T), 22:13707
mass difference (n - p), analytic continuation of divergent integrals for electromagnetic, 22:50364
mass difference (n - p), calculation using generalized superconvergence relation, 22:11612
mass difference (n - p), dispersion relation treatment o perturbation effects on, 22:15732
mass difference (n - p), effect of strong interaction on electromagnetic, 22:46359
mass difference (n - p), field-theoretic calculation of, 22:11616
mass difference (n - p), inelastic contribution in Cottingham formula for, 22:44363
mass difference (n - p), inelastic model of, 22:11615
mass difference (n - p), sidewise dispersion relations for, 22:52958
mass of, continuity equation for scalar Riemann curvatur of space--time for μ/m and α for ratio of electron mas with self, 22:34919
mobility in helium, (T), 22:31650
models of high-energy, spatial distribution, (E/T), 22:11320
modulation of galactic, measurement of solar, 22:5160
modulation of primary cosmic, during sunspot minimum, (E), 22:36772
motion in relativistic high-current cyclotron, space charge effects on, 22:1526 (JINR-P9-3448)
motion in single crystals of silicon, blocking and channeling effects in, (E), 22:27087(R) (ANL-7405)
motion in spiral magnetic fields, (T), 22:13345
motion in strong-focusing quadrupole lenses, 22:1538(T) (CERN-Trans-67-4)
motion in the field of Alfven waves, (T), 22:9315
motion in the geomagnetic trap, dynamics of, 22:48006
nuclear magnetic resonance frequency of, relation to cyclotron frequency of free electrons in same magnetic field, (E), 22:5428
nuclear optical-model potential at 50 MeV, (T), 22:2736
nuclear optical-model potential for, real central part of, (T), 22:30087
origin and propagation of, associated with centers of solar activity, (E), 22:36563 (N-68-11005)
origin in inner radiation belt, relation of albedo neutron flux to, 22:26316
paths in biological tissues, equations for calculation of, 22:47533
penetration into polar cap atmosphere, solar, (T), 22:2875
penetration of aluminum and tissue by, comparison of computer codes for, 22:35668 (ORNL-RSIC-22(Pt.2))
penetration of solar, to 4R/sub E/ in equatorial plane, (E), 22:47719 (N-68-23445)
photoproduction from titanium isotopes at 22 and 30 MeV, yields for, (E), 22:1636
polarization for use as targets, method for, 22:1336
polarization from $\gamma + d \to p + n$ interactions at 170 to 450 MeV, (E), 22:15661
polarization from $\gamma + p \to \pi^0 + p$ interactions at 500 to 1000 MeV, (E), 22:26549
polarization from helium-3 reactions (He-3,p) with carbon-12 angular and energy dependence of, 22:4500 (JINR-P15-3504)
polarization in dilute paramagnetic crystals between 1 and 4^0K, dynamic, (E/T), 22:44255
polarization in $e + d \to p + n + e$ backward interactions at very low momentum transfers, formalism for, 22:29619
polarization in $\gamma + p \to p + \pi^0$ interactions at 450 to 600 MeV, scintillation counter telescope and spark chamber of, (E), 22:44306
polarization in irradiated polymers, by solid effect, (E/T), 22:3601
polarization in neodymium-doped yttrium ethyl sulfate, low-temperature dynamic, (E), 22:1357
polarization in $\pi^- + p$ and $\pi^+ + p$ elastic interactions at 550 to 1025 MeV, (E), 22:29631
polarization in targets, linearized Q-meter circuit for measurement of, 22:7596
polarization measurements at 10 MeV, experimental facility for, (E), 22:1598(R) (COO-1265-49)
polarization of recoil, from $\gamma + p \to \pi^0 + p$ interactions at 240 to 420 MeV, (E), 22:29615
polarization of recoil, $\gamma + p \to p + \pi^0$ interactions at 750 and 1450 MeV, (E), 22:24523
polarization of, cryostats for targets used for, 22:15896
polarization of, phenomenological model for spin--spin interaction in dynamic, 22:1335
polarization of, review of methods for, 22:46566 (CERN-68-32)
precipitation in aurora, rocket measurements of, 22:1064
precipitation in auroral zone, satellite measurements of, 22:5267
precipitation of auroral, correlation of radar echoes

from aurora with, 22:2942
primary source of radiation injuries during Gemini space flights, 22:486 (AD-631989)
production by synchrocyclotron (SREL), 22:51935
production from $\gamma + p \to p + \pi^0$ interactions at 163 to 234 MeV, phenomenological analysis of, 22:13699
production in cosmic-neutron interactions in nuclear emulsions, (E), 22:15383
production in electron reactions with beryllium, beryllium—iron, and iron at 16 and 18 GeV, yields of, (E), 22:20113
production in electron reactions with molecular hydrogen ions, cross section for, (E), 22:8996
production in proton reactions with nuclei at 20.8 GeV/c in emulsions, distributions of transverse momenta for, (E), 22:32053
production in π + N multi-prong interactions at 17 GeV in emulsions, analysis of, 22:34863
production of 14.5-MeV, design of rotating heavy ice target for, 22:37252
production of πp pairs from elementary particle interactions, method for determining, 22:15701
production of recoil from $\gamma + p \to p + \pi^0$ interactions at 750 to 1450 MeV/c, scintillation counter and spark chamber study of energy dependence of polarization in, (E), 22:20112
production of single slow recoil, in π + N interactions at 17.2 GeV/c in emulsions, (E), 22:34984
production of spectator, from $\pi^+ + d \to \pi^+ + \pi^- + \pi^0 + p + p$ interactions at 3.65 GeV/c in deuterium bubble chamber, cross sections for, (E), 22:3286
production of synchrotron radiation in quasars by relativistic, (T), 22:2740
propagation of solar flare, in interplanetary space, (T), 22:889
propagation of solar, along lines of force of interplanetary field, (T), 22:23918
proton reactions (p,2α) with boron-11, interference effects in 3α decay in, (E), 22:20578 (WASH-1079)
quality factor for 260- and 660-MeV, in water phantoms, 22:31115
radio-wave phase perturbations produced by solar, vlf, 22:5237
range and stopping power in aluminum, copper, lead, silver, uranium, and water, (T), 22:45926 (UCRL-18127)
range in gases of 5- to 50-keV, (E/T), 22:999
range in molecular gases, biological effects from, (E), 22:29271
range--energy relations in germanium and silicon at 0.8 to 2.0 MeV, 22:6708
range-energy relations for low-energy, in dense targets, (T), 22:978
range-energy tables for silicon at 1 to 200 MeV, (E/T), 22:3663
reactions (n,γ) with chlorine-37 at 1.0 to 1.8 MeV, argon-38 energy levels and transitions from, (E), 22:9822
reactions (p,15p34n) with gold-197, effect of thick targets on monitoring proton beams by, 22:15895
reactions (p,2α) with boron-11 at 0.15 to 2 MeV, α correlations in, (E), 22:20460
reactions (p,2α) with boron-11 at 163 keV, alpha spectra from, (E), 22:7650
reactions (p,2α)α with boron-11 at 2.6 MeV, α-α coincidence spectra from, (E), 22:26894
reactions (p,2n) with bismuth-209 at 12, 14, and 16 MeV, γ spectra from, (E), 22:48551
reactions (p,2n) with europium-151 and europium-153 at 14 MeV, conversion-electron spectra from, (E), 22:48514 (JAERI-1158, pp 14-16)
reactions (p,2n) with gold-197, iodine-127, lanthanum-139, rhenium-187, rhodium-103, silver-107, and silver-109 at 14.3 MeV, conversion-electron anisotropy in, (E), 22:20645
reactions (p,2n) with palladium-102 at 50 MeV, production of silver-101 by, (E), 22:1699
reactions (p,2n) with samarium-147, production of isomeric europium-146 in, (E), 22:25664
reactions (p,2n) with tantalum-181, production of isomeric tungsten-180 in, (E), 22:25664
reactions (p,2n), (p,3n), (p,4n), and (p,p3n) with strontium-88 at 7 to 85 MeV, cross-section ratios for isomer production in, (E/T), 22:7684
reactions (p,2p) with aluminum-27 at 460 MeV with quasielastic scattering, angular correlation distribution for, (E), 22:3784
reactions (p,2p) with beryllium-9, boron-10, boron-11, carbon-12, lithium-6, and lithium-7, spectroscopic factors for, (E/T), 22:26864
reactions (p,2p) with carbon-12 at 1 GeV with quasielastic scattering, (E), 22:26831 (BNL-12344)
reactions (p,2p) with carbon-12 at 50 to 110 MeV, cross sections for coplanar and non-coplanar, (E), 22:1612
reactions (p,2p) with carbon-12, cross-section calculations using t-matrix formalism with local and nonlocal p-p effective interactions, (T), 22:27243
reactions (p,2p) with deformed nuclei, with quasielastic scattering, (T), 22:3784
reactions (p,2p) with deuterium at 156 MeV, cross sections for, (E), 22:26808
reactions (p,2p) with deuterium at 16 MeV, analysis for two-body parameters, (E/T), 22:26811
reactions (p,2p) with deuterium at 46 MeV, angular and energy distributions for, (E), 22:26810
reactions (p,2p) with lithium-6 at high energy, (E), 22:14116
reactions (p,2p) with lithium-6, angular correlation distributions and cross sections for, (T), 22:26885
reactions (p,2p) with lithium-6, testing α-deuteron cluster model for lithium-6 by, (T), 22:32497
reactions (p,2p) with magnesium-24, silicon-28, and sodium-23 at 156 MeV, spectroscopic factors for, (T), 22:44647
reactions (p,2p) with medium-weight nuclei at 156 MeV with quasielastic scattering, proton energy spectra and angular distributions from, (E), 22:1642
reactions (p,2p) with nuclei at 0.16 to 1 GeV, description using distorted-wave impulse approximation, (T), 22:42128
reactions (p,2p) with nuclei at medium energies, nuclear structure research from, 22:33187 (ISS-66/50)
reactions (p,2p) with nuclei, calculations of cross sections using distorted-wave t-matrix approximation, (T), 22:50696
reactions (p,2p) with nuclei, study of hole states by, (E/T), 22:16071
reactions (p,2p) with yttrium-89 at 46 MeV, proton angular correlations in, (E), 22:13927(R) (USC-136-132)
reactions (p,2pn) with sulfur-34 at 50 MeV to 3 GeV, cross sections for, (T), 22:21356 (CEA-R-3376)
reactions (p,2pxn) with cesium-133 at 660 MeV, relative cross sections for production of xenon isotopes by, (E), 22:37363
reactions (p,3n) and (p,4n) with palladium-102 at 10 to 50 MeV, production of silver-99 and -100 by, (E), 22:1698
reactions (p,3p) with lead-208 at 0.59 and 18 GeV, cross sections for, (E), 22:44691
reactions (p,3p3n) at 3 to 12.5 GeV with carbon-12, cross section for beryllium-7 production in, (E), 22:24536
reactions (p,3pn) and (p,3p3n) with aluminum-27, effect of thick targets on monitoring proton beams by, 22:15895
reactions (p,4n) and (p,5n) with uranium-233 at 33 and 41 MeV, production of neptunium-229 and-230 by, (E), 22:35292 (ORNL-4217, pp 1-81)
reactions (p,4n) with gold-197 at 50 and 55 MeV, conversion-electron spectra from, (E), 22:27165
reactions (p,5n) with antimony-121 at 52 MeV, production of tellurium-117 isomers by, (E), 22:3729
reactions (p,6n) with gold-197, thallium-203, and thallium-205 at 50 and 55 MeV, conversion-electron spectra from, (E), 22:27165
reactions (p,α) and (p,γ) with potassium-39 at 2.8 to 6.1 MeV, calcium-40 energy levels from, (E), 22:11937
reactions (p,α) and (p,He-3) with niobium-93, (E/T), 22:13927(R) (USC-136-132)
reactions (p,α) and (p,He-3) with nitrogen-14 at 30 MeV, spectra for, (E), 22:13927(R) (USC-136-132)
reactions (p,α) and (p,He-3) with nitrogen-14 at 6 to 12 MeV, cross sections and spectra for, (E), 22:11949(R) (ORO-2972-47)
reactions (p,α) and (p,n) with oxygen-18 at threshold to 3.2 MeV, yields for, (E), 22:22560(R) (ORO-1067-2)
reactions (p,α) and (p,t) with lithium-7, cross sections and spectra for, (E), 22:20578 (WASH-1079)
reactions (p,α) with aluminum-27 at 10.9 to 19.7 MeV, fluctuation analysis of excitation functions for, (E), 22:26933
reactions (p,α) with aluminum-27 at 11 to 20 MeV, cross-section fluctuations in, (E), 22:20545
reactions (p,α) with aluminum-27 at 4.0 to 5.5 MeV, cross sections for, (E), 22:7569(R) (BARC-291)
reactions (p,α) with aluminum-27 at 4.0 to 5.5 MeV, correlations of excitation functions for, (E), 22:27060
reactions (p,α) with aluminum-27 at 6.4 MeV, fluctuation analysis of excitation function for, (E/T), 22:11923
reactions (p,α) with aluminum-27 at 9 to 12 MeV, excitation function for, (E), 22:20543
reactions (p,α) with aluminum-27, carbon-12, fluorine-19, magnesium-24, neon-20, nitrogen-14, and oxygen-16 at 40 MeV, differential cross sections for, (E), 22:1598(R) (COO-1265-49)
reactions (p,α) with aluminum-27, carbon-12, fluorine-19, magnesium-24, neon-20, nitrogen-14, and oxygen-16 at 40 MeV, angular distributions and cross sections for, (E), 22:24849
reactions (p,α) with aluminum-27, differential cross sections for, (E), 22:29970
reactions (p,α) with argon-40 at 1.81 to 4.35 MeV, excitation function for, (E), 22:44660
reactions (p,α) with beryllium-9, boron-11, carbon-12, fluorine-19, nitrogen-14, and oxygen-16 at 38 MeV, differential cross sections for, (E), 22:26893
reactions (p,α) with boron-11 at 1 to 12 MeV, analysis using plane-wave direct reaction formalism, (T), 22:35240
reactions (p,α) with boron-11 at 1.4 MeV, resonances in, (E), 22:37340(R) (EANDC(E)-89(U))
reactions (p,α) with boron-11 at 670-keV resonance, (E), 22:26835

reactions (p,α) with calcium-42 at 10.6 to 11.1 MeV, potassium-39 energy levels from, (E), 22:15986
reactions (p,α) with carbon-12 at 17 to 22 MeV, excitation functions for, (E), 22:26909
reactions (p,α) with carbon-12 at 44.5 MeV, DWBA analysis using combined square-well and harmonic-oscillator potentials, (T), 22:53115
reactions (p,α) with carbon-14 at 2.0 to 3.6 MeV, differential cross sections for, (E), 22:18158
reactions (p,α) with chlorine-35 and -37 at 4.0 to 7.8 MeV, fluctuation analysis of, (E), 22:11949(R) (URO-2972-47)
reactions (p,α) with chlorine-35 and chlorine-37, statistical analysis of angular distributions for, (T), 22:26950
reactions (p,α) with chlorine-35 at 0.83 to 2.95 MeV, argon-36 energy levels from, (E), 22:20525
reactions (p,α) with chlorine-35, cross sections for, (E), 22:1634
reactions (p,α) with cobalt-59 at 21 MeV, effects of angular momentum on compound-nucleus formation and decay in, (E), 22:53150
reactions (p,α) with cobalt-59, manganese-55, and nickel-62, excitation functions for, (E), 22:39635(R) (NYO-3938-1)
reactions (p,α) with fluorine-19 at 1.9 to 4.2 MeV, excitation functions and γ spectra for, (E), 22:32513(R) (ANU-P-400)
reactions (p,α) with fluorine-19 at 2.1, 2.4, and 3.3 MeV, γ--γ coincidence spectra for, (E), 22:50532
reactions (p,α) with fluorine-19 to oxygen-16 ground state, analysis using three-nucleon pickup DWBA formalism, (T), 22:35233
reactions (p,α) with lithium-6 at 20 MeV, α spectra from, (E), 22:1598(R) (COO-1265-49)
reactions (p,α) with lithium-6 at 300 to 1000 keV, angular distributions and total cross sections for, (E), 22:46717 (CEA-R-3428)
reactions (p,α) with lithium-6, cross sections and resonance parameters for, (T), 22:44609
reactions (p,α) with lithium-7 at 0.5 to 7 MeV, effects of proton polarization on, (E/T), 22:3619
reactions (p,α) with lithium-7 at 0.8 to 3.0 MeV, alpha angular distributions from, using polarized protons, (E), 22:29916
reactions (p,α) with lithium-7 at 3 to 10 MeV, use for polarization analysis, (E/T), 22:26848
reactions (p,α) with lithium-7 at 440-keV resonance, (E), 22:26835
reactions (p,α) with lithium-7 at 7.4 to 10.4 MeV, angular distribution of polarization in, (E), 22:13936
reactions (p,α) with nickel-58 at 9 to 10 MeV, intermediate resonance parameters for, (T), 22:27065
reactions (p,α) with nickel-58, -60, -62, and -64 at 10 MeV, angular distributions and excitation functions for, (E), 22:32513(R) (ANU-P-400)
reactions (p,α) with nickel-62 at 14.3 MeV, angular distributions and spectra for, (E), 22:20544
reactions (p,α) with nickel-62 at 14.3, α angular distributions and spectra for, (E), 22:3652
reactions (p,α) with nitrogen-14 and oxygen-16 from fast neutron reactions, average cross sections for, (E), 22:26932(R) (NP-17434)
reactions (p,α) with nitrogen-14 at 5.0 to 5.6 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
reactions (p,α) with nitrogen-15 at 0.4 to 1.9 MeV, cross section for, (E), 22:32507
reactions (p,α) with oxygen-18 at 1.4 to 3.2 MeV, yield curve for, (E), 22:20578 (WASH-1079)
reactions (p,α) with phosphorus-31 at 1 to 2 MeV, differential cross sections and spectra for, (E), 22:20516
reactions (p,α) with phosphorus-31 at 1.0 to 3.8 MeV, angular distribution for, (E), 22:24841
reactions (p,α) with phosphorus-31 at 8.5 to 12.3 MeV, fluctuation analysis of, (E), 22:11929
reactions (p,α) with phosphorus-31, spin mixing in entrance channels for, (E/T), 22:48506
reactions (p,α) with potassium-41 at 2.1 to 2.5 MeV, angular distributions and excitation functions for, (E), 22:15976
reactions (p,α) with sodium-23 at 2.2 to 4.5 MeV, angular distributions and excitation functions for, (E), 22:22570
reactions (p,α), (p,d), (p,t), and (p,He-3) with bismuth-209, carbon-12, and iron-54 at 60 MeV, differential cross sections for, (E), 22:41952 (ORNL-4274)
reactions (p,α), (p,d), (p,t), and (p,He-3) with gold and silver at 156 MeV, direct and indirect mechanisms for, (E/T), 22:7703(T) (ORNL-tr-1831)
reactions (p,α), (p,γ), and (p,n) with potassium-41 at 1.40 to 1.75 MeV, resonances in, (E), 22:13962
reactions (p,α), (p,t), and (p,He-3) with fluorine-19 at 30 MeV, distorted-wave analysis of angular distributions for, (E/T), 22:13927(R) (USC-136-132)
reactions (p,α)2α with boron-11 at 0.163 to 2 MeV, system for two-dimensional analysis of, (E), 22:3605 (CEA-R-3270)
reactions (p,α)2α with boron-11 at 2.65 MeV, α-α coincidence spectra from, (E), 22:3631
reactions (p,d) and (p,n) with tritium at 14 MeV, angula distributions for, (E), 22:20578 (WASH-1079)
reactions (p,d) and (p,pd) with lithium-6 at 14.7 MeV, differential cross sections for, (E), 22:9795
reactions (p,d) and (p,t) with aluminum-27, fluorine-19, magnesium-25, magnesium-26, phosphorus-31, silicon-29, silicon-30, and sodium-23, differential cross sections for, (E), 22:30048(R) (PUC-937-307)
reactions (p,d) and (p,t) with arsenic-75 at 17.5 MeV, angular distributions for, (E), 22:30048(R) (PUC-937-307)
reactions (p,d) and (p,t) with calcium-48 at 18 MeV, angular distributions for, (E), 22:37328
reactions (p,d) and (p,t) with carbon-12 at 55 MeV, angular distributions for, (E), 22:26898
reactions (p,d) and (p,t) with carbon-13 at 55 MeV, angular distributions for, (E), 22:26903
reactions (p,d) and (p,t) with fluorine-19 at 30 MeV, angular distributions for, (E), 22:13927(R) (USC-136-132)
reactions (p,d) and (p,t) with lead-208 at 40 MeV, (E), 22:32574 (MIT-2098-422, pp 95-105)
reactions (p,d) and (p,t) with magnesium-24 at 50 MeV, angular distributions of differential cross sections for, (E), 22:27012
reactions (p,d) and (p,t) with magnesium-26 at 20 MeV, deuteron and triton spectra from, (E), 22:46729(R) (AECL-3157)
reactions (p,d) and (p,t) with niobium-93, yttrium-89, zirconium-91, and zirconium-92 at 55 MeV, isobaric analog resonances in, (E), 22:27140
reactions (p,d) and (p,t) with tin-117 and tin-119, research program on, (E), 22:37316(R) (UR-3591-9)
reactions (p,d) and (p,t) with zirconium-90 at 55 MeV, angular distributions and spectra for, (E), 22:26987
reactions (p,d) at 100 MeV, performance of germanium range--telescope spectrometer for obtaining spectra from, 22:350
reactions (p,d) with 2s1d-shell N = Z nuclei, angular distributions and spectroscopic factors for, (E), 22:44664
reactions (p,d) with aluminum-27 and silicon-28 at 155 MeV, differential cross sections for, (E), 22:26946
reactions (p,d) with argon-36 and -40 at 27.5 MeV, angular distributions of differential cross sections for, (E), 22:9800(R) (COO-535-571)
reactions (p,d) with argon-36 and -40 at 27.5 MeV, differential cross sections and deuteron spectra for, (E), 22:11928
reactions (p,d) with argon-36, calcium-40, magnesium-24, silicon-28, and sulfur-32 at 34 MeV, angular distributions for, (E), 22:35274
reactions (p,d) with beryllium-9 at 1.6 to 3.8 MeV, deuteron tensor polarization in, (E), 22:53110
reactions (p,d) with beryllium-9 at 16 to 29 MeV, cross sections and angular distributions for, (E/T), 22:29939
reactions (p,d) with beryllium-9 with formation of singlet deuteron, cross section for, (T), 22:39591
reactions (p,d) with beryllium-9, analysis using R-matrix formalism, (T), 22:41961
reactions (p,d) with beryllium-9, boron-10, boron-11, carbon-12, lithium-6, lithium-7, nitrogen-14, and oxygen-16 at 156 MeV, angular and energy distributions for, (E), 22:20484
reactions (p,d) with beryllium-9, carbon-12, and silicon-28 at 185 MeV, deuteron vector polarization in, (E), 22:50548
reactions (p,d) with beryllium-9, carbon-12, lithium-7, and oxygen-16 at 100 MeV, differential cross sections for, (E), 22:5766
reactions (p,d) with beryllium-9, lithium-6, and lithium-7 at 34 MeV, deuteron angular distributions and spectra for, (E), 22:3600
reactions (p,d) with beryllium-9, phase-shift analysis of, (E/T), 22:26866
reactions (p,d) with boron-11 at 34 MeV, deuteron angular distributions and spectra for, (E), 22:18135
reactions (p,d) with calcium-40 and silicon-28 at 30.5 MeV, DWBA analysis of polarization analyzing powers and differential cross sections for, (E), 22:48489
reactions (p,d) with calcium-40, -42, -44, and -48 at 20 MeV, spectroscopic factors for, (E), 22:35268
reactions (p,d) with calcium-42 and calcium-44 at 26.5 MeV, differential cross sections for, (E), 22:29972
reactions (p,d) with calcium-44 and -47 at 17.5 MeV, differential cross sections and spectra for, (E), 22:3647 (PUC-937-168)
reactions (p,d) with carbon-12, helium-4, lead, lithium-6, and oxygen-16 at 1 GeV, Feynman-diagram calculation of deuteron momentum spectra from, 22:39572
reactions (p,d) with carbon-12, spectroscopic factors for, (T), 22:20767
reactions (p,d) with cerium-140, lead-206, and lead-208 at 55 MeV, angular distributions and spectra for, (E), 22:27146
reactions (p,d) with helium-3 at 46 MeV, angular and energy distributions for, (E), 22:26810
reactions (p,d) with helium-3 at 46 MeV, angular distribution and deuteron energy spectra for, (E), 22:13927(R) (USC-136-132)
reactions (p,d) with iron-56 at 18.5 MeV, effect of

deuteron d-state on J-dependence in, (T), 22:27367
reactions (p,d) with lead-208 at 14 to 16 MeV, cross section for, (E), 22:18234
reactions (p,d) with lead-208 at 20 and 22 MeV, angular distributions for, (E), 22:27206
reactions (p,d) with magnesium-24 at 27 MeV, deuteron angular distributions and spectra for, (E), 22:9800(R) (COO-535-571)
reactions (p,d) with magnesium-25 at 15 MeV, testing time reversal invariance by, (E), 22:13979
reactions (p,d) with nickel-58, configuration mixing effects in, (T), 22:32726
reactions (p,d) with nickel-58, form factors for, (T), 22:27268
reactions (p,d) with niobium-93 at 55 MeV, isobaric analog resonances in, (E), 22:29993
reactions (p,d) with silicon-28 at 27.6 MeV, angular distributions of differential cross sections for, (E), 22:9800(R) (COO-535-571)
reactions (p,d) with silicon-28 at 28 MeV, cross-section angular distributions and deuteron spectra for, (E/T), 22:9812
reactions (p,d) with sodium-23 at 26.6 MeV, deuteron angular distributions and spectra for, (E), 22:9800(R) (COO-535-571)
reactions (p,d) with tin-112, -114, -116, -118, -120, -122, and -124 at 30 MeV, angular distributions and spectra for, (E), 22:20627
reactions (p,d) with tin-117 and -118 at 55 MeV, deuteron energy spectra and angular distributions from, (E), 22:30009
reactions (p,d) with tin-117, tin-118, and tin-119 at 55 MeV, angular distributions for, (E), 22:27144
reactions (p,d) with titanium-46 at 26.0 MeV, angular distributions for, (E/T), 22:26965
reactions (p,d) with yttrium-89, angular distributions and coincidence spectra from, (E), 22:35292 (ORNL-4217, pp 1-81)
reactions (p,d) with zinc-67 at 55 MeV, angular distributions and spectra for, (E), 22:26986
reactions (p,d) with zirconium-90 at 55 MeV, angular distributions for, (E), 22:50572
reactions (p,d) with zirconium-90 at 61 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
reactions (p,d) with zirconium-90, zirconium-91, and zirconium-92 at 31 MeV, deuteron spectra and angular distributions for, (E), 22:44732
reactions (p,d) with zirconium-91 at 11 to 13 MeV, charge exchange in, (E), 22:20610
reactions (p,d) with zirconium-96 differential cross sections for, (E), 22:1679
reactions (p,dp) with carbon-12, helium-4, lead, lithium-6, and oxygen-16 at 1 GeV, (E), 22:26831 (BNL-12344)
reactions (p,f) with bismuth and uranium at 450 (MeV), recoil properties of isomeric muclei from, (E), 22:12338(R) (COO-1167-3)
reactions (p,f) with bismuth-209 and uranium-238 at 3 GeV/c, fission-fragment angular correlations and kinetic energies from, (E), 22:14513 (BNL-50057, pp 60-78)
reactions (p,f) with bismuth-209 at 2.2 GeV, fission-product angular distributions and ranges from, (E), 22:14513 (BNL-50057, pp 60-78)
reactions (p,f) with bismuth-209, gold-197, and uranium-238 at 0.6 to 29 GeV, excitation functions for, (E), 22:14513 (BNL-50057, pp 60-78)
reactions (p,f) with bismuth-209, thorium-232, and uranium-238 at 156 MeV, delayed neutron emission in, (E), 22:9877
reactions (p,f) with bromine and silver at 20 GeV/c, fragment range and velocity in, (E), 22:53162
reactions (p,f) with heavy nuclei at 1 to 9 GeV, cross sections for, (E), 22:46804
reactions (p,f) with lead-208 and uranium-238 at 12 GeV, charge distribution and recoil properties in, (E), 22:37338(R) (COO-1505-26)
reactions (p,f) with neptunium-237, thorium-232, uranium-235, and uranium-238, α emission in, (E), 22:3720
reactions (p,f) with radium-226 at 13 MeV, neutron emission and fission-fragment energy and mass distributions in, (E), 22:44738
reactions (p,f) with radium-226 at 6 to 13 MeV, fission-fragment angular and mass distributions in, (E), 22:44739
reactions (p,f) with tantalum-181 and uranium-238 at 156 MeV, cross sections and fission-fragment angular and energy distributions for, (E), 22:9900
reactions (p,f) with thorium and uranium at 10.5 GeV, cross sections for production of cesium isotopes and rubidium isotopes by, (E), 22:24879
reactions (p,f) with thorium and uranium at 47 MeV, 22:27836
reactions (p,f) with thorium at 35 MeV, creep during, 22:15228
reactions (p,f) with thorium-232 at 9.5 and 11.3 MeV, nuclear charge distribution in, (E), 22:22588 (ORO-1797-11, pp 114-64)
reactions (p,f) with uranium at 14 GeV, use of semiconductor detectors for study of, 22:49104
reactions (p,f) with uranium at 450 MeV, fission-product recoil properties in, (E), 22:12338(R) (COO-1167-3)
reactions (p,f) with uranium at 5.5 GeV, carbon-17 production in, (E), 22:50542
reactions (p,f) with uranium-233 at 13 MeV, neutron emission in, (E), 22:35293(R) (ORNL-4230)
reactions (p,f) with uranium-233 at 8.5 and 13 MeV, dependence of prompt neutron emission on fragment energy and mass distributions in, (E), 22:50601 (ORNL-TM-2272)
reactions (p,f) with uranium-233, uranium-235, and uranium-238 at 7 to 13 MeV, fission-fragment energy-mass correlations in, (E), 22:35293(R) (ORNL-4230)
reactions (p,f) with uranium-235 at 10 MeV, insomeric cross-section ratio for niobium-95 from, (E), 22:18218
reactions (p,f) with uranium-238 at 0.45 and 12 GeV, energy dependence of recoil properties of fission products in, (E), 22:37338(R) (COO-1505-26)
reactions (p,f) with uranium-238 at 12 MeV in uranium dioxide single crystal, lifetime of compound nucleus in, (E), 22:35308
reactions (p,f) with uranium-238 at 12 MeV, dependence of prompt neutron emission on fragment energy and mass distributions in, (E), 22:50601 (ORNL-TM-2272)
reactions (p,f) with uranium-238 at 12 MeV, prompt-neutron emission in, (E), 22:37369
reactions (p,f) with uranium-238 at 150 MeV, production of short-lived cesium and rubidium isotopes by, (E), 22:30033
reactions (p,f) with uranium-238 at 2.2 GeV, angular distributions and differential range curves for products of, (E), 22:53198
reactions (p,f) with uranium-238 at 450 MeV, charge distribution in symmetric, (E), 22:48537
reactions (p,f) with uranium-238 at 450 MeV, recoil studies of symmetric, (E), 22:48536
reactions (p,γ) and (p,α) with chlorine-37 at 0.9 to 2 MeV, argon-38 analog levels from, (E), 22:15967
reactions (p,γ) and (p,n) with cerium-142, excitation functions for, (E/T), 22:11973
reactions (p,γ) and (p,n) with cobalt-59 and vanadium-51, isobaric analog resonances in, (E), 22:37315 (KFK-704)
reactions (p,γ) and (p,n) with tritons, use of Feynman diagrams to determine position of resonances in, (T), 22:18337
reactions (p,γ) and (p,n) with vanadium-51, isobaric analog resonances in, (E), 22:27052
reactions (p,γ) and (p,nγ) with calcium-48 at 1.94 to 2.00 MeV, isobaric analog resonances in, (E), 22:27042
reactions (p,γ) with aluminum-27 and sodium-23, resonances in, (E), 22:9844
reactions (p,γ) with aluminum-27 at 1 to 4 MeV, resonance γ spectra from, (E), 22:44662
reactions (p,γ) with aluminum-27 at 612 keV, resonance widths in, (E), 22:41994
reactions (p,γ) with aluminum-27 in giant resonance region, angular distributions for, (E/T), 22:11945(R) (ANL-7384)
reactions (p,γ) with aluminum-27, γ angular distributions and yields in, (E), 22:5897
reactions (p,γ) with aluminum-27, γ Doppler shifts in, (E), 22:18123(R) (RLO-1925-11)
reactions (p,γ) with aluminum-27, γ spectra from resonance, (E), 22:37281(R) (NYO-72-191)
reactions (p,γ) with aluminum-27, large-volume coaxial lithium-drifted germanium detector for measuring gamma spectrum from, 22:19138
reactions (p,γ) with aluminum-27, resonance absorption of 12.33-MeV γ ray from, (E), 22:27074
reactions (p,γ) with beryllium-7, cross sections for, (E), 22:44625
reactions (p,γ) with boron-10, carbon-11 energy levels from, (E), 22:9783
reactions (p,γ) with boron-11 at 13 to 22 MeV, differential cross sections and γ angular distributions for, (E), 22:26871
reactions (p,γ) with boron-11, giant dipole resonances in, (T), 22:20473
reactions (p,γ) with calcium-40 at 0.6 to 5.2 MeV, resonances in, (E), 22:29967
reactions (p,γ) with calcium-44, γ angular distributions for, (E), 22:18186
reactions (p,γ) with calcium-48, γ spectra for, (E), 22:35267
reactions (p,γ) with carbon-12 at 1.4 to 1.9 MeV, cross sections for, (E), 22:24832
reactions (p,γ) with carbon-12 at 14.2 MeV, γ angular distributions and spectra for, (E), 22:26841
reactions (p,γ) with carbon-12, fluorine-19, oxygen-16, and sodium-23, resonances in, (E), 22:26989
reactions (p,γ) with carbon-13 at 1.75 MeV, measure of beam energy spread of Van de Graaff accelerator using, 22:18060
reactions (p,γ) with carbon-13 at 1012-keV resonance, γ spectra from, (E), 22:32513(R) (ANU-P-400)
reactions (p,γ) with carbon-13, lithium-7, and nitrogen-15, giant resonances in, (E), 22:26914
reactions (p,γ) with carbon-14 and nitrogen-14, resonances in, (T), 22:20451 (JINR-P4-3674)
reactions (p,γ) with carbon-14 and nitrogen-14, resonances in, (T), 22:41948(T) (BNL-tr-218)
reactions (p,γ) with carbon-14 at 0.6 to 2.7 MeV, resonances in, (E), 22:44621

reactions (p,γ) with cerium-140 at 9.75 MeV, isobaric analog resonances in, (E), 22:42092
reactions (p,γ) with cerium-142, lead-208, and tellurium-130, cross sections for, (T), 22:42132
reactions (p,γ) with chlorine-35 at 4 to 12 MeV in giant resonance region, γ angular distributions for, (E), 22:5809(R) (ANL-7354)
reactions (p,γ) with chlorine-35 at 4 to 12 MeV, giant dipole resonance in, (E), 22:27078
reactions (p,γ) with chlorine-35 at 4 to 12 MeV, γ angular distributions and yields for, (E), 22:11945(R) (ANL-7384)
reactions (p,γ) with chromium-50 at 1.05 to 1.97 MeV, γ spectra and Q-value for, (E), 22:18184
reactions (p,γ) with chromium-50, γ angular distributions for, (E), 22:18185
reactions (p,γ) with chromium-52 at 1.36 to 2.26 MeV, γ spectra and yields from, (E), 22:5788 (NP-17149)
reactions (p,γ) with deuterium at 2 to 12 MeV, differential cross sections for, (E), 22:9772
reactions (p,γ) with deuterium at low energy, cross-section calculations using direct two-body model, (T), 22:26830
reactions (p,γ) with deuterium, effect of deuteron-proton interaction on, (T), 22:20444
reactions (p,γ) with deuterium, radiative transitions in, (T), 22:26793
reactions (p,γ) with deuterium, S-wave cross sections for, 22:9047
reactions (p,γ) with fluorine-19, description of intermediate-structure resonances using shell model with Feshbach formalism, (T), 22:3616
reactions (p,γ) with iron-54 at 1 to 2 MeV, resonance positions and γ spectra for, (E), 22:48494
reactions (p,γ) with iron-54 at 1.07 to 2.03 MeV, γ angular distributions and spectra for, (E), 22:18183
reactions (p,γ) with lead-208, calculation including spin-orbit interaction, (T), 22:9977
reactions (p,γ) with lithium-7 at 0.44 to 2.45 MeV, differential cross sections for, (E), 22:41967
reactions (p,γ) with lithium-7 at 1.4 to 2.5 MeV, γ angular distributions and yields for, (E), 22:29932
reactions (p,γ) with magnesium-24 and neon-22, resonances in, (E), 22:26932(R) (NP-17434)
reactions (p,γ) with magnesium-24 and silicon-28, isobaric analog resonance in, (E), 22:53149
reactions (p,γ) with magnesium-24 at 1200 and 1823 keV, resonance widths in, (E), 22:41994
reactions (p,γ) with magnesium-24 at 6 MeV, isobaric analog resonances in, (E), 22:5809(R) (ANL-7354)
reactions (p,γ) with magnesium-24, isobaric analog resonances in, (E), 22:26991
reactions (p,γ) with magnesium-24, yield curves for, (E), 22:11945(R) (ANL-7384)
reactions (p,γ) with magnesium-25 at 0.9 to 1.3 MeV, γ Doppler-shift attenuation in, (E), 22:11944(R) (AECL-2780)
reactions (p,γ) with magnesium-26 and silicon-30, resonances in, (E), 22:11948(R) (NP-17216)
reactions (p,γ) with magnesium-26 at 0.66 to 1.05 MeV, γ spectra and resonance spins for, (E), 22:32513(R) (ANU-P-400)
reactions (p,γ) with magnesium-26 at 1.785 and 1.965 MeV, resonances in, (E), 22:39621
reactions (p,γ) with magnesium-26 at 2.174 MeV, resonance in, (E), 22:44643
reactions (p,γ) with magnesium-26 at 2.29 MeV, p-γ-γ correlations for, (E), 22:13965
reactions (p,γ) with magnesium-26 at 2322 keV, aluminum-27 energy levels from, (E), 22:9804
reactions (p,γ) with magnesium-26 at 338 and 1733 keV, aluminum-27 energy levels from, (E), 22:15967
reactions (p,γ) with neon-20 at 0.98 to 2.2 MeV, γ spectra from, (E), 22:35293(R) (ORNL-4230)
reactions (p,γ) with neon-20 at 0.98 to 2.2 MeV, γ spectra from, (E), 22:42019(R) (MLM-1494)
reactions (p,γ) with neon-22 at 1 to 2 MeV, resonances in, (E), 22:11948(R) (NP-17216)
reactions (p,γ) with nickel-58 and nickel-62 at 1.10 to 1.85 MeV, γ triple correlations and Q-values for, (E), 22:27034
reactions (p,γ) with nitrogen-14 at 0.97 to 1.96 MeV, gamma spectra from, (E), 22:11916
reactions (p,γ) with nitrogen-14 at 2 to 3 MeV, γ spectra from, (E), 22:32513(R) (ANU-P-400)
reactions (p,γ) with nitrogen-15 at 0.4 to 1.9 MeV, gamma coincidence spectra from, (E), 22:32507
reactions (p,γ) with nitrogen-15 at 1.16 MeV, γ--γ coincidence spectra for, (E), 22:50532
reactions (p,γ) with oxygen-16 at 0.15 to 2.5 MeV, cross-section calculations using direct two-body model, (T), 22:26830
reactions (p,γ) with potassium-39 at 0.5 to 2.9 MeV, γ angular correlations and spectra from, (E), 22:22559 (NP-17384)
reactions (p,γ) with potassium-39 at 1.24 to 1.58 MeV, γ spectra from, (E), 22:18123(R) (RLO-1925-11)
reactions (p,γ) with potassium-39 at 2.9 to 6.0 MeV, excitation function for, (E), 22:39617
reactions (p,γ) with potassium-39, resonances in, (E), 22:11948(R) (NP-17216)
reactions (p,γ) with scandium-45 at 1377 and 1660 keV, resonances in, (E), 22:44670
reactions (p,γ) with silicon-29 and -30, resonances in, (E), 22:11948(R) (NP-17216)
reactions (p,γ) with silicon-29 at 0.5 to 1.5 MeV, resonances in, (E), 22:32513(R) (ANU-P-400)
reactions (p,γ) with silicon-29 at 1.47 to 1.85 MeV, γ decay of resonances in, (E), 22:29951
reactions (p,γ) with silicon-30 at 0.5 to 2.2 MeV, phosphorus-31 energy levels and transitions from, (E), 22:9823
reactions (p,γ) with silicon-30 at 2 to 3 MeV, γ angula correlations and spectra in, (E), 22:27028
reactions (p,γ) with silicon-30 at 2 to 4 MeV, resonanc widths for, (E), 22:26932(R) (NP-17434)
reactions (p,γ) with sodium-23 at 4 to 12.4 MeV, cross sections for, (E), 22:46741
reactions (p,γ) with sodium-23 at 4 to 13 MeV, in giant resonance region, (E), 22:5809(R) (ANL-7354)
reactions (p,γ) with sulfur-32 at 0.475 to 3.215 MeV, γ angular distributions and spectra for, (E), 22:32514(R) (COO-1120-71)
reactions (p,γ) with sulfur-32 at 1.74 to 1.77 MeV, γ spectra for, (E), 22:11950(R) (ORO-3624-1)
reactions (p,γ) with sulfur-32 at 1.754 MeV, resonance in, (E), 22:22560(R) (ORO-1067-2)
reactions (p,γ) with sulfur-32 near 1754 keV, resonance in, (E), 22:20578 (WASH-1079)
reactions (p,γ) with sulfur-34 and sulfur-36, γ angular correlations and spectra from, (E), 22:26994
reactions (p,γ) with sulfur-34 at 1.0, 1.2, and 1.5 MeV, angular distributions, triple angular correlations, an polarization in, (E), 22:9829
reactions (p,γ) with sulfur-34 at 1.2 to 2.0 MeV, isobaric analog resonances in, (E), 22:26940
reactions (p,γ) with sulfur-34, angular distributions, triple correlations, and polarization in, (E), 22:983
reactions (p,γ) with sulfur-36 at 0.80 to 1.94 MeV, resonance parameters and Q-values for, (E), 22:29963
reactions (p,γ) with sulfur-36 at 2.05 to 2.30 MeV, excitation function for, (E), 22:39618
reactions (p,γ) with sulfur-36, chlorine-37 energy level from, (E), 22:9807
reactions (p,γ) with titanium-46, γ spectra and Q-value for, (E), 22:20514
reactions (p,γ) with titanium-48 at 1.0 to 1.4 MeV, γ spectra for, (E), 22:20502
reactions (p,γ) with titanium-48 at 1.0 to 1.4 MeV, γ spectra from isobaric analog resonances in, (E), 22:44631
reactions (p,γ) with titanium-48 at 1.3 to 2.3 MeV, resonances in, (E), 22:41991
reactions (p,γ) with yttrium-89 at 4 to 18 MeV, differential cross section for, (E), 22:7685
reactions (p,γ) with zirconium-90 at 7 MeV, γ decay of isobaric analog resonance in, (E), 22:53186
reactions (p,γ)^{3}He with deuterium, cross sections for, 22:5140
reactions (p,γ)2α with lithium-7 at 0.4 5o 1.4 MeV, cross sections and branching ratios for, (E), 22:50535
reactions (p,γα) with lithium-7 at 441-keV resonance, triple correlations in, (E), 22:32513(R) (ANU-P-400)
reactions (p,He-3) and (p,t) with carbon-13 at 44 and 50 MeV, differential cross sections and spectra for, (E), 22:1599 (UCRL-17790)
reactions (p,He-3) and (p,t) with nitrogen-15 at 44 MeV, differential cross sections and spectra for, (E), 22:1599 (UCRL-17790)
reactions (p,He-3) with aluminum-27, carbon-12, fluorine-19, magnesium-25, nitrogen-14, and oxygen-16 at 40 MeV, diffraction-model analysis of, (T), 22:20728
reactions (p,He-3) with boron-11, carbon-12, and oxygen-16 at 185 MeV, angular distributions for, (E), 22:37628 (ISS-68/1)
reactions (p,He-3) with carbon-12, angular distributions for, (T), 22:42131
reactions (p,He-3) with fluorine-19, angular distributions of differential cross sections for, (E), 22:26908
reactions (p,He-3) with lithium-6 at 0.4 to 3.2 MeV using polarized beams, polarization analyzing power for, (E), 22:48462
reactions (p,He-3) with lithium-7, coincidence spectra for, (E), 22:13930
reactions (p,He-3) with potassium-39 at 45 MeV, argon-37 mass and energy levels from, (E), 22:20555
reactions (p,n) and (p,2n) with cadmium, chromium, molybdenum, scandium, and tungsten at 8 to 14 MeV, cross sections for, (E), 22:5843
reactions (p,n) and (p,2n) with erbium, tantalum, terbium, and ytterbium isotopes at 17.5 MeV, production of isomers by, (E), 22:1676
reactions (p,n) and (p,γ) with manganese-55 at 1.30 to 1.85 MeV, isobaric analog resonances in, (E), 22:18191
reactions (p,n) and (p,pxn) with iodine-127 up to 80 MeV, mechanisms and cross sections for, (E), 22:53212
reactions (p,n) with argon-40 from threshold to 5 MeV, excitation functions for, (E), 22:44667
reactions (p,n) with arsenic-75, bromine-79, bromine-80, copper-65, germanium-74, germanium-76, selenium-80, and zinc-70, isobaric analog resonances in, (E), 22:20578 (WASH-1079)

reactions (p,n) with beryllium-9 at 2.0 to 2.1 MeV, anomaly near threshold for, (E), 22:39582
reactions (p,n) with boron, carbon, and nitrogen isotopes at 180 MeV, mechanism of single-charge exchange in, 22:39599
reactions (p,n) with boron-11 at 150 MeV to 3 GeV, cross sections for, (E), 22:21356 (CEA-R-3376)
reactions (p,n) with boron-11, carbon-13, nitrogen-14, and oxygen-18 from fast neutron reactions, average cross sections for, (E), 22:26932(R) (NP-17434)
reactions (p,n) with bromine-79 at 6 MeV, γ spectra from, (E), 22:13958
reactions (p,n) with cadmium-110, cadmium-111, cadmium-113, selenium-77, tellurium-123, tellurium-125, tin-115, tin-116, and zinc-67 at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)
reactions (p,n) with calcium-43, -44, and -48 at 4.0 to 5.5 MeV, angular distributions and time-of-flight spectra for, (E), 22:11948(R) (NP-17216)
reactions (p,n) with calcium-43, calcium-44, and calcium-48, activation cross sections for, (E), 22:26932(R) (NP-17434)
reactions (p,n) with calcium-48 at 4.5 and 5.5 MeV, neutron spectra and Q-value for, (E), 22:41984
reactions (p,n) with calcium-48 at 5.5 MeV, γ spectra and yields for, (E), 22:26996
reactions (p,n) with calcium-48 at threshold to 3 MeV, γ angular correlations and spectra for, (E), 22:26997
reactions (p,n) with calcium-48, scandium-48 energy levels from, (E), 22:5817(R) (NYO-GEN-72-28)
reactions (p,n) with carbon-12 and oxygen-17, DWBA analysis with two-body tensor forces and central forces, (T), 22:50560(R) (RLO-1062-681)
reactions (p,n) with carbon-12 at 18.9 to 50 MeV, resonances in, (E), 22:15963
reactions (p,n) with chlorine-35, threshold energy for, (E), 22:50562
reactions (p,n) with chromium-53, cobalt-59, copper-63, nickel-61, and nickel-62 at 6.8, neutron angular distributions and spectra from, (E), 22:1632
reactions (p,n) with cobalt-59 at 3.1 to 5.2 MeV, gamma angular distributions from, (E), 22:32549
reactions (p,n) with copper-63 and copper-65 at 6 to 12 MeV, cross sections for, (E), 22:39586
reactions (p,n) with copper-63 and zinc-68, γ angular distributions from, (E), 22:18187
reactions (p,n) with copper-63 at 3.1 to 5.2 MeV, gamma angular distributions from, (E), 22:32549
reactions (p,n) with copper-63, copper-65, iron-56, titanium-47, titanium-49, and zinc-68, conversion-electron and γ spectra from, (E), 22:11935
reactions (p,n) with deuterium at 20 MeV, n-n scattering length from, (E), 22:50526
reactions (p,n) with deuterium at 30 to 150 MeV, polarization transfer in, (T), 22:22544
reactions (p,n) with deuterium at 45.5 MeV, angular distribution for, (E), 22:41941
reactions (p,n) with deuterium at 46 MeV, differential cross section and neutron spectra for, (E), 22:26807
reactions (p,n) with deuterium, mechanism of, (T), 22:5760
reactions (p,n) with fluorine-19 at 4.23 to 6.01 MeV, absolute total cross section for, (E), 22:41956
reactions (p,n) with fluorine-19 at 6.8 MeV, neutron angular distributions from, (E), 22:1632
reactions (p,n) with iodine-127 at 9 to 12 MeV, production of xenon-127 by, (E), 22:30028
reactions (p,n) with light and medium-weight nuclei, effective two-body force from DWBA analysis of,(T), 22:27363
reactions (p,n) with lithium-6 at 8 to 18 MeV, angular distributions for, (E), 22:41964
reactions (p,n) with lithium-7 at 2.0 to 2.6 MeV, neutron spectra for, (T), 22:18123(R) (RLO-1925-11)
reactions (p,n) with lithium-7 at 23 to 52 MeV, cross section and γ spectra for, (E/T), 22:3622
reactions (p,n) with lithium-7 at 8.3 to 9.1 MeV, neutron spectra from, (E), 22:37347
reactions (p,n) with lithium-7 at threshold to 2.36 MeV, neutron angular distributions for, (E), 22:20458
reactions (p,n) with lithium-7, integrated cross section for, 22:32959 (ANL-7310, pp 1-30)
reactions (p,n) with lithium-7, neutron production by, (E/T), 22:5752
reactions (p,n) with magnesium-26 at 3.8 to 8.3 MeV, (E), 22:35262
reactions (p,n) with manganese-55 at 1.8 to 3.5 MeV, γ angular distributions from, (E), 22:24835(R) (BARC-305)
reactions (p,n) with manganese-55 at 2.4, 3.0, and 3.5 MeV, γ and n-γ coincidence spectra from, (E), 22:32553
reactions (p,n) with nickel-58 at 9.5 to 10.6 MeV, double analog resonances in, (E), 22:35282
reactions (p,n) with niobium-93 at 4.6 to 5.3 MeV, molybdenum-93 energy levels from, (E), 22:27118
reactions (p,n) with nitrogen-14, threshold energy and Q-value for, (E), 22:39597
reactions (p,n) with nitrogen-15, shell-model calculation of, (T), 22:29908
reactions (p,n) with nuclei at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
reactions (p,n) with nuclei at 94 MeV, isobaric analog states in, (E), 22:29952
reactions (p,n) with nuclei, with isobaric analog resonance excitation, (T), 22:7661(R) (NYO-3525-26)
reactions (p,n) with nuclei, with isobaric analog resonance excitation, spectroscopic factors for, (T), 22:20730
reactions (p,n) with oxygen-18 at 13 to 18 MeV, cross section for, (E), 22:30048(R) (PUC-937-307)
reactions (p,n) with oxygen-18 at threshold to 3.2 MeV, yield curve for, (E), 22:20578 (WASH-1079)
reactions (p,n) with oxygen-18 in water, from oxygen-16 (γ,p) reactions, (E), 22:5774
reactions (p,n) with rubidium-85 and rubidium-87 at 2.3 to 5.6 MeV, excitation functions for, (E), 22:18159
reactions (p,n) with rubidium-87 at 4.6 to 6.2 MeV, isobaric analog resonances in, (E), 22:15978
reactions (p,n) with scandium-45 at 2.9 to 5.3 MeV, fluctuations in integrated cross section for, (E), 22:32531
reactions (p,n) with selenium-78 at 4.4 to 5.7 MeV, isobaric analog resonances in, (E), 22:15978
reactions (p,n) with selenium-78, -80, and -82, isobaric analog resonances in, (E), 22:37327
reactions (p,n) with selenium-80 and selenium-82 at 2.5 to 6.0 MeV, excitation functions for, (E), 22:35275
reactions (p,n) with selenium-80 at 3.6 to 5.7 MeV, isobaric analog resonances in, (E), 22:15978
reactions (p,n) with selenium-82 at 4.1 to 5.8 MeV, isobaric analog resonances in, (E), 22:15978
reactions (p,n) with single crystals of vanadium-51 at 2 MeV, use for studying channeling effects, 22:18197
reactions (p,n) with tin-117 at 4.5 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
reactions (p,n) with tritium at 15.4 MeV, cross section for, (E), 22:26821
reactions (p,n) with tritium at 3 MeV, angular distributions for, (E), 22:18195
reactions (p,n) with tritium from threshold to 5 MeV, neutron production in, (T), 22:39554 (SC-RR-68-19)
reactions (p,n) with tritium, calculations of neutron production from, 22:32479 (BNL-50083, pp 179-91)
reactions (p,n) with tritium, neutron production by, (E/T), 22:5752
reactions (p,n) with vanadium-51 at 1.5 to 5.5 MeV, integrated cross section for, (E), 22:32533
reactions (p,n) with vanadium-51 at 1.56 to 5.53 MeV, excitation function for, (E), 22:24835(R) (BARC-305)
reactions (p,n) with vanadium-51 at low energies, analysis of fluctuations of neutron excitation function for, 22:46754
reactions (p,n) with vanadium-56 at 1.56 to 5.53 MeV, cross sections for, (E), 22:7569(R) (BARC-291)
reactions (p,n) with yttrium-89 at 3.6 to 5.8 MeV, cross sections for, (E), 22:7670
reactions (p,n) with zinc-64, -66, -67, -68, and -70 at 18 MeV, measurement of Coulomb displacement energies by, (E), 22:30048(R) (PUC-937-307)
reactions (p,n) with zinc-68 at 3.1 to 5.2 MeV, gamma angular distributions from, (E), 22:32549
reactions (p,n) with zinc-68 at 4.05 and 4.25 MeV, γ angular distributions for, (E), 22:26998
reactions (p,n) with zirconium-90, production of isomeric niobium-90 in, (E), 22:25664
reactions (p,n) with zirconium-92, isobaric analog resonances in, (T), 22:42133
reactions (p,nγ) with boron-11 at 7.8 MeV, angular correlations for, (E), 22:3606 (IFA-CRD-35)
reactions (p,nγ) with calcium-48 at 1.92 to 2.02 MeV, structure of scandium-49 ground-state isobaric analog resonance in, (E), 22:11920
reactions (p,nγ) with calcium-48, isobaric analog resonances in, (E), 22:9939
reactions (p,nγ) with calcium-48, scandium-48 energy level transitions from, 22:14831
reactions (p,nγ) with chromium-53 below 2.5 MeV, total yields and angular distributions of γ rays from, (E/T), 22:13967
reactions (p,nγ) with manganese-55 at 1.80 to 3.50 MeV, iron-55 energy levels from, (E), 22:1637
reactions (p,np) with tin-117, tin-119, zirconium-91, zirconium-92, and zirconium-94 at 12 to 16 MeV, (E), 22:27211
reactions (p,p) with nuclei at 19.7 MeV, phase-shift analysis for high-precision polarization data from, 22:3256
reactions (p,pα) and (p,2p) with carbon-12 at 57 MeV, spectra for, (E), 22:26900
reactions (p,pα) with beryllium-9 and carbon-12 at 55 MeV, angular correlation distributions and coincidence spectra for, (E), 22:26890
reactions (p,pd) with helium-3 at 45 MeV, charged-particle angular correlations and spectra for, (E/T), 22:13927(R) (USC-136-132)
reactions (p,pd) with lithium-6 at 9 MeV, coincidence spectra for, (E), 22:20477
reactions (p,pd) with nuclei at 1 GeV, short-range correlations in, (T), 22:20280
reactions (p,pd)α with lithium-6 at 9 and 10 MeV, two-particle coincidence spectra for, (E), 22:7652
reactions (p,p'γ), (p,p'n), and (p,np') with nickel-61 and tin-119 at 17 MeV, angular and energy correlations

for, (E), 22:42048
reactions (p,pHe-3) with lithium-6 at 156 MeV with quasi-elastic scattering, (E), 22:26850
reactions (p,pn) with carbon-12 at 385 MeV, cross section for, (E), 22:20463
reactions (p,pn) with carbon-12 at 40 to 150 MeV, recoil ranges from, (E), 22:37338(R) (COO-1505-26)
reactions (p,pn) with carbon-12 at 450 MeV, carbon-11 recoil energy distribution from, (E), 22:29917
reactions (p,pn) with carbon-12 at 660 MeV, angular distribution of recoil nuclei in, (E), 22:39255
reactions (p,pn) with carbon-12 at 660 MeV, angular distribution of recoil nuclei in, (E), 22:46715(T) (ANL-Trans-657)
reactions (p,pn) with carbon-12 at threshold to 85 MeV, recoil studies of, (E), 22:18151
reactions (p,pn) with copper-65 and gold-197 at 20 to 85 MeV, average recoil ranges in, (E), 22:53161
reactions (p,pn) with copper-65 at 0.4, 1.0, and 2.8 GeV, recoil angular distributions for, (E), 22:53145
reactions (p,pn) with deuterium at 6.5 to 11.5 MeV, spectra for, (E), 22:20578 (WASH-1079)
reactions (p,pn) with deuterium at 9 MeV, final-state interactions in, (E), 22:11903
reactions (p,pn) with deuterium at 9 MeV, final-state interactions in, (E), 22:20446
reactions (p,pn) with fluorine-19 at 660 MeV, fluorine-18 recoil angular distributions from, (E), 22:35244
reactions (p,pn) with fluorine-19 at 660 MeV, fluorine-18 recoil angular distributions from, (E), 22:53094(T) (ANL-Trans-656)
reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) with nickel-58 and zinc-64 at 370 MeV, cross sections for, (E/T), 22:18201
reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) with chromium-50, nickel-58, and zinc-64 at 370 MeV, cross sections and mechanisms of, (E/T), 22:20552
reactions (p,pπ^+) with aluminum-27 at 0.6 to 28 GeV, excitation function and integral recoil properties of, (E), 22:26951
reactions (p,pπ^+) with copper-65, cross sections for, (T), 22:9791
reactions (p,t) and (p,He-3) with carbon-13 and nitrogen-15, angular distributions for, (E), 22:53098
reactions (p,t) and (p,He-3) with carbon-13 at 43.7 and 50.5 MeV, angular distributions for, (E), 22:39639 (UCRL-17989, pp 43-99)
reactions (p,t) and (p,He-3) with carbon-13 at 50 MeV, cross-section analysis using Born approximation, (E/T), 22:13947
reactions (p,t) and (p,He-3) with nitrogen-15 at 43.7 MeV, carbon-13 and nitrogen-13 energy levels from, (E), 22:20494
reactions (p,t) and (p,He-3) with nitrogen-15 at 44 MeV, cross-section analysis using distorted-wave Born approximation, (E/T), 22:13947
reactions (p,t) and (p,He-3) with silicon-30 at 46 MeV, triton and helium-3 energy spectra for, (E), 22:50574
reactions (p,t) with A = 4 to 224 nuclei, tables of structure amplitudes for, (T), 22:53078 (UCRL-18268)
reactions (p,t) with calcium-40, calcium-42, calcium-48, nickel-58, nickel-60, nickel-62, and nickel-64 at 40 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666
reactions (p,t) with even calcium and nickel isotopes, cross sections for, (T), 22:27022
reactions (p,t) with even tin isotopes, calculations using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
reactions (p,t) with germanium-76, nickel-58, and zinc-70 at 40 MeV, triton spectra from, (E), 22:1598(R) (COO-1265-49)
reactions (p,t) with iron-56 at 18 MeV, angular distributions for, (E), 22:30048(R) (PUC-937-307)
reactions (p,t) with lead-207, shell-model calculations of angular distributions and relative cross sections for, (T), 22:32601
reactions (p,t) with lead-208 at 20 and 22 MeV, angular distributions for, (E), 22:27207
reactions (p,t) with lead-208 at 40 MeV, differential cross sections for, (E), 22:30002
reactions (p,t) with lithium-7, triton spectra from, (E), 22:13930
reactions (p,t) with magnesium-24 at 50 MeV, triton angular distributions from, (E), 22:9808
reactions (p,t) with nickel-58 at 50 MeV, angular distributions for, (E), 22:48483
reactions (p,t) with potassium-39 at 45 MeV, potassium-37 mass and energy levels from, (E), 22:20555
reactions (p,t) with samarium-150, -152, and -154 at 55 MeV, angular distributions and spectra for, (E), 22:27147
reactions (p,t) with samarium-150, samarium-152, and samarium-154 at 55 MeV, angular distributions for, (E), 22:48518 (JAERI-1158, pp 47-55)
reactions (p,t) with sodium-23 at 42 MeV, sodium-21 mass and energy levels from, (E), 22:20555
reactions (p,t) with tin-118 at 55 MeV, angular distributions for, (E), 22:27144
reactions (p,t) with tin-118 at 55 MeV, triton energy spectra and angular distributions from, (E), 22:30009
reactions (p,t) with tin-118, -120, -122, and -124 at 20 MeV, angular distributions for, (E), 22:27202
reactions (p,t) with tin-118, spectroscopic factors from Tamm--Dancoff calculations, (T), 22:27263
reactions (p,t) with zinc-68 at 55 MeV, angular distributions and spectra for, (E), 22:26986
reactions (p,x) with gold-197 at 11.5 GeV, cross sections and relative abundances for formation of alpha-emitting rare-earth nuclides by, (E), 22:30020
reactions (p,x) with various compounds, chemical state of carbon-11 recoils produced by, 22:10264(R) (ORO-3602-1)
reactions (p,xγ) with lithium-7, beryllium-9, boron-11, carbon, oxygen, magnesium, aluminum-22, and iron at 16 to 160 MeV, gamma spectra and production cross sections for, (E), 22:32494
reactions (p,xn) with bismuth at 60 to 150 MeV, production of light-weight polonium isotopes by, (E), 22:30032
reactions (p,xn) with iron-56, iron-57, and iron-58 at 370 MeV, cross sections for, (E), 22:48491
reactions (p,xn) with uranium-233 at 32 and 42 MeV, production of neptunium-230 and -229 in, (E), 22:32661
reactions (p,xpn) with silicon-28 at 150 MeV, production of sodium isotopes with A = 20 to 25 by, (E), 22:30033
reactions (p,xpyn) with aluminum-27, carbon-12, copper, and uranium at 50 to 400 MeV, cross sections for, (E/T), 22:41953
reactions (p,xpyn) with aluminum-27, carbon-12, copper-65, and uranium-238 at 50 to 400 MeV, cross-section calculations using cascade-evaporation model, (T), 22:26832 (ORNL-4105)
reactions in aluminum, glass, iron, lead, magnesium, polyethylene, silicon, silver, and stainless steel at 100 MeV, isotope formation cross sections for, (E), 22:31535
reactions in He-4, C-12, N-14, and O-16, cross sections for spallation, (T), 22:19733
reactions in meteorites, cross sections for, (E), 22:52307(R) (AD-665431)
reactions of high-energy, astrophysical implications of, (T), 22:29102
reactions with A = 11 to 27 nuclei at 156 MeV, cross sections for carbon-16, lithium-9, and nitrogen-17 production by, (E), 22:29918
reactions with alkali metals at 2 to 50 keV, cross sections for charge exchange in, (E), 22:21845 (NYO-2962-6, pp 63-9)
reactions with aluminum and copper crystals at 100 to 200 keV, channeling effects on characteristic radiations from, (E), 22:26474
reactions with aluminum crystals at 100 to 200 keV, channeling effects on K-shell excitation in, (E), 22:22201 (NYO-2962-6, pp 36-53)
reactions with aluminum, copper, and gold single crystals at 0.2 to 1.0 MeV, secondary electron emission in, (E), 22:5809(R) (ANL-7354)
reactions with aluminum, copper, and tungsten at 250 to 1560 keV, x-ray yields from, (E), 22:960
reactions with aluminum, lead, and oxygen at 0.75 to 2 GeV, intranuclear-cascade calculations for, (T), 22:7526 (ORNL-TM-1996)
reactions with aluminum, lead, and oxygen at 750 to 2000 MeV, analytic representation of nucleon and pion emission spectra from, 22:46459 (ORNL-TM-2277)
reactions with aluminum-27, beryllium-9, bismuth-209, carbon, cobalt-59, and water at 158 MeV, proton production in, (E), 22:18136
reactions with argon and nitrogen at 440 keV to 13.75 MeV, cross sections for electron capture and loss in, (E), 22:2816
reactions with argon near targets at 3 GeV, production of radioisotopes in, 22:22511
reactions with argon, excitation of 1300-A continuum in, (E), 22:50013
reactions with argon, helium, and neon at 2 to 120 keV, cross sections for production of excited hydrogen atoms in electron capture for, (E), 22:52514
reactions with argon, nitrogen, and oxygen atoms, Born estimates for electron capture from, 22:29263
reactions with atomic helium, polarization of light from, 22:50026
reactions with atomic hydrogen, bounds on transition probabilities and cross sections for, (T), 22:43928
reactions with atomic hydrogen, charge exchange in, (T), 22:15343
reactions with atoms, classical approximation for ionization in, 22:9058
reactions with atoms, polarization of characteristic x radiation from, 22:21896
reactions with barium and strontium at 730 MeV, krypton and xenon yields from spallation, (E), 22:13974
reactions with beryllium and iron at 30 GeV, metastable, mass = 3 to 7 GeV particle production from, (E), 22:13647
reactions with beryllium and sodium in tissue equivalent phantoms, 22:25961(R) (BNWL-531-2)
reactions with beryllium at 30 GeV, anti d production from, (E), 22:13647
reactions with beryllium, carbon, lithium, and oxygen at 660 MeV, helium-3 production by, (E), 22:13953
reactions with beryllium-9 and helium-4 at 660 MeV,

threshold detector study of angular distributions and number of nucleons from, (E), 22:11582

reactions with beryllium-9 at 2.7 to 4.0 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))

reactions with bromine and silver at 13.8 GeV/c in emulsions, particle production in, (E), 22:24531 (JEN-174-DF/I-52)

reactions with bromine and silver at 24 GeV in emulsions, models for analysis of fission-like disintegrations from, (E/T), 22:20126

reactions with bromine and silver at 25 GeV/c with emission of two $Z > 5$ particles, (E/T), 22:9850 (INR-P-827/VI/PH)

reactions with bromine and silver in nuclear emulsions at 1, 2, and 3 GeV, cross sections for, (E), 22:9837

reactions with bromine and silver in nuclear emulsions at 2.26, 9, and 19.5 GeV, production of fast helium nuclei in, (E), 22:22301

reactions with calcium-40 at 10 to 22 MeV, total cross section for, (E), 22:15953 (LA-3842)

reactions with carbon at 10 to 1000 GeV, effective cross sections for, (E), 22:22550

reactions with carbon at 16 to 28 MeV, total cross sections for, (E/T), 22:18152

reactions with carbon dioxide--helium mixtures at 43.7 MeV, frequency distribution of energy losses in, (E), 22:21890

reactions with carbon dioxides, nitrogen, oxygen, and water at 40 to 1500 eV, charge exchange cross sections for, 22:13234

reactions with carbon nuclei at 10^{10} to 10^{12} eV of cosmic, effective cross sections in, (E), 22:21928

reactions with carbon, nitrogen, and oxygen using recoil protons, average cross sections for, (E), 22:11910

reactions with carbon-12 and nitrogen-14 at 125 MeV in nuclear emulsions, isotope formation cross sections for, (E), 22:37301

reactions with carbon-12 and oxygen-16 at 70 to 200 MeV, cross sections for isotope production by spallation, (E), 22:7658

reactions with carbon-12 at 10 to 20 MeV, total cross section for, (E), 22:15953 (LA-3842)

reactions with carbon-12, deuterium, helium-4, and oxygen-16 at 1 GeV, total cross sections for, (E), 22:53088

reactions with carbon-12, nitrogen-14, and oxygen-16 at 125 MeV in nuclear emulsions, cross sections for, (E), 22:41976

reactions with cerium at 680 MeV, spallation, 22:42829

reactions with cesium and potassium vapor at 0.5 to 2 keV, charge exchange in, 22:7162

reactions with cesium, potassium, and rubidium at 2 to 30 keV, (E), 22:1011

reactions with cobalt-59, iron-54, iron-56, manganese-55, and nickel-58, isomeric cross-section ratios for production of iron-53 by, (E), 22:35265

reactions with complex nuclei at 17 and 24 GeV in emulsions, diffraction in, (E/T), 22:39262

reactions with concrete shielding at 660 MeV, neutron yield from, 22:34736

reactions with concrete shielding at 660 MeV, neutron back-scattering from, (E/T), 22:3149 (JINR-P16-3514)

reactions with copper and uranium at 8 GeV/c, Cherenkov counter study of K^- and π^- production and relative yields from, (E), 22:13653 (RPP/H-28)

reactions with copper and uranium at 8 GeV/c, K^- and π^- production in, (E), 22:22309

reactions with copper at 150 keV, K- and L-shell excitation in, 22:22201 (NYO-2962-6, pp 36-53)

reactions with copper at 30 GeV, anti p production from, (E), 22:13647

reactions with copper at 90 to 440 MeV, cross sections for, (E), 22:12338(R) (COO-1167-3)

reactions with copper, gold-197, silver, and uranium at 1, 2, and 3 GeV, cross sections for formation of neon-24 and sodium-24 in, (E), 22:42033

reactions with copper, graphite, and tantalum at 63 MeV in thick targets, neutron angular distribution, energy, and yield from, (E), 22:33822

reactions with copper, magnesium, titanium, and zirconium at 9.1 MeV, total cross sections for, (E), 22:26970

reactions with deuterium atoms below 100 MeV, electron capture from 1s level in, (T), 22:29262

reactions with emulsion nuclei at 21 and 24 GeV/c in strong magnetic fields, particle diffraction production in, (E), 22:7679

reactions with emulsion nuclei at 24 and 27 GeV/c, (E), 22:1687

reactions with emulsion nuclei at 25 GeV/c, diffractional production of mesons (π) in, (E), 22:22625

reactions with emulsion nuclei at 25 GeV/c, helium-8 production from, (E), 22:3255

reactions with erbium and tantalum at 660 MeV, production of dysprosium, europium, gadolinium, and terbium isotopes by, (E), 22:35354

reactions with excited muonic atom, effect of 2PPI muon orbital in, (T), 22:41361

reactions with gases at .25 to 4.5 MeV, electron capture cross sections for, 22:11215

reactions with gases at 0.15 to 1.00 MeV, formation of excited states in, 22:5042(R) (ORO-2591-33)

reactions with gases at 100 to 2500 keV, charge-transfer cross sections for, (E), 22:943 (ORNL-TM-1988)

reactions with gases at 20 keV to 100 MeV, cross sections for electron capture in, (T), 22:43943

reactions with gases at 5 to 120 keV, electron capture cross sections for 4s state of, 22:5089

reactions with gases, charge transfer cross sections for, 22:38794

reactions with germanium and silicon at 5 to 150 MeV, total cross sections for, (E/T), 22:13927(R) (USC-136-132)

reactions with gold at 660 MeV, production of iridium isotopes in, (E), 22:11954

reactions with gold below 50 keV, measurement of energy loss in, (E), 22:11544

reactions with gold-197 at 3 GeV, nitrogen-19 and oxygen-21 production by, (E), 22:53169(R) (PPAD-647-D)

reactions with gold-197, lead, silver, tantalum, and uranium at high energy, cross sections for formation of beryllium-7, sodium-22, and sodium-24 in, (E), 22:42032

reactions with heavy nuclei at 24 GeV/c in emulsions, complete disintegration in, (E), 22:22298

reactions with heavy nuclei in emulsions at 9 GeV, production of π^+ and π^- (<11 MeV) in, (E), 22:1384

reactions with heavy nuclei in emulsions at 9 GeV, fast deuteron emission in, 22:7436

reactions with helium and neon atoms, charge exchange cross sections for, (T), 22:19795

reactions with helium at 0.1 to 1 MeV, polarization of 4^1D--2^1P transition in, 22:31632

reactions with helium at 0.1 to 1.0 MeV, cross sections for excitation of helium 4^1S level in, (E), 22:9044

reactions with helium at 0.15 to 1.0 MeV, excitation cross sections for, 22:5086

reactions with helium at 0.15 to 1.0 MeV, excitation cross sections for, 22:5087

reactions with helium at 1 to 1000 keV, electron capture cross sections for, 22:9088

reactions with helium at 1 to 3 MeV, double ionization in, 22:13228

reactions with helium at 440 keV to 5.41 MeV, cross sections for electron capture and loss in, (E), 22:2816

reactions with helium atoms at high energies, Born approximation for energy level transitions from, 22:29255

reactions with helium atoms below 100 MeV, electron capture from $1s^2$ level in, (T), 22:29262

reactions with helium atoms, excitation cross sections for, (T), 22:29247

reactions with helium in upper atmosphere, (T), 22:44000

reactions with helium, calculation of first Born-approximation cross sections for excitation to n/sup 1/S states in, 22:47805

reactions with helium, excitation by, 22:41328

reactions with helium, excitation in distortion approximation, 22:49995

reactions with helium, first Born approximation cross sections for excitation in, 22:21897

reactions with helium, lithium, nitrogen, and oxygen, ionization cross sections for, (T), 22:17363

reactions with helium, nitric oxide, and nitrogen at 60 to 400 keV, cross sections for excitation in, 22:8997

reactions with helium, relativistic effects on excitation of triplet states in, 22:5074

reactions with helium, single-electron capture by slow, (T), 22:52484

reactions with helium-4 at 2.2 GeV, cross section for tritium production in, (E), 22:26829

reactions with human bone, 600 MeV, 22:51296 (CERN/HER/AP-2-68)

reactions with hydrogen and nitrogen molecules, optical emission from, (E/T), 22:13260

reactions with hydrogen and oxygen, cross sections for, (E), 22:19772

reactions with hydrogen at 1 to 500 keV, impulse approximation for cross sections for excitation in, 22:43863

reactions with hydrogen at 440 keV to 2.45 MeV, cross sections for electron capture and loss in, (E), 22:2816

reactions with hydrogen atoms at high energy, cross section for resonant electron capture in, (T), 22:21853

reactions with hydrogen atoms, accuracy of second Born approximation for excitation of 1s → 2p and 1s → 2s transitions from, 22:29260

reactions with hydrogen atoms, application of simplified second Born approximation to excitation in, 22:24048

reactions with hydrogen atoms, closure approximation for excitation of 2s level from, 22:29261

reactions with hydrogen atoms, effect of apparatus geometry on charge-exchange cross sections of, (E), 22:29302

reactions with hydrogen atoms, impulse approximation cross sections for electron capture into excited states in, (T), 22:21854

reactions with hydrogen molecules, reaction rate determination from positive ion mobility measurements, 22:41376

reactions with hydrogen, charge exchange cross sections

for, 22:9427 (TID-24201)
reactions with hydrogen, charge exchange probability at large angles in, (T), 22:21852
reactions with hydrogen, charge-exchange cross sections for, (T), 22:17361
reactions with hydrogen, electron capture into metastable 2s state, 22:31608
reactions with hydrogen, excitation cross sections for, (T), 22:9019
reactions with indium and silver at 200 and 400 MeV, recoil ranges in spallation, (E), 22:14036
reactions with indium and silver at 200 and 400 MeV, cross sections for, (E), 22:14035
reactions with indium, molybdenum-100, tantalum, and uranium at 10.5 GeV, cross sections for production of sodium isotopes by, (E), 22:24864
reactions with interstellar gases, helium production in, (E/T), 22:11267
reactions with ionized lithium, electron capture cross sections for, (T), 22:11210
reactions with iron at 1 and 3 GeV, Monte Carlo calculations of nucleon--meson cascade in, 22:46463
reactions with iron at 1.0 and 3.0 GeV, Monte Carlo calculation of nucleon--meson cascades from, 22:32172
reactions with iron at 100 GeV, cloud chamber study of, (E), 22:24545
reactions with iron, nuclide production by, 22:789 (NYO-844-72)
reactions with krypton at 70 to 200 eV, differential cross sections for nonresonant charge transfer in, (E), 22:1010
reactions with lead at 3 GeV, spallation, (E), 22:30031
reactions with lead-208, uranium-233, uranium-235, and uranium-238 at 12 GeV, sodium-24 production cross sections for, (E), 22:9875
reactions with light-weight nuclei at 156 MeV, cross sections for production of lithium-9, carbon-16, and nitrogen-17 by, (E), 22:29912
reactions with lithium and sodium, calculation of cross sections for charge exchange in, 22:49985 (NP-17621)
reactions with lithium at 22 MeV, angular distribution, energy, and yield from, 22:20387
reactions with lithium at 97 to 203 keV, alpha yields from, (E), 22:29931
reactions with low- and medium-Z elements at 16 to 160 MeV, gamma spectra from, (E), 22:5763 (ORNL-4183)
reactions with magnesium vapor, charge-exchange cross sections for, 22:31597 (ORNL-4238, pp 105-15)
reactions with matter, energy straggling distributions in, 22:24765
reactions with matter, LET for, 22:10761 (MIT-952-4, pp 132-201)
reactions with medium and heavy elements at 10 MeV, production of short-lived isomers by, (E), 22:24874
reactions with mercury atoms, excitation of 6^1P_1 and 6^3P_1 levels from, (T), 22:29682
reactions with metal foils at 1 to 10 keV, effects of hydrogen on secondary electron emission from, 22:9043
reactions with molecular gases at 5 to 45 keV, fragmentation from, (E), 22:29267
reactions with molecular hydrogen ions, effect of vibrational excitation on dissociation in, (T), 22:9036
reactions with molecular hydrogen, cross sections for, (E), 22:5059
reactions with molecular hydrogen, emission spectra from, 22:9063
reactions with molecular hydrogen, vacuum ultraviolet emission from, (E), 22:31642
reactions with molecular nitrogen at 0.15 to 1.0 MeV, excitation cross sections for, 22:9064
reactions with molecular nitrogen, excitation spectra for, (E/T), 22:41310
reactions with molecules, energy distributions from, 22:25403
reactions with natural glasses, meteorites, and rocks, luminescence from, (E), 22:11113
reactions with neon at 150 to 250 keV, autoionization in, (E), 22:31640
reactions with neon at 28 GeV/c in neon--hydrogen bubble chamber, coherent production of $p\pi^+\pi^-$(1470) enhancement in, (E), 22:41729 (BNL-12674)
reactions with neutral atoms with outer 2P and 3P electrons Born approximation for ionization from, 22:29264
reactions with nickel nuclei in nuclear emulsions at 10 GeV, (E), 22:21976
reactions with nitrogen, electron capture, cross sections for Balmer-α radiation, polarization of 3d → 2p and 3p → 2s radiation measurements in 10- to 35-keV, (E), 22:41371
reactions with nitrogen, optical spectra from, 22:5071
reactions with nitrogen-14 at 6 to 12 MeV, angular distributions and integrated cross sections for, (E), 22:39586
reactions with nitrogen-14 at 6 to 9 MeV, charged-particle yields and angular distributions for, (E), 22:29924
reactions with nuclei above 10 TeV in atmosphere, singularities in π^0 production in, (E), 22:44323
reactions with nuclei at 1 GeV, excitation of low-lying states in, (T), 22:48626
reactions with nuclei at 1 GeV, magnetic spectrometer study of high-momentum deuteron production from, (E), 22:3257
reactions with nuclei at 1 GeV, small-angle elastic, (T), 22:48626
reactions with nuclei at 10, 16, 17, and 28 MeV, effects of $Z = 28$ shell closure on total cross sections for, (E/T), 22:13927(R) (USC-136-132)
reactions with nuclei at 20 GeV/c in emulsions, heavy short-range hyperfragment production from, (E), 22:5500
reactions with nuclei at 20 to 23 GeV in emulsions, diffraction production of particles in, (E), 22:44322
reactions with nuclei at 20.8 GeV/c in emulsions, distributions of transverse momenta of secondary particles in, (E), 22:32053
reactions with nuclei at 21 and 24 GeV in emulsions, resonance production in, (E), 22:44321
reactions with nuclei at 24 and 28 GeV in bubble chambers and emulsions, methods of primary energy determination for jet production from, (T), 22:20133
reactions with nuclei at 24 GeV/c in emulsions, double emission of $Z > 3$ fragments in, (E), 22:44326
reactions with nuclei at 25 GeV/c in emulsions, azimuthal angular distribution of secondary particles in diffractional generation in, (E), 22:32051
reactions with nuclei at 28 GeV in emulsions, along-the-track scanning method for total cross section for, (E), 22:29624
reactions with nuclei at 3 GeV/c at small angles in emulsions, computer test programs for, 22:20690
reactions with nuclei at 400 to 660 MeV, mean number of secondary neutrons evaporated from, (E), 22:20127
reactions with nuclei at 450 MeV, meson (π) production in, (T), 22:35388
reactions with nuclei at 63 MeV, angular distributions, energy, and yield of neutrons produced by, 22:6652 (ORNL-4168, pp 183-230)
reactions with nuclei at 660 MeV, kinematics of cascade, (T), 22:22629
reactions with nuclei at 9 GeV in emulsions, yield of slow π^- and π^+ from, (E), 22:39260
reactions with nuclei at high energies in emulsions, frequency distribution of heavy prongs from, (E), 22:7438
reactions with nuclei at high energies, Regge pole model for, 22:1450 (AD-648017)
reactions with nuclei below 28 GeV in emulsions, multiple production from, (E), 22:7439
reactions with nuclei in GeV range, excitation cross sections for energy-level transitions from, (T), 22:35412
reactions with nuclei of cosmic-ray composition, cross sections for, (T), 22:19810
reactions with organic and inorganic phosphors, energy losses in, 22:45290
reactions with oxygen and nitrogen at 30 keV to 40 MeV, electron capture cross sections for, 22:5075
reactions with oxygen at 0.15 to 1.0 MeV, cross sections for formation of excited molecular ions in, (E), 22:21898
reactions with oxygen at 100 keV, energy spectra of electrons from, (E), 22:26256
reactions with oxygen-16 at 19, 135, and 550 GeV, production of beryllium, boron, and lithium isotopes in, (E), 22:20495
reactions with oxygen-16 at 27, 34, 41, and 45 MeV, total cross section for, (E), 22:26838
reactions with paraffin phantoms, use of activation detectors for measuring absorbed doses and fluences from, 22:14865
reactions with plasma of magnetosphere, Pc1 pulsations as Cherenkov radiation from, (T), 22:24130
reactions with platinum at 2.8 GeV, production of mesons (K_2^0) and γ radiation from, (E), 22:34856
reactions with polycrystalline gold, sputtering, (E), 22:52500
reactions with potassium vapor at 2.5 to 22 keV, charge components and cross sections for charge exchange in, (E), 22:34283
reactions with potassium-41 at 1.8 to 2.2 MeV, resonances in, (E), 22:7680
reactions with rare gases, polarization of Lyman alpha radiation from charge exchange, (E), 22:15344
reactions with silicon at 0 to 60 MeV, excitation functions for, (E), 22:9803 (ORNL-TM-2060)
reactions with silicon at 1.0 to 200 MeV, stopping power and range tables for, 22:45284 (UCRL-17663(Rev.1))
reactions with silicon below 60 MeV, excitation functions for radioisotope production by, (E), 22:44665
reactions with silicon single crystals at 3 to 12 MeV, blocking effects in, (E), 22:44273
reactions with silicon surface barrier detectors, energy distributions in, (E/T), 22:22202 (NYO-2962-6, pp 55-62)
reactions with silicon, paramagnetic center production from, 22:9453
reactions with silver and thorium at 660 MeV, angular distribution and differential energy spectra of lithium-8 produced in, (E/T), 22:5855
reactions with silver and thorium at 660 MeV, lithium-8

angular and energy distributions from, (E), 22:27216
reactions with silver at 3 and 29 GeV, distribution of radionuclides produced by, (E), 22:16021
reactions with sodium iodide crystals at 10 MeV to 10 GeV, energy losses in, 22:45290
reactions with solids at 6.3 MeV, displaced atom and energy loss distributions in, (T), 22:39180
reactions with space-vehicle shielding, dosages from, (T), 22:22198
reactions with stilbene crystals at 10 MeV to 2 GeV, energy losses in, 22:45290
reactions with strontium and yttrium at 660 MeV, rubidium isotope production by, (E), 22:35283
reactions with synchrotron shielding materials, shielding requirement determination from Monte Carlo nucleon--meson cascade calculations of, 22:32379
reactions with thin films, thickness measurements by x-ray analysis of, 22:10616
reactions with titanium shielding at 660 MeV, secondary nucleon flux and dose from, (E), 22:31912
reactions with tungsten, upper limit for W production from, (E), 22:15664 (NEVIS-164)
reactions with uranium at 50 MeV, production of neptunium-235 and plutonium-239 by, 22:48871 (AERE-R-5790)
reactions with water, cross sections for elastic and charge-rearranging, 22:36745
reactions with xenon at 5 to 50 keV, cross sections for charge-change processes in, (E), 22:43884
reactions with Z = 12 to 92 nuclei at 400 MeV, sodium-22 and -24 production cross sections for, (E), 22:9816
recoil in $\pi^- + p \to p + n\pi$ interactions at 11 GeV/c in hydrogen bubble chamber, preliminary results for backward collimation in, (E), 22:39278 (CERN-68-7(Vol.2), pp 226-43)
relaxation times in aqueous solutions of lithium chloride, effects of lithium-6 and lithium-7 on, 22:4089
scattering by A = 24 to 92 nuclei at 20 MeV using polarized protons, asymmetry in inelastic, (E), 22:27010
scattering by A = 32 to 120 nuclei at 14.5 and 17.8 MeV, correlation of differential cross sections and polarizations for elastic, (E/T), 22:24900
scattering by aluminum, gold, and silver at 10 to 140 MeV, mean multiple scattering correction to energy loss for, 22:29804
scattering by aluminum-27 and silicon-28 at 55 MeV, angular distributions for inelastic, (E), 22:27016
scattering by aluminum-27 and sodium-23, γ yields for inelastic, (E), 22:11948(R) (NP-17216)
scattering by aluminum-27 at 1.3 to 1.5 MeV, differential cross section for elastic, (E), 22:11948(R) (NP-17216)
scattering by aluminum-27 at 4.3 to 5.8 MeV, excitation functions and γ-γ coincidence spectra for inelastic, (E), 22:53137
scattering by aluminum-27 at 4.5 and 6.0 MeV, γ Doppler-shift attenuation in inelastic, (E), 22:20510
scattering by aluminum-27 at 5.8 and 7.0 MeV, γ and proton spectra from inelastic, (E), 22:37314 (ANU-P-408)
scattering by aluminum-27 at 5.8 and 7.0 MeV, γ spectra from inelastic, (E), 22:44676
scattering by aluminum-27 at 55 MeV, angular and energy distributions for elastic and inelastic, (E), 22:27015
scattering by aluminum-27 at 6 MeV, angular distributions for elastic and inelastic, (E), 22:39615
scattering by aluminum-27 at 6.2 to 6.7 MeV, resonances in excitation functions for elastic and inelastic, (E), 22:13983
scattering by aluminum-27 at 6.4 MeV, fluctuation analysis of excitation function for inelastic, (E/T), 22:11923
scattering by aluminum-27, fluorine-19, magnesium-25, phosphorus-31, and sodium-23 at 17.5 MeV, inelastic, (E), 22:18140
scattering by aluminum-27, fluorine-19, magnesium-24, magnesium-25, magnesium-26, oxygen-16, phosphorus-32, silicon-28, and sulfur-32 at 17.5 MeV, inelastic, (E), 22:3609 (PUC-937-164)
scattering by argon, helium, and neon at small angles, relation between reduced scattering angle and impact parameter for, (T), 22:34280
scattering by argon-36 and argon-40 at 25 MeV, DWBA analysis of angular distributions for elastic and inelastic, (E), 22:48487
scattering by argon-40 and titanium-48, mechanism of, (E/T), 22:20550
scattering by argon-40 at 1.1 MeV, resonances in elastic, (E), 22:7677
scattering by argon-40 at 1.81 to 4.35 MeV, excitation functions for elastic and inelastic, (E), 22:44660
scattering by atomic hydrogen at 0.130 to 150 keV, resonant electron capture from, (E), 22:2815
scattering by atomic hydrogen, coupled-channel calculations for, 22:29256
scattering by barium isotopes and cerium isotopes using polarized beams, isobaric analog resonances in, (E), 22:42069
scattering by barium nitrates, magnesium lanthanum nitrates, magnesium oxides, and polyethylene, elastic and quasielastic, 22:37077
scattering by barium-130, -132, -134, -136, and -138 at 7 to 12 MeV, isobaric analog resonances in, (E), 22:5809(R) (ANL-7354)
scattering by barium-138 and cerium-140 at 9 to 12 MeV, polarization measurements near isobaric analog resonances in elastic, (E), 22:42039
scattering by barium-138, cerium-140, and neodymium-140 with isobaric analog resonance excitation, elastic, (T), 22:7690 (JINR-E2-3551)
scattering by beryllium-9 at 16 to 29 MeV, angular distributions for elastic and inelastic, (E/T), 22:29939
scattering by beryllium-9 at 2.0 to 2.1 MeV, resonances in elastic, (E), 22:39582
scattering by beryllium-9 at 7 to 11 MeV, polarizations and cross sections for elastic and inelastic, (E), 22:18155
scattering by beryllium-9 at 7.0, 8.5, and 10.0 MeV, optical-model analysis of elastic, (E/T), 22:11949(R) (ORO-2972-47)
scattering by beryllium-9, boron-10, and boron-11 at 5 to 19 MeV, optical-model analysis of elastic, (T), 22:48507(R) (ANL-7436)
scattering by beryllium-9, boron-10, lithium-6, and lithium-7 at 34 MeV, optical-model analysis of angular distributions for, (E), 22:35236
scattering by bismuth-209, carbon-12, and iron-54 at 60 MeV, differential cross sections for elastic and inelastic, (E), 22:41952 (ORNL-4274)
scattering by boron-10 at 5 to 12 MeV, angular distributions and integrated cross sections for inelastic, (E), 22:48507(R) (ANL-7436)
scattering by boron-10 at 7.8 MeV, proton-γ angular correlations in inelastic, (E), 22:32504
scattering by boron-11, lithium-6, lithium-7, and nitrogen-14 at 155 MeV, cross-section and polarization angular distributions for elastic and inelastic, (E/T), 22:44606
scattering by cadmium-106 at 5.50 to 6.55 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:32612
scattering by cadmium-110 and cadmium-114 at 55 MeV, angular distributions for elastic and inelastic, (E), 22:27201
scattering by cadmium-110, cadmium-114, cadmium-116, and nickel-60 at 55 MeV, DWBA analysis of angular distributions for inelastic, (E), 22:48519 (JAERI-1158, pp 56-63)
scattering by cadmium-112 and cadmium-114 at 13 MeV, differential cross sections for elastic and inelastic, (E), 22:53181
scattering by cadmium-112, tin-116, and tin-120 at 15 MeV, DWBA analysis of angular distributions for inelastic, (E), 22:48519 (JAERI-1158, pp 56-63)
scattering by cadmium-114 at 55 MeV, DWBA analysis of angular distributions for inelastic, (E), 22:27131
scattering by cadmium-114, zinc-64, zinc-66, zinc-68, and zinc-70 at 50 MeV, collective-model generalization of optical model for inelastic, (T), 22:48497
scattering by calcium isotopes and helium-4 at high energy, review on elastic, (E), 22:50675
scattering by calcium-40 and lead-208, differential cross sections and polarization for inelastic, (T), 22:32697
scattering by calcium-40 at 10 to 22 MeV, differential cross sections and spectra for elastic, (E), 22:15953 (LA-3842)
scattering by calcium-40 at 24 MeV, γ spectra from inelastic, (E), 22:44661
scattering by calcium-40 at 5.0 to 12.5 MeV, phase-shift analysis of angular distributions for, (E), 22:27063
scattering by calcium-40 at 5.0 to 12.6 MeV, cross sections for, 22:18202
scattering by calcium-40, carbon-12, and nickel-58, optical-model potential for, (T), 22:27262
scattering by calcium-40, gallium, iron-56, scandium-45, and vanadium-51 at 9.6 MeV, optical analysis of elastic, (T), 22:50662
scattering by calcium-40, inelastic, (E), 22:26980
scattering by calcium-40, lead-208, nickel-58, and tin-120 at 40 MeV, real part of optical potential for, (T), 22:44774
scattering by calcium-40, magnesium-24, silicon-28, and sulfur-32 at 155 MeV, elastic and inelastic, (E), 22:26946
scattering by calcium-40, silicon-28, and nickel-58 at 8 to 10 MeV, γ Doppler-shift attenuation in, 22:11926
scattering by calcium-42 and -44 at 23 MeV, cross-section angular distributions for elastic and inelastic, (E), 22:9800(R) (COO-535-571)
scattering by calcium-42 and calcium-44 at 1.1 to 2.4 MeV, isobaric analog resonances in elastic, (E), 22:22560(R) (ORO-1067-2)
scattering by calcium-42 and calcium-44 at 22.9 MeV, angular distribution calculations using shell model, (E/T), 22:46742
scattering by calcium-42, -44, and -48 at 1.1 to 2.4 MeV, isobaric analog resonances in elastic, (E), 22:20578 (WASH-1079)
scattering by calcium-43 at 2.55, 3.24, and 3.61 MeV, γ spectra from inelastic, (E), 22:29965
scattering by calcium-44 and titanium-50, isobaric analog

resonance parameters for elastic, (E), 22:53139
scattering by calcium-44, energy level spins from inelastic, (E), 22:5817(R) (NYO-GEN-72-28)
scattering by calcium-44, scandium-45, and titanium-46 at 17.5 MeV, angular distributions for inelastic, (E), 22:44651
scattering by calcium-48 at 1.94 to 2.00 MeV, isobaric analog resonances in, (E), 22:27042
scattering by calcium-48 at 6.5 MeV, γ spectra from inelastic, (E), 22:26947
scattering by calcium-48, isobaric analog resonances in, (E), 22:22560(R) (ORO-1067-2)
scattering by calcium-48, spectroscopic factors for analog resonances in elastic, (E), 22:30094
scattering by carbon at 10 to 1000 BeV, cross sections for inelastic, (E), 22:13272
scattering by carbon at 3.5 and 3.7 MeV, angular distribution of polarization of elastic, (E), 22:50539
scattering by carbon-12 and lithium-7 at 185 MeV, angular distributions for inelastic, (E), 22:20467
scattering by carbon-12 and oxygen-16 at 1 GeV, cross sections for elastic and inelastic, (T), 22:15815
scattering by carbon-12 and oxygen-16 at 1 GeV, cross sections for, (E), 22:5498 (BNL-11890)
scattering by carbon-12 and oxygen-16 at 1 GeV, differential cross sections and deformation parameters for, (E), 22:3630
scattering by carbon-12 at 0.9 to 21.5 GeV/c, Regge-pole analysis of cross sections for, 22:48327
scattering by carbon-12 at 1 and 21 GeV, differential cross sections for elastic and quasi-elastic, 22:46462
scattering by carbon-12 at 100 MeV, performance of germanium range--telescope spectrometer for obtaining spectra from, 22:350
scattering by carbon-12 at 14.24 to 14.27 MeV, differential cross sections for elastic and inelastic, (E), 22:20486
scattering by carbon-12 at 152 MeV, analysis using impulse approximation for multiple scattering effects in inelastic, (T), 22:48456
scattering by carbon-12 at 17 to 22 MeV, excitation functions for elastic and inelastic, (E), 22:26909
scattering by carbon-12 at 17.7 to 18.3 MeV, isobaric analog resonances in inelastic, (E), 22:30048(R) (PUC-937-307)
scattering by carbon-12 at 4.6 to 9.6 MeV, differential cross sections and polarizations for elastic, (E), 22:50536
scattering by carbon-12 at 55 MeV, angular distributions for inelastic, (E), 22:26898
scattering by carbon-12 below 3 MeV, analysis of gamma emission in inelastic, (T), 22:32725
scattering by carbon-12, deuterium, helium-4, and oxygen-16 at 1 GeV, differential cross sections for elastic, (E), 22:24826 (BNL-12342)
scattering by carbon-12, deuterium, helium-4, and oxygen-16 at 1 GeV, cross sections for, (T), 22:53088
scattering by carbon-12, deuterium, helium-4, hydrogen, and oxygen-16 at 1 GeV, elastic, (E), 22:26831 (BNL-12344)
scattering by carbon-12, deuterium, helium-4, hydrogen, and oxygen-16 at 1 GeV, optical-model analysis of elastic, (E/T), 22:29907 (ORO-1316-57)
scattering by carbon-12, fluorine-19, oxygen-16, and sodium-23, resonances in elastic, (E), 22:26989
scattering by carbon-12, helium-4, magnesium-24, and silicon-28 at 152 MeV, optical-model analysis of, (T), 22:44782
scattering by carbon-12, magnesium-24, oxygen-16, and silicon-28, isospin-forbidden resonances in, (E), 22:27051
scattering by carbon-12, nickel-58, nickel-60, and nickel-64, proton spin--flip probability for inelastic, (E), 22:50538
scattering by carbon-13 at 33 MeV using polarized beams, testing time reversal invariance by elastic, (E/T), 22:35292 (ORNL-4217, pp 1-81)
scattering by carbon-14 at 0.6 to 2.7 MeV, resonances in elastic, (E), 22:44621
scattering by carbon-14 at 1.0 to 2.7 MeV, differential cross section for elastic, (E), 22:41975
scattering by carbon-14 at 1.0 to 2.7 MeV, differential cross section for elastic, (E), 22:41959
scattering by carbon-14 at 2.0 to 3.6 MeV, differential cross sections for elastic, (E), 22:18158
scattering by cerium-140 at 9 to 12 MeV, isobaric analog resonances in inelastic, (E), 22:11949(R) (ORO-2972-47)
scattering by cerium-140 at 9.6 to 10.7 MeV, excitation functions and spectra for inelastic, (E), 22:20632
scattering by cerium-140, excitation functions for inelastic, (E), 22:20611
scattering by chlorine-37 at 1.1 to 1.8 MeV, partial proton widths of argon-38 analog states from elastic, (E), 22:20524
scattering by chromium-50 at 6.33 and 6.45 MeV, energy-level spins and transitions from inelastic, (E), 22:27035
scattering by chromium-50 at 7.5 MeV, angular distributions for inelastic, (E), 22:37332
scattering by chromium-52 and nickel-62 at 16.5 and 18.6 MeV using polarized protons, asymmetries in inelastic, (E), 22:9834
scattering by chromium-52 and titanium-48 at 155 MeV, effects of core polarization in shell-model formalism for inelastic, (T), 22:27270
scattering by chromium-52, iron-56, manganese-55, nickel-60, and vanadium-51 at 17.5 MeV, inelastic, (E), 22:30048(R) (PUC-937-307)
scattering by chromium-53 at 2.3, 2.4, and 2.5 MeV, angular distribution of γ rays from, (E), 22:13967
scattering by chromium-54 at 3.50 to 3.65 MeV, using polarized beams, elastic, (E), 22:35285(R) (AERE-PR/NP-13)
scattering by chromium-54 at 3.6 MeV, isobaric analog resonance in elastic, (E), 22:9802(R) (NYO-1082-9)
scattering by cobalt-59 and bismuth-209 at 14.4 MeV, optical-model potential for elastic, (E/T), 22:5894
scattering by cobalt-59 at 16 MeV, effects of angular momentum on compound-nucleus formation and decay in inelastic, (E), 22:53150
scattering by copper surfaces at 40 to 120 keV, angular and energy distributions in, (E), 22:26473
scattering by copper, lead, and uranium at 19.3 GeV/c, eikonal optical for, (T), 22:44452
scattering by copper-63 and -65 at 9.4 to 11.0 MeV, excitation functions for elastic and inelastic, (E), 22:20503
scattering by copper-63 and copper-65 at 6 to 12 MeV, cross sections for inelastic, (E), 22:39586
scattering by copper-63 and copper-65 at 6.5 MeV, rho-γ coincidence measurements on inelastic, (E), 22:32516 (MIT-2098-422, pp 43-68)
scattering by copper-63 and copper-65, energy-level excitation in inelastic, (E), 22:46736
scattering by copper-63, iron-54, iron-56, nickel-58, nickel-64, titanium-48, and titanium-50 at 18.6 MeV using polarized protons, asymmetries in inelastic, (E), 22:9834
scattering by crystals at low energies, correspondence of classical and quantum mechanical descriptions of, 22:1310
scattering by crystals, theory of star patterns from, 22:31920 (BNL-50083, pp 106-24)
scattering by deuterium at 12 MeV using polarized beams, angular distribution of polarization in elastic, (E), 22:53082
scattering by deuterium at 12 MeV, polarization in small-angle elastic, (E), 22:11899
scattering by deuterium at 198 MeV, differential cross section and polarization for elastic, (E), 22:50529
scattering by deuterium at 22.0, 35.0, and 46.3 MeV, differential cross sections and polarization in elastic, (E), 22:29896
scattering by deuterium at 25.7 MeV, differential cross sections for elastic, (E), 22:15946
scattering by deuterium at 3 MeV, phase-shift analysis of polarization and cross-section data for, (T), 22:7635
scattering by deuterium at 30 and 50 MeV using polarized protons, polarization angular distribution in elastic, (E), 22:20445
scattering by deuterium at 35 MeV, differential cross section and polarization for elastic, (E), 22:26810
scattering by deuterium at 46 MeV, angular distributions for elastic and inelastic, (E), 22:20442
scattering by deuterium at 6.7 to 7.5 and 10.3 to 11.3 MeV, helium-3 T = 1/2 energy levels from elastic, (E), 22:1592
scattering by deuterium at high energy, effects of deuteron break-up in, (T), 22:29898
scattering by europium-153 with Coulomb excitation, Moessbauer spectra from, (E), 22:7697 (NYO-2028-2, pp 24-36)
scattering by even stable zinc isotopes at 50 MeV, differential cross sections for elastic and inelastic, (E), 22:5800
scattering by even-A cadmium isotopes, tellurium isotopes, and tin isotopes at 16 MeV, optical-model analysis of elastic and inelastic, (E), 22:53196
scattering by fluorine-19 at 4.26, 5.96, and 6.87 MeV, coupled channel analysis of, (E/T), 22:5772
scattering by fluorine-19 at 8 and 9 MeV, p-γ angular correlations in inelastic, (E), 22:26872
scattering by germanium-70, γ spectra from inelastic, (E), 22:27006
scattering by germanium-73, angular distributions for inelastic, (E), 22:26932(R) (NP-17434)
scattering by germanium-74 at 3.4 to 5.4 MeV, excitation functions for elastic, (E), 22:20536
scattering by germanium-76, selenium-76, selenium-78, selenium-80, and selenium-82, isobaric analog resonances in elastic, (E), 22:37281(R) (NYO-72-191)
scattering by gold below 50 keV, cross sections for, (E), 22:11544
scattering by hafnium-180 at 11.5 to 13.5 MeV, differential cross sections for elastic and inelastic, (E), 22:35299
scattering by heavy nuclei, proton widths for analog resonances in, (T), 22:39702
scattering by heavy rotational and vibrational nuclei at 16 MeV, differential cross sections for elastic and inelastic, (E), 22:18304
scattering by helium-3 at 10 to 20 MeV using polarized

beams, proton polarization in elastic, (E), 22:37284 (UCRL-18137)
scattering by helium-3 at 2.38 to 4.46 MeV, phase-shift analysis of cross-section and polarization data for elastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by helium-3 at 30 MeV using polarized protons, polarization angular distribution in elastic, (E), 22:26800
scattering by helium-3 at 30 MeV, search for excited states by inelastic, (E), 22:15943
scattering by helium-3 at 31 MeV, differential cross sections and proton spectra for inelastic, (E), 22:7634
scattering by helium-3 at 4.0 to 10.8 MeV using polarized beams, asymmetry measurements on elastic, (E), 22:41945
scattering by helium-3 at 47 MeV, differential cross section for elastic, (E), 22:13927(R) (USC-136-132)
scattering by helium-3 at low energy, phase-shift analysis of cross section and polarization for elastic, (E/T), 22:3604
scattering by helium-4 at 1 GeV, cross sections for, (T), 22:5498 (BNL-11890)
scattering by helium-4 at 1 GeV/c, model for multiple, 22:50416
scattering by helium-4 at 1.7 GeV/c, differential cross sections for elastic, (T), 22:26668
scattering by helium-4 at 10 MeV using polarized beams, phase-shift analysis of elastic, (E), 22:41947
scattering by helium-4 at 22 to 24 MeV, differential cross sections and polarization for elastic, (E), 22:15944
scattering by helium-4 at 600 MeV, differential cross section for elastic, (E), 22:29897
scattering by helium-4 at 665 MeV, scintillation counter study of differential cross section for backward elastic, (E), 22:20124 (JINR-P1-3720)
scattering by helium-4 at high energies, multiple diffraction theory for, (T), 22:17974
scattering by hydrogen at 20 MeV, polarization asymmetry in, (E), 22:20438
scattering by hydrogen at 50 MeV, spin correlation parameters from, (E), 22:26806
scattering by hydrogen at 52 MeV, differential cross section for, (E), 22:26805
scattering by hydrogen at 6 to 10 MeV, phase-shift analysis of angular distributions for elastic, (E), 22:53087
scattering by hydrogen at 74, 98, and 143 MeV using polarized protons, spin-correlation parameter for, (E), 22:11898
scattering by hydrogen at 98 MeV, differential cross sections and polarization for, (T), 22:37285
scattering by hydrogen atoms, calculation using Sturmian representation of effect of continuum on, 22:52512
scattering by hydrogen atoms, impact parameter representation for, 22:29769
scattering by hydrogen, calculation using Sturmian representation, 22:26254
scattering by hydrogen, calculation using variable effective charge, 22:29187
scattering by indium-115, rhodium-103, silver-107, and silver-109 at 3.5, 4.0, and 4.5 MeV, γ spectra from inelastic, (E), 22:27152
scattering by iodine-127 at 4 to 5 MeV with Coulomb excitation, γ spectra from inelastic, (E), 22:32650
scattering by iron-54 at 9 MeV, γ angular distributions and spectra for inelastic, (E), 22:39638 (UCRL-17989, pp 1-41)
scattering by iron-54, isobaric analog resonances in elastic and inelastic, (E), 22:27053
scattering by iron-54, nickel-58, nickel-60, and silicon-28 at 40 MeV using polarized protons, left-right asymmetry and differential cross sections for inelastic, (E), 22:3650
scattering by iron-54, nickel-58, nickel-60, and silicon-28 at 40 MeV using polarized protons, left-right asymmetry and differential cross sections for inelastic, (E), 22:35273
scattering by iron-56 at 4.8 to 6.0 MeV, γ angular distributions and spectra for inelastic, (E), 22:27195
scattering by iron-56 at 4.8 to 6.0 MeV, γ angular distributions from inelastic, (E), 22:32558
scattering by iron-56 at 8.6 to 10.6 MeV, excitation functions for elastic and inelastic, (E), 22:20503
scattering by iron-56 in polarized iron, γ angular correlation and distribution for inelastic, (E), 22:13968
scattering by iron-56, -57, and -58 at 22.5 MeV, angular momentum transfers for, (E/T), 22:9800(R) (COO-535-571)
scattering by krypton at 3.6 to 5.4 MeV, angular distributions for elastic and inelastic, (E), 22:35293(R) (ORNL-4230)
scattering by lead-204, -206, -207, and -208, isobaric analog resonances in, (E), 22:20633
scattering by lead-204, lead-206, and lead-207 at 10 to 16 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:27097
scattering by lead-204, lead-206, and lead-207 at 11 to 16 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:27228
scattering by lead-204, lead-206, and lead-208 at 14 to 16 MeV, isobaric analog resonances in elastic, (E), 22:27215
scattering by lead-204, lead-206, lead-208, samarium-144, and zirconium-90, isobaric analog resonances in elastic, (E), 22:39653
scattering by lead-206 and -208 at 12 to 22 MeV, particle--core excitations in, (E/T), 22:22597
scattering by lead-206, -207, and -208 at 24.5 MeV, angular distributions for inelastic, (E), 22:27098
scattering by lead-206, isobaric analog resonances in inelastic, (T), 22:42061
scattering by lead-206, isobaric analog resonances in, (E), 22:42035
scattering by lead-207 and lead-208 at 24.5 MeV, angular distributions for inelastic, (E), 22:20623
scattering by lead-207 at 11.4 MeV, spectroscopic factors for 0^+ analog resonances in elastic and inelastic, (E), 22:30094
scattering by lead-207 at 20 MeV, differential cross sections for inelastic, (E), 22:50627
scattering by lead-208 at 14 to 18 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:14040
scattering by lead-208 at 14 to 18 MeV, proton spectra for inelastic, (E), 22:9903
scattering by lead-208 at 14 to 18 MeV, widths of isobaric analog resonances in, (E), 22:29998
scattering by lead-208 at 14.2 to 18.8 MeV, differential cross sections for elastic and inelastic, (E), 22:20631
scattering by lead-208 at 15 MeV, cross-section angular distributions and proton spectra for, (E), 22:9882
scattering by lead-208 at 15 to 18 MeV, proton spectra for inelastic, (E), 22:11949(R) (ORO-2972-47)
scattering by lead-208 through isobaric analog resonances, method analog resonances, method for cross-section analysis, (T), 22:11949(R) (ORO-2972-47)
scattering by lead-208 with isobaric analog resonance excitation, angular distribution for inelastic, (T), 22:35297
scattering by lead-208 with isobaric analog resonance excitation, γ spectra from inelastic, (E), 22:44709
scattering by lead-208, isobaric analog resonances in elastic, (T), 22:7762
scattering by lead-208, samarium-144, and zirconium-90, proton polarization in elastic, (E), 22:20629
scattering by light, medium, and heavy nuclei at 20 GeV, N + N correlations in, (E/T), 22:5499 (INP-567/PL/PH)
scattering by light-weight nuclei, computer measurement of excitation function for inelastic, (E), 22:18150
scattering by lithium-6 and -7 at 50 MeV, spectra for inelastic, (E), 22:5767
scattering by lithium-6 at 24 MeV, differential cross section for inelastic, (E), 22:53126
scattering by lithium-6, cross sections and resonance parameters for elastic, (T), 22:44609
scattering by lithium-7 at 2 to 10 MeV, angular distributions and excitation functions for elastic and inelastic, (E), 22:37340(R) (EANDC(E)-89(U))
scattering by lithium-7 at 23 to 52 MeV, cross section and γ spectra for inelastic, (E/T), 22:3622
scattering by magnesium-24 and silicon-28 at 5.8 to 6.0 MeV, isospin-forbidden analog resonances in, (E), 22:18163
scattering by magnesium-24 and silicon-28 at 55 MeV, angular distributions for spin-flip inelastic, (E), 22:27014
scattering by magnesium-24 at 49.5 MeV, differential cross sections for elastic and inelastic, (E/T), 22:3676
scattering by magnesium-24 at 50 MeV, collective-model analysis using distorted-wave and strong-coupling approximations, (E/T), 22:44655
scattering by magnesium-25 at 3.8 to 7.0 MeV, γ spectra from inelastic, (E), 22:50587
scattering by magnesium-25 at 4.0 to 5.2 MeV, γ Doppler-shift attenuation in inelastic, (E), 22:32513(R) (ANU-P-400)
scattering by magnesium-25 at 4.6 to 5.2 MeV, γ angular distributions and γ-γ angular correlations for inelastic, (E), 22:26936
scattering by magnesium-26 at 0.85 to 4.58 MeV, differential cross sections for elastic, (E), 22:50577
scattering by magnesium-26 at 1 to 2 MeV, dissertation summary on elastic, (E), 22:42007
scattering by magnesium-26 at 3.8 to 8.3 MeV, γ Doppler-shift attenuation in inelastic, (E), 22:35262
scattering by magnesium-26 at 6.8 MeV, γ-γ angular correlations for inelastic, (E), 22:11944(R) (AECL-2780)
scattering by magnesium-26 at 8.3 to 14 MeV, analysis of compound and direct reaction mechanisms in inelastic, (E/T), 22:15980
scattering by magnesium-26, γ Doppler shifts in inelastic, (E), 22:26932(R) (NP-17434)
scattering by magnesium-26, triple angular correlations in inelastic, (E), 22:20497(R) (AECL-3009)
scattering by manganese-55 and vanadium-51, isobaric analog resonances in elastic, (E), 22:27052
scattering by manganese-55 at 17.5 MeV, angular distributions for inelastic, (E), 22:50575

scattering by manganese-55 at 8.2 to 9.6 MeV, excitation functions for elastic and inelastic, (E), 22:20503
scattering by medium and heavy nuclei of zero spin, polarization and differential cross section measurements of, (E/T), 22:36154
scattering by medium-weight nuclei at 18.6 MeV, optical-model and coupled-channel calculations for polarized, (T), 22:16088
scattering by neodymium-142 at 9 to 12 MeV using polarized protons, isobaric analog resonances in, (E), 22:27214
scattering by neodymium-142 at 9.3 to 11.3 MeV, spins of p-, f-, and h-wave levels in neodymium-143 from polarized elastic, (E), 22:7728
scattering by neon-22 at 0.6 to 3.1 MeV, excitation functions for elastic and inelastic, (E), 22:20578 (WASH-1079)
scattering by neon-22, resonances in elastic and inelastic, (E), 22:22560(R) (ORO-1067-2)
scattering by nickel-58 and -60 at 40 MeV, differential cross sections for elastic and inelastic, (E/T), 22:1598(R) (COO-1265-49)
scattering by nickel-58 at 3 to 6 MeV, differential cross sections for elastic and inelastic, (E), 22:1625
scattering by nickel-58 at 8 MeV, energy-level spins, multipolarities, and transition branching ratios from inelastic, (E), 22:1627
scattering by nickel-58 at 8 MeV, p-γ angular correlations in inelastic, (E), 22:27005
scattering by nickel-58 at 9 to 10 MeV, intermediate resonance parameters for elastic, (T), 22:27065
scattering by nickel-58, -60, and -62 at 6.0 to 6.5 MeV, polarization from inelastic, (E), 22:24844
scattering by nickel-60 at 13 MeV, spectroscopy of inelastic, (E), 22:29954
scattering by nickel-60 at 16.5 MeV using polarized protons, asymmetries in inelastic, (E), 22:9834
scattering by nickel-60 at 18 MeV, differential cross section for inelastic, (E/T), 22:7666
scattering by nickel-61 at 7.5 MeV, angular distributions for inelastic, (E), 22:3649
scattering by nickel-62 at 14.3 MeV, angular distributions and spectra for inelastic, (E), 22:20544
scattering by nitrogen-14 at 15 MeV, angular distributions for elastic and inelastic, (E), 22:26904
scattering by nitrogen-14 at 3.7 to 5.7 MeV, angular distributions for elastic and inelastic, (E), 22:35293(R) (ORNL-4230)
scattering by nitrogen-14 at 3.7 to 5.7 MeV, differential cross sections for elastic and inelastic, (E), 22:37303
scattering by nitrogen-14 at 6 to 12 MeV, cross sections and spectra for elastic and inelastic, (E), 22:11949(R) (ORO-2972-47)
scattering by nitrogen-14, DWBA analysis with two-body tensor forces and central forces for inelastic, (T), 22:50560(R) (RLO-1062-681)
scattering by nitrogen-14, resonances in elastic and inelastic, (E), 22:53125
scattering by nuclei at 1.7 GeV/c, N + N correlations in, (E/T), 22:5499 (INP-567/PL/PH)
scattering by nuclei at 11 MeV, real potential well depth for, (T), 22:14082
scattering by nuclei at 17.5 MeV, semiconductor detector system for measuring small-angle inelastic, 22:16884
scattering by nuclei at 20 GeV in emulsions, absorption mean free paths for inelastic, (E), 22:29621
scattering by nuclei at 20 GeV, computer program for cross sections of elastic, 22:13780
scattering by nuclei at 30 MeV, collective-model and distorted-wave calculations of inelastic, (T), 22:30102
scattering by nuclei at medium energy, method for measuring small-angle inelastic, 22:30048(R) (PUC-937-307)
scattering by nuclei of fixed spin, isobaric analog resonance in elastic, (T), 22:27369
scattering by nuclei with isobaric analog resonance excitation, amplitude for elastic, (T), 22:7690 (JINR-E2-3551)
scattering by nuclei with isobaric analog resonance excitation, (T), 22:35285(R) (AERE-PR/NP-13)
scattering by nuclei, approximations in Bethe formula for Coulomb--nuclear interference in, 22:3464
scattering by nuclei, fine structure of isobaric analog resonances in elastic, (T), 22:44777
scattering by nuclei, form-factor calculations using projected Hartree--Fock wave functions for inelastic, (T), 22:48588 (N-68-24661)
scattering by nuclei, generalized optical-model potential for elastic and quasi-elastic, (T), 22:1729
scattering by nuclei, intermediate structure in inelastic, (T), 22:24896 (LA-DC-8192)
scattering by nuclei, isobaric analog resonances in inelastic, (E/T), 22:20729
scattering by nuclei, isobaric analog resonances in elastic, (E/T), 22:27254
scattering by nuclei, isobaric analog resonances in elastic, (T), 22:27368
scattering by nuclei, spectroscopic factors from isobaric analog resonances in elastic, (T), 22:18336
scattering by nuclei, spectroscopic information from excitation of isobaric analog states in, (E/T), 22:30094
scattering by nuclei, theory of isobaric analog resonances in, (T), 22:5893
scattering by nuclei, validity and limits of diffraction theories for, 22:17926
scattering by odd-A indium, niobium, rhodium, and silver isotopes, inelastic, (E), 22:32651
scattering by osmium-186, osmium-188, osmium-190, osmium-192, palladium-104, tungsten-182, tungsten 184, and tungsten-186 with Coulomb excitation, (E), 22:29985 (ORNL-TM-2121)
scattering by osmium-188, -190, and -192 at 10 to 16 MeV, isobaric analog resonances in, (E), 22:27213
scattering by osmium-190 and osmium-192 at 4.5 MeV, with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
scattering by oxygen at 24.2 to 40.0 MeV, angular dependence of left--right asymmetry for polarized, (E), 22:15965
scattering by oxygen-16 at 20 to 50 MeV, differential cross section for elastic, (E), 22:26838
scattering by oxygen-16 at 20 to 50 MeV, optical-model analysis of elastic, (E/T), 22:26907
scattering by oxygen-16 at 23 to 46 MeV, differential cross sections for elastic, (E), 22:18131
scattering by oxygen-16 at 24 to 40 MeV, angular distribution of polarization in elastic, (E), 22:18132
scattering by oxygen-16, angular distributions for elastic and inelastic, (E), 22:3610
scattering by oxygen-16, silicon-28, and sulfur-32 with excitation of non-normal-parity, differential cross sections and polarization for inelastic, (T), 22:22576
scattering by oxygen-18 at 1.4 to 3.2 MeV, yield curve for elastic, (E), 22:20578 (WASH-1079)
scattering by oxygen-18 at 1.4 to 3.2 MeV, yields for elastic, (E), 22:22560(R) (ORO-1067-2)
scattering by palladium-110 at 13 MeV, differential cross sections for elastic and inelastic, (E), 22:35293(R) (ORNL-4230)
scattering by phosphorus-31 at 1.0 to 3.8 MeV, differential cross section for elastic, (E), 22:24841
scattering by phosphorus-31 at 1.99 to 2.05 MeV, differential cross sections for elastic, (E), 22:20516
scattering by phosphorus-31 at 8.0 to 8.2 MeV, angular distributions and excitation functions for elastic, (E), 22:32513(R) (ANU-P-400)
scattering by polarized helium-3, polarization angular distribution in, (E), 22:20578 (WASH-1079)
scattering by potassium-39 at 7.12 to 8.51 MeV, energy levels from inelastic, (E), 22:15986
scattering by rhodium-103 at 10 MeV, γ and proton spectra from inelastic, (E), 22:32513(R) (ANU-P-400)
scattering by samarium-148 at 10, 10.5, and 12 MeV, proton spin-flip probability for inelastic, (E), 22:42077
scattering by samarium-148, samarium-154, and ytterbium-174, elastic and inelastic, (E), 22:11952
scattering by samarium-152 at 12 MeV, proton spin-flip probability in inelastic, (E), 22:42077
scattering by samarium-154 with Coulomb excitation, Moessbauer spectra from, (E), 22:7698 (NYO-2028-2, pp 37-44)
scattering by scandium-45 at 2.8, 3.2, and 3.6 MeV, γ spectra from, (E), 22:50569
scattering by scandium-45, zero-range exchange potential for, (T), 22:32725
scattering by selenium-76, -78, -80, and -82, isobaric analog resonances in elastic, (E), 22:37327
scattering by silicon single crystals at large angles, elastic MeV, (E), 22:11558
scattering by silicon-28 at 21.2 MeV, angular distributions for inelastic, (E), 22:15994
scattering by silicon-28 at 27.6 MeV, cross-section angular distribution for, (E), 22:9800(R) (COO-535-571)
scattering by silicon-28 at 28 MeV, optical-model analysis of cross-section angular distribution for elastic, (E/T), 22:9812
scattering by silicon-28 at 29.7 and 40 MeV, spin flip in inelastic, (E), 22:44672
scattering by silicon-28 at 40 MeV, proton spin-flip probability in elastic, (E), 22:35292 (ORNL-4217, pp 1-81)
scattering by silicon-29 and -30, resonances in inelastic, (E), 22:11948(R) (NP-17216)
scattering by silicon-29 and silicon-30 at 17.5 MeV, differential cross sections for inelastic, (E), 22:30048(R) (PUC-937-307)
scattering by silicon-29 at 4.9 to 5.3 MeV, γ-γ angular correlations in inelastic, (E), 22:26993
scattering by silicon-30 at 1 to 2 MeV, parities, proton widths, and reduced widths of resonances in, (E), 22:15967
scattering by silicon-30 at 1.0 to 2.2 MeV, dissertation summary on elastic, (E), 22:42007
scattering by silver-107 and -109 at 6.0 to 7.5 MeV, isobaric analog resonance in, (E), 22:11949(R) (ORO-2972-47)
scattering by sodium-23 at 3.6 to 4.5 MeV, γ yields for inelastic, (E), 22:22570

scattering by sodium-23 at 6.2 to 6.7 MeV, angular distributions and excitation functions for elastic and inelastic, (E), 22:42009
scattering by spin-zero nuclei, formula for polarization in elastic, (T), 22:27264
scattering by strontium-88 and yttrium-89 at 19 MeV, angular distributions for elastic and inelastic, (E), 22:11942
scattering by strontium-88 at 4.7 to 6.4 MeV, isobaric analog resonances in elastic, (E), 22:11949(R) (ORO-2972-47)
scattering by strontium-88 at 4.9 to 8.7 MeV, strontium-89 isobaric analog levels from elastic and inelastic, (E), 22:15992
scattering by strontium-88 at 7.0 to 8.5 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:32516 (MIT-2098-422, pp 43-68)
scattering by strontium-88 at 7.4 to 8.0 MeV, isobaric analog resonances in inelastic, (E), 22:27210
scattering by strontium-88, interpretation of isobaric analog resonances in inelastic, (T), 22:41995
scattering by strontium-88, isobaric analog resonance widths for, (T), 22:24846
scattering by sulfur-32 at 2.8 to 5.5 MeV, differential cross sections for elastic and inelastic, (E), 22:26932(R) (NP-17434)
scattering by sulfur-34 at 2.8 to 3.1 MeV, excitation function for inelastic, (E), 22:9806
scattering by surfaces, use in structure studies, (E/T), 22:31924 (BNL-50083, pp 167-78)
scattering by tin-112, -116, -118, -120, -122, and -124 at 16 MeV, angular distributions for elastic and inelastic, (E), 22:27203
scattering by tin-116 and -117 at 55 MeV, energy spectra and angular distributions from inelastic, (E), 22:30009
scattering by tin-116, -118, -120, -122, and -124 at 40 MeV, differential cross sections and polarizations for, (E), 22:1598(R) (COO-1265-49)
scattering by tin-116, -122, and -124, isobaric analog resonances in inelastic, (E), 22:9914
scattering by tin-116, -122, and -124, isobaric analog resonances in inelastic, (E), 22:20628
scattering by tin-116, tin-117, and tin-118 at 55 MeV, angular distributions for inelastic, (E), 22:27144
scattering by tin-116, tin-118, and tin-120 at 6.5 to 9.5 MeV, polarization measurements near isobaric analog resonances in, (E), 22:42040
scattering by tin-116, tin-118, and tin-120 using polarized beams, isobaric analog resonances in, (E), 22:42069
scattering by tin-118 with excitation of 2^+ collective state, cross section for inelastic, (T), 22:42143
scattering by tin-120 at 20.6, 25.2, 30.6, and 36.2 MeV, differential cross sections for elastic and inelastic, (E), 22:29984 (ORNL-4252)
scattering by tin-120 at 7 to 10 MeV, isobaric analog resonances in elastic, (E), 22:11949(R) (ORO-2972-47)
scattering by titanium-46 at 21.2 MeV, energy spectra and angular distribution from inelastic, (E), 22:29968
scattering by titanium-46 at 26.0 MeV, angular distributions for elastic, (E/T), 22:26965
scattering by titanium-46 at 6.5 to 6.8 MeV, energy-level spins and transitions from inelastic, (E), 22:9821
scattering by titanium-46 at 8 MeV, p--γ angular correlations in inelastic, (E), 22:53136
scattering by titanium-48 at 4 to 6 MeV, differential cross sections and p-γ angular correlations for inelastic, (E), 22:9832
scattering by tritium at 14 MeV, angular distributions for, (E), 22:20578 (WASH-1079)
scattering by tritium at 3 to 11 MeV, angular distributions and excitation function for elastic, (E), 22:20435
scattering by tritons, use of Feynman diagrams to determine position of resonances in elastic, (T), 22:18337
scattering by tungsten at 400 keV, energy and temperature dependence of directional effects in, (E), 22:26472
scattering by vanadium-51 at 4.0 to 5.5 MeV, fluctuation analysis of excitation functions for elastic, (E), 22:27064
scattering by vanadium-51 at 4.0 to 5.5 MeV, fluctuation analysis of cross section for elastic, (E/T), 22:32532
scattering by vanadium-51 at 4.00 to 5.52 MeV, excitation function for elastic, (E), 22:24835(R) (BARC-305)
scattering by vanadium-51 at 4.005 to 5.515 MeV, cross sections for elastic, (E), 22:20529
scattering by vanadium-51, fluctuation analysis of chromium-52 levels from elastic, (E), 22:7569(R) (BARC-291)
scattering by xenon-136 at 9.8 to 12.6 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:11949(R) (ORO-2972-47)
scattering by xenon-136 at 9.8 to 12.6 MeV, resonances in elastic and inelastic, (E), 22:35293(R) (ORNL-4230)
scattering by yttrium-89 at 5.5 to 11 MeV, cross sections for inelastic, (E), 22:5808
scattering by yttrium-89 at 61 MeV, differential cross sections for, (E), 22:1630
scattering by yttrium-89 at 9.06 and 9.98 MeV, proton spectra from inelastic, (E), 22:44659
scattering by zinc-64, -66, -68, and -70 at 49 MeV, differential cross sections for elastic and inelastic, (E), 22:27027
scattering by zinc-66 at 55 MeV, differential cross sections for inelastic, (E), 22:26986
scattering by zirconium-90 and zirconium-92 with excitation of isobaric analog resonances, neutron spectroscopic factor from elastic, (T), 22:50671
scattering by zirconium-90 at 5 to 7 MeV, analysis of isobaric analog resonances in, (T), 22:32725
scattering by zirconium-90 at 6 to 10 MeV, isobaric analog resonances in elastic and inelastic, (E), 22:11949(R) (ORO-2972-47)
scattering by zirconium-90, -92, and -94 at 12.7 MeV, angular distributions for elastic and inelastic, (E), 22:27108
scattering by zirconium-92 and -94 at 19 MeV, angular distributions for elastic and inelastic, (E), 22:11942
scattering by zirconium-92, isobaric analog resonances in, (T), 22:42133
scattering by zirconium-96 at 19.4 MeV, differential cross sections for elastic and inelastic, (E), 22:1679
scattering cross sections for p-shell nuclei, calculations using rectangle diagrams for inelastic, (T), 22:50683
scattering from evaporated film surfaces of copper and gold at 6 to 40 keV, (T), 22:41334
scattering in crystal lattices, use in crystallography, 22:26451 (AERE-R-5743)
scattering in nuclear emulsions at 5 to 24 GeV/c, multiple Coulomb, (E), 22:46331
scattering in nuclear emulsions, use of track lengths for studying multiple, 22:21323
scattering inelastically in air, water, and nuclear emulsions of cosmic, cross sections for, (T), 22:22299
scattering of 10^{12} eV cosmic, on atmospheric nuclei, (E), 22:2830
scattering on aluminum, copper, and lead at 325.7 MeV, angular distributions from, 22:31903
scattering on helium at 100 to 1000 keV, polarization of the 3^1P--2^1S transition in, (E), 22:7151
scattering on muscovites at 94 to 294 keV, angular distributions from, 22:49982 (JINR-P15-3998)
scattering on nickel foils at 15 to 90 keV, angular distributions from, (E), 22:11211
scattering on pure and alloyed copper and gold at 30 to 100 keV, structure analysis from, 22:17786
scattering on solids, effects of particle interactions on Bragg curve for, 22:52852 (JINR-P1-4000)
spallation of strontium and yttrium at 660 MeV, production of neutron-deficient isotopes from, (E), 22:35284
spallation of tantalum at 10.5 GeV, cross sections for production of cesium isotopes and rubidium isotopes by, (E), 22:24879
spallation of uranium at 3 GeV, α and γ spectra from, (E), 22:7702(R) (PPAD-631-D)
spectra at L = 2 to 3 in magnetosphere, (E), 22:34354 (AD-661562)
spectra from inelastic π^- + N interactions at 17 GeV/c in nuclear emulsions, 22:22315
spectra from uranium-235 thermal neutron fission, (E), 22:3693 (INR-822/IA/PL)
spectra in magnetosphere of low-energy, cinematographic display of, (T), 22:36791 (AD-662228)
spectra in primary cosmic radiation, (E), 22:36767
spectra in solar flare of Sept. 2, 1966, (E), 22:36561 (N-68-10375)
spectra of auroral-zone, (E), 22:31709
spectra of cosmic-ray, (T), 22:38828
spectra of flare-produced, (E), 22:17214
spectra of impurity-trapped, in rutiles, infrared, (E), 22:3163 (COO-1434-04)
spectra of low-energy, in cosmic radiation, 22:5159
spectra of primary cosmic, (E), 22:34295
spectra of solar, (T), 22:23926
spectra of trapped, from L = 2 to 3, (E), 22:47924
spectra of, computer program for least-squares analysis of recoil, 22:33662
spectroscopy of 100-MeV, design of germanium total-absorption spectrometer for, 22:349
spectrum of, in low-energy primary cosmic radiation, (E), 22:21965
spin relaxation in paramagnetic ion solutions, 22:16530
spin--lattice relaxation in solid deuterated and normal acetonitrile, NMR measurements of, 22:31951
spin-lattice relaxation time in methane, 22:6308
sputtering on gold at 500 eV to 8 keV, yields and angular distributions in, (E), 22:21846 (ORO-3557-3)
stopping in vanadium at 559, 1776, and 1984 keV, cross sections for, 22:11538
structure of, existence of virtual level in pion system for halo, 22:41820
structure of, impact parameter theory for hadronic, 22:9700 (NYO-2262-TA-165)
structure of, theory for internal, 22:46349
synchrotron emission from relativistic, in compact radio sources, (T), 22:41197
temperature in solar wind and interplanetary magnetic field lines, 22:2938
temperatures of ionospheric, (E/T), 22:31701

theory as composite particles, 22:17966
theory for Sakata triplet (p, n, Λ), Lagrangian in SU(3) symmetry for, 22:17994
track measurements in nuclear emulsions, use of photographic scanning techniques for, 22:36082
trajectories of low-energy cosmic, in model atmosphere, (T), 22:17428
transmission through gold and iron crystal foils, channeling effects on, (E), 22:29540 (COO-1053-9)
transport in fluorine compounds, stopping power and additivity for 1-MeV, (E), 22:17416
trapping in magnetosphere, pitch-angle distribution of 1- to 100-MeV solar, (E), 22:34134 (AD-661959)
tunnel effects for, forming hydrogen bonds in DNA molecule, determination of quantum mechanical, 22:44964 (UCRL-50412)
use in chemical analysis by excitation of characteristic x rays, 22:11 (ORNL-IIC-10(Vol.2), pp 587-612)
use in chemical analysis by excitation of characteristic x-rays, 22:10 (ORNL-IIC-10(Vol.2), pp 576-86)
use in nuclear magnetic double resonance experiments, 22:44217 (UCRL-18278)
use of polarized targets for N + p interactions at 14.5 and 23.1 MeV, review of, 22:5501
velocity distribution, anisotropic solar-wind, 22:2938
velocity distributions in the ionosphere, (T), 22:41470

PROTONS (anti p)
abundance in primary cosmic radiation, (T), 22:24086
detection of 1.5- to 3.3-GeV/c, efficiency of scintillation detectors for, 22:372
flux in cosmic radiation, 22:43945
interactions anti p + p at 2 to 3 GeV/c, review of quasi-two-body final states and multiple particle production in, 22:32121
interactions anti p + d → p + π^- + π^0, possible experiments for test of isospin invariance of, 22:48300
interactions anti p + d → p + π^- + π^0, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)
interactions anti p + d at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions anti p + d at GeV energies, multiple-scattering formalism for elastic, (T), 22:50414
interactions anti p + d at rest, relative annihilation rates of, (E/T), 22:15765
interactions anti p + n → anti p + n at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, 22:37143
interactions anti p + n → $\Delta(1236)$ + p at 28 GeV/c, differential cross sections and decay angular distributions for, (E/T), 22:3261
interactions anti p + n → n + anti p, dispersion theoretic calculation of two-π exchange effects on amplitude of forward, 22:39383
interactions anti p + n → π^- + π^- + π^+ at rest in deuterium bubble chamber, analysis of final state in, (E), 22:17863
interactions anti p + n → W^- + l + anti ν, effects of form factors and polarization on differential and total cross sections of, (T), 22:39388
interactions anti p + n at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti p + n at 1.23 to 1.65 GeV/c, comparison of dip-bump structure in elastic, 22:50376
interactions anti p + N at 3 GeV/c in emulsions, K and π emission in annihilation, (E), 22:46332
interactions anti p + N at 5 GeV/c in emulsions, preliminary results for, (E), 22:39261
interactions anti p + n at high energies, cross sections for elastic, (E), 22:17858
interactions anti p + n at rest, statistical model with SU(3) symmetry for multiple particle production in, 22:32139
interactions anti p + n at rest, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions anti p + n, π elementarity in elastic unitarity model for, 22:1428
interactions anti p + p → 2 mesons, SU(3) x SU(3) and SU(6)/sub W/ symmetry for, 22:9662
interactions anti p + p → $2\pi^+$ + $2\pi^-$ + π^0 at 1.2 GeV/c, $\pi\pi$ scattering effects in, (T), 22:39372 (CERN-68-7(Vol.1), pp 595-8)
interactions anti p + p → $2\pi^+$ + $2\pi^-$ + π^0, isosinglet resonance decay in, (T), 22:9581 (IS-T-210)
interactions anti p + p → $2\pi^+$ + $2\pi^-$ + π^0, phase-space distributions for 4π decay of isosinglet resonance in, 22:46410
interactions anti p + p → $2\pi^+$ + $2\pi^-$ + π^0, spin, symmetry, and polarization in isosinglet resonance four pion decay in, (T), 22:37134
interactions anti p + p → $2\pi^+$ + $2\pi^-$, Feynman diagrams for angular distributions for, 22:15761 (LYCEN-6757)
interactions anti p + p → 3γ, test of linearity of quantum electrodynamics equations from cross section of, (T), 22:48360
interactions anti p + p → $3\pi^0$ at 1.00 to 2.50 GeV/c, upper limits for cross sections for, (E), 22:15677
interactions anti p + p → $3\pi^+$ + $3\pi^-$ + π^0 at 1.2 and 2.5 GeV/c, $\pi\pi$ scattering effects in, (T), 22:39372 (CERN-68-7(Vol.1), pp 595-8)
interactions anti p + p → $3\pi^+$ + $3\pi^-$ + π^0 at 5.7 GeV/c in bubble chamber, production of rho, ω, A_1, and A_2 in, (E), 22:22305
interactions anti p + p → $3\pi^+$ + $3\pi^-$ at 2.5 GeV/c, meson resonance production in, (E), 22:39373 (CERN-68-7(Vol.2), pp 281-302)
interactions anti p + p → 4π at 1.2 GeV/c, A_2^+, A_2^-, rho^0, and f^0 production in, (E), 22:26563
interactions anti p + p → anti K + K + $n\pi$ at 3 to 4 GeV/c in hydrogen bubble chamber, resonance production from, (E), 22:3271
interactions anti p + p → anti K + K + π + π, box singularity effects on, (T), 22:3398
interactions anti p + p → anti K^0 + K^0 at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p → anti Λ + Λ + π^+ + π^-, box singularity effects on, (T), 22:3398
interactions anti p + p → anti N + N + $n\pi$, angular distributions and cross sections for,, 22:17860
interactions anti p + p → anti n + n at 5 GeV/c in emulsions, preliminary results for cross section for, (E), 22:39261
interactions anti p + p → anti n + n at 5 to 9 GeV/c, magnet spark chamber study of differential and total cross sections for, (E), 22:34970
interactions anti p + p → anti n + n, use of Lorentz group in Regge pole analysis of, (T), 22:50321 (UCRL-18377)
interactions anti p + p → anti N* + N + π, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p → anti N* + N*, Regge-pole model for pion-exchange, 22:7494
interactions anti p + p → anti p + p at 5 GeV/c in emulsions, preliminary results for, (E), 22:39261
interactions anti p + p → anti p + p at 5.9 to 9.8 GeV/c, scintillation counter telescope and optical spark chamber study of cross sections for, (E), 22:39271 (CERN-68-7(Vol.1), pp 571-9)
interactions anti p + p → anti p + p at high energies and fixed momentum transfer, asymptotic expansion of amplitudes for polarization in, 22:37143
interactions anti p + p → anti p + p at high energies and large momentum transfers, Regge trajectories for recurring minima in, 22:20221
interactions anti p + p → anti p + p at high energies, unitarity condition for imaginary part of amplitude for large-angle, 22:13743
interactions anti p + p → anti p + p, dispersion theoretic calculation of two-π exchange effects on amplitude of forward, 22:39383
interactions anti p + p → anti p + p, polarization experiments for CPT invariance test in, 22:24707 (JINR-P2-3716)
interactions anti p + p → anti p + p, test of C, T, and CPT invariance from, 22:3499
interactions anti p + p → anti Σ^+ + Σ^-, quark model and multiple-scattering formalism for, 22:52985
interactions anti p + p → anti Ξ^0 + Ξ^0, quark model and multiple-scattering formalism for, 22:52985
interactions anti p + p → anti Y + Y + $m\pi$, angular distributions and cross sections for, 22:17860
interactions anti p + p → $\Delta^{++}(1236)$ + anti $\Delta^{++}(1236)$ at 5.7 GeV/c, differential cross section and decay angular distributions for, (T), 22:11665
interactions anti p + p → $\Delta^{++}(1236)$ + anti$\Delta^{--}(1236)$, Regge-pole model for π exchange in, 22:26657
interactions anti p + p → e^+ + e^- at 1.50 and 2.50 GeV/c, spark chamber study of proton electric and magnetic form factors from upper limits for, (E), 22:15677
interactions anti p + p → γ + γ at 1.50 GeV/c, differential cross section for, (E), 22:15677
interactions anti p + p → γ + γ at 2.50 GeV/c, upper limit for differential cross sections for, (E), 22:15677
interactions anti p + p → h^0 + rho^0, CP nonconservation in, 22:20236
interactions anti p + p → K + anti K + $n\pi$ (n = 3,4) at 1.2 GeV/c, production of K*(890), rho, ω, eta, and D(1280) in, (E), 22:32059
interactions anti p + p → K + anti K* (anti K + K*) below Kπ threshold, upper limit for J/sup P/ = 0+, S = +1 K* production in, (E), 22:48218
interactions anti p + p → K* + anti K + $n\pi$, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p → K_1^0 + K_1^0 + π^0 at rest in hydrogen bubble chamber, (K anti K) and (Kp) system production from, (E), 22:5502
interactions anti p + p → K_1^0 + K_2^0 + γ, strong interaction theory from cross section for, 22:20233
interactions anti p + p → K_1^0 + K^+ (K^-) + π^- (π^+) at rest in hydrogen bubble chamber, (K anti K) and (Kp) system production from, (E), 22:5502
interactions anti p + p → K^+ + K^- + γ, strong interaction theory from cross sections for, 22:20233
interactions anti p + p → K^- + K^+ at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p → Λ + anti Λ, absorption model

and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\to$ Λ + anti Σ^0, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\to$ $m_1\pi^+ + m_2\pi^- + m_3\pi^0 + m_4K$ at 0 to 7 GeV/c, (T), 22:3378 (INP-555/PL/PH, pp 1-15)
interactions anti p + p $\to$ n + anti n at high energies, Regge pole models with branching in j-plane for differential cross sections for, 22:39377
interactions anti p + p $\to$ n + anti n, conspiracy of singularities in complex angular momentum plane for, 22:11688
interactions anti p + p $\to$ n + anti n, Regge-pole analysis of, 22:5603
interactions anti p + p $\to$ N* + anti N*, method for representing joint decay distributions from, (T), 22:39405 (TPJU-15/67)
interactions anti p + p $\to$ N* + anti N*, use of statistical tensors for joint decay angular distributions in, 22:24629
interactions anti p + p $\to$ $n\pi$ + K + anti K, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\to$ $n\pi$ at 1.61 to 5.70 GeV, model for π angular distributions from, 22:15760 (LYCEN-6751)
interactions anti p + p $\to$ $n\pi$, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\to$ $n\pi$, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
interactions anti p + p $\to$ ω + $n\pi$, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\to$ π^+ + e^- + anti ν/sub e/, preparations for study of W^- production from, (E), 22:13642
interactions anti p + p $\to$ $\pi^+ + \pi^- + \gamma$, strong interaction theory from cross sections for, 22:20233
interactions anti p + p $\to$ $\pi^+ + \pi^- + m\pi^0$, strong interaction isospin invariance check from, (T), 22:22381 (JINR-P2-3691)
interactions anti p + p $\to$ $\pi^+ + \pi^- + \pi^0$ at rest in hydrogen bubble chamber, (E), 22:34855
interactions anti p + p $\to$ $\pi^+ + \pi^- + \pi^0$ at rest, analysis of, (E), 22:39382
interactions anti p + p $\to$ $\pi^+ + \pi^- + \pi^0$ below 1 GeV, cosmic gamma spectrum from, (T), 22:20125 (NP-17315)
interactions anti p + p $\to$ $\pi^+ + \pi^- + \pi^0$, Feynman diagrams for angular distributions for, 22:15761 (LYCEN-6757)
interactions anti p + p $\to$ $\pi^+ + \pi^+ + \pi^- + \pi^-$ at rest, π angular correlations in, (T), 22:3380 (INP-555/PL/PH, pp 31-50)
interactions anti p + p $\to$ $\pi^- + \pi^+$ at 2.7 GeV/c in hydrogen bubble chamber, angular distributions and cross sections for, (E), 22:1382
interactions anti p + p $\to$ $\pi^+ + \pi^-$, Feynman diagrams for angular distributions for, 22:15761 (LYCEN-6757)
interactions anti p + p $\to$ rho + $n\pi$, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\to$ Σ^0 + anti Σ^0, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\to$ Σ^+ + anti Σ^-, absorption model and U(6,6) symmetry for K- or K*-exchange, 22:20230
interactions anti p + p $\to$ Σ^+(1385) and anti Σ^+(1385) at 5.7 GeV/c, differential cross section and decay angular distributions for, (T), 22:11665
interactions anti p + p $\to$ Y + anti N + K, angular distributions and cross sections for, (E), 22:17860
interactions anti p + p $\to$ Y + anti Y + $n\pi$, total cross sections in multi Regge model for, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
interactions anti p + p $\to$ Y + anti Y* + π, angular distributions and cross sections for, 22:17860
interactions anti p + p above 10 GeV, optical model of, 22:35017
interactions anti p + p at 0.2 to 1.0 GeV, energy dependence of angular correlation effect in multiple π production from, (T), 22:1431
interactions anti p + p at 0.3 to 2.0 GeV/c, s and t channel effects in elastic, 22:50385
interactions anti p + p at 1 to 7 GeV/c, multiple π production in, (T), 22:24637
interactions anti p + p at 1.0 to 3.3 GeV/c, scintillation and differential Cherenkov counter study of total cross section and resonance production in, (E), 22:29634
interactions anti p + p at 1.2 GeV/c, production of rho^0, f^0, A_2^+ and A_2^- in four-prong annihilation, (E), 22:39258
interactions anti p + p at 1.2 to 1.6 GeV/c, total cross sections for, (E), 22:26560
interactions anti p + p at 1.23 to 1.65 GeV/c, comparison of dip-bump structure in elastic, 22:50376
interactions anti p + p at 1.6 to 2.2 GeV/c, differential cross sections for elastic, (E), 22:52933
interactions anti p + p at 1.6 to 70 GeV/c, statistical model with angular momentum conservation for, 22:29684 (DESY-68/10)
interactions anti p + p at 1.73 to 2.97 GeV/c, differential cross sections and polarization distributions for elastic, (E), 22:46330
interactions anti p + p at 1.88 to 3.00 GeV, effect of SU(3) invariance on meson production in, (E), 22:11654
interactions anti p + p at 300 to 700 MeV/c in bubble chamber, study of differential cross sections in backward, (E), 22:52934
interactions anti p + p at 50 to 150 MeV, partial-wave analysis of amplitude for, (E/T), 22:24640
interactions anti p + p at 50 to 180 MeV, differential cross sections for charge-exchange, (E), 22:24543
interactions anti p + p at 6 GeV/c, differential cross sections for elastic, (E), 22:41746
interactions anti p + p at 6.9 GeV/c in bubble chamber, angular distribution and cross section for, (E), 22:39257
interactions anti p + p at 6.94 GeV/c, cross sections for π production and elastic, (E), 22:50291
interactions anti p + p at 63 to 175 MeV, differential cross sections for elastic, (E), 22:24544
interactions anti p + p at 7 to 12 GeV/c, differential cross sections for elastic, (E/T), 22:46430
interactions anti p + p at high energies, 22:3371
interactions anti p + p at high energies, cross sections for elastic, (E), 22:17858
interactions anti p + p at high energies, dispersion relation calculation of real part of forward amplitude for, 22:48309
interactions anti p + p at high energies, multiple-scattering corrections to Pomeranchuk on exchange in elastic, 22:46397
interactions anti p + p at high energies, quark model for large-angle elastic, 22:46389
interactions anti p + p at high energies, resonance production in, (T), 22:20174 (NP-17316)
interactions anti p + p at rest, relative annihilation rates of, (E/T), 22:15765
interactions anti p + p at rest, statistical model with SU(3) symmetry for multiple particle production in, 22:32139
interactions anti p + p at rest, statistical model for particle production in, 22:24647
interactions anti p + p at rest, SU(3) symmetry for multiple particle production in, 22:41805 (JINR-P2-3879)
interactions anti p + p at rest, tests of SU(6)/sub W/ and SU(3) predictions for annihilation, 22:22390
interactions anti p + p at small momentum transfer, Regge-pole model for elastic, 22:15779
interactions anti p + p below 286 MeV under astrophysical conditions, upper limits and selection rules for gamma production in, (T), 22:20174 (NP-17316)
interactions anti p + p in sakaton triplet model, 22:15752
interactions anti p + p to 300 MeV, OBE potential models for, 22:26644
interactions anti p + p, analysis of multiplicity of π production in annihilation, 22:24642
interactions anti p + p, effects of resonance scattering on charge-exchange and elastic, 22:52979
interactions anti p + p, energy dependence of angular correlations in, 22:3379 (INP-555/PL/PH, pp 17-29)
interactions anti p + p, generalized quark model for cross sections and spin density matrix elements for strangeness-exchange, 22:29693
interactions anti p + p, predictions and validity of forward dispersion relations for amplitudes of, 22:15785 (BNL-12058)
interactions anti p + p, production of neutral pseudoscalar and vector mesons in annihilation, (T), 22:22387
interactions anti p + p, semistrong C violation with ΔI = 3 in annihilation, 22:29738
interactions p + anti p $\to$ Λ + anti Λ, spin correlations for, (T), 22:7637(R) (COO-1573-33)
lifetime of, (T), 22:43763
origin in primary cosmic radiation, diffusion equation for, 22:43946
production from proton reactions with copper at 30 GeV, (E), 22:13647
production in electron reactions with beryllium, beryllium--iron, and iron at 16 and 18 GeV, yields of, (E), 22:20113
production in p + p inelastic scattering at 12.5 GeV/c, diffraction model study of, (E), 22:52932
production in p + p interactions at 12.5 GeV/c, cross sections for, (E), 22:39250 (CERN-68-7(Vol.2), pp 262-80)
production in p + p interactions at 12.5 GeV/c, differential cross section for, (E), 22:20128
reactions with bromine and silver at 3 GeV in nuclear emulsions, (E), 22:14513 (BNL-50057, pp 60-78)
reactions with bromine and silver in emulsions at 5.0 GeV/c, production of Z greater than or equal to 3 nuclei in, 22:35279
reactions with bromine and silver in nuclear emulsions at 2.23 GeV, production of fast helium nuclei in, 22:22301
reactions with emulsion nuclei at 5 GeV/c, beryllium-8 emission in, (E), 22:20513
reactions with emulsion nuclei at 5.0 GeV/c, helium-8 production from, (E), 22:3255
reactions with nuclei at 3 GeV/c in emulsions, annihilation radiation evaluation for, (E), 22:20129
scattering by complex nuclei at 3 GeV/c in emulsions, nuclear optical model parameters from small-angle

elastic, (E), 22:46855
scattering by complex nuclei in emulsions at 3 GeV/c, small-angle distribution of elastic, (E), 22:32061

PROTOPLASM
radioinduced oxidation of, in dinoflagellates, uv, 22:31259

PROTOPORPHYRINS
see also Heme
cobalt, radioprotective effects of, on mice, cobalt-60 γ, fast neutron, and x, 22:31188
complexes with radioactive iron ions, 22:21087(P)
photosensitivity in human skin, 22:6853
radiation effects on, in skin of guinea pigs and man with erythropoietic protoporphyria, uv, 22:51877
radioinduced free radicals in solutions of, 22:28363

PROTOTYPE FAST REACTOR
construction of, description of, 22:14206
control systems for, description of, 22:18507
coolant for, polarographic determination of oxygen in liquid sodium, 22:31390
cooling system for, description of, 22:16195
cooling system for, testing of equipment for liquid sodium, 22:18505
core and breeder for, description of, 22:16195
description of, 22:22729
description of, 22:18497
description of, 22:27424
design parameters for, 22:16195
design parameters for, analysis of, 22:35498
fuel elements for, analysis of physics parameters of, 22:18512
fuel elements for, fabrication of plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:14209
physics measurements for, description of, 22:35540
physics parameters for, analysis of, 22:18509
sodium temperature coefficient calculations for, using multigroup diffusion theory and first-order perturbation theory, 22:35560

PROTOZOA
Acanthamoeba sp., radiation effects on chemocytology of, effects of dose on x, 22:49189
Acanthamoeba sp., radiation effects on morphology and physiological processes of, x, 22:45682
Actinophrys sol, radiation effects on survival of, γ and uv, 22:21619
Actinosphaerium nucleofilum, radiation effects on survival of, γ and uv, 22:21619
Amoeba proteus, radiation effects on clone formation in postirradiation subcultures of, effects of dose on x, 22:8628
Amoeba proteus, radiation effects on genetic stability of, in ethanol and methionine, 22:36236
Amoeba proteus, radiation effects on metabolism of DNA by, γ, 22:25712 (COO-78-163, pp 39-63)
Amoeba proteus, radiation effects on, effects of dose and mitotic stage on, 22:36351
Babesiella ovis, radiation effects on resistance of sheep to, strontium-90β, 22:49570
Ceratium sp., radioinduced oxidation of protoplasm of, uv, 22:31259
Cohnilembus sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
content of parasitic, in intestine of radiation chimeras, 22:28630 (ORNL-4100, pp 118-26)
Cyclidium sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Dinophysis sp., radioinduced oxidation of protoplasm of, uv, 22:31259
effects of sunspot cycle on buildup of parasitic, (T), 22:43698
Eimeria bovis, radiation effects on antigenicity of oocysts of, γ, 22:43268
Euplotes patella, radiation effects on metabolism of DNA by, γ, 22:25712 (COO-78-163, pp 39-63)
extinction of Radiolarian species, relation to geomagnetic field reversals, 22:13371
foraminifera, content of oxygen-16 and oxygen-18 in glacial-period, from arctic region, 22:42897 (CU-2663-9, App.G)
Goniaulax polyedra, radioinduced oxidation of protoplasm of, uv, 22:31259
Gonyaulax polyedra, luminescence of, biological mechanisms for, 22:30410(R) (NYO-3401-4)
Gonyaulax polyedra, luminescence of, use of image brightness intensifier microscope system to study, 22:40504
Hymenostomidae sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
Nassula sp., characterization of feeding movements and structures of, 22:53495(R) (COO-235-49)
Noctiluca miliaris, luminescence of, use of image brightness intensifier microscope system to study, 22:40504
Paramecium aurelia photoreactivation of pyrimidime dimers in DNA of, 22:28399 (ORNL-4100, pp 40-7)
Paramecium aurelia, characterization of DNA of cytoplasmic symbionts of, 22:53495(R) (COO-235-49)
Paramecium aurelia, chromosome mapping in, 22:53495(R) (COO-235-49)
Paramecium aurelia, development of kinetosomes in, electron micrographs of, 22:53495(R) (COO-235-49)
Paramecium aurelia, maintenance of cytoplasmic symbionts of, physiological mechanisms for, 22:53495(R) (COO-235-49)
Paramecium aurelia, radiation effects on growth of, effects of dose on, 22:19435
Paramecium aurelia, radiation effects on pyrimidines in DNA of, photoreactivation of uv, 22:8445
Paramecium aurelia, radioinduced delay of vegetative mitosis in, evaluation of models for x, 22:31240
Paramecium bursaria, discharge of trichocysts by, effects of geranium extract on, 22:28272 (ANL-7278, pp 185-218)
Paramecium caudatum, radiation effects on activity of dehydrogenases in, x, 22:36184
Paramecium caudatum, radiation effects on survival of, effects of stage of nuclear reconstruction on x, 22:21607
Paramecium caudatum, radiation effects on synthesis of DNA in macronucleus of, effects of temperature adaptation on x, 22:21608
Paramecium caudatum, radiation effects on, role of pyrimidine hydroperoxides in, 22:51983
Paramecium caudatum, toxicity of γ-irradiated glucose solutions to, 22:15122
Paramecium multimicronucleation, radiation effects on osmoregulation in, effects of increased osmotic pressure and salt solutions on uv, 22:15121
Paramecium sp., toxicity of tritium-labeled water to, 22:51459
Pelomyxa carolinensis, structure of, effects of space flight on, 22:47503
Pelomyxa illinoisensis, radiation effects on survival of, effects of actinomycin D on x, 22:28537 (ANL-7278, pp 170-84)
Pelomyxa illinoisensis, radiation effects on survival of, protective effects of injections of unirradiated protoplasm against x, 22:28537 (ANL-7278, pp 170-84)
Pelomyxa palustris, electron microscopy of, 22:28537 (ANL-7278, pp 170-84)
Peridinium sp., radioinduced oxidation of protoplasm of, uv, 22:31259
Plasmodium berghei, radiation effects on erythrocytes parasitized by, effects of, on immunity in mice and rats, 22:38473
Plasmodium gallinaceum, effects on survival time of x-irradiated chickens, 22:45676
Plasmodium gallinaceum, staining in mosquitoes for electron microscopy, use of uranyl acetate for, 22:49255
Plasmodium vivax, radiation processing of vaccines of, research on, 22:31305
Prorocentrum sp., radioinduced oxidation of protoplasm of, uv, 22:31259
Pseudocohnilembus sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
radiation effects on Hartmannellid, γ, 22:40914
radiation effects on, proposed mechanism for recovery from high dose x, 22:40879
radiation effects on, uv, 22:23672
Stentor coeruleus, synthesis of DNA by transferred nuclear nodes from Stentor polymorphus, in cytoplasm of, 22:33718 (UCLA-12-640, pp 61-80)
Stentor coeruleus, synthesis of RNA in, in relation to oral regeneration, 22:53498 (LA-3848, pp 11-20)
Stentor polymorphus, synthesis of DNA by transferred nuclear nodes from, in cytoplasm of Stentor coeruleus, 22:33718 (UCLA-12-640, pp 61-80)
Tetrahymena pyriformis, calcium metabolism in, effects of antimetabolites and metabolic inhibitors on, 22:40515 (NYO-1822-25)
Tetrahymena pyriformis, calcium metabolism in, effects of deficiencies of folic acid, nicotinamide, pantothenate, pyridoxamine, riboflavin, and thiamine on, 22:30932 (NYO-1822-24)
Tetrahymena pyriformis, calcium uptake by, during growth, 22:30931 (NYO-1822-21)
Tetrahymena pyriformis, carbohydrate content of, cyclic variation in alcohol-soluble, 22:28399 (ORNL-4100, pp 40-7)
Tetrahymena pyriformis, cell division and macromolecular protein synthesis in synchronized, effects of heavy water and temperature on, 22:35812
Tetrahymena pyriformis, density of DNA in mitochondria isolated from, 22:12744 (BL-207)
Tetrahymena pyriformis, genetic control systems and mating types of, 22:53495(R) (COO-235-49)
Tetrahymena pyriformis, radiation effects on DNA in, repair of uv, 22:19309(R) (SU-326-P-7-194)
Tetrahymena pyriformis, radiation effects on respiration of, effects of phosphate buffer on γ, 22:25988
Tetrahymena pyriformis, radiation effects on survival of, uv and x, 22:36421
Tetrahymena pyriformis, radiation effects on synthesis of DNA in, uv and x, 22:12744 (BL-207)
Tetrahymena pyriformis, radiation effects on, effects of, on production of pyrimidine dimers, uv, 22:51441
Tetrahymena pyriformis, radiation effects on, repair of uv, 22:28399 (ORNL-4100, pp 40-7)
Tetrahymena pyriformis, radiosensitivity of, effects of caffeine, growth cycle, and recovery capacity on uv and x, 22:49455
Tetrahymena pyriformis, replication of DNA in

  synchronized cells of, determination of patterns for, 22:28272 (ANL-7278, pp 185-218)
  Tetrahymena pyriformis, strontium metabolism in, effects of antimetabolites and metabolic inhibitors on, 22:40515 (NYO-1822-25)
  Tetrahymena pyriformis, strontium uptake by, during growth, 22:30931 (NYO-1822-21)
  Tetrahymena pyriformis, synthesis of DNA in mitochondria and nuclei of, 22:12744 (BL-207)
  Tetrahymena sp., isolation, characterization, and synthesis of RNA from mitochondria in, methods for, 22:1926(R) (NYO-3588-6)
  Tetrahymena sp., radiation effects on DNA of, repair of uv and x, 22:21587
  Tintinnopsis sp., methods of culturing for sea water microbiological assay, 22:33711(R) (NYO-3658-9)
  Tokophrya infusionium, genetic studies on, 22:53495(R) (COO-235-49)
  Trypanosoma cruzi, radiation effects on infectivity of, in mice, γ, 22:23481(R) (PRNC-102)
  Uronema sp., ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
  Vorticellid, effect on removal of phosphorous-32 from raw sludge, 22:10534
  zinc-65 content of marine, off Oregon, effects of diel, season, and geographic location on, 22:31015

PRP Reactor
  see Plutonium Recycle Test Reactor

PRTR
  see Plutonium Recycle Test Reactor

PRUSSIAN BLUE
  effects on half life of cesium-137 in man, 22:45402
  use for removal of cesium-137, 22:38255(R) (EUR-3918)

PSCC (Fort St. Vrain) Reactor
  see Fort St. Vrain Power Reactor, Unit 1

Pseudourea, 2-(2-Aminoethyl)-2-thio-
  see AET

PSEUDOUREA, 2-(3-AMINOPROPYL)-2-THIO-
  radioprotective effects of, on SCH cells, γ, 22:25892
  radioprotective effects of, spectrophotometric study of mechanisms of, 22:31181

PSEUDOUREA, 2-METHYL-
  hydrochloride, radiation effects on, ESR spectra of free radicals from x, 22:27788

PSORALEN
  effects on uv-radiosensitivity of sea urchin sperm, 22:21563
  effects on uv-radiosensitivity of tumor-producing capacity of Ehrlich ascites tumor cells in mice, 22:25917
  radiation effects on reaction of, with DNA and RNA, role of thymine and uracil in uv, 22:47454
  radiation effects on solutions of, and thymine, uv, 22:16995
  radiation effects on, effects of, on Drosophila, 22:47457

Psoralen, 8-Methoxy-
  see 8-Methoxypsoralen

PSYCHOLOGY
  see also Behavior
  book: Problems in Cosmic Biology, Vol. 7, 22:47538
  radiation effects on, of space flight personnel, 22:6922

Psychrometers
  see Hygrometers

PTB Reactor (Physikalisch--Technische Bundesanstalt)
  see Reactors, Research

PTEROPSIDA
  see also Angiospermidae
  see also Filicinidae
  see also Gymnospermidae

PTR (Pool Test Reactor)
  see Reactors, Swimming-Pool

PUERTO RICO
  Anasco Bay in, bottom sediments and topography of, (E), 22:21216 (PRNC-104, pp 118-20)
  content of major- and trace elements in marine organisms and sediments, minerals, rocks, seawater, seston, and soils in, 22:43311(R) (PRNC-85)
  distribution of aragonites, calcites, and α-quartz in marine sediments off west coast of, 22:43311(R) (PRNC-85)
  ecology of starfish on coast of, 22:21408 (PRNC-104, pp 54-6)
  ecology of tropical rain forest in, 22:47496(R) (PRNC-103)
  element content and distribution in biogeochemical environments in, stable, 22:43311(R) (PRNC-85)
  fallout monitoring in, during 1966, 22:23481(R) (PRNC-102)
  radiation effects on biological processes in rain forest in, experimental cesium-137 γ, 22:43476 (PRNC-61)
  radiosterilization of sugarcane borers in, use of sterile male technique for γ, 22:43497(R) (PRNC-100)
  research in marine biology at Puerto Rico Nuclear Center, progress report on, 22:21407(R) (PRNC-104)
  sediments of Anasco Bay, clay mineralogy of, (E), 22:21218 (PRNC-104, pp 147-66)
  sediments of coastal western, dispersion patterns and trace element distribution in, 22:21217 (PRNC-104, pp 121-46)

PUERTO RICO POWER REACTOR
  containment building leak testing for, 22:24974 (PRWRA-120)
  containment vessel for, seals for electrical penetrations for, 22:10051
  design and operating characteristics of, tabulation of, 22:7831
  fuel element development and testing for, 22:8742 (ORNL-4170, pp 151-7)
  fuel elements for, ISOCHECK method for determining heavy isotope content in, 22:16118 (CEND-296)
  maintenance and operations for August 1967, 22:3845(R) (PRWRA-117)
  maintenance for June 1967, description of, 22:1774(R) (PRWRA-115)
  operation and performance during July 1967, 22:7818(R) (PRWRA-116)
  operation for June 1967, description of, 22:1774(R) (PRWRA-115)
  operation of, materials performance in, 22:52192
  operation of, training programs on, 22:23481(R) (PRNC-102)
  operations and performance during September 1967, 22:16160(R) (PRWRA-118)
  operations during October 1967, 22:18422(R) (PRWRA-119)
  operations history of, total, 22:1821
  radiation protection standards for, 22:23507 (PRWRA-GNEC-7(Rev.2))
  shutdowns during June 1967 of, analysis of, 22:1774(R) (PRWRA-115)
  startup of, preoperational analysis program during initial, 22:18358 (CEND-PRWRA-270)

Puerto Rico Water Resources Authority Reactor
  see Puerto Rico Power Reactor

Puffatron Device
  see Magnetic Mirror Machines

PULSARS
  amplitude variations in, long-period, (T), 22:34178
  AP 2015 + 28, pulse characteristics of, (E), 22:49972
  characteristics of, (T), 22:31548
  characteristics of, (T), 22:41273
  characteristics of, (T), 22:43852
  conference on, summary of, (T), 22:36594
  CP 0328, dispersion value for, (E), 22:49971
  CP 0328, dispersion, period, position, and pulse shape of, (E), 22:52336
  CP 0808, dispersion value for, (E), 22:49971
  CP 0808, dispersion, period, position, and pulse shape of, (E), 22:52336
  CP 0950, position of, (E), 22:41260
  CP 1133, attempt to detect gamma radiation or neutral particles from, (E), 22:52347
  CP 1133, position of, (E), 22:41260
  CP 1919, amplitude fluctuations studied over 5000-km base line of, (E), 22:49973
  CP 1919, period of, at 111.5 MHz, (E), 22:38674
  CP 1919, pulse intensity variations at different frequencies, (E), 22:36698
  CP 1919, pulse spectra between 85 and 2700 MHz, (E), 22:36698
  CP 1919, pulse structure and polarization, (E), 22:36698
  CP 1919, statistical properties of, (E), 22:47780
  discovery of CP 0808 and CP 0328, (E), 22:43678
  discovery of fifth, (E), 22:43679
  distances to, (T), 22:47778
  energy source for, (T), 22:52346
  flux density at 11 cm, peak, (E), 22:38669
  galactic distribution of, (T), 22:36678
  general relativistic effects on frequencies of, (T), 22:34190
  gravitational radiation from, (T), 22:41206
  HP 1506, dispersion value for, (E), 22:49971
  HP 1506, dispersion, period, position, and pulse shape of, (E), 22:52336
  identification of fifth, (T), 22:43852
  impulsive emission between main pulses from CP 0950, (E), 22:34149
  intensity variations in, submillisecond, (E), 22:36697
  luminosity at optical wavelengths, (E), 22:41257
  mechanism for, (T), 22:34189
  model for, (T), 22:41172
  model for, (T), 22:36678
  model for, featuring orbiting objects, (T), 22:34190
  model for, featuring plasma oscillations in magnetosphere of neutron star, (T), 22:38673
  model for, featuring rotating neutron stars, (T), 22:34187
  model for, featuring small orbiting companion, (T), 22:38667
  model for, featuring underluminous white dwarfs, (T), 22:41145
  model for, planetary, 22:41275
  model for, vibrational, 22:43756
  model of, featuring neutron star, (T), 22:34191
  model of, featuring vibrating white dwarf stars, (T), 22:45910
  models for, (T), 22:34188
  optical pulsations from CP 1919, search for, (E), 22:34186
  oscillations of Hamada--Salpeter white dwarfs including general relativistic effects, (T), 22:34179
  periods of rotating white dwarf models, (T), 22:43680
  photometric observations of stars near position of CP

    1919 + 21, (E), 22:38661
  polarization of pulses from, circular, (E), 22:36697
  positions of CP 0950, CP 1133, CP 1919, and CP 0834, (E), 22:45844
  properties of, (T), 22:36594
  PSR 1749-28, discovery of, (E), 22:43820
  PSR 1749-28, dispersion and pulse length of, (E), 22:52341
  PSR 1749-28, dispersion, period, position, and pulse shape of, (E), 22:52336
  PSR 2045-16, discovery of, (E), 22:43820
  PSR 2045-16, dispersion, period, position, and pulse shape of, (E), 22:52336
  pulsation period of fifth, (E), 22:43679
  pulsation periods of CP 0808 and CP 0328, (E), 22:43678
  pulsation periods of rotating white dwarf, (T), 22:41259
  pulse amplitude variations in, (E), 22:41163
  pulse characteristics of CP 0950, 1133, and 1919, (E), 22:38671
  pulse energy at 11 cm, mean, 22:38669
  radii and relative rotation rates for, (T), 22:41256
  radio emission from, Faraday rotation of, (E), 22:41164
  radio spectra of two, (E), 22:38662
  search for proper motion, (E), 22:41257
  use for test of general relativity, (T), 22:31556
  use to determine interstellar electron content, (T), 22:52351
  use to test general relativity theory, (T), 22:52351
Pulse Amplifiers
    see Amplifiers
PULSE ANALYZERS
    see also Oscillographs
  amplifier for Nuclear Data ND-120 multichannel, design of integrated circuit for, 22:28212
  book: Multichannel Analyzers in Nuclear Physics, 22:30922
  calibration and evaluation of multichannel, using PDP-8 computer, 22:47409
  channel identification in memory data display of multichannel, system for, 22:45371
  channel selector for single-channel, design of, 22:4515
  circuit for multichannel, for simultaneously measuring two independent amplitude spectra, 22:25663
  circuit for scalar overflow, 22:21377 (ORNL-4219, pp 4-17)
  circuits for multichannel, 22:33689 (ZfK-121, pp 1-133)
  converter for, linearity of analog--digital, 22:12704
  converter for, review of analog--digital, 22:12705
  converters for 8192-channel, used with semiconductor detectors for measuring gamma spectra, analog-to-digital, 22:43026 (JINR-P13-3911)
  converters for grouping channels in, for coincidence measurements, design of analog-to-digital, 22:51285
  converters for improving resolution of, design of analog-to-digital, 22:28238
  converters for, description of high-speed analog-to-digital, 22:43181
  converters for, design of high-speed 4096-channel analog-to-digital, 22:36152
  converters for, development of time-to-amplitude, 22:16944
  counting rate losses with coupling to CDC 1700 computer, 22:20409(R) (GA-8449)
  data from multichannel, accuracy of oscilloscope histogram display of, 22:329
  data from multichannel, computer display and analysis of, 22:47410
  data from multichannel, computer programs for analysis of, 22:331
  data from multichannel, mean rate analysis of, 22:330
  data from multichannel, strip chart recorder for recording, 22:2449 (INP-560/PS)
  data from, use of on-line programmed desk calculator for peak integration with background subtraction of data from pulse analyzers, 22:45360
  data from, used in biomedical gamma spectroscopy, data acquisition system for collecting, 22:2457 (UCRL-70547)
  data input systems for, description of, 22:33689 (ZfK-121, pp 1-133)
  data printout system of 4096 channel, design of digital, 22:40483 (DP-1154)
  data storage devices for, design of electrostatic, 22:49110
  dead time of multichannel, multistage delay line memory systems for decreasing, 22:10643
  dead-time correction device for, design of automatic, 22:47426
  description for nuclear spectroscopy, 22:49103(P)
  description of 15-channel, using MOSFET memory devices, 22:23367
  description of computer-based multichannel, 22:33692 (ZfK-121, pp 320-425)
  description of continuously averaging multichannel, for x-ray diffractometer, 22:23379
  description of time interval, for measuring half lives of isomeric nuclear states, 22:23369
  design and use in portable x-ray fluorescence analyzer, 22:310 (ORNL-IIC-10(Vol.2), pp 817-4)
  design for activation foil counting, 22:4453(P)
  design for measuring fission-fragment mass distributions, 22:32664
  design for radiation detectors, 22:25660(P)
  design for remote gamma spectroscopy at high altitudes, 22:28142
  design for space applications, 22:40496
  design for surface-barrier detectors, 22:2355
  design of 12 ns resolution single-channel, with pulse pile-up selector, 22:16943
  design of 16,384-channel, for coincidence gamma spectrometers, 22:33657 (AD-663268)
  design of 400-channel, with integrated circuits, 22:51283
  design of compact 128-channel, 22:8410(T) (AD-660962)
  design of computer-based, for real time off-line analysis of gamma spectra from aerial surveying of radioactive minerals, 22:28241
  design of large-memory, for gamma spectroscopy, 22:25706
  design of million-channel, 22:43190
  design of multichannel, 22:21396(P)
  design of multichannel, engineering drawings for, 22:25708
  design of multichannel, for alpha and proton spectroscopy with silicon detectors on lunar surface, 22:12599
  design of RAH-403 400-channel, 22:4513
  design of risetime spectrometer for studying pulse shapes in lithium-drifted germanium gamma detectors, 22:49109
  design of synthesized optimum time-variant, 22:23371
  design of thirty-two channel time, using binary scalers, 22:38153
  design of thirty-two channel, for gamma spectrometer aboard Luna-10 space vehicle for investigation of cosmic radiation, 22:43084
  design of wide-range digital time, with resolution of 50 psec, 22:10661
  design with paper tape readout for analysis of multiple simultaneous voltage pulses, 22:45373
  development for multipurpose use in mines, 22:25700
  development of multichannel, 22:14879
  discriminator circuit for, design and performance of zero-crossover, 22:16950
  discriminator for multichannel, design of high-stability diode pulse-height, 22:14883
  discriminator for, with integrated circuits, design of pulse amplifier and differential, 22:19201
  gain-control system for multichannel, for photomultiplier, design of automatic, 22:2463
  leveling out system for multichannel, with combination ferrite memory and magnetic tape recording systems, 22:36144
  linearity of, measurements of differential, 22:12706
  memory device for multichannel, design of ferrite-core, 22:33689 (ZfK-121, pp 1-133)
  modification of multichannel, for automatic data folding in Moessbauer experiments, 22:405
  outputs for stationary and mobile, design computer-compatible, 22:36136
  outputs from mobile and stationary, computer-compatible, 22:33681 (AD-665608)
  performance for dual-channel subtract scintillation scanning system, 22:49402
  performance of multichannel, with digital address and analog memory, 22:47405 (UUIP-596)
  performance of transistorized 256-channel, for isotope spectra analysis, 22:2411
  performance of, window width--amplifier gain ratio for optimum, 22:6627
  pulse pile-up rejection and correction systems for, development of, 22:16942
  recording system for multichannel, description of computer-based, 22:33692 (ZfK-121, pp 320-425)
  resolution degradation at low and high counting rates, 22:28233
  resolution of time, design of two-channel amplitude correction circuit for improving, 22:36141
  resolution of, in presence of noise and pile-up fluctuations, method for improving, 22:28217
  spectra from data tapes of Nuclear Data and TMC multichannel, computer program for plotting, 22:10635 (RISO-M-640)
  spectrum stabilizer for multichannel, design of pulse generator for testing digital, 22:23358 (IA-1128, pp 185-212)
  spectrum stabilizer for multichannel, digital, 22:23358 (IA-1128, pp 185-212)
  stability of high resolution, improving, 22:33689 (ZfK-121, pp 1-133)
  stabilization of, statistics of digital stabilizers for, 22:10647
  testing of multichannel, design of sliding pulse generator for, 22:6677 (ORNL-TM-1989)
  testing of, engineering drawings of random pulse generator for, 22:30924
  timing circuits for 512-channel, design of transistorized unit for automatic channel stepping, 22:21385 (PINSTECH/PHY-11)
  use for detection for radiation protection, 22:31096
  use for nondestructive testing of FFTF fuels, 22:1854 (BNWL-SA-1388, pp 9.1-6)
  use in Aerial Radiological Measuring System, 22:305 (CEX-59.4(Pt.4))
  use in display system for scintillation detectors, 22:2386(P)

- use in fast Moessbauer data-acquisition system, 22:2397 (ORNL-IIC-10(Vol.1), pp 142-56)
- use of multichannel, and Anger scintillation camera with xenon-135 for study of human lung physiology, 22:31120
- use of multichannel, for analysis of gamma--gamma, particle--gamma, and particle--particle coincidences, 22:14764
- use of multichannel, for measuring time distribution of radioactive decay, 22:49162
- use of single-channel, for spectral measurements of gamma sources, 22:404
- uses in association with medical applications of radioisotopes, 22:19216

PULSE COLUMNS
- holdup and flooding in sieve-plate, 22:20996 (ORNL-TM-1229)
- performance in extraction of zirconium from zirconium oxide using tributyl phosphate, 22:10937
- reactor fuel reprocessing in, radiation stability of solvents in, 22:18865 (ORNL-4212)

PULSE CONVERTERS
- calibration of time-to-amplitude, 22:14888
- channel profiles of analog-to-digital, distortions produced by quantization in, 22:406
- circuit for analog-to-digital, design of analog input delay, 22:43174(P)
- circuits for time-to-amplitude, amplitude compensation, 22:16956
- count-loss corrections for TMC time, with TMC Model 211 logic, 22:16954
- description of analog-to-digital, 22:38181
- description of differential time-to-amplitude, for scintillation detection system, 22:19208
- description of high-speed analog-to-digital, for nuclear measurements, 22:43181
- description of time-to-amplitude, for multichannel analyzers, 22:33689 (ZfK-121, pp 1-133)
- design and performance of 256-channel time-to-amplitude, 22:33689 (ZfK-121, pp 1-133)
- design and performance of time-of-flight, for use with up to 12 radiation detectors and PDP-8 computer, 22:14811
- design and performance of transistorized nanosecond, 22:398
- design for 100 ns range, (E), 22:5817(R) (NYO-GEN-72-28)
- design for multichannel pulse height analyzer, engineering drawings for, 22:25708
- design for use with ionization chambers, 22:36065
- design of analog-to-digital, for 8192 channel analyzer used with semiconductor detectors for measuring gamma spectra, 22:43026 (JINR-P13-3911)
- design of analog-to-digital, for grouping channels in pulse analyzers for coincidence measurements, 22:51285
- design of analog-to-digital, for improving resolution of pulse analyzers, 22:28238
- design of digital time-to-pulse height, for measuring electroluminescent spectra from crystals, 22:51275 (AD-662627)
- design of high-speed 4096-channel 12-bit analog--digital, for pulse height analysis, engineering drawings for, 22:40456
- design of high-speed 4096-channel analog-to-digital, for pulse analyzers, 22:36152
- design of nanosecond time-to-amplitude, with tunnel diodes, 22:33690 (ZfK-121, pp 134-248)
- design of time-to-amplitude, for beam deflection system of pulsed accelerator, 22:18064
- design of time-to-amplitude, for operation in μsec range, 22:6682
- design of time-to-amplitude, for scintillation detectors for time-of-flight measurements, 22:38002
- design of time-to-amplitude, for semiconductor detector time measurements and coincidence measurements, 22:51225
- design of time-to-amplitude, for subnanosecond range, 22:43166
- design of time-to-amplitude, for use with photomultiplier tubes, 22:38159
- design of time-to-amplitude, using bitripoles, 22:28234
- design of transistorized time-to-amplitude, for positron lifetime measurements in solids, 22:16961
- development of 20- to 100-MHz analog-to-digital, 22:14879
- development of 256-channel analog-to-digital, 22:37281(R) (NYO-72-191)
- development of time-to-amplitude, for measuring short time intervals, 22:16944
- errors in time-to-amplitude, calculation of, 22:33689 (ZfK-121, pp 1-133)
- gain and baseline drifts in on-line time-of-flight, digital regulation of, 22:14812
- linearity of analog--digital, 22:12704
- linearity of analog-to-digital, method for determining differential, 22:14886
- linearity of computer-interfaced analog-to-digital, improving differential, 22:23383
- performance of time-to-amplitude, compensation method for increasing, 22:30915
- performance of time-to-pulse height, statistical equalization method to improve differential, 22:19209
- properties of analog--digital, 22:12705
- speed of analog-to-digital, autoequalizing method for increasing, 22:14889
- use with pulse analyzers for measuring lifetime of μ-mesic atoms, 22:6682

PULSE DISCRIMINATORS
- circuit for fast, with trigger level proportional to signal level, 22:21376 (ORNL-4219, pp 1-3)
- design and performance for background-neutron scintillation detector, 22:2425
- design and performance of fast-gated, with small-time skewing, 22:335
- design and performance of pulse shape, for use with organic scintillation detectors, 22:12577
- design and performance of shape, for fast-neutron time-of-flight spectrometer, 22:10591
- design and performance of zero-crossover time, for pulse analyzers, 22:16950
- design for photomultiplier tubes, 22:38158
- design for scintillation detector, 22:47354(P)
- design for stilbene scintillation detectors for neutron spectroscopy, 22:28159
- design of constant fraction of pulse height, for optimum time resolution, 22:10644
- design of constant-fraction, for timing pulses from planar lithium-drifted germanium semiconductor detectors, 22:36060
- design of differential, with integrated circuits, 22:19201
- design of fast zero-crossing, for pulsed-beam time pickoff, 22:408
- design of high-stability diode pulse-height, for multichannel analyzer, 22:14883
- design of integral and differential, with tunnel diodes, 22:36145
- design of pulse shape, for NE213 and stilbene scintillation detectors used for gamma and neutron detection, 22:40405
- design of pulse shape, for use with scintillation detectors, 22:6599
- design of pulse shape, using single p--i--n detector, 22:36135
- design of redundant-type dual pulse generator and discriminator, engineering drawings for, 22:28256
- design of sensitive pulse shape, for wide range of energies, 22:6695
- design of tunnel diode, for scintillation detectors, 22:38037
- design of versatile gated adjustable paralysis, for fast-slow coincidence experiments, 22:32961 (ANL-7310, pp 377-430)
- design of window, with integrated circuits, 22:49154
- design of zero-walk charge storage diode, for scintillation detectors in coincidence, 22:45293
- development of pulse-shape, for electrons and muons in photomultipliers, 22:2421
- development of velocity window, for Moessbauer spectrometers, 22:37281(R) (NYO-72-191)
- performance of pulse shape, for scintillation detectors, 22:28119
- performance with dual-phosphor scintillation detectors for monitoring α and β activity on human hands, 22:45562
- use for background reduction in x-ray proportional detectors, 22:45273 (AERE-R-5749)
- use for suppressing Compton background in semiconductor detectors, 22:21308 (BNWL-SA-1515)
- use in gamma rejection for proportional counters for reactor noise analysis, 22:49084

PULSE GENERATORS (ELECTRONICS)
- circuit for 15 kHz regular or 5 kHz random RC-shaped, 22:21377 (ORNL-4219, pp 4-17)
- circuit for 500-A, for magnet coil for generating 5 kG fields pulsed at 1200 Hz, 22:21378 (ORNL-4219, pp 18-28)
- circuit for random, at 100 Hz to 10 kHz, 22:21377 (ORNL-4219, pp 4-17)
- circuits for line-type, design of power scavenging de-Q'ing, 22:10663(P)
- description for fast-rise flashlamp, 22:21318 (UCRL-50176)
- description for prompt curve simulation for nanosecond lifetime measurements, 22:33690 (ZfK-121, pp 134-248)
- description for reactor oscillators, 22:18637(P)
- description for Tohoku 300-MeV electron linac, 22:22508
- description of double light, for simulating scintillation light flashes, 22:33690 (ZfK-121, pp 134-248)
- description of, for use with nuclear geophysics equipment, 22:28262
- design and performance for isotropic monogap streamer chamber, 22:33664
- design and performance of solid-state double, for use as stable reference for semiconductor spectrometers, 22:40440
- design and performance of square-loop flux standard, for calibrating search coil--integrator magnetometer, 22:12684 (UCRL-17639)
- design and theory of, using superconductive tunnel junction neuristor, (E/T), 22:46076
- design for accelerators, 22:9753(P)
- design for supplying 500-A current pulses for producing pulsed magnetic fields, 22:28237
- design for testing digital spectrum stabilizers of multichannel analyzers, 22:23358 (IA-1128, pp 185-212)

- design for triggering gas-filled spark chambers, 22:19159(P)
- design for use with spark chamber, 22:8384 (JINR-P13-3570)
- design of 20-kW peak power, for supplying pulses to displacement gage transducers, 22:38152 (UCRL-71084)
- design of 5- to 138-MHz, with variable pulse duration, 22:6686
- design of current-mode trigger, for coincidence circuits, 22:40497
- design of digital pseudorandom, with uniform amplitude distribution, 22:19205
- design of dual, engineering drawings for, 22:14898
- design of fast, using electron beam for arc breakdown of coaxial conductors, 22:4549(P)
- design of gigawatt lumped-element line, 22:42935 (LRP-37/68)
- design of high-power, using pnpn devices, 22:36150
- design of high-voltage, for spark chamber with gaps of 1.0 to 15 cm, 22:38082
- design of nanosecond rise time, high power, variable delay double, for measuring decay of electron--hole plasma, 22:8415
- design of random, for testing nuclear instruments, engineering drawings for, 22:30924
- design of random, ORNL Model Q-3029A-1, 22:12683 (ORNL-TM-1909)
- design of redundant-type dual pulse generator and discriminator, engineering drawings for, 22:28256
- design of rf, for producing 1.8 kG rotating magnetic field, 22:28225
- design of sliding, for testing multichannel analyzers, 22:6677 (ORNL-TM-1989)
- design of square-loop flux standard for calibrating search coil and integrator fluxmeters, 22:10652
- design of transistorized, for 25 kV pulses, 22:36139
- design of transistorized, three-channel, nanosecond, 22:36148
- design with integrated circuits, 22:38175
- development of digital delay, with 1 μsec to 300 msec width in 100 μsec steps, 22:51279(R) (RISO-M-729)
- fabrication and operation principles of high-voltage, 22:36147
- magnetohydrodynamic, with superconducting magnetic system, 22:17441
- stabilization of high-frequency, control circuit for, 22:9724(T) (ANL-Trans-535)
- switch for, use of laser for triggering spark gap, 22:12682 (NPA/Int.-65-31)
- trigatrons for high-current, review of, 22:47429
- use of externally-triggered, with associated time-coincident logic pulse for testing nuclear instruments, 22:23364

PULSE GENERATORS (PNEUMATICS)
- operating experience of automatic blowback systems for sintered-metal filters in fluidized beds, 22:25564 (ANL-7392)

PULSE INTEGRATORS
- description of MOSFET, for radiation dosimetry, 22:23367
- design and performance of fast dc, 22:45361
- design of nanosecond, for photomultiplier pulse-height analysis, 22:4519
- noise of gated, time-domain method for calculating, 22:10642
- optimum time constant for, for continuous materials testing equipment, 22:10526
- reactor noise analyses using, plutonium fueled fast, 22:32961 (ANL-7310, pp 377-430)
- response of DDP-24 on-line computer, 22:32961 (ANL-7310, pp 377-430)
- use with radiation detector for monitoring reactor period, 22:10091(P)
- use with radiation detectors for monitoring reactor period, 22:7934(P)

PULSE SHAPERS
- circuit design for pulse stretching, 22:4552(P)
- design and operation of reconductible, 22:49164
- design and use in decade counter with 500-Mc resolution, 22:2464
- design for measuring fission-fragment mass distributions, 22:32664
- design for photomultiplier tubes, 22:28121
- design of nanosecond, for scintillation detectors, 22:6583
- design of pulse shaping variable gain amplifiers for high-resolution spectroscopy, 22:14842
- design of pulse stretcher, for semiconductor spectrometers, 22:43095
- design of saturated transistor, for pulse stretching, 22:409
- design of time-dependent filter, for nuclear spectrometers, 22:45325

Pulse Stretchers
- see Pulse Shapers

Pulsed Fast Research Reactor (Brookhaven)
- see Reactors, Research

PULSES
- distribution in negative pion irradiation of mice, 22:33905 (ORO-3343-1, Paper 5)

PULSTAR (AMF-Atomics)
- see Reactors, Research

PUMICE
- effectiveness for polonium-210 removal from human skin, 22:43333
- plutonium-239 abundance in, 22:25516

PUMPS
- see also Blowers
- see also Compressors
- see also Electromagnetic Pumps
- see also Pumps (Liquid Metal)
- see also Vacuum Pumps
- bearings for liquid hydrogen turbo-, radiation effects on, 22:8789
- bearings for steam driven helium, design of water lubricated shrouded step thrust, 22:8279
- Beznau Power Reactor, description of, 22:42237
- case welding of large stainless-steel nuclear, electroslag, 22:2286
- configuration of 2000 MW(e) Molten Salt Breeder Reactor fuel salt, design parameters for optimum, 22:48652 (ORNL-4254, pp 50-87)
- configuration of boiling reactor jet, description of replaceable movable nozzles for back flow-preventing, 22:44845(P)
- cooling system jet, description of multi-nozzle removable reactor, 22:39927(P)
- description of hermetically sealed heavy water and water, 22:22784
- description of high temperature electric motor, for organic-cooled and -moderated reactors, 22:44948(P)
- description of jet, for circulation of reactor coolant, 22:20956(P)
- description of NERVA turbine, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
- description of optimized rocket reactor turbine, 22:22789 (CONF-661204-(Vol.2), pp 80.1-11)
- description of SENA Power Reactor cooling system, 22:3858
- description of test, for irradiation facility, 22:3956(P)
- design and operation of coolant, for nuclear power plants, 22:47263 (AECL-2713)
- design criteria for nuclear installation, 22:7816(R) (ORNL-TM-2057)
- design for conversion of uranium nitrate to uranium oxide, engineering drawings for, 22:14643
- design of boiling water reactor internal axial-mounted, 22:25014
- design of differential pumping tubes for electrostatic particle accelerators, 22:1556(P)
- design of electrolytic, 22:27848 (CEA-N-816, pp 359-414)
- design of radioisotope-powered heart, 22:10519
- design of reactor coolant, 22:30771
- design requirements for reactor, analysis of, 22:42222
- design, fabrication, and operation of demountable glass, with variable pumping speed, 22:21237 (UUIP-547)
- development and testing for use in organic Rankine cycle space power systems, 22:30768(R) (SAN-651-57)
- development and testing for use in Rankine power cycles, 22:45221(R) (SAN-651-65)
- development and testing of condensate, for operation in organic Rankine cycle space power system, (E), 22:25617(R) (SAN-651-49)
- development and testing of neon cycle cryogenic, for low density plasma tunnel, 22:10459
- development of internal axial-mounted reactor coolant, 22:25147
- failure of N.S. Savannah main coolant, 22:6068
- feedwater driven dual-jet, description of boiling reactor cooling system, 22:37482(P)
- impeller for reactor coolant, description of pressure vessel-penetrating externally-driven pivotally-mounted folding-blade, 22:37609(P)
- lubrication of, evaluation of silicone for, 22:11104
- motors for, evaluation of PEC Fast Test Reactor, 22:53444
- operation performance of jet, analysis of optimum water tunnel, 22:25203 (AAEC/TM-410)
- performance and testing of, for operation in organic Rankine cycle space power system, (E), 22:10506(R) (SAN-651-43)
- performance in Elk River Reactor decay heat system, 22:18420(R) (NUS-428)
- performance of Medium Power Reactor Experiment jet, analysis of, 22:24972 (ORNL-3745)
- performance of potassium and sodium, in space power systems, 22:12975
- performance of radial electric field and Penning, to study secondary emission in vacuum below 10^{-10} torr, 22:16838
- performance of screw, in laminar flow, (T), 22:8275
- placement of primary, relation to intermediate exchanger, 22:8251 (DRP/ML/FAR R-168)
- relay circuits associated with HIFAR heavy water, operation manual for, 22:22797 (AAEC/M-13)
- shaft seal failure in Big Rock Point reactor coolant-circulation, 22:24991
- testing of HNPF prototype sodium, design of loop system for, 22:53279 (LMEC-Memo-68-21)
- testing of Sioux Falls Power Reactor recirculation, effects in reactivity of trip, 22:9983 (ACNP-67515)
- vibrations in Rover reactor turbopumps, testing at 530 to 114°R for 2000 g, 22:42341 (LA-DC-9331)

- PUMPS (LIQUID METAL)
  - see also Electromagnetic Pumps
  - bearing materials for high-temperature lithium and potassium--sodium, effects of coating on reactions and wear of, 22:2576
  - book: Basic Theory and Design of Linear Liquid Metal Induction Pumps, 22:43973
  - calibration of SNAP-10A permanent-magnet, as flowmeter for potassium--sodium alloy, 22:23197 (ORNL-TM-2073)
  - description of 1000 MW(e) LMFBR, 22:9990(R) (BAW-1312)
  - description of BN-350 Reactor liquid sodium circulating, 22:18506
  - description of circulating sodium, 22:18504
  - design and performance data for FTR, 22:14250(R) (BNWL-470)
  - design and performance of, for 2000 kW sodium test facility, (E), 22:10433 (LA-3782)
  - design and testing high-volume, for sodium, 22:10438(R) (NAA-SR-12585)
  - design and testing of sodium, 22:48982(R) (LMEC-68-20)
  - design parameter comparison of boiler feed, for cesium and potassium Rankine cycle space power systems, 22:47000 (ORNL-TM-2086)
  - design testing of liquid-metal fast-breeder reactor coolant, analysis of optimum, 22:32870
  - development of 500 to 1000 MW(e) liquid sodium-cooled fast reactor, analysis of problems in, 22:32736(T) (ANL-Trans-588)
  - development of optimum 50,000 to 100,000 gpm free-surface shaft-sealed centrifugal mechanical-type, description of, 22:46962
  - development of TREAT liquid sodium Mark-2 in-pile loop annular linear-induction, description of, 22:44884 (ANL-7369)
  - effects of liquid sodium environment on fast reactor, 22:18503
  - performance data for annular linear induction (ALIP), 22:32735 (ANL-7310, pp 249-375)
  - performance of FFTF liquid sodium, effects of coolant loop location on, 22:35590 (BNWL-729)
  - performance of sodium purity, 22:18600
  - performance testing of, 22:647(R) (BNL-50077)
  - power failure in sodium, flywheel-augmented flow coastdown following, 22:37449 (ORNL-TM-2132)
  - reliability of sodium, 22:16203
  - testing facility design for, 22:206(R) (NAA-SR-12520)
- PUPAE
  - phosphorus-32 distribution in Drosophila, following uptake by larvae of different ages, 22:23460
  - phosphorus-32 uptake by yellow-fever mosquito, loss and transfer during development, mating, and oviposition following, 22:36165
  - radiation effects on cereal leaf beetle, β, γ, and x, 22:45681
  - radiation effects on formation of, by insects, effects of ecdysone on γ or x, 22:31147
  - radiation effects on life span, mortality, and reproduction of rice stem borer, effects of dose on γ, 22:36397
  - radiation effects on molting of dermestid beetle, effects of dose on γ, 22:6915
  - radiation effects on mortality of Drosophila, γ, 22:2549
  - radiation effects on Musco domestica, effects of, on life span and wing retention by adults, 22:555
  - radiation effects on silkworm, effects of, on quality of silk fiber, γ, 22:40979 (THAI.-AEC-8)
  - radiation effects on, of Drosophila melanogaster, γ, 22:10864
  - radiation effects on, of flour beetles, latent x, 22:10824 (BNWL-480, pp 1-19)
  - radiation effects on, of holyhock seed moth, in relation to sterilization, x, 22:52122
  - radiation effects on, of moths, x, 22:17070
  - radiation effects on, of rice weevils, cobalt-60 γ, 22:10822 (AECD/AG-22)
  - radiation effects on, of Tribolium, effects of centrifugation, dose, and vibrations on x, 22:31208 (UCRL-17751, pp 41-51)
  - radiosensitivity of cabbage fly, γ, 22:40981
  - radiosensitivity of Drosophila ananassae, x, 22:17011
  - radiosensitivity of human bot fly, effects of stage of development on γ, 22:23699
- PUPPY
  - see Pluto Reactors (Tory)
- PUREX PROCESS
  - analysis of waste solutions from, for uranium, polarographic, 22:8009
  - building for, radioisotope levels in air of, 22:12474 (BNWL-643)
  - contactor for, efficiency of stainless steel stacked-clone, 22:12403 (ORNL-4094, pp 5-13)
  - efficiency for reprocessing breeder fuels, 22:48909
  - equipment for reprocessing high-plutonium-content fuel by, 22:30646(T) (EURFNR-460)
  - feed solutions for, nitric acid dissolution of breeder fuels for, 22:42810(T) (EURFNR-471)
  - feed solutions for, nitric acid dissolution of breeder fuels for, 22:25460 (KFK-673)
  - plutonium retention in, 22:16643 (KFK-652)
  - radioiodine release at Savannah River Plant from, effects of mercury on suppression of, 22:35882 (DP-MS-66-78)
  - radioiodine release in, use of mercury in suppression of, 22:30667
  - sludge from, neptunium and plutonium separation by solvent extraction using bis(2-ethylhexyl) phosphate from, 22:21154 (BNWL-583)
  - tributyl phosphate stability in, review of, 22:18873(T) (ORNL-tr-1901)
  - waste (PW-1) processing for, effects of component concentration on, 22:23244 (BNWL-544)
  - waste (PW-1) processing for, pot solidification method for, 22:21297(R) (BNWL-677)
  - waste (PW-2) processing for, spray solidification method for, 22:21297(R) (BNWL-677)
  - waste disposal from, at Savannah River Plant, geologic aspects of underground, 22:28036 (DP-MS-67-108)
  - waste processing for, pot and spray methods for, (E), 22:47306(R) (BNWL-771)
- Purification Equipment
  - see Water Purification Equipment
- PURINE, 2-AMINO-
  - effects on Escherichia coli, method for determining specificity of mutagenic, 22:4593
- Purine, 6-Amino-
  - see Adenine
- Purine, 6-Amino-9-β-D-ribofuranosyl-
  - see Adenosine
- Purine, 6-[(1-Methyl-4-nitroimidazol-5-yl)-thio]-
  - see Azathioprine
- PURINES
  - (Substituted purines found in nucleic acids)
  - see also Adenine
  - see also Guanine
  - deficiency effects on x-radiosensitivity of DNA in Escherichia coli, 22:25780
  - effects on reproductive capacity of female insects, 22:45744
  - effects on uv-radioinduced formation of dimers and hydrates in pyrimidines, 22:25791
  - nuclear magnetic resonance spectra of, effects of deuterium ion concentration on, 22:28309
  - radiation effects on content of, in yeasts, cosmic, 22:12944
  - radiation effects on, effects of phosphoric acid residues on γ, 22:33770
  - radiation effects on, mechanisms of, 22:40123
  - stability of tritium-labeled, in metabolic processes, 22:51461
  - synthesis in man with hyperuricemia in relation to sex-linked neurological disorders, 22:12743 (ACRH-1000-32)
  - synthesis of primordial, 22:33734
  - tritium exchange in aqueous solutions, effects of acidity on, 22:27699
- PUROMYCIN
  - effects on chlorophyll synthesis of Chlorella mutant, 22:36220
  - effects on cytaster formation in amphibian eggs, 22:43448
  - effects on γ-radiosensitivity of reticuloendothelial system of mice, 22:45641
  - effects on mitosis and protein synthesis in grasshopper neuroblast cells, 22:28407(R) (ORO-2575-41)
  - effects on protein synthesis during mitotic cycle of sea urchin eggs, 22:25712 (COO-78-163, pp 39-63)
  - effects on synthesis of proteins during spermatogenesis in fruit flies, tritium tracer study of, 22:28668
  - effects on uv-radiosensitivity of cultured Chinese hamster cells, 22:36361
  - effects on x-radiosensitivity of antibody synthesis by spleen cells from mice, 22:4569
  - inhibition of protein synthesis by Chinese hamster cells, effects of, on progression and radiation repair, 22:25785
- PURRE
  - see Plutonium Recycle Test Reactor
- PVA (Polyvinyl Alcohol)
  - see Vinyl Alcohol Polymers
- PWR (Shippingport)
  - see Shippingport Pressurized-Water Reactor
- Pyralin
  - see Celluloid
- PYRAN, TETRAHYDRO-
  - effects on chlorine-36 exchange between aluminum chloride and hexachloropropene in dichloromethane solution, 22:12321
  - hydrolysis of 2-alkoxy- and 2-aryloxy-, deuterium isotope effects in acid-catalyzed, 22:37751
  - radiation effects on bond scission of, electron, 22:42719(T) (AEC-tr-6937, pp 176-83)
  - radiation effects on, at 77°K, ESR spectral studies on free radicals produced by electron, 22:8129
  - radiation effects on, at 77°K, ESR studies of free radicals from electron, 22:42714(T) (AEC-tr-6937, pp 117-32)
- PYRAZINE
  - effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
  - radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
  - radiolysis in 2-methyltetrahydrofuran glass, spectral

  studies on radical ions produced by γ, 22:35831 (PRNC-116)
  radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
2,3-PYRAZINEDICARBOXYLIC ACID
  use in photometric determination of molybdenum, 22:1988
PYRAZINIUM COMPOUNDS
  octamethylpyrazino[2,3-b]pyrazinium dodecahydrododecaborate, preparation for use as neutron moderator, 22:18740 (RMD-5097-F)
PYRAZOLE
  electrolysis of, ESR spectra of radicals from, 22:1935 (UCRL-17743)
  radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
  radiolysis in 3-methylpentane and 2-methyltetrahydrofuran glasses at 77°K, spectral studies on radical ions produced by γ, 22:35831 (PRNC-116)
  radioprotective effects of, on hemin solutions, x, 22:8562 (NP-16875)
3,5-PYRAZOLIDINEDIONE, 4-BUTYL-1,2-DIPHENYL-
  radioprotective effects of, on skin of man, uv, 22:45594
  radioprotective effects of, on skin, uv, 22:49393
2-PYRAZOLIN-5-ONE, 4-BENZOYL-3-METHYL-1-PHENYL-
  solvent properties for neptunium in acid solutions, 22:45174
  solvent properties for thorium, 22:10196
2-PYRAZOLIN-5-ONE, 3-METHYL-4-OCTANOYL-1-PHENYL-
  solvent properties for barium, calcium, lanthanum, potassium, scandium, and strontium, 22:33495
  solvent properties for cadmium-115 and strontium-89 and -90, 22:4236
  solvent properties for indium, 22:12421
  solvent properties for strontium-89 and yttrium-90, 22:4237
  solvent properties for various metals, 22:8193
3-PYRAZOLIN-5-ONE, 4-IODO-1,2,3-TRIMETHYL-
  iodine-125 exchange between iodine and, in water, kinetics of, 22:30550
PYRENE
  effects on γ-induced isomerization of 4-methoxy-4'-nitrostilbene in naphthalene, 22:27776
  electron attachment cross sections for, nondissociative, 22:35777 (ORNL-TM-2216)
  preparation of tritium-labeled, effects of variables on Wilzbach method for, 22:65
  cyclohexane--pyrene, radioinduced fluorescence of, effects of electric field on electron, 22:42749
Pyrex Glass
    see Glass
Pyrexal
    see Lipopolysaccharides
PYRIDAZINE
  effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
  radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
  radiolysis in 2-methyltetrahydrofuran glass, spectral studies on radical ions produced by γ, 22:35831 (PRNC-116)
PYRIDAZINE, METHYL-
  deuterium exchange between heavy water and methyl hydrogens of, base-catalyzed, 22:37727
  1-oxide, deuterium exchange between heavy water and, 22:37727
3,6-PYRIDAZINEDIONE
  radioprotective effects of, on mice, 22:8561(R) (COO-1223-10)
3,6-PYRIDAZINEDIONE, 1,2-DIHYDRO-
  effects on chromosomes in roots of Vicia faba, combined effects of hydroxyurea on aberrant, 22:47505
  effects on chromosomes of Vicia faba, combined effects of x rays on aberrant, 22:28414
  effects on chromosomes of Vicia faba, effects of hydroxyurea on mutagenic, 22:31022
  effects on γ-radiosensitivity of rate of mutations in Drosophila melanogaster, 22:14994
  effects on root growth in x-irradiated corn seedlings, 22:31283
PYRIDINE
  complexes with cobalt or nickel and 2,4-pentanedione, preparation of, for use as secondary standards, 22:45039
  complexes with uranyl nitrate, infrared spectra of, 22:14502
  compounds with uranyl bromides and/or chlorides, infrared spectra of, 22:2042
  deuterium exchange with hydrogen in, catalytic effects of group VIII metals on, 22:35819
  effects on distribution of uranyl ions in 2,4-pentanedione--phosphoric acid ester, 22:27894
  effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
  electrolysis of methyl-substituted, ESR spectra of radicals from, 22:1935 (UCRL-17743)
  electrolysis of, ESR spectra of radicals from, 22:1935 (UCRL-17743)
  hydrochloride, chlorine-36 exchange between gaseous hydrogen chloride and, kinetics of, 22:47146
  mass spectra of, effects of deuterium on, 22:42647(T) (AEC-tr-6937, pp 104-8)
  molecular orbital calculations on, and its radical anion and cation, 22:35831 (PRNC-116)
  radiation effects on, effects of iodine additions on free radical formation in γ, 22:8103(T) (AEC-tr-6908, pp 139-44)
  radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
  radiolysis in 2-methyltetrahydrofuran glass, spectral studies on radical ions produced by γ, 22:35831 (PRNC-116)
  radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
  reactions with 1-chloro-2,4-dinitrobenzene, effects of deuterium in solvent on, 22:27711
  reactions with methyl iodide, 22:22657(R) (BMI-X-10222)
  reactions with potassium hexachlororhodate, effects of deuterium on catalyzed, 22:10241
  reactions with uranyl chlorides, production of complex compounds in, 22:10215
  separation of deuterated and normal, by gas chromatography using open tubular thick layer graphitized carbon black columns, 22:27874
  spectra of deuterated and normal, isotope effects in, 22:8052
  substituted, deuterium exchange with C-methyl protons in, PMR spectral studies on, 22:6303
PYRIDINE, 2-BENZYL-
  reactions with acetic anhydride, effects of deuterium on, 22:27702
PYRIDINE, 2-BENZYL-
  complexes with uranyl nitrate, infrared spectra of, 22:14502
  complexes with uranyl nitrate, luminescence spectra of, 22:33304
PYRIDINE, 2-BROMO-
  complexes with bromine, nuclear quadrupole resonance spectral studies on charge transfer in, 22:18806(R) (COO-1385-21)
PYRIDINE, 1,2-DIHYDRO-2-IMINO-1-METHYL-
  dithiocarbamate salts of, preparation and radioprotective effects of, 22:28579
PYRIDINE, 1,4-DIHYDRO-1,4,4-TRIMETHYL-
  decomposition of, effects of deuterium on, 22:18785
Pyridine, Dimethyl-
    see Lutidine
PYRIDINE, 2-[N-[p-(DIMETHYLAMINO)PHENYL]-FORMIMIDOYL]-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
PYRIDINE, 4-[N-[p-(DIMETHYLAMINO)PHENYL]-FORMIMIDOYL]-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
PYRIDINE, 2-FLUORO-
  radiation effects on liquid, ESR spectral studies on, 22:18806(R) (COO-1385-21)
Pyridine, Hexahydro-
    see Piperidine
Pyridine, Methyl-
    see Picoline
Pyridine, 2-Methyl-
    see 2-Picoline
Pyridine, 4-Methyl-
    see 4-Picoline
PYRIDINE, 2-METHYL-5-VINYL-
  butadiene--methylvinylpyridine, polymers of, radiation effects on infrared, 22:14518(R) (ORO-2418-4)
Pyridine-nucleotide Dehydrogenase
    see Reduced NAD Dehydrogenase
PYRIDINE NUCLEOTIDES
    see also Nicotinamide-Adenine Dinucleotide
    see also Nicotinamide-Adenine Dinucleotide Phosphate
PYRIDINE-1-OXIDE
  complexes with rare earth and yttrium nitrates, precipitation and solubility of, 22:33360
  deuterium exchange at annular positions of, mechanism of base-catalyzed, 22:50961
  electrolysis of, ESR spectra of radicals from, 22:1935 (UCRL-17743)
PYRIDINE, 4-(N-PHENYLFORMIMIDOYL)-
  complexes with thorium, tin, and titanium, preparation and structure of, 22:8076
PYRIDINE, 2,4,6-TRIMETHYL-
  tritium exchange between 2-nitropropane and, 22:40070
PYRIDINE, VINYL-
  photochemical grafting of gaseous, to polyamide fibers, kinetics and mechanism of uv, 22:14543
  radiochemical grafting of gaseous, to polyamide fibers, kinetics and mechanism of γ, 22:14543
PYRIDINE, 2-VINYL-
  radioinduced graft polymerization with cellulose, effects of water vapor on products of, 22:21115
  radioinduced grafting to cellulose, effects of methanol, solvents, and oxygen on, 22:33434
  radioinduced polymerization of, with sulfur dioxide at -20 to 75°C, γ, 22:4193
PYRIDINE, 4-VINYL-

radiation effects on subsequent polymerization with polypropylene, 22:51031
radioinduced graft polymerization with Teflon, properties of products of γ, 22:40146
radioinduced grafting to cellulose, effects of methanol, solvents, and oxygen on, 22:33434
radioinduced polymerization of, with sulfur dioxide at -20 to 75°C, γ, 22:4193
acrylic acid--divinylbenzene--vinylpyridine, sorptive properties of copolymer of, for gold and silver ions, 22:45059
acrylonitrile--divinylbenzene--vinylpyridine, sorptive properties of copolymer of, for gold and silver ions, 22:45059
PYRIDINE, VINYL-, POLYMERS
radiation effects on infrared spectra of, 22:14518(R) (ORO-2418-4)
radiation effects on, γ, 22:4192
2-Pyridinecarboxylic Acid
see Picolinic Acid
3-Pyridinecarboxylic Acid
see Nicotinic Acid
2,6-Pyridinedicarboxylic Acid
see Dipicolinic Acid
PYRIDINIUM BROMIDES
cetyl-, use in spectrophotometric determination of rare earths in alkaline medium, 22:40000
PYRIDINIUM COMPOUNDS
1-methyl-4-formylpyridinium iodide, reactions with alanine, deuterium isotope effects on, 22:30522
cetylpyridinium bromide, complexes with various metals and pyrocatechol, 22:48906
hexadecyl pyridinium chloride, effects on yeast cells, protective effects of thorium and uranyl ions against lytic, 22:10730
N-methylpyridinium carboxylates, decarboxylation of, 22:50961
N-methylpyridinium chloride, deuterium exchange at annular positions of, mechanism of base-catalyzed, 22:50961
reactions of ions of, with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
reactions with hydrated electrons, effects of polyanions on, 22:42783
2H-PYRIDO[4,3-b]INDOLE
radioprotective effects of, on skin of rabbits, β, 22:21543
2-PYRIDONE, 1-METHYL-
reactions with 1,3-cyclohexadien-5-yne, products of, 22:18801
PYRIDOXAL 5-PHOSPHATE
radiation effects on, in mammalian tissues, x, 22:19383
radioprotective effects of intravenous injections of, on survival of rats, effects of dose and time of administration on whole-body x, 22:31137
radioprotective effects of, on skin, uv, 22:49393
PYRIMIDINE
effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
effects on reproductive capacity of female insects, 22:45744
molecular orbital calculations on, and its radical anion and cation, 22:35831 (PRNC-116)
radiation effects on excision of dimers of, from DNA, effects of bacterial extracts on uv, 22:28288 (ORNL-4100, pp 166-77)
radioinduced dimers of, in cultured human cells, of uv, 22:51957
radioinduced dimers of, in excision-repair deficient Escherichia coli, persistence of, uv, 22:33792
radioinduced dimers of, in poly T, uv, 22:28288 (ORNL-4100, pp 166-77)
radioinduced dimers of, repair of uv, 22:49223
radioinduced peroxides of, in Paramecium caudatum, toxicity of, 22:51983
radioinduced production of dimers of, in Tetrahymena, uv, 22:51441
substituted, deuterium exchange with C-methyl protons in, PMR spectral studies on, 22:6303
tritium exchange in aqueous solutions, effects of position of labeling on, 22:27699
PYRIMIDINE, AMINO-
reactions with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
PYRIMIDINES
(Substituted pyrimidines found in nucleic acids)
see also Cytosine
see also Thymine
see also Uracil
chemical stability of tritium-labeled, conference on, 22:45380 (EUR-3290)
electrolysis of, ESR spectra of radicals from, 22:1935 (UCRL-17743)
nuclear magnetic resonance spectra of, effects of deuterium ion concentration on, 22:28309
photochemical reactions in, mechanisms of, 22:23409(R) (NYO-2798-32)
photoreactivation of dimers of, in DNA of Paramecium aurelia, 22:28399 (ORNL-4100, pp 40-7)
radiation effects on, effects of phosphoric acid residues on γ, 22:33770
radiation effects on, mechanisms of, 22:40123
radioinduced dimerization of, in DNA of Paramecium, photoreactivation of uv, 22:8445
radioinduced dimers of, in DNA of Escherichia coli in relation to mutagenesis, uv, 22:23457
radioinduced formation of dimers and hydrates in, effects of complexing with purines on uv, 22:25791
radiolysis of aqueous solutions of, in presence of chloride ions, γ, 22:33718 (UCLA-12-640, pp 61-80)
stability of tritium-labeled, in metabolic processes, 22:51461
structure of deuterochlorides of 4-substituted, NMR studies on, 22:18801
synthesis of primordial, 22:33734
PYRIMIDINOL
substituted, deuterium exchange with C-methyl protons in, PMR spectral studies on, 22:6303
4-Pyrimidinol, 2-Amino-
see Isocytosine
PYRIMIDINONE
deuterium exchange between H-2 in 4-substituted, NMR studies on kinetics of, 22:18801
structure of deuterochlorides of 4-substituted, NMR studies on, 22:18801
substituted, deuterium exchange with C-methyl protons in, PMR spectral studies on, 22:6303
PYRIMIDINTHIONES
deuterium exchange between H-2 in 4-substituted, NMR studies on kinetics of, 22:18801
PYRITES
content in neogene sediments of Niigata Prefecture, Japan, 22:51118
PYRITHIAMINE
effects on metabolism of calcium and strontium in Tetrahymena, 22:40515 (NYO-1822-25)
Pyrocatechin
see Pyrocatechol
PYROCATECHOL
amine derivatives, radiation effects on content of, in adrenal glands of mice, effects of diethylstilbestrol on x, 22:19377
amine derivatives, radiation effects on metabolism of, in mammals, ionizing, 22:16979
complexes with various metals and quaternary salts, 22:48906
radiation effects on content of, in brain and muscles of adrenalectomized mice, neutron and x, 22:51944
reactions with polyvinyl acetate radicals, kinetics of deuterium isotopic exchange in, 22:25353
use in spectrophotometric determination of molybdenum and tungsten in solution with Complexon III, 22:48821
PYROCHLORES
radiation effects on flotation behavior of, beta, 22:42796
PYROGALLOL, NITRO-
radiolysis of aqueous solutions of, yields of 2,3,4,5-tetrahydroxynitrobenzene in γ, 22:14536
PYROMELLITIC ACID
use in complexonometric determination of barium in presence of calcium, magnesium, and strontium, 22:16430
Pyrometallurgical Processes
see High Temperature Separation Processes
PYROMETERS
see also Thermocouples
see also Thermometers
design and operation for determining thermal properties of ceramic fuels, 22:19649(R) (NUMEC-3505-30)
design and performance of photometric, for temperature measurements in liquid sodium, 22:36453 (LMEC-Memo-68-10)
design for determination of high temperature phase diagrams, 22:35981
design for measurement of molten steel surfaces in electron-beam furnace, 22:19468(T) (UCRL-Trans-10215)
design of photoelectric, for measurement of temperature of tungsten, 22:31358
PYROMETRY
see also Thermometry
PYROMORPHITES
see also Apatites
PYRONINE
radiation effects on staining reactions of amoebae to, effects of dose on x, 22:49189
PYROPHOSPHATES
see also Calcium Pyrophosphates
see also Sodium Pyrophosphates
see also Strontium Pyrophosphates
see also Thorium Pyrophosphates
see also Uranium Pyrophosphates
use of potassium-32-labeled, for study of phosphate uptake by ATP in Mycobacterium tuberculosis, 22:40524
PYROPHOSPHORAMIDE, OCTAMETHYL-
complexes with rare earths, preparation of, 22:30468
use in spectrochemical determination of rare earths, 22:30468
PYROPHOSPHORIC ACID, TETRABUTYL ESTER
complexes with uranyl nitrate, spectral studies on, 22:27853 (INP-591/C)
solvation energy of aqueous uranyl chloride in, use of

  plutonium-239 electrode for measuring, 22:23010
 HNO_3--tetrabutyl hypophosphate--tetrabutyl pyrophosphate, solvent properties for rare earths and transuranium elements, 22:27853 (INP-591/C)
Pyrotrons
  see Magnetic Mirror Machines
PYROXENES
 analysis of lava containing, for trace elements, activation, 22:50939
 effectiveness as anti-emetic in human patients undergoing radiotherapy of abdomen and pelvis, 22:33893
 Hugoniot equation of state for jadeite and bronzitite, 22:174
 uranium content in Siberian, determination by (n,f) reactions, 22:48967
 uranium content of, determination by autoradiography, 22:2203
PYRRHOPHYTA
 Gymnodinium bicorne, isolation from tropical Atlantic Ocean, 22:42576(R) (NYO-3497-13)
PYRROLE
 effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
 molecular orbital calculations on, 22:35831 (PRNC-116)
 molecular orbital calculations on radical anion and cation of, 22:35831 (PRNC-116)
 radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
 radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on radical ions produced by γ, 22:35831 (PRNC-116)
 radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
PYRROLIDINE
  see also Atropine
  see also Cocaine
Pyrrolidine, 1,1'-(2-Butynylene)di-
  see Tremorine
PYRROLIDINECARBAMIC ACID, DITHIO-, AMMONIUM SALT
 use in uv spectrophotometric determination of bismuth, cadmium, cobalt, and molybdenum in solution, 22:30487
2,5-Pyrrolidinediones
  see Succinimides
PYRROLIDINONE, VINYL-
 radioinduced grafting on polypropylene, γ, 22:25418
 radioprotective effects of, on mice, effects of hypoxia on, 22:28591
 radioprotective effects of, on SCH cells, γ, 22:25892
2-PYRROLIDINONE, 1-VINYL-, POLYMERS
 effects in combination with CDTA on iron-59 excretion in rats, 22:21456
 effects on excretion of strontium-90 in rats, 22:21456
 effects on plutonium retention by rats, 22:8480
 preparation of gold-198-labeled colloids of, for use in scintiscanning, 22:43352
 use of iodine-131-labeled, for studying neutron- and x-radioinduced gut leakage in mice, 22:49557
PYRUVALDEHYDE
 effects on γ-radiosensitivity of Ehrlich ascites tumors of mice, 22:25723 (UCLA-12-668, pp 71-84)
 effects on infectivity of T-even phages for Escherichia coli, 22:19460
 effects on x-radiosensitivity of bacterial and mammalian cells, effects of oxygen abundance on, 22:6844
PYRUVALDEHYDE, 1-OXIME
 radioprotective effects of, on mice and rats, 22:25863
PYRUVATE DEHYDROGENASE
 radiation effects on activity of, in liver mitochondria of rats, protective effects of mustard gas solutions against x, 22:19378
Pyruvates
  see Pyruvic Acid--salts
PYRUVIC ACID
 complexes with uranium, stability constants for, 22:47119
 radiation effects on metabolism of, by mitochondria from rat liver, 22:8457
 salts, effects on x-radiosensitivity of respiration in reticulocytes of rabbits, combined effects of 2,4-dinitrophenol and x radiation on, 22:45428
 salts, radioprotective effects of, against inactivation of lactic acid dehydrogenase, γ, 22:33729
PYRYLIUM COMPOUNDS
 trimethylpyrylium perchlorate, deuterium exchange between heavy water and, NMR study of, 22:6306
 trimethylpyrylium perchlorate, oxygen-18 exchange between water and, effects of pH on, 22:4140

Q

Q DEVICES
 design and operation of, 22:9290
 design change in, for modification into magnetic Laval nozzle, 22:50195
 design for alkali metal plasma studies, 22:11404(R) (LA-3831)
 design of Pascal, for cesium plasma instability studies, 22:5379
 design of single-ended, with pulsed emitter, 22:44139
 development for optical studies on barium plasmas, 22:24283(R) (SIT-2813-44)
 drift waves in, finite-amplitude resistive, 22:34672
 electron bombardment system for Univ. of Maryland, development of, 22:13514(R) (ORO-3405-17)
 electron cyclotron heating in, 22:11404(R) (LA-3831)
 ion temperatures in, effects on increased end losses, (E), 22:24243 (MATT-Q-25, pp 118-65)
 ion--acoustic wave excitation in, research on, 22:41571(R) (TID-24563)
 operation of single-ended, (T), 22:44167
 oscillations in, periodic pulling and transition to turbulence in, (T), 22:34649 (ORO-3405-21)
 plasma confinement time in, cesium and potassium, (E), 22:44080
 plasma convective losses in, effect of shear on, (E), 22:24243 (MATT-Q-25, pp 118-65)
 plasma diagnostics in, camera for, 22:31793 (SIT-2813-45)
 plasma diffusion across, potassium, 22:34581 (SIT-2813-46)
 plasma diffusion in, collisional effects on alkali metal, 22:11404(R) (LA-3831)
 plasma diffusion in, potassium, (E), 22:26352 (NYO-2813-39)
 plasma diffusion in, potassium, (E), 22:31828
 plasma diffusion in, research on, 22:41571(R) (TID-24563)
 plasma diffusion in, research on, 22:31865(R) (ORO-3405-20)
 plasma drift wave coupling in, cesium, (E), 22:36907 (N-68-16007)
 plasma drift waves in, dispersion relation for, 22:36881 (RISO-171)
 plasma electron cyclotron resonance heating in, method for, 22:1149
 plasma flutes in, photography of, 22:44196
 plasma instabilities in, effect of finite ion Larmor radius on Kelvin--Hehmholtz, 22:1271 (RISO-158)
 plasma instabilities in, research on, 22:34719(R) (ORO-3405-18)
 plasma losses in, charge exchange effects on cesium, (E/T), 22:17628
 plasma oscillations in TP-D, (E), 22:29506
 plasma oscillations in, noncorrelation with anomalous transport and equilibrium density in, 22:3080
 plasma self-luminosity in, barium, (T), 22:26370
 plasma spectra in, discrete and continuum, 22:44093 (ORO-3405-19)
 plasma temperature and density profiles in, alkali metal, (T), 22:11404(R) (LA-3831)
 plasma transport due to drift waves in, 22:13428 (NP-17257)
 plasma turbulent drift waves in, (E), 22:24243 (MATT-Q-25, pp 118-65)
 plasma velocity distributions in bounded, (T), 22:11404(R) (LA-3831)
 plasma viscous diffusion in, cesium, (T), 22:24280 (MATT-Q-25, pp 257-303)
 radiations from magnetoplasma in, near electron cyclotron harmonics, (E), 22:22146 (NP-17389)
 shock formation in, (E), 22:19993
QP (Japanese Quiescent Plasma Device)
  see Q Devices
Quail (Corturnix)
  see Corturnix under Aves
QUAD CITIES POWER REACTOR, UNIT 1 (715 Mw(e))
 ACRS report on, 22:46879 (DOCKET-50254-1)
 addition of Unit 2, preliminary safety analysis for, 22:46884 (DOCKET-50254-6)
 buildings for, maximum earthquake ground acceleration of, 22:46880 (DOCKET-50254-2)
 containment systems for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
 containment vessel for, quality control procedures for, 22:46880 (DOCKET-50254-2)
 control rod drive system for, analysis of, 22:46887 (DOCKET-50254-9)
 control systems and instrumentation for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
 control systems for, reliability analysis of reactor protection, 22:46887 (DOCKET-50254-9)
 cooling system for, design specifications and fabrication codes for, 22:46880 (DOCKET-50254-2)
 cooling system for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
 core and internals for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
 core isolation cooling system for, safety analysis of design of, 22:46880 (DOCKET-50254-2)
 core spray test program for, description of, 22:46887 (DOCKET-50254-9)
 description of, 22:16218
 drawings for, complete engineering, 22:46887 (DOCKET-50254-9)
 earthquake design criteria for, 22:46887 (DOCKET-50254-9)
 electrical systems for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)

  emergency and auxiliary systems for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
  Emergency Core Cooling Systems for, design details and engineering drawings for, 22:46883 (DOCKET-50254-5)
  engineered safeguards for, preliminary safety analysis of, 22:46882 (DOCKET-50254-4)
  engineered safeguards for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
  license application for, 22:46885 (DOCKET-50254-7)
  owners of, financial statement of, 22:46881 (DOCKET-50254-3)
  pressure vessel for, description of proposed in-service inspection program for, 22:46882 (DOCKET-50254-4)
  pumps for, development of jet, 22:46887 (DOCKET-50254-9)
  pumps for, preliminary safety analysis of testing and performance of jet, 22:46882 (DOCKET-50254-4)
  radiation protection and waste processing at, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
  radioactivity releases from, analysis of designed precautions for minimizing, 22:46880 (DOCKET-50254-2)
  reactivity transients in, safety analysis of, 22:46882 (DOCKET-50254-4)
  safety analyses for, 22:46886 (DOCKET-50254-8)
  site for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
  steam and power conversion systems for, preliminary safety analysis of, 22:46886 (DOCKET-50254-8)
  tornado design criteria for, 22:46880 (DOCKET-50254-2)
  tornado design criteria, safety analysis of, 22:46882 (DOCKET-50254-4)
  turbine rotor failures at, safety analysis of possible, 22:46882 (DOCKET-50254-4)
  turbine-generator failures at, analysis of effects of, 22:46880 (DOCKET-50254-2)
  waste handling at, preliminary safety analysis of, 22:46882 (DOCKET-50254-4)
QUAD CITIES POWER REACTOR, UNIT 2 (715 Mw(e))
  ACRS report on, 22:46879 (DOCKET-50254-1)
  buildings for, maximum earthquake ground acceleration of, 22:46880 (DOCKET-50254-2)
  containment vessel for, quality control procedures for, 22:46880 (DOCKET-50254-2)
  cooling system for, design specifications and fabrication codes for, 22:46880 (DOCKET-50254-2)
  core isolation cooling system for, safety analysis of design of, 22:46880 (DOCKET-50254-2)
  description of, 22:16218
  Emergency Core Cooling Systems for, design details and engineering drawings for, 22:46883 (DOCKET-50254-5)
  engineered safeguards for, preliminary safety analysis of, 22:46882 (DOCKET-50254-4)
  owners of, financial statement of, 22:46881 (DOCKET-50254-3)
  pressure vessel for, description of proposed in-service inspection program for, 22:46882 (DOCKET-50254-4)
  pumps for, preliminary safety analysis of testing and performance of jet, 22:46882 (DOCKET-50254-4)
  radioactivity releases from, analysis of designed precautions for minimizing, 22:46880 (DOCKET-50254-2)
  reactivity transients in, safety analysis of, 22:46882 (DOCKET-50254-4)
  safety analysis report for, preliminary, 22:46884 (DOCKET-50254-6)
  tornado design criteria for, 22:46880 (DOCKET-50254-2)
  tornado design criteria, safety analysis of, 22:46882 (DOCKET-50254-4)
  turbine rotor failures at, safety analysis of possible, 22:46882 (DOCKET-50254-4)
  turbine-generator failures at, analysis of effects of, 22:46880 (DOCKET-50254-2)
  waste handling at, preliminary safety analysis of, 22:46882 (DOCKET-50254-4)
Quadrupole Moments
    see Moments
QUALITY CONTROL
    see also Inspection
    see also Sampling
  component reliability in, method for estimation of, 22:27955 (ORNL-TM-2200)
  development of multi-application control for use in, 22:10144 (SC-DR-67-800)
  equipment evaluation for automatic production of aluminum oxide filled epoxy resins, 22:10128 (GEPP-4)
  equipment evaluation for automatic production of urethane foam castings, 22:10127 (GEPP-3)
  equipment evaluation for producing glass microballoon-resin-diethanolamine mixes, 22:10126 (GEPP-2)
  laboratory for ceramic and metallic fuel element, description of, 22:27960
  malfunctions in, computer program for detection of, 22:3989 (UCID-15240)
  method for SNAP-23A thermoelectric converter components, 22:51180(R) (MMM-3824-23)
  methods for SNAP-27, 22:40319 (ANSE-6300-014)
  methods for undersea oceanographic measurements, 22:42909 (CU-2663-9, App.S)
  radiographic method for, of hermetically sealed relays, 22:12558 (N-67-23261)
  techniques for pressurized-water reactor boilers, description of, 22:53310
Quantometers
    see Gamma Spectrometers
Quantometric Analysis
    see Spectroscopy
QUANTUM ELECTRODYNAMICS
    see also Quantum Field Theory
    see also Quantum Mechanics
  amplitude calculation without bare constants and divergences in, photon Green functions from, 22:20187
  asymptotic condition and covariant gauges in, 22:5640
  atom interactions with electromagnetic fields in, 22:46513
  Bethe--Salpeter equation in, Goldstone bosons in, 22:13846
  Bethe--Salpeter equations for low-energy interactions, approximate solutions to, 22:53019
  breakdown of, review of theory for direction and extent of, 22:32198 (LNF-68/17)
  calculation of higher-order processes at high energies in, algebra simplification for, 22:20317
  calculations in, S-matrix and perturbation, 22:22444
  charge renormalization in sixth order in, finite, 22:35081
  charge renormalization in spinor, finite, 22:24721
  charge renormalization in, semi-perturbative analysis of, 22:32208
  charge renormalization in, zero charge problem for, 22:26700 (JINR-P2-3590, pp 137-47)
  charge renormalization with zero-mass states, conserved currents for, 22:3512
  conference, 22:22342 (CONF-670923)
  Coulomb pole motion in J-plane in, asymptotic amplitude of $\mu^+ + \mu^- \rightarrow e^+ + e^-$ interactions for, (T), 22:37144
  current commutators in renormalized, Hamiltonian formalism for, 22:24716 (ITF-67-43)
  Dirac equation in, class of solutions for, 22:32203
  dispersion relations in, trace calculation for, 22:3510
  dispersion theory for, Lagrangian formalism for, 22:44484
  electromagnetic self energies in, sidewise dispersion relations for, 22:52958
  electron and meson (μ) magnetic moment in, experiments for measuring, 22:46512
  electron and photon self-energy graphs in, renormalization group for asymptotic behavior of, 22:15840
  electron interactions with electromagnetic fields in, dynamic invariance for, 22:48368
  electron mass and charge in, Green functions for bare, 22:39475
  electron stationary states in, Rayleigh--Ritz method for dressed-, 22:46501
  equations in, interactions at high energies for test of linearity of, (T), 22:48360
  Feynman integrals in, asymptotic estimates of, 22:50449
  field antisymmetric quantization in, functional integration for Dirac, 22:9683
  field interactions with gravitational fields, electromagnetic and Dirac, (T), 22:18019
  field operators in, local Lagrangian for small-distance behavior of, 22:15722
  field quantization in general covariant gauge for, 22:9671
  fields in, group properties of wave equations for zero-mass particle, 22:20312
  fine structure constant α in, method for measurement of, 22:38779
  fine structure constant measurement for, $1/\alpha$, 22:26210
  formalism for, c-number generating functionals in, 22:35071 (LPTHE-TH-68/6)
  formalism in self-consistent, 22:41850
  formulation of divergence-free, relativistic, gauge invariant, macrocausal, 22:20311
  formulation of five-dimensional unitary, in Riemaniann space, 22:44488
  formulation of, Pugh, 22:29754
  formulation with classical fields, 22:35079
  formulation without divergences, 22:26695 (JINR-P2-3590, pp 75-80)
  gauge invariance with nonzero photon bare mass, 22:39337
  gauge transformations in, quantum, 22:5634
  Green functions in, mass-shell singularities of, 22:50452
  infrared corrections for colliding $e^- + e^+$ beam experiments, 22:3320
  infrared divergence in, coherent states in theory for, 22:46372
  infrared divergence in, redefinition of final states for elimination of, 22:53014 (LNF-67/1)
  interactions in, indefinite metric for nonlocal, 22:26694 (JINR-P2-3590, pp 69-74)
  kinetic equations in Bogoliubov axiomatics for spinor, 22:29745 (ITF-67-30)
  Lamb shift in self-consistent spinor, 22:48358
  Lamb shift in, review of experiments on, 22:46511
  mass and charge renormalization constants without bare mass in, 22:20313
  operator formulation in Landau gauge, 22:18013
  pair production from photon interactions in constant and uniform electric field in, scalar-particle and electron--positron, 22:22360
  pair production with modified fermion propagator in,

- asymmetric, 22:46495 (DESY-68/36)
- particle annihilation and production with external current and potential in, 22:32200
- particle interactions in, double-logarithmic asymptotics of amplitudes and cross sections for, 22:1478
- particle interactions with electromagnetic and electrostatic fields in, nondegenerate perturbation treatment of, 22:34239 (COO-1112-160)
- particle interactions with electromagnetic fields in, Foldy--Wouthuysen transformation for arbitrary-spin, 22:3314
- perturbation amplitudes at high energies in, algebraic structure of, 22:3511
- perturbation corrections to g tensor in, 22:41703
- photon propagator of, renormalization group for logarithmic asymptotic behavior of, 22:37189
- photon propagators in, 22:50443
- physical states in, subsidiary condition for defining, 22:44482
- positronium singularities in, perturbation theory for, 22:29751
- propagators in, analytic functionals for momentum-space representations of causal, 22:35076
- quantization of free electromagnetic field in Landau gauge in, canonical, 22:9672
- quantum mechanical theory for, 22:26710
- radiative corrections for gphi^3 model to sixth order, computation of, 22:3513
- radiative corrections for gphi^3 model, method for computing higher-order, 22:3514
- radiative corrections in, 22:22437 (CONF-670923-, pp 32-47)
- relation to cosmology, (T), 22:41171
- research on low-energy, review of, 22:22437 (CONF-670923-, pp 32-47)
- research on, review of, 22:11568 (SLAC-PUB-370)
- research program at Stanford Mark III linear accelerator, 22:37628 (ISS-68/1)
- review on current status of, 22:53020
- S-matrix formulation of, gauge transformations in, 22:20324
- S-matrix theory for results of, 22:20179
- scattering amplitudes in, Furry theorem for, 22:20322
- Schwinger--Dyson equations in, perturbation expansion of, 22:50440
- secondary radiation from atom with nondiagonal extinction matrix, amplitude of intensity beats of, (T), 22:5049
- symmetry breaking in, spontaneous, 22:3480
- test from angular distribution in e + e interactions at 2 x 43 to 2 x 160 MeV, (E), 22:20109 (NP-17322)
- test from e + e interactions at 2 x 43 to 2 x 160 MeV, spark chamber study of, (E), 22:13712
- test from virtual photon Compton effect in $e + p \to e + p + \gamma$ and $\mu + p \to \mu + p + \gamma$ interactions, 22:48256 (LNF-68/38)
- test in asymmetry of μ pairs in $\gamma + p \to \mu^- + \mu^+ + p$ interactions, (E), 22:39232 (AD-668169)
- test of, experiments for, 22:5636
- test of, from wide angle electron--positron pair production in photon reactions with carbon, (E), 22:50283
- test of, proposed experiment using range absorber method for γ reactions with carbon and hydrogen for very asymmetric μ pair production in, 22:44299 (DESY-68/34)
- test of, review of experiments for wide-angle high-energy e and μ pair production for, 22:46514
- testing by atomic-beam techniques, (E/T), 22:15336
- tests and theory for, lectures on, 22:46510
- tests of validity at small distances, μ and e wide-angle pair production for, 22:41846 (NP-17547)
- tests of, anomalous magnetic moment of electron and meson (μ) as, 22:24722
- tests of, anomalous magnetic moment of μ for, 22:46371
- tests of, experimental, 22:11611
- tests of, experimental results for, 22:22276 (CONF-670923-, pp 409-51)
- tests of, hyperfine structure of hydrogen and g - 2 value of muons as, 22:11715
- tests of, low energy, 22:17845
- tests of, proposed μ experiments for, 22:22277 (CONF-670923-, pp 494-509)
- tests of, relativistic treatment of hydrogen, muonium, and positronium for, 22:46516
- theory at small distances, 22:33187 (ISS-66/50)
- theory for gauge-invariant nonlocal, 22:26692 (JINR-P2-3590, pp 55-8)
- theory for polarization of particles in $e^+ + e^- \to 2\gamma$ and $e^+ + e^- \to \mu^+ + \mu^-$ interactions at high energies, 22:39318
- theory for, calculation of radiative corrections to sixth order inclusive for lambda/sub phi/^{3} model, 22:13835 (NP-17207)
- theory for, limitations of nonlocal, 22:26690 (JINR-P2-3590, pp 44-5)
- theory for, research on, 22:5520 (NYO-3829-18)
- theory for, review of fundamental questions in, 22:32078
- theory for, Utiyama identities in, 22:13849
- theory of one-electron states with Dirac condition, 22:35106
- theory of, intepretation of, 22:18016
- theory with electrons and muons, 22:9682
- two-point function in unrenormalized, perturbation theory calculation of generalized photon and electron, 22:37186
- vacuum polarization in, 22:5644
- vacuum polarization in oscillatory gauge in, finiteness of, 22:48355
- vacuum structure in, 22:39473
- validity of, analysis of evidence on, 22:3506
- validity of, use of $e^+ + e^-$ interactions for determining, 22:11576
- vertex function of spinor, high-momentum dynamics of, 22:46507

QUANTUM FIELD THEORY

- adiabatic hypothesis in axiomatic, formulation of, 22:32199
- algebras for, C* and von Neumann, 22:13840
- algebras of observables with continuous representations of symmetry groups for, definition of, 22:35095
- analytic functionals in, 22:13844
- analytic functions in, homological study of, 22:29748
- angular momentum decomposition in spinor, graphical methods for execution of γ- or sigma-algebras for, 22:11603
- angular momentum in, separation in spin and orbital parts for total, 22:48357
- axiomatic method for, dynamics of, 22:44485
- baryon octet generation in, bootstrapped symmetries for, 22:24724
- Bethe--Salpeter amplitudes for bound states in, normalization of, 22:3515
- Bethe--Salpeter equation for two-body compound systems, 22:18037
- Bethe--Salpeter equation for unequal-mass particles, stereographic projection method for, 22:29774
- Bethe--Salpeter equation for zero-mass fermion-antifermion system, reduction of, 22:50445
- Bethe--Salpeter equation in ladder approximation for scattering of spinless particles, 22:35104
- Bethe--Salpeter equation in scalar, for high-energy scattering, 22:3521
- Bethe--Salpeter equation in, bootstrap solutions of, 22:46411
- Bethe--Salpeter equation in, eikonal approximation for, 22:53018
- Bethe--Salpeter equation in, lack of crossing symmetry for scattering amplitude in, 22:18040
- Bethe--Salpeter equation in, model for relative time in, 22:11724
- Bethe--Salpeter equation in, operator formalism for daughter Regge trajectories in, 22:3516
- Bethe--Salpeter equation in, Regge daughter trajectories in, 22:3517
- Bethe--Salpeter equation in, Regge daughter trajectories in Wick--Cutkosky model of, 22:26705
- Bethe--Salpeter equation in, relation between spectra of massless and zero energy-momentum solutions of, 22:53021
- Bethe--Salpeter equation in, tightly bound fermion--antifermion systems from solutions for, 22:15770
- Bethe--Salpeter equation in, variational solutions of, 22:35105
- Bethe--Salpeter equations for low-energy interactions, approximate solutions to, 22:53019
- Bethe--Salpeter equations in, retardation effects and gauge transformations in, 22:35102
- book: Analytic Properties of Feynam Graphs in Quantum Field Theory, 22:20218
- book: High Energy Electromagnetic Interactions and Field Theory, 22:11625
- book: Renormalization Theory of Quantum Field Theory with a Cut-Off, 22:5652
- bootstrap formulation with Z = 0 in Lagrangian, 22:17937
- bootstrap hypothesis in Lagrangian, formulation of, 22:44487
- bootstraps and composite particles in, 22:13841
- boson bound states in, binding energy of relativistic two-body, 22:41847
- boson field in, volume limit of lambda phi^4, 22:35085
- boson fields with phi^4 interaction in three dimensions, 22:53015
- bosons in free-, spinless, 22:44420
- canonical commutation relations and ergodic actions of Euclidean group, 22:18006
- canonical formalism and solutions in model, 22:18004
- canonical transformation in, unitarity of Pauli, 22:46496
- causality in nonlocal, macroscopic, 22:26689 (JINR-P2-3590, pp 31-7)
- CDD poles and asymptotic fields in, 22:9685
- charge operators in local, additivity of conserved, 22:39477
- charged-particle interactions in external vector field in, symmetric group of solutions for Klein--Gordon equation for, 22:15697
- commutation relations in infinite tensor-product space in, representations of canonical, 22:39466 (JINR-E2-3831)
- commutation relations in, Jost--Lehmann--Dyson representation for equal-time, 22:3519
- commutation relations in, nonequivalent representations of, 22:22438 (ITF-67-39)
- commutation relations of renormalized currents for

isoscalar and isovector spin-0 meson couplings in, equal-time, 22:39471
commutativity in nonrenormalizable Wightman, weak local, 22:9679
commutators in, method for calculating equal-time, 22:20321
commutators of nonconserved currents in model for π + sigma interactions in renormalizable, equal-time, 22:46398 (DESY-68/37)
composite particle currents in, dynamical moments of, 22:41844 (JINR-P2-3847)
composite particle parameters from $Z = 0$ conditions in, 22:29752
composite particles in, properties of, 22:39368
compositeness criteria for particles in, review of, 22:18041
Compton amplitude in Jost--Lehmann representation, relation between electromagnetic mass shifts and equal-time commutators for, 22:35083
conference on nonlocal, 22:26687 (JINR-P2-3590)
conference on particles and fields, 22:17886
cosmic-particle creation processes, (T), 22:43763
coupling constant in model of nonrenormalizable, analytical continuation on, 22:48365
coupling constant in nonrenormalizable, asymptotics and analytic continuation in, 22:26699 (JINR-P2-3590, pp 127-36)
coupling constant in renormalizable, analytic continuation in, 22:13834 (JINR-E2-3610)
coupling constant of Yukawa theory equivalent to Fermi theory, 22:39479
coupling parameters in vector-meson, current-algebra determination of, 22:5642
CPT theorem for infinite-component fields in, invalidity of, 22:41842 (JINR-E2-3854)
crossing symmetry and infinite multiplets in, 22:5646
current algebra validity in axiomatic, 22:22340
current-field algebra in Lagrangian, π dynamics in, 22:20323
current-mixing model, spectral-function sum rule, and vector-meson dominance, relation between, 22:46347
currents in, ordering theorems for, 22:44489
distributions in local, class of relativistic invariant, 22:35097
edge of wedge theorem in, generalized, 22:35101
electron propagator for complex $e^2 2\pi/hc$, analytic behavior of, 22:24723
elementary particle representation in model in, 22:48359
elementary particle symmetries from Schwinger action principle in, 22:46499
elementary particles in model in, hermicity or nonhermicity of Hamiltonian for unstable, 22:26708
Feynman amplitude in, analytic renormalization in, 22:50448
Feynman diagram in, continuation to complex angular momentum of three-particle discontinuity of, 22:44506
Feynman diagram model in, Fubini identities for, 22:15842
Feynman diagrams, calculation of sum of very-high-order, 22:32205
Feynman integrals in, homological approach to parametric, 22:15841
Feynman integrals in, homology theory for, 22:13837
Feynman rules for Reggeons, formulation of, 22:26707
Feynman-diagram models of Regge and multi-Regge couplings, 22:26726
field and particle coupling in, 22:26702 (JINR-P2-3590, pp 211-27)
field classification in terms of scalar fields in one space and one time dimension, 22:39467 (MATSCIENCE-59)
field equation of motion, unitarity condition for spin-family solution of, 22:24720
field equations for higher-spin particles, Weinberg, 22:53017
field equations for, invariance postulate for variational calculation of, 22:37187
field equations in, fixed-point methods for local, 22:13842
field equations in, Green function of bilocal, 22:35080
field equations in, SO(n) symmetric, 22:44490
field excitations in, gradient invariance in theory for Yang--Mills, 22:9674
field in, conform group of space--time curve for associated Yang--Mills, 22:24718
field in, criterion for free character of Wightman, 22:13852
field in, free relativistic multipole, 22:11726
field in, geometrization of complex scalar, 22:18010
field interactions in, algebra of field operators for nonlocal model of, 22:9673
field interactions in, construction of quasipotential in models with two-component spinor, 22:41848
field interactions in, five-dimensional quantum mechanics for, 22:1490
field interactions in, generalization of Lie algebras for boson--fermion, 22:29642 (ITF-67-21)
field interactions in, interactions-with-derivatives model for exact solution for, 22:29744 (ITF-67-25)
field matrix elements in, relation between S-matrix elements on mass shell and singularities of nonrelativistic, 22:39469
field of point charge in Yang--Mills, gauge, 22:13845
field operator for Dirac particles in, regularization of two-point functions for, 22:1480
field operator in axiomatic, domain of time-averaged, 22:11725
field operators in Froissart model, nonuniqueness of canonical formalism for, 22:22446
field operators in Lie algebra, construction of, 22:15835
field operators of neutral vector mesons for hadronic electromagnetic current, 22:5542
field renormalization in axiomatic and Lagrangian formalisms in, scalar, 22:22439 (ITF-67-40)
field renormalization in axiomatic, model for, 22:13832 (ITF-67-28)
field renormalization in, spectral representations for, 22:13833 (ITF-67-29)
field with nonstatic source in, model for scalar, 22:13853
field-algebra current commutators for energy--momentum tensor of hadrons, test of, 22:41851
field-current algebra for mass relations between vector and axial vector mesons, 22:29688
field-current identities for intermediate bosons, 22:26703
fields in, apparent weakening of locality condition for, 22:35088
fields in, Dirac spinors, covariant currents, and Lorentz group over finite, 22:35072 (RT/FI-(68)6)
fields in, Euclidean invariant interaction Hamiltonian for certain nonrelativistic quantized, 22:35092
fields in, even canonical anticommutation relations algebra for models of free, 22:35087
fields in, general theory for, 22:3520
fields in, internal holonomy groups of Yang-Mills, 22:35075
fields in, limiting process of cutoff and auxiliary, 22:32204
fields in, method of determination of S-matrix in two-dimensional space for nonlinear Born--Infeld, 22:18032 (JINR-P2-3662)
fields in, nonsteady-state solutions of nonlinear equations of scalar, 22:22461
fields in, normal form of operators in Fock space for expansion of out-fields in in-fields for, 22:26685 (JINR-P2-3739)
fields in, positive functionals of test functions for, 22:35098
fields in, states on Clifford algebras formed by field variables of fermion, 22:35086
fields in, Wick theorem for Heisenberg, 22:13831 (ITF-67-27)
fields with noninvariant interactions in, classical framework for gauge, 22:29747
fields with spin in, unitary representations for Lorentz group for relativistic equations for, 22:20343
formalism for autocomposite isomultiplets, 22:24725
formalism for Bargmann--Wigner fields, electromagnetic interaction in Lagrangian, 22:15844
formalism for free $2(2s + 1)$-component, spinor, (T), 22:50442
formalism for infinite-component, 22:39476
formalism for meson fields with Hamiltonian as time-dependent quadratic form of coordinates and momentum, 22:26637 (JINR-P2-3590, pp 183-93)
formalism for photodetector correlations, 22:23302
formalism for SL(6,C) quark fields, combined Lorentz and SU(3) symmetry in Weinberg, 22:15830
formalism for stochastic interacting field, 22:15843
formalism for, c-number generating functionals in, 22:35071 (LPTHE-TH-68/6)
formalism in de Sitter space--time for, 22:35070 (JINR-P2-3777)
formalism in space of random coordinates, 22:26696 (JINR-P2-3590, pp 86-91)
formalism in two-dimensional space--time, 22:39474
formalism of infinite-component fields, 22:18008
formalism of relativistic, for composite particles, 22:44343
formalism of, theory of sources in, 22:48251
formalisms in, 22:18003
formulation for chiral symmetry in Gursey model, 22:44481
formulation for currents, 22:37190
formulation for faster-than-light particles, Lorentz invariance in, 22:50450
formulation for redundant and composite fields in Lagrangian, 22:11719
formulation for strong interactions, 22:18000
formulation from fields and nonlinear transformation laws under chiral SU(3) x SU(3), 22:35103
formulation in de Sitter space for nonlocal, two-quark interactions for meson (π) in, 22:48304
formulation in Friedman space, 22:22448
formulation of asymptotic, current formalism in, 22:11729
formulation of five-dimensional unitary, in Riemannian space, 22:44488
formulation of free relativistic multipole field, 22:7550
formulation of interpolating fields for V-particle in Lee model, 22:35107

formulation of Lagrangian, equivalent to theory of currents, 22:50451
formulation of Lagrangian, perturbation theory and inversion theorems for Green-function, 22:15839
formulation of Lagrangian, self-generating interactions in Green-function, 22:15838
formulation of local quantum fields for particles with different masses and spins, 22:44478
formulation of local, review of Haag--Kastler, 22:20310 (INP-555/PH, pp 183-212)
formulation of nonlocal, for elementary particles extended in space--time, 22:18002
formulation of nontrivial, Euclidean-invariant, validity of weak correspondence principle for, 22:20314
formulation of relativistic Lagrangian, for composite systems, 22:44483
formulation of relativistic quark, 22:29743 (DESY-68/11)
formulation of self-interacting complex scalar, 22:22443
formulation of sigma-model for PCAC, 22:11720
formulation of solvable two-dimensional, based on currents, 22:15846
formulation of, generalized method for, 22:29749
formulation of, variational, 22:7554
formulation with positive semi-definite metrics, 22:32202
formulations of massive spin-one, equivalence of Weinberg and Proca, 22:29746
gauge theory in, geometric approach to local, 22:53012
gauge transformations in, quantum, 22:5634
Gelfand functionals for fields in lattice space in, 22:35100
Goldstone theorem and broken symmetries in, 22:17981
Goldstone theorem and unsymmetrical vacuum in, 22:18007
Goldstone theorem in models of broken symmetries, 22:17980
Goldstone theorem in, algebraic approach to, 22:15837
gravitation field quantization in axiomatic, gauge problem in, 22:20318
gravitational fields in, macroscopic, 22:13857
Green function in axiomatic, renormalized and nonrenormalized, 22:32201
Green functions in momentum space for unrenormalized interactions in, method for construction of, 22:26684 (JINR-P2-3727)
Haag theorem for general Wightman, proof of, 22:13850
Haag theorem in Jost model of Wightman, proof of, 22:13851
Haag theorem in, generalization of, 22:24717 (NYO-3829-22)
Haag--Ruelle theory for asymptotic fields in, preliminary result for generalization of, 22:39313
Haag--Ruelle theory of asymptotic fields in, generalization of, 22:24727
Hamiltonian and Lagrangian formalisms in, 22:22440 (ITF-67-42)
hyperquantization method, formulation of, 22:20319
interactions in Lie, absence of, 22:41858
interactions in Minkowski and Euclidean spaces in, dynamics of unrenormalizable, 22:3504
interactions in unitary relativistic model of, unrenormalizable, 22:35090
interactions in, local properties of unrenormalizable, 22:26697 (JINR-P2-3590, pp 96-113)
interactions in, quadratic, 22:1477
interactions of self-conjugate isofermion fields in local, 22:46505
invariance of self-interacting boson field in, dynamic, 22:48368
isospin symmetry in local, C, P, and T transformations for, 22:13791
Klein--Gordon field in, causal behavior of charge density of, 22:7552
Lagrange function for low-energy, relation between T-matrix at zero momenta and classical, 22:48361
Lagrangian representation of theory of currents, canonical, 22:46504
lecture, 22:5633 (NP-17143)
lectures on, 22:13685
Lee model in, 22:22442 (JINR-P2-3731)
Lee model in, 2V sector of, 22:35077
Lee model in, algebraic solution in V--theta sector of, 22:20327
Lee model in, bound-state operator in, 22:39371
Lee model in, equal-time commutator and zero-energy theorem in, 22:3301
Lee model in, Haag theorem for point-coupling relativistic, 22:50446
Lee model in, renormalization and composite effects in, 22:44347
Lee model in, Tamm--Dancoff method in 2V sector of, 22:46554
Lee model in, third sector of, 22:46390
Lee model with additional coupling, compositeness conditions in, 22:46392
Lippman--Schwinger equation in, renormalization of singular potential in, 22:41854
locality condition for Hermitean, scalar, tempered, apparent weakening of, 22:39470
localizability in, zero-charge in, 22:46509
Lopuszanski theorem in, generalization of, 22:32206
Lorentz group representations for free massless fields in, 22:26706
Lorentz invariance in two-dimensional, formal breakdown of, 22:44479
magnetic charge in Schwinger, generalization of, 22:39339
mass spectra in relativistically invariant, consequences of unreasonable, 22:3509
matrix elements for soft vector mesons in, equivalence with current algebra, 22:11721
meson--fermion interacting fields on light cone, behavior of, 22:46497
mesons in lattice space in, 22:41859
model for algebra of spin currents, 22:22447
model for relativistic particle-antiparticle bound and scattering states in, 22:50460
model of lambdaphi^4, analytic structure of energy levels in, 22:41852
model of, axiomatic, 22:11727
model with composite particles for electromagnetic mass differences of vector and axial-vector mesons, 22:34920
model with currents and symmetry breaking in, 22:3478
model with spectral functions of fast increase in, four-dimensional unitary relativistic, 22:24719
model with unrenormalizable interaction in, 22:1476 (JINR-E2-3472)
models in zero-dimensional space, continued fractions and convergence problems in, 22:11722
models in, relativistic, 22:11716
multiplets in, infinite, 22:9670 (JINR-P2-3606)
Noether theorem for local, second, 22:3505
nonexistence of local infinite-component, 22:20166
nonlocal effects in, 22:7551
nonrenormalizable, method for singular potentials for, 22:41854
operator formalism in Froissart model for massless second-order pole in, 22:41857
operators in axiomatic, model S-matrix for dressing, 22:24729 (ITF-67-41)
oscillator in, functional calculus for anharmonic, 22:18015
para-field representation of intrinsic degrees of freedom of isospin and strangeness in, 22:46354
particle localizability in, 22:35096
particle structure analysis for Green functions in axiomatic, many-, 22:5635
particle wave equation and degenerate vacuum in, mass formulas from infinite-component, 22:13838
particlelike solutions for nonlinear, internal dynamics of, 22:20315
particlelike solutions to nonlinear complex scalar, with positive-definite energy densities, 22:46498
particles with half-integral isospin in, nonexistence of self-conjugate, 22:46503
perturbation theory diagrams containing composite particles in model, analytic properties of, 22:3522
perturbation theory for gauge-invariant fields in, 22:26683 (ITF-67-36)
phase-space structure in nonlocal, 22:41864
photon emission and absorption in, low-frequency limit of bremsstrahlung amplitude for soft-, 22:50453
photon field in, construction of coherent states of, 22:5637
photon intensity correlations in, 22:5641
Poincare generators in, structure of, 22:35073
problems in, local operator rings and C* algebra, 22:18005
production amplitudes for neutral scalar field without pairing symmetry, existence of, 22:20320
propagators in square diagrams of, insertions of complex, 22:3507
properties of para-Fermi, 22:37188
quantization of electromagnetic field in axiomatic, 22:3518
quantization of spin-$^3/_2$ field, formalism for, 22:11718
quantum mechanical equations in, Wentzel--Kramers--Brillouin method for reduction to quasiclassical form for, 22:39465 (ITF-67-53)
quantum states in nonlinear, nonexistence of finite-energy stationary, 22:41853
radiative correction to photon propagator in Lee--Yang theory of spin-one bosons, 22:39468
radiative corrections for gphi^3 model to sixth order, computation of, 22:3513
radiative corrections for gphi^3 model, method for computing higher-order, 22:3514
radiative corrections to 6th order in, calculation of, 22:29742 (NP-17377)
Regge trajectory in model in, daughter, 22:20316
Regge trajectory in model, daughter, 22:44493
renormalization constant in, composite particles and bootstrap from Z = 0 conditions for, 22:5648
renormalization constants as conditions for composite particles, vanishing of, 22:35082
renormalization for nonzero-mass vector, sufficient condition for, 22:48366
renormalization in, 22:46515
renormalization in, causality condition and relation between Bogoliubov and Lehmann--Symanzik--Zimmerman axiomatic for, 22:32197 (ITF-67-38)
renormalization of field operator in axiomatic, 22:48364
renormalization procedure for N-quantum approximation in,

22:46502
renormalization scheme for strong-coupling lambdaphi* theory, 22:24728
representations in Euclidean, integral, 22:22441 (ITF-67-50)
research on, index for, 22:15693 (AED-C-23-20)
research on, index of, 22:20153 (AED-C-23-22)
research on, index of, 22:24567 (AED-C-23-24)
research on, review of, 22:15696 (NP-17252)
review on, 22:48350 (CERN-68-23(Vol.1), pp 1-128)
S-matrix for Born-Infeld two-dimensional model in, 22:46557
S-matrix in perturbation theory for nonlocal scalar, 22:26693 (JINR-P2-3590, pp 59-68)
S-matrix in, semiclassical approximation to, 22:26709
S-matrix unitarity in field theory with derivatives, 22:48367
scalar fields with spacelike momentum spectra, relativistic, 22:48362
scattering at high energies in axiomatic, review of, 22:39491 (CERN-68-7(Vol.1), pp 290-315)
scattering model for neutral self-conjugate field, 22:46541
Schwinger model in, gauge transformation in, 22:9680
Schwinger terms from local currents in, 22:9677
Schwinger terms, field dependence, and covariance in general, 22:13847
solutions in, existence of, 22:5649
spectral density in Wightman axiomatic, Kaellen--Lehmann, 22:26686 (JINR-P2-3740)
spectral functions in model in, rapidly increasing, 22:26698 (JINR-P2-3590, pp 114-26)
spectral representations of Lorentz invariant distributions and scale transformations for formulas in, 22:35099
spin--statistics relation from symmetry between emission and absorption processes in, 22:48352
stability in nonlinear, 22:1473
static models in, saturation of sum rules in strong-coupling, 22:34995
statistical mechanics for, extension of invariant partial states in, 22:35094
statistical mechanics formulation in, quantum, 22:41855
statistics in quantum mechanics and, relation between formulations of generalized, 22:44492
sum rules in perturbation-theoretic calculation in sigma-model, Weinberg, 22:24726
superconvergence relations for forward amplitude of particles with spin in axiomatic, 22:39497
symmetries in Zachariasen--Thirring--Licht model for, spontaneously broken, 22:32181
symmetry at infinite four-momentum in, exact internal group, 22:11698
symmetry breaking for dilatations in space--time in, 22:29750
symmetry breaking in, field-current identities from, 22:41849
symmetry laws in Lagrangian formalism for discrete and continuous, 22:29730
symmetry violation in Wightman axiomatics in, 22:24691 (ITF-67-32)
symmetry with infinite multiplets for, SU(2,2), 22:20283
tensor fields in, spectral-function sum rules for, 22:34973
test functions for Wightman, representations of algebras for, 22:7548 (JINR-E2-3583)
theory for axiomatic, formulation of adiabatic hypothesis in, 22:15836 (ITF-67-24)
theory for free Yang--Mills, conditional dynamic equivalence with free gravitational fields, 22:13848
theory for generalized Yang--Mills, standard invariance in self-interaction in, 22:13839
theory for nonlocal, review of, 22:26688 (JINR-P2-3590, pp 11-16)
theory for relativistic, review of mathematical structure in, 22:18011
theory for Wightman, distribution theory, Laplace transformations, and Klein--Gordon equation in, 22:11717
theory for, book on, 22:9684
theory for, development of laws and perspectives in, 22:22333
theory for, ergodic states in noncommutative, 22:35093
theory for, group straight-line motions in geometric, 22:22445
theory for, index on, 22:37092 (AED-C-23-26)
theory for, index on, 22:37091 (AED-C-23-25)
theory for, limitations of nonlocal, 22:26690 (JINR-P2-3590, pp 44-5)
theory for, local and nonlocal generalized functions in, 22:26701 (JINR-P2-3590, pp 148-57)
theory for, review of, 22:3508
theory for, review of fundamental questions in, 22:32078
theory with local interactions in indefinite metric space in, relativistic, 22:13836 (SU-1206-131)
theory without divergences in, four-dimensional unitary relativistic model, 22:13855
Thirring four-fermion model in, perturbation theory for, 22:5650
tree-graph approximation to, classical field as generating functional of, 22:46500
two-point function for infinite-component fields in, spectral representations of Lorentz-invariant, 22:41843 (JINR-E2-3891)
ultraviolet divergences in, analytic functionals for regularization of, 22:35076
use for calculation of matrix elements between atomic states with open-shell configurations in, 22:38751
use for calculation of matrix elements between atomic states with open-shell configurations, 22:38752
vacuum expectation values in two-dimensional, time-ordered, 22:48363
vacuum expectation values involving local commutativity, integral representations of, 22:1475 (ITF-67-16)
wave equations for many-particle systems in, relativistically covariant, 22:41845 (JINR-P2-3900)
wave equations in discrete space-time, formulation of, 22:48351 (IFVE-STF-68-7-K)
Wightman function in, duality between Feynman integral and perturbation term of, 22:50444
Wightman functions for large space-like separation of arguments in, decrease of truncated, 22:35089
Wightman functions in, Lorentz convariant distributions for, 22:50447
Wightman functions in, upper bounds on holomorphy envelopes for, 22:35074
Yang--Mills fields in, Dirac isotopic current operator in, 22:48354
Yang--Mills fields in, nonexistence of classes of, 22:11723
Yang--Mills theory for chiral current algebra relation with fields of vector and axial vector mesons, generalization of, 22:32127
Yang--Mills theory in, theory of currents as limit of, 22:37112

QUANTUM MECHANICS
see also Mathematics
see also Physics
see also Quantum Electrodynamics
see also Quantum Field Theory
algebras of observables with continuous representations of symmetry groups for, definition of, 22:35095
analysis of algebraic and analytic relations between classical problems in, 22:22257
angular momentum in, Dirac bracket for Schwinger calculus of, 22:39299 (IPNO/TH-123)
angular symmetry properties of 2-matrix and rotational symmetry properties of two-particle density matrix, 22:52899
atomic effective potential calculations from x-ray s terms, method for, 22:5051
axiom system for, 22:13616
Bethe hypothesis for anisotropic Heisenberg model, (T), 22:7637(R) (COO-1573-33)
Bethe--Salpeter equation in, interpretation of, 22:46508
bibliography on historical development of, 22:15655
book: Advanced Quantum Mechanics, 22:26710
book: Angular Momentum, 22:52898
book: Application of Group Theory in Quantum Mechanics, 22:32180
book: Classical and Quantum Theories of Spinning Particles, 22:44380
book: Commutation Properties of Hilbert Space Operators and Related Topics, 22:20105
book: Equilibrium Statistical Mechanics, 22:15657
book: Foundations of Quantum Mechanics, 22:15656
book: Fundamentals of Quantum Optics, 22:17843
book: Introduction to Quantum Theory, 22:15658
book: Introduction to the Quantum Theory, 22:24512
book: Lectures on Quantum Statistics, Vol. 1, 22:13627
book: Many-Electron Systems: Properties and Interactions, 22:13628
book: Mathematical Foundations of Quantum Mechanics, 22:43918
book: Nonrelativistic Quantum Mechanics, 22:46292
book: Physics Pocket Book, 22:1374
book: Pseudopotentials, 22:7418
book: Quantum Mechanics, 22:50272
book: Quantum Statistical Mechanics, 22:15654
book: Sources for History of Quantum Mechanics, 22:15655
book: Special Relativity and Quantum Mechanics, 22:50267
book: Symposia On Theoretical Physics. Vol. V, 22:13623
book: The Application of Group Theory in Physics, 22:39448
book: The Many-body Problem in Quantum Mechanics, 22:11564
book: The Spatial Quantum Mechanical Axial and Shell Structure of the Atomic Nucleus, 22:27395
book: Theory of Finite Groups: Applications in Physics, 22:46302
book: Theory of Groups in Classical and Quantum Physics. Vol. 1. Mathematical Structures and the Foundations of Quantum Theory, 22:7465
book: Wave Mechanics, 22:1401
book: Wave Mechanics of Atoms, Molecules, and Ions, 22:43908
bound state in relativistic, anomalous and normal behavior of form factors of, 22:15845
bound states and Levinson's theorem for nonlocal s-wave potentials, 22:32692
Breit--Pauli hamiltonian in, one- and two-cluster expansions of, 22:52910
canonical quantization of dynamical systems, differential

geometry of, 22:34813
charged-particle scattering by short-range central field, Levinson theorem and quantum defect for, 22:53230
Clebsch--Gordan coefficients in, negative quasibinomial representations of, 22:48338
Clebsch--Gordan coefficients in, square symbol for quasibinomial representations of, 22:48337
coherent states in statistical, (T), 22:1367 (NYO-3699-16)
coherent states in, construction from condition of minimum uncertainty of, 22:3229
coherent states in, time development of, 22:3230
conference on quantum chemistry of atoms, molecules, and solids, 22:26545
corrections to pair distribution function of classical plasma, 22:41587
correlation functions and quasi-probability distribution functions for electromagnetic fields in, 22:34816
correspondence principles in dynamics, 22:13626
defects of the spectrum of the Schroedinger radial equation, (T), 22:26537
density-matrix variational principles at finite temperatures, (T), 22:3223 (UCD-CNL-82)
description of Birkhoff and von Neumann, 22:44291
determination of absorption coefficient of negative hydrogen ion, (T), 22:996
diagram renormalizations, variational principles, and infinite-dimensional Ising model, 22:32029
Dirac Hamiltonian as member of hierarchy of matrices, 22:7553
Dirac Hamiltonian in, nonrelativistic approximation for, 22:5468 (NP-17121)
Dirac Hamiltonian in, nonrelativistic approximations of, 22:41714
Dirac--Pauli equation for plane-wave external fields in, exact solution of, 22:41856
dualism in, wave-particles, (T), 22:44280
effective pair potential of quantum ideal gases, 22:13618
energy level density in, path representations of, 22:41705
energy loss of heavy charged particle in matter, (T), 22:2785
energy of model dynamical systems of BCS type, free, 22:32028
energy-moment methods in, 22:5485
entropy of states in, mean, 22:46300
equations of motion for nonlinear oscillator, relation between asymptotic behavior, renormalization, and, 22:15647
equivalence in, role of, 22:32034
Feynman diagram model in relativistic, Fubini identities for, 22:15842
Feynman formulation for, 22:1479
Feynman one- and two-order diagrams for radial integrals in, 22:37065
field theory equations in, Wentzel--Kramers--Brillouin method for reduction to quasiclassical form for, 22:39465 (ITF-67-53)
finite translations in solid-state physics, eigenvalues of, 22:7406
Foldy--Wouthuysen transformation for relativistic symmetric Hamiltonian in, 22:22266
formalism of, 22:13615
formulation for relativistic scalar particles, proper-time, 22:20325
Green's function application in, (T), 22:24501
Hamilton--Jacobi formalism of general relativity, 22:37195
Hamiltonians in, uses of eigenvalue problem for quadratic, 22:52903
harmonic oscillators in, statistical properties of systems of coupled, 22:3233
Hartree--Fock calculations of electron affinities in, 22:38783
Hartree--Fock equations in, l-averaged exchange term in, 22:34811
Hartree--Fock problem in, relation between random phase approximation and, 22:35383
Hilbert space for elementary particles in, rigged, 22:13687
Hilbert space formulation generalization in axiomatic, systems of observables in, 22:34871
Hilbert space in, measurement theory in, 22:24506
Hilbert space in, translation invariance from energy--momentum for, 22:13868
hyperbolic equation in relativistic, boundary-value problem for nonlinear, 22:22265
hyperquantization method, formulation of, 22:20319
information theory in, (T), 22:5483
interactions between atoms in, time-dependent perturbation treatment of resonance scattering of radiation from, 22:34240 (COO-1112-162)
interactions of two-level systems with quantized radiation field, 22:9492
interactions of wave packets in relativistic, space--time shifts and cross sections in, 22:20260
interpretation of general rules of, (T), 22:3222 (TH-213)
invariance and non-invariance dynamic groups in, 22:46476
kinetic equations for electrons with magnetic interactions, 22:52540
Klein--Gordon and Schroedinger equations in, quasi-stationary solutions to time-dependent, 22:9678
Korteweg--de Vries equation for wave processes in, 22:39228
Landau papers on, collection of, 22:15504
locality and change of state of relativistic systems of, 22:35091
many-body problem in, 22:18033
many-body problem in, antisymmetric projection operator without spin-orbit coupling for constructing wave functions for, 22:52913
many-body problem in, exact theorems for, 22:32027
many-body problem in, including spin, 22:39222
many-body problem in, lower bounds using density matrices, 22:5475
many-body problem in, one-dimensional two-body interactions in, 22:32030
many-body problem in, path integrals method in Green function theory for, 22:32025
many-body problem in, self-consistent calculations using Hartree-Fock method, (T), 22:1743
many-body problem in, theory of, 22:32026
many-body problem in, two-body potentials for bound states in, 22:30104
many-body problems in, lectures on, 22:13382 (NP-17258)
many-body systems in, adiabatic approximation and bound states in, 22:52493
many-body systems, correlation functions in ring-diagram approximation, 22:39217
many-electron systems in, properties of GF wavefunctions for, 22:41701
matrix elements of Coulomb field, operator derivation of recursion relations between radial, 22:32715
matrix methods in, 22:46291
matrix representations in, numerical techniques for, 22:17838
measurement problem in, (T), 22:46304
measurement processes in, model for, 22:39215
measurement theory in, 22:15648
measurement theory in, 22:15649
measurement theory in, relation with symbolic logic for, 22:22262
measurements in, analysis, 22:2 495
measurements in, idealized trajectory, 22:26539
measurements in, relation to theory, 22:44292
model for Moessbauer line narrowing, 22:1352
model for, coordinate and momentum observables in axiomatic, 22:13619
modular variables in, 22:39213 (AD-668099)
operation equations in perturbation theory, (T), 22:3227
operator for coherent states in, unity, 22:50266
operator in, analyticity properties of exponential, 22:32020 (ITF-67-20)
orbital angular momentum and group representations in, 22:34808
orthogonality and completeness of the rotation matrices, 22:5889
orthogonality conditions for, 22:24507
pair equations in, numerical solutions of, 22:41698
particle motion in field of two Coulomb centers, elementary solutions for, (T), 22:29598
partition function for, with scattering operators, 22:32031
Pauli principle in, dynamical theory of, 22:17881
perturbation formalism for responses to time-dependent interactions in, 22:46296
perturbation theory in case of two states in open shells, 22:13609(T) (ANL-Trans-551)
phase and angle variables in, 22:24499
phase function methods in, review of, 22:37396
phase space representation for equations of motion in, 22:39223
positron operator for relativistic elementary systems in, 22:46303
potentials for Dirac, Klein--Gordon, and Schroedinger equations in, construction of solvable, 22:18038
potentials in, properties of singular attractive, 22:35158
pressure of ideal gases, (T), 22:31614
probability density and probability current in, determination of quantum state by, (E), 22:15653
properties of 2-matrix due to integer character of occupation numbers, 22:3224 (UCD-CNL-83)
relativistic invariance in, lectures on, 22:48353
relativity theory in, validity of special, 22:44498
resolution of Einstein--Podolsky--Rosen paradox in, 22:41702
review of quantum theory, 22:32036
scattering problem in, three-body, 22:38805
scattering problems in, numerical resolution of systems of integro--differential equations in, 22:46298
scattering theory in, bounds on cross sections for, 22:38804
scattering theory in, eikonal approximation and impact parameter in, 22:38811
Schroedinger equation for Hamiltonian with exchanges, (T), 22:29608
Schroedinger equation for mixed local and separable nucleon-nucleon potentials, method for solving, (T), 22:39703

Schroedinger equation for three-electron atoms in, Euler-angle reduction for, 22:41320
Schroedinger equation in Riemannian manifold, derivation of, 22:52901
Schroedinger equation in, bounded energy spectrum and eigenfunctions in, 22:3232
Schroedinger equation in, derivation of generalized, 22:13617
Schroedinger equation in, exponential approximation for time-dependent, 22:7139
Schroedinger equation in, lower bounds to eigenvalues of, 22:5056
Schroedinger equation in, numerical solution of S-limit, 22:24498
Schroedinger equation in, relation between solitons and bound states of time-independent, 22:22259
Schroedinger equation in, solitons and eigenvalues of, 22:39228
Schroedinger equation in, solutions of, 22:7408
Schroedinger equations for, computer program for numerical solution of N coupled one-dimensional reduced, 22:39697 (UCRL-50430)
Schroedinger wave functions for systems of identical spinless particles, symmetrization postulate for, 22:5479
selection rules in, hypothesis of commutative super-, 22:34868 (JINR-E2-3799)
spacing distribution for ensemble of random matrices with nonrandom bias, nearest-neighbor, 22:46851
spectral densities in statistic problems, equations for, 22:48199
spectrum of many-particle Schroedinger operator with combined Zeeman and Stark effect, 22:46305
spin systems in, statistical mechanics of, 22:52902
spin-particle theories in classical and, 22:18014
spinor rotations in, sign change under 2π, 22:37068
stability of matter, (T), 22:5446
statistical interpretation of, development by means of joint coordinate-momentum representation, 22:15646 (JINR-E4-3687)
statistical mechanics of irreversible processes, (T), 22:7403 (ITF-66-7)
statistics in field theory and, relation between formulations of generalized, 22:44492
sum rules in, 22:3226
sum rules in, 22:17833
symmetries of oscillator systems, 22:44289
symmetry for, SU(2), 22:1461
symmetry groups in, dynamic, 22:9630
symmetry origin of dynamics, (T), 22:7409
tables of Clebsch--Gordan coefficients and spherical harmonics, 22:42102 (UCID-2823)
temperature dependence near phase transitions in canonical statistics, (T), 22:1372
theorem for W*-algebras with dispersion-free normal states, 22:29597
theory for elementary particles, 22:3304
theory for, Moessbauer technique for elementary length in, 22:20156 (INP-555/PH, pp 93-8)
theory for, review of, 22:46297
theory for, review of Segal algebraic approach to, 22:20310 (INP-555/PH, pp 183-212)
theory for, stationary and nonstationary quantum problems soluble by contour integral technique in, 22:11743
theory of, 22:29609
theory of conditional invariance in, 22:41704
theory of five-dimensional, for field interactions, 22:1490
theory of gravitation, supplementary conditions in, 22:46522
theory of gravity, covariant formulation of, 22:3530
theory of matter in, (T), 22:41715
theory of multi-configuration self-consistent fields with non-orthogonal orbitals in, (T), 22:41713
theory of superfluid vortices for type-II superconductors, 22:1116
theory of, relation between elementary length and, 22:52900
three-body correlation function for dilute boson gas with hard-sphere interaction, ground-state, (T), 22:5872
three-body problem in, 22:34820
three-body problem in nuclear theory, review on, (T), 22:32670 (SLAC-PUB-409)
three-body problem in, (T), 22:3221 (ORNL-TM-2008)
three-body problem in, solution of Faddeev's equations with local potentials for, 22:22621 (SLAC-79)
three-body problems in, solution of, 22:39224
time correlation between emission and absorption of exchanged photon, 22:44282
time correlation functions in, corrections for, 22:29242
time operator in, (T), 22:9496
time-reversal violation effects on energy-level spacings, (T), 22:5615
transitions between seniority-4 and seniority-2 states compared to 2-phonon-1-phonon transitions, 22:35381
transport theory in strong magnetic fields, 22:44286
triton potentials and wave functions, 22:32693
two-center problem in, term tables for, (T), 22:1369(T) (SC-T-67-0953)
two-center problem of, numerical calculations for, (T), 22:1368(T) (SC-T-67-0952)
use for particle statistics, classical limits of, 22:5481
use for treatment of fluctuations of optical parametric oscillator, 22:17840
use for treatment of fluctuations of optical parameter oscillator, 22:17842
use in description of Brownian particle, (T), 22:41710
use in representation of systems of complex-spin atoms or nuclei, 22:17387
use in theory of surface superconductivity, 22:44027
validity of, experimental tests of, 22:26543
variational calculations in, lower bound in, (T), 22:17839
variational calculations with density matrices, 22:3225 (UCD-CNL-84)
variational principle for Landau equation, 22:44293
variational principle, virial theorem, and nonlinear parameters in, application to 3^1D and 3^3D states of helium isoelectronic series, 22:38775
variational principles for expectation values of physical quantities in, 22:20102
wave equations for position operators and localizability of quantum systems for elementary particles in, finite- and infinite-dimensional, 22:44345
wave equations in, exact solutions of class of nonlinear, 22:48198(T) (MATT-Trans-65)
wave equations in, formulation of higher-spin, 22:18012
wave equations in, integral transformations connected with Klein--Gordan, 22:24575
wave equations in, interpretation of relativistic, 22:46508
wave equations in, Lie group theory for general mass formula for, 22:22423
wave equations on hyperplane, 22:44480
wave fields in, projection operators for, 22:13748
wave function for spin-1/2 composite particles, 22:29607
wave function in, closure property for many-body, 22:34819
wave functions in, correlation coefficients for electronic, 22:38761
wave functions in, perturbational-variational approach to variational, 22:3234
wave-functions in, unoccupied natural orbitals of two-electron, 22:34812
Weyl transform in nonrelativistic, (T), 22:41708
Wigner coefficients for moment of momentum in, 22:9634
WKB approximation in, application to radial problems, 22:5473
Quantum Physics
see Nuclear Physics
Quark Model
see Elementary Particle Models (Triplet)
Quarks
see Elementary Particles (Triplet)
QUARTZ
see also Sands
see also Silicon Oxides
analysis for aluminum by activation methods, 22:12257
analysis for iron by γ and x scattering and transmission, 22:12247
coating with silicon carbide using radiant heating, 22:7043
condensation of particles of, in M-star atmospheres, (T), 22:52413
content in lake sediments, use of x-ray diffraction spectroscopy for estimation of, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
crystallization in hydrothermal stage of pegmatite process, 22:7981(T) (WAPD-Trans-80)
defects in alpha-, dielectric and anelastic relaxation of point, 22:21718(R) (CU-3712-05)
determination in silicates by volatilization with hydrofluoric acid, 22:21029 (SC-M-67-3044)
distribution in marine sediments off west coast of Puerto Rico, 22:43311(R) (PRNC-85)
effect of incorporated powdered, on mechanical properties of Fiberglas plastics, 22:11099 (AERE-R-5504)
hydrogen isotopic ratios in, 22:27913
neutron diffraction by (11.0) plane of vibrating crystal of, 22:48434
oxygen isotopic ratios in, 22:27913
positron annihilation in, (E), 22:26207
proton channeling at 415 keV in single-crystal, (E), 22:34753
radiation effects in germanium- and aluminum-doped, gamma, (E), 22:24414(T) (AD-663345)
radiation effects in, transient, (E), 22:24411 (LA-DC-8636)
radiation effects on color of, effects of aluminum impurities on γ, 22:27802
radiation effects on diffusion of hydrogen in, at room temperature, neutron, 22:33449
radiation effects on electric conductivity of, electron and x, 22:12721
radiation effects on flotation behavior of, beta, 22:42796
radiation effects on optical properties of fused, electron, (E), 22:13571
radiation effects on physicochemical properties of glasses of, γ and neutron, 22:12348
radiation effects on resonance frequency of different sections of plates of, electron, gamma, and x, (E),

22:41695
radiation effects on solubility of dusts of, 22:12356
radiation effects on thermoluminescence of, gamma, (E/T), 22:17746
radiation effects on ultrasonic attenuation in, relation of three-phonon scattering mechanism to neutron, (T), 22:34793
radiation effects on, glow curves for defects from γ, 22:33464
radiation effects on, in-pile, 22:19678
radiation effects on, review, 22:26095
radioinduced luminescence and thermoluminescence in, relation of electron processes and dielectric constants to x, 22:29556
radioinduced mechanical property changes in, gamma, 22:11493(T) (JPRS-42628, pp 30-42)
radioinduced smoky color centers in alpha-, study of nonthermoluminescent gamma, 22:48191
sorptive properties for protactinium, 22:8196
thermal conductivity of paper of, opacified with copper flakes, 22:40302(R) (ALO-3632-29)
thermal transmission by windows of, 22:19649(R) (NUMEC-3505-30)
thorium content of, determination by autoradiography, 22:2203
use for recording fission fragment tracks in fission foil detectors, 22:36071
feldspar--kaolin--quartz, phase diagram, 22:7958 (SC-CR-67-2688)
QUARTZ FIBERS
evaluation for use as thermal insulation for radioisotope power systems, 22:21284 (ALO-3633-7(Vol.1))
thermal conductivity testing of, for use in insulation materials, 22:12555(R) (ALO-3632-23)
use of gold-coated, as anodes in high-pressure 4π proportional detectors, 22:6610
Quartz Sandstone
see Quartzites
QUARTZITES
radioactivity of rutilo-zirconiferous, from Spain, 22:18895
separation of uranium from rutilo-zirconiferous, 22:18895
QUASARS
see also Seyfert Galaxies
3C 249.1, spectral line intensities for, (E), 22:41235
3C 273, distance of, (T), 22:38672
3C 273, distance, mass, effective temperature, and redshift of, (T), 22:36599
3C 273, infrared photometry of, (E), 22:52434
3C 273, optical luminosity fluctuations of, (T), 22:29057
3C 273, optical polarization of, (E), 22:17232
3C 273, physical parameters of, (T), 22:38672
3C 273, radio emission increase during 1966--1967, (E), 22:41181
3C 273B, angular diameter at 18 cm, (E), 22:17260
3C 273B, characteristics of, (T), 22:34139 (AD-664692)
3C 273B, continuum radiation from, (T), 22:29112
3C 273B, radio-brightness distribution of, (E), 22:36575
3C 287, structure in optical image of, (E), 22:36682
3C 287, time changes in structure of optical image of, (E), 22:49904
3C273, proper motion and distance of, (T), 22:45854
3C287, proper motion and distance of, (T), 22:45854
absorption spectrum of, nature of standard, (T), 22:794
angular diameter of, variation of, (T), 22:34167
angular dimensions of, radio interferometric study of, (E), 22:41182
angular size of 3C 273B, (E), 22:5014
angular size of 3C 9, 3C 446, PKS 1116 + 12, and 4C 31.38, (E), 22:7095
angular structure of, observations of, (E), 22:29026
book: An Introduction to Astronomy: Planets, Stars, and Galaxies, 22:24022
book: Quasi-Stellar Objects, 22:15322
brightness distributions at 2695 MHz of, (E), 22:26172
bulk motion of relativistic gas, nonrelativistic equations of, (T), 22:4982
characteristics of, (T), 22:34203
clustering of, effects on cosmic microwave background, (T), 22:17310
color indices for, with redshifts greater than 2.2, (T), 22:8893
colors of, U--V--B, (T), 22:8960
consequences for galactic evolution, (T), 22:34184
consequences for modern cosmology, (T), 22:34154
continuum radiation from, model of, (T), 22:2740
cosmic-ray passage through ambient gas clouds around, (T), 22:5167
cosmic-ray production in, (T), 22:15385
cosmological interpretation of, (T), 22:13099
cosmological significance of, (T), 22:45911
detection of, with jet, (E), 22:43683
diameter of, measurement at 66.9 cm of, 22:5019
differentiation from luminous stars, (T), 22:8968
discovery of, (T), 22:918
distance limit for 3C 147, (E), 22:4974
distance to, (T), 22:36676
distance to, cosmological, (T), 22:31578
distances of, (T), 22:43690
distances to, discretization of, (T), 22:38715
distribution of, space, (T), 22:2721
distribution of, spatial, (T), 22:31578
effects of intervening galaxies on correlation of intensity and red shift of, (T), 22:4997
ejection from center of Milky Way, (T), 22:45854
energetics of, (T), 22:29109
energy and mass balance of massive and supermassive stars, equations for, 22:41147
energy emission from, (T), 22:28996
energy emission from, model for, (T), 22:17303
energy generation in, (T), 22:5033
energy of relativistic particles and magnetic fields in reabsorbing, total, (T), 22:45893
energy radiation from, beamed, (T), 22:29052
energy requirements of, (T), 22:925
energy source for, (T), 22:52346
energy source for, (T), 22:23968
energy source of, dense star systems as, (T), 22:29108
energy source of, stellar collisions as, (T), 22:43786
energy sources of, relativistic effects in study of, (T), 22:43686
envelopes of, structure and mass of, (T), 22:36575
evolution of supermassive stars, (T), 22:7090
evolution of, into radio galaxies, (T), 22:29122
evolutionary properties of, determination by luminosity--volume test, (T), 22:23940
features of compact galaxies III Zw 2 and 3C 120 resembling, (E), 22:36649
flux densities at 2695 MHz of, (E), 22:52431
formation in expanding Universe, (T), 22:816
formation of, theory of, (T), 22:8899
gravitational collapse and anticollapse in, relation to high-energy particles and magnetic fields associated with, (T), 22:41146
gravitational redshift of, (T), 22:903
gravitational wave emission by, measurement by scintillation detection, 22:17339
identification of 37, optical, (E), 22:15294
identification of 4C 50.11 as, (T), 22:17298
identification of seven 4C sources with blue objects, 22:4926
image amplification by gravitational lens effects of foreground galaxies, (T), 22:52352
lifetimes of, (T), 22:41269
light emission from, spectral shift of, 22:31538
light emission from, variations of, (T), 22:45865
light fluctuations of, (T), 22:34132(R) (AD-661573)
luminosity functions of, (T), 22:43690
luminosity functions of, optical and radio, (T), 22:17219
luminosity of 3C 48, (T), 22:795
luminosity of, distribution of, (T), 22:29107
luminosity variations of, size determinations from, (T), 22:36681
luminosity--velocity distribution of, (T), 22:31574
magnetic field of 3C 273B, (T), 22:2740
magnitude and redshift of, in anisotropic and homogeneous Universe, (T), 22:52459
magnitude variations from 1934 to 1961 for 3C 273, photographic, 22:2750
mass of, (T), 22:36676
model for variable, relativistically expanding, (T), 22:8905
model for, (T), 22:837
model for, (T), 22:38672
model for, (T), 22:4924
model for, directed-emission, 22:13096
model for, featuring supernovae, (T), 22:26151
model of, 22:4993
model of, binary system as, (T), 22:13120
model of, gravitational lens, (T), 22:8889
model of, lagging-core, (T), 22:11167
model of, local, (T), 22:49903
model of, restrictions on, (T), 22:11139
model of, stellar coalescence and multiple supernova, (T), 22:861
model of, synchrotron, (T), 22:17334
models for, (T), 22:15322
nature of, (T), 22:45868
nuclear parameters of 3C 273, 22:7089
nucleogenesis in, (T), 22:19688
observation of two images of single, (T), 22:8866
observational data on, (T), 22:15322
observations at short centimeter wavelengths of 3C 273 and 3C 279, 22:13162
optical brightness and polarization of 3C 345, variability of, (E), 22:29027
optical identifications of, (E), 22:38702
optical identifications of, between +20° and +27°, (E), 22:47734
optical observations of, (T), 22:29104
optical polarization in, (E), 22:41179
optical positions of, (E), 22:13194
optical properties of, (T), 22:5008
optical radiation from 3C 273, statistical properties of, (T), 22:7089
origin of, (T), 22:8872
oscillating sphere model for, (T), 22:17292
oscillation frequencies and instability conditions, (T), 22:43714
Parkes 2134 + 004, radio spectrum of, (E), 22:31554

perturbations of dense star clusters, stability for radial, (T), 22:52404
PHL 5200, absorption-line spectrum of, (E), 22:29031
PHL 938, spectral line intensities for, (E), 22:41235
PHL 938, spectrum of, absorption-line, (E), 22:36639
PKS 0237-23, absorption-line spectrum of, (E), 22:43790
PKS 0237-23, method for identifying absorption lines in spectrum of, (E), 22:43789
PKS 0237-23, spectrum of, (E), 22:45913
PKS 0237-23, spectrum of, absorption-line, (E), 22:36639
PKS 2251 + 11, spectral line intensities for, (E), 22:41235
plot of log N--log S for seventy, (T), 22:2722
polarization at 6 cm of, linear, (E), 22:47739
polarization of 1418-MHz radiation from, upper limits for circular, (E), 22:34198
polarization of optical and radio emission from compact, circular, (T), 22:899
positions of radio sources opposite known, (T), 22:41269
positions of, (E), 22:4968
positions opposite radio sources as cosmological test, 22:45853
power levels of, (T), 22:918
properties of 3C 273B, (T), 22:31563
properties of, (E/T), 22:28998
properties of, (T), 22:919
properties of, discussions at Prague, 8/67, on, 22:13083
proton synchrotron emission from, (T), 22:41197
radiation emission from, inverse Compton, (T), 22:29109
radiation emission from, mechanism for, (T), 22:29095
radiation from, mechanism for continuum, (T), 22:29112
radiation from, mechanism for nonthermal optical, (T), 22:52386
radiation from, model for continuum, 22:34139 (AD-664692)
radiation variations in magnetodynamic model of, (T), 22:7089
radio emission from, circular polarization of, (E), 22:23953
radio emission from, circular polarization of, (E), 22:11129
radio emission from, mechanism for, (T), 22:7096
radio emission from, variations of, (T), 22:45865
radio flux densities at 5.2 cm, (E), 22:43819
radio intensity variations of, (E), 22:52344
radio properties of, (T), 22:5008
red shift of, cosmological nature of, (T), 22:794
red shift of, cosmological significance of, (T), 22:36676
red shift of, interpretation of, (T), 22:29109
red shift of, origin of, (T), 22:28996
red shift--absolute magnitude relation for, (T), 22:29092
red shifts of, (E), 22:41180
red shifts of, (T), 22:52364
red shifts of, (T), 22:41269
red shifts of, cosmological interpretation of, (T), 22:38664
red shifts of, effects of distance on, (T), 22:52358
red shifts of, gravitational, (T), 22:49903
red shifts of, interpretation of, (T), 22:45861
red shifts of, relation to angular size, (T), 22:34167
red shifts of, relation to spectral absorption lines, (E), 22:45913
redshift of, (T), 22:21800
relation to N-type and Seyfert galaxies, (T), 22:41200
relation to N-type galaxies, (T), 22:13099
relation to radio galaxies and galaxies, (T), 22:52364
relation to radio-compact and radio N galaxies, (T), 22:41184
relativistic cosmological picture of, 22:2739
scintillations of, interplanetary, (E), 22:11166
screening by intervening galaxies in Eddington--Lemaitre universe, (T), 22:43846
space distribution of, (T), 22:17219
space distribution of, (T), 22:43690
spectra and red shifts of, (T), 22:34200
spectra at 88 GHz, (E), 22:13195
spectra of O II and O III forbidden transitions in emission, (T), 22:8966
spectra of 3C 191, containing quark atoms, 22:43724
spectra of OQ208, (E), 22:5006
spectra of radio-quiet, (E), 22:29032
spectra of, (E), 22:41180
spectra of, (T), 22:31563
spectra of, (T), 22:29107
spectra of, (T), 22:29104
spectra of, absorption features in, (T), 22:43821
spectra of, absorption lines in, (T), 22:8967
spectra of, absorption lines in, (T), 22:29052
spectra of, Compton effect interpretation of redshift in, (T), 22:29142
spectra of, excitation of forbidden lines in, (T), 22:43849
spectra of, identification of line at 2974 A in, (T), 22:4931
spectra of, jet model for explaining line, (T), 22:43689
spectra of, method for identifying absorption lines in, (E), 22:43789
spectra of, nature of optical continuum in, (T), 22:47722
spectra of, occurrence of absorption lines in, (E), 22:45913
spectra of, radio, (E), 22:31569
spectra of, radio, (T), 22:45867
spectra of, red shifts in emission-line, (T), 22:52466
spectra of, red shifts in, (T), 22:8967
spectra of, relation of metagalactic rotation to red shift in, (T), 22:52432
spectra with broad emission lines, strength of Hβ in, (E), 22:49947
spectral-energy distributions of, (T), 22:8960
spectrographic observations of, (E), 22:7106
spectrum and absolute magnitude of, (T), 22:903
spectrum of 3C 273, search for 90α recombination line of atomic hydrogen in emission, (E), 22:13162
spectrum of, strong emission lines in, (T), 22:21800
structure at 1425 MHz, east--west radio, (E), 22:2757
structure of radio-emitting regions of, high-resolution interferometry of, (E), 22:49880
structure of, (T), 22:29107
synchrotron emission and reabsorption by, (T), 22:23912(T) (NASA-TT-F-521)
synchrotron radiation from 3C 273B, (T), 22:5032
theory of, 22:34132(R) (AD-661573)
Ton 1530, spectrum of, absorption-line, (E), 22:36639
x-ray emission from 3C 273, (T), 22:15306
x-ray emission from 3C 273, detection of, (E), 22:19696
x-ray emission from 3C 273, search for, (E), 22:11116

QUATERPHENYL
effects as wave-length shifter on light output of argon and argon--nitrogen proportional scintillation detectors, 22:6609
properties of derivatives of, for use as scintillators, 22:4188

p-QUATERPHENYL, 4,4'''-BIS(2-BUTYLOCTYLOXY)-
light output of, in oxygen-free toluene solution, 22:40414
scintillation decay time of, in oxygen-free toluene solution, 22:40414

p-QUATERPHENYL, 3,3',3'',3'''-TETRAMETHYL-
light output of, in oxygen-free toluene solution, 22:40414
scintillation decay time of, in oxygen-free toluene solution, 22:40414

Queenie Analyzer
see Scalers

QUENCHING CIRCUITS
design for gas-discharge detectors in parallel, 22:36043
design of quenching generator for time-of-flight mass spectrometer, 22:30889 (JUL-507-PC)

Quercetagetin
see Flavone, 3,3',4',5,6,7-Hexahydroxy-

QUERCETIN
complexes with beryllium, titanium, and uranium, infrared study of structure of, 22:16493
complexes with niobium, tantalum, and thorium, spectral studies on, 22:27680
complexes with scandium, spectrophotometric studies on, 22:16503

QUINACRINE
radioprotective effects of, on mice and rats, 22:25863

QUINALDIC ACID
decarboxylation of, effects of carbon-13 on, 22:4109
radiation effects on content of, in liver of rats, x, 22:19383

QUINALDIC ACID, 4,8-DIHYDROXY-
determination in urine by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)

QUINALDIC ACID, 4-HYDROXY-
radiation effects on content of, in mice, x, 22:19383

QUINALDINE
reactions of deuterium-labeled and normal, with acetic anhydride, mechanism and rate of, 22:37767
reactions with acetic anhydride, effects of deuterium on, 22:27702

Quinalizarin
see Anthraquinone, 1,2,5,8-Tetrahydroxy-

QUINHYDRONE
radiolysis at 120°K by 0.3-GeV electrons, 22:25399

QUININE
effects on calcium-45 movements in muscles of frogs, 22:14970

QUINOLINE
see also Strychnine
deuterium exchange with hydrogen in, catalytic effects of group VIII metals on, 22:35819
solvent properties for copper, molybdenum, and vanadium, 22:16463
use in treatment of polymorphous light eruption in man, 22:19446

Quinoline, 7-Chloro-4-[[4-(diethylamino)-1-methylbutyl]amino]-, diphosphate
see Chloroquine Diphosphate

QUINOLINE, 4- 3-(DIMETHYLAMINO)PROPYL AMINO-7-IODO-
use of iodine-125- and iodine-131-labeled, for localization of melanomas, evaluation of, in mice and rats, 22:10820

Quinoline, 8-Hydroxy-
see 8-Quinolinol

Quinoline, 2-Methyl-
see Quinaldine

Quinoline, 4-Methylsee Lepidine

QUINOLINE, 4-NITRO-, 1-OXIDE
  effects on mice, combined effects of strontium-90 and yttrium-90 on carcinogenic β, 22:49588

5-QUINOLINESULFONIC ACID, 8-HYDROXY-
  complexes with neptunium, preparation and stability of, 22:16541
  complexes with plutonium, preparation and stability of, 22:16541

5-QUINOLINESULFONIC ACID, 8-HYDROXY-7-IODO-
  complexes with neptunium, preparation and stability of, 22:16541
  complexes with plutonium, preparation and stability of, 22:16541
  complexes with thorium, ionization and stability constants of, 22:62
  use in oscillopolarographic determination of molybdenum, uranium, and vanadium in acetic buffered solutions, 22:21035

8-QUINOLINOL
  carbon-14 exchange between aluminum, gallium, or indium tris-8-quinolinolato complexes and, 22:42677
  complexes with americium, curium, and plutonium, formation of, 22:33332
  complexes with hafnium, thorium, and zirconium tetrachlorides and zirconium tetrafluoride, 22:48857
  complexes with metals, mass spectra of, 22:25344
  complexes with metals, solvent extraction and polarographic studies on, 22:50930
  complexes with neptunium, preparation and stability of, 22:16541
  complexes with niobium or tantalum, preparation and properties of, 22:50959
  complexes with plutonium, preparation and stability of, 22:16541
  complexes with thorium, crystal structure of, 22:42681
  complexes with uranium, infrared spectra of, 22:4090
  complexes with uranium, preparation, composition, and nonstoichiometry of, 22:35827
  complexes with uranium, thermal conversion of, to bis(8-hydroxyquinolinato)dioxouranium(VI), 22:35827
  complexes with uranium(VI), structure of, 22:18768
  complexes with uranyl ions, solubility of, in organic solvents, 22:12298
  compounds with thorium, preparation of, 22:2059
  effects on coprecipitation of molybdenum with chromium, tungsten, and uranium, 22:48858
  reactions with picolinic acid and uranium, thermal decomposition and solubility of chelates from, 22:16513
  solvent properties for aluminum, 22:8004
  use in extraction--photometric determination of lanthanum, 22:33217
  use in separation of niobium from tantalum, 22:4038

8-QUINOLINOL, 5-ACETYL-
  complexes with thorium, crystal structure of, 22:42681

8-QUINOLINOL, 5-CHLORO-
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 7-CHLORO-
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 5-METHYL-
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 7-METHYL-
  complexes with thorium, crystal structure of, 22:42681
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 5-NITRO-
  complexes with thorium, crystal structure of, 22:42681
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 7-NITRO-
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 5-PHENYL-
  complexes with thorium, crystal structure of, 22:42681
  complexes with uranium, infrared spectra of, 22:4090

8-QUINOLINOL, 7-PHENYL-
  complexes with thorium, crystal structure of, 22:42681
  complexes with uranium, infrared spectra of, 22:4090

QUINONES
  content of adrenal glands of animals in relation to radiosensitivity, 22:19269
  radiation effects on content of, in bone marrow and liver of rats, methods for detection of, 22:49512
  radiation effects on photoreactions in, isolated from green algae, uv, 22:4699(R) (RLO-1783-13)
  radioinduced, in cotton seeds, γ, 22:6733

p-QUINQUEPHENYL, 3,3''''-BIS(3-ETHYLHEPTYL)-
  light output of, in oxygen-free toluene solution, 22:40414
  scintillation decay time of, in oxygen-free toluene solution, 22:40414

R

R-0
  see Swedish Reactors (R-0)

R-1 Reactor (Sweden)
  see SLEEP Reactor

R-2 Reactor (Sweden)
  see Swedish Reactors (R-2)

R-2 Reactor (Poland)
  see Reactors, Research

R-3 Reactor (Sweden)
  see Swedish Reactors (R-3)

RA (Heavy water reactor-Vinca)
  see Reactors, Research

RABBITS
  antibodies in blood serum of, determination of, 22:19233(R) (COO-209-144)
  autoradiography of thyroid gland of, use of iodine-125 and iodine-131 for, 22:30969
  body composition of, relation of potassium to, 22:21460(R) (COO-1171-82)
  calcium distribution in blood plasma and bone in, tracer study, 22:30999
  cesium-134 uptake by fetuses of, 22:38427(R) (ORO-659)
  chromium-51 toxicity to erythrocytes in, 22:51308 (ORAU-106, pp 171-93)
  clearance of creatinine and inulin from kidneys of, effects of uranyl acetate on, 22:14911(R) (COO-1691-1)
  clearance of radioisotope labeled particles from lungs of, use of profile scanning and whole-body counting to measure, 22:25751
  content of sodium fluoride in plasma of, effects of, on survival, 22:16375 (UR-49-891)
  dermatotoxic serum of, effects of, on skin of γ-irradiated guinea pigs, 22:30943
  determination of antibacterial proteins in leukocyte lysosomes of, 22:20998(R) (ORO-3628-1)
  determination of autoantibodies in sensitized, methods for, 22:51430
  development of candidiosis in, effects of alloxan-induced diabetes on, 22:8605
  diagnosis of uranium poisoning in, use of fluorescence microscopy for, 22:21436
  distribution of gallium-72-labeled hydrous ferric oxide colloids in, 22:51307 (ORAU-106, pp 105-34)
  distribution of iodine-131-labeled albumin in heart and lungs of, 22:12794
  erythropoiesis in anemic, preparation and purification of factor for stimulation of, 22:6213(R) (NYO-3795-1)
  erythropoiesis in, effects of erythropoietin and testosterone on, 22:23413(R) (ORO-3547-6)
  fission product metabolism in, unseparated uranium, 22:8473
  formation of stem cells in, effects of x-irradiated aminocaproic acid, pentosan SP 54, sanguina deproteinase, and SD-SK on, 22:16990
  immune reaction to x-irradiated corneal grafts in, 22:51395
  iodine-125 uptake by fetuses of, 22:38427(R) (ORO-659)
  iodine-131 content of blood of pregnant, in comparison to that of fetuses, 22:10700
  iodine-131 exchange between fetal and maternal, during pregnancy, 22:10687
  iodine-131 metabolism in, 22:33778 (UCLA-12-640, pp 45-60)
  iodine-131 metabolism in liver of, 22:6722
  iodine-131 storage by organs of fetuses of, 22:10686
  iodine-131 uptake by fetuses of, 22:38427(R) (ORO-659)
  iodine-131 uptake by thyroid gland of, effects of ultrasound on, 22:437
  iron-59 distribution in tissues of, 22:21450
  iron-59 metabolism in, effects of chronic gastrointestinal bleeding on, 22:51308 (ORAU-106, pp 171-93)
  iron-59 toxicity in, 22:21599
  kidney functions in, effects of chronic radiation sickness on, 22:8576
  krypton-85 clearance from kidneys of, 22:4575
  lead-210 uptake by hair of, factors affecting, 22:455
  leukopenia induced in, by toxins extracted from x-irradiated blood cells, 22:19437
  metabolism of iron-59-labeled iron chloride following chronic oral administration, 22:21452
  molecular size of ATPase from muscles of, estimation of, using radiation inactivation, 22:51411
  permeability properties of tubular epithelium in kidney of, effects of uranyl acetate on, 22:14911(R) (COO-1691-1)
  phagocytic activity of leukocytes of, effects of cystamine on, 22:25886
  phagocytosis of colloidal gold-198 and endotoxins in, effects of ethyl palmitate and Thorotrast on, 22:12773
  phagocytosis of colloidal gold-198 in, effects of size of particles on, 22:38469
  phosphorus-32 distribution in organs of, following endoarterial introduction in labeled resin microspheres, 22:28609
  plutonium-239 uptake by bone marrow of, 22:10736
  plutonium-239 uptake by bones of, effects of, on content of DNA and RNA, 22:25971
  population dynamics of Lepus californicus, in Utah, 22:1918(R) (COO-1329-6)
  radiation dose to ear of, determination of integral absorbed strontium-90-yttrium-90 β, 22:45546
  radiation dose to, effects of, on mechanism of death, x, 22:8594 (CONF-670305-, pp 76-80)
  radiation dosimetry in, following chronic oral administration of iron-59-labeled iron chloride, γ, 22:21452
  radiation effect on brain of, x, 22:23621
  radiation effects on acid- and alkaline phosphatase activity in blood and bone tissue of, plutonium-239 α,

22:23454
radiation effects on activity of aldolase and lactate dehydrogenase in blood serum of, x, 22:33765
radiation effects on activity of lipoprotein lipase in adipose tissues of, x, 22:40564
radiation effects on activity of thromboplastin in blood vessels of, 22:8437
radiation effects on adrenal cortex of, histological study of x, 22:31233
radiation effects on aminotransferase activity in, combined effects of embitol on x, 22:33736
radiation effects on antibody formation in, 22:28621 (ANL-7278, pp 1-94)
radiation effects on antitoxin-localizing ability in tissue of, effects of dose on x, 22:6712(R) (COO-1172-7)
radiation effects on antitoxin-localizing response in, effects of diurnal rhythm on x, 22:6712(R) (COO-1172-7)
radiation effects on autoimmune processes in, effects of antibiotics on x, 22:21446
radiation effects on binding of mercapto groups to leukocyte lysosomes in, γ, 22:51406
radiation effects on bioelectric activity in brain of, effects of prenatal exposure on γ, 22:40604
radiation effects on blood circulation to retina of, effects of dose on γ and x, 22:23665
radiation effects on blood of, protective effects of platelet extract on in vivo, 22:33869
radiation effects on blood proteins of, protective effects of serotonin against phosphorus-32 β, 22:40805
radiation effects on blood serum of, biophysical whole-body x, 22:10680
radiation effects on blood vessels in ears of, protective effects of trihydroxyethylrutoside against electron, 22:40797
radiation effects on blood vessels of retina in eyes of, histological study of laser, 22:15067
radiation effects on blood vessels of, protective effects of cystamine against, 22:47561
radiation effects on blood, body weight, and survival of, protective effects of glutathione against chronic x, 22:49464
radiation effects on bone marrow of, protective effects of bone marrow transplants on x, 22:33871
radiation effects on bone marrow, intestinal epithelium, and testes of, effects of degree of cell maturity on x, 22:8594 (CONF-670305-, pp 76-80)
radiation effects on bones of growing, effects of androsterone, egg shells, and vitamin D_2 on x, 22:38366
radiation effects on brain of, electrophysiological analysis of ionizing, 22:45715
radiation effects on calcium, potassium, and sodium content of tissues of, comparison of chemical effects to polonium-210 α and γ, 22:47611
radiation effects on calcium-45 and phosphorus-32 metabolism in, localized, 22:43441
radiation effects on capillaries of, effects of antihistaminic and vasoactive drugs on x, 22:28559
radiation effects on capillaries of, protective effects of trihydroxyethylrutoside against fast electron, 22:40738
radiation effects on ciliary body of, electron microscopy of fast neutron, 22:49595
radiation effects on circulatory system and heart of, 22:23660
radiation effects on composition of plasma in, γ, 22:43234
radiation effects on content of acid mucopolysaccharides in ears of, γ, electron, and x, 22:51335
radiation effects on content of albumins and globulins in blood serum of, following administration of iron-59, β and γ, 22:21602
radiation effects on content of cholesterol, nitrogen, phospholipids, and total protein in stroma of erythrocytes in, whole-body x, 22:40824(T) (JPRS-44070, pp 19-23)
radiation effects on content of sugar in blood of, following administration of iron-59, β and γ, 22:21602
radiation effects on corneas of, cytology and immunology of grafts following x, 22:47485
radiation effects on cultured bone marrow cells from, effects of spleen shielding on x, 22:31228
radiation effects on development of collateral lymph circulation in, effects of dose on x, 22:28657
radiation effects on DNA and RNA synthesis in nerve cells of, whole-body x, 22:36183
radiation effects on DNA base content of bone marrow of, x, 22:33737
radiation effects on DNA of, in relation to production of antibodies, uv, 22:14928
radiation effects on electrical activity of brain in, following chronic ingestion of iron-59, β and γ, 22:21598
radiation effects on electrolyte composition of blood plasma and cerebrospinal fluid of, protective effects of cystamine against, 22:51903
radiation effects on electrolyte metabolism in, in relation to adrenal cortex function, acute polonium-210 γ, 22:49608
radiation effects on enzymatic degradation of deoxyribonucleoprotein in homogenates of appendix, liver, and spleen, γ, 22:43229
radiation effects on enzyme activity and respiration in erythrocytes of, effects of chemical compounds on x, 22:45428
radiation effects on enzyme activity of, comparison of, to radiomimetic effects, 22:49239
radiation effects on enzymes and pathways of thymine metabolism in, 22:45508(R) (PG-Report-826)
radiation effects on epithelium of trachea of, effects of dose fractionation on x, 22:31257
radiation effects on erythropoiesis in, following chronic ingestion of iron-59, β and γ, 22:21450
radiation effects on erythropoiesis in, following prolonged uptake of iron-59, β and γ, 22:21453
radiation effects on eyes of, continuous CO_2 laser, 22:15106
radiation effects on eyes of, effects of energy levels on laser, 22:8619
radiation effects on eyes of, effects of ocular spectral characteristics of retinal pigment epithelium and chloroid on pathological white light and laser, 22:51922
radiation effects on eyes of, effects of spectral reflection and transmission properties of choroid, retina, and sclera on laser, 22:51921
radiation effects on eyes of, electron microscopy of strontium-90 β, 22:31224
radiation effects on eyes of, histological study of laser, 22:6880
radiation effects on eyes of, laser, 22:38420 (CONF-660573-, pp 5-18)
radiation effects on eyes of, mechanisms in effects of peak power on laser, 22:51919
radiation effects on eyes of, microwave, 22:554(R) (UR-49-810)
radiation effects on eyes of, pathological laser, 22:25986
radiation effects on eyes of, protective effects of 5-adenylic acid, ATP, cysteamine, serotonin, and vitamin B_6 against γ and neutron, 22:12875
radiation effects on eyes of, Q-switched laser, 22:49587
radiation effects on fatty acids in liver of, therapeutic value of, 22:25731
radiation effects on fatty acids in liver of, therapeutic value of, 22:25730
radiation effects on febrile reaction in, 22:49511
radiation effects on filtering capacity of lymph nodes of, x, 22:21617
radiation effects on function and structure of heart in, x, 22:28682
radiation effects on function and structure of vestibular organs of, γ, 22:31209 (UCRL-17751, pp 81-141)
radiation effects on function of vestibular analyzer in, effects of localized exposure on x, 22:6905
radiation effects on gastric mucosa of, combined effects of cortisone on x, 22:36372
radiation effects on glucoproteins and lipoproteins in blood of, protective effects of serotonin against phosphorus-32 β, 22:12797
radiation effects on glycogen content of megakaryocytes of, x, 22:47481
radiation effects on glycogen synthesis in liver of, combined effects of starvation on, 22:40558
radiation effects on granulocytopoiesis in, effects of dose on, 22:49575
radiation effects on growth of articular cartilage in, 22:4670
radiation effects on growth, life span, and reproduction in, following ingestion of irradiated diet, γ, 22:17069
radiation effects on heart function in, following prolonged internal administration of iron-59, β and γ, 22:21603
radiation effects on heart of, electrocardiogram analysis of x, 22:21423
radiation effects on hematopoiesis and survival of, effects of dose on γ and x, 22:49578
radiation effects on hematopoiesis in bone marrow of, following local exposure of femur, kinetic studies of, 22:28665
radiation effects on hematopoiesis in, during pregnancy, β and γ, 22:21600
radiation effects on hematopoiesis in, following loss of blood, β and γ, 22:21454
radiation effects on hematopoiesis in, following prolonged administration of iron-59, β and γ, 22:21599
radiation effects on hematopoietic system of, comparison of RBE for β, fast neutron, and x, 22:40822(T) (JPRS-44070, pp 1-9)
radiation effects on hippocampus neurons of, x, 22:45442
radiation effects on immune reactions of, to corneal transplants, γ, 22:38433
radiation effects on immune reactions of, to skin transplants on ears, ^{111}Ag and ^{131}I β and γ, 22:21439
radiation effects on immune reactions of, to transplanted corneal tissue, x, 22:51395
radiation effects on immune response of, in relation to splenic secondary nodules, whole-body x, 22:19279
radiation effects on incidence of Tyzzer's disease in, effects of cortisone on x, 22:47586

radiation effects on inner ear of, high-energy α, 22:12936
radiation effects on inner ear of, pathological x, 22:23600(T) (N-67-18922)
radiation effects on intestine of, combined effects of serotonin on x, 22:49550
radiation effects on kidney soluble protein biosynthesis in, electrophoretic and tracer study of x, 22:33739
radiation effects on kidneys of, following therapy of abdominal neoplasms, 22:40756
radiation effects on kidneys of, with nephritis, electron microscopic study of, 22:43435
radiation effects on lens epithelium of, effects of shielding on fast neutron and x, 22:15063
radiation effects on lens of, effects of dose fractionation on fast neutron, 22:51964
radiation effects on lens of, RBE for fast neutron and x, 22:51966
radiation effects on leucocyte count in, focal x, 22:6712(R) (COO-1172-7)
radiation effects on life span of erythrocytes of, in comparison to effects of phenylhydrazine, x, 22:33731
radiation effects on light response of cells in retina of, x, 22:23414(R) (ORO-3599-1)
radiation effects on localization of injected protein in tissues of, effects of inflammation on x, 22:6712(R) (COO-1172-7)
radiation effects on localization of radioiodine-labeled serum albumin in, x, 22:6712(R) (COO-1172-7)
radiation effects on long-chain fatty acids in, acute phosphorus-32, 22:47482
radiation effects on lung tissues and tumors of, effects of energies on laser, 22:25901
radiation effects on lungs of, late electron, 22:51898
radiation effects on lymph nodes of, histological study of effects of antigens, appendectomy and thymectomy on x, 22:25879
radiation effects on metabolism of glycogen in, x, 22:23623
radiation effects on mitosis of corneal epithelial cells of, γ, 22:49513
radiation effects on morphology and physiology of nervous system of, effects of dose fractionation on microwave, 22:583
radiation effects on morphology of cornea of, threshold for carbon dioxide laser, 22:51923
radiation effects on morphology of liver in, x, 22:6904
radiation effects on nerve repair in, effects of methyl-2-cyanoacrylate adhesive on phosphorus-32 β, 22:16993
radiation effects on nerves controlling heart function in, following prolonged uptake of iron-59, β and γ, 22:21604
radiation effects on neuraminic acid and mucoproteins of blood serum of, mechanisms for x, 22:28312
radiation effects on neuropathological response of, proton, 22:47592
radiation effects on nonpigmented and pigmented skin of, comparison of laser, 22:40823(T) (JPRS-44070, pp 10-18)
radiation effects on nucleic acids in normal and denervated muscles of, whole-body x, 22:49217
radiation effects on olfactory bulb neurons in, β and x, 22:552(R) (COO-1669-1)
radiation effects on olfactory system of, mechanisms in acute x, 22:51870(R) (COO-1669-4)
radiation effects on organs of, following prolonged administration of iron-59, pathological β and γ, 22:21606
radiation effects on pancreas of, effects of dose on x, 22:558
radiation effects on performance of nerve heterografts in, effects of pretreatment with specific antiserum on, 22:51364
radiation effects on permeability of blood vessel-tissue barriers in, combined effects of hemorrhage on γ, 22:28570
radiation effects on permeability of blood vessels in, effects of dose on γ and x, 22:23614
radiation effects on physiology of kidneys of, iodine-131-labeled hippuran tracer study of γ, 22:15076
radiation effects on physiology of, effects of dose on x, 22:33920
radiation effects on pigmented retinal epithelium in, laser, 22:2541
radiation effects on platelet count of, effects of, on cholesterol atherogenesis, phosphorus-32 β, 22:49522
radiation effects on production of anti-sheep-erythrocyte hemolysin in intact and splenectomized, x, 22:8469
radiation effects on progeny of, effects of parental iodine-131 administration on β and γ, 22:8625
radiation effects on protein content of blood serum of, high and low energy x, 22:28387
radiation effects on proteolytic activity of leukocytes of, γ, 22:47579
radiation effects on quenching properties of blood plasma and serum from, γ, 22:38247 (A-AC-82/G/L-1163)
radiation effects on reflex activity in central nervous system of, γ, 22:47590
radiation effects on regeneration of hypoglossal nerves of, autoradiographic study of x, 22:43455
radiation effects on regeneration of striated skeletal muscle in, acute x, 22:31226
radiation effects on response of, to epinephrine, effect of dose fractionation on x, 22:25994
radiation effects on retina of chinchilla grey, comparison of neodymium and ruby laser, 22:33962
radiation effects on retina of eyes of, laser, 22:4695
radiation effects on saliva parotin-A activity in, x, 22:51437
radiation effects on sensitivity of erythrocytes of, to hypotonic solutions of sodium chloride, x, 22:6867 (LFEN-56)
radiation effects on sensitivity of muscles and nerves of, to succinylcholine, 22:445
radiation effects on sensitivity of vestibular analyzer in, in relation to incidence of nystagmus, 22:36364
radiation effects on serum content and synthesis of proteins in rabbits, x, 22:6751
radiation effects on skin and underlying tissues of, effects of dose on high-energy electron, 22:38419 (CEA-R-3294)
radiation effects on skin grafts in, γ, 22:19336
radiation effects on skin of, 22:23667
radiation effects on skin of, effects of pigment on laser, 22:12784
radiation effects on skin of, protective effects of dimebolin, dimedrol, EAC, and trasylol against β, 22:21543
radiation effects on spermatozoa of, protective effects of chemical agents against cobalt-60 γ, 22:19376
radiation effects on structure of fatty acids in, x, 22:16992
radiation effects on survival of, use of body weight and blood changes to estimate probability of x, 22:21578
radiation effects on synthesis of antibodies in, effects of colchicine on x, 22:28621 (ANL-7278, pp 1-94)
radiation effects on synthesis of lipids in liver and thymus of, effects of dose on γ, 22:51473
radiation effects on synthesis of plasma proteins in, tracer study of acute, 22:43250
radiation effects on synthesis of proteins in lungs of, ionizing, 22:45437
radiation effects on tattooed skin of, laser, 22:25989
radiation effects on ultrastructure of cells of epidermis in, use of electron microscopy to determine x, 22:30963
radiation effects on uridine diphosphate glucose system of glycogen synthesis in bone marrow of, x, 22:33728
radiation effects on uridine response of, 22:38216
radiation effects on vigilance behavior of, γ, 22:40843
radiation effects on vision of, whole-body γ, 22:40916
radiation effects on water content of brain, intestines, and kidneys of, iodine-131 β and γ, 22:45435
radiation effects on, determination of RBE for electron and x, 22:51900
radiation effects on, effects of cell recovery rate on x, 22:8594 (CONF-670305-, pp 76-80)
radiation effects on, effects of inactivation of inner ear function on γ, 22:6852
radiation effects on, effects of labrinthectomy on γ, 22:28685
radiation effects on, effects of postirradiation blood transfusions on acute x, 22:31201
radiation effects on, effects of postirradiation reduction of blood volume on γ, 22:6871
radiation effects on, laser, 22:38421 (CONF-660573-, pp 35-48)
radiation effects on, protective effects of balneotherapy and cysteamine against γ, 22:15047
radiation effects on, protective effects of bathing in spring water at various seasons against γ, 22:8641
radiation effects on, protective effects of drugs and immunization against, 22:49382
radiation effects on, protective effects of electronarcosis against γ, 22:49484(T) (JPRS-39515, pp 1-13)
radiation effects on, protective effects of pyridoxine against x, 22:6850
radiation effects on, RBE of γ and neutron, 22:582
radiation sickness effects on respiration of, combined effects of blood loss on, 22:33911
radiation sickness in, pathology of, 22:49484(T) (JPRS-39515, pp 1-13)
radioinduced bone diseases of, following intravenous injection of Thorotrast, 22:38486
radioinduced burns on skin of, effects of dimethyl sulfoxide on β, 22:51837
radioinduced cataracts in eye lens of, latent period for, 22:49498
radioinduced dominant lethals in sperm of, effects of dose rate on γ, 22:17022
radioinduced endomyocarditis in, whole-body x, 22:43446
radioinduced lesions in retina of eyes of, histological analysis of laser, 22:569
radioinduced lesions in retina of eyes of, ruby laser, 22:19403
radioinduced leukopenia in, protective and therapeutic effects of marinamycin against x, 22:28561
radioinduced leukopenia in, x, 22:19437
radioinduced necrosis in brain of, role of capillaries in alpha and proton, 22:23598 (UCRL-17481, pp 154-70)
radioinduced nuclear pyknosis in lymphocytes of, use of, for evaluation of dosimetry, x, 22:38422 (EUR-3939)

radioinduced tumors in brain of, gold-198 β and γ, 22:25975
radioisotope transport across placental tissues following injection into pregnant, iodine-125 and -131, 22:40827 (ORO-657, pp 3-10)
radiosensitivity of lymphocytes in peripheral blood of, in relation to other animals, 22:19438
radiosensitivity of nervous system of, relation between resistance and γ, 22:23658
radiosensitivity of skin of, effects of temperature on topical x, 22:43403
radiosensitivity of ureters in, γ and x, 22:19449
radiosensitivity of, effects of dose and seasonal changes on γ, 22:8640
radiospirometry in, procedure for xenon-133, 22:40578
radiotherapy of carcinoma of colon of, preoperative x, 22:10798
radiotherapy of neoplasms in, use of pulsed lasers for, 22:28594
radiotherapy of tumors in lungs of, combined effects of hyperbaric oxygen on yttrium-90 β and γ, 22:38416
radiotherapy of tumors in, effects of oxygen on telecobalt γ, 22:28592
ribonucleic acid synthesis in brain of, 22:38193(R) (EUR-3912)
scintiscanning of bones and kidneys in, evaluation of indium-113 for, 22:40747
secretion of adrenal steroids by, effects of population-dependent factors on, 22:25208(R) (COO-1446-2)
selenium-75 content of blood of, following small doses, mechanisms for, 22:51379
strontium distribution in blood plasma and bone in, tracer study, 22:30999
strontium-85 uptake by fetuses of, 22:38427(R) (ORO-659)
sulfur-35 uptake by tissues of eyes and nose in, effects of methyl prednisolone on, 22:25903
synthesis of lipoprotein in effects of mutants of Shope papilloma virus on, 22:28289 (ORNL-4100, pp 178-201)
toxicity of ozone for, 22:40751
toxicity of x-irradiated stored blood for, 22:51477
transduction of x ray quanta into information transmitted by optic nerve in, identification of cells in retina responsible for, 22:23414(R) (ORO-3599-1)
transport of paraminohippurate in kidneys of, effects of uranyl acetate on, 22:14911(R) (COO-1691-1)
uranium distribution in tissues of, following sorption through skin, relation of, to toxicity, 22:49242
use of colloidal gold-198 to determine effects of bone marrow erythropoiesis on reticulo-endothelial activity in, 22:51307 (ORAU-106, pp 105-34)
xenon-133 clearance from kidneys of, 22:4575
xenon-133 distribution in tissues of, following inhalation, 22:51398
xenon-133 distribution in tissues of, in vivo determination of, 22:4575
zinc content of pancreas in, 22:6721(T) (UCRL-Trans-10099)
zinc-65 retention in, effects of leukemia on, 22:51308 (ORAU-106, pp 171-93)

RACAH COEFFICIENTS
tables for calculation of nuclear two-body matrix elements using harmonic oscillator wave functions, (T), 22:46819 (NRL-6733)
tables of Clebsch--Gordan coefficients, 22:42102 (UCID-2823)

RACCOONS
hormone secretion by thyroid of, determination of rate of, 22:21404 (COO-301-150)

RADAR
see also Microwaves
book: Radar Astronomy, 22:31592
deflection in Sun's gravitational field, (E), 22:41188
determination of astronomical unit of length in relativity theory, (T), 22:43749
echoes from aurora, correlation of auroral particle precipitation with, 22:2942
echoes from ionospheric D region, 22:2959
emission of microwaves, permissible limits for exposure of personnel to, in France, 22:36267
hazards to personnel, 22:40718
plasma effects on, high altitude nuclear explosion-produced, 22:27946
pulse return from ground and water surfaces for airborne, measurement of strength of, 22:10146 (SC-RR-67-502)
radiation hazards from operation of, protection against, 22:23512(T) (LA-tr-68-12)
reflection from auroral ionosphere, relation to geomagnetic field and ionospheric currents, (E), 22:47895(T) (N-68-24394)
return computational techniques for, 22:10152 (SC-TM-67-3006)
scattering from auroral electrojet in afternoon, (T), 22:17514
scattering from auroral, (T), 22:34385
scattering from ionospheric E region, Thomson, (E), 22:52633
scattering on aurorae, (T), 22:34384
use in airborne lidar method for detection and analysis of clouds from underground nitromethane explosions, (E), 22:21227 (PNE-1119)
use with laser in tracking nitromethane explosion-produced clouds, 22:198 (PNE-1108)
use with laser radiation for tracking debris clouds from nuclear cratering explosions, 22:47242 (UCRL-13360)
use with laser radiation for tracking NERVA rocket reactor exhaust plume, (E), 22:47241 (UCRL-13358)

RADIATION
see also Alpha Particles
see also Background Radiation
see also Beta Particles
see also Bremsstrahlung
see also Cherenkov Radiation
see also Cosmic Radiation
see also Cyclotron Radiation
see also Electromagnetic Waves
see also Gamma Radiation
see also Infrared Radiation
see also Microwaves
see also Natural Background Radiation
see also Nuclear Particles
see also Nucleons
see also Particle Sources
see also Photons
see also Radiation Sources
see also Radio Waves
see also Solar Particles
see also Synchrotron Radiation
see also Thermal Radiation
see also Ultraviolet Radiation
see also Van Allen Radiation Belts
see also X Radiation
absorption in matter, review of theory of, (T), 22:27393
absorption of, lectures on, (T), 22:35998 (ISS-68/6)
attenuation in media, effects of fractional LET on, 22:8515 (CONF-670305-, pp 63-75)
behavior in cosmological models, (T), 22:8928
book: Action of Ionizing Radiation on Ion Exchange Materials, 22:10315
book: Action of Ionizing Radiations on Water and Aqueous Solutions, 22:18858
book: Chemistry of Dissociated Water Vapor and Related Systems, 22:25366
book: Code of Practice against Radiation Hazards, 22:4628
book: Comprehensive Biochemistry, Vol. 27. Photobiology, Ionizing Radiations, 22:49222
book: Current Topics in Radiation Research, Vol. 4, 22:40552
book: Dosimetry and Protection from Ionizing Radiation, 22:12650(T) (AD-663372)
book: Dosimetry of Ionizing Radiation, 22:21359(T) (AD-663930)
book: Early Radiation and Biochemical Reactions, 22:40612
book: Effect of Ionizing Radiation on Heredity, 22:21473
book: Effects of Irradiation on Materials, 22:34092
book: Experimental Data on the Ionizing Radiation Effects on Organisms, 22:17020
book: Laboratory Handbook of Toxic Agents, 22:36289
book: Linear Transport Theory, 22:20104
book: Measurement of Nuclear Radiations by Means of Semiconductor Devices, 22:19130
book: Nuclear Radiation and Atomic Reactors, in Russian, 22:35520
book: Nuclear Radioelectronics, 22:4546
book: Problems in Postirradiation Recovery, 22:40976
book: Problems of General Radiobiology, 22:23650
book: Protection Against and Repair of Radiation Injuries, 22:25930
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Radiation and Chemical Protection, 22:47574
book: Radiation and the Evolution of Populations, 22:40655
book: Radiation Corrosion, 22:45750
book: Radiation Defectoscopy, 22:37959
book: Radiation Diseases of the Skin, 22:40816
book: Radiation Effects, 22:21733
book: Radiation Effects and Radiative Grafting Polymerization in Fibers, in Russian, 22:40128
book: Radiation Effects in Semiconductor Devices, 22:16971
book: Radiation Effects on Inorganic Glass, in Russian, 22:35837
book: Radiation Penetration of Matter, 22:34889
book: Radiation Physics of Nonmetallic Crystals (in Russian), 22:24491
book: Radiation Physics. Part V. Luminescence and Defects of Ionic Crystals, 22:26535
book: Radiation Techniques, Vol. 1 (In Russian), 22:19076
book: Radiation Toxins: Their Nature and Role in the Biological Effect of High-Energy Radiation, 22:40944
book: Radiation-Induced Defects in Solids and Liquids, in Russian, 22:20095
book: Semiconductor Detectors of Nuclear Particles and Their Applications, 22:2384
book: Studies in Radiation Effects. Series A. Physical and Chemical. Vol. 1, 22:36516
calculation of, review of methods for, 22:10778
counting experiments for, trend removal in data from, 22:2356
damage processes of, review of, 22:19590

density perturbations in cosmological models, (T), 22:34169
detection and measurement of low-level, facility for, 22:14433 (ORNL-4196, pp 66-89)
detection and measurement of pulsed ionizing, electron-optical method for, 22:36067
detection and measurement of pulsed, use of information theory of discrete systems for, 22:21324
detection and measurement of, effects of geometric factors on, 22:6598
detection and measurement on skin, performance of hand and foot monitors for, 22:36277
detection of environmental, use of ionization chamber for, 22:12578
detection of pulsed high-energy, use of pulsed and mean-current detectors for, 22:4444
detection using scintillating plastic inserted in eye of dogs, efficiency of, 22:31119
dose field behind steel shield, mixed, 22:34734
dose to man from artificial and natural sources, annual, 22:28464
dose to man, in relation to radiosensitivity, 22:8598 (CONF-670305-, pp 289-96)
dose to man, role of health physics in reducing, 22:23528
dose to medical personnel, organizational methods for reduction of, 22:43334
dose to tissues, specifications for ionizing, 22:28288 (ORNL-4100, pp 166-77)
dosimeter system for manned space vehicle, 22:201 (AD-646555)
dosimetry for accidents, 22:28681
dosimetry for man, role of health physics in developing methods for, 22:23528
dosimetry in accident victims, use of biological responses for, 22:8517 (CONF-670305-, pp 94-113)
dosimetry in biological materials, role of quality factors in, 22:38319
dosimetry in biological materials, units for, 22:17024
dosimetry in bone-tissue interfaces, 22:38308
dosimetry in gastrointestinal tract of man following ingestion of radioactive materials, measurement of, 22:49332
dosimetry in gastrointestinal tract of man, mathematical model for, 22:49333
dosimetry in man following accidental exposure, 22:6816
dosimetry in man using lymphocyte chromosome aberrations, 22:40689
dosimetry in man, performance of film, photoluminescent, and thermoluminescent dosimeters for, 22:23523
dosimetry of mixed, thermoluminescent dosimeter for, 22:47388(P)
dosimetry of, chemical, 22:27832
dosimetry, reference standards for, 22:51586
effect on digestive and phagocytic functions of reticuloendothelial system of rats, ionizing, 22:23610
effect on DNA of α phage, relation of, to synthesis of α messenger RNA, 22:25783
effect on selection of materials for sodium-cooled reactor components, 22:8269
effect on tissue in space, 22:41440 (N-68-16837)
effectiveness of, review of physical factors affecting biological, 22:23530
effects at cellular and molecular level, 22:51875 (TID-4060(1st Ed.))
effects at molecular and cellular level in cultured cells, 22:43208(R) (UCSF-10-P-2-39)
effects in relation to physical, biological, 22:43300 (AERE-PR/HPM-12)
effects in stars, pressure, (T), 22:22267
effects of high-energy, on chemistry of gases and liquids, review on, 22:25429
effects of in-pile, on electric conductivity of metals, 22:36520
effects of in-pile, on electric properties of epoxy resins, 22:38643 (CERN-68-13)
effects of in-pile, on plutonium dioxide—uranium dioxide fuel rods, 22:34125 (EURAEC-1999)
effects of ionizing, neutralization of isolated ion pairs produced by, (T), 22:26234
effects of ionizing, on bubble nucleation in superheated ethyl ether, 22:42966
effects of ionizing, on dislocation density and hardness of potassium chloride crystals, 22:34094
effects of ionizing, on electric properties of dielectrics, 22:14904
effects of ionizing, on solids, mechanisms of diffusion from, (T), 22:17754
effects of isotropic, on particle velocity in interstellar space, (T), 22:2762
effects of reactor, on fluorite electric conductivity and optical absorption, (E), 22:26507
effects of reactor, on thermionic converter performance, (E), 22:29319
effects of trichloroacetamide single crystals, ESR spectral studies on radicals produced by, 22:18806(R) (COO-1385-21)
effects on 3,3-bis(chloromethyl)oxetane and its polymer, ESR spectra studies on, 22:8104(T) (AEC-tr-6908, pp 145-53)
effects on ability of culture media to support growth of microorganisms, 22:36420
effects on abundance of lymphocytes in medical personnel, chronic low-dose, 22:49611
effects on acetates, effects of crystal structure on, 22:18806(R) (COO-1385-21)
effects on acetonitrile, mechanism of, 22:37775 (BNL-50082, pp 40-78)
effects on acidity and clearance of stomach in rats, effects of atropine on, 22:28683
effects on active carbon catalysts, 22:48876 (JAERI-1155)
effects on activity and structure of lysozyme, 22:30930(R) (COO-690-29)
effects on activity of bone marrow cells of mice and rats, 22:51949
effects on activity of C, K, and B vitamins, effects of dose and moisture on, 22:40550
effects on activity of ferrochelatase in mice and rats, in vitro and whole-body, 22:40590
effects on activity of polyphenol oxidase and decay rate of peaches, effects of pretreatment with hot water on, 22:49662(R) (ORO-3097-17)
effects on addition reactions of alcohols and ethers with hexafluoropropene, 22:21095
effects on adrenal and pituitary gland of mammals, review of ionizing, 22:25966
effects on adrenal gland function in man following therapy of thyrotoxicosis, acute, 22:49614
effects on adrenocortical function of rats, whole-body supralethal, 22:19280
effects on aging and life span of animals, 22:51880
effects on aging in relation to chromosome stability, 22:14905 (BNL-50057, pp 111-22)
effects on aging of animals, review of, 22:51879
effects on aging of living systems, 22:43421
effects on alkali metal halide crystals, chemical method for studying defects produced in, 22:34770
effects on alkali metal halide crystals, mechanisms of formation of color centers from, review, 22:9447
effects on alkali metal halide crystals, production mechanisms and structure of hole-type defects from, review, 22:9445
effects on alkali metal halide defects, impurity-center microstructure, and luminescence, (E/T), 22:20043(T) (AD-663351)
effects on alkali metal halides, review of formation mechanisms and properties of point defects from, 22:13552
effects on alkaline and neutral aqueous solutions, yields in, 22:21134
effects on alkaline solutions of sodium peroxydisulfate, 22:40134
effects on alkanes, free radical yields in, 22:8126
effects on alkanes, free radical yields in, 22:42711(T) (AEC-tr-6937, pp 84-95)
effects on alkanes, methyl radical yields in, 22:8108(T) (AEC-tr-6908, pp 198-200)
effects on alkanes, radical yields in, 22:42804
effects on alkenes, 22:4213
effects on allosteric center of enzymes, 22:14946
effects on allotropic changes of sulfur, selenium, and tellurium, 22:4135
effects on ammonium difluoroacetate and barium dichlorofluoroacetate crystals, ESR spectral studies on radicals produced by, 22:18806(R) (COO-1385-21)
effects on ammonium, potassium, and sodium nitrates, effects of metal oxide semiconductor impurities on, 22:30632
effects on amoebae, effects of dose and mitotic stage on, 22:36351
effects on aneuploidy in oogenesis of Drosophila melanogaster, effects of dose and genotype on, 22:43282
effects on animal-plant-soil ecosystems, 22:51875 (TID-4060(1st Ed.))
effects on animals and man, effects of acceleration on space flight, 22:40825(T) (N-68-16163)
effects on animals and man, qualitative and quantitative, 22:49584
effects on animals and plants, 22:40826(R) (ORO-657)
effects on animals and plants during space flight, 22:47582
effects on animals in relation to pharmacology, review of, 22:51829
effects on animals, evaluation of equipment and procedures used to study, 22:52014
effects on animals, man, and plants, classification of genetic and somatic, 22:10835
effects on animals, man, and plants, immediate and transient, 22:40880
effects on animals, review of genetic, 22:23601
effects on animals, review of radioprotective effects of preirradiation on whole-body, 22:51955
effects on animals, review of recovery rates following, 22:49482 (CONF-680410-, pp 24.1-22)
effects on animals, review of, protective effects of autotransplants of bone marrow against, 22:25909
effects on animals, selection of bone marrow donors with maximum histocompatibility for transplants following, 22:43396(R) (EUR-3946)
effects on animals, source of variability in response to whole-body, 22:33944

effects on animals, use of cell transplants to measure vital activity following, review of, 22:25982
effects on annealed magnesium-doped lithium fluoride, 22:4222
effects on anthocyanin in Coleus plants, mutagenic, 22:17013
effects on anthracene crystals, 22:23481(R) (PRNC-102)
effects on anthracene, benzophenone, and naphthalene in benzene and cyclohexane solutions, mechanism and yields in pulse, 22:33385
effects on antibody formation in human infants from mothers exposed to atomic bombing at Hiroshima and Nagasaki, 22:6837
effects on antibody formation, hematopoiesis, mucous membranes, and skin in man, effects of genetics, leukemia, and state of health on, 22:23646
effects on antibody production in animals, effects of adrenal cortical hormones on, ionizing, 22:12771
effects on antigenicity of Ehrlich ascites tumor cells, effects of incubation time and temperature on, 22:33750
effects on aqueous α-D-methylglucoside solutions, mechanism and products of, 22:33455
effects on aqueous benzene solution in presence of hydrogen peroxide, 22:42772
effects on aqueous solutions and water, review on mechanism of, 22:27744 (NYO-3242-25)
effects on aqueous solutions of benzene in presence of oxygen, effects of acidity on, 22:27813
effects on aqueous solutions of ionic bromine oxides with and without carbonate and hydroxyl ions, spectral studies on yields in, 22:30629
effects on aqueous solutions of iron ions, 22:4215
effects on aqueous solutions of nucleic acids, 22:45097
effects on aqueous solutions of tyrosine, 22:42773
effects on aqueous solutions of vitamin K, effects of dose on ionizing, 22:43272
effects on aqueous solutions, effects of alkali salts on yields in, 22:23034 (IA-1128, pp 78-96)
effects on aqueous thallium chloride solutions, yields of hydrogen and hydrogen peroxide in, 22:23034 (IA-1128, pp 78-96)
effects on aromatic, olefinic, and saturated hydrocarbons, mechanism and yields of, 22:40122
effects on ascites tumor cells, effects of ploidy on, 22:6741
effects on atropine, protective effects of potassium sulfites against, 22:4721
effects on bacteria, mutagenic and physiological, 22:40615(R) (EUR-3889)
effects on bacteria, review of recovery from, 22:26010
effects on bacterial and brain tumor cells, sensitizing effects of BUDR on, 22:49237
effects on bacterial and mammalian cells, review of, 22:36419
effects on bacterial spore count and toxicity of shrimp, effects of post-irradiation storage temperature on low dose, 22:49663(R) (ORO-3698-2)
effects on *Bacterium prodigiosum*, lethal, 22:10893
effects on bananas, mutagenic and toxic effects of, on fruit flies following ingestion, 22:43508
effects on barley, distribution of gene loci following mutagenic ionizing, 22:51548
effects on barley, mutagenic, 22:23489(R) (RLO-353-21)
effects on bcc metals, research on, 22:31420(R) (ORNL-4246)
effects on behavior of rats, relation of, to radiosensitivity, 22:33941
effects on benzene vapor containing nitrous oxide, mechanism of nitrogen and phenol production by, 22:30591(R) (RRL-2310-231)
effects on benzene--cyclopentanone, yields in, 22:12340 (NYO-2668-15)
effects on biochemistry of animals and man, review of, 22:19426
effects on biochemistry of cells, ionizing, 22:6711 (BARC-287)
effects on biological macromolecules, ionizing, 22:49224
effects on biological materials, 22:14905 (BNL-50057, pp 111-22)
effects on biological materials during space flight, criteria for determination of, 22:47584
effects on biological materials, comparison of high and low LET, 22:38318
effects on biological materials, effects of dose fractionation, dose rate, and LET on accelerator-produced ionizing, 22:8514 (CONF-670305)
effects on biological materials, molecular kinetics of ionizing, 22:40945
effects on biological materials, protective effects of drugs against, 22:12867
effects on biological materials, review of molecular mechanisms of ionizing, 22:43269
effects on biological materials, role of biophysics in evaluating accelerator-produced, 22:8522 (CONF-670305-, pp 277-9)
effects on biological systems, characterization of recovery processes following, 22:25740
effects on biological systems, hit region theory of, 22:6870(T) (NP-tr-1561)
effects on biological systems, review of, 22:49535
effects on biological systems, use of copolymerization technique for identification of free radicals formed during ionizing, 22:28295
effects on biosynthesis of sex hormones in beagle dogs, combined effects of pregnenolone and progesterone on ionizing, 22:43244
effects on bismuth--lead filled Zircaloy-2 capsules for pin-type reactor fuel elements, in-pile, 22:28861
effects on bladder of man following therapy for cervical carcinoma, ulcerative, 22:12902
effects on bleaching of textiles, 22:6360(P)
effects on blood and hematopoiesis of man following occupational exposure, 22:33966
effects on blood cells in rats, 22:21574
effects on blood coagulating system and vascular resistance in man, 22:31210
effects on blood coagulation in man, effects of dose on ionizing, 22:52008
effects on blood formation and skin of medical personnel, 22:52011
effects on blood of rabbits and rats, protective effects of platelet extract on, 22:33869
effects on blood pressure of rats, effects of procaine on, 22:19364
effects on blood vessels of rabbits, protective effects of cystamine against, 22:47561
effects on bone following therapy of mammary cancer, 22:2554
effects on bone marrow and duodenal epithelium of rats, protective effects of AET against, 22:25885
effects on bone marrow and liver of rats, methods for detection of quinoids following, 22:49512
effects on bone marrow cells, autoradiographic study of effects of cell phase on, 22:45657
effects on bone marrow of mice, protective effects of AET, cysteamine, phenylephrine, and serotonin against whole-body, 22:33841
effects on bones and dental tissues of man, prevention and treatment of pathological, 22:10844
effects on bones and lungs of man following postoperative therapy of breast cancer, pathological, 22:23581
effects on bones in hands of man exposed to atomic bombing at Hiroshima and Nagasaki, treatment for, 22:4683
effects on bones of animals and man, review of carcinogenic, 22:51947
effects on bones of man following therapy for mammary gland carcinoma, 22:36396
effects on bones, teeth, and salivary glands in mouth of man, 22:51942
effects on bowel of man following therapy for carcinomas of cervix and endometrium, external, 22:51766
effects on brain of man and mice, effects of dose rate on prenatal and postnatal, 22:31265
effects on brain of man, following therapy for pharyngeal cancer, 22:15093
effects on brain of rabbits, electrophysiological study of ionizing, 22:45715
effects on brain stem of cats, uhf, 22:40939
effects on breast cancers in man, effects of, on long-chain fatty acids in serum, therapeutic, 22:28555
effects on breast tumors in mice, effects of oxygen inhalation and triiodothyronine on, 22:38382
effects on brittleness of metals and other solids, Saclay conference on, 22:28862
effects on bromoethane--chloromethane in cyclohexane solutions, electron scavenging in, 22:96(R) (RRL-2310-214)
effects on bromomethane--sulfur hexafluoride system in cyclohexane solutions, yields in, 22:30591(R) (RRL-2310-231)
effects on butyl methyl ether, effects of diphenylpicrylhydrazyl on yields from, 22:42718(T) (AEC-tr-6937, pp 170-5)
effects on butyl methyl ether, effects of diphenylpicrylhydrazyl on yields in, 22:8133
effects on calcium-45 and phosphorus-32 metabolism in rabbits, localized, 22:43441
effects on capillary ultrastructure of nervous tissue in rats, whole-body, 22:33742
effects on carbohydrate and fat metabolism in liver of rats, protective effects of insulin against, 22:8639
effects on carcinoma of uterine cervix in man, effects of arteriosclerosis and hypertension on ionizing, 22:2528
effects on carcinosarcomas in rats, effects of selective tissue oxygenation on, 22:10828
effects on catalysis, 22:40124
effects on catalysts, 22:4218
effects on catalytic activity of solid aluminum oxide, chromium oxide, and zinc oxide, 22:2096 (CU-2791-6)
effects on catalytic materials and processes, 22:48876 (JAERI-1155)
effects on cell membranes in green algae, 22:8650
effects on cell proliferation in spleen and immunological activity of chicken embryos, 22:19276
effects on cells and man, fundamental concepts of ionizing, 22:12786
effects on cells and organisms, effects of hypoxia on somatic, 22:43208(R) (UCSF-10-P-2-39)
effects on cells of liver and thymus of rats, ionizing, 22:45447
effects on cells of man, effects of dose, mitotic

activity, and oxygen abundance on ionizing, 22:10839
effects on cells of tumors, effects of cell phase on therapeutic, 22:31131
effects on cells of Vicia faba, protective effects of low molecular weight organic compounds against aberrant, 22:49459
effects on cells, cytokinetic analysis of, 22:51521
effects on cells, effects of chromosome volume on, 22:10854
effects on cells, mechanisms of recovery from ionizing, 22:15054
effects on cells, model for probability of survival of individual following, 22:51926
effects on cells, review of, 22:14952
effects on cells, review of ionizing, 22:23629
effects on central nervous system of human children, latent pathological, 22:43398 (NP-17495)
effects on central nervous system of human embryos and fetuses following diagnosis or therapy during pregnancy, 22:47609
effects on central nervous system, bibliography on ionizing, 22:550 (AD-648028)
effects on ceramic materials, 22:2687(R) (N-67-15390)
effects on ceramics, chemicals, electronic equipment, and metals, bibliography on, 22:49773 (REIC-ACCESS-111)
effects on cervical neoplasms in man, development of proctitis following therapeutic, 22:31149
effects on cesium-131 uptake by tumors of dogs, man, and mice, 22:40592
effects on chemical and physical properties of foods, 22:40990
effects on chemical properties of plutonium and uranium nitride and sulfide and uranium phosphide fuels, 22:64
effects on chemical reactions, 22:4218
effects on chemical reactions, review on, 22:23063
effects on chemisorption of hydrogen on γ-aluminum oxide, role of volume of solid in, 22:33412
effects on children of atomic bomb survivors of Japan, pathological, 22:28565
effects on Chinese hamster cells, review of mechanisms of repair following, 22:25785
effects on chlorination of hydrocarbons, 22:21143(P)
effects on chlorination of polyethylene film or fibers, 22:21138(P)
effects on cholesterol content and function of adrenal glands in mice, effects of dose fractionation on latent, 22:49604
effects on chromel-alumel and iron-constantan thermocouple calibration, 22:16271(R) (BNWL-666)
effects on chromophobe adenomas in pituitary of man, combined effects of surgery on therapeutic, 22:12876
effects on chromosomes and mitosis of pea seeds, histological study of, 22:23501
effects on chromosomes in cultured human lymphocytes, aberrant, 22:28432
effects on chromosomes in cultured leukocytes from man, aberrant, 22:28445
effects on chromosomes in human leukocytes following exposure to fallout at Bikini, Hiroshima, or Nagasaki, 22:28574
effects on chromosomes in leukocytes of man, effects of occupational exposure on, 22:4594
effects on chromosomes in leukocytes of nuclear industry personnel, aberrant, 22:28436
effects on chromosomes in leukocytes of nuclear personnel, aberrant, 22:28437
effects on chromosomes in liver cells, statistical analysis of aberrant, 22:36227
effects on chromosomes in peripheral blood leukocytes of man, effects of dose and dose rate on aberrant, ionizing, 22:38492
effects on chromosomes in relation to carcinogenesis, aberrant, 22:45490
effects on chromosomes of ascites carcinoma cells, protective effects of cysteamine and sodium thioglycolate against aberrant, 22:28617
effects on chromosomes of cells, mechanisms of recovery from aberrant, 22:51546
effects on chromosomes of Drosophila, effects of, on viability of hetero- and homozygotes, 22:33788
effects on chromosomes of human bone marrow cells in vitro, protective effects of methionine against aberrant, 22:49438
effects on chromosomes of leukocytes in man, latent aberrant, 22:21527
effects on chromosomes of leukocytes of man, accidental whole-body plutonium and uranium, 22:36248
effects on chromosomes of mammals and plants, ionizing, 22:23490
effects on chromosomes of man, aberrant, 22:15087
effects on chromosomes of man, establishment of standard karyotype for reference in mutagenic, 22:17019
effects on chromosomes of man, following therapy, aberrant, 22:33956
effects on chromosomes of personnel in nuclear industry, estimation of aberrant, 22:31030
effects on chromosomes, protective effects of anoxia and cysteamine against aberrant, 22:25888
effects on chromosomes, RBE of ionizing, 22:8497 (CONF-670305-, pp 45-50)
effects on circulation of blood to eyes of man, pathogenesis of latent, 22:8632
effects on cladding and fuels at burnups of 2.1 at. percent, 22:2662 (BNWL-479)
effects on coaxial signal cables, currents due to, (E/T) 22:36155 (BNWL-749)
effects on coherent precipitates in cobalt--copper alloys, 22:28851
effects on color center induction in inorganic glasses, mechanism of, 22:30606
effects on color of synthetic sapphire vessels for use i radiolysis studies, 22:37786
effects on concentrated nitrate ion solutions, effects o cations on yields in, 22:23034 (IA-1128, pp 78-96)
effects on connective tissues, review of, 22:33946
effects on content of adenine nucleotides in blood cells, liver, and mitochondria of rats, whole-body ionizing, 22:51484
effects on content of amino compounds in plasma of rats, 22:419 (AD-648223)
effects on content of bone marrow cells of rats, effects of postirradiation bleeding on, 22:40837
effects on content of electrolytes in blood serum of man following therapy, 22:4694
effects on content of flavor compounds in oranges, low-dose, 22:49662(R) (ORO-3097-17)
effects on content of reduced ascorbic acid, reducing sugars, sucrose, and total sugars in citrus fruits, low-dose, 22:49662(R) (ORO-3097-17)
effects on content of sugars in peaches, effects of storage temperature and time on low-dose, 22:49662(R) (ORO-3097-17)
effects on content of type E botulinum toxin in cod, effects of storage temperature on, 22:49660(R) (COO-1183-26)
effects on content of volatile compounds and spoilage patterns in fish, effects of dose on, 22:43499(R) (TID-24256)
effects on continuous polymerization of tetrafluoroethylene, 22:21147(P)
effects on control and telemetry circuits in spacecraft, 22:205 (N-67-18431)
effects on copolymerization of trioxane and 1,3-dioxolane, 22:21145(P)
effects on corticosterone content of adrenal glands and blood plasma of rats, protective effects of testosterone propionate against, 22:51797
effects on cotton seeds, effects of storage on restoration of viability following, 22:52025
effects on count of leukocytes in peripheral blood of man, effects of dose on ionizing, 22:52007
effects on covalent bonds and secondary and tertiary structures of globular and fibrous proteins, ionizing, 22:25779
effects on creep rate of Zircaloy mechanisms of in-pile, 22:28857
effects on crosslinking of polymers in acetylene, 22:21139(P)
effects on crosslinking of polymers, review on, 22:27786
effects on crosslinking of rubber, 22:25396
effects on cryogenic insulation materials and composites, 22:781(R) (N-67-19129)
effects on crystal lattices, order--disorder kinetics and, 22:26496
effects on crystal structure and properties of iron and molybdenum, in-pile, 22:21747
effects on crystal structure and stability of gadolinium oxide, 22:21722
effects on crystalline ice, effects of temperature on properties of transient radicals produced by, 22:30591(R) (RRL-2310-231)
effects on crystalline solids, review of energies, mobilities, and structure of point defects from, 22:24445
effects on crystals, calculation of collision cascades in, 22:20050
effects on crystals, coalescence of dislocation loops, gas atoms, and pores from, (T), 22:37026
effects on crystals, computer calculation of, 22:11499
effects on cultured cells of heart of monkeys, effects of ionic strength of medium on, 22:15079
effects on cultured cells of man, relation between LET and RBE for ionizing, 22:8593 (CONF-670305-, pp 51-62)
effects on cultured cells, effects of nonlethal doses on, 22:45508(R) (PG-Report-826)
effects on cultured HeLa cells, effects of DNA synthesis on lethal, 22:40603
effects on cultured mammalian cells, effects of cell phase on, 22:45677
effects on cyclohexane solutions, effects of chloromethanes on yields in, 22:23034 (IA-1128, pp 78-96)
effects on cyclohexane, review on, 22:42801
effects on cyclohexanecarboxylic acid, free radical reactions in, 22:14553
effects on cyclopentane, effects of iodine on yields in, 22:50998
effects on cyclopropane mixtures with cyclohexane or hexane, effects of temperature on positive ion scavenging in, 22:30591(R) (RRL-2310-231)
effects on deamination of α-amino acids on oxygen-free solution, 22:36200
effects on degradation of olefin polymers, 22:2168(P)

effects on degradation of polymers in solutions and solid phase, 22:4216
effects on density of uranium carbide at -195°C, in-pile, 22:28856
effects on density of uranium dioxide at -195°C, in-pile, 22:28856
effects on deterioration of natural and butyl rubber, 22:45113
effects on deuterated methanol, effects of potassium fluoride on hydrogen yields in, 22:23034 (IA-1128, pp 78-96)
effects on deuterated propene in liquid methane at -181 to -94°C, yields in, 22:96(R) (RRL-2310-214)
effects on development and growth of children exposed in utero to atomic bombings of Hiroshima and Nagasaki, 22:8574
effects on development of chest tumors, growth, and life span of mice, low-dose, 22:45692
effects on development of human adolescents, latent ionizing, 22:52011
effects on development of interrenal glands of amphibians, 22:45695
effects on development of pneumoconiosis in animals following inhalation of radioactive dusts, 22:45683
effects on development of postharvest diseases in fruits and vegetables, review of, 22:52125
effects on dextran, effects on animals of products from, 22:14535
effects on dielectric systems, self-trapping of free electrons from, 22:22234
effects on dimensions and thermal conductivity of low-permeability graphite, 22:34126(T) (NSJ-tr-102)
effects on distal ureters following therapy for uterine carcinoma in man, surgical repair of, 22:47605
effects on distribution of intracellular enzymes in cultured cells and tissues, 22:45508(R) (PG-Report-826)
effects on dithiodiacetic acid, ESR study of ion formation from, 22:30618
effects on division of cultured mammalian cells, review of, 22:40876
effects on DNA and RNA in seeds of peas, tracer study of ionizing, 22:28388
effects on DNA base pairing in pea seeds, 22:51399
effects on DNA in liver of rats, 22:51450
effects on DNA metabolism in mice, ionizing, 22:25766
effects on DNA molecule of lymphosarcoma cells, ionizing, 22:36177
effects on DNA molecules of Escherichia coli, combined effects of oxygen on lytic, 22:33793
effects on DNA of mammals, role of enzymes in repair of ionizing, 22:38409
effects on DNA synthesis in epithelium of small intestine and tongue of mice, combined effects of Endoxan on, 22:36315
effects on DNA synthesis in first postirradiation life cycle of cultured mouse leukemic cells, 22:40587
effects on DNA, effects of hydrodynamic forces following, 22:49198
effects on DNA, effects of physical state on, 22:47480
effects on dogs, prophylactic effects of blood transfusions from convalescent donors on, 22:38378
effects on Drosophila, effects of heterozygosity on mutagenic, 22:23492
effects on durum wheat, application for patent and registration for products of mutagenic, 22:33983
effects on durum wheat, genetic analysis of mutagenic, 22:49304
effects on Dutch Elm and millet, mutagenic, 22:14905 (BNL-50057, pp 111-22)
effects on Ehrlich carcinoma, effects of administration time of 6-azauracilriboside on, 22:47555
effects on electric conductivity of cyclohexane, isobutyl vinyl ether, α-methylstyrene, and styrene, 22:8100(T) (AEC-tr-6908, pp 97-116)
effects on electrical properties of colloids, in relation to therapy of ascites tumor cells, 22:15022
effects on electrolyte composition of blood plasma and cerebrospinal fluid of rabbits, protective effects of cystamine against, 22:51903
effects on electrolyte levels and pressure of blood, pulse rate, and creatinine and electrolyte levels in urine of man following radon inhalation therapy for hypertension, 22:51959
effects on electron attachment in nitrous oxide, rate constant for, 22:30591(R) (RRL-2310-231)
effects on electron trapping in alkaline ice and methanol and methyltetrahydrofuran glasses, EPR spectral studies on, 22:33375(R) (COO-1528-26)
effects on electron trapping in alkaline ice, EPR spectral studies on thermal decay in, 22:33375(R) (COO-1528-26)
effects on electronic equipment, conference on, 22:12722
effects on electronic equipment, design of transient signal recording system for studying, 22:43197
effects on elements under primitive earth conditions, abiogenic, 22:25789
effects on embryos and newborn of animals and man, review of leukemogenic and teratogenic, 22:49596
effects on emulsion polymerization of chlorotrifluoroethylene and tetrafluoroethylene, 22:33402(P)
effects on Endoxan toxicity for Escherichia coli and HeLa cells, effects of phosphate buffer on, 22:23473
effects on environment of man, 22:2555
effects on environment, AEC research on, 22:21017
effects on enzyme activity in rabbits and rats, comparison of, to radiomimetic effects, 22:49239
effects on enzyme in liver of rats, effects of glucagon hydrocortisone, and starvation on whole-body, 22:19271
effects on enzymes and pathways of thymine metabolism in man, mice, rabbits, and rats, 22:45508(R) (PG-Report-826)
effects on enzymes in human serum and liver of mice, protective effects of bone marrow transplants against, 22:4577
effects on epithelioma of epiglottis of man, therapeutic, 22:25977
effects on equilibrium of monkeys, pulsed ionizing, 22:551(R) (AD-648671)
effects on erythrocytes parasitized by Plasmodium berghei, effects of, on immunity in mice and rats, 22:38473
effects on erythropoiesis in mice, protective effects of bone marrow or spleen cell transplants against lethal, 22:6876
effects on erythropoiesis in rats, protective effects of hydrocortisone against whole-body, 22:10810
effects on erythropoiesis in spleen of mice, effects of repeated exposure on, 22:10843
effects on erythropoiesis in spleen of mice, protective effects of biological materials against, 22:10842
effects on erythropoiesis, evaluation of iron-59 methods for study of, 22:49576
effects on ethanol metabolism in liver of rats, 22:19244
effects on ethylene polymers, 22:23066
effects on ethylene, x-ray studies on molecular folding in, 22:8092(T) (AEC-tr-6908, pp 25-32)
effects on EVESR fuel cladding materials, 22:5925 (GEAP-5510)
effects on exchange between tritium and hydrogen in organic compounds, 22:42787
effects on exchangeable hydrogens of lysozyme, 22:30930(R) (COO-690-29)
effects on excretion of β-aminoisobutyric acid and taurine in urine of rats, 22:31264
effects on excretion of deoxycytidine in urine of man and rats, effects of dose on ionizing, 22:51478
effects on excretion of taurine in urine of rats, effects of enzymic activity on, 22:28374
effects on excretion patterns of metabolites of thymine and tryptophan in man in relation to DNA and protein synthesis rates, 22:45508(R) (PG-Report-826)
effects on explosive polymerization of solid acetaldehyde, 22:27782
effects on extraregional areas of body of man, protective effects of radiogens against, 22:36401
effects on eye lens of animals, development of cataracts following, 22:49498
effects on eyes of reactor personnel, 22:8623
effects on fcc metals, model for kinetics of stage I/sub E/ recovery of, 22:1308
effects on febrile reaction in rabbits, 22:49511
effects on fecundity of dogs, effects of dose fractionation on ionizing, 22:52011
effects on femur of man following therapy, 22:21621
effects on flexible materials for packaging irradiated foods, 22:11103
effects on flower color in Tradescantia, genetic mechanisms for, 22:17010
effects on fluorination of octafluoronaphthalene, yields in, 22:37707 (BNL-50082, pp 27-39)
effects on foaming of mixtures of ethylene polymers, natural or synthetic rubbers, and a foaming agent, 22:47188(P)
effects on food, carcinogenic and toxic, 22:31301
effects on food, effects of, on thymus of mice and rats following ingestion, 22:45743
effects on foods and insects, review of economic aspects of, 22:47658
effects on foods, commercial evaluation of, 22:49670
effects on foods, effects of, on design of food irradiation facility, 22:8678
effects on foods, research programs in Asia, Europe, and North America on, 22:31304
effects on forest ecosystems, review of, 22:47499
effects on formation and depletion of blood cells, review of, 22:49585
effects on formation and maturation of granulocytes, effects of dose on, 22:49575
effects on formation of color centers in alkaline solutions of carbonates, formates, and methanol, 22:12357
effects on formation of organic peroxides in biological materials, ionizing, 22:51480
effects on free fatty acid and neutral fat excretion from intestines of dogs, 22:15020
effects on free radical formation in lyophilized tissues of rats, effects of oxygen and water content on, 22:28369
effects on free radical formation in pathways of oxidative metabolism, 22:14906 (BNL-50057, pp 123-37)
effects on free radical reactions in cell fractions of

liver in rats, graft copolymerization study of, 22:14956
effects on fruit flies, sterilizing, 22:31305
effects on fruit, factors affecting commercial application of, 22:8681
effects on fruits, pathological effects of, on dogs following ingestion, 22:47648 (NYO-3422-1(Vol.3))
effects on function of adrenal glands in rats, whole-body supralethal, 22:4673
effects on gaseous and liquid cyclohexane, effects of nitric oxide on secondary reactions in, 22:35835
effects on gaseous and liquid hydrocarbons, effects of dose and LET effects in, 22:42803
effects on gaseous benzene--nitrous oxide mixtures, yields of nitrogen and phenol in, 22:96(R) (RRL-2310-214)
effects on gaseous cyclohexane, effects of deuterium and nitric oxide on yields in, 22:35836
effects on gaseous cyclopropane, 22:47198
effects on gaseous hydrocarbons, mechanisms of, 22:21135
effects on gases, microwave method for measuring electron decay in, 22:30591(R) (RRL-2310-231)
effects on gastrointestinal tract and hematopoietic system of man, 22:15064
effects on gastrointestinal tract, conferences on pathological, 22:49564
effects on gene function, genetic recombination, and replication of bacteriophage DNA, 22:40615(R) (EUR-3889)
effects on genetic components and processes in organisms, 22:51875 (TID-4060(1st Ed.))
effects on genetic factors in animals, review of ionizing, 22:51495
effects on genetic information in cells, bibliography on, 22:19369
effects on genetics of humans, 22:40626
effects on genetics of mammals, ionizing, 22:21468
effects on genetics of man, review of, 22:51494
effects on germanium and silicon, influence of charge state on behavior of defects from, review, 22:36992
effects on germination rate of seeds, effects of deuterization on, 22:40954
effects on glass and liquid systems, yields in, 22:40125
effects on glasses, quartz, and silica, review, 22:26095
effects on glycine, ESR of free radicals from, 22:2093 (CEA-R-3250)
effects on glycogen synthesis in liver of rabbits and rats, combined effects of starvation on, 22:40558
effects on goats, protective effects of blood transfusions from irradiated goats against, 22:40750
effects on gonads of mice, ionizing, 22:17036
effects on graft polymerization in textile production, review on problems in, 22:8091(T) (AEC-tr-6908, pp 18-24)
effects on graft polymerization of cellulose with 2-vinylpyridine, effects of water vapor on, 22:21115
effects on graft polymerization of nylon with styrene, properties of products from, 22:33472(P)
effects on graft polymerization of styrene on polyethylene monocrystalline aggregate films, 22:21096
effects on graft polymerization of vinyl chloride polymers, isobutylene polymers, and aromatic monomers, 22:47194(P)
effects on graft-polymerization of acrylonitrile on polypropene fibers, 22:35843(P)
effects on grafting of acrylonitrile to cellulose, 22:10309
effects on grafting of organic polymers on inorganic substances, review on, 22:45095(R) (RLO-2043-2)
effects on grafting of polyoxymethylene copolymers with vinyl compounds, 22:51037(P)
effects on grafting of polystyrene to wool, location of grafted polymer from, 22:35859
effects on grafting of polyvinyl chloride and acrylonitrile, 22:47196(P)
effects on grafting of rubber, cellulose, and acrylonitrile and amide polymers, 22:4213
effects on grafting of vinyl monomers to cellulose, 22:14545(P)
effects on grafting of vinyl or vinylidene groups onto ester- or phenyl-activated halogen-containing polymers, 22:14554(P)
effects on growth kinetics of lymphosarcomas, effects of dose on ionizing, 22:43460
effects on growth of animals, effects of age and dose on, 22:19428
effects on growth of articular cartilage in temporomandibular joint of rabbits, 22:4670
effects on growth of Chlorella under space flight conditions, mathematical model for ionizing, 22:52058
effects on growth of Ehrlich ascites tumor cells in vitro and in vivo, ionizing, 22:38495
effects on hafnium control rods in Shippingport Core 1, 22:32812
effects on hematopoiesis in mice, effects of dose fractionation on ionizing, 22:52011
effects on hematopoietic cells in spleen of mice, 22:10841
effects on hematopoietic spleen colony formation in mice, effects of erythropoietic stimuli on, 22:43473
effects on hematopoietic system in mammals, development of cell-survival model for determination of acute, 22:14906 (BNL-50057, pp 123-37)
effects on hematopoietic system in mice, analysis of parameters determining acute lethal, 22:43203 (BNL-12594)
effects on hematopoietic system of atomic bomb survivors in Japan, 22:4635
effects on hematopoietic system, intestines, and skin of animals, effects of split dose on recovery from, 22:25990
effects on hematopoietic tissue in pancreas of mice, combined effects of endoxan on, 22:19413
effects on hematopoietic tissues of mammals, review of, 22:49490 (STI/PUB-134)
effects on hemopoiesis in rats, effects of dose on recovery from, 22:15057
effects on hemopoietic stem cells and intestines of mice, effects of age on, 22:45716
effects on hexamethyl- and octamethylnaphthalene cations, ESR spectral studies on free radicals produced by, 22:18806(R) (COO-1385-21)
effects on hexane, effects of deuterated ammonia, ethylene and propene on ion recombination processes in, 22:30591(R) (RRL-2310-231)
effects on histamine content of rat tissues, comparison of, to radiomimetics and vibration effects, 22:25964
effects on Hodgkin's disease and mammary carcinoma, development of pericarditis following therapeutic, 22:51973
effects on human astronauts following space flight, 22:33915
effects on human blood constituents, quantitative ionizing, 22:31248
effects on human blood volume following therapy of mammary carcinoma, ionizing, 22:19402 (NP-16717)
effects on human brain, development of complications following therapeutic, 22:47585
effects on human cells, use of stopping power theory for predicting RBE of, 22:8637
effects on human chromosomes, effects of age and Down's disease on mutagenic, 22:45495
effects on human chromosomes, review of aberrant, 22:51514
effects on human lung carcinomas, performance of presurgical, 22:51680
effects on human malignant brain tumor cells, combined effects of bromouridine on therapeutic, 22:31186
effects on human organs and tissues, legislation for protection against ionizing, 22:40673
effects on human populations exposed to atomic bombing of Hiroshima and Nagasaki, report of ABCC on pathological, 22:51670(R) (ABCC-66-67)
effects on human populations surviving atomic bombing of Hiroshima, latent, 22:47548
effects on human populations, genetic, 22:51499
effects on human sarcomas, effects of tourniquet-induced hypoxia of normal tissues on therapeutic, 22:38384
effects on human skin following therapy of basal cell carcinomas, plastic surgery for treatment of, 22:28557
effects on human skin following therapy, evaluation of grid for protection against, 22:45571
effects on human skin, chemosurgery technique for treatment of carcinogenic, 22:45701
effects on human thyroid, review of therapeutic carcinogenic, 22:51905
effects on human transitional cell carcinomas of nasopharynx, development and treatment of dental decay following therapeutic, 22:31174
effects on hydroaromatic compounds, effects of substituents on, 22:42737
effects on hydroaromatics, review on, 22:42802
effects on hydrocarbons--styrene, 22:785(P)
effects on hydrogen--hydrogen peroxide--oxygen--water system, yields of hydrogen peroxide in, 22:33423
effects on hydroxylation of anisole in dilute aqueous solutions, yields of methoxyphenols and phenol in, 22:96(R) (RRL-2310-214)
effects on hydroxylation of nitrobenzene in dilute aqueous solutions, 22:96(R) (RRL-2310-214)
effects on ice, properties of hydroxyl radical and solvated electron in, 22:96(R) (RRL-2310-214)
effects on immune competence of spleen cells from mice, effects of presence of thymus tissues on sublethal, 22:19282
effects on immune reactions between donor and host tissues in mice treated with hamster or rat marrow, 22:12815
effects on immune reactions in animals, review of, 22:51414
effects on immune reactions in chickens, combined effects of hormonal or surgical bursectomy on, 22:40534
effects on immune reactions in mice, 22:51431
effects on immune reactions in personnel, effects of chronic exposure on, 22:21430
effects on immune reactions in rats, 22:51433
effects on immune reactions in rats following injection of mixed liver and spleen extracts in relation to protein synthesis, 22:25771
effects on immune reactions of mammals, effects of dose rate on acute and chronic, 22:49175 (CONF-680410-, pp 16.1-23)
effects on immune reactions of mammals, review of

ionizing, 22:45449
effects on immune reactions of mice to homologous or isologous bone marrow, 22:19277
effects on immune reactions to cancer, combined effects of bone marrow transplants on, 22:12785
effects on immune reactions to injected bovine gamma globulin in rats, effects of endotoxin stimulation on, 22:8462
effects on immune reactions to isologous lymphocytes and spleen cells in mice, protective effects of bone marrow against, 22:6744
effects on immune response of hamsters to skin transplants, effects of lymphocyte injections on whole-body, 22:10683
effects on immune response of mice chimera to cytomegallic virus, effects of thymectomy on, 22:8483
effects on immune response of mice to Ehrlich ascites carcinoma, effects of sex on whole-body, 22:10684
effects on immune response to bone marrow injections in chimeric mice, effects of early incompatibility reactions on lethal whole-body, 22:51309 (ORAU-106, pp 194-220)
effects on immune responses of mice, effects of proliferation of transplanted lymphocytes on, 22:49264
effects on immunological response to skin allografts, effects of extracorporeal lymph exposure on, 22:14906 (BNL-50057, pp 123-37)
effects on inactivation of buds in tobacco plants in relation to formation of tumors, ionizing, 22:28700 (ANL-7278, pp 283-96)
effects on incidence of aplastic anemia in bone marrow of man, effects of dose on, 22:6881
effects on incidence of chromosome aberrations in man, therapeutic, 22:33955
effects on incidence of chromosome aberrations in man exposed to atomic bombing, 22:15085
effects on incidence of diabetes in atomic bomb survivors at Hiroshima, 22:4684
effects on incidence of leukemia among atomic bomb survivors at Hiroshima, 22:2527
effects on incidence of leukemia among atomic bomb survivors at Nagasaki, 22:2526
effects on incidence of leukemia and lymphomas in man, 22:49590
effects on incidence of leukemia in man exposed to atomic bombing at Hiroshima, 22:4685
effects on incidence of necrosis of femoral bone of man, therapeutic, 22:4692
effects on incidence of thyroid adenomas and carcinomas in man, therapeutic, 22:8617
effects on incised muscle of rats, protective effects of cystamine against, 22:47567
effects on individual chromosomes, biometric testing methods for model to explain, 22:51516
effects on induced conductivity of reactor signal cable insulation, 22:16271(R) (BNWL-666)
effects on induced currents in reactor signal cables, 22:16271(R) (BNWL-666)
effects on infection and immune mechanisms in organisms, bibliography of ionizing, 22:4566 (TID-23990(Suppl.1))
effects on infection and immune reactions in organisms, bibliography of ionizing, 22:4565 (TID-23990)
effects on initiation of boiling in sodium, 22:52227
effects on initiation of chemical reactions, 22:27835(P)
effects on inorganic glasses, studies on trapped radicals in, 22:30606
effects on insulating oxide ceramics, literature survey, 22:36553 (N-68-17095)
effects on intestinal reactions of mammals, protective effects of vitamins against, 22:51896
effects on intestine of man following therapy for carcinoma of endometrium, 22:2551
effects on intestine, research on lethal, 22:49554
effects on intestines, combined effects of thermal damage on recovery from, 22:14905 (BNL-50057, pp 111-22)
effects on ion production and neutralization in condensed media, 22:29291
effects on ionic polymerization of styrene, mechanism and rate of, 22:40144
effects on isotopic exchange in gaseous nitrogen, effects of oxygen and rare gases on, 22:10310
effects on Japanese pressure vessel steel, 22:2620
effects on kidneys of man, histological analysis of therapeutic, 22:33952
effects on kidneys of rabbits following therapy of abdominal neoplasms, 22:40756
effects on labeled binary organic mixtures, yields of labeled compounds in, 22:30615
effects on laboratory personnel, diagnosis of ionizing, 22:45722
effects on lasers, review of mechanisms of, 22:12723
effects on lens of eyes in man, development of cataractogenic, 22:38451
effects on leukemia, combined effects of bone marrow grafting on therapeutic whole-body, 22:6840
effects on leukocyte chromosomes of man at Hiroshima, aberrant, 22:28558
effects on leukocyte count and protein content of blood in chipmunks, 22:6769(R) (NYO-2579-17)
effects on leukocytes of man, use of lysozyme for treatment of ionizing, 22:21548
effects on leukocytes of rats, effects of dose on lethal, 22:36353
effects on leukocytes, effects of dose, species, and strain on recovery from, 22:38429 (UCSF-10-P-2-49)
effects on lipids and proteins of meats, 22:8673
effects on lipids in liver of mice in relation to free radical formation, 22:28370
effects on liquid dihexylmercury, mechanism and yields in, 22:4202
effects on liquid hexane, effects of benzene, 1-hexene, and octafluorocyclobutane on yields in, 22:23034 (IA-1128, pp 78-96)
effects on liquid hexane, effects of dose and iodine on yields from, 22:18834
effects on liquid hydrocarbons, electron scavenging processes in, 22:30591(R) (RRL-2310-231)
effects on liquid hydrocarbons, radical yields in, 22:42804
effects on liquid polyethylene, uv spectral studies on formation of diene free radicals in, 22:30584(R) (COO-1088-30)
effects on liquid, deuterated and normal hexane, review on, 22:42800
effects on lithium fluoride crystals, EPR studies of paramagnetic defects produced in, 22:34764
effects on lithium-doped beryllia and zinc oxide, structure of paramagnetic center formed in, (E/T), 22:50241
effects on liver and spleen of mice, protective effects of cysteamine against, 22:17041
effects on living organisms and tissues, bibliography on, 22:51869 (AED-C-04-31)
effects on living systems, carcinogenic, 22:31251
effects on living tissues and organisms, bibliography on, 22:4663 (AED-C-04-30)
effects on luminescence and respiration in pea plant germinants, 22:15116
effects on luminescence in alkali metal halide crystals, (T), 22:9431
effects on lung tumors in man, combined effects of methotrexate on therapeutic, 22:4633
effects on lungs of animals and man, pathogenesis of, 22:40936
effects on lungs of dogs following exposure of thorax, pathological, 22:40937
effects on lungs of mining personnel, carcinogenic ionizing, 22:25963
effects on lymph nodes of man following therapy, 22:43465
effects on lymph nodes of mice, effects of, on systemic immunity to reimplantation of tumor cells in comparison to effects of removal of lymph nodes, 22:43241
effects on lymphogranulomatosis, atrophy of kidney following therapeutic, 22:23587
effects on lysosomes and metabolism of HeLa cells, ionizing, 22:33754
effects on macromolecular organization of DNA and DNP, ionizing, 22:14955
effects on malignant brain tumors in man, combined effects of surgery on therapeutic, 22:31140
effects on malignant cells, basic medical research in, 22:43346(R) (ACRH-28)
effects on malignant tumors of man, combined effects of Ametohepazon on, 22:23582
effects on malignant tumors, effects of antiblastic substance from methylhydrazine on, 22:6862
effects on malignant tumors, effects of cell oxygenation on clinical and experimental, 22:47550
effects on mammalian cell cultures, effects of adaptation, LET, and rate of proliferation on continuous, 22:25991
effects on mammalian cells, cytokinetic basis for variations in, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on mammals, effects of dose rate on qualitative, 22:49481 (CONF-680410-, pp 22.1-18)
effects on mammals, effects of sex, species, and strain on recovery from single-dose, 22:38431 (UR-49-934)
effects on mammals, review of protective effects of chemicals and drugs against acute whole-body, 22:51801
effects on man, 22:2555
effects on man and mice, recovery from late, 22:43286
effects on man during space flight, determination of, 22:36273
effects on man during therapy of head and neck tumors, protective effects of vitamedin against, 22:43381
effects on man during therapy, effects of pyridoxine hydrochloride on pathological, 22:4639
effects on man exposed to atomic bombings of Hiroshima and Nagasaki, genetic and pathological, 22:8579
effects on man following exposure to fallout from testing of nuclear weapons, 22:10818
effects on man following medical diagnosis, risk of carcinogenic, 22:45535
effects on man following therapy of adenocarcinoma of endometrium, 22:45670
effects on man following therapy, effects of age on, 22:45659
effects on man following therapy, evaluation of carcinogenic and leukemogenic, 22:45720
effects on man following therapy, review of osteonecrotic, 22:45721
effects on man following therapy, tumorigenic, 22:4667

effects on man in space, methods for protection against, 22:33916
effects on man, bibliography on ionizing, 22:17035 (NP-17232)
effects on man, calculation of equivalent dose for, 22:38288
effects on man, carcinogenic and leukemogenic in utero, 22:51916
effects on man, classification, diagnosis, and treatment of injurious, 22:523
effects on man, effects of accidental and medical exposure on carcinogenic, 22:15097
effects on man, effects of dose on pathological, 22:49328
effects on man, effects of dose on whole-body, 22:43457
effects on man, effects of dose, dose fractionation, and type on partial- and whole-body, 22:8595 (CONF-670305-, pp 114-27)
effects on man, effects of embryonic exposure on teratogenic, 22:565
effects on man, extraregional, 22:36401
effects on man, genetic and somatic, 22:4666
effects on man, mutagenic and somatic, 22:8598 (CONF-670305-, pp 289-96)
effects on man, protective effects of autologous bone marrow transplants against, 22:33870
effects on man, quantitative evaluation of ionizing, associated with Project Ketch, 22:51876 (UCID-15325)
effects on man, relation of cumulative dose and cure rate to therapeutic, 22:47623
effects on man, review of cytogenetic, 22:47520
effects on man, review of effects of dose-rate on, 22:49378 (CONF-680410-, pp 17.1-25)
effects on man, review of genetic, 22:47577 (NP-17191)
effects on man, review of methods for treatment of injurious, 22:524
effects on man, review of problems in protection against pathological, 22:45583
effects on man, review of standards for epidemiological studies on, 22:10848
effects on man, review of therapeutic, 22:4651
effects on man, role of medical personnel in protection against, 22:15015
effects on man, standards for medical evaluation of, following occupational exposure, 22:38475
effects on mechanical and electrical properties of epoxy resins, 22:50996
effects on mechanical and physical properties of thorium and thorium alloys, data tabulations of, 22:21695 (ORNL-4218)
effects on mechanical properties of metals, 22:38557
effects on mechanical properties of metals, 22:40332
effects on mechanical properties of metals and alloys at high energy, 22:23848
effects on mechanical properties of reactor pressure vessel steel, in-pile, 22:19585 (NRL-6620)
effects on medical personnel, diagnosis of pathological, 22:31255
effects on mental alertness of man, low-dose ionizing, 22:47608
effects on messenger RNA during loach embryogenesis, 22:51388
effects on metabolism in man, 22:549(R) (AD-646667)
effects on metabolism of carbohydrates, catecholamine, and proteins, in mammals, ionizing, 22:16979
effects on metabolism of carbon-14-labeled serine in mice, protective effects of homologous and isologous bone marrow transplants against lethal, 22:38197 (ORO-3635-2)
effects on metabolism of carbon-14-labeled serine in mice, protective effects of homologous and isologous bone marrow transplants against lethal, 22:38196 (ORO-3635-1)
effects on metabolism of citric acid cycle substrates by mitochondria from rat liver, 22:8457
effects on metabolism of DNA in man and rats, ionizing, 22:51478
effects on metabolism of electrolytes in intestine, acute, 22:40887
effects on metabolism of fluids and sodium in intestine of rats, protective effects of AET and cysteamine against, 22:6854
effects on metabolism of sulfur compounds in rats, ionizing, 22:51485
effects on metal oxide--semiconductor structures, analysis, 22:40511 (SC-CR-68-3659)
effects on metal oxide-activated glasses, 22:12593(P)
effects on metals, review of defects produced in, 22:28863
effects on methane, effects of alkenes and oxygen on yields in, 22:35862
effects on MH-1A pressure vessel, surveillance program for, 22:35561 (AD-663550)
effects on mice and rats, effects of circadian clock on, 22:36391
effects on mice and rats, protective effects of chemicals and drugs on, 22:25863
effects on mice, analysis of isoantigens from sarcomatous, 22:14965
effects on mice, combined effects of skin wound on histopathological whole-body, 22:47583
effects on mice, effects of acetylcholine and histamine on hematoencepholic barrier following, 22:51968
effects on mice, effects of anions and cations on protective effects of AET and serotonin against, 22:17032
effects on mice, effects of bone marrow and spleen cell transplants on development of autoimmune anemia following, 22:36206
effects on mice, effects of cholinolytic agents on protective effects of AET, BMEA, cystamine, and cysteine against, 22:51699
effects on mice, effects of hyperbaric oxygen on, 22:33880
effects on mice, effects of radiation-leukemia protectio factor on leukemogenic, 22:31136
effects on mice, effects of strain on protective effects of bone marrow transplants against, 22:25894
effects on mice, estimation of frequency of mutagenic, 22:43295
effects on mice, protective effects of anoxia and aminothiols against, 22:25889
effects on mice, protective effects of arecoline, Oxotremorine, and tremorine against, 22:28591
effects on mice, protective effects of biogenic amines and taurine against acute, 22:49383
effects on mice, protective effects of caffeine against lethal, 22:25914
effects on mice, protective effects of cysteamine against latent, 22:28606
effects on mice, protective effects of derivatives of cystamine, cysteamine, and β-mercaptopropionic acid against, 22:43378
effects on mice, protective effects of derivatives of AET and phosphorothioic acid against, 22:19396
effects on mice, protective effects of derivatives of MEA against, 22:525
effects on mice, protective effects of MEA and mexamine against, 22:25884
effects on mice, protective effects of methoxytryptamine and sodium phosphorothioate against fractionated, 22:49384
effects on mice, protective effects of pentetrazole against lethal, 22:25914
effects on mice, protective effects of pyridine and pyrimidine dithiocarbamates against, 22:28579
effects on mice, protective effects of sensitized plague vaccine against, 22:49392
effects on mice, protective effects of serum and spleen extracts against leukemogenic, 22:45646
effects on mice, review of genetic, 22:25819
effects on mice, review of leukemogenic, 22:49586
effects on Micrococcus sodonensis, effects of iodoacetamide on, 22:4713
effects on microelectronic device materials, 22:10673
effects on microelectronics in telemetry transmitters, 22:204(R) (N-67-18419)
effects on military personnel, command guidance for, 22:49602
effects on mitosis in Chinese hamster cell cultures, effects of cell stage on, 22:12834
effects on mitosis in cultured cells, effects of hypertonic medium on inhibitory, 22:49178(R) (ORO-3546-6)
effects on mitosis, bio-mathematical models for analysis of, 22:4564 (N-67-18203)
effects on mitotic cycle in yeast, effects of life span of cells on, 22:31295
effects on mitotic time of lymphoid cells in calves, use of tritium-labeled thymidine to study extracorporeal, 22:23619
effects on mixture of normal and deuterated butane, structure and reactivity of propyl ions from, 22:45124
effects on mixtures of methylcyclohexane with carbon tetrachloride or nitrous oxide, mechanism of, 22:103
effects on mixtures of polymerizable materials to yield thermoplastic resins with good mechanical properties, 22:45118(P)
effects on mixtures of polyvinylidene fluoride with triallyl cyanurate, 22:25438(P)
effects on mobile electron reactions in frozen solutions of sodium hydroxide, effects of solutes on, 22:33375(R) (COO-1528-26)
effects on molecular structure of deoxyribonucleoprotein, protective effects of AET, ethyl alcohol, and mercaptopropylamine against, 22:47565
effects on molecules, research on mechanism of, 22:8485
effects on molecules, role of multiple ionization in ionizing, 22:25402
effects on molybdenum--uranium base alloys at 550 and 645°C, 22:25133 (NAA-SR-12549)
effects on morphology of blood cells, 22:12901
effects on morphology of gonads and survival of rats, protective effects of AET, antibiotics, bone marrow, MET, serotonin, and vitamin B_{12} against lethal ionizing, 22:31157
effects on morphology of human cells, 22:49605
effects on morphology of intestines, review of external, 22:23655
effects on mortality of rats, protective effects of antibiotics against whole-body, 22:10851
effects on MOS transistors, 22:8429
effects on motility of stomach of mice, protective

effects of cholinergic drugs against, 22:19358
effects on motor function of personnel, 22:38204
effects on mucosa of duodenum in developing chickens, 22:14910(R) (COO-1244-12)
effects on multiplication of Mycobacterium leprae and tuberculosis in foot pad of mice, combined effects of thymectomy on whole-body, 22:49654
effects on myoglobin from sperm whales and tuna, effects of DPNH, EDTA, flavin mononucleotide, and pH on, 22:49183(R) (UCB-34-P-95-15)
effects on natural latex rubber, vulcanization, 22:40290 (CEA-R-3345)
effects on neoplastic diseases of man, time-dose studies on, 22:49379 (CONF-680410-, pp 19.1-40)
effects on nerve grafts with artery, Silastic, or vein sheaths, growth following, 22:49496
effects on nerve transplants of rats, comparison of, with effects of azathioprine, 22:40951
effects on nervous system and survival of rats, effects of dose and strain on, 22:23659
effects on nervous system in beagle dogs following radioisotope inhalation, 22:23596 (LF-38, pp 144-6)
effects on nervous system of animals and man, review of genetic and pathological, 22:8613
effects on neuromuscular activity in frogs, role of synapse in, 22:51952
effects on neuropsychologic functions in human children, latent pathological, 22:43398 (NP-17495)
effects on neurosecretory nuclei of hypothalamus of rats, effects of adrenotropic substances on, 22:51991
effects on neutral aqueous cysteine solutions in presence of oxygen, mechanism and yields in, 22:40117
effects on nitromethane in alkaline aqueous solutions, kinetics and spectra of hydroxynitromethane anion radical produced by, 22:30591(R) (RRL-2310-231)
effects on nitromethane, ESR spectral studies on free radicals produced by, 22:96(R) (RRL-2310-214)
effects on nitrous oxide adsorbed on molecular sieve and silica gel, yields in, 22:37775 (BNL-50082, pp 40-78)
effects on nitrous oxide in 2-propanol solutions, effects of potassium hydroxide on yields in, 22:23034 (IA-1128, pp 78-96)
effects on nitrous oxide--oxygen system, yields in, 22:30591(R) (RRL-2310-231)
effects on nucleation of bubbles in superheated water, 22:10487(R) (SU-326-P-13-2)
effects on nuclei of lymphocytes and thymocytes of rats, effects of dose and incubation time on pan, 22:33756
effects on nucleic acids in relation to base composition, 22:47478
effects on nucleic acids of bacteria and bacteriophages, review of ionizing, 22:49251
effects on nucleic acids of mammalian cells, review of early, 22:40553
effects on nucleohistones, effects of calcium ions on, 22:45408
effects on nucleoproteins, effects of protective agents on, 22:31143
effects on nucleoside phosphorylases in erythrocytes of rats, effects of dose on, 22:45508(R) (PG-Report-826)
effects on number of immunologically competent cells in spleen of rats, effects of bone marrow grafts on, 22:40518(R) (RT/BIO-(68)3)
effects on occurrence of microorganisms in water circuit of WWR-C reactor, 22:2557
effects on onions, effects of, on dogs and rats following ingestion, 22:47649 (NYO-3422-1(Suppl.)(Vol.3))
effects on optical rotation in sucrose, 22:27806
effects on optical rotation in sucrose, theoretical studies on, 22:27805
effects on oral cavity and tongue of mice, protective effects of AET and PAPP against, 22:15038
effects on organelles of rat liver cells, chemiluminescence and ESR studies of, 22:51401
effects on organic and inorganic materials, research on, 22:22200(R) (NYO-2962-6)
effects on organic compounds, ESR spectral studies on, 22:18806(R) (COO-1385-21)
effects on organic dielectrics, mechanism of induction of electric conductivity by, 22:42734
effects on organic electric insulation materials, 22:784
effects on organic liquids, 22:42722 (BNL-50110)
effects on organisms, criteria for development of agents and devices for protection against, 22:51875 (TID-4060(1st Ed.))
effects on organisms, facilitation of recovery from, 22:51875 (TID-4060(1st Ed.))
effects on organisms, protective agents against, 22:51875 (TID-4060(1st Ed.))
effects on organisms, role of macrophages in initiating immune responses following, 22:43397 (EUR-4032)
effects on organoleptic properties of foods, effects of low-temperature on, 22:31301
effects on organs and systems of man, effects of dose on pathological, 22:31256
effects on organs and tumors of mice and rats, combined effects of natulan on, 22:40838
effects on origin of biopolymers, 22:25790
effects on origin of life on earth, ionizing, 22:33734
effects on osmotic stability of leukocytes of mice, effects of bone marrow or synestrol on, 22:47573
effects on ovaries of mice, effects of dose fractionation on pathological, 22:33938
effects on ovaries of mice, repair of ionizing, 22:40894
effects on ovaries of rats, effects of progesterones on ionizing, 22:33945
effects on oxidation and reduction of aqueous solutions of nitroalkanes, 22:30591(R) (RRL-2310-231)
effects on oxidation and reduction of platinum chloride ions, yields in pulse, 22:33383
effects on oxidation of grade A graphite, yields of gasified carbon atoms in, 22:10284
effects on oxidation of heptane and nonane at -78 to 140°C, mechanism of hydroperoxide formation in, 22:2120
effects on oxidation of phosphorous acid and its alkyl esters, review on, 22:25421
effects on oxidation of polyethylene, 22:42738
effects on oxidative phosphorylation and respiration in liver mitochondria, 22:51385
effects on oxides, electronic states of defects produced in, 22:52864
effects on oxygen redistribution in uranium dioxide fuels, 22:38642
effects on oxygen tension in neoplastic and normal tissues in man, 22:19382
effects on oxygen, kinetics of ozone formation in, 22:25422
effects on oxygen--trichloroethylene--water systems, yields in, 22:42701 (AD-664757)
effects on oxygenated solutions of hydrogen peroxide, yields in, 22:30591(R) (RRL-2310-231)
effects on Paramecium caudatum relation of pyrimidine bases to, 22:51983
effects on paws of rats, protective effects of low temperature and tourniquet on, 22:40774
effects on peanuts, statistical analysis of mutagenic, 22:45478
effects on pepsin, EPR study of combined effects of oxygen and temperature on, 22:28367
effects on performance of nerve heterografts in dogs, rabbits, and rats, effects of pretreatment with specific antiserum on, 22:51364
effects on performance of strain gages in cryogenic and radiation environment, 22:4562
effects on pericardium following postoperative therapy of mammary cancer, 22:6911
effects on peripheral blood of mice, prophylactic effects of B vitamins on, 22:36331
effects on personnel at Lawrence Radiation Laboratory, routine occupational, 22:49504
effects on personnel in luminous paint factories, regulations for protection against, 22:23559
effects on phagocytic activity of neutrophil leukocytes of nuclear personnel, chronic ionizing, 22:40896
effects on phagocytosis in rats following injection of India ink, 22:23617
effects on phosphate compounds in liver of mice, effects of diet on, 22:47580
effects on physical and physicochemical properties of solids, 22:40124
effects on physical properties of alloys, metals, and semiconductors, (E/T), 22:30155(R) (NAA-SR-12296)
effects on physical properties of biphenyl and terphenyl isomers and their mixtures, 22:8113
effects on physical properties of ceramic materials, in-pile, 22:19678
effects on physical properties of ceramic reactor fuels and components, review of, 22:19677
effects on physiological mechanisms of root growth, 22:12782
effects on physiology and survival of albino rats, combined effects of heat treatment on ionizing, 22:10883
effects on physiology of kidneys of dogs, 22:33950
effects on plastics, 22:26099 (CONF-660706-, pp 111-23)
effects on plastics, review of, 22:26098 (CONF-660706-, pp 55-61)
effects on platelet count in rats, effects of thiols on, 22:47578
effects on platinum and tungsten, 22:712(R) (CU-3551-9)
effects on plutonium-containing fuels, review on, 22:8804
effects on poly(methyl methacrylate), protective effects of organophosphorus compounds against, 22:16587
effects on polyethers at low temperatures, ESR spectral studies on, 22:8134
effects on polyethers at low temperatures, ESR studies on, 22:42720(T) (AEC-tr-6937, pp 184-91)
effects on polyethylene, kinetics of allyl-free radical formation in, 22:12383
effects on polyethylene, physicochemical studies on products of, 22:45129
effects on polyethylene, spectral studies on decay of free radicals produced by, 22:30584(R) (COO-1088-30)
effects on polymer gel production, theoretical studies of, 22:8140
effects on polymerization of 2-methylpropene under anhydrous conditions, 22:8096(T) (AEC-tr-6908, pp 56-63)
effects on polymerization of 2-methylpropene with sulfur dioxide at -78 and -196°C, 22:4171
effects on polymerization of 2-methylpropene, effects of

zinc oxide on rate of, 22:4177
effects on polymerization of 3-methyl-1-butene, 4-methyl-1-pentene, and 2-methylpropene with sulfur dioxide, 22:8098(T) (AEC-tr-6908, pp 74-8)
effects on polymerization of 3-methyl-1-butene, 4-methyl-1-pentene, and 2-methylpropene with sulfur dioxide, 22:8097(T) (AEC-tr-6908, pp 64-73)
effects on polymerization of acenaphthylene in liquid and solid states, 22:27794
effects on polymerization of acrylamide or trioxane, electron microscopic studies on, 22:42717(T) (AEC-tr-6937, pp 158-69)
effects on polymerization of acrylamide or trioxane, electron microscopic studies of fibrils formed by, 22:8132
effects on polymerization of acrylonitrile, methyl methacrylate, and styrene with wood, kinetics of, 22:35858
effects on polymerization of butadiene, catalytic effects of silver ions on, 22:21142(P)
effects on polymerization of butadiene, effects of additives on, 22:33387
effects on polymerization of chloroethylene impregnated in wood, tensile strength studies on, 22:48891(P)
effects on polymerization of chloroethylene with diallyl ester of 5-norbornene-2,3-dicarboxylic acid, 22:45120(P)
effects on polymerization of cyclic ethers, 22:47192(P)
effects on polymerization of derivatives of methylenesuccinic acid, 22:8157(P)
effects on polymerization of dienes with poly(vinyl chloride), 22:35860(P)
effects on polymerization of ethylene, 22:21105
effects on polymerization of ethylene, 22:47191(P)
effects on polymerization of ethylene and vinyl acetate, 22:35846(P)
effects on polymerization of ethylene with propylene, 22:4213
effects on polymerization of ethylene, properties of polyethylene produced by, 22:37775 (BNL-50082, pp 40-78)
effects on polymerization of fluoroolefins, 22:47195(P)
effects on polymerization of hexafluoropropene--tetrafluoroethylene, ESR studies on free radicals formed in, 22:21099
effects on polymerization of hydrocarbons, mechanism of, 22:40122
effects on polymerization of ion exchange resins of acenaphthylene--divinylbenzene and divinylbenzene--styrene, 22:12352
effects on polymerization of materials for ion exchangers, 22:42791
effects on polymerization of monomers in solution, review on kinetics of, 22:21124
effects on polymerization of organic acids to polyesters, 22:8161(P)
effects on polymerization of phosphonitrile chlorides, review on, 22:25421
effects on polymerization of poly(vinyl chloride) with mixed styrene--diene system, 22:35861(P)
effects on polymerization of polyesters with organic acids, 22:21141(P)
effects on polymerization of polyvinyl alcohol with acrylonitrile, 22:47185(P)
effects on polymerization of propene, formation of foamed polymers by, 22:33408(P)
effects on polymerization of quaternary ammonium compounds, 22:8162(P)
effects on polymerization of solid acenapthylene, uv spectral studies on, 22:33469
effects on polymerization of solid trioxane, kinetics of crystallization in, 22:8107(T) (AEC-tr-6908, pp 173-82)
effects on polymerization of solid vinylene carbonate, effects of temperature on mechanism and products of, 22:35840
effects on polymerization of styrene under anhydrous conditions, effects of scavengers on, 22:8099(T) (AEC-tr-6908, pp 79-96)
effects on polymerization of styrene, effects of electron scavengers on, 22:42710(T) (AEC-tr-6937, pp 75-83)
effects on polymerization of styrene, effects of electron scavengers on, 22:8125
effects on polymerization of styrene, effects of electric fields on rate of, 22:8124
effects on polymerization of styrene, effects of electric field on, 22:42709(T) (AEC-tr-6937, pp 69-74)
effects on polymerization of styrene, effects of high electric field on, 22:33411
effects on polymerization of tetrafluoroethylene, 22:6356(P)
effects on polymerization of tetrafluoroethylene in chlorodifluoromethane, 22:21140(P)
effects on polymerization of tetrafluoroethylene in gas phase, 22:33407(P)
effects on polymerization of tetrafluoroethylene with ethylene, 22:6358(P)
effects on polymerization of trioxane and maleic anhydride and/or itaconic acid anhydride, 22:47190(P)
effects on polymerization of trioxane in presence of methylenesuccinic acid anhydride, 22:35845(P)
effects on polymerization of trioxane with nitrogen-containing compounds, 22:37810(P)
effects on polymerization of vinyl ethers, 22:21108
effects on polymerization of vinylene carbonate, 22:37811
effects on polymerization, preirradiation techniques in, 22:51031
effects on polymers, 22:6342
effects on polymers of high molecular weight, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)
effects on polymers, conference on, Pittsburgh, Pa., March 29 and 30, 1966, 22:6341
effects on polymers, developments in, 22:51016
effects on polypropene, effects of molecular weight, oxygen content, and segmental mobility of polymer chains on, 22:33454
effects on polyuracil, protective effects of cysteamine against, 22:51800
effects on polyvinylacetate semiconductors, electric and paramagnetic property changes from, 22:5443
effects on populations of Drosophila, review of mutagenic, 22:8509
effects on populations, effects of dose fractionation on,, 22:36225
effects on porphyrin complexes in aqueous solution, mechanisms of recovery from, 22:23425
effects on post-polymerization of trioxane, mechanism of, 22:10299
effects on preparation of thermoluminescent glass in aluminum, lithium, silicon, and terbium oxide mixture, 22:50997(P)
effects on primary immune response of grafted cells of chicken embryos, 22:19276
effects on processing of plastics--wood, review on, 22:35866
effects on production of androgenetic haploid hybrids in fish, 22:21584
effects on production of dicarboxylic acids, 22:21137(P)
effects on production of hydrocarbons, 22:33458(P)
effects on production of poly(vinyl chloride) resins, 22:21144(P)
effects on production of polymers of tetrafluoroethylene, 22:45116(P)
effects on proliferation of rhabdomyosarcomas, combined effects of antineoplastic drugs on, 22:33876
effects on properties of beryllium oxide and uranium dioxide, methods of determining, 22:767 (GEMP-557)
effects on properties of radiopolymerized hydrocarbon--styrene lubricants, 22:785(P)
effects on properties of reactor pressure vessel materials, availability of data on, 22:35658(R) (AD-663879)
effects on properties of two-step recovery diodes, 22:414 (AD-648380)
effects on protein metabolism in synchronous cultures of Chinese hamster cells, relation of, to reproduction, ionizing, 22:25713 (COO-78-163, pp 64-125)
effects on proteins in blood serum of dogs and rats, whole-body ionizing, 22:52004
effects on proteolytic activity in blood of mice, whole-body, 22:19261
effects on Proteus population in intestine of rats, whole-body, 22:6909
effects on pyrimidine bases of nucleic acids of Escherichia coli, ionizing, 22:51389
effects on rabbits, protective effects of drugs and typhoid vaccine against, 22:49382
effects on radioinduced polymerization of nitroethylene with tetrahydro-2-methylfuran at 77°K, spectral studies on, 22:8106(T) (AEC-tr-6908, pp 157-72)
effects on rate of polymerization of α-methylstyrene and styrene, 22:8101(T) (AEC-tr-6908, pp 117-29)
effects on rate of reproduction of Drosophila melanogaster, protective effects of shielding against, 22:17045
effects on rats, effects of ether anesthesia on lethal, 22:8583
effects on rats, effects of, on respiratory response to morphine, 22:21615
effects on rats, protective effects of caffeine against lethal, 22:25914
effects on rats, protective effects of pentetrazole against lethal, 22:25914
effects on rats, protective effects of quaternary ammonium salts against, 22:25876
effects on rats, protective effects of thymus extract against lethal, 22:33844
effects on reaction of 2-propanol with ethylene to produce tertiary alcohols, 22:51035(P)
effects on reaction of ethylene and hydrochloric acid, simultaneous production of 1-chlorobutane and chloroethane by, 22:35849(P)
effects on reactions of carbon-11 recoil atoms in nitrogen--oxygen systems, 22:33453
effects on reactions of hydrocarbons with phosphorus chlorides, review on, 22:25421
effects on reactions of solid surfaces with adsorbed phases in heterogeneous systems, 22:21136
effects on reactor fuel elements, methods for mechanical analysis of, 22:25145
effects on reactor materials, 22:19646

effects on reactor structural materials, conference on, 22:19595
effects on reactor-core graphite oxidation by impurities, 22:9993 (EUR-2762(ANNEX))
effects on refractory bcc metals, review of recovery of defects after, 22:24375 (BLG-424)
effects on regeneration of bone marrow in mice and rats, 22:47617
effects on reproduction of carp, chronic low-level, 22:6772 (ORNL-4168, pp 61-118)
effects on reproduction of goitrogen-stimulated thyroid cells in rats, 22:38376
effects on reproduction of Mediterranean fruit flies, field evaluation of, in Capri, 22:34004
effects on reproduction of neoplastic cells, combined effects of drugs on, 22:6846
effects on reproductive capacity and survival of insects in relation to population control, 22:10881
effects on reproductive capacity of Aedes aegypti, review of genetic control in, 22:52108
effects on reproductive capacity of male May cockchafers, ionizing, 22:12949
effects on respiration of yeast, effects of dose on, 22:26001
effects on respiratory metabolism of barley seeds, ionizing, 22:49187
effects on response of animals to anesthesia, effects of trichlorotriethylamine on, 22:8624
effects on response of chicks to light and sound, effects of time of embryonic exposure on, 22:45658
effects on response of rats to saccharin, effects of circadian rhythm on, 22:49488(R) (ORO-2903-43)
effects on retention of stomach content in rats, effects of irradiation site on, 22:28688
effects on Saccharomyces vini, effects of anaerobic fermentation and iodoacetate on recovery from, 22:26004
effects on Saccharomyces vini, protective effects of nutrient content of media against, 22:19359
effects on SAP cladding of fuel elements in HWOCR, 22:627 (AI-CE-72)
effects on sarcomas in rats, effects of drugs on, 22:33878
effects on sarcomas, effects of tumor type on therapeutic, 22:51755
effects on scintillation of organic phosphors, kinetic study of, 22:11495(T) (UCRL-Trans-10166)
effects on seed cultivation, effects of environment, mutation stability, and reproductive capacity on mutagenic, 22:40621
effects on seeds, effects of age on genetic, 22:45483
effects on seeds, role of free radicals in, 22:23424
effects on seeds, spores, and strand breaks in DNA, effects of OER on, 22:51396
effects on selective destruction of hypoxic cells, fractionated, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on semiconductor transistors, reduction of deteriorating, 22:8431(P)
effects on semiconductors, conference on, 22:36986
effects on semiconductors, EPR and optical absorption studies of, review, 22:37001
effects on semiconductors, method for measurement of energy levels and introduction rates of defects from, (E), 22:37008
effects on semiconductors, microscopic nature of stable defects from, 22:39158(R) (N-68-17349)
effects on semiconductors, model for induced electron-hole pairs from, 22:20060
effects on semiconductors, summary of conference on, 22:37022
effects on sensitivity of mice to botulin toxins, 22:30985
effects on sensitivity of muscles and nerves to succinylcholine in rabbits, whole-body, 22:445
effects on sensitivity of vestibular analyzer in, of rabbits in relation to incidence of nystagmus, 22:36364
effects on separation of nitrobenzene from hexane and aqueous triethylamine solutions, 22:48877 (JINR-P13-3943)
effects on serum proteins of dogs, chronic, 22:47452
effects on serum proteins of man, electrophoretic analysis of therapeutic, 22:6839
effects on shelf life of haddock fish, effects of handling techniques on, 22:52115
effects on shipping quality of oranges, low-dose, 22:49662(R) (ORO-3097-17)
effects on silicon solar cells, effects of lithium doping on recovery from, 22:36157(R) (N-68-17065)
effects on silicon-on-sapphire thin-film transistors, 22:415(R) (AD-648453)
effects on silicones, 22:11104
effects on single crystals of organic compounds, ESR spectral studies on free radicals produced by, 22:18806(R) (COO-1385-21)
effects on skeletal muscle in frogs, 22:12904
effects on skin of citrus fruits, effects of dose and storage temperature and time on low-level, 22:49662(R) (ORO-3097-17)
effects on skin of man following therapy of spondylitis, 22:40767
effects on skin of man, pathological, 22:49530
effects on skin, effects of dose and time on necrotic, 22:33947
effects on skin, prophylactic and protective effects of cortisone against, 22:33867
effects on sodium acetate crystals, ESR spectral studies on radical conversions produced by, 22:18806(R) (COO-1385-21)
effects on sodium chlorodifluoroacetate single crystals, ESR spectral studies on, 22:18806(R) (COO-1385-21)
effects on solid calcite, mechanism of, 22:30607
effects on solid heterocyclic compounds, radical yields from, 22:33395
effects on solid nitrates, studies on fragments and mechanism in, 22:30607
effects on solid polyethylene, heats of reaction from free radical recombination in, 22:30584(R) (COO-1088-30)
effects on solid polymers, survey of, 22:25412
effects on solid state polymerization of allyl 5-norbornene-2,3-dicarboxylate with acetanilide, succinimide, or N-succinimide, phase studies on, 22:109
effects on solid-state polymerization of eutectic system of N--vinylsuccinimide and monoallyl ester of 5-norborene-2,3-dicarboxylic acid, 22:51036
effects on solid-state polymerization of trioxane, 22:4195
effects on solid-state polymerization of trioxane in presence of proton and electron acceptors, 22:42726(T) (NSJ-tr-108)
effects on solid-state polymerization of trithiane, 22:12385
effects on solid-state polymerization of vinylene carbonate, kinetics of, 22:51018
effects on solids, general cascade theory of defect production from, 22:22206(T) (AERE-Trans-1090)
effects on solids, influence of scattering law on, 22:24469
effects on solids, literature survey, 22:43619(T) (JPRS-46209)
effects on solids, modified cascade theory of defect production from, 22:22205(T) (AERE-Trans-1089)
effects on solids, particle-track studies of, 22:36513
effects on solids, research on, 22:22203(R) (ORNL-4250)
effects on solids, spatial distribution of defect cascades from, (T), 22:31935 (BNL-50083, pp 374-88)
effects on solubility of quartz and silicon dusts, 22:12356
effects on somatic aspects of organisms, 22:51875 (TID-4060(1st Ed.))
effects on sorptive properties of nickel oxide surfaces, 22:52301
effects on soybeans, mass screening of technique for selection of mutagenic, 22:36246
effects on spermatocytes of Drosophila melanogaster, effects of oxygen and nitrogen on recovery from, 22:521
effects on spoilage microflora of haddock, effects of oxygen abundance on, 22:26020
effects on sprouting of potatoes, 22:31301
effects on stability of highly crystalline polyoxymethylene, 22:35855(P)
effects on stainless steel-clad fuels, in-pile, 22:766 (BMI-1809, Sect.F)
effects on starting potential of gaseous discharge tubes, 22:28269
effects on static electricity on polymer surfaces, 22:6359(P)
effects on steel reactor pressure vessels, review, 22:30802
effects on stem cells of nerves in chicken embryos, 22:19409
effects on stem-cell population and survival of mice, biological model for analysis of relation of, 22:45686
effects on sterility of medical products, conference on economic aspects of, 22:31310
effects on storage life and wholesomeness of fish and shell fish, 22:8682
effects on storage life and wholesomeness of food, review of safety aspects of, 22:49676
effects on storage life of Bombay duck, 22:4722
effects on storage life of cod, effects of dose, pH, spore load, and temperature on, 22:6930(R) (COO-1183-24)
effects on storage life of fish, effects of dose, oxygen, packaging material, and temperature on, 22:2559
effects on storage life of food, 22:17063
effects on storage life of food, 22:51875 (TID-4060(1st Ed.))
effects on storage life of food, resolution of Scientific Council of International Society for Research on Nutrition and Vital Substances regarding, 22:49678
effects on storage life of foods, ionizing, 22:8668
effects on storage life of fresh fruits, microbiological analysis of, 22:26019
effects on storage life of potatoes, study of economic feasibility of, 22:33995 (JEN-184-SI/I-17)
effects on storage life, taste, and wholesomeness of seafoods, effects of packaging and post-irradiation temperature on, 22:17064
effects on storage of radioactive waste in salt mine,

22:51064
effects on structure of DNA and RNA, 22:23448
effects on structure of DNA in microorganisms and repair mechanisms, 22:40582
effects on structure of DNA, protective effects of DNP and cell nuclei against ionizing, 22:23564
effects on subcutaneously implanted spleen of dogs, lymphocytopenic, 22:40882
effects on subsequent polymerization of vinyl monomers, 22:35842(P)
effects on sugars, radiomimetic effects of, on cultured vegetable tissues, 22:43261
effects on sulfochlorination of polyethylene and polypropene, electron microscopic studies of compounds formed by, 22:27789
effects on sulfonamide content of blood of rats, 22:21614
effects on suppression of allergic encephalomyelitis in mice, effects of localized and whole-body exposure on, 22:8609
effects on survival of cells in relation to dose, 22:28662
effects on survival of cells, effects of cell cycle and mitotic arrest on, 22:31131
effects on survival of crickets, effects of oxygen on, 22:25869
effects on survival of cultured mammalian cells, 22:6780
effects on survival of fetuses of rats, effects of oxygen starvation on repair of, 22:51953
effects on survival of mice, effects of bone marrow injections on, 22:51987
effects on survival of mice, effects of diet and strain on, 22:23661
effects on survival of mice, effects of radioprotective compounds on repeated, 22:25899
effects on survival of mice, effects of strain on, 22:23662
effects on survival of mice, protective effects of propolis against, 22:10791
effects on survival of plants, relation of, to phylogenetic position, 22:23682
effects on survival of rats, effects of time of day on, 22:38449
effects on survival of rats, protective effects of shielding of bone marrow against, 22:49368
effects on survival, relation of crosslinkage theory of aging to ionizing, 22:49193
effects on swelling in reactor fuel elements, 22:49777
effects on synthesis of plasma proteins in rabbits, tracer study of acute, 22:43250
effects on synthesis of RNA in slime mold, ionizing, 22:25713 (COO-78-163, pp 64-125)
effects on tensile properties of chromium--nickel steel at 650 to 850°C, 22:2668
effects on tensile properties of Type 304 stainless steel, 22:16271(R) (BNWL-666)
effects on tensile properties of Type 304 stainless steel at 650°C and 15,000 to 30,000 psi, in-pile, 22:21727 (ORNL-TM-2130)
effects on tetrachloroethylene in dilute pentane solutions, mechanism of electron scavenging effects on yields in, 22:23034 (IA-1128, pp 78-96)
effects on tetrachloroethylene in pentane solutions, mechanism of formation of hydrochloric acid and trichloroheptene in, 22:23034 (IA-1128, pp 78-96)
effects on textiles to alter properties, 22:42732
effects on thallium sulfate solutions, yields of hydrogen peroxide, 22:23034 (IA-1128, pp 78-96)
effects on the production of polymers of acrylamide and methacrylamide, 22:47193(P)
effects on thermal cracking of gas-oil fractions at 500°C, 22:2121
effects on thermal decomposition of lead nitrates, 22:42780
effects on thermolumenescence of polymers, 22:42785
effects on thoracic lymphocytes, effects of, on immune reaction of man following injection, 22:51309 (ORAU-106, pp 194-220)
effects on thymus grafts, electron microscopic study of cytology following, 22:51929
effects on thyroid of man, effects of dose to neck in infancy on carcinogenic, 22:33969
effects on tissues of cattle and sheep, histopathological study of, following autopsy, 22:40830 (ORO-657, pp 35-45)
effects on tissues of man, combined effects of electromagnetic waves on ionizing, 22:23673
effects on tissues, factors determining renewal response following continuous, 22:49469 (CONF-680410-, pp 3.1-12)
effects on toxicity of fruits to rats following ingestion, 22:47650 (NYO-3422-1(Vol.4))
effects on transformation of hematopoietic cells following implantation in thymectomized dogs, 22:31266
effects on transformation temperatures in uranium tetraiodides, 22:2710
effects on transforming activity of DNA, role of strand scission in, 22:45463
effects on transplants of hematopoietic tissues, review of effects of antibiotics and hormones on, 22:4698
effects on trees, effects of pollen and seed exposure on mutagenic, 22:45499
effects on tributyl phosphate and diluents in extraction processes, 22:40167 (KR-126, pp 120-42)
effects on triolein and tristearin in beef and pork fats, 22:47491
effects on triplet-singlet energy transfer in perylene solutions of benzophenone, spectral studies on, 22:27626 (MIT-905-108, pp 33-62)
effects on tubule cells in kidneys of mice, 22:12816
effects on tumors of larynx in man, effects of hyperbaric oxygen on therapeutic, 22:31176
effects on tumors of rats, effects of oxygen on, 22:40749
effects on tumors, review of factors affecting, 22:25916
effects on ultrastructure of human rectal mucosa, electron microscopy study of effects of dose on, 22:36209
effects on upper epidermis of maize, combined effects of colchicine on, 22:15118
effects on uranium swelling, capsule design for measurement of, 22:6136 (BNWL-SA-1377)
effects on ureters following therapy for cervical neoplasms, 22:10852
effects on urinary excretion of β-aminoisobutyric acid, creatine, and taurine by man and rats, use of, for indication of injury, 22:49492
effects on usefulness of meats from animals in postattack environment, 22:25832
effects on uv fluorescence of cells of bone marrow and blood, 22:36175
effects on uv-fluorescence of rat lymphosarcoma cells, 22:36350
effects on vaporous methylcyclohexane, effects of additives on yields in, 22:102
effects on variation in bond energy in molecules, 22:50992 (CEA-R-3520)
effects on vesical mucous of human bladder following therapy, 22:33951
effects on viruses in carcasses of livestock, effects of, on use of meat for food, 22:17063
effects on viscosity and yield of juice from grapefruits, low-dose, 22:49662(R) (ORO-3097-17)
effects on visual system of Heliothis zea, ionizing, 22:49488(R) (ORO-2903-43)
effects on vitamins, 22:4216
effects on water, effects of LET on yields in, 22:2103
effects on wheat in relation to DNA content and volume of cell nuclei, 22:43477
effects on wholesomeness of foods, 22:19461 (NYO-3135-45)
effects on wholesomeness of foods, 22:19462
effects on wholesomeness of foods, effectiveness of, 22:26018
effects on wholesomeness of foods, test programs for, 22:49677
effects on yeast cells, biochemical and cytophysiological recovery from, 22:31290
effects on yeast cells, effects of B vitamins on, 22:10815
effects on yeast in relation to free radical formation, 22:25739
effects on yeasts, effects of polysaccharide content on, 22:52019
effects on yield of cayenne plants, effects of seed exposure on ionizing, 22:12941
effects on zeolites, effects of adsorbed formic acid, methanol, methylamine, or methyl iodide on mechanisms in, 22:23061
effects on Zircaloy-2-clad vibrationally packed uranium dioxide, in-pile, 22:41124 (BNWL-SA-1674)
emission by internally-deposited isotopes in mosquito fish, effects of, on fecundity, 22:6772 (ORNL-4168, pp 61-118)
emission of 2000 A to 100 μ, from solar photosphere, (E), 22:52353
emission of secondary, from atom with nondiagonal extinction matrix, (T), 22:5049
energy density distribution, analysis of local ionizing, 22:49326 (NYO-2740-5, pp 6-200)
energy distribution, effects of, on production of biomolecular transitions, 22:31048
energy sorption by iodine-125- and -131-, mercury-197- and -203-, and phosphorus-32-labeled pharmaceuticals, 22:37819
energy transfer by, in general relativistic gases, 22:44279
energy transfer to matter by, 22:23055
flux in nuclear explosions, neutron--gamma Monte Carlo transport code for determining, 22:40280 (AD-667933)
hazards to personnel in Roumania, protection against, 22:33832
heat, effects on X agent effect on neutral red, 22:49247
industrial uses of, in Japan, 22:6542
interaction with plasma, nonlinear effects for induced resonance in, (T), 22:39127
interactions with matter, energy-loss fluctuations in, 22:30868 (UCRL-17751, pp 53-80)
measurement of RBE of, above 10 GeV, 22:12857
monitoring in environs of reactor, use of packaged photographic film for, 22:45548
patterns in plasma from magnetic line source on conducting plane, angular anisotropy of EM- and P-mode,

(T), 22:46152
  penetration through solids, 22:3157
  production and use in Japan, review of biological, industrial, and medical, 22:31155
  production and uses of, technical progress review on, 22:10523
  production of harmonic, in microwave gas discharges, review, 22:5351
  properties of transition, from charged-particle crossing dielectric media, (T), 22:37066
  properties of, effects of, on RBE, 22:12845 (ORNL-4215)
  protection from nuclear explosion, methods for ground-based strategic nuclear weapons systems, 22:4392
  protection of man against, medical standards for, 22:40719
  radicals induced by, bibliography on electron spin resonance of, 22:25372 (COO-38-595)
  reactions with matter, anomalous equilibrium properties of, (T), 22:949
  reactions with matter, LET in, 22:40127
  reactions with solids, distribution function for atoms from, 22:13583
  research in beneficial applications of, 22:51875 (TID-4060(1st Ed.))
  role of short-wave, in origin of life on earth, 22:25788
  scattering of fallout, from ceilings of protective structures, 22:25627
  sensitivity of rats, effects of monoiodoacetic acid on, 22:45618
  shielding against, properties of concrete for, 22:41138
  shielding for, design of liquid-cooled positioning device for, 22:47270(P)
  spectrometry, technique for computer based, and automatic data processing, 22:43300 (AERE-PR/HPM-12)
  technology, use of, in commercial research and production programs, 22:4586
  three-dimensional form of the Eddington approximation for, (T), 22:21818
  transfer and neutron transport theory, equivalence of models in nongrey, 22:46301
  transfer in relativistic medium, (T), 22:13610
  transfer in spectral line, (T), 22:945(T) (CLM-Trans-10)
  transport equations for, solution using discrete ordinates S/sub n/ method, (T), 22:22524 (ORNL-RSIC-19)
  transport in inhomogeneous material, perturbations in, 22:41639
  transport in nonuniform atomic plasma, (T), 22:31821
  transport in variable density atmosphere and ground, computer program for, 22:39146 (UNC-5179)
  transport of, application of Monte Carlo sampling techniques to, (T), 22:22264
  use in agricultural entomology, review of, 22:47657
  use in agricultural research, 22:21626
  use in control and degradation of sewage-type pollutants, 22:30711
  use in immunology and replacement surgery, 22:33908
  use in industrial processes, 22:36004
  use in industrial processes, 22:47294(R) (TID-24349)
  use in industry in Japan, 22:49232
  use in industry, medicine, and research in Canada, 22:16638
  use in soil moisture and irrigation studies, 22:6437 (STI/PUB-133)
  use of high-energy, in polymer chemistry, 22:71
  uses for process, review of industrial, 22:37939 (WASH-1095)
  uses in aerospace, 22:37945
  uses in Australian industry, 22:47297
  uses in Czechoslovakia, France, Great Britain, and Soviet Union, 22:12546
  uses in entomology, bibliography on ionizing, 22:12896 (STI/PUB-21/24)
  uses in industrial processes, 22:12381
  uses in industry, 22:22944
  uses in industry and technology, review of, 22:42987
  uses of, developments in, 22:16637
  variation of atmospheric, effects of man-made earth surface changes on, 22:2244
Radiation Absorption Testing
  see Radiometric Testing
Radiation Belts
  see Van Allen Radiation Belts
Radiation Biology
  see Radiobiology
RADIATION CHEMISTRY
  (Study of the effects of radiation on chemical systems)
  see also Radiochemistry
  analysis of uv-radiation effects on furocoumarins, 22:25798
  application of principles of, to radiotherapy of tumor cells in man, 22:15022
  book: Action of Ionizing Radiations on Water and Aqueous Solutions, 22:18858
  book: Current Topics in Radiation Research, 22:40878
  book: Free Radicals in Radiation Chemistry, in Polish, 22:47182
  book: Radiation Chemistry, Principles, Techniques, and Uses, in German and English, 22:27832
  book: Radiation Polymerization, in Russian, 22:18856
  chemical effects of nuclear reactions in solids, 22:48888
  chemical reactions of atomic hydrogen, muons, and positrons in, 22:120
  conference on, Univ. of Newcastle upon Tyne, England, Sept. 21 to 23, 1966, 22:2148
  conference on, Warsaw, Poland, Feb. 10 to 12, 1964, 22:4211
  decay curves of chemical species in, tables for evaluation of, 22:18804 (ANL-7400)
  development in Japan, 22:18659
  development in Latin America, 22:39965 (PRNC-112)
  developments in, review on high-energy, 22:25429
  dose rate effects on fixed concentrations in, 22:42771
  dose-rate and linear energy transfer effects in, correlation of, 22:4175
  economic and industrial aspects of, 22:18814
  effects of electric and magnetic fields on chemical processes in, 22:21133
  effects on labeled lipids during storage, 22:40570
  electron and positive charge scavenging in, 22:21131
  electron and positive charge scavenging in, 22:21128
  electron-ion recombinations following pulse radiolysis, microwave cavity method for studying, 22:40104 (BNL-12552)
  energy deposition from slow heavy particles in, by collision cascades, 22:25403
  equipment design and costs for, 22:2138
  equipment for, development of, 22:37775 (BNL-50082, pp 40-78)
  equipment for, performance of continuous tubular radiation chemical reactor, 22:30598
  experimental facilities in research reactors for, review of, 22:12123
  hot atom reactions in, review of, 22:33470
  industrial aspects of, in United States, 22:8153
  inert-gas sensitized radiolysis, processes of, 22:40115
  ionic processes in, kinetics of, 22:33440
  kinetics of pulse radiolysis, 22:40119
  mechanisms in water, aqueous solutions, and simple organic compounds, review of, 22:27777
  mechanisms in, survey of, 22:33467
  molecule activation in, primary events of, 22:25401
  molecule activation in, theoretical studies of, 22:25400
  primary processes in, review of, 22:35873
  processes in low-temperature, of organic vitreous liquids, review of, 22:6328
  processes in, atomic, ionic, and molecular, 22:30591(R) (RRL-2310-231)
  processes in, comparison of, with photochemical processes, 22:2149
  processes in, review of, 22:30599
  processes in, survey of possible industrial, 22:33430
  production of solvated electrons in, 22:40113
  pulse radiolysis in, review of, 22:4174
  pulse radiolysis techniques in, review of, 22:42799
  radiation sources for, review of, 22:23233
  radical formation in, ESR studies of, 22:27841
  radioinduced excitation and ionization of solutions, comparison of, with results from photochemistry, 22:2151
  radioinduced reactions in, electron transfer processes in, 22:2150
  radioisotope uses in, conference on, 22:28011 (CONF-660503)
  radiolysis of carbon dioxide in pores of graphite moderator, 22:21842 (AERE-M-1708)
  radiolysis processes in organic systems, (E), 22:30155(R) (NAA-SR-12296)
  reaction mechanisms in, 22:2136
  reaction mechanisms in, radical scavenging by nitric oxide, 22:2152
  reactions in liquid phase in, apparatus using krypton-85 as source for, 22:12344(T) (NSJ-tr-92)
  reactions of solid surfaces with adsorbed phases in heterogeneous systems, 22:21136
  recoil techniques in activation analysis, 22:8002
  research at Puerto Rico Nuclear Center, 1967, 22:48807(R) (PRNC-121)
  research in, description of 2000-Ci cesium-137 facility for, 22:219
  research problems in, at Institute of General Chemistry, Warsaw, review of, 22:4218
  research programs in, Takasaki Center, Japan, 22:48893
  research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
  research progress in, review of Soviet, 22:12343(T) (JPRS-44048)
  research progress in, summaries of off-site USAEC, 22:18811 (TID-4005(Pt.2A)(3rd Ed.))
  research progress on, 22:48872(R) (CALT-532-37)
  research progress on, 22:23055
  research progress on, at Technical University, Lodz, Poland, 22:4216
  research progress on, in Japan, 22:4189
  research progress on, in Japan, 22:30420
  research review on, 22:40119
  review of research in, of hydrocarbons and organic nitrogen compounds, 22:40552
  review on, 22:48883
  review on, 22:2129
  review on phosphorus compounds in, 22:25421
  sample geometries for fast-neutron irradiation, 22:27807

- solvated electrons in, effects of dielectric saturation on, 22:42784
- spectra of electrons, inorganic and organic radicals, and ions in, review of, 22:40112
- superexcited states in, 22:25377
- technical aspects of, review of, 22:33430
- training programs at Puerto Rico Nuclear Center, 22:23481(R) (PRNC-102)
- use of pulse radiolysis in radiobiological research, 22:40126
- uses in industry, 22:2137
- uses in industry, 22:33467
- uses in textile industry, 22:23042
- uses of, review of industrial, 22:2138
- uses of, review of industrial, 22:2136
- yields in radiolysis of aqueous solutions, effects of pH and solute concentration on molecular and radical, 22:40114
- yields in radiolysis of various gases, use of theory of unimolecular reactions and theory of mass spectra to calculate, 22:2128
- yields in, derivation of fundamental relations for, 22:21113
- yields in, Monte Carlo calculations of effects of sample geometry on, 22:27807
- yields in, theory of primary, 22:2100 (UJV-1883)
- yields of primary activations in, theoretical methods of estimating, 22:2160

Radiation Cross Sections
- see Cross Sections

RADIATION DETECTORS
- (Sensing components of specific instruments, sometimes called counters. Specific sensors are of the form Radiation Detectors, Geiger-Mueller.)
- see also Photomultiplier Tubes
- see also Radiation Dosimeters
- acceptance vectors for neutron monitors, (E), 22:24068
- acceptance vectors of, (T), 22:34317
- accuracy for absolute radioactivity measurements, 22:23203
- afterpulses in self-quenching, probability of appearance of, 22:38007
- alarm system for monitoring scattered x rays, 22:49089
- amplifier for, design and performance of time-sampling, 22:28104
- amplifiers for, design of high-precision electrometric integrating, 22:2366
- angular correlation coefficients for, geometric corrections to measured, 22:10541 (MIT-952-4, pp 267-99)
- aperture for directional, determination of optimum, 22:4439
- background properties of low-level counting, 22:6578
- background subtraction methods for coincidence systems of, 22:49086
- bibliography on, for nuclear physics, 22:33635 (AED-C-06-18)
- book: Instrumentation in Nuclear Medicine, 22:45299
- book: Nuclear Radioelectronics, 22:4546
- book: Radioisotope Instruments in Metallurgy, 22:36050
- cadmium cutoff energies for finite-size, effective, 22:10544 (WAPD-TM-670)
- calibration for beta dosimetry, use of extrapolation ionization chamber for, 22:4484 (NP-17062)
- calibration for measurement of diffuse cosmic x-ray background, (E), 22:36761
- calibration of gamma dose rate, device for, 22:14848 (AERE-M-1763)
- calibration of gamma, description of portable system for, 22:36052
- calibration of gas-discharge, in parallel, quenching scheme for improving, 22:36043
- calibration of, circuit design for, 22:16891(P)
- characteristics of cellulose nitrate charged-particle track, 22:33631 (AD-666543)
- characteristics of solid-state track, 22:47342
- circuit design for beta--gamma, coincidence, 22:19129(P)
- circuit for pulse-type, 22:25660(P)
- circuit for, design of cable-feed, 22:21328
- circuits for position-sensitive, design of pulse division, 22:37972(T) (ANL-Trans-623)
- circuits for pulse-type, design of portable transistorized scaler, 22:28066 (NP-17360)
- circuits for systems of multiple, description of logic, 22:14791
- circuits for, design of pulse division, 22:36024(T) (ANL-Trans-622)
- circuits for, development of, 22:23266 (JEN-183-DF/1-56)
- coincidence circuit performance for particle identification, pile up elimination, and low-energy gamma measurements, 22:313
- collimator for radiometric instruments, design of, 22:28199(P)
- construction of parallel multiple, to measure ionization cross section of argon ions in inorganic gases, 22:45508(R) (PG-Report-826)
- control and pulse transmission system for assembly of multiple, 22:2443
- control system for high energy, diode light sources for analog and time, 22:43104
- converter for array of, for use with PDP-8 computer, 22:14811
- counting statistics for, nomogram for, 22:28080
- current measurement devices for, design and performance of 10^{-9} to 10^{-15} A, 22:312
- data efficiency calculations for, computer programs for, 22:16475
- data from gamma effects of reducing fwhm on statistical, 22:325
- data from, design of computer-based acquisition system for processing, 22:28128
- data from, statistical analysis of counting, 22:10566
- data from, theoretical evaluation of using inverse probability method for processing, 22:25688
- data obtained with gamma, directional dependence of, 22:2426 (ABS-THH-1037)
- dead time losses in, method for automatic compensation of, 22:14816
- description and use for nuclear medicine, 22:25911
- description and uses of solid-state track, 22:43050
- description for MSRE control and process systems, 22:16159 (ORNL-TM-729(Pt.2A))
- description of delayed-neutron, for use in burst can detection system, 22:10110(P)
- description of electrostatic fission product collection, for use in burst can detection system, 22:10110(P)
- description of fissile radiator--solid-state track, for neutron dosimetry, 22:21358 (ORNL-TM-2120)
- description of neutron flux and heat output combined signal, for instantaneous measurement of output, 22:14358(P)
- description of neutron-sensitive and -insensitive mounted thermocouple junctions for neutron flux measurement, 22:20974(P)
- description of personnel, aboard Apollo spacecraft, 22:37993 (N-68-21647)
- description of safing wire, with cobalt target, aluminum pulling wires and tungsten kink wires, 22:16305(P)
- description of Soviet, aboard first three sputniks, 22:15412(T) (AD-655364)
- description of system for monitoring radioactive effluent in storage tanks, 22:40375(P)
- description of, for isotope localization in man, 22:40433
- design and fabrication for nuclear radiation measurements, 22:33698
- design and operation of self-powered, in LMFBR, 22:12570 (ANL-7380, pp 139)
- design and performance of device for measuring low-concentration beta-active gases, 22:40371
- design and performance of high-resolution cooled system of preamplifiers and, for detection of charged particles, 22:315
- design and performance of proton-recoil, using plastic scatterer for detecting fast neutrons, 22:43068
- design and performance of spinner, based on fracture of liquids due to ionizing particles, 22:21341
- design and performance of, using boron-10 (n,α) lithium-7 reaction, for use in PULSTAR and TRIGA research reactors, 22:43048
- design and use for nondestructive testing of coatings, 22:23242
- design and uses in nuclear physics, book on, 22:30846
- design and uses of negative-pressure, rotational, bubble-chamber-type, for measuring very low neutron fluxes and spontaneous fission rates, 22:10560
- design and uses of, survey on, 22:43161
- design for continuous measurement of the concentration of radioactive aerosols, 22:51237
- design for continuous recording of β emission by phosphorus-32 in tumor transplants in rats, 22:12851
- design for control of plutonium contamination, 22:23551
- design for detecting and measuring fission products, 22:14820(P)
- design for detection of $\nu + d \rightarrow 2n + e^+$ and anti $\nu + d \rightarrow$ anti $\nu + n + p$ interactions, 22:44314
- design for diagnosis of heart and lung functions, 22:23589(P)
- design for hot-cell examination of irradiated plutonium, 22:4377
- design for identifying radioisotope-labeled aircraft, 22:43141(P)
- design for low-level measurements, 22:2238
- design for measurement of relativistic particle energy, 22:23326
- design for measuring neutron flux densities, 22:4449(P)
- design for monitoring alpha particles and neutrons, (E), 22:15153 (ANL-7313)
- design for neutron radiography, 22:10618
- design for neutron radiometric analysis of hydrogen compounds in soils, 22:38122(P)
- design for soil moisture measurement, 22:23131 (CONF-680112-1)
- design modification for charge recognition in $e^+ + e^- \rightarrow e^+ + e^-$ interactions at Adone, 22:48205 (ISS-68/20)
- design of 14-MeV neutron, for well logging, 22:28189
- design of AN/GKQ-4 detector--telemetry system for monitoring fallout, 22:33633 (AD-666659)
- design of calorimetric, for measuring energy flux and beam power of 5- to 20-keV x rays, 22:16876
- design of colorimeter, for measuring x-ray energy absorbed in gold target, 22:43040
- design of Compton, for intense gamma fluxes, 22:21318

(UCRL-50176)
design of cosmic x-ray focusing telescope, (E), 22:36567 (N-68-16582)
design of electron energy-loss analyzer, 22:49107
design of four-detector system for γ-γ angular correlation measurements, 22:28074
design of multilayer electrode-type, with output independent of energy distribution of radiation, 22:49073(P)
design of nuclear emulsion, for particle asymmetry measurements in inner radiation belt, (E), 22:47894(R) (N-68-23790)
design of optical system for visible and infrared, with wide field of view, 22:21332(P)
design of paraffin- or polyethylene-moderated, for neutron rem measurements, 22:23331
design of personnel, for monitoring radioactive aerosols, 22:23306(P)
design of self-powered, for neutron detection, 22:36073
design of sensitive gamma, with direct-reading in flux and dose rate, 22:30830
design of sensitive γ, for determining radioisotope content in seawater, 22:2256
design of telescopic detector probe for radiation monitoring, 22:47325(P)
design of vacuum-diode, for measuring high-intensity gamma-ray flux, 22:4446
design of, using filter paper, for measuring radioactivity of aerosols, 22:19127(P)
design, operation, and performance of parallel-plate vacuum-chamber-type, for spectral measurements of electrons liberated by x radiation, 22:43092
development and use for high-energy physics research, 22:24570(R) (UCRL-17876)
development at CEA, 22:23276
development at ORNL, 22:21314 (ORNL-4219, pp 30-5)
development at Scientific Institute for Nuclear Instrumentation in Soviet Union, 22:6554
development for measuring fast and intermediate neutron spectra, 22:48424 (RPI-328-133, pp 35-55)
development for radiation measurements in space, review of, 22:49093
development for studying shielding materials, 22:15003(T) (AD-662586)
development of dielectric, for charged particles by track analysis, 22:10564
development of helium discharge--condensation chamber, 22:40461
development of neutron-multiplicity monitor for operation at sea level and 3800-m elevation, 22:308(R) (N-67-19359)
development of photoelectric, for 10- to 400-A x radiation, 22:10547
development of proton-recoil telescope for fast neutrons, 22:39586
development of self-powered in-core neutron, for use in power reactors, 22:12084(R) (BAW-3647-6)
development of solid particle track, using organic polymers, 22:327
development of solid state track, 22:40364
development of time-of-flight, for charged particles, 22:9855(R) (ORO-2843-12)
development of transition, using nonmetallic foils, 22:32039(R) (COO-1195-124)
development of, 1918-1968, 22:28101
development of, program for, 22:28103
development, review, 22:4309 (TID-24102)
economic aspects of, industrial, 22:23275
effects on reliability of cesium-137 measurements in man, 22:8549
efficiency for measurement of differential cross sections, effects of aperture size on, 22:45297
efficiency for neutrons, spectra for calibrating, 22:18123(R) (RLO-1925-11)
efficiency in complex radiation fields, 22:36040
efficiency of adjoint-weighted, in reactor--detector system for neutron noise measurements, 22:30833
efficiency of alpha, calculated and experimental, 22:23274
efficiency of neutron, method for calculating, 22:28102
efficiency of neutron, theoretical, 22:10537 (AAEC/TM-403)
efficiency of NM-64, for precision measurements of neutron scattering, 22:45295
efficiency of solid-state track, for neutron flux measurements, 22:30835
efficiency of, effects of instrumental errors on, 22:14784
energy integration program for, use in nuclear explosion flux mapping, 22:40280 (AD-667933)
equipment for, design of tube mounting assembly, 22:10571(P)
error statistics for, calculation of, 22:47357
etching techniques for solid-state dielectric, for charged-particle track analysis, 22:28120
evaluation for determination of internal contamination in man, 22:31058 (BNWL-SA-1511)
evaluation for direct measurement of plutonium-239 in biological systems, 22:49343
evaluation for radiation monitoring near CERN 28-GeV- and 600-MeV synchrocyclotrons, 22:22534
evaluation of reactor coolant, parameter study for, 22:25126 (CEA-R-3342)
feasibility of gamma--electric cell, for high γ flux, (T), 22:47863
gamma radiation counting in, probability of, (T), 22:5471
geometry corrections for determination of radioisotope decay rates, solid-angle, 22:14780
geometry efficiency of parallel-disk system of source and, integral method for determining, 22:10563
geometry of radiation source--, Monte Carlo calculation of, 22:14787
geometry with respect to source, system for exactly orienting, 22:28115
instrumentation associated with reactor neutron, book on, 22:30273
material for, preparation of thermoplastic, 22:6354(P)
neutron counting statistics of, short time interval, 22:19121
neutron flux, calculation of optimum efficiency for reactor core multiple, (T), 22:35677
noise in, rejection of spurious counts arising from electrical, 22:43054
operation and performance for high-energy physics experiments, 22:44297(R) (UCLA-34-P-106-27)
operation and use in health physics, statistical analysis of, 22:21317 (SC-TM-67-3036)
operation in medical schools, regulations for, 22:499
outputs of two photo-, quantum theory of intensity correlations of, (T), 22:5641
particle detection by, quantum field theory for localizability properties of, 22:35096
particle track density measurements in dielectric track, use of scattered light for, 22:37990 (KAPL-3412)
particle tracks in solid-state, chemical etching techniques for developing, 22:47342
performance for determining maximum permissible levels of surface contamination, 22:23548
performance for neutron dose equivalent rate measurements near reactors, 22:14746 (AERE-M-1848)
performance for pulsed radiation and particles, information theory for, 22:21324
performance for radiation monitoring near high-energy proton accelerators, evaluation of, 22:21322
performance in determining γ radiation from rocks, 22:2213
performance of celluloid film track, for alpha particle detection, 22:49116
performance of electroscope, for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540-1)
performance of Geiger-Mueller and scintillation, for monitoring air, 22:51567(R) (IN-1205)
performance of hand and foot monitor, for detecting radioactive contamination on skin, 22:36277
performance of solid-state track, for absolute fission rate measurements, 22:47346
performance of super neutron monitor in recording multiplicity variations, 22:41395
performance of, lectures on, 22:13689
performance of, over-all correction factor for, 22:43039
performance of, signal-to-background criterion of, 22:49077
preamplifier for, design of wide-band low-noise charge sensitive, 22:30919
properties of solid, for particle track registration, 22:6563
pulse analysis for sorting radioactive samples, sequential statistical, 22:45286
pulse shaping for high resolution nuclear spectroscopy, 22:28147
random processes in, with dead time, statistical description of, 22:33651
reactor power profiles from neutron, optimal estimation technique for determination of, 22:32880
reactor safety transient systems of, efficiency of, 22:32961 (ANL-7310, pp 377-430)
recording system for neutron, 22:23300
recording systems for, used in measuring neutron flux distributions in exponential piles and reactors, 22:43025 (EUR-3943)
research on high-energy particle, Congressional hearings on, 22:11607
research progress on, 22:47077(R) (NYO-844-75)
resolution of, statistical factors affecting, 22:36027 (CONF-680303-, pp 1-11)
response function and convolution integral for, determination of, 22:19099 (UCID-4675)
response of Haverah Park array to extensive air showers, (E), 22:9119
response of out-of-core, for measuring power distribution in reactors, 22:30839
response of system of, to extensive air showers, statistical analysis of, 22:23298
sensitivity of moderated cylindrical neutron, computer program for calculating, 22:47319 (JAERI-1163)
sensitivity of organic foil particle-track, effects of oxygen and humidity on, 22:51226
sensitivity of photoelectric diode, for soft fluorescent x rays, 22:8341 (UCID-15248)
sensitivity of, for measuring low activity of radioisotopes, 22:2387

signal-to-noise ratio in, improvement of, 22:36028 (CONF-680303-, pp 169-88)
signals from, instruments for amplification and formation of, 22:2390 (CEA-R-3252)
specific yield functions for IGY neutron, 22:51218(R) (AD-672313)
splash protection for water-surface monitor, protective film and heater assembly for, 22:47348
standardization of, methods of, 22:43063
testing for neutron spectral index measurement of k/sub infinity/ in RB-1 reactor, 22:20911 (RT/FI-(67)30)
testing high-temperature neutron, 22:43629(R) (LA-3933)
theory of parallel-plate and spherical vacuum-chamber-type, for attenuated radiation fields, Greening's, 22:43061
timing circuits for, with automatic setting of time interval, 22:47353(P)
use for determining erosion in exhaust stacks, 22:10621(P)
use for determining kidney function, 22:51765
use for dosimetry, energy absorption spectrum--radiation dose conversion operator for, 22:12658
use for fast neutron radiography, 22:51222 (TID-24730)
use for measuring angular correlation of atomic cascade photons, calculation of signal-to-noise ratio for, 22:19102
use for radioassay of effluent of gas chromatography column, methods for, 22:36049
use in gamma polariscopes for measuring linear and circular polarization, 22:8356
use in health physics, review of, 22:10778
use in high-energy pulsed radiation fields, 22:4444
use in nuclear physics research, review of, 22:8376
use in research reactors, 22:12108
use in well logging for petroleum exploration, 22:2375
use of cellulose acetate solid track, for determining angular distribution of alpha particles from deuteron reactions (d,α) with fluorine-19 at 600 keV, 22:38045
use of cellulose nitrate and cellulose acetate, for detecting light nuclei by track analysis, 22:16887
use of cellulose nitrate, for light charged particles, 22:8338 (JINR-P13-3585)
use of dielectric track, for determining fissionable material content in solids, 22:38005
use of muscovite mica solid track detectors for detection of alpha particles, electrons, fission fragments, and mesons (μ), 22:8346
use of Penning discharge tube for detecting charged particles and gamma rays, 22:38048
use of plastic track, for isotope identification, 22:10558
use of solid dielectric, for heavy charged particles by track analysis, 22:47343
use of solid state, to measure alpha particle range in gaseous, liquid, or solid ethylene and propene, 22:45508(R) (PG-Report-826)
use of solid-state track, for studying fission fragments of uranium bombarded by 14-MeV neutrons, 22:25642
use of solid-state, for determining mass and energy distribution of fission fragments by particle track analysis, 22:14792
use of x-ray film, for determining ground water filtration direction in drill holes, 22:43135
use with pulse integrator for measuring reactor period, 22:7934(P)
use with pulse integrator for monitoring reactor period, 22:10091(P)
use with radiation sources for direction finding, 22:10619(P)
use with radiometric techniques for aerodynamic testing, 22:38126
uses in association with medical applications of radioisotopes, 22:19216
uses in medicine, review of, 22:12879
x radiation focusing on small, telescope using asymmetric Bragg crystal-plane diffraction for, 22:36029 (D-1-82-0720)

RADIATION DETECTORS, ACTIVATION
see also Radiation Detectors, Fission Foil
accuracy of thermal neutron spectrum measurements of, analysis of, 22:25141
activity counting system for neutron flux measurements, design of, 22:4453(P)
burnup correction factor of cobalt-59 and cobalt-60, calculation of, 22:43030 (UJV-2034)
calibration for fast neutrons, 22:21321(T) (ORNL-tr-1843)
calibration of aluminum--dysprosium wire, description of, 22:32740(R) (BAW-3647-7)
calibration of lutetium indicators for activation measurements of thermal neutron temperature, 22:35208
calibration of silver foil, for measuring neutron flux, 22:47349
corrections for cadmium-shielded indium, for epithermal neutron detection, 22:33652
data analysis for determining fast neutron spectra, use of approximate quadrature formulas for, 22:38025
data analysis for fast neutron, extension of polynomial method for, 22:2368
data analysis for neutron spectroscopy, computer program for, 22:21338 (SC-RR-67-746)
data from, computer program for determining fast neutron spectra from, 22:30834
description of liquid argon, for analyzing chlorine-40 isomer, 22:16882
design for detection of thermal neutrons, 22:33643(P)
design of coaxial, for neutron monitoring inside reactors, 22:10572(P)
design of rhodium wire, description of, 22:32740(R) (BAW-3647-7)
development and testing for monitoring fast reactor core fluxes, 22:13035 (BNWL-473, pp 11.1-7)
development for measuring neutron energy spectra in reactors, 22:8363(P)
development for neutrons, based on the lithium-6 (n,α)t and oxygen-16 (t,n) fluorine-18 reaction sequence, (E), 22:5736
development of aluminum--copper alloy, for thermal and fast neutron flux monitoring, 22:4437
development of beta-current, for neutron detection in Halden Boiling Heavy Water Reactor, 22:21312 (HPR-73)
development of multi-element, for resonance integral and resonance spectrum measurements, 22:16901
efficiency of foil, for neutron dosimetry in fast reactors, 22:48746
efficiency of sulfur, for fast neutrons, separation of sulfur from phosphorus-32 by combustion for increasing, 22:21320(T) (ORNL-tr-1842)
fabrication of neutron, 22:19128(P)
gamma spectra data from, use of EL-X8 computer for evaluating, 22:19113
isotopes for use in in-pile multifoil, data tabulations for, 22:47318 (EURFNR-527)
manganese bath-type, description of on-line computer for use with, 22:32961 (ANL-7310, pp 377-430)
manganese bath-type, design of fast neutron detecting, 22:32961 (ANL-7310, pp 377-430)
measurement of neutron flux distribution in aluminum-clad uranium oxide (UO_2) multi-rod water-moderated critical assembly, analysis of, 22:32740(R) (BAW-3647-7)
neutron fluence measurements in WWR-S using foil, 22:16294 (UJV-1905)
neutron flux measurements by Aeroball system of manganese mixed carbon steel balls in, description of, 22:39769 (EUR-3932)
neutron flux measurements in research reactors by, methods for, 22:12110
neutron flux perturbation by foil, in reactors, method for avoiding, 22:53470
neutron flux spectra from multiple foil data, computer program for determining, 22:48413 (BNWL-855)
performance of aluminum--dysprosium wire, description of, 22:32740(R) (BAW-3647-7)
performance of indium, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance of iron, for integration of fast neutron fluxes, 22:23268 (UJV-1885)
performance of multiple-foil, for neutron spectrum measurements, 22:4434
performance of rhodium wire, description of, 22:32740(R) (BAW-3647-7)
power monitor for liquid metal fast breeder reactors, description of, 22:14128 (ANL-7380, pp 140-5)
preparation of gold, lanthanum, and sulfur, use of polyvinyl alcohol for, 22:14814
preparation of plutonium-239 and plutonium-241, for EBWR capture-to-fission measurements, 22:32961 (ANL-7310, pp 377-430)
preparation of thin, for neutron flux measurements, 22:2340 (ABS-THH-1033)
properties for sandwich foil measurements of fast and thermal neutron spectra, 22:20403 (CONF-680307-14)
sensitivity for neutron dosimetry in intense radiation fields, 22:21363
testing of rhodium-type, description of LPR high-temperature tank facilities for, 22:37528(R) (BAW-3647-8)
use as high-energy proton dosimeters, 22:6658
use as radiation monitors in accelerators and reactors, precise counting methods for, 22:14783
use for dosimetry of 3-GeV protons in tissue-equivalent phantoms, 22:21356 (CEA-R-3376)
use for dosimetry of californium-252 fast neutrons in tissue-equivalent phantom, 22:43109 (TID-24609)
use for dosimetry, method for, 22:21356 (CEA-R-3376)
use for fast neutron spectra measurements, 22:8339 (JUL-414-RX)
use for fast neutron spectra measurements in 2MW(t) UA-RR-1 reactor, description of, 22:42370
use for fast neutron spectroscopy, (E/T), 22:26779
use for measurement of fission-neutron spectra, 22:16046
use for measuring absorbed doses and fluences from proton reactions with paraffin phantoms, 22:14865
use for measuring epithermal neutron spectra, 22:8348
use for measuring thermal neutron flux, self-absorption, self-shielding, and flux depression effects in, 22:23289
use for neutron dosimetry near TRIGA Mark II reactor, 22:19163
use for neutron dosimetry studies in EBR-II, for radiation effects experiments, 22:4438
use for neutron spectroscopy at 0.025 eV to 25 GeV, unfolding technique for, 22:12596 (RHEL/R-154)

  use for slow neutron detection, 22:12586
  use of aluminum-27 and gold-198, for determining fission neutron spectra through (n,γ) reactions, 22:14804
  use of cobalt, for thermal neutron flux measurements, 22:4426 (JUL-495-RX)
  use of continuous flow manganese, for measuring neutron yield of accelerator sources, 22:36037
  use of copper, for measurement of 14-MeV neutron flux, 22:16857 (CEA-R-3295)
  use of copper, gold, magnesium, and sulfur, for fast neutron spectroscopy, 22:19146
  use of gold foil, for determining fast-to-thermal neutron ratios using lithium-drifted germanium spectrometers, 22:38029
  use of gold, for detection of neutrons from concrete shielding of LRL Van de Graaff accelerator, 22:9720 (UCID-15235)
  use of niobium-93, for fast neutron fluence detection, 22:8352
  use of niobium-93, for neutron dosimetry, 22:28177 (FFN-74)
  use of phosphate glass, for dosimetry of neutrons simultaneous with x ray and gamma photoluminescent dosimetry, 22:14859
  use of resonance, for detecting 0.46-eV to 5.8-keV neutrons in absorbing hydrogenous media, 22:24821
  use of uranium, for fast-fission measurements in reactors, corrections for, 22:10565
  use of uranium-238, for fast neutron flux measurements in research reactors, 22:40376
  use of uranium-238, thorium-232, and aluminum-27, for thermal neutron flux measurements in research reactors, 22:40376
  use with fission chamber for absolute neutron flux determination, 22:28105

RADIATION DETECTORS, BUBBLE CHAMBER
  beam contamination of 7-GeV/c antiproton beam in BNL, use of delta-ray spectrum for determining, 22:36100
  book: Bubble and Spark Chambers, Vol. I, 22:38096
  book: Bubble Chambers, 22:40468
  bubble density and growth in propane, 22:12629 (CERN-67-26(Vol.2), pp 405-12)
  bubble formation in liquid hydrogen, 22:12628 (CERN-67-26(Vol.2), pp 389-404)
  bubble growth and condensation in liquid hydrogen, theory of, 22:30855 (JINR-P13-3726)
  bubble nucleation by high-energy ionizing particles, thermodynamic theory of, 22:362
  calibration of hydrogen, as spectrometer for low momentum electrons, 22:6594
  camera lens for RHEL liquid helium, design and fabrication of telecentric, 22:19157
  charged-particle parameters in hydrogen, computer program for determining, 22:33665
  conference, 22:12603 (CERN-67-26(Vol.1))
  conference, 22:12624 (CERN-67-26(Vol.2))
  construction and operation of liquid hydrogen, 22:6649
  construction of MIT 300-liter, status of, 22:30856 (MIT-2098-422, pp 10-12)
  description of 50-cm hydrogen, 22:38086
  description of 50-cm liquid helium, at Northwestern Univ, 22:47380
  description of Gargamelle heavy liquid, at CERN, 22:36106
  design and fabrication of 1-meter hydrogen test, 22:12613 (CERN-67-26(Vol.1), pp 181-9)
  design and fabrication of 15-m-diameter by 6-m-length hydrogen, 22:12614 (CERN-67-26(Vol.1), pp 191-7)
  design and fabrication of ANL 12-ft hydrogen, status of, 22:12608 (CERN-67-26(Vol.1), pp 97-102)
  design and fabrication of Gargamelle heavy liquid, status of, 22:12610 (CERN-67-26(Vol.1), pp 111-33)
  design and fabrication of large European hydrogen, 22:12609 (CERN-67-26(Vol.1), pp 103-9)
  design and fabrication of Mirabelle hydrogen, status of, 22:12611 (CERN-67-26(Vol.1), pp 135-46)
  design and fabrication of propane, with pulsed magnetic field, 22:25669 (BMwF-FBK-68-02)
  design and fabrication of RHEL hydrogen, 22:12612 (CERN-67-26(Vol.1), pp 147-65)
  design and operation of cylindrical Mura model heavy liquid, 22:12640 (CERN-67-26(Vol.2), pp 513-49)
  design and operation of track-sensitive hydrogen target inside neon--hydrogen, 22:368
  design and testing of Gargamelle heavy liquid, 22:12606 (CERN-67-26(Vol.1), pp 73-86)
  design and uses of ANL 12-ft hydrogen, for neutrino physics, 22:12607 (CERN-67-26(Vol.1), pp 87-94)
  design of fast-cycling hydrogen, 22:12627 (CERN-67-26(Vol.2), pp 379-87)
  design of hydrogen--neon, 22:4481(P)
  design of Stanford Linear Accelerator, engineering drawings for, 22:32387
  design parameters for, optimization of, 22:12605 (CERN-67-26(Vol.1), pp 25-47)
  development and operation of hydrogen, 22:9497(R) (UCRL-17544)
  development and use of large, for neutrino physics, 22:12604 (CERN-67-26(Vol.1), pp 3-23)
  development at CERN, 1967, 22:50491(R) (NP-17628)
  development for use at proposed 300-GeV proton synchrotron, 22:48387 (CERN/ECFA-67/16(Vol.1))
  development of fast-cycling hydrogen, 22:12626 (CERN-67-26(Vol.2), pp 371-7)
  development of hydrogen, for Argonne Zero Gradient Synchrotron, 22:28168
  development to study radioinduced bubble formation in superheated water, 22:10487(R) (SU-326-P-13-2)
  efficiency of xenon, for measuring gamma radiation, 22:45335 (JINR-P13-3918)
  electron trajectories in heavy-liquid, γ and π^0 production determination from, 22:44300 (LAL-1190)
  expansion in heavy liquid, elastically suspended plates for control of, 22:12633 (CERN-67-26(Vol.2), pp 467-71)
  expansion of MURA Freon, liquid oscillations from, 22:12619 (CERN-67-26(Vol.1), pp 263-93)
  expansion system and high-speed valve for, design of, 22:47377
  expansion system for 3.5-m hydrogen, 22:12634 (CERN-67-26(Vol.2), pp 473-8)
  expansion system for ANL 12-ft hydrogen, 22:12637 (CERN-67-26(Vol.2), pp 493-500)
  expansion system for ANL 12-ft hydrogen, design of, 22:12639 (CERN-67-26(Vol.2), pp 507-11)
  expansion system for, description of high-speed, 22:19158(P)
  fluid dynamics, 22:35181
  gamma energy measurements in xenon, precision of, 22:38084
  illumination system for hydrogen, performance of Scotchlite in, 22:28170
  illumination systems for Russian PK-300, evaluation of, 22:38085
  illuminators for large hydrogen, method for sealing, 22:19156
  instrumentation for ANL 12-ft hydrogen, 22:12638 (CERN-67-26(Vol.2), pp 501-5)
  lenses for Argonne 12-ft, development of wide-angle, 22:12622 (CERN-67-26(Vol.1), pp 329-40)
  magnet coils for 12-ft, insulation for superconducting, 22:38999
  magnet coils for, design of fast pulsed 225 kG, 22:21354
  magnet design for Mirabelle hydrogen, 22:12636 (CERN-67-26(Vol.2), pp 485-92)
  magnet for BNL 7-foot, design of superconducting, 22:51249 (BNL-12897)
  magnet for large, development of superconducting, 22:12632 (CERN-67-26(Vol.2), pp 457-64)
  magnet performance for Oxford--Rutherford 80-cm helium, 22:10603
  magnet system for ANL 12-ft hydrogen, 22:10600
  magnet system for ANL 12-ft hydrogen, design of superconducting, 22:12631 (CERN-67-26(Vol.2), pp 427-33)
  magnet system for, design of 1.3-m-diameter 50-kG, 22:10601
  magnetic field applications in large hydrogen, 22:21352
  magnetic field in BNL 30-in hydrogen, measurement and least squares fitting of, 22:23319 (BNL-12374)
  magnets for Argonne and Brookhaven, design of fully stabilized superconducting strips for, 22:28173
  magnets for, design and performance of superconducting, review, 22:1107
  magnets for, design of pulsed, 22:6644
  magnets for, development of superconducting, 22:50486 (BNL-12832)
  magnets for, review of superconducting, 22:37237
  meson (K) energy ranges in, analytical formulas for calculating, 22:30865
  meson (μ^+) range in deuterium, $\pi^+ \to \mu^+ + \nu$ decay for, (E), 22:32047 (UCID-3162)
  meson (π) energy ranges in, analytical formulas for calculating, 22:30865
  operation of 80 cm helium, 22:53047(R) (RHEL/R-162)
  operation of ANL 12-ft hydrogen, 22:12637 (CERN-67-26(Vol.2), pp 493-500)
  operation of propane, and Jena 30-MeV betatron, 22:32381
  optical system for Mirabelle hydrogen, 22:12636 (CERN-67-26(Vol.2), pp 485-92)
  optical system for, design of, 22:49119(P)
  optical system of large European hydrogen, 22:12623 (CERN-67-26(Vol.1), pp 341-6)
  optical system of large heavy liquid Gargamelle, 22:12620 (CERN-67-26(Vol.1), pp 295-311)
  particle beam direction in, use of conversion pairs and gamma-quantum spectrum for determining, 22:45332(T) (ANL-Trans-640)
  particle event identification in propane, 22:8383 (JINR-P1-3595)
  particle track analysis by computer recognition of line patterns, method for, 22:49120
  particle track analysis in photographs from, use of MP II for, 22:361 (UCRL-17611)
  particle track analysis in photographs from, use of PDP-8 computer for, 22:12646
  particle track analysis in, Brookhaven raster display for, 22:43103
  particle track analysis in, correction for geometrical losses in, 22:23321 (CERN-68-10)
  particle track coordinates in, computer program for magnetic field calculations at, 22:359 (JINR-P11-3512)
  particle track data from, computer program for final

  analysis of, 22:21351 (ORO-2504-116)
  particle track data processing for, computerized, 22:12643
  particle track data processing for, PEPR program for use with IBM-7044 for, 22:12644
  particle track film analysis for, computer-controlled manual system for, 22:23322 (SLAC-81)
  particle track geometrical reconstruction in, description of computer program for, 22:38080(T) (CERN-Trans-67-8)
  particle track geometry measurements in, use of on-line PDP-5 connected to IBM 360/50 for, 22:360 (PPAD-629-C)
  particle track photography in MURA Freon, efficiency of Scotchlite reflecting material on, 22:12619 (CERN-67-26(Vol.1), pp 263-93)
  particle track photography in, effects of thermal turbulence on, 22:12619 (CERN-67-26(Vol.1), pp 263-93)
  particle track photography in, effects of turbulent convective motions on optical distortions in, 22:12616 (CERN-67-26(Vol.1), pp 215-28)
  particle track photography in, geometrical theory of Scotchlite light reflecting material for, 22:12617 (CERN-67-26(Vol.1), pp 229-42)
  particle track photography in, optical sources of distortion in, 22:12615 (CERN-67-26(Vol.1), pp 201-13)
  particle track photography in, use of dark field Scotchlite for, 22:12618 (CERN-67-26(Vol.1), pp 243-61)
  particle tracks in BNL 80 in., scanning table measurements for film analysis, 22:30860 (UCID-2950)
  particle tracks in Brookhaven, data terminal network computer system for film analysis of, 22:36103
  particle tracks in Gargamelle, equipment and procedures for film analysis of, 22:12621 (CERN-67-26(Vol.1), pp 313-27)
  particle tracks in heavy-liquid, computer program for reconstruction of, 22:49117
  particle tracks in hydrogen, use of delta electron density for identification of, 22:43102
  particle tracks in propane, methods for calculating Coulomb scattering and bremsstrahlung for analysis of, 22:30862
  particle tracks in SLAC, photographic techniques for, 22:16907
  particle tracks in, at BNL and Columbia, status of automatic scanning of, 22:38095
  particle tracks in, computer program for geometrical reconstruction of, 22:49113(T) (ANL-Trans-668)
  particle tracks in, computer program for simulating, 22:30858 (UCID-2753)
  particle tracks in, computer-based system for film analysis of, 22:19153
  particle tracks in, description of Hummingbird automatic film digitizer for analyzing, 22:28165 (SLAC-82)
  particle tracks in, description of PEPR for film scanning and measuring of, 22:38092
  particle tracks in, design and performance of HPD Mark 2 flying-spot digitizer for film analysis of, 22:23320 (CERN-68-4)
  particle tracks in, design of fast digitizer for automatic film analysis of, 22:36101
  particle tracks in, development of DAPR for automatic film analysis of, 22:38094
  particle tracks in, development of PEPR for analyzing, 22:30856 (MIT-2098-422, pp 10-12)
  particle tracks in, development of RIPPLE semiautomatic device for analysis of, 22:47371(R) (ORO-3065-16)
  particle tracks in, effects of multiple scattering on film analysis of, 22:363
  particle tracks in, electronic specifications of Spiral Reader MP-IIB system for film analysis of, 22:30859 (UCID-2842)
  particle tracks in, evaluation of Image-Plane Digitizers for film analysis of, 22:4476 (UR-875-219)
  particle tracks in, event selection criteria for analysis of, 22:49121
  particle tracks in, film analysis of, 22:43099
  particle tracks in, high-speed flying image digitizer for film analysis of, 22:40459 (BNL-12679)
  particle tracks in, method for iterative fitting of events involving neutral particles in analysis of, 22:49115 (IS-T-265)
  particle tracks in, method for statistical analysis of data on, 22:370
  particle tracks in, modifications to RHEL geometrical reconstruction programs for analysis of, 22:16903 (RHEL/R-150)
  particle tracks in, modified PEPR-type machine for film analysis of, 22:4475 (PPAD-628-E)
  particle tracks in, operation of SMP for film analysis of, 22:22332(R) (UH-511-23)
  particle tracks in, PEPR (Precision Encoding and Pattern Recognition) system for film analysis of, 22:33663
  particle tracks in, PEPR track following system for analysis of, 22:47376
  particle tracks in, photographic experiments from simulation of, 22:12647
  particle tracks in, picture description language for computer film analysis of, 22:10595 (SLAC-PUB-358)
  particle tracks in, POLLY I film measuring system for analysis of, 22:47381
  particle tracks in, program for determining coordinates of, 22:4472 (JINR-P1-3487)
  particle tracks in, scanning and measurement system operating on-line to computer for film analysis of, 22:10604(P)
  particle tracks in, television measuring projector for film analysis of, 22:10598
  particle tracks in, testing program for generation of fictitious tracks in geometrical reconstruction of, 22:4473 (JINR-P10-3526)
  particle tracks in, use of CDC 160A computer for analysis of, 22:16906
  particle tracks in, use of computer for matching photographs for analysis of, 22:358 (ANL-7346)
  particle tracks in, vidicon system for film analysis of, 22:4474 (ORO-2504-110)
  performance of Saclay 82-cm, 22:1531(R) (RHEL/R-151)
  photographic system for ANL 12-ft hydrogen, 22:12637 (CERN-67-26(Vol.2), pp 493-500)
  photographic system for, development of Fraunhofer holography, 22:38091
  photography system for, design of, 22:30864
  physics of, 22:3559(R) (LAL-1176)
  pressure gages for hydrogen, calibration of quartz piezoelectric transducers used as, 22:40460 (DESY-68/30)
  pressure gaskets for 2-m liquid hydrogen, flat membrane inflatable, 22:12635 (CERN-67-26(Vol.2), pp 479-84)
  proton energy ranges in, analytical formulas for calculating, 22:30865
  prototype development of Mirabelle hydrogen, 22:2422
  refraction in deuterium, $\pi^+ \to \mu^+ + \nu$ decay for index of, (E), 22:32047 (UCID-3162)
  refractive indices of liquid propane in, at 17.4 to 65.8°C and 7.6 to 23.4 atm pressure, 22:16909
  research, 22:15659 (BNL-50057, pp 3-36)
  temperature measurements in CERN heavy liquid, 22:12630 (CERN-67-26(Vol.2), pp 413-24)
  use of hydrogen or hydrogen--neon, for detection of neutrinos, neutrons, and mesons (π^0) at 300-GeV accelerator, 22:13874 (CERN-67-26(Vol.1), pp 49-71)
  vibration of liquid in, during expansion, 22:12625 (CERN-67-26(Vol.2), pp 349-69)
RADIATION DETECTORS, CHEMICAL
    see also Radiation Dosimeters, Chemical
  development of metal oxide-activated glasses as, 22:12593(P)
  performance for dosimetry in human phantoms, 22:8513 (CONF-670219)
  use of polymethylmethacrylate, for mixed gamma--neutron fields in reactors, 22:2434
RADIATION DETECTORS, CHERENKOV
  calibration for various voltages, 22:21318 (UCRL-50176)
  coincidence circuits for meson (K) and meson (π) detection, 22:33690 (ZfK-121, pp 134-248)
  data analysis for gaseous, used in measuring reactor core gamma distribution, use of Langevin's technique for, 22:30832
  description for failed-fuel-element detection, 22:16863
  description of logarithmic, for Madison Event, 22:21318 (UCRL-50176)
  description of threshold, with plexiglas radiator, 22:38008
  design and performance of freon and perspex, for investigation of 120- to 320-MeV/c meson (π) beams, 22:38097
  design and performance of total-absorption lead glass, for studying $\gamma + p \to \pi^0 + p$, $\pi^0 \to \gamma + \gamma$ interactions, 22:371
  design of argon-filled, for monitoring electron beam in Stanford Linear Accelerator switchyard, engineering drawings for, 22:47375
  design of liquid hydrogen and deuterium differential, for measuring π^+ and π^- lifetimes, 22:47374 (UCSB-34-P-135-7)
  design of total absorption nuclear cascade, for detection of high-energy particles, 22:38040
  design study of large aperture gas threshold, using wavelength-shifter technique for light collection, 22:33632 (AD-666558)
  discriminator with small-time skewing for, design and performance of fast-gated, 22:335
  light collection from, solid light funnels for increasing efficiency of, 22:43034
  operation and performance of gaseous, for fission rate fluctuation measurements in reactors, 22:47027
  optical system for focusing wide-angle light in, design of catadioptric, 22:318
  performance in reactor noise analysis system, 22:32976(R) (MIT-2344-12)
  performance of lead fluoride, for high-energy positron detection, 22:28122
  pulses from, design of coincidence circuits for recording, 22:6584
  radiation path in, apochromatization and trigonometric calculations of, 22:2343 (JINR-P13-3488)
  resolution of lead fluoride, 22:40426
  response function for photodiode, determination of, 22:19099 (UCID-4675)
  response of lucite and quartz, to gamma and fast neutron radiation, 22:21318 (UCRL-50176)
  sensitivity of, effects of energy on gamma, 22:25633 (UCID-15318)

timing circuits for, design of fast,, 22:14813
use as anticoincidence shield for cosmic-ray background reduction in thallium-activated sodium iodide detectors, 22:23279
use for measuring activity of beta sources, 22:19122
use for particle velocity determinations, image brightness intensifier for, 22:4541
use in on-line data acquisition system for studying γ + p interactions in GeV range, 22:367
use in system for measuring charge composition of primary cosmic radiation from Z = 1 to 50 at 10 GeV to 100 TeV, 22:40412
use of gaseous, for detection of prompt high-energy gamma rays for reactor power-level monitoring, 22:4440
use of gaseous, for reactor noise measurements, 22:22846

RADIATION DETECTORS, CLOUD CHAMBER
control circuits for Wilson, used for detection and measurement of cosmic radiation, 22:43079
design of diffusion, for investigating photonuclear reactions on helium-3, 22:2359
design of diffusion, for scattering experiments on polarized neutrons, 22:44577 (NP-17572)
design of hydrogen discharge, 22:49118
evaporation and nucleation processes in Wilson, 22:10608
expansion of Wilson, characteristic properties of, 22:43100
particle tracks in picture description language for computer film analysis of, 22:10595 (SLAC-PUB-358)
use of 0.1 atm hydrogen-filled diffusion, for thermal neutron spectroscopy, 22:23316

RADIATION DETECTORS, CRYSTAL
see also Radiation Detectors, Scintillation
description of ferroelectric, for x-ray spectroscopy, 22:12580
design for uv-dosimetry in medicine, 22:40807
design of total absorption nuclear cascade, for detection of high-energy particles, 22:38040
performance for measurement of emission from man, 22:488 (AEEW-M-715)
radiation damage in materials for, in-pile, 22:19580 (BNWL-455, Paper 12.1-100)

RADIATION DETECTORS, FISSION CHAMBER
amplifier for, design of differential, 22:19108
calibration for reactor control systems, 22:28063 (CONF-661020-18)
calibration of B and W Critical Experiment Laboratory multi-rod critical assembly, description of, 22:32740(R) (BAW-3647-7)
calibration to 100 MW of Fermi Fast Breeder Reactor, description of, 22:30120 (APDA-NTS-17)
circuits for automatic reactor control, 22:33691 (ZfK-121, pp 249-319)
circuits for Campbelling measurements, γ discrimination and sensitivities of averaging and rms type, 22:28084
circuits for EBR-2 neutron flux monitoring system, performance of counting-Campbelling, 22:28072
design and performance of fission electric cell, 22:45289
design for local measurement of fast neutron flux, 22:49074
design for neutron flux measurements in reactors, 22:12568 (AEEW-M-492)
design for wide-range, Campbelling, neutron-flux monitoring system for reactors, 22:303 (ANL-7224)
design of in-core regenerative, for neutron flux measurements in reactors, 22:30837
design of multisection, 22:38006
development of regenerative, for in-core neutron flux monitoring, 22:36025 (BNWL-SA-1621(Rev.))
development of regenerative, for measuring high-flux thermal neutrons in reactors, 22:304 (BNWL-430)
fissionable material content in, method for determining, 22:14807
neutron flux measurements in research reactors by, methods for, 22:12110
performance of counting-Campbelling, in EBR-2, 22:14247 (ANL-7380, pp 168-9)
performance of plutonium-239, for fast neutron detection in intense transient gamma field, 22:43053
power supply for, operation and maintenance of, 22:30821 (ORNL-TM-1638(Pt.17))
preamplifier for, design of, 22:51276(R) (IDO-17269)
pulses from, maintenance of amplifier and count rate meter for, 22:25692 (ORNL-TM-1638(Pt.14))
response function calculations for polyethylene-moderated boron carbide, for fast neutrons, 22:4436
uranium reaction determination during Dounreay Fast Reactor fuel loading, use for, 22:30309 (TRG-Report-857)
uranium-235 and uranium-238 fission rates in fast spectra, effects of system heterogeneity on, 22:35333
use for measuring neutron flux under adverse conditions, 22:12573 (ANL-7380, pp 165-7)
use for power density spectral determination in reactors, design of digital transferometer for, 22:23261 (CEA-R-3241)
use in Campbelling detection system for neutrons, 22:6605
use in neutron diffractometer system, 22:19187 (IS-1740)
use in wide-range nuclear channels for reactor power and period measurement, 22:53488
use with activation detector for absolute neutron flux determination, 22:28105

RADIATION DETECTORS, FISSION FOIL
counting data of, computer programs for processing, 22:8335 (ANL-7356)
design and performance for neutron detection, using uranium or thorium fissionable materials and glass or mica as detector materials, 22:40370
design and performance for personnel neutron dosimetry, 22:19168
design and performance of mica- and glass-sandwiched, for detection of neutrons, 22:40434
design and performance of uranium--photographic plate, for neutron flux measurements, 22:38028
fission fragment recording in mica of, 22:36069
performance of Hurst, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
preparation and standardization of, 22:37340(R) (EANDC(E)-89(U))
track recording media in, evaluation of mica, quartz, and dacron, 22:36071
uranium-235 and uranium-238 fission rates in fast spectra, effects of system heterogeneity on, 22:35333
use of uranium-234--mica, for fission rate mesurements in ZPR-6, 22:48747
use with solid-state track detectors for neutrons, 22:6652 (ORNL-4168, pp 183-230)

RADIATION DETECTORS, GEIGER-MUELLER
ageing of self-quenching, 22:2351
circuit for, design of fault, 22:47338(P)
circuits for, design of portable scaler, 22:45277 (CNEA-204)
dead time in carbon dioxide-filled, 22:36063
dead time of 4π, method for reduction of, 22:2342 (CEA-R-3189)
dead time of, corrections for, 22:23280
design and performance of anticoincidence-shielded system for assaying low-level beta-emitting solid samples, 22:28067 (TID-24454)
design and properties of open self-quenching, for detection of exoelectrons, 22:10557
design for detecting radioactive contamination on surfaces, 22:43036(P)
design for detection of phosphorus-32 mobility in blood vessels of human intestines, 22:10829
design for high-altitude dosimetry, 22:28181
design for measuring flow direction of underground water, 22:33678
design for monitoring iodine-131 and particulate fission products in stack disposal, 22:45306
design for ultraviolet radiation with minimum spurious count rate, 22:21331(P)
design modifications for leveling response curve for gamma radiation, 22:4452(P)
design of miniature, for personal radiation monitor, 22:14818
design with activable cathodes, for measurement of integrated fluxes of thermal neutrons, 22:45310
detection of radon leakage from radium needles, plaques, and tubes by, 22:2515
development and testing for use for personnel dosimetry, 22:21534
discharge propagation in, method for determining velocity of, 22:28114
efficiency for measuring carbon-14 metabolism by phytoplankton, 22:38000
exo-electron emission in, during operation with reversed potentials, 22:16873
geometry with respect to source, system for exactly orienting, 22:28115
model of, solid-state detector, 22:37977 (CONF-670545-, pp 17-35)
operation at high temperatures, preparation technique for, 22:21333(P)
operation of, calculation of current and voltage pulses in, 22:43049
performance for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540-1)
performance for measurement of γ activity in atmospheric samples, 22:45563
performance for measurement of iodine radioisotopes in tap water, 22:6815
performance for monitoring environment of work areas, 22:21535
performance for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance for whole-body γ dosimetry of man, 22:6848
performance of ADH-42, 22:14785
performance of, over-all correction factor for, 22:43039
performance of, research on, 22:19342
recovery time of, 22:23280
sensitivity for determination of beta-emitting radioisotopes in liquids, 22:19116
sensitivity for gamma dosimetry in Operation HENRE, 22:6652 (ORNL-4168, pp 183-230)
use for argon-41 determination in air, 22:6569
use for detection of beta particles and gamma radiation in monitoring personnel contamination, 22:25659(P)
use for determining energy yield from beta sources, 22:6592
use for determining moisture in gases by radio-release

method using carbon-14, 22:16421
use for measuring activities of tritium and carbon-14 by incorporating gas samples, 22:6574
use for measuring activity of radioisotopes, 22:4421
use for measuring thickness of nickel plating on uranium, 22:14867 (AWRE-O-2/65)
use for monitoring gamma radiation, 22:43047
use for soft x-ray spectroscopy, 22:4466
use for thermionic emission measurements, 22:34328
use in balances with radioisotope sensing elements, 22:4493
use in carbon-14 dating method, history of, 22:6453
use in gamma radiometric oil gaging system for C-5A aircraft, 22:38130
use in gas monitor for measuring krypton-85, 22:14613
use in surface contamination monitor, 22:45272 (AAEC/M-84)
use of array of, for beta and beta--gamma coincidence detection, 22:6579
use of compensated internal gas, for preparation of standard gaseous radiation sources, 22:16771 (CEA-R-3365)
use of gas flowing, for measuring activity of tritiated water, 22:4056
use of gas-flow, in 2π geometry for low-level beta activity measurements, 22:33647
use of halogen-quenched, for gamma detection in moisture gage, 22:10620(P)
uses in association with medical applications of radioisotopes, 22:19216
windows for, preparation of mylar, 22:45321

RADIATION DETECTORS, IONIZATION CHAMBER
adjustment and control of, device for, 22:30823 (RISO-M-678)
amplifier for gamma-compensated, used for monitoring reactor power, 22:43029 (ORNL-TM-1638(Pt.36))
calibration of, 22:38717(R) (COO-323-17)
calibration of ATR, method for, 22:33071
calibration of B and W Critical Experiment Laboratory multi-rod critical assembly, description of, 22:32740(R) (BAW-3647-7)
calibration of graphite wall and polyethylene wall gas-filled, description of, 22:35602 (N-68-10291)
calibration of thimble, at 5 to 30 MeV, absorbed electron dose, 22:19118
calibration to 100 MW of Fermi Fast Breeder Reactor, description of, 22:30120 (APDA-NTS-17)
cathode pulses from gridded, use for alpha--gamma angular correlations, 22:23282
characteristics for assessment of radiation dose to skin, 22:37994 (RD/B/N-1107)
circuit for survey meter, solid-state, 22:21315 (ORNL-4219, pp 36-46)
circuits for Campbelling measurements, γ discrimination and sensitivities of averaging and rms type, 22:28084
circuits for portable, criteria for MOSFET, 22:21311 (CLOR-67/D)
counting rate and optimal dimensions for measuring concentration of beta-active gases, calculation of, 22:45285
current amplifiers and ratio meter for, used for measuring x-ray dose distribution, 22:25680
current integrators for, design of, 22:28131(P)
current variations from, neutron flux determination in reactors from, 22:25638
description of coaxial reflection, for monitoring beam losses in CERN synchrotron, 22:14795
design and operation of low-level Oeschger-type, 22:6576
design and operation of low-level quartz tube, 22:6576
design and performance of boron trifluoride, for neutron detection in high gamma fluxes, 22:36051(P)
design and performance of boron-coated, for measuring thermal neutron flux, 22:49066 (AERE-R-5800)
design and performance of integrating-type, for radiation detection aboard OGO-I and III satellites, 22:43041
design and performance of portable, for gamma dosimetry, 22:30867 (ORNL-TM-2145)
design and performance of tissue-equivalent filled, for dosimetry of photons, 22:14863
design and use of portable, for measuring environmental gamma dose to populations, 22:2383
design for improved temperature stability, 22:47341(P)
design for measurement of naturally occurring α radioactivity in biological materials, 22:2517
design for neutron flux measurements in reactors, 22:12568 (AEEW-M-492)
design for personnel dosimetry of beta, gamma, and x radiation, 22:49129(P)
design for radial dosimetry of protons incident on hydrogen ion tracks, 22:4600 (BNL-11877)
design for use at high temperature, 22:30827(P)
design of assembly of, for monitoring environmental radiation, 22:2382
design of boron trifluoride, for neutron detection at high temperature, 22:38014(P)
design of boron-coated, for neutron detection, 22:16890(P)
design of flowthrough, with internal radiation source for detecting impurities in gases, 22:23356(P)
design of flowthrough, with internal standard radiation source for gas analysis, 22:28207 (NP-17355)
design of Garigliano Power Reactor moveable, 22:48645 (GEAP-5623)
design of gridded, for alpha spectroscopy, 22:8374
design of inflated balloon, for low-energy, low-level, x-ray exposure measurements, 22:40380
design of multiplate, with gamma compensation and guard-ring electrodes, 22:38021(P)
design of muscle-equivalent, for radiation dose measurements, 22:2380
design of open-point, for detecting low-level beta particles, 22:36054
design of position-sensitive, 22:47350
design of position-sensitive, using risetime measurement, 22:47351
design of resonant gamma, for detecting Moessbauer effect in tin-119, 22:47330
design of thin-wall, for low-level radiation environment, 22:2378
design of tissue-equivalent plastic, providing long-term sensitivity stability, 22:49326 (NYO-2740-5, pp 6-200)
design of tissue-equivalent, for beta particles and photons, 22:23339(P)
design of tissue-equivalent, for high-altitude dosimetry, 22:28181
design of well-type, for determining radioisotope activity in liquid samples, 22:36041
development for use in fast neutron dosimetry, 22:498(T) (NP-tr-1575)
development of compensated, for NERVA, 22:12679 (ANL-7380, pp 161-3)
development of Kanne, for tritium monitoring in atmosphere, 22:36030 (DPSPU-67-30-1)
development of, review of, 22:43126
dielectrics for, linear energy transfer of gamma radiation and neutrons in liquid, 22:16879
dielectrics for, linear energy transfer of gamma radiation and neutrons in liquid, 22:30824(T) (SLAC-Trans-81)
dimensions of xenon- and methane-filled, determination of polarization of weak 10-keV x-ray beams from optimization of, 22:25673
dose calibration of thimble, in water phantoms for 30-MV x rays, 22:380
dose rate in cavity, effect of thin air-equivalent layers on pressure dependence of mean, 22:38113
dosimetry of walls of, use of phantoms for, 22:43329
efficiency for personnel radiation monitoring, 22:28113
efficiency for radioactive dust measurements, 22:2233
efficiency for tritium counting, 22:42586 (CEA-R-3348)
efficiency of CC5, method of measuring, 22:16272 (CEA-R-3326)
electron scattering in, dosimetry errors due to, 22:47386
energy absorption and ionization in aluminum-walled, from 100-keV x rays, 22:38049
evaluation for Savannah River Plant environs monitoring, 22:2245
gas fluctuation coefficient in, minimization of, 22:6614
gas mixture for, tissue-equivalent, 22:4450(P)
ionization and ion pair production in, mass spectrometric method for determining cross sections for, 22:43075
ionization currents in hexane-filled, temperature and electric field dependence of α- and β-induced, 22:51239
maintenance of Garigliano Power Reactor, description of, 22:22713(R) (TID-24304)
modification of pool reactor γ-compensated, low-range performance improvement by, 22:53452
mounting assembly for, design of, 22:12594(P)
operation and performance of halogen-quenched, 22:47333
organic compounds in, response of, 22:6587
performance as standard for dosimetry of high energy electrons, 22:28480
performance characteristics of gamma-compensated neutron, for NERVA reactor control system, 22:28085
performance for bremsstrahlung dosimetry in tissues, phantom studies on, 22:51618
performance for dosimetry in human phantoms, 22:8513 (CONF-670219)
performance for dosimetry in personnel, 22:21512
performance for dosimetry of 6 MeV x rays, 22:28530
performance for dosimetry of electron beams, 22:36284
performance for dosimetry of electrons in bacteria and yeasts, 22:38278
performance for dosimetry of γ and x, 22:49352
performance for dosimetry of γ- and x radiation in phantoms, 22:28529
performance for dosimetry of micro-beam of x rays, 22:23531
performance for dosimetry of personnel, 22:21519
performance for γ-dosimetry in human phantoms, 22:38325
performance for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540-1)
performance for measurement of depth doses of γ or orthovoltage x rays, 22:31086
performance for measurement of γ emission by sodium in water phantoms, 22:512
performance for measurement of x radiation leakage from target housing of linear accelerator, 22:28498
performance for measuring individual doses, 22:23523
performance for monitoring environment of work areas,

22:21535
- performance for monitoring of air in radiochemical laboratories, 22:45560
- performance for personnel dosimetry, 22:21534
- performance for tritium monitoring in air, 22:8527 (SC-DC-67-2191)
- performance in measuring α activity of natural environment samples, 22:2211
- performance in measuring natural radiation, effects of fallout on, 22:2214
- performance of dual carbon-platinum, for dosimetry of therapeutic γ, 22:51613
- performance of miniature, for flux measurements inside beta-emitting medium, 22:25652
- performance of tissue equivalent, for measurements of absorbed radiation dose by accelerator personnel, 22:38328
- performance of tissue-equivalent, for monitoring air in laboratories, 22:45557
- performance of Yankee Power Reactor, analysis of, 22:30167(R) (WCAP-3708)
- performance of, research on, 22:19342
- pulse converter design for, 22:36065
- pumps for, design of variable pumping speed, demountable glass circulation, 22:21237 (UUIP-547)
- reactivity measurements in research reactors using, on-line, 22:37545
- reactivity meter for, used in research reactors, 22:38043
- readout system for dosimetry, 22:47387
- readout system for tissue-equivalent, for dosimetry, 22:49132
- recombination effects on hexane, irradiated with gamma rays, 22:2430
- recombination theories for determining LET and QF, 22:38051
- resolution of, design of FET preamplifier for improved, 22:14819
- resolution of, intrinsic, 22:40430
- resolving power of finite-sized, use of modulation transfer function for determining, 22:23286
- response characteristics of, computer program for determining plateau slope, 22:12574 (CEA-R-3190)
- response of, calculations for, 22:19105
- response testing in swimming pool reactor neutron measurement channels, method for, 22:42383
- sensitivity of Garigliano Power Reactor in-core, 22:48645 (GEAP-5623)
- sensitivity of thick-walled aluminum, for bremsstrahlung beams at 4 to 27 MeV, (E/T), 22:46664
- testing of SEFOR, static and dynamic, 22:14137(R) (GEAP-5561)
- use as exposure timer for pediatric x-ray equipment, 22:25635
- use for beta particle backscattering analysis in mixtures of close atomic numbers, 22:23342
- use for calibration of ferrous sulfate dosimeters, 22:38271
- use for detection of environmental radiation, 22:12578
- use for determining carbon-14 content in expired air of man, 22:10554
- use for determining tritium content in water, 22:6575
- use for dosimetry of soft x rays, 22:40713
- use for electron dosimetry by secondary electron equilibrium, 22:51260
- use for fast neutron flux measurements, 22:4428 (NP-17063)
- use for measurement of beta energy from tritium decay, comparison of, with liquid scintillation counter, 22:51665
- use for measurement of HTO vapor in air at Chalk River, 22:14999 (AECL-2699)
- use for measuring absolute absorbed dose, 22:14862
- use for measuring activity of radioisotopes, 22:4421
- use for measuring depth dose distribution of 20-MeV electrons in Perspex, 22:51690
- use for measuring dose rate and quality factor distribution of neutrons up to 700 MeV in tissue-equivalent phantoms, 22:14823(T) (LA-tr-68-8)
- use for measuring energy fluence of x radiation, 22:25651
- use for measuring gamma activities of cobalt neutron flux monitors, 22:4422 (AERE-R-5179)
- use for negative reactivity measurement of BSR, description of, (E/T), 22:35635
- use in air and depth dosimetry, Fourier analysis of energy dependence of blurring effects in, 22:19166
- use in air dosimetry, Fourier analysis of blurring effects in, 22:10613
- use in depth dosimetry, Fourier analysis of blurring effects in, 22:10614
- use in ionization calorimeter for cosmic rays, 22:6650
- use in measurements of angular and energy distributions of fission fragments, method for, (E), 22:48589 (SRARI-P-3)
- use in monitoring system for manned space systems, proposal for, 22:36039
- use in personal gamma- and x-ray dosimetry, 22:4488
- use in radiometric instrument for measuring hydrogen cryogenic densities and qualities, 22:38132
- use in reactor control system for startup, 22:47324(P)
- use in tracer method for continuous measurement of oil consumption in internal combustion engines, 22:14700
- use of 4π, for measuring activity of gamma sources, 22:14782
- use of boron trifluoride, for calibration of neutron standard, 22:6571
- use of boron-coated, in Campbelling detection system for neutrons, 22:6605
- use of extrapolation, for calibration of radiation detectors for measuring beta doses, 22:4484 (NP-17062)
- use of Farmer--Baldwin and Victrometer, for dosimetry of high-energy x radiation, 22:25681
- use of gamma- and neutron-sensitive, for power spectral density measurement in HFIR, 22:25096 (ORNL-TM-2144)
- use of graphite, for standardization of cobalt-60 gamma source, 22:6565
- use of gridded, for determination of relative content of uranium-235 in enriched uranium, 22:30462
- use of Kanne system, for tritium monitoring of Savannah River Production Reactors, 22:35455 (DPSPU-66-30-13)
- use of multiplate, as quantameter for bremsstrahlung beam energy measurements, 22:46687
- use of Nishina-type, for determining cosmic ray spectrum, 22:4442
- use of paired, for measurement of dose equivalent in mixed neutron--gamma fields, 22:12659
- use of thin-wall, for dosimetry in heavy ion irradiation of mammalian cells, 22:26752
- use of tissue-equivalent, for dosimetry of fission neutrons, 22:30866 (BNL-12452)
- use of well-type, in refined metrology, 22:47316 (CEA-R-3438)
- use to control liquid deposition on sheets, 22:43133(P)
- use with scintillation detectors for measurements in fast neutron (n,α) reactions with nuclei, 22:38009
- windows for gas-filled, for x-ray detection, method of stretching polypropene for use as, 22:38020

RADIATION DETECTORS, PROPORTIONAL
- afterpulses in, analysis of time and energy distributions of, 22:16867
- amplifier for boron trifluoride, design of high-speed, 22:51276(R) (IDO-17269)
- amplifiers for, pulse shaping in, 22:8344
- anodes of high-pressure 4π, use of gold-coated quartz fiber as, 22:6610
- background reduction in, 22:25440(R) (MLM-1443)
- background reduction in x-ray, by pulse-shape discrimination, 22:45273 (AERE-R-5749)
- background reduction through risetime discrimination in, used for detection of cosmic x radiation, 22:28078
- calibration for γ dosimetry in tissues, 22:28187
- calibration of B and W Critical Experiment Laboratory multi-rod critical assembly, description of, 22:32740(R) (BAW-3647-7)
- calibration of boron trifluoride-filled and boron-coated, for reactor control systems, 22:28063 (CONF-661020-18)
- calibration of x-ray equipment by, 22:515
- circuits for coupling boron trifluoride, for neutron time-of-flight spectroscopy, 22:38067 (EUR-3942)
- data reduction from 4π proton-recoil, fast neutron energy spectra from, 22:49067 (ANL-7394)
- dead time measurements of, coincidence method for, 22:8349
- description of boron trifluoride, for detection of 0- to 14-MeV neutrons, 22:4445
- description of large area, for beta activity measurements in coolant of Studsvik R2 research reactor, 22:37970 (AE-319)
- design and efficiency of large-window, 22:8357
- design and performance for fast reaction detection and dosimetry, 22:19112
- design and performance for measuring neutron dose equivalent at 10 keV and up, 22:28175 (AERE-R-5656)
- design and performance of 4π, for absolute measurement of β-emitters, 22:16858 (CEA-R-3362)
- design and performance of boron trifluoride, for measuring photoneutrons at energies up to 5 MeV, 22:19110
- design and performance of helium-3-filled, spherically moderated for measuring neutron dose equivalent, 22:28174 (AERE-R-5131)
- design and performance of multiwire, for analyzing beam profiles, 22:45276 (CERN-68-33)
- design and performance of portable fast-neutron dose-equivalent, 22:2371
- design and performance of proton-recoil, with pulse shape discrimination for core neutron spectra measurements in reactors, 22:33659 (IN-1054)
- design and performance of spherical, 22:14810
- design and performance of tissue-equivalent, for dosimetry, 22:38119
- design and performance of tissue-equivalent, for gamma- and neutron-dosimetry at high altitudes, 22:4482 (BNWL-SA-1364)
- design and performance of tissue-equivalent, for neutron dose measurements in mixed neutron--gamma fields, 22:36026 (BNWL-SA-1632)
- design and testing of helium-3-sandwiched, for neutron spectroscopy in critical assemblies, 22:47360 (IITRI-578-P-31-2)
- design and testing of proton recoil, for neutron spectroscopy in critical assemblies, 22:47360 (IITRI-

578-P-31-2)
design and testing of thin-window, for x radiation, 22:37991 (N-68-11367)
design and use for analyzing x-ray fluorescence, 22:310 (ORNL-IIC-10(Vol.2), pp 817-4)
design and use of high-pressure 4π, for radionuclide electron-capture studies, 22:6564
design and use of proton-recoil, for fast neutron monitoring, 22:6570
design and use of x-ray, for radiometric analysis of low-activity sources, 22:311 (ORNL-IIC-10(Vol.2), pp 944-62)
design for alpha detection in air, 22:19126(P)
design for detecting x radiation from 1 to 8 angstroms, 22:47340(P)
design for measuring beta activity of gases, 22:21310 (CEA-R-3403)
design of boron trifluoride, for neutron monitoring at Van de Graaff accelerator, 22:47315 (BNWL-715(Pt.1), pp 54-60)
design of flow through dose-rate, for measuring gas density, 22:28200(P)
design of flowthrough, for measuring alpha and beta contamination of clothing, 22:45313
design of gas-flow, for low-energy radiation, 22:4451(P)
design of graphite moderated, for neutrons, engineering drawings for, 22:40373
design of graphite-moderated boron trifluoride, for neutron detection, 22:38044
design of helium-3 counter for neutron beam density measurements, 22:5708 (RISO-144)
design of high-sensitivity, for x-ray spectroscopy, 22:6621
design of large area, for detection and measurement of cosmic radiation, 22:36107
design of Lyman-alpha photon, filled with carbon disulfide, 22:16886
design of methane-filled, for detection of alpha, beta, and gamma radiation, 22:30819 (ARH-488)
design of moderated and unmoderated boron trifluoride, for detecting thermal and fast neutrons, 22:33656(P)
design of moderated spherical helium-3-filled, for neutron dose-equivalent evaluation, 22:43123
design of proton-recoil, with multiple radiators for fast neutron dosimetry and flux measurements, 22:45274 (BARC-330)
design of rocket-borne high-resolution, for x-ray spectroscopy, 22:28146
design of rocket-borne, thin-window, for detection of cosmic x radiation, 22:38022
design of tissue-equivalent, for linear energy transfer measurements, 22:28181
design of tissue-equivalent, for measuring radiation energy absorption spectrum in chromosomes, 22:38053
design of wall-less, 22:49326 (NYO-2740-5, pp 6-200)
development for beta and x-ray spectroscopy, 22:14826
development for dosimetry of cobalt-60 γ radiation in tissues, 22:28187
development for intensity measurements of photons down to 100 eV, 22:19148
development for use in radiometric analysis, 22:33212
development of gas-filled, 22:11944(R) (AECL-2780)
development of low-level, for determining argon-39 content in atmosphere, 22:6577
efficiency for neutron counting in plutonium fluoride determination, 22:48811 (ANL-7402)
efficiency of internal, for absolute measurement of radioisotope activity, 22:14776
electronic equipment associated with 4π, description of, 22:6606
end-effect elimination in, using field tube pulses, 22:36042
energy absorption and ionization in tissue-equivalent, for low-energy x-ray detection, 22:36050
energy resolution of position-sensitive, 22:36023(T) (ANL-Trans-621)
energy resolution of x-ray spectrometers of, for determination of elements with adjacent atomic numbers, 22:43097
geometry for microdosimetry, path length distributions in cylindrical, 22:38052
method for simultaneous tritium and carbon-14 determination in animal cells, 22:51233
model of, solid-state detector, 22:37977 (CONF-670545-, pp 17-35)
operation of methane and argon--methane 4πβ, analysis of, 22:21327
performance for analysis of reactor noise, limitations in, 22:49084
performance for distinguishing protons from mesons (π) in cosmic radiation by relativistic rise of most probable energy loss, 22:36044
performance for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540-1)
performance for neutron monitoring, effects of snow on, 22:45308
performance of banks of boron trifluoride-filled, for determining neutron spectra, reproducibility of, 22:49112
performance of boron-10-coated, for fast neutron detection in intense transient gamma field, 22:43053
performance of Hurst, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance of moderated uniform-sensitivity boron trifluoride, for fast neutron flux measurements, 22:28118
performance of neutron, for remote determination of plutonium in process materials, 22:25443 (ANL-7375, pp 46-94)
performance of overfilled 515G, for recording cosmic-ray intensities, 22:47345
performance of Rossi tissue-equivalent, 22:38054
performance of tissue-equivalent liquid filled, for measurements of radiation dose distribution in relation to LET for accelerator personnel, 22:38328
power supply for, stabilized high-voltage, 22:47326(P)
properties of gasflow system in, analysis of, 22:49326 (NYO-2740-5, pp 6-200)
pulse discrimination in, with respect to rise time, 22:43074
pulse height of, effect of anode voltage on, 22:21314 (ORNL-4219, pp 30-5)
pulse-height distributions from boron trifluoride, wall effect corrections for calculating, 22:16865
pulse-height spectra from, method for efficient representation of, 22:16866
radiation effects on sensitivity of boron trifluoride, with aluminum cathode, high-flux neutron, 22:16965 (CEA-R-3343)
resolution of, intrinsic, 22:40430
resolution of, theoretical, 22:10550
resolution of, theory of, 22:23291
response curves for AARR boron trifluoride, effects of position on, 22:32960 (ANL-7310, pp 31-135)
response functions for 4π proton-recoil, effects of finite size on, 22:43052
response of 4π, for gamma radiation, 22:14770
sensitivity for measuring activity of beta sources, method for determining stability of, 22:14768
sensitivity of moderated boron trifluoride, for neutron dosimetry, 22:21362
stability of x-ray, effects of extreme operating conditions on, 22:2346 (ORNL-IIC-10(Vol.1), pp 376-92)
use as x-ray detectors for analysis of low-grade ores, 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
use for controlling streamer chambers used in recording stopping of slow mesons, 22:6648
use for detecting plutonium and americium in wounds, 22:8340 (RFP-1068)
use for measuring activity of radioisotopes, 22:4421
use for measuring alpha energy transfer to soft tissues, 22:38311
use for measuring small-angle x-ray scattering, 22:49169
use for personnel neutron dosimetry, 22:43300 (AERE-PR/HPM-12)
use for x-ray fluorescence analysis of binary and ternary systems, 22:30831
use in 4πβ--γ coincidence measurements of neutron-activated gold foils, internal conversion and gamma corrections for, 22:21325
use in β^+--γ coincidence measurements for positron emitting nuclides, 22:23273
use in detecting α-excited x rays, 22:249(R) (NYO-3491-2)
use in fast Moessbauer data-acquisition system, 22:2397 (ORNL-IIC-10(Vol.1), pp 142-56)
use in plutonium monitoring, 22:35881 (ANL-7450, pp 21-38)
use in radioisotope standardization, 22:6547
use in soil-moisture probes with neutron sources, 22:6667
use in telescopic arrangement for detection of charged particles from fast neutron reactions, 22:43033
use in telescopic arrangement of detectors for charged particles from fast neutron reactions, 22:43065
use in x-ray--alpha coincidence circuit for determining isotopic composition of plutonium, 22:47312 (BNWL-715(Pt.1), pp 20-9)
use of 4π, for measuring activity of cesium-137, corrections for, 22:14774
use of air, in walk-over alpha hand and shoe monitor, 22:25639
use of BF_3 counters, for Peach Bottom Unit 1 noise measurements, 22:22693 (GAMD-7908)
use of boron trifluoride, cosmic neutron lifetime measurements in, 22:12576
use of boron trifluoride, for calibration of neutron standard, 22:6571
use of boron trifluoride, for measuring neutron spectra in reactors by transmission method, 22:23288
use of boron trifluoride, for neutron detection in moisture gage, 22:10620(P)
use of boron trifluoride, for neutron dose rate measurements, 22:19161 (SZS-2/68)
use of boron trifluoride, in control system for countercurrent separation of plutonium from fission products and uranium, 22:28198(P)
use of boron trifluoride, in spherical neutron remmeters, 22:28183
use of boron trifluoride, with geometrically designed moderator for detecting fast neutrons, 22:23299
use of boron trifluoride, with neutron sources for

measuring calorific values of heavy oils, 22:30885
use of cylindrical gas-discharge, for cosmic-ray absolute intensity measurements, (E), 22:47850
use of end-window, for x ray detection in microanalysis, 22:6612
use of flow-through, for tritium and carbon-14 determination in effluents from gas--liquid chromatography column, 22:10549
use of flowthrough, for detecting radon-220, calibration technique for, 22:40372
use of gas, for detection of cosmic mesons (π) and protons at energies near or greater than 100 GeV, 22:365
use of helium-3, for neutron spectroscopy, 22:10576 (CEA-R-3310)
use of helium-3, in well logging for studying dump leaching processes, 22:40431
use of Hurst tissue-equivalent, for estimating tissue dose to man from cosmic neutrons, 22:2437
use of internal, for measuring activity of carbon-14, 22:14775
use of moderated boron trifluoride, in beam monitoring and rapid cutoff system for 88-in. cyclotron, 22:3562 (UCRL-17728)
use of multiwire, to select and localize charged particles, 22:36059
use of proton-recoil, for measuring fast neutron spectra in reactors, computer program for data analysis in, 22:25631 (AWRE-O-9/68)
use of proton-recoil, for neutron spectrum measurements in ZPR, 22:4433
use of proton-recoil, for neutron spectrum measurements in SNEAK and SUAK, 22:4432
use of tandem, in counter telescopes for measuring angular distribution and energy of charged particles produced in neutron reactions with nuclei, 22:6638
use to measure soft x-ray dose to man from plutonium-239 in lungs following inhalation of palladium-103-labeled areosols, 22:43300 (AERE-PR/HPM-12)
use with neutron sources for moisture measurements, effects of ignition noise on, 22:4492

RADIATION DETECTORS, SCINTILLATION
see also Scintillation Cameras
amplifiers for, design of linear pulse, 22:12585
amplifiers for, pulse shaping in, 22:8344
assay of carbon-14-labeled hydroxytryptophan and tryptophan by liquid, 22:457
background reduction in liquid, for measuring weak beta sources, 22:40362
background reduction in thallium-activated, use of Cherenkov anticoincidence detector shield for cosmic-ray, 22:23279
background reduction of thallium-activated sodium iodide, use of massive cosmic-ray shielding for, 22:23259 (BNWL-SA-1516)
book: Scintillation Spectroscopy of Gamma Radiation, Vol. 1, 22:8377
calibration for whole-body counting, 22:6848
calibration of, 22:40358 (IAN-RS-ERA-2)
calibration of liquid, design of system for automatic, 22:14843(P)
calibration of liquid, for beta spectroscopy, design of automatic system for, 22:40439(P)
calibration of silver-activated zinc sulfide, for detecting alpha particles, 22:51234
calibration of STSF lithium-6 loaded glass, description of, 22:47008(R) (GA-8715)
calibration of thallium-activated sodium iodide, equipment and methods for, for gamma spectroscopy, 22:343 (ORNL-4118)
calibration of thallium-activated sodium iodide, for gamma spectroscopy, 22:49134
calibration of three-crystal ring-type, for measurement of iodine-131 uptake by thyroid gland in man, 22:12864(R) (ORO-2401-10)
cell for liquid, design of, 22:23305(P)
chamber design for counting activity of radium-containing solutions, 22:16459
characteristics for assessment of radiation dose to skin, 22:37994 (RD/B/N-1107)
characteristics of europium-activated lithium iodide, for detecting neutrons, 22:28178 (NP-17349)
characteristics of lithium glass, for detecting neutrons, beta particles, and gamma radiation, 22:33644
characteristics of toluene-blended liquid, for tritium counting, 22:47358
circuit for pulse discrimination in silver-activated zinc sulfide, for simultaneous detection of alpha particles and fission fragments, 22:43071
circuits for, description of, 22:10573(P)
circuits for, design of nanosecond pulse shaper, 22:6583
circuits for, design of pulse-shape discrimination, 22:6599
collection yield of cylindrical liquid, for photons, 22:6593
computer techniques in analyses using, 22:45006
conference on, 22:40429
construction for study of metabolism of proteins in man, lead-shielded whole-body, 22:19392
counting of emissions from potassium-42 in plant tissues by, 22:503
counting rate and optimal dimensions for measuring concentration of beta-active gases, calculation of, 22:45285
crystal intrinsic resolution in thallium-activated sodium iodide, Monte Carlo method for determining, 22:40423
data acquisition system for, CAE 90-10 computer-based, for polarization parameter measurements of π + p interactions, 22:19155
data analysis for gamma spectroscopy, 22:8382
data display system for, design of, 22:2386(P)
data from Bonner, multisphere technique for analysis of neutron, 22:36110 (LA-3700)
data from, development of computer-based system for evaluation of, 22:12569(R) (ANL-7311)
data recording system for use with, design of, 22:10827(R) (UCD-472-114)
description for measuring radioactivity of clear liquids, 22:19125
description of array of thallium-activated sodium iodide, for neutron time-of-flight measurements, 22:21376 (ORNL-4219, pp 1-3)
description of flowthrough liquid, for low-level beta-emitting radioisotopes, 22:25644
description of flowthrough, for failed-fuel-element detection, 22:16863
description of gallium-activated zinc oxide, for detecting alpha particles, 22:28100
description of gas, in electric field for charged-particle detection and spectroscopy, 22:45278 (JINR-P3-3904)
description of high-pressure gas, with position-independent pulse height, 22:6607
description of low-level beta liquid, with automatic compensation for quenching effects, 22:14794
description of multi-channel system, for Rossi-α measurements, 22:12087 (BNWL-472, pp 5.1-16)
description of oxygen-doped zinc telluride, 22:40428
description of tellurium-doped cadmium sulfide, 22:40428
description of thallium-activated sodium iodide, for Moessbauer spectroscopy, 22:40458
description of, system for measuring probability of zero counts for various time intervals in reactor noise analysis, 22:12087 (BNWL-472, pp 5.1-16)
design and calibration of flowthrough europium-activated calcium fluoride, for measuring krypton-85 in natural gas, 22:14756(R) (UCRL-50007-67-2)
design and calibration of thallium-activated sodium iodide, for measuring atmospheric density from space vehicle by gamma-scattering technique, 22:21366
design and operation of 4π liquid, for whole-body counting, 22:19104
design and operation of low-level plastic, 22:6576
design and performance for antineutron detection at 2 to 4 GeV/c, 22:372
design and performance for antiproton detection at 1.5 to 3.3 GeV/c, 22:372
design and performance for meson (π) detection, 22:372
design and performance of 1000-liter Arapahoe type H-F, for determining cross sections for photon reactions (γ,n) and (γ,2n) at 10 to 50 MeV, 22:16881
design and performance of anthracene and europium-activated calcium fluoride, for beta spectroscopy, 22:45322
design and performance of large area, 22:43042
design and performance of large sodium iodide, for measurement of linac thick-target bremsstrahlung spectra, 22:38065 (CONF-680706-1)
design and performance of large-area, with prismatic Plexiglas light guides, 22:8359
design and performance of liquid, for natural carbon-14 beta activity, 22:19142
design and performance of liquid, whole-body counting, 22:14758
design and performance of plastic and thallium-activated sodium iodide, for use as extremely low-level gamma spectrometer, 22:353
design and performance of portable transistorized plastic, for beta and gamma detection, 22:23301
design and performance of proton-recoil plastic, for time-of-flight neutron spectroscopy, 22:6635
design and performance of rubidium-activated cesium iodide, for tracer studies in man, 22:28071
design and performance of sealed helium-3 gas, for measuring neutron spectra, 22:47329
design and performance of thallium-activated sodium iodide, for x-ray spectroscopy at 15 and 25 MeV, 22:8373
design and performance of thallium-activated sodium iodide, for gamma spectroscopy in health physics, 22:302 (AECL-2767)
design and performance of thallium-activated sodium iodide, for low-level gamma measurements, 22:23283
design and performance of thallium-activated sodium iodide, in combination with photomultiplier tube, 22:8354
design and performance of thin large-area plastic, for primary cosmic ray detection, 22:43056
design and use for analyzing x-ray fluorescence, 22:310 (ORNL-IIC-10(Vol.2), pp 817-4)
design and use for tritium detection, 22:10538 (CEA-R-3321)
design and use of thallium-activated sodium iodide, in

aerial surveying of gamma radiation, 22:2381
design as thermal and epithermal neutron detectors in well logging, 22:40477
design for background radiation measurements, 22:2415
design for beam monitoring in FIAN electron synchrocyclotron, 22:32409
design for continuously monitoring activity of liquids, 22:16892(P)
design for cosmic-ray spectroscopy, 22:38083
design for cosmic-ray spectroscopy, 22:36089
design for detecting fissionable materials, 22:47352(P)
design for gynecological radiotherapy, 22:51264
design for linear scanning of man, 22:36296
design for low-level radiation detection in gases, 22:4454(P)
design for measuring blood-flow using radioactive tracers, 22:45287(P)
design for measuring fission product decay in spent reactor fuel elements, 22:36038(P)
design for monitoring argon-41 in ground-level atmosphere near reactors, 22:18947 (BNL-12154)
design for monitoring x radiation from plutonium-239, 22:21307 (AERE-HP/M-139)
design for radiometric liquid fuel gage, 22:43140(P)
design for solid-state counting of biological materials, 22:4443
design for time-of-flight spectroscopy of 10- to 100-MeV neutrons, 22:40447
design for use in well logging for detecting epithermal neutrons, 22:38013(P)
design for whole-body counting of inhaled plutonium-239 in dogs, 22:8558
design of 4π plastic, for determination of cesium-137 and potassium-40 in infants, 22:36074
design of anthracene, for counting weak-beta-emitting nuclides in liquid samples, 22:38038
design of array of sodium iodide, for angular correlation measurements, 22:10548
design of array of, for use as digital autofluoroscope, 22:25637
design of boron-loaded liquid, for slow neutrons in mixed radiation fields, 22:21330(P)
design of cesium iodide, for portable gamma spectrometer, 22:2414
design of coincidence annihilation-gamma, for detecting positrons, 22:40359 (INP-605/PL)
design of directional, for neutron detection aboard sounding rocket, 22:36032(R) (N-68-16913)
design of double-layered thallium-activated cesium iodide evaporated on plastic NE-102, for detection and discrimination of low-energy electrons and protons, 22:40420
design of fast reactor noise, computer-input circuits utilizing, 22:32961 (ANL-7310, pp 377-430)
design of gallium arsenide, with semiconductor phototube, 22:47355(P)
design of high resolution hodoscopic, 22:32735 (ANL-7310, pp 249-375)
design of isochronous time-of-flight, 22:4478
design of large liquid, at RPI, modifications for, 22:39506 (RPI-328-123, pp 53-63)
design of large sodium iodide double crystal, for measuring decay curves of positron emitters, engineering drawings for, 22:51247
design of large spherical-cap-shaped, with irregular broken crystals of sodium iodide immersed in arachlor oil, 22:49399
design of liquid, for tritium counting in water, 22:25641
design of low-background plastic, for detection of beta particles, 22:28069
design of low-background, for beta spectroscopy, 22:36091
design of miniature, to determine cardiac output, 22:40786
design of minimum-background, 22:8362(P)
design of moderated, for neutron dose rate measurements, 22:43119(P)
design of neutron--gamma, for space applications, 22:28095
design of opposed, effectiveness of, 22:51822
design of organic liquid, for alpha and beta sources, 22:6568
design of organic, for detecting fast neutrons with gamma discrimination, 22:36053
design of organic, for neutron spectroscopy at 10 to 100 MeV, 22:28135 (NYO-3914-2)
design of plastic, for cosmic ray telescope, engineering drawings for, 22:51223
design of plastic, for detecting neutrons at 100 eV to 10 MeV, 22:14748 (GA-8184)
design of plastic, for low-level gamma dose rates, 22:2379
design of polystyrene--zinc sulfide, for gamma and x radiation dose rate measurements at 0.03 to 3 MeV, 22:16913
design of position-sensitive, 22:43031(P)
design of self-correcting thallium-activated sodium iodide, for determining uranium-235 level in reactor fuel elements, 22:30820 (NLCO-1011)
design of silver-activated zinc sulfide, for determining radon-222 in water, 22:2415
design of sodium iodide, for aerial surveying of uranium deposits, 22:19143
design of system for measuring gamma emission from liquid sample, 22:28254(P)
design of thallium-activated sodium iodide, for extreme low-level gamma spectroscopy, 22:6622
design of thallium-activated sodium iodide, for gamma spectroscopy, 22:28145
design of thallium-activated sodium iodide, for gamma spectroscopy in bore-hole operation, 22:12601
design of thallium-activated sodium iodide, for gamma spectroscopy, 22:2413
design of thallium-activated sodium iodide, for gamma spectroscopy of rocks on lunar surface, 22:43083
design of thallium-activated sodium iodide, for measuring x-ray angular and energy distribution behind absorbers, 22:21345
design of thallium-activated sodium iodide, for whole-body scanner for laboratory animals, 22:6567
design of thallium-activated sodium iodide, for x-ray fluorescence spectroscopy, 22:4430 (ORO-3224-12)
design of thallium-activated sodium iodide, with anticoincidence shielding using plastic scintillators for gamma spectroscopy, 22:6623
design of thallium-activated sodium iodide, with paraffin pile for neutron detection, 22:6603
design of total absorption nuclear cascade, for detection of high-energy particles, 22:38040
design of well-type, for measurement of activity in biological samples, 22:49340
design of windowless, for detecting 0.5- to 1300-A photons and photoelectrons, 22:28123
design of zinc sulfide, for low-level alpha-pair detection, 22:2360
design of zinc sulfide, for radon-222 determination, 22:2377
development for controlling and measuring radial clearances in turbines, using cesium-137 emitter, 22:2287
development for detection of neutrons from electron reactions (e,e'n) with nuclei, 22:21313 (ISS-67/18)
development for gamma and positron cameras, 22:38056
development for measurement of iodine-131 content of thyroid gland of man, 22:38346
development for measuring polarization of gamma radiation, 22:48509(R) (BMwF-FBK-68-22)
development for neutron detection, 22:5809(R) (ANL-7354)
development for water monitoring by low-energy x-ray detection, 22:30825(R) (UCRL-50007-67-3)
development of 4000-liter liquid, for coincidence operation, 22:3689(R) (GA-7820)
development of 4π liquid, for standardization of beta sources, 22:14766
development of collimator for use with, for xenon-133 lung scanning, 22:40773
development of gas-flow, for x-ray detection, 22:32512(R) (AECL-3108)
development of gel, for counting beta emission by protein-bound iodine-131 in plasma of man, 22:19353
development of hexafluorobenzene, for gamma dosimetry in mixed gamma--neutron fields, 22:28108
development of large light output, rare gas, proportional, 22:6595
development of liquid, for spectroscopy, 22:23318
development of position-sensitive, for detecting charged particles, 22:23260 (CEA-Bib-102)
development of prototype, for detection and measurement of gamma radiation at 10 mR/h to 1000 R/h, 22:51219 (AD-672474)
development of shadow-shielding for use of, in thyroid scanning, 22:12583
development of thallium-activated sodium iodide, for plutonium-239 monitoring, 22:30825(R) (UCRL-50007-67-3)
development of, review of, 22:43126
discriminator circuits for NE213 and stilbene, design of pulse shape, for gamma and neutron detection, 22:40405
discriminator for boron-loaded liquid, design of neutron--gamma, 22:45282(T) (ORNL-tr-1946)
discriminator for, design of tunnel diode, 22:38037
discriminator with small-time skewing for, design and performance of fast-gated, 22:335
discriminators for organic, design and performance of pulse shape, 22:12577
efficiency and resolution of sodium iodide, for measuring radioactive fallout, 22:45320
efficiency for counting tritium, variations in, 22:18732
efficiency for detection of beta sources in aqueous solutions by Cherenkov radiation produced, effects of colored materials on, 22:8361
efficiency for fast neutron time-of-flight measurements, 22:13906 (RPI-328-100, pp 57-112)
efficiency for gamma radiation, effects of contamination by natural radioisotopes in components on, 22:2367
efficiency for neutron counting in plutonium fluoride determination, 22:48811 (ANL-7402)
efficiency for x-ray detection, 22:40430
efficiency for x-ray spectroscopy, mathematical model for error analysis for, 22:49106
efficiency in fast fission ratio measurements using uranium foil activation detectors, radial dependence

of, 22:10565
efficiency of boron carbide-shielded sodium iodide, for fast neutrons, 22:22526 (RPI-328-112, pp 16-59)
efficiency of cylindrical sodium iodide, for gamma radiation, detection and photopeak, 22:23296
efficiency of cylindrical thallium-activated sodium iodide, for aqueous spherical gamma sources, 22:16856 (AE-310)
efficiency of fuel element failure detection using, testing of, 22:18584 (CEA-R-3330)
efficiency of gadolinium-loaded, for neutrons, Monte Carlo calculation of, 22:14788
efficiency of liquid, for activity measurement of beta sources in solution with phosphors, 22:38004
efficiency of liquid, for measuring carbon-14 metabolism by phytoplankton, 22:38000
efficiency of liquid, for tritium counting using sealed standard, (T), 22:43044
efficiency of liquid, long-term storage effects on, 22:47356
efficiency of liquid, method for measuring, 22:23290
efficiency of lithium-6-loaded glass, Monte Carlo S/sub n/ calculations of, 22:319
efficiency of lithium-loaded glass, for detecting neutrons at 100 to 250 keV, 22:26932(R) (NP-17434)
efficiency of NE 102 plastic, for detection of 10- to 70-MeV neutrons, 22:6604
efficiency of NE 102, for neutrons at 9 to 20 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
efficiency of NE-213 organic, for 2.7- and 14.5-MeV neutrons, 22:23295
efficiency of stilbene, effects of double scattering of neutrons on, (E/T), 22:43058
efficiency of thallium-activated sodium iodide, for cylindrical gaseous gamma sources, photopeak, 22:2402 (PG-Report-792)
efficiency of thallium-activated sodium iodide, for detection of cesium-137 and cobalt-60 gamma rays, 22:4429 (NP-17072)
efficiency of thallium-activated sodium iodide, for detecting fast neutrons, 22:40382
efficiency of, geometrical considerations for increasing collection, 22:21318 (UCRL-50176)
efficiency of, surface treatments for increasing, 22:21318 (UCRL-50176)
electronic equipment associated with large volume liquid, 22:38026
energy absorption spectrum--radiation dose conversion operator for thallium-activated sodium iodide, for determination of gamma exposure, 22:12658
energy absorption spectrum--radiation dose conversion operator for liquid, for neutron dose equivalent measurements, 22:12658
energy characteristics of thallium-activated sodium iodide, used for dosimetry, method for correction of, 22:8400
fabrication and testing of thallium-activated cesium iodide and sodium iodide, for x-ray detection, 22:19100 (UCRL-70773)
fabrication of europium-activated strontium iodide, 22:28129(P)
fabrication of lead-sandwiched, for gamma-ray monitoring in Orsay storage ring, 22:11819
fabrication of thallium-activated alkali halide, pressed from powders, 22:23272
fabrication of thallium-activated potassium iodide, for gamma spectroscopy, 22:28133 (NP-17352)
fabrication of, with protective polymer coating, 22:10568(P)
gain stabilization system for gamma spectroscopy, 22:38107(P)
krypton diffusion in polyvinyltoluene, 22:25640
light collection efficiency of, with cylindrical scintillators having reflecting walls, 22:43072
light output of argon and argon--nitrogen proprtional, effect of p-quaterphenyl wave-length shifter on, 22:6609
light output of proportional gas, with xenon and xenon mixtures, 22:40427
light pipes for plastic, efficient use of Lucite, 22:19114
light transport efficiency of, computer program for analyzing, 22:21319 (UUIP-568)
light yield efficiency of liquid, for protons, 22:49098
light yield efficiency of monocrystalline thallium-activated cesium iodide, 22:47335
luminescence of thallium-activated cesium iodide and thallium-activated sodium iodide, bremsstrahlung energy dependence of, 22:12588
luminescence time of anthracene, excited by alpha particles and electrons, 22:43051
luminescent decay components of, use of composite phosphors for separation of, 22:45291
measurement of antimony content in lungs of industrial workers by, 22:511
measurement of calcium-45 and calcium-47 simultaneously by, 22:10719
mounting for system of, design of adjustable, 22:10570(P)
noise reduction in sodium iodide, for biomedical x-ray spectroscopy, 22:36078 (CONF-680303-, pp 205-12)
operation of thallium-activated sodium iodide, for gamma spectroscopy, 22:2410
optical homogeneity of phosphors in, 22:38003
optical transfer function of, for measuring radioisotope distribution in tissue-equivalent materials, 22:43045
performance for detection and measurement of beta emission by protein-bound iodine-131 in plasma of man, 22:19353
performance for detection of cosmic x radiation, effects of instrument noise on, 22:28107
performance for detection of radioactive particles in respiratory tract, 22:23508 (SC-M-67-2973)
performance for difference gamma spectroscopy, 22:339 (HMI-B-59)
performance for dual isotope studies, computer programs for, 22:28273 (ANL-7278, pp 219-49)
performance for evaluating surface contamination with soft beta emitters, 22:23547
performance for external counting of actinium-227 and protactinium-231 content of human lungs, 22:43320
performance for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540-1)
performance for measurement of activity from radon decay products on filter paper samples from air in uranium mines, 22:45561
performance for measurement of γ activity in atmospheric samples, 22:45563
performance for measurement of iodine radioisotopes in tap water, 22:6815
performance for profile scanning of γ-emitting radioisotopes in man, 22:6798(R) (IAEA-2819-6)
performance for radiodiagnosis, 22:25959
performance for rectilinear scanning of iodine-131 in thyroid, 22:51784
performance for scanning brain tumors with technetium-99, effects of collimator resolution on, 22:49417
performance for scanning radioisotopes in human organs, 22:40804
performance for scanning technetium-99 in human brain, 22:25933
performance for scanning technetium-99 in human brain, 22:25934
performance for scanning thyroid gland in man, 22:38362
performance for scintiscanning of brain tumors with technetium-99-labeled pertechnetate, 22:540
performance for simultaneous measurements of γ emission from two isotopes, by use of dual-channel pulse height analyzer, 22:49402
performance for whole-body γ dosimetry of man, 22:6848
performance in high-quantum rapid scanner, 22:10782(R) (UCLA-34-P-119-10)
performance in measuring α activity of natural environment samples, 22:2211
performance of alpha, for radiometric and dosimetric application, 22:25648
performance of collimated two-headed, for radioisotope scanning, comparison of, with gamma cameras, 22:49418
performance of dispersed lithium fluoride and silver-activated zinc sulfide, for detecting slow neutrons, 22:47334
performance of dual crystal, for use with rate meters for radioisotope localization of tumors in human brain, 22:49404(P)
performance of dual phosphor, with photomultipliers and pulse-height discriminators for measurement of α and β activity on human hands, 22:45562
performance of dual-phosphor, for simultaneous measurement of α and β activity on filters, 22:45563
performance of flexible esophageal probe containing, for scanning blood circulation in human heart, 22:36294
performance of gamma camera, line-source phantom for testing, 22:38039
performance of Hornyak button, in neutron hodoscope for fuel meltdown testing in TREAT, 22:28076
performance of in-line, at Marcoule plutonium extraction plant, 22:7 (CONF-671012-2)
performance of large area liquid, for determining electron density in extensive air showers, 22:316
performance of large organic, 22:51305 (LA-3848, pp 75-96)
performance of liquid, for counting β particles from tritium decay, 22:51240
performance of moving and stationary, for isotope scanning, computer calculation of modulation transfer function for evaluation of, 22:51809
performance of multi-probe, for rapid scanning of human organs, 22:33839 (UCLA-12-640, pp 1-30)
performance of multisphere lithium iodide, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance of neutron, for remote determination of plutonium in process materials, 22:25443 (ANL-7375, pp 46-94)
performance of probe-type, for measurement of rectal γ dose from radium implants in human vagina, 22:51610
performance of remote multiple, for monitoring β activity in air, 22:23505 (LF-38, pp 103-7)
performance of sodium iodide, for determining purity of radioisotope preparations, 22:2411
performance of sodium iodide, for gamma spectroscopy of (n,n'γ) reactions, 22:32561

performance of thallium-activated cesium iodide and sodium iodide, as converters in x-ray radiography, 22:43070
performance of thallium-activated sodium iodide for gamma spectroscopy at 2 to 12 GeV, 22:40455
performance of thallium-activated sodium iodide, effect of lead impurity on, 22:324
performance of thin plastic 2π, for measuring low-level beta activities, 22:51227
performance of whole-body, for scanning of man, 22:38406
performance of, effects of sample preparation on, 22:12265
phosphorescence in thallium-activated sodium iodide and thallium-activated cesium iodide, long-lived, 22:14759
photoelectron yield in thallium-activated sodium iodide, measurement of primary, 22:16880
photomultiplier operating characteristics for thallium-activated sodium iodide, used for high-resolution gamma spectroscopy, 22:51246 (RT/EL-(68)1)
photomultiplier tubes for liquid, effects on performance of after-pulses in, 22:51224
photomultipliers for eight crystal, amplification stability of, 22:36095
photomultipliers for, design with high quantum efficiency and low dark current, 22:40430
photomultipliers for, secondary emission processes in, 22:40424
photomultipliers for, servo-circuits for stabilization of, 22:47331
photon pair response of, effects of, on counting geometry, 22:517
photopeak analysis program for gamma spectrometers of thallium-activated sodium iodide, 22:2405
properties of argon-filled gas, 22:12589
pulse analyzers for use with, use of PDP-8 computer for calibration and evaluation of, 22:47409
pulse converters for thallium-activated sodium iodide, for time-of-flight measurements, time-to-amplitude, 22:38002
pulse discriminator for, design of, 22:47354(P)
pulse discriminator for, in coincidence, design of zero-walk charge storage diode, 22:45293
pulse height of, effect of anode voltage on, 22:21314 (ORNL-4219, pp 30-5)
pulse shape discrimination of thallium-activated cesium iodide, at 200 to 360°K, alpha--gamma, 22:25643
pulse shaper--discriminator system for thallium-activated cesium iodide, performance of, 22:28119
pulse-height distribution data for gamma spectroscopy, use of computer for analyzing, 22:28155
pulse-height distributions from, computer program for unfolding, 22:49096 (ORNL-TM-2172)
pulse-height distributions in thallium-activated sodium iodide, computer program for analyzing gamma-ray, 22:38073
pulse-height spectra from in-core lithium-drifted, iterative unfolding of Compton spectra for analyzing gamma, 22:49094 (AERE-R-5653)
pulse-height spectra from thallium-activated sodium iodide, method for efficient representation of, 22:16866
pulse-shape discriminator for stilbene, for neutron spectroscopy, 22:28159
pulses for, used in nuclear spectroscopy, oscillators base on silicon carbide and gallium phosphide diodes for production of reference, 22:2393 (JINR-P13-3523)
pulses from, design of coincidence circuits for recording, 22:6584
quantum efficiency of argon, krypton, and neon, for x-ray detection, 22:28112
quench correction in liquid, use of external standard and channel ratio techniques for, 22:40374
quenching corrections in carbon-14 measurements with liquid, computer program for, 22:51229
radiation damage to plastic, for beta detection, 22:10561
radioisotope activity data from liquid, computer program for calculating, 22:4448
radioisotope activity data from liquid, system for transfer to punched cards, 22:4448
readout system for, design of, 22:10569(P)
resolution and linearity of high-pressure helium gas, 22:10562
resolution correction for spectra of recoil deuterons scattered by 2.7- to 14-MeV neutrons, 22:16864
resolution for gamma spectroscopy, background, shielding, and collimation studies for increasing, 22:8378
resolution of fast coincidence sodium iodide, time, 22:32961 (ANL-7310, pp 377-430)
resolution of sodium iodide, in gamma spectrometer, 22:19151
resolution of thallium-activated cesium iodide, at 200 to 360°K, for alpha particles, 22:25643
resolution of thallium-activated sodium iodide, for gamma spectroscopy, 22:30845
resolution of thallium-activated sodium iodide, for gamma spectroscopy, effects of energy on, 22:38074
resolution of thallium-activated sodium iodide, intrinsic, 22:40430
resolution of, with cylindrical scintillators having reflecting walls, 22:43072
resolution, stability, and noise of, automatic device for measuring, 22:45307
response for gamma spectroscopy, 22:8381
response function for, determination of, 22:19099 (UCID-4675)
response functions for liquid, computer program for calculating, 22:9921 (JUL-Conf-1)
response functions of large sodium iodide double-crystal, 22:43027 (LA-DC-9801)
response of anthracene, to low-energy electrons, 22:16904
response of californium-252-sandwiched, for coincidence detection of fission fragments, 22:36058
response of europium-activated lithium iodide, in polyethylene sphere, to neutrons at energies thermal to 25 MeV, 22:19101 (UR-49-903)
response of NE-213 liquid, calculation of gamma-ray, 22:49072 (ORNL-TM-2273)
response of organic, to electrons, protons, and deuterons, 22:49087
response of organic, to neutron, computer program using Monte Carlo method for calculating pulse-height distributions for determining, 22:14750 (ORNL-4160)
response of plastic NE 102, 22:2354
response of plastic, for electron detection, 22:16870
response of plastic, for fast neutron detection, 22:2407
response of plastic, peak dose rate for maintaining linear, 22:28064 (CONF-680207-8)
response of sodium iodide, to pulsed 14-MeV neutrons, 22:39564
response of thallium-activated alkali halide, pressed from powders, 22:23272
response of thallium-activated sodium iodide, to neutrons, 22:8379
response of thin thallium-activated sodium iodide, for x-ray detection in plutonium-238-contaminated wounds, 22:37995 (SC-TM-68-416)
response of, bibliographic review of, 22:36045
response to 0.1- to 10-MeV gamma rays and 0.1- to 14-MeV neutrons calculated by Monte Carlo method, 22:21318 (UCRL-50176)
sample changer for liquid, design of simple automatic, 22:43067
sample handling system for, design of automatic, 22:49064(P)
sample preparation for liquid, 22:28081
sample preparation techniques for, 22:27611
sample vial construction for liquid, for spectroscopy, 22:12591(P)
sample-handling elevator for liquid, design of, 22:14901(P)
sensitivity for use in bremsstrahlung radiography of steel, 22:28117
sensitivity of liquid, in tritium measurement, effects of vial activity on, 22:28109
sensitivity of moderated, for neutron dosimetry, 22:21362
shielding for neutron scattering experiments, design of shadow bar, 22:322
shielding for, design and fabrication of low-background lead, 22:16860
spectral matching of various solutes in liquid, to photomultipliers, 22:8343
stability for low-background radiation measurements, alternating counting method for increasing, 22:33650
stability of various components of, 22:38017
stabilization system for spectrometers of, design of, 22:6625
stabilization system for, for gamma spectroscopy, 22:23309 (CEA-R-3300)
standards for gamma spectrometry using thallium-activated sodium iodide, 22:22575
theory for spectrometer, statistical model for timing inaccuracies for nuclear event detection in, 22:28156
time resolution of, minimum, 22:16885
use as x-ray detectors for analysis of low-grade ores, 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
use for comparing activities of gamma sources varying by ratios up to 1:1000, 22:14781
use for contamination monitoring of laundered protective clothing, 22:6555 (BNWL-540)
use for counting aqueous solutions of tritium, efficiency of dioxane and toluene blended mixes for, 22:16433
use for detection of fast neutrons, pulse-height distribution of recoil protons in, 22:14815
use for detection of water content of soil samples, 22:6796 (COO-1269-15)
use for determining tritium content in water, 22:6575
use for determining tritium uptake in roots of corn seedlings, 22:23674(R) (NYO-3561-4)
use for digitizing electron densities in extensive air showers to determine core location, 22:364
use for gamma measurements of activated materials for slow neutron detection, 22:12586
use for identification of beta sources, 22:28068
use for measurement of beta energy from tritium decay, comparison of, with gas-counters, 22:51665
use for measurement of HTO vapor in atmosphere at Chalk River, 22:14999 (AECL-2699)
use for measuring absolute beta activity, afterpulsing effects on, 22:49088
use for measuring activity of radioisotopes, 22:4421

use for measuring activity of tritium, 22:51236
use for measuring body burden of europium isotopes, 22:47543
use for measuring capture-to-fission cross sections for neutron reactions with plutonium-239, uranium-233, and uranium-235, 22:6601
use for measuring flux and spectra of cosmic-ray-produced neutrons, 22:2425
use for measuring gamma spectra at 3 to 11 MeV from IRT-1000 (Sofia) reactor, 22:25101
use for measuring induced activity in gold foils for calibrating DOSAR thermal pile, 22:2272 (ORNL-TM-2009)
use for measuring low-level activities of beta sources, 22:47323
use for measuring temperature of molten metals, 22:16778
use for neutron spectroscopy at 0.025 eV to 25 GeV, unfolding technique for, 22:12596 (RHEL/R-154)
use for neutron time-of-flight spectroscopy, 22:28134 (NYO-3914-1)
use for neutron-capture gamma spectroscopy, 22:6626
use for simultaneous measurement of engine component wear, 22:14686
use for standardization of carbon-14 stock solutions, 22:6724
use for x-ray fluorescence analysis of binary and ternary systems, 22:30831
use in Aerial Radiological Measuring System, 22:305 (CEX-59.4(Pt.4))
use in anticoincidence with semiconductor detectors for background suppression, 22:21308 (BNWL-SA-1515)
use in coincidence circuits for absolute measurement of beta--gamma activity of radioisotopes, 22:2373
use in combination with semiconductor detectors for clinical dosimetry, 22:38296
use in Compton polarimeter for linear polarization measurements of gamma rays, 22:25650
use in Compton polarimeter, computer program for determining asymmetry ratio of, 22:25656
use in Compton polarimeter, optimizing sensitivity of, 22:25653
use in continuous materials testing equipment, 22:10526
use in electron-backscatter gage for corrosion detection, 22:38127
use in fission product detector, 22:47317 (CEA-R-3511)
use in gamma spectrometer for neutron activation analysis, 22:28163(P)
use in gamma spectrometer for testing irradiated fuel elements, 22:45328
use in gamma spectrometers for analysis of thorium and uranium ores, 22:6619
use in γ aeroradioactivity survey of southeastern New York and southern New England, 22:169 (CEX-58.4.6)
use in making continuous measurements of activated machine part wear, 22:2281
use in measuring natural background γ radiation in Poland, 22:6445
use in measuring natural environmental radioactivity from radon-222 in Illinois, 22:171 (PHS-999-RH-26)
use in measuring uranium content in reactor fuel elements, 22:43002
use in multidetector arrangement for linear polarization correlation measurements of γ--γ cascades, 22:6608
use in neutron spectrometer with gamma background discrimination based on time of luminescence, 22:2409
use in radioisotope standardization, 22:6547
use in SNAP-19 radiation measurements, 22:10502 (MND-3607-173)
use in spectrometers for measuring purity of radioisotopes, 22:4421
use in surface contamination monitor, 22:45272 (AAEC/M-84)
use in system for measuring charge composition of primary cosmic radiation from Z = 1 to 50 at 10 GeV to 100 TeV, 22:40412
use in well logging for studying dump leaching processes, 22:40431
use in whole-body counters for animals, 22:28130(P)
use in x-ray--alpha coincidence circuit for determining isotopic composition of plutonium, 22:47312 (BNWL-715(Pt.1), pp 20-9)
use of 2,2'-p-phenylenebis[5-tolyoxazole], in radiochemical analysis, 22:45292
use of Anger camera as, for radioisotope scanning of bladder, head, kidneys, and liver in human children and infants, 22:31164
use of annular system for studying angular distribution of protons in (e,e'p) reactions with nuclei, 22:6561 (ISS-67/17)
use of anthracene, with surface-barrier silicon detector for detection and measurement of relativistic electrons aboard satellites, 22:28099
use of B_2O_3--ZnS(Ag), for neutron dose rate measurements, 22:19161 (SZS-2/68)
use of car-mounted, for radiometric survey of Hyogo prefecture, Japan, 22:6451
use of coincidence, for standardization of electron-capture radioisotopes, 22:14765
use of europium-activated lithium iodide, in spherical polyethylene moderator for dosimetry of thermal to 10-MeV neutrons, 22:28182
use of film-type, for measuring total number of resonance captures in (n,γ) reactions, 22:19095 (IAE-1349)
use of large volume liquid, for coincidence counting, 22:38023
use of liquid naphthalene--dioxan, for activity measurements of aqueous solutions of tritium, cost reduction in, 22:43059
use of liquid, for carbon-14 and tritium determination in microbiological samples, methods for, 22:43037
use of liquid, for carbon-14 and tritium determination in microbiological samples, review of, 22:43038
use of liquid, for counting of carbon-14-labeled carbon dioxide, 22:43060
use of liquid, for determining tritium content in air, 22:51228
use of liquid, for gamma spectroscopy in analysis of low-activity fission products, 22:36094
use of liquid, for measuring tritium yields from titanium--tritium targets, 22:51228
use of liquid, for standardizing beta-emitting isotopes, 22:16889
use of liquid, in computer-based spectrometer, 22:40454
use of liquid, in neutron time-of-flight spectrometer with neutron--gamma discrimination, 22:49098
use of liquid, with time-shared computer for spectroscopic analysis of low-level beta-emitting samples, 22:4460 (UCRL-70529)
use of lithium glass, for spectral studies in STSF-1 fuel assemblies, 22:27462(R) (GA-8543)
use of lithium-6 glass, for simultaneous soil moisture and density measurements using neutrons and gamma rays, 22:23346
use of low-level sodium iodide, effects of background cosmic radiation on, 22:2412
use of multidetector, for measurement of total radioactivity in man, 22:28544
use of neutron--gamma discriminating, for time-of-flight fast neutron spectroscopy, 22:6630
use of organic liquid, for absolute neutral oil determination in vegetable oils, 22:38012
use of organic, for dose equivalent and quality factor measurements in gamma--neutron fields, 22:2369
use of organic, for fast neutron spectroscopy, computer program for data analysis for, 22:19135 (ORNL-TM-2112)
use of plastic and thallium-activated sodium iodide, for reducing Compton background in lithium-drifted germanium anti-Compton gamma spectrometers, 22:351
use of plastic, for beta spectroscopy at 2 to 20 MeV, 22:10584
use of plastic, for measurement of proton recoil dose for neutron dosimetry at depth in tissues, 22:45508(R) (PG-Report-826)
use of plastic, implanted in eye of dogs, evaluation of, 22:31119
use of plastic, in combination moisture gage--densimeter, 22:25687
use of plastic, in cosmic ray telescope, 22:37996 (UCID-15324)
use of plastic, in fast neutron time-of-flight spectrometer, 22:19137
use of polyethylene-moderated europium-activated lithium iodide, for neutron spectroscopy and dosimetry, 22:47384 (UR-49-894)
use of silver-activated zinc sulfide, for determining radon in water and soil, 22:6572
use of sodium iodide, for measuring gamma spectrum from energy-level transitions of carbon-12, 22:14756(R) (UCRL-50007-67-2)
use of sodium iodide, for measuring spectra from dental x-ray equipment, 22:8372
use of sodium iodide, for whole-body gamma spectroscopy, 22:4458(R) (NYO-3136-4)
use of sodium iodide, in computer-based in vivo radiation monitor, 22:12575 (Y-1595)
use of sodium iodide, in linear scanner for radiodiagnosis, 22:6566
use of sodium iodide, in radiometric system for measuring propellant level in small arms cartridges, 22:38133
use of sodium iodide, in self-recording aerial surveying equipment, 22:6573
use of sodium iodide, in three-crystal pair gamma spectrometers, 22:8369
use of sodium iodide, in whole-body scanner, 22:4424 (CONF-671027-2)
use of sodium iodide, with gridded ionization chambers for alpha--gamma angular correlations, 22:23282
use of stilbene, for simultaneous neutron and gamma spectroscopy, 22:19141
use of thallium-activated cesium iodide, for discriminating between deuterons, protons, and tritons, 22:47337
use of thallium-activated cesium iodide, for measuring time-varying energy distribution of hydrogen atoms emitted from plasma at 0.08 to 1.0 MeV, 22:40378
use of thallium-activated cesium iodide, for plutonium monitoring in air, 22:28157
use of thallium-activated sodium iodide (NaI) foil for counting of neptunium-239, (E), 22:35592 (CNAEM-47)
use of thallium-activated sodium iodide and plastic, in anticoincidence for gamma spectroscopy, 22:36085
use of thallium-activated sodium iodide, for determining plutonium-238 content in waste drums by gamma spectroscopy, 22:43080

  use of thallium-activated sodium iodide, for fission product monitoring in water-cooled reactors, 22:19120
  use of thallium-activated sodium iodide, for gamma detection in β--γ coincidence spectrometer, 22:23317
  use of thallium-activated sodium iodide, for in vivo plutonium detection, interpreting counting data for, 22:47311 (BNWL-715(Pt.1), pp 1-15)
  use of thallium-activated sodium iodide, for measuring activities of beta sources, 22:14783
  use of thallium-activated sodium iodide, for measuring background radiation in rock salt mines, 22:28111
  use of thallium-activated sodium iodide, for measuring hydrogen cryogenic densities and properties, 22:38132
  use of thallium-activated sodium iodide, for whole-body counting of gamma sources in man and phantoms, 22:25646
  use of thallium-activated sodium iodide, for whole-body counting of gamma sources in man and phantoms, 22:25645
  use of thallium-activated sodium iodide, in AAEC whole-body counter, 22:37969 (AAEC/TM-450)
  use of thallium-activated sodium iodide, in Anger radioisotope organ camera, 22:10545
  use of thallium-activated sodium iodide, in coincidence spectrometer for positron annihilation radiation, 22:10589
  use of thallium-activated sodium iodide, in Compton spectrometers, 22:8380
  use of thallium-activated sodium iodide, in gamma radiometric system for measuring propellant mass aboard orbiting space vehicles, 22:38131
  use of thallium-activated sodium iodide, in gamma cameras for determining radioisotope distribution in man, 22:2344 (ORNL-IIC-10(Vol.1), pp 248-67)
  use of thallium-activated sodium iodide, in radiation-event monitor for gamma and x radiation, 22:6596
  use of thallium-activated sodium iodide, in radioisotope camera, 22:10574
  use of thallium-activated sodium iodide, in two-crystal pair gamma spectrometers, 22:10585
  use of thallium-activated sodium iodide, in x-ray spectrometer, 22:51291
  use of Triton X-100 liquid, for activity measurements of carbon-14 labelled compounds, 22:43035
  use of unactivated sodium iodide, for fast gamma detection, 22:8355
  use of well-type thallium-activated sodium iodide, for assay of manganese-54--zinc-65 mixtures, 22:51185
  use with absorption filters for gamma spectroscopy in high background, 22:21340
  use with gamma sources as ablation sensors for space vehicles, 22:4490
  use with image intensifiers for space research, 22:4447
  use with ionization chambers for measurements in fast neutron (n,α) reactions with nuclei, 22:38009
  use with iron absorbers and spark chambers for spectroscopy of high-energy particles, 22:21347(T) (AD-666080)
  use with neutron sources for determining carbon content in coal, fly ash, and iron ore, 22:386
  use with on-line computer for gamma spectral analysis of mixtures of radioisotopes, 22:19132 (BNWL-669)
  use with photographic film for tritium detection and measurement, 22:38024
  use with single phototube monitor to measure very high concentrations of tritium, 22:51661
  uses of large sodium iodide double-crystal, 22:43027 (LA-DC-9801)
RADIATION DETECTORS, SEMICONDUCTOR
  amplifier for, design of linear, 22:43096
  amplifier with automatic gain control for, for gamma spectroscopy, 22:47365
  amplifiers for, analysis of low-noise charge, 22:49068 (BNL-12798)
  amplifiers for, pulse shaping in, 22:8344
  background noise of miniature, effects of temperature on, 22:37984 (CONF-670545-, pp 126-36)
  background suppression by anticoincidence and pulse-shape discrimination methods, 22:21308 (BNWL-SA-1515)
  ballistic deficit and signal-to-noise ratio of position-sensitive, 22:14808
  bibliography on, 1963-1967, 22:19094 (EUR-3630)
  book: Measurement of Nuclear Radiations by Means of Semiconductor Devices, 22:19130
  book: Semiconductor Detectors of Nuclear Particles and Their Applications, 22:2384
  characteristics for assessment of radiation dose to skin, 22:37994 (RD/B/N-1107)
  characteristics for detection of ionizing radiation, 22:23284
  characteristics of p--n, for electromagnetic radiation and alpha and beta particles, 22:45275 (CEA-Bib-97)
  characteristics of, review of, 22:43032
  charge collection-time variations in, theoretical comparison between pulse-area and pulse-height errors from, 22:45298
  charge dividing mechanism for one-dimensional position-sensitive, 22:332
  circuits for, 22:33689 (ZfK-121, pp 1-133)
  circuits for spectroscopy, signal--noise ratio of time-dependent filter, 22:47361(T) (ORNL-tr-1971)
  coincidence circuits for, time-to-amplitude converter for, 22:51225
  Compton background suppression in, use of discrimination and anticoincidence techniques for, 22:40451
  conference on, 22:40429
  conference on, for radiation protection and measurement techniques, 22:37975 (CONF-670545)
  current pulses from, calculation and measurement of waveforms of, 22:43069
  data acquisition system interface for, design of multianalyzer stored program, 22:30822 (ORNL-TM-2153)
  data from, development of computer-based system for evaluation of, 22:12569(R) (ANL-7311)
  description and uses of junction-type, 22:45309
  design and performance for fast neutron dosimetry at 0.3 to 22.5 MeV, 22:373 (AD-648642)
  design and performance for neutron cross section measurements using underground nuclear explosions, 22:47320 (LA-DC-9709)
  design and performance of, 22:28113
  design and performance of boron-doped silicon carbide, 22:33646
  design and performance of cadmium sulfide, for measuring high-level gamma exposure rates, 22:47321 (RD/B/N-1108)
  design and performance of lithium-6-sandwiched, for neutron spectra measurements in reactors, 22:36055
  design and performance using boron-10, lithium-6, and uranium-235 converters, for in-core neutron flux measurements, 22:40357 (CEA-R-3304)
  design and use for analyziing x-ray fluorescence, 22:310 (ORNL-IIC-10(Vol.2), pp 817-4)
  design and uses of cadmium sulfide, for radiotherapy dosimetry, 22:6661
  design based on Geiger--Mueller principle, 22:37983 (CONF-670545-, pp 109-15)
  design for alpha detection during monitoring of surface contamination, 22:8342
  design for alpha spectroscopy, 22:8342
  design for continuous air monitoring for plutonium-239, engineering drawings for, 22:30843
  design for electron detection aboard OGO-F satellites, 22:40411
  design for electron measurements on OGO-F satellite, 22:36033 (N-68-22703)
  design for ions, 22:12592(P)
  design for thermal neutron flux measurements, 22:8342
  design of high-resolution of large-volume, 22:338(P)
  design of one- and two-dimensional position-sensitive, 22:40394
  design of portable, for low-energy radiation, 22:38015(P)
  design of position-sensitive, using risetime measurement, 22:47351
  design of surface-barrier, for proton--deuteron discrimination, 22:2358
  design of total absorption nuclear cascade, for detection of high-energy particles, 22:38040
  design of two dimension position-sensitive, 22:38061 (CONF-670545-, pp 116-25)
  design of zinc oxide, for atomic hydrogen beams, 22:2357
  detection mechanism in junction-type, (T), 22:30844
  development and uses of avalanche-type, 22:45281(R) (NYO-3246-TA-3)
  development and uses of, review on, 22:16878
  development at Bonn, Jan. 1 to Dec. 31, 1966, 22:48509(R) (BMwF-FBK-68-22)
  development for beta, heavy charged-particle, and gamma spectroscopy, review of, 22:28136
  development for β dosimetry, 22:17050(R) (EUR-3606)
  development for determining uranium dust content in atmosphere, 22:14817
  development for gamma detection, 22:6558 (CONF-660663-, pp 3-26)
  development for neutron dosimetry, 22:38098 (CONF-670545-, pp 200-16)
  development for nuclear physics research, 22:14763
  development for use as dosimeters, 22:2502 (AECL-2665)
  development in Japan, 22:4441
  development of, 22:47332
  development of arrays of avalanche-type, 22:40389
  development of avalanche-type, 22:19097(R) (NYO-3246-TA-1)
  development of avalanche-type, for low-level radiation, 22:33636 (AERE-M-2025)
  development of avalanche-type, for x-ray fluorescence analysis, 22:45280 (NYO-3246-TA-2)
  development of cadmium telluride, for gamma spectroscopy, 22:23278
  development of contoured avalanche-type, 22:38032
  development of ΔE--E telescope, for studying 14-MeV neutron reactions with nuclei, 22:23263 (CEA-R-3378)
  development of gallium arsenide and gallium phosphide, for gamma detection at room temperatures, 22:38036
  development of high Z, for gamma detection at elevated temperatures, 22:38027
  development of photo-, review of, 22:33642
  development of position-sensitive, 22:1598(R) (COO-1265-49)
  development of position-sensitive, for detecting charged particles, 22:23260 (CEA-Bib-102)
  development of surface-barrier cadmium telluride, for

gamma spectroscopy, 22:28139
development of surface-contoured, for plutonium wound counting, 22:47314 (BNWL-715(Pt.1), pp 41-3)
development of, review of, 22:43043
development, review, 22:14762
efficiency for alpha spectroscopy, 22:38059 (CONF-670545-, pp 69-72)
efficiency of lithium-6-sandwiched, for directional neutron spectroscopy, calculation of geometrical, 22:21342
efficiency of surface-barrier cadmium telluride, for gamma spectroscopy, 22:40452
energy resolution of, signal-to-noise ratio of time-dependent filters for improving, 22:25655
energy resolution of, theoretical limits of, 22:37979 (CONF-670545-, pp 57-61)
evaluation of cadmium telluride, 22:6560 (CONF-660663-, pp 37-52)
fabrication of doped, 22:33640(P)
fabrication of high voltage, using shelf structure, 22:23304(P)
fabrication of large-volume lithium-drifted, 22:337(P)
fabrication of lithium-doped, method and equipment for, 22:28124(P)
fabrication of position-sensitive, ion implantation techniques for, 22:40388
fabrication of surface-barrier cadmium telluride, for detection of gamma radiation, 22:40390
fabrication of, methods development for, 22:37340(R) (EANDC(E)-89(U))
fabrication of, use of ion implantation techniques for, 22:38042
gain uniformity of avalanche-type, 22:45281(R) (NYO-3246-TA-3)
ionization energy of, determination of, 22:37998 (UCRL-17989, pp 261-95)
materials for gamma detection, 22:6557 (CONF-660663)
neutron flux measurements in research reactors by, methods for, 22:12110
neutron ionization in, pulsed 14-MeV neutron generator for measuring, 22:39564
operating characteristics of amplifying, analysis of electron avalanche, 22:21326
operation as analog of G--M and proportional detectors, 22:37977 (CONF-670545-, pp 17-35)
operation for gamma spectroscopy, 22:2410
operation in E--ΔE configuration for discrimination of charged particles at 5 to 15 MeV, 22:38010
operation mechanism in junction-type, 22:2363
operation of high voltage, using shelf structure, 22:23304(P)
operational principles and physical properties of, 22:37976 (CONF-670545-, pp 7-16)
performance for dosimetry of fast neutrons, 22:17050(R) (EUR-3606)
performance for electron detection in high gamma background, 22:45301
performance in measuring α activity of natural environment samples, 22:2211
performance of avalanche-type, with tunnel diode for gamma detection at high temperatures, 22:38031
performance of p-i-n, for radiodiagnosis of malignant tumors in digestive organs, 22:45288
performance of surface-barrier cadmium telluride, for alpha spectroscopy, 22:21343
plasma time in, 22:40404
plutonium contamination monitoring system using, design of airborne, 22:32961 (ANL-7310, pp 377-430)
power supply for, design of high-voltage, 22:36056
preamplifier for, description of germanium FET low-noise, 22:37998 (UCRL-17989, pp 261-95)
preamplifier for, design and performance of, 22:33689 (ZfK-121, pp 1-133)
preamplifier for, design and performance of nuvistor, 22:51220 (IAE-1453)
preamplifier for, design of low-noise, 22:37971 (AI-AEC-Memo-12706)
preamplifiers for p-i-n, description of, 22:10551
preamplifiers for, use of pulse transformer for improving response of, 22:14749 (KFK-617)
properties of homogeneous and junction, 22:10575 (CEA-Bib-110)
properties of surface-barrier, in comparison to drifted detectors, 22:37985 (CONF-20545-, pp 137-44)
protection of, design of high voltage divider and current leakage monitor for, 22:36072
pulse amplitudes in, use for determining range of charged particles, 22:25634
pulse analyzers for use with, design of analog-to-digital converters for 8192-channel, 22:43026 (JINR-P13-3911)
pulse shapes in surface-barrier, 22:2355
pulse stretchers for spectrometers of, design of, 22:43095
pulse time measurements of, time-to-amplitude converter for, 22:51225
pulses from, electronic processing of, 22:37978 (CONF-670545, pp 36-56)
radiation damage in, 22:16877
radiation effects on MOS, 22:33707
radiation effects on, gamma, 22:47441 (BNWL-715(Pt.1), pp 15-20)
resolution capabilities for particles at 10 to 100 MeV, 22:37998 (UCRL-17989, pp 261-95)
resolution for nuclear spectroscopy, time-dependent filter for improving, 22:33660
resolution of surface-barrier, for 12-MeV protons, 22:32513(R) (ANU-P-400)
resolution of, effects of carrier capture on, 22:40395
resolution of, theoretical and practical limits to, 22:49092
response of cadmium telluride and gallium arsenide, for gamma detection at elevated temperatures, 22:38030
response of cadmium telluride, for alpha detection under conditions of trapping and detrapping, transient, 22:40391
response to cobalt-60 gamma-rays and electrons up to 60 MeV, 22:375(R) (NYO-3510-3)
sensitivity of Compton diode, effects of energy on, 22:25633 (UCID-15318)
sensitivity of PIN, effects of energy on gamma, 22:25633 (UCID-15318)
signal-to-noise ratio in, use of tapped delay lines for improving, 22:25657
stabilization system for, for gamma spectroscopy, 22:23309 (CEA-R-3300)
use for absolute dosimetry, 22:14864
use for alpha spectroscopy of actinium-227 decay products, 22:38060 (CONF-670545, pp 88-95)
use for beta detection, 22:6588
use for determining linear energy transfer of heavy charged particles, 22:30868 (UCRL-17751, pp 53-80)
use for discriminating between deuterons, protons, and tritons, 22:47337
use for dose measurements of negative pions, 22:33905 (ORO-3343-1, Paper 5)
use for dosimetry of heavy charged particles, 22:30868 (UCRL-17751, pp 53-80)
use for fuel element burnup analysis, description of, 22:35702
use for high-resolution spectroscopy, calculation of amplifier fluctuation effects on performance for, 22:38069 (JINR-P13-3813)
use for high-resolution spectroscopy, optimization of design for, 22:38068 (JINR-P13-3812)
use for measuring conversion electrons from gadolinium for detecting thermal neutrons, 22:25649
use for measuring energy fluence of x radiation, 22:25651
use for measuring low-level activities of radioisotopes, 22:37981 (CONF-670545-, pp 81-7)
use for neutron spectra measurements using lithium-6 (n,t) reaction, 22:40363
use for studying short-lived radioisotopes produced at JINR proton synchrocyclotron, 22:26736 (JINR-P6-3773)
use for thermal neutron flux distribution in Otto Hahn Reactor, description of, 22:46987
use for x-ray fluorescence analysis of binary and ternary systems, 22:30831
use in 90° helium-3 neutron spectrometer without recoil spectrum effects, 22:2395 (LA-3752)
use in neutron spectrometers employing charged-particle collimation, 22:19144
use in radiobiology and medicine, review of, 22:47344
use in radiometric thickness, displacement, and pressure gage, 22:40476(P)
use in telescopic arrangement for detection of charged particles from fast neutron reactions, 22:43033
use in telescopic arrangement of detectors for charged particles from fast neutron reactions, 22:43065
use in three-crystal pair gamma spectrometers, 22:8369
use in x-ray fluorescence analysis, 22:19096 (INR-820/II/PS)
use in x-ray--alpha coincidence circuit for determining isotopic composition of plutonium, 22:47312 (BNWL-715(Pt.1), pp 20-9)
use of avalanche-type, for in-vivo radiodiagnosis of heart defects in man, 22:19097(R) (NYO-3246-TA-1)
use of avalanche-type, for measuring spectra of carbon-14, 22:45281(R) (NYO-3246-TA-3)
use of avalanche-type, for plutonium detection in wounds, 22:45281(R) (NYO-3246-TA-3)
use of avalanche-type, in prototype catheter for krypton-85 measurements, 22:45281(R) (NYO-3246-TA-3)
use of lithium-6-sandwiched surface barrier, for measuring fast neutron spectra in shielding layers, 22:38064 (CONF-670545, pp 185-90)
use of miniature, in biomedicine, 22:37984 (CONF-670545-, pp 126-36)
use of position-sensitive, for measuring properties of double-focusing magnetic spectrometers, 22:14838
use of position-sensitive, for measuring properties of magnetic spectrometers, 22:8336 (ANU-P-387)
use of small, for measuring neutron flux profiles in reactor cores during zero power experiments, 22:37989 (CONF-670545, pp 191-9)
use of surface barrier, on-line with computer for identifying nuclear particles, 22:28073
use of surface-barrier, for determining particle energy and position, 22:37980 (CONF-670545, pp 73-80)
use with converter foils for measuring neutron spectra and flux, 22:51231
use with PDP-8 computer for charged-particle analysis, 22:344 (ORNL-TM-2013)

uses in biology, chemistry, medicine, nuclear physics, and space physics, 22:16877
uses in radioisotope technology, 22:43066
window thickness and rectifying process in surface-barrier, 22:40392
RADIATION DETECTORS, SEMICONDUCTOR (GERMANIUM)
amplifier for, design of pulse shaping variable gain, 22:14842
amplifiers for lithium-drifted, design of low-noise pulse, 22:14747 (EUR-3659)
background reduction of lithium-drifted, use of massive cosmic-ray shielding for, 22:23259 (BNWL-SA-1516)
calibration of lithium-drifted, for gamma radiation energy and relative intensity measurements, 22:6631
calibration of lithium-drifted, up to 3.5 MeV, use of cobalt-56 gamma source for, 22:2364
calibration of lithium-drifted, using barium-133, 22:2352
carrier transit times in, use of collimated gamma radiation for determining, 22:38041
carrier trapping in lithium-drifted, use of collimated gamma radiation for determining, 22:38041
carriers in lithium-drifted, use of collimated gamma radiation for determining properties of, 22:38041
change collection in coaxial lithium-drifted, 22:20497(R) (AECL-3009)
characteristics for gamma detection, 22:23284
characteristics of coaxial lithium-drifted, through warmup and redrift cycles, 22:40398
charge collection efficiency of lithium-drifted, for detection of x radiation, 22:28087
charge collection in coaxial lithium-drifted, 22:46729(R) (AECL-3157)
charge collection in coaxial lithium-drifted, for gamma spectroscopy, 22:40396
charge trapping and detrapping in lithium-drifted, 22:40391
charged-particle energy loss, range, and stopping power in, 22:16859 (CEA-R-3371)
circuits for lithium-doped, design of digital gating system for γ-γ coincidence, 22:28075
compensated region of lithium-drifted, use of thin plastic coating for protection of, 22:36046
conduction channel formation in homogeneous, 22:14806
cooling of lithium-drifted, design of miniature cryostat for, 22:6611
core shape and size in coaxial lithium-drifted, use of collimated gamma radiation for determining undrifted, 22:38041
cryostats for lighium-drifted, design of, 22:38057 (AE-320)
current leakage detection and high voltage removal from, design of equipment for, 22:14897
current--voltage characteristics of lithium-drifted, surface treatment effects on, 22:28091
description of lithium-drifted, for gamma-ray and particle spectroscopy, 22:38061 (CONF-670545-, pp 116-25)
design and fabrication of, 22:16877
design and performance for gamma spectroscopy using sum and coincidence methods, 22:19149
design and performance of anticoincidence-shielded lithium-drifted, for gamma spectroscopy, 22:40444
design and performance of coaxial lithium-drifted, with active volumes between 20 and 40 cm³, 22:6615
design and performance of coaxial lithium-drifted, for gamma detection, 22:2418
design and performance of lithium-drifted, for anticoincidence-shielded gamma spectroscopy, 22:23308 (BNWL-SA-1522)
design and performance of lithium-drifted, for gamma spectroscopy, 22:38058 (CEA-R-3405)
design and performance of lithium-drifted, for high resolution gamma spectroscopy, 22:38062 (CONF-670545-, pp 146-55)
design and performance of lithium-drifted, for high-resolution neutron-capture gamma spectroscopy, 22:45315 (AAEC/TM-462)
design and performance of lithium-drifted, for neutron-capture gamma spectroscopy, 22:10575 (CEA-Bib-110)
design and performance of lithium-drifted, for total absorption gamma spectroscopy, 22:23307 (BNL-12332)
design and performance of lithium-drifted, with germanium junction FET preamplifier for gamma and x-ray spectroscopy, 22:40450
design and performance of planar lithium-drifted, connected in parallel for large-volume biological analysis, 22:4431 (UCRL-70545)
design and use of high-resolution lithium-drifted, for gamma radiation, 22:2353
design of lithium-drifted, for coincidence gamma spectroscopy, 22:40445
design of lithium-drifted, for gamma-spectroscopic analysis of biological materials, 22:4461 (UCRL-70544)
design of lithium-drifted, for use in Compton sum coincidence gamma spectrometer, 22:40443
design of lithium-drifted, with germanium FET preamplifier for gamma and x-ray spectroscopy, 22:19136 (UCRL-17901)
development and uses of lithium-drifted, 22:14800
development and uses of lithium-drifted, conference on, 22:14753 (STI/PUB-132)
development for nuclear physics research, 22:14763
development of avalanche-type, 22:40389
development of high-resolution, for clinical use, 22:12864(R) (ORO-2401-10)
development of lithium-drifted, 22:11944(R) (AECL-2780)
development of lithium-drifted, for charged particle spectroscopy, 22:40400
development of lithium-drifted, for gamma spectroscopy, 22:45316 (AERE-R-5703)
development of time-of-flight gated lithium-doped, for detecting gamma rays, 22:26932(R) (NP-17434)
development of total absorption lithium-drifted, for gamma spectroscopy, 22:40441
efficiency and resolution of lithium drifted, for measuring radioactive fallout, 22:45320
efficiency calibration of lithium-drifted, for detection of gamma rays at 20 to 100 keV, 22:45296
efficiency for gamma detection, 22:8345
efficiency for protons at 5 to 150 MeV, corrections for nuclear reactions, (E/T), 22:13927(R) (USC-136-132)
efficiency for protons, nuclear reaction correction for, 22:14796
efficiency in neutron activation analysis of geological samples, 22:44975 (MIT-905-125)
efficiency of cylindrical-type lithium-drifted, calculated, 22:7569(R) (BARC-291)
efficiency of lithium-drifted, empirical method for determining full-energy peak and two-escape peak, for gamma detection, 22:333
efficiency of lithium-drifted, for 0.2- to 1.5-MeV gamma radiation, equation for, 22:49080
efficiency of lithium-drifted, for forensic activation analysis, 22:30850
efficiency of lithium-drifted, use of collimated gamma radiation for determining, 22:38041
efficiency of, for x-ray detection, 22:40430
electron--hole production from thermal radiation of casing of lithium-drifted, current leakage due to, 22:49082
electron-hole pair formation energy in γ detection at 10 to 170°K, average, 22:20497(R) (AECL-3009)
energy loss by electronic excitation in, 22:14831
energy per electron--hole pair in lithium-drifted, for gamma radiation, temperature effects on, 22:28090
energy resolution of lithium-drifted, theoretical limits of, 22:37979 (CONF-670545-, pp 57-61)
fabrication and characteristics of coaxial lithium-drifted, for gamma spectroscopy, 22:14829
fabrication and operation characteristics of lithium-drifted, 22:33648
fabrication and performance of lithium-drifted, for gamma spectroscopy, 22:28179
fabrication and performance of lithium-drifted, for studying nuclear reaction gamma rays, 22:37992 (N-68-11787)
fabrication and properties of lithium-drifted, for gamma detection, 22:19117
fabrication and use of lithium-drifted, 22:10543 (UJV-1873)
fabrication and use of lithium-drifted, 22:14802
fabrication and uses of lithium-drifted, 22:23358 (IA-1128, pp 185-212)
fabrication for gamma detection, problems in, 22:14799
fabrication of, 22:14798
fabrication of ion-doped, 22:40387
fabrication of lithium-drifted and lithium-diffused, 22:38035
fabrication of lithium-drifted planar, methods development for, 22:26929(R) (COO-1420-139)
fabrication of lithium-drifted, at Soreq Nuclear Research Center, 22:36031 (IA-1153)
fabrication of lithium-drifted, bibliography on, 22:28062 (CEA-Bib-90)
fabrication of lithium-drifted, crystal growth methods for, 22:40401
fabrication of lithium-drifted, diffusion techniques for, 22:28092
fabrication of lithium-drifted, for gamma-ray detection in Moessbauer experiments, 22:6562 (NYO-2028-2, pp 150-8)
fabrication of lithium-drifted, methods development for, 22:11950(R) (ORO-3624-1)
fabrication of lithium-drifted, technique for determining depletion depth in, 22:14797
fabrication of planar and coaxial lithium-drifted, for gamma spectroscopy, 22:14830
fabrication of, testing and evaluation of crystals for, 22:38034
Fano factor in, 22:40385
gamma angular correlation attenuation coefficients and efficiencies for square lithium-drifted, calculation of, 22:19109
gamma spectra from, use of on-line computer for analysis of, 22:43076 (AAEC/TM-458)
gamma spectral line broadening in, at 0.2 to 2.5 MeV, energy dependence of, 22:10577 (SGAE-PH-55/1967)
ionization energy measurements as function of temperature in lithium-drifted, for alpha particles, electrons, and gamma radiation, 22:14809
leakage current in lithium-drifted, negative differential resistance, 22:14760

- operation and efficiency of lithium-drifted, for gamma spectroscopy, 22:40453
- operational principles and physical properties of, 22:37976 (CONF-670545-, pp 7-16)
- peramplifiers for, design of charge-sensitive, low noise, FET, 22:28125
- performance for beta spectroscopy, 22:14825
- performance in γ spectrometry in comparison to scintillation detectors, 22:40679
- performance in neutron activation analysis in forensic science, 22:22929(R) (GA-8013)
- performance of 20-cc lithium-drifted, 22:32513(R) (ANU-P-400)
- performance of 20-cm^3 lithium-drifted, 22:18123(R) (RLO-1925-11)
- performance of coaxial lithium-drifted, for gamma spectroscopy, 22:14833
- performance of large-volume open-ended coaxial lithium-drifted, for gamma spectroscopy, 22:19138
- performance of lithium-drifted, for determining purity of radioisotope preparations, 22:2411
- performance of lithium-drifted, for high-resolution gamma spectroscopy, 22:37999 (UCRL-50437)
- performance of lithium-drifted, for measuring gamma spectra of cyclotron activated parts, 22:37986 (CONF-670545, pp 156-63)
- performance of lithium-drifted, for measuring x ray spectra, 22:45314
- performance of lithium-drifted, for spectra measurements of fission fragments, 22:37987 (CONF-670545, pp 164-70)
- performance of lithium-drifted, for x-ray spectroscopy, 22:38063 (CONF-670545-, pp 171-6)
- performance of, effects of preamplifier noise and response on, 22:27534 (NBS-TN-421)
- photopeak analysis program for gamma spectrometers of lithium-drifted, 22:2405
- positions of poor resolution in lithium-drifted, use of collimated gamma radiation for determining, 22:38041
- preamplifier for lithium-drifted, for coincidence measurements, high-speed low-noise FET, 22:51276(R) (IDO-17269)
- preamplifier for lithium-drifted, low-noise charge, 22:49091
- preamplifier for small capacity, design of, 22:47336
- preamplifier for use with, low-noise charge-sensitive, (E), 22:5817(R) (NYO-GEN-72-28)
- preamplifiers for lithium-drifted, development of low-noise charge-sensitive, 22:10541 (MIT-952-4, pp 267-99)
- preamplifiers for, design and performance of low-noise, 22:14755 (UCRL-18005)
- preparation and encapsulation of lithium-drifted, for detecting gamma rays, 22:38016(P)
- preparation and performance of half-column p-i-n lithium-drifted, 22:19119
- preparation of electric contacts on lithium-drifted, 22:14798
- preparation of high-purity germanium for, 22:6559 (CONF-660663-, pp 27-36)
- preparation of lithium-drifted, methods development for, 22:35285(R) (AERE-PR/NP-13)
- preparation of p--i--n junction, 22:43028(R) (NYO-3870-1)
- preparation of stable, by compensation with radioinduced structural defects, 22:40386
- production of lithium-drifted, methods development for, 22:32574 (MIT-2098-422, pp 95-105)
- pulse generator as reference for lithium-drifted, design and performance of solid-state double, 22:40440
- pulse shapes from coaxial and planar lithium-drifted, 22:32512(R) (AECL-3108)
- pulse shapes from coaxial lithium-drifted, current and electric charge, 22:19123
- pulse shapes from lithium-drifted, risetime spectrometer for studying gamma-ray, 22:49109
- pulse time measurements in coaxial lithium-drifted, 22:2372
- pulse timing system for lithium-drifted, for gamma detection, 22:45311
- pulse-height defect in gamma-detection lithium-drifted, effects of electron interactions in dead layers on, 22:317
- pulse-height distributions from lithium-drifted, used in gamma spectroscopy, method for calculating, 22:6617(T) (ORNL-tr-1816)
- pulse-height spectra of lithium-drifted, analog decomposition for resolving, 22:16861
- pulses from lithium-drifted, use of collimated gamma radiation for determining origin of slow rising, 22:38041
- pulses from planar lithium-drifted, design of constant-fraction discriminator for timing, 22:36060
- radiation effects on lithium-drifted, 40-MeV proton, 22:40400
- radiation effects on lithium-drifted, fast neutron, 22:28264
- relaxation phenomena in planar lithium-drifted, 22:40397
- resolution of lithium-drifted, for gamma detection, effects of radiation source position on, 22:2341 (AECL-2764)
- resolution of RLC filter and, using pole-zero cancellation technique, 22:14884
- resolution of, intrinsic, 22:40430
- resolving power of lithium-drifted, for gamma-spectrometric identification of fallout nuclides in rainwater, 22:23314
- response functions for large coaxial lithium-drifted, for gamma spectroscopy, 22:25666
- response to monoenergetic gamma rays below 1 MeV, (T), 22:37281(R) (NYO-72-191)
- reworking of lithium-drifted, 22:42019(R) (MLM-1494)
- sensitive volume position in lithium-drifted, use of collimated gamma radiation for determining, 22:38041
- spectra peak areas for activation analysis and γ spectrometry using lithium-drifted, computation of, 22:40013
- surface preparation for obtaining good current-voltage characteristics on lithium-drifted, 22:40402
- time resolution improvement of lithium-drifted, used in coincidence measurements, 22:36057
- time resolution of lithium-drifted, for gamma detection, 22:4427 (LYCEN-6766)
- time resolution of planar lithium-drifted, in gamma--gamma coincidence measurements, 22:28089
- timing characteristics of lithium-drifted, for coincidence experiments, use of collimated gamma radiation for determining, 22:38041
- timing circuits for lithium-drifted, leading edge, 22:40407
- timing properties of lithium-drifted, for gamma spectroscopy, 22:43078
- use for measuring gamma spectra from inelastic scattering of neutrons by fluorine-19 and iodine-127 at 570 and 850 keV, 22:10553
- use for monitoring plutonium in air, 22:14752 (RFP-1046)
- use in dE/dx telescope configuration for detection of charged particles at 1 to 60 MeV, 22:28086
- use in gamma spectrometer for counting gold activation foils, 22:38029
- use in gamma spectroscopy, 22:12600
- use in radiobiology and medicine, review of, 22:47344
- use in three-axis spectrometer for studying gamma decay of magnesium-24, 22:2418
- use of array of lithium-drifted, for gamma spectroscopy for space applications, 22:38112
- use of lithium-drifted, 22:14801
- use of lithium-drifted, 22:14831
- use of lithium-drifted for measuring short nuclear lifetimes, 22:14803
- use of lithium-drifted, as gamma spectrometer for analysis of reactor coolant, 22:30404(P)
- use of lithium-drifted, for alpha, beta, and gamma spectroscopy, 22:16893 (CEA-R-3251)
- use of lithium-drifted, for gamma spectroscopy, 22:12598
- use of lithium-drifted, for gamma spectroscopy, 22:14824
- use of lithium-drifted, for gamma spectroscopy of neutron- and proton-capture reactions, 22:14836
- use of lithium-drifted, for γ spectroscopy in reactor coolant channel for detecting fuel cladding failure, 22:9984 (AECL-2786)
- use of lithium-drifted, for measurement of gamma spectra of fallout, 22:36259
- use of lithium-drifted, for measurement of positron annihilation interactions, 22:33630 (AD-663113)
- use of lithium-drifted, for measuring gamma spectra of short-lived radioisotopes, 22:28148
- use of lithium-drifted, for measuring lifetimes of nanosecond isomeric states, 22:28097
- use of lithium-drifted, for measuring platinum-196 resonance neutron capture spectra, 22:14834
- use of lithium-drifted, for neutron-capture gamma spectroscopy, 22:14832
- use of lithium-drifted, for spectroscopy of mesic atoms, 22:14835
- use of lithium-drifted, for studies of A = 171 decay chain, 22:16015 (NP-17220)
- use of lithium-drifted, in anti-Compton gamma spectrometer, 22:40442
- use of lithium-drifted, in Compton gamma spectrometer, 22:357
- use of lithium-drifted, in gamma spectrometer for neutron activation analysis, 22:45318 (BNWL-SA-2009)
- use of lithium-drifted, in gamma spectrometer for determining uranium-235/-238 ratios following neutron activation, 22:43089
- use of lithium-drifted, in two-crystal pair gamma spectrometers, 22:10585
- use of lithium-drifted, with bent crystal gamma spectrometer, 22:28153

RADIATION DETECTORS, SEMICONDUCTOR (SILICON)

- amplifier and pulse analyzer for, used in alpha and proton spectroscopy on lunar surface, 22:12599
- calibration of satellite-borne telescopic system for proton and electron detection, 22:23293
- calibration of, used for x-ray detection, 22:14754 (UCID-15277)
- charge collection efficiency of lithium-drifted, for detection of x radiation, 22:28087
- charged-particle energy loss, range, and stopping power in, 22:16859 (CEA-R-3371)
- conduction channel formation in homogeneous, 22:14806
- current--voltage characteristics of surface-barrier,

22:47322 (UUIP-597)
defects of p-n junction in p-i-n, detection of, 22:10552
description of p-i-n and lithium-drifted, 22:21318 (UCRL-50176)
description of three-electrode surface-barrier, for alpha detection, 22:23297
description of, for gamma-ray and particle spectroscopy, 22:38061 (CONF-670545-, pp 116-25)
design and fabrication of, 22:16877
design and performance for high-resolution proton spectroscopy, 22:352
design and performance of gold-coated surface-barrier, 22:23277
design and performance of lithium-drifted, 22:51238
design and performance of p-n junction, for operating at high temperatures, 22:38033
design and performance of phosphorus-diffused, for fast neutrons, 22:314
design and performance of position sensitive, using ion implantation, 22:14789
design and performance of position-sensitive lithium-drifted, 22:45337(R) (NYO-3510-5)
design and resolution of, for alpha and beta spectroscopy, 22:2404 (RT/EL-(67)4)
design and testing of helium-3-sandwiched, for neutron spectroscopy in critical assemblies, 22:47360 (IITRI-578-P-31-2)
design for fast neutron dosimetry, 22:36113(P)
design for in vivo dosimetry, 22:30872(P)
design of 12-channel array of lithium-drifted, for NBS electron scattering spectrometer, 22:40446
design of lithium-drifted, for conversion-electron and x-ray spectroscopy, 22:19134 (JINR-P13-3718)
design of lithium-drifted, for detecting charged particles, 22:47339(P)
design of lithium-drifted, for x ray detection, 22:33649
design of miniature p--n junction, for in vivo measurements, 22:45337(R) (NYO-3510-5)
design of position-sensitive, for low-energy electrons, 22:28083
design of system for Surveyor V for alpha-backscatter measurements on lunar surface, 22:14793
development for nuclear physics research, 22:14763
development of arrays of avalanche-type, 22:40389
development of catheter-type, for medical use, 22:33645
development of, for fast neutron personnel dosimetry, 22:38099 (CONF-670545, pp 217-27)
efficiency for protons at 5 to 150 MeV, corrections for nuclear reactions, (E/T), 22:13927(R) (USC-136-132)
efficiency for protons, nuclear reaction correction for, 22:14796
efficiency of avalanche-type, for tritium counting, 22:19097(R) (NYO-3246-TA-1)
efficiency of lithium-doped, geometrical, for tracer studies of blood flow in renal tissues, 22:14757
efficiency of, for neutron spectroscopy, 22:36090
efficiency of, for x-ray detection, 22:40430
electron scattering from, at 50 to 625 keV, 22:25647
fabrication and performance of lithium-drifted, for spectroscopy of electrons and low-energy gamma rays, 22:4457 (MLM-1351)
fabrication and performance of surface-barrier, for x-ray spectroscopy, 22:21344
fabrication and performance of surface-barrier, for spectroscopy, 22:4457 (MLM-1351)
fabrication and uses of, 22:37982 (CONF-670545, pp 96-106)
fabrication by boron and phosphorus ion-implantation, 22:323
fabrication for beta spectroscopy, review of, 22:47368
fabrication of convex-shaped surface-barrier, for use in electrostatic precipitators for alpha detection in air, 22:4423 (CLOR-65/D)
fabrication of high-resolution, for alpha and beta spectroscopy, 22:2403 (RT/EL-(67)1)
fabrication of ion-doped, 22:40387
fabrication of lithium-doped p--i--n and surface-barrier, 22:23264 (CEA-R-3419)
fabrication of lithium-drifted, 22:10555
fabrication of lithium-drifted, 22:19107
fabrication of lithium-drifted, 22:11949(R) (ORO-2972-47)
fabrication of lithium-drifted, bibliography on, 22:28062 (CEA-Bib-90)
fabrication of lithium-drifted, for beta detection, 22:47328
fabrication of lithium-drifted, method for, 22:10556
fabrication of lithium-drifted, methods development for, 22:9800(R) (COO-535-571)
fabrication of miniature lithium-drifted, 22:43057
fabrication of position-sensitive boron- and phosphorus-doped, 22:40388
fabrication of surface-barrier p-type, for alpha particle detection, 22:19124
fabrication of surface-barrier p-type, for alpha particle detection, 22:14805
fabrication of thick lithium-drifted, for nuclear physics experiments at Univ. of Colorado cyclotron, 22:320
fabrication of, testing and evaluation of crystals for, 22:38034
Fano factor in, 22:40385
gamma spectral line broadening in, at 0.2 to 2.5 MeV, energy dependence of, 22:10577 (SGAE-PH-55/1967)
ion reactions in, low-energy positive, (E/T), 22:22202 (NYO-2962-6, pp 55-62)
ionization energy measurements as function of temperatur in lithium-drifted, for alpha particles, electrons, an gamma radiation, 22:14809
meson (π^+) and (π^-) dose distribution at 65 MeV in, 22:49127 (ORO-3343-2)
operation of contoured lithium-drifted, at high voltage, 22:49085
operation of lithium-drifted, at 60°C, 22:43064
operation of lithium-drifted, effects of long-term storage under ambient temperature conditions on, 22:43064
operational principles and physical properties of, 22:37976 (CONF-670545-, pp 7-16)
peramplifiers for, design of charge-sensitive, low noise FET, 22:28125
performance for industrial control monitoring of radioactive contamination in lead, 22:36034 (NYO-3540 1)
performance in determining energy distribution of recoil protons in tissues and tissue-equipment materials, 22:37988 (CONF-670545-, pp 178-84)
performance of depleted, using plutonium conversion foil for fast neutron detection in intense transient gamma field, 22:43053
performance of lithium-drifted, in mobile x-ray fluorescence detector for heavy minerals, 22:2348 (ORNL-IIC-10(Vol.1), pp 503-21)
performance of, effects of preamplifier noise and response on, 22:27534 (NBS-TN-421)
performance of, for measuring neutron radiation damage i solids, 22:10263 (CEA-R-3228)
preamplifier for, design of low-noise, 22:2350 (UCRL-17818)
preamplifiers for, design and performance of low-noise, 22:14755 (UCRL-18005)
preparation and performance of half-column p-i-n lithium-drifted, 22:19119
preparation of lithium-drifted, time variation of drift region during, (E/T), 22:49081
preparation of phosphorus-diffused, 22:14786
pulse time distribution of lithium-drifted, used for electron detection, 22:23281
pulse time spread of lithium-drifted, for beta particle detection, 22:23265 (INR-P-867/IA/E)
radiation damage in surface-barrier, high-energy proton, 22:47443 (N-68-24660)
radiation damage in, used as fast neutron dosimeter, isochronal and isothermal annealing of, 22:33666 (AD-661323)
radiation effects on n-type, 1-MeV electron, 22:16970
radiation effects on performance of surface-barrier, 0.8- to 5.0-MeV proton, 22:40512
radiation effects on stability of spectrometers of, proton, 22:2477
radiation effects on surface-barrier, 50-keV to 1-MeV proton, 22:36156 (N-68-15364)
radiation effects on useful lifetime of surface-barrier, 0.05- to 1.0-MeV proton, 22:28268
radioinduced pulse-height defects in thin-window surface-barrier, helium, neon, and nitrogen ion, 22:28088
radioinduced space-charge buildup in MOS, 22:33706
rectification characteristics of surface-barrier gold--n--silicon, 22:40393
resolution and linearity of one-dimensional position-sensitive surface-barrier, 22:16868
resolution of high resistivity surface-barrier, effects of preferential trapping of holes on, 22:49079
resolution of, intrinsic, 22:40430
response function for fully depleted p--n, determination of, 22:19099 (UCID-4675)
response of avalanche-type, for detection of electrons at 5 to 40 keV, 22:45281(R) (NYO-3246-TA-3)
response of lithium-drifted, to 0.3- to 1.2-MeV electrons, backscattering and bremsstrahlung effects on, (E/T), 22:49090
response of lithium-drifted, to high-energy charged particles, 22:28093
response to 0.25- to 1.00-MeV electrons, 22:40403
surface-barrier formation in, theory of, 22:35285(R) (AERE-PR/NP-13)
time resolution of, for gamma detection, 22:43073
timing system for, design of low-walk high-resolution, 22:40406
use for determining neutron emission from fission fragments from californium-252, 22:46805
use for dosimetry of californium-252 fast neutrons in tissue-equivalent phantom, 22:43109 (TID-24609)
use for low-background activity measurements of beta sources, 22:6581
use for measuring alpha activity of airborne dusts collected on filter papers, 22:51099
use for measuring fission fragment energy spectra, computer program for determining parameters for, 22:47347
use for measuring small-angle inelastic proton scattering by nuclei, 22:16884
use for proton-induced fission studies at CERN, 22:49104
use in beta spectrometer for measuring conversion

    electron spectra, 22:48509(R) (BMwF-FBK-68-22)
  use in combination with scintillation detectors for clinical dosimetry, 22:38296
  use in dE/dx telescope configuration for detection of charged particles at 1 to 60 MeV, 22:28086
  use in portable survey meter for measuring intense gamma radiation, 22:21306 (AECL-3023)
  use in radiobiology and medicine, review of, 22:47344
  use in satellite-borne cosmic ray telescope, 22:43024 (CONF-680441-1)
  use of lithium-doped, in $4\pi\beta$ spectrometer, 22:23315
  use of lithium-drifted, as x-ray detectors for analysis of low-grade ores, 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
  use of lithium-drifted, for beta dosimetry, 22:30825(R) (UCRL-50007-67-3)
  use of lithium-drifted, for detecting plutonium and americium in wounds, 22:8340 (RFP-1068)
  use of lithium-drifted, for measuring energy of gamma radiation, 22:8351
  use of lithium-drifted, for x-ray spectroscopy, 22:2401 (ORNL-IIC-10(Vol.1), pp 424-41)
  use of lithium-drifted, in beta spectrometer for measuring radioactive fallout, 22:45331
  use of lithium-drifted, in counter telescopes for measuring angular distribution and energy of charged particles produced in neutron reactions with nuclei, 22:6638
  use of lithium-drifted, in radiometric gage for measuring jet engine fuel mass, 22:38124
  use of lithium-drifted, in radiometric system for measuring free-stream air density on wing of X-15 aircraft, 22:38135
  use of lithium-drifted, in x-ray spectrometer for fluorescence analysis, sensitivity for, 22:38076
  use of low-background 4π, for activity measurements of beta sources, 22:6582
  use of position-sensitive, with photoelectric cells for detection of ultraviolet radiation, 22:28083
  use of surface-barrier, for gamma and x-ray dosimetry, 22:14860
  use with thin polyethylene proton radiators for fast neutron detection, 22:12587
RADIATION DETECTORS, SPARK CHAMBER
  book: Bubble and Spark Chambers, Vol. I, 22:38096
  book: Spark Chamber, 22:10607
  calibration and testing of, use of pulsed light sources for, 22:45312
  circuit for switching clearing field for, 22:19152
  construction of digitized, manufacturing of photographic negative with parallel lines for, 22:28171
  construction of large wire, wire stretching machine for, 22:49114 (CERN-68-34)
  count recording equipment for, pulsed power supply for lighting of, 22:4311 (UCRL-17621)
  data from magnetostrictive wire, use of on-line computer for analysis of elastic differential cross section, 22:47372 (PPAR-3)
  data readout system for, using capacitors and field effect transistors, 22:28167
  data readout system with direct selection of information for wire, 22:43107
  data recording system for, design of magnetic, 22:14844 (AERE-R-5008)
  data storage and display for magnetostrictive, delay-line multiplexing method for, 22:6643 (UCRL-17623)
  description of combination nuclear emulsion--, for 15-GeV cosmic photons, 22:10559
  description of, for isotope localization in man, 22:40433
  design and operation of magnetostrictive, 22:6641 (INFN/AE-66/6, pp 1-20)
  design and performance for detecting cosmic gamma radiation, 22:51250
  design and performance for polarization parameter measurement for $\pi^- + p \to \pi^0 + n$ interactions, design and performance of triggering device for, 22:21348 (CEA-R-3357)
  design and performance of 1.5 m^2 wire, 22:40464
  design and performance of helium-filled streamer, 22:38081 (UCRL-16891)
  design and performance of high-density liquid helium and argon, 22:10596 (TID-24218)
  design and performance of high-Z cylindrical, 22:24777
  design and performance of magnetic core digitized, for gamma-ray telescopes, 22:366
  design and performance of magnetostrictive wire, 22:47378
  design and performance of sparkostrictive, with piezoelectric readout, 22:28166
  design and performance of streamer, 22:21350 (CONF-670923-, pp 571-85)
  design and performance of streamer, for studying $K_2^0 \to \pi^+ + \pi^- + \pi^0$ decay, 22:36102
  design and performance of thin-gap wire, with magnetostrictive readout, 22:369
  design and performance of wire, for K/sub e/$_4$ decay studies, 22:22332(R) (UH-511-23)
  design for 3-GeV electron--positron storage ring, 22:11822
  design for beta particles, x rays, and gamma rays, 22:2385(P)
  design for detection of gamma rays from cosmic sources, (E), 22:52424
  design for gamma-ray astronomy, (T), 22:13084
  design for imaging gamma- or x-ray emitters for medical use, 22:37973 (CEA-R-3320)
  design for neutron spectroscopy, using recoil protons, 22:21339 (TID-24308)
  design for storage rings, 22:11824
  design for studying meson resonance radiative decay, 22:38090
  design of 200-mm diameter, 22:4543
  design of cage coil--, for storage rings, 22:11825
  design of decision-making logic system for, 22:16908
  design of inductive, for use as detector in magnetic spectrometer, 22:28127
  design of large wire, with magnetostrictive readout, 22:4480(P)
  design of low-density, using polyurethane foam core, 22:23325
  design of multilayer, for detection of fission fragments, 22:45333 (JINR-P3-3957)
  design of transmission-line-type digital, 22:40463
  design of transmission-type digital, 22:25670 (BNL-12362)
  design of wire, with static magnetostrictive delay-line store, 22:47370 (JINR-P13-4020)
  design with electronic readout for use as range chamber, 22:23323
  design with increased isotropism, 22:30863
  design, operation, and uses of, 22:43106
  development and operation of streamer, 22:45336
  development and operation of wide-gap, 22:45336
  development and performance of spark and streamer, for use with accelerators, 22:12642
  development at MIT, status of, 22:30856 (MIT-2098-422, pp 10-12)
  development for detection of fission fragments, 22:14001 (RPI-328-100, pp 1-56)
  development for fission detection, 22:39506 (RPI-328-123, pp 53-63)
  development for use at proposed 300-GeV proton synchrotron, 22:48387 (CERN/ECFA-67/16(Vol.1))
  development of multiwire, 22:1598(R) (COO-1265-49)
  development of neutron, using boron converter at high temperatures, 22:10542(R) (TID-24212)
  development of thin window transmission counter for entrance of magnetic spectrograph, 22:46729(R) (AECL-3157)
  development of wire, 22:32039(R) (COO-1195-124)
  digitizing system for magnetostrictive, design of low-cost large-scale, 22:40465
  digitizing system for magnetostrictive, design of low-cost large scale, 22:25671 (UCRL-17938)
  discharge in, passive readout technique for distinguishing, 22:43105
  efficiency of argon-filled, method for improving, 22:49122
  efficiency of helium--alcohol, at low pressures, for detection of slow alpha and beta particles, 22:6600
  efficiency of multiplate, at high-background conditions, 22:30861
  electric breakdown along particle trajectories in wide-gap, 22:14845
  electric discharge in streamer, fast electron and x ray energies during initial states of impulse, 22:16905
  electric discharge mechanisms in streamer, 22:8389
  electrostatic field in wire, calculation of, 22:33689 (ZfK-121, pp 1-133)
  fabrication of cylindrical wire, 22:6651
  ionization in helium-filled streamer, measurement of relativistic increase of specific primary, 22:47379
  magnetostrictive readout system of, effects of magnetic field strength on sensitivity of, 22:36108
  magnets for, development of superconducting, 22:50486 (BNL-12832)
  operation of streamer, for detection and measurement of cosmic particles, 22:38087
  operation of wire, with ferrite memory system, 22:38089
  operation of, effects of alcohol vapors in gas mixture on, 22:49124
  particle track analysis in, errors in scanning devices for, 22:45334 (JINR-P10-3910)
  particle track coordinates in wire, use of ferrite memory systems for recording, 22:6647
  particle track data readout for, LI-415 vidicon automatic system for, 22:49123
  particle track distortion in streamer, 22:2424
  particle track film analysis of, SPDL computer system for, 22:36099 (SLAC-84)
  particle tracks in computer-controlled manual system for film analysis of, 22:23322 (SLAC-81)
  particle tracks in picture description language for computer film analysis of, 22:10595 (SLAC-PUB-358)
  particle tracks in SLAC streamer, photographic techniques for, 22:16907
  particle tracks in streamer chamber, angular dependence of brightness of, 22:8385
  particle tracks in streamer, use of image intensifier for photographing, 22:4479
  particle tracks in, ARIANE flying-spot device on-line to small computer for film analysis of, 22:2423

  particle tracks in, computer-based system for film analysis of, 22:19153
  particle tracks in, description of CHLOE film digitizing system for analysis of, 22:38093
  particle tracks in, description of Hummingbird automatic film digitizer for analyzing, 22:28165 (SLAC-82)
  particle tracks in, design and performance of vidicon for recording, 22:36105
  particle tracks in, digital system for analysis of, 22:6651
  particle tracks in, high-speed flying image digitizer for film analysis of, 22:40459 (BNL-12679)
  particle tracks in, SASS computer-controlled scanning system for film analysis of, 22:2419 (UCRL-17695)
  particle tracks in, SLAC automatic film digitizer for analysis of, 22:47373 (SLAC-PUB-426)
  particle tracks in, system for automatic film analysis of, 22:21316 (RT/EL-(67)13)
  particle tracks in, testing program for generation of fictitious tracks in geometrical reconstruction of, 22:4473 (JINR-P10-3526)
  particle tracks in, transistorized control circuit for semi-automatic film scanner for analysis of, 22:25672(T) (NP-tr-1651)
  particle tracks in, use of CDC 160A computer for analysis of, 22:16906
  performance, 22:23260 (CEA-Bib-102)
  performance of helium-filled and neon-filled streamer, for protons, 22:8386
  performance with gas discharge and energy-loss in thin films for identification of high-energy particles, 22:12641
  photographic system for, 22:11824
  pulse generator for isotropic monogap streamer, design and performance of, 22:33664
  pulse generator for, design of, 22:8384 (JINR-P13-3570)
  pulse generator for, with gaps of 1.0 to 15 cm, design of high voltage, 22:38082
  pulse measurements for, attenuator for high-voltage nanosecond, 22:23324
  pulsing of wire, system with four hydrogen thyratrons for, 22:43098 (CERN-68-26)
  readout system for, design of high-sensitivity, used in strong magnetic fields, 22:40466
  readout system for, design of nonmagnetic digital, 22:40467
  readout system of wire, design of modular data acquisition system for magnetostrictive, 22:30857 (RHEL/R-157)
  response of wire-plate, in air, 22:40462
  testing of streamer, 22:49125
  trigger circuit for, 22:28172(P)
  triggering gas-filled, design of pulse generator for, 22:19159(P)
  use for measuring neutron transport through iron at 4 to 200 MeV, 22:50518
  use for studying charged particle and gamma radiation background in Orsay electron--positron storage ring, 22:11817
  use in hodoscope--spark chamber detection system of BNL AGS, 22:37213 (BNL-12539)
  use in spark-imaging camera for mapping radioisotope distribution patterns, 22:2345 (ORNL-IIC-10(Vol.1), pp 268-81)
  use in system for measuring charge composition of primary cosmic radiation from Z = 1 to 50 at 10 GeV to 100 TeV, 22:40412
  use of proportional-detector-controlled streamer, for recording stopping of slow mesons, 22:6648
  use of wire, for measurement of activity of alpha sources, 22:328
  use with aluminum and carbon, plates for measuring neutron polarization, 22:35285(R) (AERE-PR/NP-13)
  use with image intensifiers for radiography, 22:4543
  use with iron absorbers and scintillation detectors for spectroscopy of high-energy particles, 22:21347(T) (AD-666080)
  use with storage rings, 22:11823
RADIATION DOSE
    see also Linear Energy Transfer
    see also Radiation Dosimetry
  absorbed by lizards in natural enclosure, continuous γ, 22:45470
  absorbed by man from xenon-133 inhalation, 22:40664 (NP-17466)
  attenuation in nonhydrogenous shields followed by thin hydrogenous shields, fast neutron, 22:40663 (LA-DC-9418)
  beta, absorbed by man following tritium inhalation, 22:45505 (DP-MS-66-77)
  beta, to bladder, kidneys, and liver from iodine-131-labeled hippuran, 22:19381
  beta, to bones, use of point source method for determining, 22:19324 (AERE-R-5679)
  beta, to thyroid of cattle from iodine-131, effects of rate of uptake on, 22:40831 (ORO-657, pp 46-64)
  buildup in human gonads, measurement of, from diagnostic radiography, x, 22:38323
  buildup in tissues, calculation of fast neutron and proton, 22:38315
  calculation by analog computers, use of, in therapy, 22:45533
  calculation during chronic exposure, mathematical model for, 22:28485
  calculation following reactor accident, PLUME computer program for, 22:19332 (ORNL-4086)
  calculation for bones, liver, lungs, and kidneys following inhalation of plutonium-239 oxide aerosols, use of inhalation model and computer analysis for, 22:23503 (BNWL-SA-1540)
  calculation for doubling rate of spontaneous point mutations, 22:31048
  calculation for high energy therapy of tumors of man, γ and x, 22:28466
  calculation for human population of Soviet Union, 22:33800 (A-AC-82/G/L-1182)
  calculation for iodine-131 therapy of hyperthyroidism in man, 22:38303
  calculation for life-time exposure of human x-ray technicians, 22:31242
  calculation for mammary glands of man following intravenous injection of gold-198-labeled colloids, 22:38369
  calculation for man exposed to atomic bombings at Hiroshima and Nagasaki, 22:38487
  calculation for man following dispersion of SNAP radioisotope fuels into environment, models for, 22:23509(R) (SC-CR-67-2729)
  calculation for man following nuclear explosion, use of cesium-137 content of milk for, 22:21508
  calculation for man following plutonium-238 inhalation or skin contamination, 22:38261(R) (SC-CR-67-2845)
  calculation for personnel in medical radiography, method for, 22:43332
  calculation for population from re-entry of nuclear rocket engines, effect of destruct mechanism on, (E/T), 22:30280 (NUS-277)
  calculation from airborne fission products, computer program for γ, 22:51561 (BNWL-811)
  calculation from particle current from shielding at 400-MeV linear electron accelerator, 22:11485 (ORNL-4211)
  calculation in air following nuclear test explosion, γ, 22:45519
  calculation in lungs and lymph nodes of man following inhalation, evaluation of biological model for, 22:33810 (CEA-R-3382)
  calculation in man following activation in situ, 22:36192
  calculation in vicinity of boilers during testing with γ radiometric pressure gages, computer methods for, 22:45579
  calculation of 1946 LASL criticality excursion, blood-sodium and mockup analysis for revised, 22:27465 (LA-3861)
  calculation of absorbed fractions for determining photon, in tissue-equivalent phantoms, 22:36275
  calculation of absorbed, at embryo of dry rice seed, γ, thermal neutron, and x, 22:43344
  calculation of absorbed, during cobalt 60 therapy of uterine cancer, 22:25855
  calculation of absorbed, from radioisotopes, 22:31074
  calculation of absorbed, in man during gold-198 therapy, 22:38300
  calculation of absorbed, of biologically distributed radioisotopes, equations for, 22:36262
  calculation of absorbed, review of equations for, 22:49329
  calculation of accidental neutron, to man, activation analysis of blood sodium for, 22:6799 (LA-3721)
  calculation of central axis depth, for constant source-tumor distance in therapy, 22:43319
  calculation of cloud-contained, from radioactive material released to atmosphere, 22:45196 (TID-24190, pp 301-77)
  calculation of depth, in tissues, method for soft x, 22:49356
  calculation of derivatives of, for shield optimization, Monte Carlo, 22:11487(T) (ORNL-tr-1884)
  calculation of diagnostic, to gonads of man in Yugoslavia, 22:38321
  calculation of distribution of γ, during telecobalt therapy, use of computer for, 22:38281
  calculation of electron, LET models for, 22:38049
  calculation of environmental, from radioactive material releases to atmosphere, 22:45197 (TID-24190, pp 379-99)
  calculation of equivalent, for use in evaluating radiation hazards to man, 22:8597 (CONF-670305-, pp 230-40)
  calculation of fast neutron albedo, formula for concrete, metal and soil, 22:4394
  calculation of genetically significant and somatic, to man during diagnostic x-radiography, 22:19349
  calculation of genetically significant, to human population from diagnostic radiography, biological model for, 22:28534
  calculation of genetically significant, to human population from diagnostic radiography, 22:28531
  calculation of genetically significant, to human population in New York City from diagnostic radiography, 22:28532
  calculation of integral, for γ-radiotherapy of human esophageal carcinomas in relation to RBE, 22:38368

calculation of internal, to man following inhalation or ingestion of iodine-131 or tritium, computer, 22:33814 (ORNL-TM-2229)
calculation of lead-210, to professionally unexposed man, 22:21206 (NEIC-RR-29)
calculation of maximum permissible, for man and mammals, standards for, 22:19325 (BNL-50073)
calculation of maximum personnel, operation safety for power reactors by, 22:48707
calculation of neutron, in open channel arrangement, 22:12937 (CONF-660344-1)
calculation of permissible, from contaminated drinking water, 22:6828
calculation of permissible, from radioisotopes, method and unit for, 22:45547
calculation of radial, along heavy ion tracks, 22:4600 (BNL-11877)
calculation of rate of, from 0.1- to 20-GeV electrons and 0.01- to 20-GeV photons incident normally to water slab, 22:19352
calculation of skin and tumor, during convergent-beam therapy, method for, 22:38272
calculation of tissue absorbed, of man in Far North USSR from polonium-210 and strontium-90 in bones, 22:33803 (A-AC-82/G/L-1190)
calculation of whole-body, to rats on strontium-90 diet, 22:12767
calculation of x, to man during gynecological examination, review of, 22:51660
calculation of, effects of penetration depth in tissue-equivalent phantoms on, 22:6652 (ORNL-4168, pp 183-230)
calculation to determine biological effects, 22:51875 (TID-4060(1st Ed.))
calculations for depths in tissues, computer method for mixed bremsstrahlung and γ, 22:49345
calculations for human infants and children during radioisotope scanning, 22:33826
calculations for ingested materials, 22:45196 (TID-24190, pp 301-77)
calculations for polonium-210 release from isotopic heat sources in space vehicles in launch-abort environment, 22:30776 (SC-CR-67-2801)
calculations for reprocessed breeder reactor fuels, 22:23247(T) (EURFNR-385)
calculations for world populations from fallout through 1962, 22:43345
comparison of therapeutic γ, used at fifteen institutions, 22:51612
conditioning, effects of, on cyclic radiosensitivity of sarcomas in mice, 22:49479 (CONF-680410-, pp 20.1-23)
conference on biological interpretation of accelerator-produced ionizing, 22:8514 (CONF-670305)
control by sieves of aluminum, copper, or lead, whole-body x, 22:49415
control during diagnosis and therapy, methods for x, 22:4624
control during kidney scanning, method for, 22:518 (UCLA-12-655)
control in healthy tissues during radiotherapy, design of apparatus for, 22:10821(P)
depth distribution of bremsstrahlung, 22:45529
derivation of equations for, from inhalation of plutonium-239 aerosols, 22:51566 (IDO-12067)
determination by computer code for populations exposed to nuclear explosions from peaceful uses, 22:51568 (K-1752)
determination during handling of molybdenum-99-technetium-99, effects of shielding on, 22:49389
determination for cobalt radioisotopes in tissues of rats, 22:43263
determination for dental radiography, 22:40683
determination for fast neutrons and protons in relation to production of tumors in rats, 22:38483
determination for fetuses and newborn rats, lethal x, 22:49629
determination for food preservation, 22:38509
determination for processing of corn and pea seeds for meal, γ, 22:23705
determination for therapy of neoplasms, 22:31189
determination for use of iodine-131 in scanning central nervous system of man, β and γ, 22:43370
determination for use of iodine-131 in scanning of human central nervous system, 22:43371
determination from content of β-aminoisobutyric acid, creatine, and taurine in urine of man and rats, 22:49492
determination from radioactivity induced in high-energy accelerators, 22:24749 (CERN/DI/HP-45(Rev.))
determination in man, maximum permissible tritium oxide β, 22:45543
determination in rabbit ear, integral absorbed strontium-90-yttrium-90 β, 22:45546
determination in rats following ingestion and injection of tritium-labeled thymidine, β, 22:45521
determination in use of technetium-99-labeled pertechnetate radiodiagnosis of salivary glands, 22:51778
determination of absorbed, in Arabidopsis seed, heavy particle, 22:47501 (NP-17136)
determination of betatron x, to gonads of man during therapy of chest, 22:36395
determination of external total body dose for AB Atomenergi personnel during 1966, 22:31057 (AE-312)
determination of fallout gamma, within multi-story structures, (E/T), 22:34728 (AD-661091)
determination of growth stimulating γ, for cotton following seed exposure, 22:40956
determination of iodine-131 and technetium-99, to lungs of dogs following intravenous administration, 22:51805
determination of LD 50/30, in primates, α and proton, 22:12928
determination of LD$_{50/30}$ γ, for adult locust, 22:40868
determination of LD50/30, for ducks, 22:19420
determination of maximum permissible occupational exposure, for man, 22:38320
determination of optimum γ, for sterilization of insects, 22:43510
determination of optimum, for electron beam and neutron therapy of malignant tumors, 22:45534
determination of optimum, for processing of crab meat and scallops, 22:17066
determination of permissible, to astronauts during spaceflight, 22:38474
determination of total, to man following technetium-99 diagnosis of thyroid disorders, 22:19386
determination of units of, for radiation processing of food, 22:49669
determination of x, to man and medical personnel during radiology of nerves, 22:33830
determination of, during shipping of radioactive materials, 22:28046
determination to man and personnel during dental radiography, x, 22:43339
determination to personnel in radiodiagnosis and radiotherapy departments, 22:51640
determination using wedge filters in cobalt therapy, 22:43365
determinations in rats using deoxycytidine content of blood plasma, x, 22:43201 (AD-664676)
development of model for, in relation to cell survival, 22:28662
development of scheme for maximization of integral, in radiotherapy of specified anatomical region, 22:6863
diagnostic and therapeutic x, to man in New Zealand, effects of, on leukemia incidence, 22:40927
distribution during radiotherapy of superficial tumors of man, factors affecting high-energy electron, 22:51754
distribution during teletherapy, linear decrement method for evaluation of, 22:51636
distribution during therapy, methods for estimating γ, 22:45636
distribution in astronauts, interpretation of rigidity spectra for solar particle, 22:487 (AD-634608)
distribution in biological materials, effects of LET on, 22:8548
distribution in bone and soft tissue phantoms, use of Monte Carlo method for determination of neutron, 22:8524 (CONF-670305-, pp 306-17)
distribution in cylindrical tissue-equivalent phantom, effect of slant exposure by fast neutrons on, 22:6652 (ORNL-4168, pp 183-230)
distribution in frozen and phantom rats, measurement of x, 22:40723
distribution in head of man during electron-therapy of tumors of maxillary antrum, effects of wedge filters on, 22:51740
distribution in heterogeneous tissue, effects of air cavities, bone density, and tissue thickness on, 22:507
distribution in high-energy electron beam therapy, 22:24772
distribution in human phantoms from monoenergetic neutron beams, Monte Carlo calculation of, 22:28456 (ORNL-P-3048)
distribution in human phantoms, effects of exposure angle and distance on photon, 22:45566
distribution in mammals, development of biological model for evaluation of fast neutron and x, 22:12922
distribution in man during multi-region convergent-beam γ-therapy for deep-seated tumors, 22:38273
distribution in man, effects of collimator on electron, 22:28474
distribution in man, electronic calculation and stereolocalization of three-dimensional x, 22:15045
distribution in media, effects of scattering on fast electron, 22:51580
distribution in phantom simulating human anatomical irregularities, electron, 22:51578
distribution in rats following ingestion of tungsten-185 and -187, γ, 22:38212
distribution in rats, effects of, on hematopoiesis, x, 22:8638
distribution in rats, effects of, on semen quality, 22:10868
distribution in Stebel apparatus, γ, 22:51620
distribution in tissues, calculation and measurement of, 22:51875 (TID-4060(1st Ed.))
distribution in water phantoms, cobalt-60, 22:509
distribution of neutron- and gamma-, effect of air--ground interface on spatial, 22:6652 (ORNL-4168, pp 183-230)
distribution of radium implants, method for control of,

22:546
distributions in moving-field therapy, Atlas of isodose charts for, 22:51674 (STI/PUB-120(Vol.3))
effect on radiosensitivity of bone marrow and peripheral blood cells, 22:49582
effective, for space personnel, factors affecting, 22:6847
effects of life span, mortality, and reproduction of rice stem borers following irradiation of pupae, γ, 22:36397
effects on activity of pH 5 fraction in amino acyl sRNA synthesis, 22:30946
effects on beagles, effects of dose fractionation on partial-body and whole-body x, 22:33907 (UR-49-913)
effects on biological systems, review of small ionizing, 22:38484
effects on blood count and mortality of rats, 120 MeV proton, 22:28645
effects on carcinogenesis in human populations of Hiroshima and Nagasaki, 22:8560 (ABCC-TR-16-63)
effects on cell-size distribution in bone marrow of mice, use of, as index of injury, acute x, 22:49493
effects on clone formation in postirradiation subcultures of Amoeba proteus, x, 22:8628
effects on content of sugar, rotting, and sprouting of stored Korean chestnuts, γ, 22:40985
effects on determination of RBE for fast electrons, 22:51695
effects on development of chest tumors, growth, and life span of mice, 22:45692
effects on development of complications following iodine-131 therapy of exophthalmic goiters, 22:49628
effects on development of dysplasia in hair of mice, 22:19419
effects on effectiveness of radiation processing of cod, 22:6930(R) (COO-1183-24)
effects on film emulsions, equivalences for kilovoltage, 22:51652
effects on fish, effects of fractionation, rate, and temperature on lethal γ and x, 22:15070
effects on frequency of anaphase chromosome aberrations in liver of mice, fast neutron, 22:31049
effects on frequency of chromosome aberrations in Chinese hamster cells, in vivo x, 22:51497
effects on frequency of radioinduced aneuploidy in oogenesis of Drosophila melanogaster, 22:43282
effects on genetic sensitivity of mice to radiation, 22:25819
effects on germination and survival of pines and spruces following γ-irradiation of seed, 22:33976
effects on growth in x-irradiated rats, 22:6910
effects on growth of KB cells, x, 22:2542
effects on growth of Paramecium aurelia, 22:19435
effects on growth of tibia of rats, comparison of hard γ, high-energy electron, and x, 22:38463
effects on γ radiation processing of potatoes, 22:34000
effects on γ-radiosensitivity of beef steaks, effects of temperature on, 22:8674
effects on γ-radiosensitivity of chromosomes of barley root tip cells following seed exposure, effects of dose rate on, 22:45502
effects on γ-radiosensitivity of texture of peaches, evaluation of, 22:47655
effects on heart following x-ray therapy of thoracic tumors, 22:15077
effects on hematopoiesis in rats, 22:15057
effects on histology of cervix, therapeutic γ, 22:45669
effects on incidence of cancer in man, Thorotrast, 22:2552
effects on incidence of chromosome aberrations and mitosis in seeds of peas, 22:23501
effects on incidence of genetic and somatic injuries in man, 22:28666
effects on incidence of leukemia in man, 22:49590
effects on incidence of lymphoma in human population exposed to atomic bombing of Hiroshima, 22:8578
effects on incidence of pathological mitoses in γ-irradiated cells of Vicia faba, 22:40542
effects on incidence of radioinduced leukemia in man and medical personnel, acute and chronic x, 22:38440
effects on incidence of rheumatoid arthritis in Hiroshima and Nagasaki, 22:28597
effects on incidence of thyroid carcinoma in man following exposure during childhood or infancy, 22:28689
effects on induction of mutations in decorative flowering plants, γ, 22:31052
effects on longevity of storage life of potatoes, γ, 22:43507
effects on man, correlation of, with gastrointestinal, hematologic, and neurologic syndromes, 22:43457
effects on mitosis in epithelium of mice, proton, 22:14989
effects on neutron-radiosensitivity of mice, 22:45684
effects on physiological regeneration of neutron-irradiated epithelial cells of cornea of mice, 22:25802(T) (JPRS-42635, pp 65-71)
effects on prodromal syndrome in man, 22:12933
effects on protozoa, proposed mechanism for recovery from high x, 22:40879
effects on radiation effects on physiology of rabbits, x
22:33920
effects on radiopreservation of fish, 22:2559
effects on radiosensitivity of hair matrix cells of mice
effects of growth phase on x, 22:43391 (ACRH-28, pp 101-4)
effects on radiosensitivity of leaf cells of mosses and onion plants, 22:4701
effects on radiosensitivity of respiration of yeast, 22:26001
effects on radiosensitivity of skin, 22:33947
effects on radiosensitivity of vitamin K in aqueous solution, 22:43272
effects on RBE in mammals, 22:8596 (CONF-670305-, pp 128-42)
effects on RBE of γ and x rays in HeLa cells, 22:6878
effects on RBE of ionizing radiations in cultured human cells, 22:8593 (CONF-670305-, pp 51-62)
effects on RBE of protons at end of trajectories, on Escherichia coli and mice, 22:8519 (CONF-670305-, pp 155-73)
effects on recovery of x-irradiated hypoxic cells of mice, fractionated, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on recovery rate of mammals, 22:38431 (UR-49-934)
effects on regeneration of bone marrow in rats, x, 22:43399
effects on replication of DNA in HeLa cells, x, 22:6742
effects on reproduction of x-irradiated fibroblasts and lymphoblasts, 22:25711 (COO-78-163, pp 1-38)
effects on selective destruction of irradiated hypoxic cells, fractionated, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on sensitivity of rat lymphocytes and thymocytes, ionizing, 22:33756
effects on sheep, relation of exposure rate and time to lethal γ, 22:19424
effects on shelf life of fish, effects of fractionation on γ, 22:15125(R) (RLO-1730-2)
effects on soils, gamma flux of 4 megarads from Triton reactor, 22:26006
effects on storage life of raspberries, γ, 22:28724
effects on survival of animals, effects of adrenalectomy on, 22:33842
effects on survival of caterpillars, effects of infection by nuclear-polyhedrosis virus on γ, 22:6906
effects on survival of Chlamydomonas reinhardi, uv, 22:19310
effects on survival of mammals and mammalian cells, calculations for, 22:38418 (BNL-12581)
effects on survival of oocytes of Drosophila, effects of dose fractionation on x, 22:45673
effects on survival of x-irradiated mice, effects of hematopoietic cells from hybrids on, 22:31154
effects on therapy of lymphomas in man, 22:49428
effects on threshold of saccharin and sucrose avoidance-behavior of mice, γ, 22:51891
effects on time of death of leukocytes of rats, 22:36353
effects on tissues of peas and spring wheat, β, γ, and neutron, 22:15117
effects on TMV-infected tobacco cells in vitro, γ, 22:40961
effects on tomatoes, x, 22:21636
effects on ultrastructure of rectal mucosa of human, electron microscopy study of, 22:36209
effects on uv-radiosensitivity of cultured mammalian cells, 22:33899(R) (EUR-3906)
effects on uv-radiosensitivity of influenza viruses, 22:4710
effects on x-radioinduced formation of amino acids, 22:45443
effects on x-radioinduced sucrose-avoidance behavior in rats, 22:43447
effects on x-radiosensitivity of hypoxic spleen cells of mice, fractionated, whole-body, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on x-radiosensitivity of leukocytes, effects of interphase stage on, 22:45460
effects on x-radiosensitivity of mutation frequency in mice, low, 22:8498 (CONF-670305-, pp 81-7)
effects on x-radiosensitivity of swine, 22:38438
effects on x-radiosensitivity of urinary excretion of 2'-deoxycytidine by rats, 22:12916
effectson γ- and x-radiosensitivity of erythropoiesis in mice, 22:40908
estimation for bone marrow, gonads, and skin of man during cardiac catheterization and angiocardiography, x, 22:43338
estimation for man following inhalation of radon and thorium, 22:40602
estimation for population in vicinity of Hanford, use of dietary habits for, 22:51560 (BNWL-706)
estimation in phantoms, computer program for, 22:38260 (ORNL-TM-2250)
estimation of γ, to man following protracted exposure to fallout, 22:38417 (ACRH-1000-59)
estimation of internal, to man from radioisotopes produced in surface nuclear explosion, 22:40669 (UCRL-70894)
estimation of population, following re-entry of isotopic power devices, 22:38293
estimation to human respiratory tract from fallout,

development of graded filtration sampler for, 22:33821
estimations in feasibility evaluations of Plowshare event, use of EXREM computer program for external β and γ, 22:43308(R) (ORNL-TM-2249)
estimations, use of frequency of chromosome aberrations in cultured lymphocytes for, γ and x, 22:43298 (AD-666713)
fallout, to man from ground surface and inhalation of radioisotopes, 22:47527 (JAERI-1156)
field measurement in water phantoms, effects of x-ray contrast media on bremsstrahlung and γ, 22:45630
fractionation and protraction factors of, effects of, on late γ, x, and neutron effects on small mammals, 22:49468 (CONF-680410-, pp 2.1-27)
fractionation and protraction of, to mice during gestation, effects of, on fertility, 22:47589
fractionation during radium therapy of malignant tumors, 22:43373
fractionation effects on skin response in mice, effects of hypoxia on recovery from 15 MeV electron, 22:40877
fractionation in relation to radiosensitivity of human cells, 22:10839
fractionation of therapeutic, review of principles of, 22:40790
fractionation of, effects of on radiosensitivity of tumors, 22:25916
fractionation of, effects of, on content of cholesterol and function of adrenal glands of mice, 22:49604
fractionation of, effects of, on cultured human kidney cells, mechanism of survival following acute heavy ion and x, 22:49619
fractionation of, effects of, on frequency of induced chromosome aberrations in Crepis capillaris, x, 22:43281
fractionation of, effects of, on γ- and x-radiosensitivity of mutation frequency in mice, 22:8498 (CONF-670305-, pp 81-7)
fractionation of, effects of, on γ-radiosensitivity of cotton following seed exposure, 22:47639
fractionation of, effects of, on γ-radiosensitivity of fruit fly populations, 22:36238
fractionation of, effects of, on inoperable lung neoplasms, x, 22:2524
fractionation of, effects of, on life span and late effects in mice, 22:28606
fractionation of, effects of, on mutagenic x-radiosensitivity of spermatogonia of Drosophila, 22:51490(R) (ORO-3014-3)
fractionation of, effects of, on radiosensitivity of tumors, 22:51804
fractionation of, effects of, on radiosensitivity of man, 22:8595 (CONF-670305-, pp 114-27)
fractionation of, effects of, on RBE of fast neutrons, 22:572
fractionation of, effects of, on repair of radioinduced damage in Chinese hamster cells, 22:25785
fractionation of, effects of, on survival curves in mice, 22:40919
fractionation of, effects of, on x-radiosensitivity of flour beetle larvae, 22:45672
fractionation of, effects of, on x-radiosensitivity of rats, 22:23656
fractionation of, effects of, on x-radiosensitivity of rabbits, 22:25994
fractionation of, effects of, on x-radiosensitivity of epithelial cells in skin of mice, 22:6902
fractionation, effects of, γ-, neutron-, and x-radiosensitivity of life span in mice and rats, 22:8645
fractionation, effects of, on organ and tissue transplants in γ-irradiated twin cattle, 22:40830 (ORO-657, pp 35-45)
gamma, to thyroid of cattle from iodine-131, effects of rate of uptake on, 22:40831 (ORO-657, pp 46-64)
internal, to man, management aspects of, following nuclear explosion, 22:31058 (BNWL-SA-1511)
iodine-131, to thyroid of human children, variability in parameters used for prediction of, 22:21572 (LA-DC-9095)
maximum permissible natural background, to man, 22:47577 (NP-17191)
maximum permissible, for lifetime exposure of man, 22:45565
maximum permissible, for occupational exposure of radiologists, ICRP standards for, 22:38490
maximum permissible, for personnel in German industries, 22:33834
maximum permissible, for roentgenologic personnel, standards for, 22:45510
maximum permissible, legislation for, 22:38283
maximum permissible, national standards for, 22:49324(R) (NP-17266)
maximum permissible, of iodine-131 for penetrating open wounds, 22:38444
measurement at low energy levels, performance of lithium fluoride thermoluminescent dosimeters for, 22:45556
measurement during diagnostic radiography on man, 22:38324
measurement during flight of Biosatellite II, evaluation of lithium fluoride-teflon disk thermoluminescent dosimeters for, 22:47529(R) (ORNL-TM-2190)
measurement during space flight, simulation of conditions for, 22:47535
measurement during therapy of lung carcinoma, photon, 22:21542
measurement during whole-body exposure of man, γ and x, 22:8513 (CONF-670219)
measurement for bone marrow in man during therapy using external sources or internal radioisotopes, 22:38322
measurement for gold-198 seed implants in human tissues, tables for combined β and γ, 22:49360
measurement for low-energy gamma-emitters for point source or uniform distribution in tissue-equivalent human phantoms, 22:23538
measurement for man, use of leukocyte count of peripheral blood for, 22:52007
measurement for medical personnel, effects of occupational tasks on γ and x, 22:49358
measurement for neutrons produced by ^{9}Be(^{3}He,n)^{11}C reaction in cyclotrons, 22:19370
measurement for technetium-99 scanning of human liver, 22:51767
measurement in human population of USA during 1962, effects of nuclear weapons testing on, 22:10775
measurement in man during dental radiography, 22:45524
measurement in man during dental radiography, 22:45525
measurement in man during manned space flight, 22:6919
measurement in man during therapy, performance of lithium borate thermoluminescent dosimeters for γ and x, 22:38327
measurement in man during therapy, performance of photoluminescent dosimeters for, 22:38333
measurement in man following ingestion of fallout activation or fission products, 22:23511 (UCRL-70788)
measurement in man in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
measurement in man using thermoluminescent characteristics of irradiated teeth, γ, 22:45530
measurement in man, performance of thermoluminescent dosimeters for, 22:38330
measurement in mixed γ and neutron fields, performance of chemical dosimeters for, 22:38331
measurement in monkeys, use of phantoms for proton, 22:8525 (CONF-670305-, pp 318-28)
measurement in ovaries during radiography, 22:2513
measurement in personnel, evaluation of DC-0.2 dosimeter for, 22:45526
measurement in phantoms and tissues, methods for, 22:25836
measurement in rads at points around γ sources used for interstitial and intracavitary therapy in man, 22:31105
measurement in rads at points around interstitial γ sources, computer methods for, 22:31087
measurement in rads at points around interstitial and intracavitary γ sources, computer methods for, 22:40686
measurement in rads at points around interstitial and intracavitary γ sources, computer methods for, 22:36286
measurement in small biological systems, absorbed x, 22:47542
measurement in tissues in relation to exposure and LET, electron and photon, 22:38307
measurement of 260- and 660-MeV proton, in tissue-equivalent water phantoms, 22:1287 (JINR-P9-3369)
measurement of absorbed, in man, performance of calorimeters for, 22:38332
measurement of absorbed, in tissue-equivalent phantoms, x, 22:45544
measurement of absorbed, method for determining from exposure, 22:40712
measurement of absorbed, methods for, 22:14862
measurement of absorbed, to personnel during manned space flights, 22:6823
measurement of in vivo cesium-137, evaluation of methods for, 22:43331
measurement of personnel, during direct fabrication of uranium-233 enriched fuels, 22:23858 (CONF-660524-, pp 537-45)
measurement of proton penetration of aluminum and tissue, comparison of computer for, 22:35668 (ORNL-RSIC-22(Pt.2))
measurement of space, from various sources, review of, 22:9415
measurement of x, to bone marrow of man during chest radiography, 22:33829
measurement of, effects of field shape, field size, and source-to-skin distance on γ, 22:36290
measurement of, in unshielded pilot plant for recycle of fuels containing uranium-233, 22:23190 (CONF-660524-, pp 299-319)
measurements for personnel following exposure to high doses, use of area and personnel dosimeters and clinical evaluation for, 22:21524
measurements for personnel in plutonium production center, use of blood studies, excretion studies, and whole-body counting for, 22:49342
measurements in small laboratory animals, design of apparatus for improved, 22:15004
measurements of personnel, during direct preparation of uranium-233-enriched thorium dioxide--uranium dioxide fuel, 22:23857 (CONF-660524-, pp 417-43)

method for determining radon decay product, to man, using lead-210 content of bones, 22:31082
method for determining whole-body, using quenching properties of blood plasma and serum, 22:38247 (A-AC-82/G/L-1163)
methods for constructing isodose curves for cobalt-60 planar rotation, 22:47545
optimum, for storage life of lemons, 22:40977 (JEN-175-SI/I-16)
predictions and biological consequences of, from burnup of strontium-90 heat source in space, 22:12535 (SC-CR-67-2792)
rate effects on fast neutron- and x-radiosensitivity of Shigella flexneri, 22:28712
rate effects on pathogenicity of x-ray, 22:40941
rate of acute and chronic, effects of, on radiosensitivity of immune reactions of mammals, 22:49175 (CONF-680410-, pp 16.1-23)
rate of exposure to, effects of, on recovery of algae from γ radiation injuries, 22:45638
rate of γ, effects of, on mice in hypoxic environment, 22:38352
rate of x-ray microbeam, effects of diameter on, 22:40672
rate of, effects of, on cobalt-60 γ-radiosensitivity of survival in mice, 22:12911
rate of, effects of, on man, 22:6920
rate of, effects of, on mutagenic γ-radiosensitivity of fruit fly oocytes, 22:49292
rate of, effects of, on radiosensitivity of man, 22:49378 (CONF-680410-, pp 17.1-25)
rate of, effects of, on radiosensitivity of sheep and swine, γ, 22:49470 (CONF-680410-, pp 4.1-21)
rate of, effects of, on survival of bacteria, γ, 22:23685
rate of, effects of, on survival of mice, γ, 22:23664
rates in open basements in fallout fields, calculation of, 22:4389
reaction mechanisms for effects of small x, on biological systems, 22:38485
received by ORNL personnel during 1967, FRC maximum permissible standards for external and internal, 22:43307(R) (ORNL-4286)
recommendations of ICRP for maximum, to individuals and populations, 22:28471
record of personnel, techno-legal aspects of development of, 22:38268 (UCRL-18140, pp 277-88)
reduction during dental radiography using intraoral shielding and rectangular collimation, x, 22:51811
reduction during roentgenokymography, design of shielding for x, 22:45573
reduction in medical personnel, methods for, 22:43334
reduction in private fallout shelters, methods for, 22:33809 (BNWL-SA-1509)
relation of computer calculation of, to Paterson-Parker system, 22:36286
relation to time in radiotherapy, design of biological model for calculation of, 22:45512
relations between LET, absorbed dose kerma, and exposure, mathematical, 22:40658 (CEA-R-3424)
response of biological systems to, probability estimates for parameters for, 22:27521(R) (ORNL-4236)
response of biological systems, role of intensity and time in uv, 22:40714
schedules for radiotherapy, calculation of, 22:40684
selection in biological research, review of criteria for, 22:23430
splitting of, effects of, on radiosensitivity of hematopoietic system, 22:25990
standardization of normalization factor of, to patients, 22:31185
standards for estimation of, responsibility of health physicists in establishing, 22:8521 (CONF-670305-, pp 269-76)
standards for man, maximum permissible, 22:51651
standards for man, maximum permissible, 22:6835(T) (AEC-tr-6467/2(pp 195-222))
standards for man, maximum permissible, ICRP, 22:21510
standards for man, maximum permissible, ICRP, 22:21511
standards for maximum permissible whole-body, to man in USA, 22:38456
standards for maximum, in environment at nuclear installations, 22:43322
standards for permissible exposure of personnel employed in industries and laboratories, 22:490 (CONF-660649)
standards for permissible, to man, handbook on, 22:10779
standards for personnel developed by EURATOM, 22:19330 (NP-17180)
standards of I.C.R.P. in relation to cesium-137 and strontium-90 contamination of brown trout in England, 22:10773
standards proposed by NCRP for calculation of whole-body, for man and mammals, 22:19325 (BNL-50073)
therapeutic γ and x, to organs and whole body of man, methods of estimating, 22:43341
uniformity of rate of, at surface of strontium-90--yttrium-90 applicator used for therapy, effects of aluminum foil shielding on, 22:51787
use of randomized split plot design for determining lethal, for fish, 22:33898(R) (COO-1421-3)
use of slide rule for determining therapeutic, 22:45568
RADIATION DOSIMETERS
(Specific dosimeters are of the form Radiation Dosimeters, Area and Radiation Dosimeters, Thermoluminescent.)
bibliography on, 22:14846 (AED-C-21-04)
bibliography on, 22:14847 (AED-C-21-05)
bibliography on solid-state, 22:14852 (STI/PUB-21/23)
biological, during space flight, use of phage replication for, 22:47582
biological, use of anatomical and physiological responses of accident victims as, 22:8517 (CONF-670305-, pp 94-113)
calibration for high-energy electrons, 22:51261
calibration of high energy electron, use in ionization chamber as standard for, 22:28480
calibration of neutron, use of low power reactors for, 22:4489
calibration of spherical, for neutron dosimetry at energies up to 50 MeV, 22:6656
calibration of, circuit design for, 22:16891(P)
calibration of, method based on similarity of radiation fields for, 22:23334
calibration using Fricke dosimeters, interlaboratory comparative, 22:51254
casings for, design of, 22:382(P)
characteristics of, survey of, 22:43130
charge-carrier lifetime in silicon, neutron energy dependence of excess, 22:49135
criticality, for personnel, exposure of, to simulated criticality excursions, 22:43300 (AERE-PR/HPM-12)
data obtained with gamma, directional dependence of, 22:2426 (ABS-THH-1037)
description of europium-activated lithium iodide scintillation, in spherical polyethylene moderator for dosimetry of thermal to 10-MeV neutrons, 22:28182
description of fissile radiator--solid-state track, for neutron dosimetry, 22:21358 (ORNL-TM-2120)
description of LASL personnel multifoil activation, 22:38101 (LA-3889)
description of personnel, aboard Apollo spacecraft, 22:37993 (N-68-21647)
design and performance of boron-loaded emulsion in spherical water moderator for neutrons, 22:12655
design and performance of helium-3-filled proportional, spherically moderated for measuring neutron dose equivalent, 22:28174 (AERE-R-5131)
design and performance of ionization chamber, for gamma dosimetry, 22:30867 (ORNL-TM-2145)
design and performance of multisphere moderated scintillation, for neutron dosimetry, 22:47384 (UR-49-894)
design and performance of personnel neutron, using fission foil--glass track registration, 22:19168
design and performance of personnel neutron, using nuclear emulsions containing boron-10, 22:19168
design and performance of personnel, for thermal neutrons, fast neutrons, and gamma radiation, 22:43108 (IFA-PN-19)
design and performance of silicon diode, for fast neutron dosimetry at 0.36 to 22.5 MeV, 22:373 (AD-648642)
design and performance of tissue-equivalent ionization, for dosimetry of photons, 22:14863
design and performance of tissue-equivalent proportional, for gamma- and neutron-dosimetry at high altitudes, 22:4482 (BNWL-SA-1364)
design and performance of tissue-equivalent proportional chamber, 22:38119
design and use of niobium-93 activation, for neutron dosimetry, 22:28177 (FFN-74)
design and uses of cadmium sulfide, 22:6661
design for use in neutron activation analysis, 22:8035(P)
design of Compton, using liquid scatterer, for gamma dosimetry, 22:12656
design of electroscope-type, 22:43122(P)
design of ionization chamber for dosimetry of beta, gamma, and x radiation, 22:49129(P)
design of moderated spherical helium-3-filled proportional, for neutron dose-equivalent evaluation, 22:43123
design of multicomponent personnel, for criticality dosimetry, 22:38106(P)
design of photostimulated crystal, using induced current transient, 22:23341(P)
design of radiation-sensitized quartz, for gamma dosimetry, 22:30869
design of scintillation, for gynecological radiotherapy, 22:51264
design of silicon diode, for in vivo dosimetry, 22:30872(P)
design of solid-state digital integrating, for x radiation, 22:25679
development, 22:8390 (AHSB(RP)M-46)
development and properties of, at BNL, 22:37775 (BNL-50082, pp 40-78)
development at Scientific Institute for Nuclear Instrumentation in Soviet Union, 22:6554
development for dosimetry associated with tactical warfare, 22:8396
development for measuring dose equivalent rate, 22:16920
development for studying shielding materials, 22:15003(T) (AD-662586)

development for use in large-scale irradiations, 22:47294(R) (TID-24349)
development of lithium-drifted silicon, for beta dosimetry, 22:30825(R) (UCRL-50007-67-3)
development of neutron personnel, review of, 22:33673
development of pyroelectric tourmaline, for x radiation, 22:19160(R) (NYO-3409-4)
development of pyroelectric zinc sulfide uv, 22:19160(R) (NYO-3409-4)
development of rhodium-103 activation, for fast neutrons, 22:6652 (ORNL-4168, pp 183-230)
development of scintillation and ionization, review of, 22:43126
development of uv, 22:43323
development of uv, by conductivity measurements of neutron-irradiated diamond during thermal stimulation, 22:19160(R) (NYO-3409-4)
development of vacuum chamber as interface, 22:38118
dose rate in cavity ionization, effect of thin air-equivalent layers on pressure dependence of mean, 22:38113
energy characteristics of thallium-activated sodium iodide scintillation, method for correction of, 22:8400
evaluation for field measurements of microwaves, and uv, 22:28492
intercomparison study of, representing 11 laboratories, 22:6652 (ORNL-4168, pp 183-230)
measurements with tactical military, relation with radiobiological effects table, 22:376 (USNRDL-TR-67-67)
operation and use in health physics, statistical analysis of, 22:21317 (SC-TM-67-3036)
performance for measurement of plutonium-238 and -239 in wounds, 22:6804 (ORNL-4168, pp 289-311)
performance for monitoring packaged radioisotopes during shipment, 22:45567
performance in measurement of proton RBE at end of trajectories, 22:8519 (CONF-670305-, pp 155-73)
performance of cadmium sulfide, for gamma dosimetry, effects of temperature on, 22:14866
pulse height-to-dose conversion system for beta--gamma spectrometer, 22:47382 (N-68-24341)
readout system for rod, vacuum microscope, 22:10667(P)
readout system for tissue-equivalent ionization chamber, 22:49132
research on, review of AEC, 22:21017
response of FD-3 glass, used in fluorimeter, 22:51262
response of, interface effects on, 22:38117
sensitivity of aluminum oxide and tungsten, for neutrons, 22:38105
shape and volume of micro-, biological significance of, 22:38120
silicon diode, performance for proton dosimetry, 22:12859
standardization of, methods of, 22:43063
testing of calibration of personnel, design of facility, 22:51567(R) (IN-1205)
use for continuous dosimetry with equipment for radiation catalysis, 22:4485
use in health physics, review of, 22:10778
use in USSR research reactors, description of, 22:12129
use of biological, for determining doses at interfaces, 22:38115
use of glass, and air quantity to measure radioactivity released via exhaust stacks, 22:49346
use of ionization chamber, in air dosimetry, Fourier analysis of blurring effects in, 22:10613
use of ionization chamber, in depth dosimetry, Fourier analysis of blurring effects in, 22:10614
use of nuclear emulsion, for fast neutron personnel dosimetry, 22:38100 (KFKI-12/1968)
use of thorium- or uranium-doped phosphate glasses for neutron, by registration of fission-fragment tracks, 22:23336

Radiation Dosimeters, Area
see particular types of dosimeters

RADIATION DOSIMETERS, CALORIMETRIC
see also Calorimeters
description for alpha and beta particles, 22:36109 (BNWL-590)
design and performance for gamma dosimetry, 22:51252 (CEA-R-3502)
design and performance of total-absorption, for electron beams of several hundred MeV, 22:6659
design for gamma dosimetry, 22:43127
design for standardization of cobalt-60 gamma sources, 22:19164
design of portable, for high-level high-energy gamma radiation, 22:30825(R) (UCRL-50007-67-3)
development for radiation heating measurements in first Czechoslovak power reactor, 22:27442
development of, 22:18590(T) (UCRL-Trans-10217)
gamma and neutron, description of in-pile twin-rod conduction, 22:6169
gamma heating rate measurements in critical assemblies using, comparison of calculated and measured, 22:33082
operation of micro-, for measuring absorbed dose of electrons, 22:51255
performance for measurements of absorbed dose in man, 22:38332
photon-energy flux field measurements in WWR-S using, 22:30333
thermal defects in tissue-equivalent plastic, experimental evaluation of, 22:28176 (BNWL-SA-1760)
use for calibration of secondary dosimeters, 22:38332
use for measuring absolute absorbed dose, 22:14862
use for measuring energy fluence of x radiation, 22:25651
use of carbon, for absorbed dose measurements on 20-MeV electrons, 22:375(R) (NYO-3510-3)
use of water, for calibrating Fricke dosimeter for 30-MeV electrons, 22:51257

RADIATION DOSIMETERS, CHEMICAL
see also Potassium Nitrosodisulfonates
see also Radiation Detectors, Chemical
calibration of ferrous sulfate, use of calorimetric and ionometric methods for, 22:10774
calibration of Fricke, for 30-MeV electrons with calorimetric technique, 22:51257
characteristics of Fricke, 22:23338
description of polyvinylfluoride, for gamma dosimetry, 22:4487
design and performance of manganese arsenic borate glass, for gamma radiation, 22:2431
design for high intensity sources, 22:8540
development for use in mixed γ and neutron fields, 22:38331
development of 3,3-bis(chloromethyl)oxetane polymer for x radiation, 22:47154
development of electron and gamma, using potassium iodide in presence of potassium acid phosphate, 22:2435
development of Fricke, for dosimetry of β particles during extracorporeal irradiation of human blood, 22:28533
development of oxalic acid solutions for multimegarad gamma radiation dosimetry, 22:51263
development of poly-3,3-(bischloromethyl)oxetane for 4- to 15-keV x rays, 22:379
development of polytetrafluoroethylene, using free radical yields, 22:40469 (AD-668109)
development of, polytetrafluoroethylene free radical yield as basis for, 22:47187
development using 4,4'(5-chloro-2-thenylidene)bis[n,n-dimethyl-aniline], 22:25682
efficiency of cyclohexane for alpha particles, 22:10282
extinction coefficient of trivalent iron ions in Fricke, factors affecting measurement of, 22:45340
G-value of ferrous sulfate, calorimetric determination with electrons and gamma radiation, 22:19171
G-values of ferrous sulfate, for low-energy x radiation, 22:40474
method for improvement of the sensitivity of ferro-ferri-sulfate systems for, 22:49359
operation and performance of oxalic acid, for cobalt-60, 22:12648 (RISO-111)
performance evaluation of glycol-bentonite, for gamma radiation, 22:36115
performance for dosimetry of bremsstrahlung in Vicia root tips, 22:49642
performance for low and high radiation dose measurements, 22:23338
performance for measurement of x radiation dose to soft tissue adjacent to plane bone interfaces, polyethylene-film, 22:510
performance of bromobiphenyl--benzene, 22:18805 (COO-913-23)
performance of ethylene, 22:2119
performance of ferrous sulfate, for measurement of absorbed doses of electrons in bacteria and yeasts, 22:38278
performance of ferrous sulfate, for measurement of absorbed dose of electrons or γ radiation, 22:38271
performance of heteropolyacids of molybdenum and tungsten as, for electrons and x radiation, 22:28180
performance of mercuric chloride as low-level γ-ray, 22:28185
performance of micro-, in primate phantoms, 22:8525 (CONF-670305-, pp 318-28)
performance of oxalic acid, effects of dose rate at large absorbed doses on, 22:12649 (RISO-112)
performance of polyacrylamide, for gamma- and x-ray dosimetry following nuclear accidents, 22:8395
performance of, effects of glycerol on x radiation effects on, 22:45101
photosensitivity of clear Perspex, uv, 22:19169
preparation of plastic, for electron and gamma dosimetry, 22:21365(P)
properties of oxalic acid dihydrate as, 22:42763
radiolysis of heavy- and light-water ferrous sulfate, ferric ion yields from 14.6-MeV neutron and gamma ray, 22:2429
reaction yields of ferrous sulfate, effects of secondary electrons on, 22:10612
response of ferrous sulfate, to 20-MeV electrons, depth dependence of, 22:375(R) (NYO-3510-3)
sensitivity of benzoic acid--ferrous sulfate, effects of impurities and concentration on, 22:47385
stabilization of cupric sulfate--ferrous sulfate--sulfuric acid, by irradiation, 22:40470(P)
sulfur purification and pelletization for, 22:12273 (K-1720)
use as reactant in radiation chemical reactor, 22:30598

  use for measuring energy fluence of x radiation, 22:25651
  use for proton dosimetry, 22:12652
  use of ferric thiocyanate, to measure 5 to 20 keV x-ray intensities, 22:30933(R) (PRNC-12)
  use of ferrous sulfate, for measuring depth dose distribution of 20-MeV electrons in Perspex, 22:51690
  use of Fricke, for dosimetry of 8-MeV electrons and 7.5-MeV x rays, 22:51259
  use of Fricke, for interlaboratory comparative calibration of dosimeters, 22:51254
  use of lithium fluoride, for determining dose to biological materials during space flight, 22:49652
  use of lithium fluoride, for determining iodine-131 and technetium-99 doses to lungs of dogs, 22:51805
  use of titanium sulfate, for gamma dosimetry, 22:8393
  yield of Fricke--Miller ferrosulfate, for 60-keV x radiation, 22:23332
RADIATION DOSIMETERS, LUMINESCENT
  see also Radiation Dosimeters, Photoluminescent
  see also Radiation Dosimeters, Thermoluminescent
  design and construction of europium-activated lithium iodide, for neutron dosimetry, 22:28178 (NP-17349)
  development of single-crystal ruby, for dosimetry of pulsed high-energy ionizing radiation, 22:43112
  sensitivity of silver-activated phosphate glass, 22:6652 (ORNL-4168, pp 183-230)
Radiation Dosimeters, Personnel
  see particular types of dosimeters
RADIATION DOSIMETERS, PHOTOGRAPHIC FILM
  backing materials for, effects of temperature on radiophotoluminescence of, 22:23337
  calibration for beta dosimetry, 22:23328 (IEA-141)
  calibration of, procedures for, 22:17023 (BNWL-542)
  commercial service for personnel, review of experience with, 22:36118
  data from, computer programs for analysis of, 22:4483 (CERN-67-28)
  description of LASL personnel, 22:38101 (LA-3889)
  design and performance for measuring exposures to tritium in gaseous or water vapor form, 22:8399
  design for measuring fast and thermal neutron doses in mixed radiations using multiple filters, 22:19173(P)
  design of personnel, for mixed gamma, beta, and neutron dosimetry, 22:38106(P)
  design of personnel, for mixed radiations, 22:43117(P)
  dose evaluation of, method for, 22:2433
  efficiency for beta, gamma, and x-ray dosimetry, 22:10611
  efficiency of, design of optical densimeter for evaluation of, 22:43120
  evaluation of multicomponent, in mixed radiation fields, individual dose, 22:19165
  evaluation of, automatic isodensity recorder for optical density, 22:381
  evaluation of, standards of performance for film badge services for, 22:25857
  fading of neutron tracks in personnel, latent image, 22:38102 (MLM-1490)
  measurement of radioactivity on paper film wrapping of, use for monitoring contamination in laboratories using open sources, 22:21522
  performance criteria for personnel, 22:33671 (BNWL-SA-1836)
  performance for broad spectrum dosimetry of man, standards for, 22:28496
  performance for dosimetry of electrons, 22:51611
  performance for dosimetry of high-energy electron beams used in radiotherapy, effects of energy and depth on, 22:51265
  performance for dosimetry of high-energy γ and x rays in superficial tissue layers, 22:49357
  performance for dosimetry of personnel, 22:21520
  performance for dosimetry of personnel, 22:21519
  performance for dosimetry of, by dentists, 22:15009
  performance for measurement of β, γ, and x, 22:21513
  performance for measurement of dose to human gonads during chest fluoroscopy, x, 22:25835
  performance for measurement of external β and γ dose to personnel at ORNL and WNRE, 22:51556 (AECL-3158)
  performance for measurement of γ and x, 22:21523
  performance for measurement of γ and x, 22:21512
  performance for measurement of radiation dose in environs of synchrocyclotrons, 22:21529
  performance for measurement of x radiation leakage from target housing of linear accelerator, 22:28498
  performance for measuring individual doses, comparison of, with photoluminescent and thermoluminescent dosimeters, 22:23523
  performance for monitoring of x ray dose to medical personnel, 22:28518
  performance for monitoring radiation dose for personnel, 22:51581
  performance for monitoring radiation dose to personnel in Belgium, 22:21518
  performance for personnel dosimetry, 22:21516
  performance for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
  performance for personnel dosimetry in France, 22:21533
  performance for personnel dosimetry in Sweden, 22:21517
  performance for protection of personnel, 22:49350
  performance in combination with automatic color isodose curve plotter for dose determination in diagnostic radiography, 22:28228
  performance in mixed β- and γ-fields, 22:21516
  performance in mixed γ- and neutron-fields, 22:21516
  performance of DDR, for individual dosimetry in mixed beta, gamma, and x radiation, 22:36112 (SZS-6/68)
  performance of, comparison with solid-state dosimeters, 22:378
  performance of, comparison with thermoluminescent dosimeters, 22:8397
  performance of, effects of exchange interval of film on, 22:28490
  photographic process underlying, description of, 22:10610 (ORO-2036-3)
  processing of, evaluation of criteria for, 22:17023 (BNWL-542)
  processing of, evaluation of procedures for, in EURATOM countries, 22:21523
  processing of, evaluation of procedures for, in United States, 22:21521
  radiation dosimetry for personnel using, β, γ, thermal neutron, and x, 22:49351
  radiation effects on performance of Kodak Personal Neutron Monitoring film types A, β, γ, and x, 22:51266
  radiation effects on, atmospheric tritium, 22:33670 (BNWL-SA-1569)
  scanning system for semiautomatic reading of, 22:49353
  use at NRTS, 22:10609 (IDO-12056)
  use for β, γ, and x dosimetry, 22:377
  use for dosimetry of high-energy electrons, 22:51258
  use for gamma dosimetry, 22:19170
  use for measurement of low radiation doses, 22:6657
  use for measuring depth dose distribution of 20-MeV electrons in Perspex, 22:51690
  use for measuring radiation dose near 15-MeV betatron, 22:38279
  use for monitoring neutrons, gamma, and x radiation, 22:6653 (RT/PROT-(67)12)
  use for monitoring of reactor environs, 22:45548
  use for personnel monitoring in Poland, 1966 results of, 22:49126 (CLOR-68)
  use for proton dosimetry on Gemini flight, 22:31241
  use for survey of industrial exposure to ionizing radiation in Czechoslovakia, 22:40674
  use of Kodak NTA, for fast neutrons, 22:16917
  use of personnel, recommendations for proper, 22:38101 (LA-3889)
  use of, characteristics encountered in, 22:374 (NVO-162-30)
RADIATION DOSIMETERS, PHOTOLUMINESCENT
  casing for silver-activated phosphate glass, design of, 22:38108(P)
  cleaning of silver-activated phosphate glass, procedure for, 22:19172
  description of activated-glass, for personnel dosimetry, 22:43121(P)
  design and performance for thermal neutrons, 22:43125
  design and performance of silver-activated phosphate glass, for personnel dosimetry, 22:8394
  design for gamma and x-ray dosimetry, 22:36113(P)
  development and uses of, state-of-the-art in, 22:8391 (BNWL-SA-1543)
  development for personnel monitoring, 22:51268
  development of, 22:21515
  luminescent material composition for, for beta-, gamma-, and x-ray dosimetry, 22:38110(P)
  performance for dosimetry in personnel, 22:21520
  performance for dosimetry in personnel, 22:21519
  performance for γ-dosimetry in human phantoms, 22:38325
  performance for internal use in man, 22:38333
  performance for measurement of γ and x, 22:21512
  performance for measuring individual doses, comparison of, with film and thermoluminescent dosimeters, 22:23523
  performance for personnel dosimetry, 22:21515
  performance of cobalt-activated borosilicate glass, in mixed gamma--neutron fields, 22:51251 (AD-672475)
  performance of silver-activated metaphosphate glass, in mixed gamma--neutron fields, 22:51251 (AD-672475)
  photosensitivity of clear Perspex, 22:23333
  predose concept in radio-, 22:19167
  properties of metaphosphate, 22:14858
  properties of, review on, 22:36116
  radiation effects on, atmospheric tritium, 22:33670 (BNWL-SA-1569)
  reaction mechanisms of alkali halide, 22:31072
  readout device for, design of, 22:38111(P)
  readout systems for, development of, 22:38116
  response of cobalt-activated borosilicate glass, for gamma dosimetry, exposure-rate dependence of, 22:33667 (AD-664758)
  response of silver-activated metaphosphate glass, for gamma dosimetry, exposure-rate dependence of, 22:33667 (AD-664758)
  sensitivity for gamma dosimetry in intense radiation fields, 22:21363
  stability of metaphosphate glass, 22:49131
  use for dosimetry during therapy, evaluation of, 22:38325
  use for radiation monitoring in nuclear power installations, 22:33674

use in medical radiology, evaluation of, 22:45522
use of phosphate glass, for x and gamma radiation dosimetry simultaneous with neutron activation dosimetry, 22:14859
use of polyethylene, for electron dosimetry, 22:2436

RADIATION DOSIMETERS, THERMOLUMINESCENT
background reduction in EG and G model TL manganese-activated calcium fluoride, inherent, 22:40472
bibliography on, 22:25676
calibration of lithium fluoride, for dosimetry of high-energy electron, 22:51256
calibration of lithium fluoride, for point-source beta dosimetry in tissues, 22:38387
characteristics of dysprosium-activated calcium fluoride, 22:47383 (TID-24640)
characteristics of lithium fluoride, supralinearity and optical absorption, 22:30825(R) (UCRL-50007-67-3)
characteristics of, for personnel monitoring, 22:38103 (TID-24522)
description and use at NRTS, 22:10609 (IDO-12056)
description of bismuth-doped zinc sulfide, for uv dosimetry, 22:19160(R) (NYO-3409-4)
design and performance of calcium and lithium fluoride, 22:6654
design and performance of LiF powder, for measurements of bone marrow absorbed dose, 22:38326
design and performance of lithium fluoride, for finger-tip beta and gamma dosimetry, 22:2427 (AEEW-R-497)
design and performance of lithium fluoride, for personnel dosimetry, 22:21364
design and performance of tandem lithium fluoride and manganese-activated calcium fluoride, for gamma- and x-ray dose measurements, 22:14854
design and performance of, for gamma and x-ray dosimetry, 22:36114
design for complex radiation, 22:8401(P)
design for mixed radiation, 22:47388(P)
design of Teflon-coated, for use as probe in radiodiagnosis, 22:8547
development, 22:14855
development and performance of LiF, 22:38330
development and uses of, state-of-the-art in, 22:8391 (BNWL-SA-1543)
development at Wisconsin, July 15, 1967 to August 31, 1968, 22:47383 (TID-24640)
development for personnel monitoring, 22:51268
development of, 22:16919
development of calcium fluoride, 22:43128
development of lithium borate, for use during γ and x radiotherapy for man, 22:38327
development of lithium fluoride pellet, 22:49128(P)
development of lithium fluoride, for dosimetry of charged particles, thermal neutrons, x rays, and γ rays, 22:4486
development of lithium fluoride, for gamma and x-ray dosimetry, 22:21355 (AAEC/TM-412)
development of lithium fluoride, for gamma dosimetry, 22:33676
development of lithium fluoride, for measurement at low energy levels, 22:45556
development of lithium-fluoride, 22:33672
development of manganese-activated lithium borate, 22:38104 (TID-24523)
development of manganese-doped calcium fluoride and calcium sulfate, 22:21360(T) (N-67-26397)
development of manganese-doped zinc fluoride and lithium fluoride, for x-ray dosimetry, 22:19162(T) (NSJ-tr-99)
development of, review, 22:16914
efficiency for personnel radiation monitoring, 22:28113
efficiency of calcium and lithium compound, for gamma and x radiation dosimetry, 22:30870
efficiency of lithium fluoride, 22:8555
efficiency of lithium fluoride, for gamma and x-ray dosimetry, particle size effects on, 22:43116
efficiency of lithium fluoride, for gamma dosimetry at 10^4 to 2 x 10^9 R, 22:12660
energy dependence of lithium fluoride and manganese-doped calcium fluoride, irradiated with cobalt-60 gamma-rays and electrons up to 20 MeV, 22:375(R) (NYO-3510-3)
energy dependence of lithium fluoride, effects of total dose of x and gamma radiation on, 22:28184
fabrication and performance of calcium fluoride, for gamma and x personnel dosimetry, 22:2428
fading characteristics of TLD-100 lithium fluoride, 22:16912
gamma heating measurements in AARR mockup using manganese-activated calcium fluoride, 22:32960 (ANL-7310, pp 31-135)
glow curve from, method for quantitative analysis of, 22:14849 (BNWL-SA-1575)
hazards to personnel using lithium fluoride, 22:19248
heating system for, design of dual, 22:43111(P)
performance for dosimetry in human phantoms, γ, 22:38325
performance for dosimetry of electrons, 22:51611
performance for dosimetry of fast neutrons, 22:23533
performance for dosimetry of γ- and x radiation in phantoms, 22:28529
performance for dosimetry of x rays in swine, 22:23532
performance for γ dosimetry in cervico-thoracic phantom, 22:51637
performance for γ dosimetry of human lung, 22:51612
performance for measurement of γ and x, 22:21512
performance for measurements of β-dose rate from therapeutic applicators, 22:51787
performance for measuring individual doses, comparison of, with film and photoluminescent dosimeters, 22:23523
performance for measuring partial-body and whole-body doses of β, γ, and x, 22:21526
performance for monitoring personnel, 22:21514
performance for monitoring radiation dose to personnel in Belgium, 22:21518
performance for personnel dosimetry, comparison with photographic film dosimeters, 22:8397
performance in diagnosis and therapy in biology and medicine, 22:15013
performance limitations for low radiation dose measurements, 22:43115
performance of CaF_2:Mn, for dosimetry of thermal neutrons, 22:17050(R) (EUR-3606)
performance of calcium fluoride, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
performance of finger ring Teflon--lithium fluoride, 22:33669 (BNWL-741)
performance of implanted, for dosimetry in beagle dogs, 22:10827(R) (UCD-472-114)
performance of lithium fluoride, 22:51267
performance of lithium fluoride and manganese-activated calcium fluoride, for measuring intense electron dose rates, 22:45337(R) (NYO-3510-5)
performance of lithium fluoride, for gamma dosimetry, 22:12661
performance of lithium fluoride, for gamma- and x-ray dosimetry following nuclear accident, 22:8395
performance of lithium fluoride, for measurement of depth doses of γ or orthovoltage x rays, 22:31086
performance of lithium fluoride, for pion-beam dosimetry in tissues, 22:8600 (CONF-670305-, pp 368-81)
performance of lithium fluoride, in mixed gamma--neutron fields, 22:51251 (AD-672475)
performance of lithium fluoride, to measure whole-body x-ray dose to bones of dogs, 22:38280
performance of manganese-activated calcium fluoride, in mixed gamma--neutron fields, 22:51251 (AD-672475)
performance of manganese-activated calcium fluoride, 22:51267
performance of manganese-activated lithium borate, 22:51267
performance of manganese-doped lithium borate, 22:23329 (RISO-161)
performance of micro-, in primate phantoms, 22:8525 (CONF-670305-, pp 318-28)
performance of micro-, in x-irradiated rat cadavers, 22:28476
performance of natural and manganese-doped calcium fluoride, for use in low dose problem areas, 22:16910 (HASL-189)
performance of ring-type, for β and γ dosimetry of skin, 22:45558
performance of, attached to free-living rodents, 22:33778 (UCLA-12-640, pp 45-60)
preparation and performance of manganese-activated lithium borate, 22:14856
properties of enamel-coated manganese-activated calcium fluoride, 22:14857
properties of lithium fluoride, 22:14858
properties of manganese-activated lithium tetraborate, 22:47383 (TID-24640)
properties of manganese-doped calcium sulfate, 22:23335
properties of manganese-doped calcium sulfate, 22:40471
properties of, review on, 22:36116
radiation effects on, atmospheric tritium, 22:33670 (BNWL-SA-1569)
readout equipment for, description of, 22:33675
readout equipment for, design of, 22:43110(P)
readout equipment for, design of, 22:2404 (RT/EL-(67)4)
readout equipment for, design of semi-automatic, 22:14853 (UCRL-70860)
readout of manganese-doped calcium fluoride, effects of ultraviolet exposure on, 22:25677
readout system for, evaluation of, 22:47383 (TID-24640)
readout system for, using heated inert gas, 22:14756(R) (UCRL-50007-67-2)
response of calcium fluoride and lithium fluoride, for electrons and gamma radiation, energy dependence of, 22:16915
response of lithium fluoride and calcium fluoride, for gamma and x radiation, 22:25678
response of lithium fluoride, at low doses, 22:40473
response of lithium fluoride, for gamma dosimetry, exposure-rate dependence of, 22:33667 (AD-664758)
response of lithium fluoride, to low and high energy electrons and high energy deuterons, 22:49133
response of lithium fluoride, to radiations with different LET, 22:21357 (COO-1105-129)
response of lithium fluoride--Teflon, to 100-keV x rays, 22:38114
response of manganese-activated calcium fluoride, for gamma dosimetry, exposure-rate dependence of, 22:33667 (AD-664758)
response of manganese-activated calcium fluoride, in polytetrafluoroethylene matrix to electrons, 22:49130

  - response of TLD-100 lithium-fluoride, to millirad doses, 22:2432
  - response of, theoretical analysis of dose and dose rate dependences of, 22:45339
  - sensitivity for gamma dosimetry in intense radiation fields, 22:21363
  - sensitivity of lithium fluoride, effects of thermal treatments on, 22:28186
  - sensitivity of, for gamma dosimetry, 22:43113
  - thermoluminescence fading in lithium fluoride, after gamma doses up to 1000 rad, 22:6660
  - thermoluminescent traps in lithium fluoride, ultraviolet repopulation of, 22:47383 (TID-24640)
  - use for assessing x-ray dose to human teeth, 22:28622 (ANL-7278, pp 95-131)
  - use for beta dosimetry in small body cavities, 22:31107
  - use for determination of natural background radiation in monazite areas of Brazil, 22:25829 (TID-24488)
  - use for dosimetry during therapy, evaluation of, 22:38325
  - use for monitoring radon decay products in air of uranium mines, 22:19328(R) (COO-1500-5)
  - use in medical radiology, evaluation of, 22:45522
  - use in personnel dosimetry, 22:23330
  - use of calcium fluoride, for gamma- and x-ray dosimetry, 22:6662(P)
  - use of lithium drifted, for measurement of x-ray dose distribution in cadavers of dogs and in phantoms, 22:36279
  - use of lithium fluoride, for doses greater than 0.1 M rad, 22:25675
  - use of lithium fluoride, for low radiation exposure measurements, 22:14850 (HASL-191)
  - use of lithium fluoride, for x ray dosimetry in frozen and phantom rats, 22:40723
  - use of lithium fluoride, in personnel thermal-neutron albedo dosimeter, 22:51253 (RD/B/R-828)
  - use of lithium fluoride--teflon, for finger and hand dosimetry, 22:383
  - use of lithium fluoride--Teflon, in health physics, 22:8398
  - use of lithium fluoride-teflon disk, in Biosatellite II, evaluation of, 22:47529(R) (ORNL-TM-2190)
  - use of manganese-activated calcium fluoride, for AARR gamma heating measurements, 22:50791 (ANL-7373)
  - use of manganese-doped calcium fluoride, for electron beam dosimetry at EGG/AEC linear accelerator, 22:26735 (EGG-1183-2140)
  - use of manganese-doped calcium fluoride--Teflon, in health physics, 22:8398
  - use of manganese-doped calcium sulfate--Teflon, in health physics, 22:8398
  - use of natural calcium fluoride, for ultraviolet dosimetry, 22:47383 (TID-24640)
  - use of proton-recoil samarium-doped calcium sulfate, for neutron dosimetry, 22:30871

- RADIATION DOSIMETRY
  - accuracy in relation to variations in biological response of man, 22:21528
  - atomic excitation energies of materials for use in, mean, 22:45943
  - bibliography on, 22:23327 (AED-C-21-06)
  - bibliography on, 22:14846 (AED-C-21-04)
  - bibliography on, 22:14847 (AED-C-21-05)
  - bibliography on solid-state, 22:14852 (STI/PUB-21/23)
  - bibliography on thermoluminescent, 22:25676
  - biological, using tissue-equivalent phantom, comparison of γ, neutron, and x, 22:51597
  - book: Dosimetry and Protection from Ionizing Radiation, 22:12650(T) (AD-663372)
  - book: Dosimetry of Ionizing Radiations, 22:21359(T) (AD-663930)
  - book: Mathematical Theory of Radiation Dosimetry, 22:38109
  - book: Principles of Nuclear Medicine, 22:49411
  - book: Radiation Dosimetry, Vol. I, 22:45338
  - book: Radium Dosage: The Manchester System, 22:45550
  - calculation for gastrointestinal tract, mathematical model for, 22:49333
  - calculation for therapy of thoracic neoplasms, use of computers for, 22:508
  - calibration and use of instruments for, handbook on, 22:10779
  - comparison in human phantom to photon energy measurement for bone marrow, x, 22:51626
  - computer-based methods for, in external-source and interstitial-source radiotherapy, application of, to treatment planning, 22:31067
  - conference on micro-, 22:38254 (EUR-3747)
  - conference on solid state and chemical, in medicine and biology, 22:14851 (STI/PUB-138)
  - design of automatic dosimeter for photographic, 22:49353
  - design of instruments for, in plants, 22:8535
  - detectors for absolute, use of semiconductor, 22:14864
  - detectors used for, energy absorption spectrum--radiation dose conversion operator for, 22:12658
  - determination of accuracy of, in biotests and in humans, 22:49361
  - determination of micro-, for biological effects and radiation protection, 22:38318
  - determinations for combined therapy, γ and x, 22:43354
  - development of computer program for, 22:4608 (UR-49-861)
  - development of computer program MEDIPORT for thermal neutron, 22:51673(R) (NYO-3267-5)
  - development of transistorized electronic equipment for whole-body x, 22:8531
  - developments in thermoluminescence personnel dosimetry, 22:23330
  - equipment and methods for, at CERN synchrocyclotrons, 22:21529
  - equipment and methods for, at CNEN, 22:6653 (RT/PROT-(67)12)
  - equipment and methods for, developments in, 22:36250 (CONF-660815)
  - equipment and methods for, near high-energy accelerators, 22:8392 (CONF-670305-, pp 329-45)
  - equipment and methods for, on Apollo and Gemini space vehicles, 22:16918
  - equipment and procedures for, in radiobiology, evaluation of, 22:23529
  - estimation for photographic film during long space flight, 22:48983 (N-68-25220)
  - evaluation of, use of radioinduced nuclear pyknosis for, 22:38422 (EUR-3939)
  - fallout, use of phantom for, 22:6831
  - fast neutron, of source for therapy, 22:43351
  - fluence-dose conversion factors for fission neutron, in tissue-equivalent materials, 22:43309(T) (ORNL-tr-1963)
  - fundamentals of gamma, 22:36117
  - luminescent substances for, of chemical solutions, 22:52123
  - materials used for photoluminescent and thermoluminescent, 22:36116
  - mathematical analysis of, for therapy of human cancer, 22:49362
  - method for 3-GeV proton, in tissue-equivalent phantoms using activation detectors, 22:21356 (CEA-R-3376)
  - method for calculation of depth dose in tissues, soft x, 22:49356
  - method for incorporated mesothorium-228, 22:19331 (NP-17202)
  - method for ionizing particle, using photographic techniques, 22:40680
  - method for micro-, in trabecular bone, 22:38309
  - method for neutron, using solid-state track detectors, 22:43050
  - method for personnel, using nuclear track registration in solid material, neutron, 22:49348
  - method for point-source beta, in tissues, 22:38387
  - method for whole-body, using urinary excretion of radioisotopes, 22:2508 (SC-TM-67-405)
  - method for x-ray microbeams, 22:40672
  - method of photo-stimulated crystal, using induced current transient, 22:23341(P)
  - method using activation detectors, 22:21356 (CEA-R-3376)
  - method using chromosome aberrations in human leukocytes, 22:21527
  - method using chromosome analysis, 22:10839
  - method using EPR of radioinduced free radicals in polytetrafluoroethylene, 22:12654
  - method using tritium analysis in urine, 22:21525
  - methods based on dose absorbed by human organs in relation to time, 22:21511
  - methods following exposure of personnel to high doses, use of area and personnel dosimeters and clinical evaluation for, 22:21524
  - methods for bremsstrahlung, γ and x, 22:4613
  - methods for β, γ, and x, 22:377
  - methods for determining contamination of personnel working with radioactive materials, 22:51593
  - methods for environmental, γ and x, 22:45531
  - methods for γ and x, 22:21512
  - methods for infrared, evaluation of, 22:49370
  - methods for megarad, used at CERN Synchrotron, 22:43124
  - methods for personnel and work areas, 22:21509
  - methods for primary and secondary beams of CERN 600-MeV proton synchrocyclotron, 22:39536
  - methods for protective shelters, 22:4386
  - methods for radium-226, in tissues, 22:31061 (NP-17201)
  - methods for research reactors, review of gamma and neutron, 22:12110
  - methods for routine monitoring of personnel using dosimeters, 22:21524
  - methods for teletherapy using electronic equipment, 22:51636
  - methods for trabecular bone using thermoluminescence, 22:38310
  - methods for tritium, standards for, 22:51664
  - methods for tritium-labeled compounds, effects of LET on, 22:51663
  - methods for, at high-energy accelerators, 22:9730
  - methods in cobalt-60 irradiation facility, chemical, 22:10498 (AECD/HP-6)
  - modification in biological materials by quality factors, 22:38319
  - nomenclature for, 22:38288
  - nomenclature for, use of ionendosis in, 22:45555
  - performance of film badge dosimeters for broad spectrum, standards for, 22:28496
  - performance of ionization chambers, photographic film, and photoluminescent glass detectors for, of personnel, 22:21519

performance of photographic film and photoluminescent glass detectors for, 22:21520
performance of photographic film dosimeters for, in France, 22:21533
program at AB Atomenergi during 1966, results of, 22:31057 (AE-312)
radioisotope, in bones of human children, relation of trabecular bone composition to, 22:31081
readout system for ionization chamber, 22:47387
reference standards for β and neutron, 22:51586
research, 22:8390 (AHSB(RP)M-46)
research on chemical and solid-state, at National Physical Laboratory, Teddington, England, 22:43129
standards and units for, 22:43130
standards for environment of work areas, 22:21535
standards for inducing mutations in crop plants, 22:31047
standards for x rays, gamma rays, and electrons, 22:14861
use of combined (fluorescent and transistor) detectors for clinical γ and x, 22:38296
use of decrement line method for γ-, in tissues, 22:31145
use of dosimeters and air quantity for, of radioactivity released via exhaust air of stacks, 22:49346
use of equivalent field principle for computerized γ, in radiotherapy of humans, 22:40670
use of hit theory and microdosimetry for RBE calculations for, 22:31203 (BNWL-SA-1753)
use of incidence of chromosome aberrations for, bibliography of, 22:31109
use of ionization chambers for, of negative pion beams, 22:33905 (ORO-3343-1, Paper 5)
use of phantoms for, of biological materials, 22:43329
use of segmentation index of granulocytic leukocytes for x, in guinea pigs, 22:38432
use of zinc content of dog blood for γ, 22:38284

RADIATION EXPOSURE CHAMBERS
argon-41 production in, of TRIGA reactor, possible control of, 22:51625
design of tube-type, 22:51156(P)
use in animal studies, evaluation of, 22:52014

RADIATION MONITORING
see also Aerial Surveying
see also Radiation Protection
activity levels in Elk River Reactor plant and secondary system during operation, 22:3842(R) (NUS-409)
activity measurements for SENA Power Reactor environment during October to December 1967, 22:24975(R) (TID-24368)
alarm system for, circuit design for audio, 22:30911(P)
atmospheric, in Thailand, 1961 to 1963, 22:25539
calibration and use of γ spectrometers in, by public health personnel, recommendations for, 22:40704
continuous-sampler spray scrubber for, performance of, 22:1766(R) (IDO-17240)
CVTR environmental, 22:7793(R) (CVNA-297)
data from Atomic Energy Commission installations during 1966, 22:40697
data from Atomic Energy Commission installations during 1966, 22:40690
data from films for personnel, computer programs for analysis of, 22:4483 (CERN-67-28)
data on fission product contents in monthly precipitation in US cities, 1958 to 1967, 22:25530 (HASL-193, pp II.1-30)
data on global, 1957 to 1968, 22:25531(R) (HASL-193(App.))
description of VVR-M reactor, 22:20917(T) (JPRS-44332)
development and testing of Geiger-Mueller detectors for, of working environment, 22:21534
development of formulas for, of uranium in personnel, 22:51563 (CEA-R-3361)
directions of viewing of ground-based neutron monitors, (T), 22:13264
environmental effects of MH-1A and SM-1 reactor operations during 1967 on, 22:35562(R) (AD-666202)
environmental, at Brookhaven National Laboratory, 1965, 22:40258 (BNL-50093)
environmental, at Byrd and McMurdo Stations, Antarctica, 22:2219
environmental, at Goodyear Atomic Corporation, 22:18966(R) (GAT-553)
environmental, at Juelich Nuclear Research Center, 1966, 22:2193(R) (JUL-485-ST)
environmental, at National Nuclear Research Center, Pelindaba, South Africa, 22:180 (PEL-89)
environmental, at Savannah River Plant, January through June 1968, 22:45178(R) (DPST-68-30-2)
environmental, α activity correction factors for use in, 22:18974
environmental, BONUS during September 1967, 22:16160(R) (PRWRA-118)
environmental, equipment and methods for, 22:2244
environmental, for carbon-14, krypton-85, and tritium released by reactors and underground nuclear explosions, 22:12463 (UCID-15251)
environmental, from UKAEA waste disposal operations, 22:279 (AHSB(RP)R-79)
environmental, in Ankara, Turkey, Aug. 1965 through July 1966, 22:181(R) (TAEC-D-5)
environmental, in Euratom countries, 1966, 22:8221 (EUR-3602)
environmental, in India, 22:2222
environmental, in Italy, data tabulations on, 22:23165 (PROT.-SAN.-12/67)
environmental, in New Zealand during October to December, 1967, 22:16709(R) (NP-17268)
environmental, in Spain, 22:2224
environmental, in Switzerland, data tabulations on, 1965, 22:25544
environmental, in Switzerland, data tabulations on, 1964, 22:25543
environmental, in Washington County, Maryland, 22:2221
environmental, in West Germany, 22:2223
environmental, near Ames Research Reactor, 1962 to 1968, 22:25532 (IS-1776)
environmental, of Ames Laboratory area, Jan. 1, 1968 to June 30, 1968, 22:48944 (IS-1924)
environmental, of Canadian reactor environs, 22:6487
environmental, of fallout in India, 1956 to 1966, 22:6488
environmental, of monazite areas of southern India, 22:6440
environmental, of Mound Laboratory area, January through June 1968, 22:45183 (MLM-1522)
environmental, of northern New England, 22:2220
environmental, of nuclear installations, 22:18973
environmental, of wastes from UKAEA sites during 1967, 22:48943 (AHSB(RP)R-86)
environmental, program for Sterling Event off-site, 22:30737 (VUF-1036)
environs, objectives of system design for, 22:19327 (BNWL-SA-1601)
equipment and method for monitoring low-level activity in waste water, 22:36022 (AE-317)
equipment and method for Phoebus 1B effluent cloud, (E), 22:12442 (LA-3787)
equipment and method for, of solvent extraction plant, 22:4304 (EUR-3612)
equipment and methods for off-site, from NERVA testing and disassembly, 22:30715 (SWRHL-30-r)
equipment and methods for strontium-90, comparison of, 22:25525 (HASL-193, pp I.2-16)
equipment and methods for, in Hyogo prefecture, Japan, 22:6451
equipment and procedures for emergency, at Savannah River Plant, 22:36251 (DP-MS-68-1)
equipment and procedures for, of waste water and exhaust air, 22:4288
equipment design for beta, gamma, and neutron, 22:8358
equipment design for, at ORNL fission products development laboratory, 22:31062 (ORNL-TM-2149)
equipment for fission-product, for pool-type reactor, 22:30826
equipment for in vivo, development of computer-based scintillation detection, 22:12575 (Y-1595)
equipment for intense gamma, design of portable, 22:21306 (AECL-3023)
equipment for JPDR, 22:6033
equipment for Juelich Nuclear Research Plant, description of, 22:51241
equipment for laboratory air, γ, 22:45557
equipment for packaged radioisotopes during shipment, 22:45567
equipment for personnel protection, survey of, 22:23270
equipment for, at ORNL transuranium processing plants, 22:19098 (ORNL-TM-1774)
equipment for, at Tohoku Univ. electron linear accelerator, 22:32420
equipment for, design of mobile, 22:21309 (CEA-R-3324)
equipment for, design of telescopic probe, 22:47325(P)
equipment for, development at CEA, 22:23276
equipment for, of plutonium-239 in air in presence of radon and daughters, 22:2349 (ORNL-TM-2011)
equipment for, of tritium near DIDO and PLUTO reactors, 22:19093 (AERE-M-1929)
equipment for, performance of Kyoto Univ. research reactor, 22:6586
equipment standards for criticality accident, ANS, 22:6591
evaluation of programs for bioassay sampling in, probabilistic method for, 22:51634
exhaust stack, method for, 22:49346
fallout, in United States, program of, 22:40661(R) (HASL-197)
fast neutron, in aircraft, use of aluminum for, 22:25961(R) (BNWL-531-2)
fuel element failure detection by HBWR gas sampling, description of, 22:48646 (HPR-102)
fuel element failure, description of modified loading machine for coolant sampling in, 22:42569(P)
instrumentation system for desalination reactors, description and economics of, 22:30289 (ORNL-TM-2049)
LACBWR environmental, 22:7786 (ACNP-67533)
leak detection system using, in Halden Boiling Reactor, 22:16150 (HPR-92)
measurement of BONUS environment during July 1967, 22:7818(R) (PRWRA-116)
measurement of fast neutrons for Air Force Engineering Test Reactor, detector system for, 22:32983
measurement of Halden Boiling Reactor personnel doses, 22:20816 (HPR-94)

  measurement of KIWI-Transient Nuclear Test effluent, description of environmental, 22:39849 (LA-3449)
  measurement of various systems of APDA Reactor, 22:30119 (APDA-CFE-18)
  measurements at Garigliano Power Reactor during April 1 to June 30, 1967, 22:3847(R) (TID-24131)
  measurements at Halden Boiling Reactor during 1967, 22:53280 (NP-17638)
  measurements at ISPRA during 1965 and 1966, 22:16706 (EUR-3884)
  measurements at JPDR, 22:16153 (JAERI-1149)
  measurements during chemical decontamination of Hanford Production Reactors (N), 22:24952 (DUN-SA-62)
  measurements for BONUS reactor during October 1967, 22:18422(R) (PRWRA-119)
  measurements for Swedish Reactor (R-3) during 1963 to 1967, 22:30225
  measurements in Peach Bottom Power Reactor during September 1967, 22:5930(R) (NP-17085)
  measurements in Peach Bottom Power Reactor during October 1967, 22:5933(R) (NP-17145)
  measurements in SNAP-10 test facility, 22:3880 (NAA-SR-12504)
  measurements of La Crosse Boiling-Water Reactor effluent during September 1967, 22:3806(R) (ACNP-67532)
  method for coal-bearing sediments in Japanese Igu lignites, 22:8217
  method for Karlsruhe Research Center hot cell air, 22:51142
  method for laboratories using open sources, use of radioactivity measurements on paper wrapping from photographic film as, 22:21522
  method for plutonium-239 activity in Hanford plant facilities air, 22:25568 (BNWL-481-3, pp 97-101)
  method for surface, at Los Alamos, 22:36254 (LA-DC-9005)
  method for terrestrial γ, relation with time, 22:2243
  method for urine using sorption on glass fiber filter paper, α, 22:51633
  methods and equipment for clinical, NCRP report on, 22:23506 (NP-17328)
  methods and equipment for sampling air-borne radioactive particles, 22:19012
  methods and results for atmospheric, over Indian Ocean, 22:6489
  methods and results of Brazilian, 22:2216
  methods and uses in U. S, 22:4309 (TID-24102)
  methods during use of industrial radiography equipment, γ, 22:45578
  methods for aerial, for terrestrial component, 22:2241
  methods for aerial, in ARMS I program, 22:2240
  methods for aerial, in ARMS program, 22:2239
  methods for air in uranium mines, 22:45561
  methods for airborne, 22:2232
  methods for atmosphere and water, 22:45563
  methods for atmosphere in uranium mines, 22:21539
  methods for atmosphere in vicinity of nuclear fuel processing plants, 22:51567(R) (IN-1205)
  methods for atmospheric, over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
  methods for boilers during testing with γ radiometric pressure gages, 22:45579
  methods for Brazilian foods and waters, 22:2217
  methods for effluent from NRX-A6 reactor, 22:51569 (LA-3895)
  methods for environment and personnel of plutonium production centers, 22:49342
  methods for environmental, around nuclear facilities, 22:25858
  methods for environmental, in Australia from French weapons tests in Polynesia, June to July 1967, 22:14592
  methods for fallout, 22:8529(T) (JPRS-42929, pp 293-330)
  methods for gages and industrial radiography equipment, γ, 22:45576
  methods for gaseous fission product, from Garigliano Power Reactor, 22:3867
  methods for German atmosphere, following third Chinese nuclear explosion, 22:18975
  methods for ground water, 22:23185 (HNS-1229-43)
  methods for human hands, α and β, 22:45562
  methods for iodine-131 in air of laboratory, direct and indirect, 22:21431
  methods for plutonium laboratory, 22:36268
  methods for plutonium loading of ZPR III, 22:23553
  methods for radioactive aerosols in breathing zones and work areas, 22:21537
  methods for radioactive aerosols in breathing zones of personnel, 22:21536
  methods for radioactive aerosols in work areas, 22:21538
  methods for radium-226 and radon-222, 22:2210
  methods for rapid, of lower atmosphere, 22:42882
  methods for Savannah River Plant environs, 22:2245
  methods for sealed source radiometric thickness gages, 22:45559
  methods for sealed sources for use in industry, 22:45577
  methods for tritium-labeled water vapor in air at Chalk River, 22:14999 (AECL-2699)
  methods for unplanned releases of radioactive materials following underground nuclear tests, 22:497 (UCRL-70608)
  methods for unsealed sources, 22:12862
  methods used at Electrical Communication Laboratory in Japan, 22:36276
  methods used in Japan, evaluation of atmospheric, 22:36272
  neutron dose equivalent measurements for Hungarian WWR-S reactor, fast, epithermal, and thermal, 22:6130
  performance of immersible γ spectrometer for, of waste solutions, 22:45564
  performance of UHTREX stack and annunciator panel, 22:53416(R) (LA-4009)
  personnel, description at NRTS, 22:10609 (IDO-12056)
  phosphorus-32, of honey bees, development of method for, 22:47458
  problems in nuclear installations, 22:21532
  procedures for nuclear power plant environs, 22:2230
  procedures for waste disposal site environs, IAEA recommendations on, 22:12562 (STI/PUB-170)
  program at Goodyear Atomic Corporation during 1967, 22:49323(R) (GAT-R-430)
  program at Hanford for, 22:16705 (BNWL-SA-1452-A)
  program for industries in Great Britain, 22:45554
  program in France, 22:21533
  program of North Carolina Board of Health, 22:51603
  program of self-instruction on, 22:10540 (HW-SA-3671)
  programs at nuclear installations, objectives of, 22:43322
  programs for coastal and surface waters of British Isles, 22:16728 (FRL-1)
  programs for environment of nuclear facilities, 22:19348
  programs in public health, in New York, 22:51601
  Puerto Rico Power Reactor environment, 22:3845(R) (PRWRA-117)
  radiometric method for, of Japanese antimony and ore deposits, 22:6443
  radiometric method for, of Miyazaki Prefecture, Japan, 22:6442
  radiometric method for, of Neogene Tertiary in Niigata Prefecture, Japan, 22:8216
  radiometric method for, of Yamaguchi and Shimane Prefectures, Japan, 22:8218
  recommendations for work area, ICRP, 22:21531
  research at Institute of Nuclear Research at Rez, 22:43327
  safety analysis of ARBUS Power Reactor operation, description of, 22:53342
  safety procedures for disassembly of SRE, description of, 22:53259 (AI-AEC-12572)
  safety procedures for European reactor, 22:5931(R) (NP-17110)
  sampling device for SNAP-8 coolant flow, description of, 22:18543 (NAA-SR-Memo-11131)
  shielding performance for Fermi Fast Breeder Reactor, analysis of neutron and γ, 22:44807 (APDA-221)
  Shippingport Pressurized-Water Reactor core 2, γ and neutron, 22:16163 (WAPD-PWR-TE-204)
  spectrometric method for, of natural background γ radiation in Poland, 22:6445
  stations for ground-level, effects of fission product activity on spacing of, 22:25547
  system for radon decay products in uranium mines, 22:19328(R) (COO-1500-5)
  system for, design of fixed, 22:10539 (DUN-SA-49)
  system for, design of fixed telemetry, 22:8337 (DUN-SA-50)
  systems at ORNL, description of, 22:21315 (ORNL-4219, pp 36-46)
  thermal neutron, in aircraft, use of sodium fluoride for, 22:25961(R) (BNWL-531-2)
  transmitter and receiver for underwater fuel element inspection, description of watertight radiological, 22:25119(P)
  tritium measurements for Savannah River Production Reactors, description of Kanne system for, 22:35455 (DPSPU-66-30-13)
  use of exit monitors on doorpost for, in reactor area, 22:43300 (AERE-PR/HPM-12)
  use of in vivo spectrometric method for, of Y-12 personnel for uranium content of chest, 22:40703
  use of packaged photographic film for, in environs of reactor, 22:45548
  use of uranium content of urine for, of work area environment, 22:38270
Radiation Phantoms
    see Phantoms
RADIATION PROTECTION
    (General aspects of the problem concerning personnel.)
    see also Health Physics
    see also Protective Clothing
    see also Protective Ointments
    see also Radiation Monitoring
    see also Radioprotective Compounds
    see also Remote-Control Equipment
    see also Shelters
    see also Shielding
  activity limits for HBWR personnel, determination of, 22:12026 (HPR-87)
  analysis for astronauts during space flight, implications of biosatellite program for, 22:31078
  analysis for plutonium fuel fabrication, 22:1755 (BNWL-SA-1326)
  bibliographies on, 22:2512
  bibliography of Soviet literature on, 22:4637

book: Code of Practice against Radiation Hazards, 22:4628
Book: Handbook on Radiation Protection, 22:10779
book: Means of Individual Protection for Work with Radioactive Materials, 22:40731
book: Principles of Nuclear Medicine, 22:49411
book: Principles of Radiation Protection, 22:10778
book: Problems in Cosmic Biology, Vol. 7, 22:47538
book: Protection Against and Repair of Radiation Injuries, 22:25930
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Protection Against Neutron Radiation up to 30 Million Electron Volts, 22:45570
book: Radiological Protection in Universities, 22:25856
book: The Care of Radiation Casualties, 22:31135
code of practice for, of man and medical personnel, 22:25845
computer programs for construction techniques in, 22:4381 (ABS-THH-1034)
conference on, 22:36250 (CONF-660815)
cost factors for, 22:490 (CONF-660649)
design of facilities for, of medical personnel during gold-198 therapy of edema, 22:6813
development of institute for, of man in Sweden, 22:40728
development of new concepts and standards for, by I.C.R.P, 22:23524
developments in, at Tunisian CEA 1966-1967, 22:14875(R) (NP-17229)
dose determinations of high-energy protons and neutrons for, depth, 22:31901
dosimetry for, relation of, to RBE, 22:38318
dosimetry methods for safe reactor operation, book on, 22:32801
economic aspects of, for industry, 22:45585
effectiveness of ascitic fluid and chorion on retina of eyes, 22:25796
effectiveness of lead shielding and collimated sources for, of man during diagnostic radiography, 22:19349
effectiveness of programs for, in nuclear industry, 22:19335
effects on immune reactions to allogenic bone marrow transplants in man, effects of, on metabolism, whole-body, 22:38206
effects on immune reactions to bone marrow transplants in mice, effects of, on metabolism, 22:38206
efficiency of clothing for, against aerosols, 22:40677
efficiency of transfusions of irradiated blood, 22:40750
equipment design for, of human infants during diagnosis, 22:19014
equipment development for, in hot laboratories, 22:12489
equipment for personnel, in radiation environments, 22:47275(P)
equipment for personnel, survey of monitoring, 22:23270
evaluation of specific activity concept for, of man against environmental contamination, 22:10750
facilities at Radioisotope Laboratory of Hiroshima University, 22:49354
fallout, Federal guides and standards for, 22:51599
fallout, of human infants by diet, methods for, 22:51609
federal standards for, of environs and personnel near nuclear power plants, 22:2230
glasses for, specifications for lead barium silicate and lead silicate, 22:31111
hazards control during Canada-India Reactor operation, 22:16299
laboratory for, summary of operations of mobile, in Czechoslovakia, 22:51590
law concerning responsibility for, Austrian, 22:16156 (NP-17218)
legal and safety requirements for, in handling radioisotopes, 22:2315
legal aspects in European countries, 22:490 (CONF-660649)
legal aspects of, in Italy, 22:40729
legal aspects of, mining personnel, hearings before subcommittee of Congress Joint Committee on Atomic Energy on, 22:51668
legal regulations for, in medicine, 22:51638
legislation and recommendations for employment of women in atomic energy industries, 22:45591
legislation for industrial personnel, 22:38283
legislation for personnel, 22:36271
legislation in Belgium, 22:40673
legislation in EURATOM countries, 22:45588
legislation in New York for x, 22:40726
measures for shipping radioactive materials, IAEA definition of competent authority role in, 22:28039
mechanism of mercapto group in mice, effects of protein bonding on, 22:28610
mechanisms in mammals, chemical, 22:38409
method for medical personnel during interstitial implantation of labeled microspheres in tumors of man, 22:38380
methods against fallout, evaluation of emergency, 22:51657
methods and standards for NERVA test operations personnel, manual of, 22:36255 (NTO-T-0022)
methods and standards for radar environs in France, 22:36267
methods at 300-GeV proton synchrotron, 22:1521 (CERN-563(Vol.1))
methods at Idaho Nuclear Corporation, safeguard review committee for, 22:19329 (IN-1041)
methods at plutonium production centers, 22:49342
methods during space flight, review of, 22:38474
methods during use of tritium, 22:43328
methods employed in podiatry, survey of x, 22:31101
methods for astronauts during space flight, evaluation of, 22:21589
methods for cellular, through control of radiotoxins, review of, 22:25910
methods for dental radiography, 22:10807
methods for dental radiography in New Zealand, survey of, 22:40683
methods for dental radiography, x, 22:45525
methods for environmental exposure of man, 22:45531
methods for French radiochemical processing plant for cesium-137 separation, 22:2263 (EUR-3611)
methods for handling crash of aircraft containing iodine-131, 22:28470
methods for human population in postattack environment, 22:10795
methods for IAEA radioactive materials shipping, 22:28040
methods for industrial handling of radiation sources and radioisotopes, 22:45572
methods for industrial personnel performing radiography, 22:45581
methods for industries and laboratories, 22:490 (CONF-660649)
methods for laboratory and industrial personnel, 22:23527
methods for man and personnel during dental radiography, x, 22:45551
methods for man during diagnosis and therapy, x, 22:51659
methods for man during habitation of outer space, 22:33916
methods for man, microwave, 22:49597
methods for Marine Products Development Irradiator personnel, 22:210(R) (TID-24016)
methods for medical personnel and patients during interstitial iridium-192 and radium therapy for cancer of mouth, 22:49364
methods for medical personnel during prolonged radiography of patients, 22:49328
methods for medical personnel during radiodiagnosis and radiotherapy, 22:23573
methods for medical personnel during surgery involving radiography, 22:4620
methods for medical personnel during therapy of oral neoplasms, x, 22:51978
methods for medical personnel during use of gold-198, 22:45582
methods for medical personnel during use of laser radiation, 22:28594
methods for medical personnel inserting radium implants, 22:546
methods for medicine, 22:25929
methods for microwave personnel, 22:554(R) (UR-49-810)
methods for mining personnel, 22:25963
methods for pediatric medicine, 22:51607
methods for personnel during handling and processing of plutonium, 22:4621
methods for personnel in industrial radiography, γ, 22:45576
methods for personnel in radiochemical laboratories, 22:45587
methods for personnel of plutonium laboratory, 22:36268
methods for personnel using γ sources for industrial radiography, 22:45580
methods for personnel using industrial radiographic equipment, γ, 22:45578
methods for personnel using neutron radiometric gages in oil well logging, 22:28489
methods for pregnant medical personnel using radiological equipment, 22:25841
methods for radioactive materials, IAEA package design for use in, 22:28043
methods for radium therapy of gynecological cancers, 22:28461
methods for shipping of low specific activity materials, IAEA regulations on, 22:28045
methods for shipping of radioactive materials, IAEA regulations on, 22:28046
methods for shipping of radioactive materials, regulations of International Air Transport Association on, 22:28047
methods for society, 22:42876
methods for space flight personnel, proposals of Soviet Union for, 22:25831(T) (JPRS-42635, pp 1-6)
methods for tritium, standards for, 22:51664
methods for uranium mining, 22:25828 (NP-17440)
methods for use in industrial medicine, review of, 22:49371
methods in public health programs of New York, 22:51601
methods of man, military evaluation of nuclear, 22:25861(T) (JPRS-39391)
methods used at Electrical Communication Laboratory in Japan, 22:36276
packaging methods for radioactive materials, IAEA regulations on, 22:28042

  performance of shipping containers, 22:289
  power reactor operation requirements for, description of, 22:48707
  power reactor personnel, analysis of standards and procedures for U. K, 22:53313
  power reactor, analysis of overall requirements for, 22:53321
  practices in nuclear medicine laboratories, 22:49377 (CONF-660839)
  problems of industrial and medical personnel, review of, 22:45583
  procedures for Gasbuggy experiments, 22:12464 (UCRL-50334)
  procedures for man and medical personnel during use of accelerators for electron and x-ray therapy, 22:40687
  procedures for Melusine disassembly, 22:7896 (INT/SPR-65-699)
  procedures for rescue in radiation accidents, 22:45504 (BNWL-SA-1937)
  procedures near accelerators, 22:39501 (CEA-R-3443)
  program at Japan Atomic Energy Research Institute, 22:4603(R) (JAERI-5016)
  program at National Tsing Hua University, Taiwan, China, 22:51581
  program for clinical and research facilities, 22:49330
  program for personnel, laser, 22:492 (LA-3731)
  program in Sweden, 22:21517
  program of North Carolina Board of Health, 22:51603
  programs for industries, 22:45586
  programs in Belgium, 22:21518
  programs of Federal government in, of diet of infant humans, 22:51600
  protective clothing for, after glove box explosion and fire, 22:2320 (BNWL-464)
  reaction mechanisms for, of serotonin in mice, 22:40752
  recommendations by advisory committee of Public Health Service for medical use of x rays, 22:51571 (NP-17507)
  recommendations for occupationally exposed persons, 22:51651
  recommendations for women in atomic energy industry, 22:45591
  recommendations of ICRP for maximum doses to individuals and populations, 22:28471
  regulations for personnel and public during demonstrations using radiation sources or radioisotopes, 22:45584
  regulations for radioactive materials shipping, IAEA, 22:28056
  regulations in universities, 22:499
  regulations in Washington state, legal, 22:45553
  requirements for fissile materials, IAEA, 22:28041
  research at Institute of Nuclear Research at Rez, 22:43327
  research at Studsvik, Sweden in, 22:33399
  research programs in Great Britain, progress report on, 22:49355
  research studies for radioactive aerosols, 22:23508 (SC-M-67-2973)
  responsibilities of Division of Biology and Medicine of AEC in, review of, 22:51605
  review of methods for, used in Soviet Union during past 50 years, 22:4638
  role of Public Health Service in, assessment of, 22:28478
  shelter entrances for, effectiveness of ducted, 22:4390
  shelter system for, equipment for public information activities in, 22:4599(R) (AD-648319)
  shelters for, guides for planning, 22:278
  shielding calculations for, during use of dental x-ray equipment, 22:19350
  shielding for, in Karlsruhe installation for reprocessing irradiated fuels, (T), 22:5397 (NP-17030)
  shielding studies for, bibliography on U.S.S.R, 22:50806 (ORNL-RSIC-23)
  shielding with remote-handling and remote-viewing equipment for, 22:45574
  shipping of radiation sources, IAEA regulations on, 22:28044
  standard policies and procedures for, 22:43299 (AECL-1027(5th Ed.))
  standards at Los Alamos laboratories, 22:36254 (LA-DC-9005)
  standards established by Protective Action Guide for livestock exposure to fallout, 22:2514
  standards for, 22:4666
  standards for aviation and medical personnel at airfields following nuclear explosion, 22:4642
  standards for dental radiography in Canada, 22:19334
  standards for disposal of radioactive corpses of man, 22:4625
  standards for eyes of man, laser, 22:12784
  standards for fallout, criteria for establishment of, 22:25834
  standards for hospitals in Netherlands, 22:2518
  standards for human population in area of nuclear installations, 22:40668 (STI/PUB-124)
  standards for industrial personnel, development of, 22:23525
  standards for industrial radiography personnel in France, 22:36265
  standards for industrial, in Germany, 22:33833
  standards for laboratory personnel handling radioisotopes, 22:501
  standards for man against lead-212, effects of age on, 22:51322
  standards for man and personnel during medical diagnosis, 22:45510
  standards for man during space flight, 22:36273
  standards for man, contribution of radiobiology to, 22:8520 (CONF-670305-, pp 192-6)
  standards for man, economic aspects of, 22:25992
  standards for man, legal aspects of, 22:10835
  standards for manned space flight, 22:6918
  standards for manned space flight, evaluation of, 22:6824
  standards for maximum permissible concentration of radioactive aerosols in air, 22:23508 (SC-M-67-2973)
  standards for measurement of iodine-125 activity, 22:30642
  standards for medical personnel in relation to human cytogenetics, 22:38245
  standards for medical radiodiagnosis, 22:45535
  standards for medical radiography in U.S.S.R, 22:6809(T) (AEC-tr-6467/2(pp 177-94))
  standards for monitoring environment at nuclear installations, 22:43322
  standards for nuclear industry personnel, in Switzerland, legislation for, 22:36266
  standards for operation of lasers, 22:38252 (CONF-660573-, pp 97-109)
  standards for patient and medical personnel during therapy for skin cancer, 22:15007
  standards for patients and medical personnel during medical radiography in Australia, 22:28536
  standards for patients and medical personnel during diagnostic radiology, 22:38286
  standards for patients and personnel during x-radiodiagnosis in Belgium, 22:47626
  standards for personnel using lasers, review of, 22:251
  standards for Puerto Rico Power Reactor, 22:23507 (PRWRA-GNEC-7(Rev.2))
  standards for release of radioactive materials from AEC installations, 22:40697
  standards for space flight, 22:12829
  standards for space flight personnel, 22:12925
  standards for transportation of radioactive compounds in U.S.S.R, 22:6810(T) (AEC-tr-6467/2(pp 143-76))
  standards for unsealed sources, 22:12862
  standards for uranium mines, 22:33824
  standards for use of dental x ray equipment in U. S, 22:43325
  standards for use of lasers at Sandia laboratory, 22:51573 (SC-TM-68-436)
  standards in France, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  standards of American Dental Association for medical personnel and patients during dental radiography, 22:15009
  standards of Atomic Energy Commission, 22:19335
  standards of Belgium government, 22:31099
  standards of Belgium government, international collaboration on, 22:31106
  standards of EURATOM for personnel, 22:19330 (NP-17180)
  supervision in installations using tritium, 22:19345
  survey of dental x-ray equipment in Israel, 22:43304 (NP-17517)
  system for x-ray generators, design of, 22:6697
  training programs for personnel, 22:28493
  training programs for, of pharmacists using radioisotopes, 22:40722
  use of chemicals for, in agriculture, 22:38301
  use of diving suits, gas masks, and respirators for, of laboratory personnel against atmospheric contamination, 22:45575
  use of lenses and camera shutter for, of laser personnel, 22:36281
  use of pulse polarography for, 22:31096
  use of tissue cultures for study of, review of, 22:23431
Radiation Pyrometers
  see Pyrometers
RADIATION RATE METERS
  amplifiers for, design of logarithmic current, 22:23340(P)
  calibration of gamma dose, device for, 22:14848 (AERE-M-1763)
  circuit to compensate for beam current variations in channeling experiments, design of, 22:28218
  design and construction of transistorized, 22:28065 (NP-17356)
  design and uses of, survey on, 22:43161
  design of cadmium sulfide high-level gamma, 22:47321 (RD/B/N-1108)
  development and testing of Geiger-Mueller, for use for area and personnel dosimetry, 22:21534
  maintenance manual for linear, ORNL Model Q-2622, 22:19192 (ORNL-TM-1638(Pt.22))
  measurements with tactical military, relation with radiobiological effects table, 22:376 (USNRDL-TR-67-67)
  operation and maintenance manual for portable AAEC type 239, 22:19182 (AAEC/M-77)
  performance for continuous monitoring of γ activity in air, 22:45557

performance for dual-channel subtract scintillation scanning system, 22:49402
performance for use with dual scintillation detectors for radioisotope localization of tumors in human brain, 22:49404(P)
performance with ionization probe for dosimetry of 6 MeV x rays, 22:28530
properties of combination scaler-, statistical, 22:43184
standards for criticality accident alarm system, ANS, 22:6591
use in detection of uranium deposits, 22:27936

RADIATION-SCATTERING ANALYSIS
see also Beta-Diffraction Analysis
see also Electron-Scattering Analysis
see also Neutron-Diffraction Analysis
see also Proton-Scattering Analysis
see also X-Ray-Diffraction Analysis
accuracy of beta, 22:6260
sensitivity of triple backscattering of electrons for, 22:30486

Radiation Shielding
see Shielding

Radiation Sickness
see Diseased, Traumatic

RADIATION SOURCES
see also Gamma Sources
see also Heat Sources
see also Light Sources
see also Particle Sources
see also Ultraviolet Sources
see also X-Ray Sources
backing for, preparation of mylar, 22:45321
beta particle energy emitted from infinitely thick, (E), 22:7342
book: Radiation Chemistry, Principles, Techniques, and Uses, in German and English, 22:27832
calibration of flux-monitor, interlaboratory counts for, 22:43615(R) (BNWL-710)
capsule insulation for, heat transfer of, 22:10481(R) (ALO-3634-6)
changing in radiographic cameras, design of cable-type coupling for, 22:16749(P)
conference on low-energy, Austin, Texas, March 27 to 29, 1967, 22:250 (ORNL-IIC-10(Vol.2))
containment of, device for ascertaining, 22:8427(P)
counting rate of an isotropic, as a function of distance (kr) from a sphere of radius (r), 22:49326 (NYO-2740-5, pp 6-200)
design for biosatellite testing, 22:4359
design for military applications using wall-stabilized arc, 22:41620 (AD-662350)
design for optimum size and efficient radiation emission, 22:258 (ORNL-IIC-10(Vol.2), pp 764-85)
design of infrared and uv, for medical use, 22:23561
design of sheet, containing small radioactive beads, 22:33609(P)
design of spent fuel element, 22:2283
design of, lectures on, 22:35998 (ISS-68/6)
development and use of low-energy, in medicine and industry, 22:2312 (ORNL-IIC-10(Vol.1), pp 1-17)
development and uses of, review of, 22:19056
development for commercial-scale radiation preservation of foods, review of, 22:14730
development of polarized photon, by Compton backscattering of optical photons, 22:24752 (UCID-15296)
developments in, at BNL, 22:37775 (BNL-50082, pp 40-78)
directional control in radiotherapy equipment, design of system for, 22:228(P)
dosimetry of high intensity, development of chemical dosimeter for, 22:8540
efficiency of uv lamps as, for sterilizing air of sanitoria, 22:52048
emission from dipole, in moving plasma, (T), 22:7296
failure of cobalt-60, for Hawaii Development Irradiator, 22:28009 (BNL-50099)
geometry efficiency of parallel-disk system of detector and, integral method for determining, 22:10563
geometry of detectors with respect to, system for exactly orienting, 22:28115
geometry of radiation detector--, Monte Carlo calculation of, 22:14787
geometry of, flux from spherical source compared to point source, 22:14756(R) (UCRL-50007-67-2)
handling by industrial personnel, methods for radiation protection during, 22:45572
handling in irradiation facilities, device for, 22:47299(P)
handling of, bibliography on accidents during, 22:12895 (AED-C-16-03-1)
handling of, design of system for remote, 22:43019(P)
hazards of exposure to x, 22:49335
leak testing of sealed radium, comparison of methods for, 22:51182
legislation for use of, by industries in France, 22:45592
legislation for use of, in Israel, 22:45593
location of, description of direction-finder for, 22:28115
monitoring of industrial, in Great Britain, 22:45554
monitoring of sealed, for use in thickness gages, 22:45559
mounting of fission product, 22:12396 (AERE-R-5587)
natural and nonnuclear, comparison with contamination from nuclear power plants, 22:2230
packaging and shipping of large, design and testing of casks for, 22:289
packaging design for large, factors affecting, 22:290
packaging of large, review of methods for, 22:264
performance evaluation of, for use in radiation chemistry, 22:33430
preparation of carrier-free tin-113, 22:36008
preparation of cesium-137, 22:37772(P)
preparation of fibrous glass, containing uranium-235, uranium-233, plutonium-239, or uranium-235-enriched uranium oxide, 22:42979(P)
preparation of high silica matrix, 22:21293(P)
preparation of standard gaseous, equipment and method for, 22:16771 (CEA-R-3365)
preparation of thallium-204, method for, 22:42984
production and sales of, 22:16637
production and testing for use in industry, sealed, 22:45577
production and uses in Argentina, 22:33189(R) (NP-17470)
production and uses of, Div. of Isotopes Development research on, 1967, 22:47294(R) (TID-24349)
production in Czechoslovakia, 22:16634
production of alkali metal and alkaline earth isotope, by alpha bombardment of rare gases, 22:4207
production of particulate, 22:8164(P)
radiation intensity distribution from, device for measuring and displaying, 22:23362(P)
radiation protection of personnel and public from, during demonstrations, 22:45584
radioisotopes in, estimation of content of single, 22:35996 (AD-662192)
radium-226, leak testing of sealed, use of photographic film for, 22:38306
shipment of encapsulated, 22:45590
shipping of, IAEA regulations on, 22:28044
shipping of, packaging design for, 22:30813
standardization of, methods of, 22:43063
support device for irradiation facility, 22:35982(P)
transport between cells, design of conveyer for, 22:47308(P)
use for determining erosion in exhaust stacks, 22:10621(P)
use in large-scale radiation-chemical processes, 22:19008
use in lightning rods, 22:23390(P)
use of ionizing, safety control methods in, 22:23535
use of large, in agriculture, industry, and medicine, review of, 22:23233
use of radioisotopes for, in Czechoslovakia, 22:51337
use to control liquid deposition on sheets, 22:43133(P)
use with radiation detectors for direction finding, 22:10619(P)
uses in analysis, 22:33212
uses of low-energy, conference on, 22:250 (ORNL-IIC-10(Vol.2))
uses of small, in industry and research, 22:23232
uses of, developments in, 22:16637

RADIATION STANDARDS AND UNITS
see also Phantoms
calibration for use in whole-body monitoring of strontium-90 bremsstrahlung in experimental animals, 22:10827(R) (UCD-472-114)
data compilation on, 22:43130
determination for radioisotopes used in medicine, 22:12879
determination of factors for neutron fluence-to-kerma, for human body, 22:12846 (ORNL-TM-2079)
development for measurement of ionizing radiation, 22:12491
development for national atomic energy program, 22:35200 (NBS-TN-283)
development of, industrial responsibility for, 22:22722
evaluation of All-Union State Standard 8848-63 for, 22:49372
quality factor recommendations for low-energy β emitters in relation to RBE for tritium-labeled water, review of, 22:51632
use in dosimetry, review of, 22:10778
use of ber and equivalent rad, in Russia, 22:47537

RADIATION TARGET CANS
configuration for testing Type 304 stainless steel- and Incoloy 800-clad plutonium carbide (PuC)--uranium carbide (UC) and mixed plutonium carbide (PuC,Pu_2C_3)--uranium carbide (UC,U_2C_3), description of, 22:46923 (UNC-5219)
configuration of Dounreay Fast Reactor graphite-containing graphite-sleeved niobium-clad rod-shaped bundle-type, description of, 22:42392(T) (ORNL-tr-1968)
configuration of EBR-2, for metal-clad helium-bonded plutonium carbide (PuC)--uranium carbide (UC) pellet-type fuel elements, 22:39789 (UNC-5198)
configuration of gas-insulated and electric-heated, description of, 22:47033(P)
configuration of heat-activated sample support in dual-chamber, for irradiation temperature determination, 22:50856(P)
configuration of pressure vessel-contained detector-

monitored shielded, for testing of cladding failures, 22:42276(P)
description of controlled pressure-temperature, for uranium swelling measurements, 22:6136 (BNWL-SA-1377)
description of ETR X-basket-2, for irradiation of coated uranium dioxide particles, 22:26082 (ORNL-TM-2097)
description of gas-filled stainless steel, for fast neutron effects on ceramic thermionic fuel rods in EBR-2, 22:25090 (LA-DC-9025)
description of reactor control rod-enclosed, for radioisotope production, 22:48774(P)
description of water-filled, for heavy water-moderated reactors, 22:35616(P)
design and fabrication methods for instrumented in-pile, 22:8708 (ORNL-4190)
design and testing of bismuth--lead filled Zircaloy-2, for irradiation of fuel pins, 22:28861
design for fast reactor mixed-carbide fuel irradiation, 22:53463(R) (UNC-5217)
design for operation at 1000 to 1200°C, 22:12037
design for reactor fuel irradiation at high-temperature, 22:42491
design of controlled pressure--temperature, 22:4316
design of controlled-temperature, for nuclear reactors, 22:7904(P)
design of stainless steel, for mixed oxide fuel testing in MTR, 22:50731 (GEAP-5556)
design of tungsten, for uranium dioxide testing, 22:36552 (GEAP-5100-10)
fabrication of LV4, description of, 22:42490
fabrication of, for GETR tests, 22:38626(R) (WARD-3791-18)
fission gas release from tungsten, containing uranium dioxide, 22:36552 (GEAP-5100-10)
fission product monitoring from reactor fuels in, helium sweep circuit for, 22:42371
heat transfer in, use of electric conductivity measurements for analysis of, (T), 22:42491
loading with fuel pellets, facility for, 22:43629(R) (LA-3933)
stopper-sealed tube-access, description of swimming pool reactor, 22:25120(P)
temperature control by liquid nitrogen in, at 15 to -196°C, 22:27795
temperature control of, method for, 22:22850
temperature control systems for FRJ-2 reactor, description of optimum, 22:42375
temperature measurement in, use of magnetized ferromagnetic transducers for maximum, 22:42528(P)

RADIATION TARGET CHAMBERS
(Mechanical devices used for nuclear reaction studies.)
control and readout system for 64-inch scattering, design of digital, 22:39505 (N-68-14018)
design for proton assymetry measurements in polarized deuteron reactions (d,p) with beryllium, 22:11755
design for studying ionospheric reactions, 22:48408
design of inverted scattering, for angular correlation measurements, 22:50506
design of sliding cylinder type, for differential cross section measurements, 22:2420
development for angular-correlation and scattering experiments, 22:13927(R) (USC-136-132)
development for AVF cyclotron, 22:30048(R) (PUC-937-307)
development of windowless, for gaseous targets, 22:22560(R) (ORO-1067-2)
operation of 60-in., computer, 22:4455 (ANL-7355)

RADIATION TARGETS
angular correlation experiments using gaseous, method for calculating effective solid angle in, (T), 22:32671 (USC-136-138)
background problems in thin heavy-ice, for producing neutrons, 22:37254
bremsstrahlung from thin diamond and silicon, collimation of monoenergetic, with linear polarization near 100 percent, 22:11619
bremsstrahlung spectra from thick, at electron energies of 1 to 10 MeV, (T), 22:44754 (UCRL-50442)
burnout under influence of ion current fluctuations, design of automatic device for preventing, 22:39537
cold trap for high-pressure gas, design of, 22:10599
conference on accelerator, for producing neutrons, 22:37239
containers for liquid, at high pressures, for studying inelastic neutron scattering, 22:1576
contamination from tritium, vacuum cartridge for containing, 22:48393 (ORO-3346-29)
cooling of polarized proton, design of horizontal cryostat for, 22:13381 (CEA-R-3172)
cryostats for polarized proton, design of continuous flow horizontal, 22:15896
crystal structure of tritium-impregnated metal, for neutron production, 22:26762(R) (NP-17412)
description in living cells, review of, 22:49535
description of beryllium-9, for fast neutron production by (He-3,n) reactions, 22:37238
description of beryllium-9, for neutron production by (p,n) reactions, 22:37255
description of Mega gauss Cnare, for production of high-energy magnetic bremsstrahlung, 22:22516
description of thin-walled liquid hydrogen, 22:20390
description of tritiated, for high-flux 14-MeV neutron production, 22:37248
design and operation of track-sensitive hydrogen, inside neon--hydrogen bubble chamber, 22:368
design and performance of beryllium-9 cyclotron, for producing fast neutrons, 22:37257
design and performance of erbium and titanium tritide, for neutron production, 22:37243
design and performance of rotating heavy-ice, for 14.5-MeV proton production, 22:37252
design for absolute determination of 14-MeV neutron yields from deuteron reactions (d,n) with tritium, 22:7630 (SC-RR-67-346)
design for CERN 600-MeV proton synchrocyclotron for isotope separation, 22:29803
design for neutron generator, 22:9769(P)
design for use in reactors at 20°K, 22:39003
design for utilization of extracted proton beam of 300-GeV synchrotron, 22:32268 (CEAL-2000, pp 183-9)
design of circulating liquid metal, for proton synchrotron for producing short-lived radioisotopes, 22:30115
design of cyclotron, for neutron production, 22:37249
design of electron linear accelerator, for x-ray production, 22:15911(P)
design of helium-cooled liquid hydrogen, 22:39004
design of high intensity gas, 22:32961 (ANL-7310, pp 377-430)
design of high-neutron-yield uranium, used at BCMN electron linac, 22:37250
design of lead--bismuth, for producing high-flux thermal neutrons, 22:1517 (AECL-2750)
design of lead--tantalum composite, for fast neutron production, 22:32375
design of liquid deuterium--hydrogen, 22:15876 (DESY-67/44)
design of mechanically-refrigerated liquid hydrogen, for Argonne ZGS, 22:46655
design of molten lithium, for meson production, 22:1517 (AECL-2750)
design of molten-lead, 22:5702(P)
design of rotating deuterium--tritium, for 500-keV accelerator, engineering drawings for, 22:14634
design of rotating, for producing high-flux 14-MeV neutrons, 22:37253
design of tritium, for 14-MeV neutron production, 22:23292
design of twin, for measuring nuclear lifetimes by Doppler shift attenuation method, 22:39527
design of water-cooled, 22:9747(P)
design study of deuterium gas, using rotating foil for neutron production, 22:37246
deterioration of tritium--titanium, under deuteron bombardment, (E), 22:18158
development at Bonn, Jan. 1 to Dec. 31, 1966, 22:48509(R) (BMwF-FBK-68-22)
development for neutron production, 22:37245
development of differentially pumped gaseous, 22:11944(R) (AECL-2780)
development of gaseous, 22:1598(R) (COO-1265-49)
development of long-lived, for neutron production, 22:20370 (KN-67-655(R))
development of long-lived, of endothermic materials for neutron production by accelerators, 22:5690
development of Stanford cryogenic oriented, 22:35166(R) (AD-663169)
development of uranium, at CBNM linac for neutron production, 22:39522
efficiency of thick internal, for alternating-gradient proton synchrotrons, 22:32340 (CEAL-2000, pp A106-8)
electron beam focusing properties for betatron, 22:44552
electron interactions with, neutron yields from, (E), 22:18557 (GA-8087)
electron reactions at 1 to 6 GeV with, effects of target thickness and collimator angle on bremsstrahlung production by, 22:5683 (DESY-67/29)
electron reactions at 2.0 to 4.0 MeV and 24.5 MeV, positron production conversion yield in, 22:24762
electron scattering from accelerator, effects on shielding at high energies, (T), 22:31895
fabrication by aluminum--neptunium casting, (E), 22:8702 (BNWL-519)
fabrication of tritium-impregnated titanium, 22:37241
geometry in angular correlation experiments with gas, calculation of effective solid angle, 22:50508
heat transfer through thin rotating, calculation of, 22:29802
heating system for liquid metal, up to 900°C, for neutron scattering measurements, 22:20381
holder for 14-MeV neutron, design of three-dimensionally rotating, 22:4516
holder for radioactive, design of, 22:53169(R) (PPAD-647-D)
holder for, design for uniform irradiation, 22:4336(P)
inspection of failed HFIR, 22:8744 (ORNL-4170, pp 184-91)
ion beam reactions with insulator, at 40 to 70 keV, x ray production by positive, 22:50507
lifetimes of erbium tritide and titanium tritide, effects of 300-keV deuterons on, 22:1518 (AWRE-O-52/67)
magnet coils for polarized proton, 22:21352
microstructure analysis of erbium deuteride film, for neutron generators, 22:20384

moderators for pulsed neutron, optimization of, 22:37256
neutron moderation in heavy element assemblies, optimization of, 22:35285(R) (AERE-PR/NP-13)
particle scattering by thick, energy loss corrections for multiple, 22:29804
particles from, quadrupole lens for focusing secondary, 22:35180(P)
performance of deuterium-enriched metal film, for neutron production by D(d,n) reactions, 22:37244
performance of magnesium lanthanum nitrates as polarized proton, evaluation of, 22:24532 (JINR-E1-3708)
performance of tritiated, in sealed-tube for 14-MeV neutron production, 22:37247
performance of tritium and deuterium, for producing low-energy pulsed neutrons, 22:37251
polarized, for nuclear experiments, 22:9436
preparation of aluminum and carbon ultrathin film, 22:29799
preparation of deuterated palladium and titanium, for neutron production, 22:11746 (CEA-R-3065)
preparation of polarized proton, 22:1336
preparation of rare earth metal, by electrolytic means, 22:7590
preparation of ruthenium foils as, for nuclear research, 22:24767
preparation of self-supporting titanium, 22:37272
preparation of self-supporting, electron source for vacuum evaporation, 22:9800(R) (COO-535-571)
preparation of stable foils of carbon, 22:29806
preparation of thin copper-backed deuterated polyethylene, for high-current accelerators, 22:7598
preparation of thin film samarium isotope, reduction of samarium oxides using lanthanum for, 22:37271
preparation of thin self-supporting foils by vacuum deposition, methods development for, 22:46731(R) (COO-1746-8)
preparation of tritiated, developments in, 22:37240
preparation of uranium, electrospray method for, 22:45759
preparation of, methods development for, 22:1598(R) (COO-1265-49)
production of charge-exchange hydrogen, design and operation of supersonic nozzle for, 22:48391(T) (NP-tr-1669)
production of gas, from argon-40 and neon-22 ion reactions with molybdenum and tantalum backings at 2 to 75 keV, 22:1552
production of metallic foils for, 22:263
proton polarization in irradiated polymers, by solid effect, 22:3601
proton polarization in, linearized Q-meter circuit for measurement of, 22:7596
proton reactions at 3 GeV, production of radioisotopes in argon near, 22:22511
radioinduced failure of HFIR, in-pile, 22:4829
range-energy relations for low-energy ions in dense, (T), 22:978
sample holder for biological suspensions, 22:48406
seals for neutron-production, design of high-speed rotating vacuum, 22:15898
separation of actinium and radium from thorium, chromatographic, 22:33516
separation of radioisotopes from cyclotron, by evaporation in vacuum, 22:40203
separation of sodium-22 from magnesium, in organic solvents by ion exchange, 22:30668
storage chambers for linear accelerators, design of, 22:1598(R) (COO-1265-49)
temperature control for neutron scattering, thermistor and thermocouple devices for, 22:2473
testing of hydrogen, for Princeton Synchrotron, destructive, 22:29793
thickness measurements using Rutherford scattering, foil, 22:44559
thickness of electron--positron storage ring, calculations for, 22:5696
thickness of, calculation from charged-particle energy losses, 22:26929(R) (COO-1420-139)
thickness of, gage using piezoelectricity of quartz for measuring, 22:29805
transfer system and sample rotator for electron linear accelerator bremsstrahlung, design and performance of pneumatic, 22:1544
tritium contamination near tritium--metallic, for neutron production, 22:43310 (PHS-999-RH-29)
tritium distribution in thin-backed, determination using (p,n) reactions, 22:37242
use as gamma source for production of x rays of particular wavelength, 22:388(P)
use of gaseous, for nuclear reactions with deuterons, 22:26738 (NP-17333)
use of polarized proton, for determining KΣN parity from $\pi^+ + p \to K^+ + \Sigma^+$ interactions, (E), 22:13673
use of polarized proton, for N + p interactions at 14.5 and 23.1 MeV, 22:5501
use of polarized proton, in particle physics, 22:9715 (CERN-67-24(Vol.4), Paper 3)
use of polarized, for antineutrino interactions at high energies, 22:1416 (IAE-1241)
use of silver sheet, in γ-x-ray fluorescence method of wear measurement, 22:4353 (EUR-3627)
use of sodium tungstate, for low-energy physics, 22:20380

use of thick, for charged-particle capture cross section measurements, 22:24832
Radiation Therapy
see Radiotherapy
RADIATORS
(Limited to space vehicle radiators)
see also Heat Pipes
design and thermal testing of SNAP-23A, 22:14679(R) (WANL-3800-9)
design for cesium and potassium vapor cycle space power plants, 22:25573 (ORNL-TM-2081)
design limitations for dynamic converters, 22:19819
efficiency of load-bearing, for nuclear potassium Rankine systems, 22:35974 (N-68-10050)
thermal analysis of SNAP-23A, 22:33605(R) (WANL-3800-12)
welding methods for high-temperature, 22:12991
RADICALS
see also Ethyl Radicals
see also Free Radicals
see also Methyl Radicals
book: Radical Ions, 22:30511
radioinduced long-lived, in lysozyme and RNAase, ESR spectra of fast neutron, γ, and proton, 22:12820
radioinduced, bibliography on electron spin resonance of, 22:25372 (COO-38-595)
RADIO ASTRONOMY
absorption of solar line at 5.65 mm, atmospheric, (E), 22:4994
angular diameter measurements in, 22:41173
Astronomical Unit determination by, (E), 22:52371
book: An Introduction to Astronomy: Planets, Stars, and Galaxies, 22:24022
book: Introduction to Radio Astronomy, 22:15323
brightness temperature of interstellar clouds, (E), 22:17318
brightness temperature of solar line at 5.65 mm, (E), 22:4994
brightness temperatures of Jupiter, Mars, and Saturn, (E), 22:19691
characteristics of the VLA telescopes, (T), 22:904
conference on progress in radio science, (T), 22:34364 (CONF-660950-(Pt.2))
detection of microwaves from $^{2}PI(_{1}/_{2})$, J = 1/2 state of OH, (E), 22:41183
detection of neutral hydrogen in galaxies, (E), 22:851
detection of radio emission from Sco X-1 and Cyg X-2, (E), 22:49936
determination of position of Jovian magnetic axis, (E), 22:29062
diameter of quasars at 66.9 cm, (T), 22:5019
draft reports of commissions of the International Astronomical Union, 22:29170
electromagnetic radiation from acceleration of charged particles, (T), 22:29101
electron densities in four H II regions from 4-cm observations, (E), 22:21824
electron temperatures and radial velocity in Orion Nebula, (E), 22:31546
electron temperatures in H II regions, (E), 22:2759
electron temperatures in nine H II regions, (E), 22:17304
electron temperatures of Orion A and NGC 2024, (E), 22:31547
emission at 408 MHz from fourteen planetary nebulae, (E), 22:4927
emission from infrared and T Tauri stars, search for, (E), 22:5001
excitation temperature of 18-cm line OH in H I regions, (E), 22:13153
flux densities for planetary nebulae, (E), 22:846
flux densities of 312 southern sources, (E), 22:7077
flux density of Sun, measurement of total, (E), 22:13135
flux of thermal emission from 30 Doradus Nebula, (E), 22:8908
formation of simultaneous radio images and spectra by electro-optic methods, (T), 22:19713
frequency shift of 21-cm line from Taurus A near solar occulation, (E), 22:13152
hydrogen detection in vicinity of open clusters, neutral, (E), 22:52393
hydrogen recombination line 158 α in galactic H II regions, 22:4948
hydrogen recombination lines in six H II regions, (E), 22:8946
identification of seven 4C sources with blue objects, 22:4926
intensity calibrations in absolute, (T), 22:7115
interferometer experiments for, long-baseline, 22:34144 (TID-24491, pp 19-22)
interferometric study of 3C 273B, (E), 22:5014
interferometry of small radio sources using intercontinental base lines, high-resolution, (E), 22:49880
interstellar OH stimulation by phonons, (T), 22:21788
magnetic field configuration in galactic spurs, (E), 22:8917
magnetic fields in Perseus arm, detection by measurement of Zeeman splitting of 21-cm hydrogen line, (E), 22:49966
mapping of Galactic Spur at 20 to 40 MHz, (E), 22:34141

(AD-665885)
maser action in galactic OH, pumping mechanisms for, (T), 22:52340
maser action of neutral hydrogen in interstellar, (E/T), 22:23945
measurement of atmospheric ozone transition at 101.737 GHz, (E), 22:19690
mechanism for maser action of hydroxide molecules in space, (T), 22:852
microwave doubling transitions for hydroxyl radical, (E), 22:41207
observation at 21 cm of neutral hydrogen galactic distribution, (E), 22:2767
observation of sources associated with clusters of galaxies, (E), 22:7079
observations at 21 cm of compact galaxies, (E), 22:31584
observations at 21 cm of ω Cen and 47 Tuc, (E), 22:8957
observations at 430 and 610.5 MHz of Coma Cluster of galaxies, (E), 22:36688
observations of 74 normal galaxies, (E), 22:850
observations of H II regions at 178 MHz, (E), 22:8918
observations of interstellar hydrogen, (E), 22:15305
observations of normal galaxies at 1415 MHz, (E), 22:52420
observations of Sun in, (T), 22:52458
observations of two supernova remnants, (E), 22:13086
polarization of galactic emission at 1.21m, (E), 22:17297
radio distances of gaseous nebulae, (E), 22:52391
radio-wave emission and absorption by interstellar gas, (T), 22:49962
recombination lives for, tables of rf, (E), 22:47790
scans in, inversion of fan-beam, (T), 22:4947
search for line emission from singly-ionized molecular hydrogen, (E), 22:52411
search for neutral hydrogen in southern Coalsack, (E), 22:26125
solar, characteristics of, (T), 22:26193
source counts for 3C Revised Catalog, (T), 22:7130
spectra of $B\,^2\Sigma^+ \rightarrow A\,^2\Sigma^+$ transition of OH and OD, (E), 22:29137
spectra of IC 418 and NGC 6572, (E), 22:8956
spectra of sources in 4C catalog, (E), 22:11171
spectra of strongly excited atomic hydrogen, discrete rf, (T), 22:29069
spectral studies of sources in 4C Catalog, (E), 22:8906
structure of extragalactic sources in the 3C catalog, (E), 22:23936
study of interstellar gas motions, (T), 22:43696
survey at 408 MHz, pencil-beam, (E), 22:52376
survey of northern sky at 178 MHz, (E), 22:8970
survey of southern sky at 85 MHz, (E), 22:792
techniques for observing structure in radio galaxies, (T), 22:7117
tropospheric absorption of solar radio waves at 7 GHz, (T), 22:19897
use in estimation of chromospheric parameters, (T), 22:7112

RADIO GALAXIES
see also Seyfert Galaxies
3C 120, electron energy distribution of, (E), 22:36685
3C 120, radio variations of, (E), 22:36685
3C 120, spectrum of, (E), 22:36649
3C 371, long-term brightness fluctuations of, (E), 22:17257
3C 398, spectra of thermal and nonthermal components of, (E), 22:45892
angular structure of, observations of, (E), 22:29026
book: Relativity Theory and Astrophysics. 2. Galactic Structure, 22:11191
brightness distribution of 3C 192, (E), 22:4946
brightness distributions at 2695 MHz of, (E), 22:26172
characteristics of, (T), 22:34203
cosmic-ray production in, (T), 22:15385
detection in clusters of galaxies, (E), 22:47735
detection of, in clusters of galaxies, (E), 22:7079
detection of, in clusters of galaxies, (E), 22:7078
discovery of, history of, 22:918
distribution of, (T), 22:8926
distribution of, space, (T), 22:2721
energetics of, (T), 22:29109
energy emission from, (T), 22:28996
energy generation in, (T), 22:5033
energy of relativistic particles and magnetic fields in reabsorbing, total, (T), 22:45893
energy production in, (T), 22:34200
energy source for, (T), 22:23968
energy sources of, relativistic effects in study of, (T), 22:43686
evolution of quasars to, (T), 22:29122
evolution of, (T), 22:34184
evolutionary properties of, determination by luminosity--volume test, (T), 22:23940
expansion of, (T), 22:34154
features of NGC 1068, NGC 1275, and NGC 4486, relation of optical and radio, (T), 22:49915
flux densities at 2695 MHz of, (E), 22:52431
formation of, theory of, (T), 22:8899
gravitational collapse and anticollapse in, relation to high-energy particles and magnetic fields associated with, (T), 22:41146
identification of 37, optical, (E), 22:15294
identification of 4C 50.11 as, (T), 22:17298
identification with bright optical galaxies, (E), 22:8879
light emission from, variations of, (T), 22:45865
M82, spectrum of, (T), 22:34200
M87, properties of jet from, radiation and physical, (E), 22:21834
magnetic fields in, (T), 22:29109
model for, (T), 22:4924
NGC 1052 and NGC 4278, radio properties of, (E), 22:19695
NGC 4278, radio spectrum of, (E), 22:29123
NGC 6618, absorption in the direction of, (E), 22:29004
nucleogenesis in, (T), 22:19688
optical form of N-type, comparison with Seyfert galaxies, (E), 22:41236
optical identification of, (T), 22:29105
optical identifications of, between +20° and +27°, (E), 22:47734
optical observations of, (T), 22:29104
optical positions of, (E), 22:13194
optical variations of 3C 171, (T), 22:795
optical variations of 3C 371, (T), 22:796
polarization at 6 cm of, linear, (E), 22:47739
polarization observations of 3C 371, (E), 22:11128
polarization of 1418-MHz radiation from, upper limits for circular, (E), 22:34198
polarization of optical and radio emission from, circular, (T), 22:899
positions of, (E), 22:4968
power levels of, (T), 22:918
properties of, (E/T), 22:28998
properties of, (T), 22:919
properties of, discussions at Prague, 8/67, on, 22:13083
radiation emission from, mechanism for, (T), 22:29095
radiation from, mechanism for nonthermal optical, (T), 22:52386
radio emission from, circular polarization of, (E), 22:11129
radio emission from, circular polarization of, (E), 22:23953
radio emission from, variations of, (T), 22:45865
radio luminosity distribution of, (T), 22:29106
radio luminosity function of, 22:29089
red shift of five, (E), 22:5022
red shifts of nine, from 3C R catalog, (E), 22:11130
red shifts of, (T), 22:38664
relation of compact and N-type, to quasars, (T), 22:41184
relation to quasars, (T), 22:52364
relation to quasars, (T), 22:45911
scintillations of, interplanetary, (E), 22:11166
spectra of, (T), 22:34200
spectra of, radio, (E), 22:31569
spectra of, radio, (T), 22:45867
spectra, problem of Compton losses in, (T), 22:8961
structure at 1425 MHz, east--west, (E), 22:2757
structure of 3C 79 and 3C 192, (E), 22:34163
structure of Fornax A, (E), 22:29136
structure of radio-emitting regions of, high-resolution interferometry of, (E), 22:49880
structure of, (T), 22:7117
x-ray emission from M87, (E), 22:11116

Radio Sources (Astro.)
see Cosmic Radio Sources

RADIO TELESCOPES
characteristics of VLA, (T), 22:904
design of Jodrell Bank Mark III, for interferometer measurements, 22:11170
high-resolution 2800-MHz, 32-element interferometer for, 22:685
interferometry using base line of 2 x 10^7 wavelengths, (E), 22:41182

RADIO TUNING CIRCUITS
design for beam observation in 300-GeV proton synchrotron, 22:1521 (CERN-563(Vol.1))

RADIO WAVES
see also Microwaves
see also Radar
see also Solar Radio Bursts
absorption and emission by interstellar gas, (T), 22:49962
absorption at midlatitudes, effects of magnetic activity on ionospheric, (E), 22:41457
absorption events in auroral zone, latitudinal motion of, (E), 22:47910
absorption events in auroral, poleward motion of onsets of, (E), 22:13373
absorption in aurorae in conjugate regions at high latitudes, (E/T), 22:34425
absorption in auroral D region, (E), 22:34351 (AD-660555)
absorption in auroral ionosphere, (T), 22:47893 (N-68-23571)
absorption in auroral ionosphere, electron densities during, (E/T), 22:48008
absorption in auroral zone of cosmic, (E), 22:17507
absorption in auroral zone of cosmic, (E), 22:17506
absorption in auroral zone, diurnal pattern of, (E), 22:48005
absorption in auroral zone, electron density and

collision frequency from, 22:46023
absorption in auroral zone, properties of slowly varying, (E), 22:46010
absorption in auroral zone, relation to magnetic activity, (T), 22:47953
absorption in D layer at vlf, pre-sunrise, (E), 22:19865
absorption in high-latitude conjugate regions, (E), 22:47930
absorption in ionosphere as function of latitude, solar activity level, and season, (E), 22:38953
absorption in ionosphere during eclipse of May 20, 1966, cosmic noise, (E), 22:22016
absorption in ionosphere during vertical probing, 22:9229
absorption in ionosphere, (T), 22:41447
absorption in ionosphere, effect of sunspot cycle on, (T), 22:9210
absorption in ionosphere, relation to electron density profiles, (E), 22:52655
absorption in ionosphere, winter anomaly of, 22:5247
absorption in ionospheric D region, (T), 22:19895
absorption in ionospheric F region, electron temperature from cosmic noise, 22:2964
absorption in lower D region, (T), 22:34360 (AD-663711)
absorption in model ionospheric layers, (T), 22:41459
absorption in nighttime ionosphere during periods of low solar activity, (E), 22:15443
absorption in the auroral zone at 30 Mc, morphology, (E), 22:41460
absorption in the ionosphere, (E), 22:11325
absorption in the ionosphere, (T), 22:19896
absorption of auroral cosmic noise, short-period, 22:34419
absorption of cosmic, ionospheric, (E), 22:11330
absorption of cosmic, relation to solar radio bursts, (E), 22:7126
absorption of nonthermal, in thermal x-ray sources, (T), 22:43770
absorption of vhf--uhf, in the ionosphere, (E), 22:34356 (AD-663111)
absorption on Feb. 5, 1965, polar cap, (E), 22:24121
absorption on Wake Island from July 9, 1962 high altitude thermonuclear explosion, 22:18977
absorption structure in auroral zone over distances approximately 300km, (E), 22:24161
amplitude perturbations of vlf, in Antarctic due to nuclear explosion of July 9, 1962, (E), 22:13362
attenuation by troposphere at 0.4 to 10 GHz, (E/T), 22:22010
auroral-zone absorption of cosmic, relation to magnetic activity, (E), 22:48028
background at 2.1 MHz, extragalactic, (T), 22:47779
background in evolving model universes, metagalactic, (T), 22:13102
background variations at the plasmapause, vlf, (E), 22:29331
book: High-Frequency Radio Communications with Emphasis of Polar Problems, 22:46039
book: Ionospheric Radio Propagation, 22:5273
book: Propagation Factors in Space Communications, 22:46038
conference on ionospheric radio communcations, Finse, Norway, April 1967, 22:46017
conference on progress in radio science, (T), 22:34364 (CONF-660950-(Pt.2))
conference on progress in radio science, (T), 22:34363 (CONF-660950-(Pt.1))
damping in Earth's atmosphere, 22:5217(T) (NRC-TT-1302)
detection of cosmic decameter, apparatus for, 22:52554
detection of vlf chorus, in association with bursts of precipitating electrons, (E), 22:22051
Doppler dispersion measurements of satellite-emitted, for local electron concentration, (T), 22:15425
Doppler shift on propagation through ionosphere, (E), 22:36846
effects of 10.7-cm solar, on ionospheric F region, (E), 22:19872
effects of 10.7-cm solar, on topside ionosphere, (T), 22:19878
effects of finite bandwidth, on observations of interplanetary scintillation, (T), 22:41261
effects of polar cap absorption on cosmic, (T), 22:31730
effects on body temperature of yellow mealworm larvae in relation to survival, 22:8607
effects on development of legs of Tenebrio molitor following larval exposure, 22:10847
effects on function of endocrine glands in rats, high and low frequency, 22:51994
effects on incidence of inflammation in skin of rats following intracutaneous injection of Escherichia coli, 22:19406
effects on insects for population control, 22:17068
effects on ionospheric F layer, (E), 22:15477
effects on man, effects of electromagnetic fields on, 22:23649
effects on metabolism in human leukocytes, effects of dose on, 22:36197
effects on metabolism in larvae of Tenebrio molitor, 22:8608
electromagnetic coupling phenomena in Earth--ionosphere cavity, (T), 22:36847
emission above active regions in solar corona, (E), 22:11182
emission at 0.8 cm from Mercury phase dependence of, (E), 22:52450
emission at 520 MHz from extensive air showers, (E), 22:13280
emission during solar maximum, (T), 22:43725
emission from auroral zone, (T), 22:9222
emission from auroras, irregularities in, (E), 22:29368
emission from bright normal galaxies, (E), 22:4925
emission from chromospheric layers, dip in spectrum of, (T), 22:29077
emission from clusters of galaxies, (E), 22:7078
emission from Crab Nebula at 3.3 cm, (E), 22:13110
emission from discrete region on east limb of sun, lunar occulation of, (E), 22:21786
emission from extensive air showers, mechanism for, (T), 22:24085
emission from fast charged-particle beams, (T), 22:36579
emission from galactic OH, stimulated, (T), 22:52340
emission from geomagnetically trapped particles, (T), 22:9190
emission from H II regions, enhancement of stimulated, (T), 22:29132
emission from Haro's blue galaxies at 9.26 cm, (E), 22:45914
emission from helically moving relativistic electrons, corrections for, (T), 22:34160
emission from infrared and T Tauri stars, search for, (E), 22:5001
emission from inner corona, (E), 22:17231
emission from intermediate-velocity clouds of hydrogen in Milky Way, (E), 22:41202
emission from Jupiter at 18 Mc, evidence for continuum, (E), 22:4996
emission from Jupiter at 18 Mc, polarization of, (E), 22:29009
emission from Jupiter at 6 cm, linear polarization of, (E), 22:41151
emission from Jupiter at 620 and 2650 Mc, (E), 22:19720
emission from Jupiter of decametric, wide bandwidth observations of, (E), 22:8943
emission from Jupiter, decametric, (E), 22:838
emission from Jupiter, effect of Io on decametric, (E), 22:17198
emission from Jupiter, effect of Io on, (E), 22:8953
emission from Jupiter, size of region of, (E), 22:4965
emission from Jupiter, solar effects on, 22:52329
emission from Jupiter, solar-wind effects on, (E), 22:41152
emission from local spiral arm, (E), 22:41192
emission from lunar surface, (E), 22:7099
emission from M31, (E), 22:34153
emission from moon at 0.8 cm, polarization in, (E), 22:812
emission from Moon at 30 to 60 cm, 22:828
emission from moon, polarization of integral, (T), 22:52461
emission from Moon, spectrum of, (E), 22:36606
emission from normal spiral galaxies, (E), 22:4945
emission from Nova Delphine 1967, upper limit to, (E), 22:34194
emission from OH region, possibility for intragalactic communications network, (T), 22:26106
emission from pulsar 0950, Faraday rotation of, (E), 22:41164
emission from quiet Sun, (E), 22:36642
emission from Sco X-1, flux density of, (E), 22:34195
emission from Seyfert Galaxy NGC 4151, (E), 22:21839
emission from shock waves in rarefied plasma, (T), 22:7086
emission from solar active regions at 408 MHz, (E), 22:4935
emission from solar active regions, model for thermal gyromagnetic, (T), 22:29151
emission from solar flares in July and August 1967, (E), 22:34197
emission from solar flares, flux density measurements of, 22:2955
emission from solar-active regions, slowly varying component of, (T), 22:52442
emission from spiral galaxies, (E), 22:850
emission from stars, aurora effects on visibility fades, 22:52632
emission from Sun at millimeter wavelengths, spectrum of slowly varying component of, (E), 22:29164
emission from Sun at mm- and sub-mm wavelengths, (E), 22:36578
emission from sun during total eclipse of Nov. 12, 1966, (E), 22:4986
emission from Sun in 1966, (T), 22:26157
emission from Sun in association with x radiation, (T), 22:38681
emission from Sun of 1.2 mm, localized enhancements of, (E), 22:45856
emission from Sun of 10.7-cm, forecast technique, (T), 22:34142 (AD-666948)
emission from Sun of centimeter, relation to relative sunspot number, (T), 22:29163
emission from Sun, occultation of source by partial eclipse, (E), 22:888
emission from Sun, relation to photospheric fields, (E),

22:36667
emission from supernova remnants, nonthermal, (T), 22:49963
emission generation and whistler propagation, vlf, 22:1042(R) (AD-648675)
emission in space, effects of solar flares on, 22:6919
emission of 4.5-cm, from sunspot groups of small area, (E), 22:45899
emission of background, in Milky Way, (T), 22:47723
emission of hydroxyl, from infrared stars, (E), 22:45839
emission of Jovian decametric, effect of first three Galilean satellites on, (T), 22:36605
emission of Jovian decametric, effects of first two Galilean satellites on, (T), 22:871
emission of magnetospheric vlf, association with energetic charged particles, (E), 22:36801 (N-68-10067)
emission of pulsed, from cosmic sources, (T), 22:29055
emission of vlf, during solar disturbance of May 23--26, 1967, (E), 22:52666
emission of vlf, in ionosphere, (E/T), 22:9204
emissions in polar chorus band during auroral absorption events, (E), 22:34399
field intensity of, disturbances on July 7-9, 1966 of, (E), 22:24141
flux of solar, during IQSY, (E), 22:17206
focusing by Earth's ionosphere, on moon, 22:47916
frequency changes in ionosphere, automatic system for recording, 22:45368
frequency shift on passing near the Sun, (T), 22:41270
frequency shifts of, ray theory of Doppler, 22:41446
generation by low-altitude atmospheric nuclear explosion, (T), 22:13363
generation by nuclear explosions of ionospheric, (E), 22:13369
generation of vlf, in magnetosphere, (T), 22:36798 (AD-666648)
hiss at very low altitudes, vlf, (E), 22:15424
identification of 4.2-cm, during solar eclipse of Nov. 12, 1966, (E), 22:34235
intensity decrease of vlf hiss on Sept. 3, 1966, (E), 22:24143
intensity of cosmic, at 700 to 950 km, (E), 22:36600
interferometry of S-bursts from Jupiter, long-baseline, (E), 22:17315
ionospheric absorption at high latitudes, (T), 22:46021
ionospheric phase fluctuations of satellite-transmitted, (E), 22:36856
ionospheric reflection, anomalous variations in phase path records, (E), 22:22009
ionospheric scintillation at 136 MHz, (E), 22:19888
ionospheric scintillations of, relation to meteorological pressure system, (E), 22:44003
measurements of Earth--ionosphere cavity resonance frequencies at high latitude, 22:11333
meteor-burst communications in Arctic, effects of intense PCA event on, (E), 22:46027
mode conversion and refraction effects in Earth--ionosphere waveguide for vlf, (T), 22:31724
mode conversion in Earth--ionosphere waveguide of vlf, (T), 22:47987
morphology of vlf, observed with Injun 3, (E), 22:47970
occurrence of Q-type bursts of elf, in Schumann resonance frequency range, 22:22059
phase anomaly induced by June 17, 1967 nuclear explosion, vlf, (E), 22:24137
phase perturbation during transauroral propagation, fine structure of, (E), 22:52643
phase perturbations produced by solar protons, vlf, 22:5237
phase variance and autocorrelation during cosmic radio source visibility fades, (T), 22:31722
polar cap absorption of, (T), 22:46019
polar cap absorption of, following solar flares, (T), 22:47892 (N-68-23538)
polarization of 11-cm, from Jupiter, (E), 22:8938
polarization of cosmic, 22:7121
polarization of cosmic, distribution of position angles of, (T), 22:31572
polarization of galactic, at 1.21m, 22:17297
production by nuclear explosions in the atmosphere, (T), 22:52640
propagation across auroral zone, frequency limits for, (E), 22:46029
propagation at high latitudes, effect of ionospheric and geomagnetic disturbances on, 22:46024
propagation at vhf, in transequatorial ionosphere, (E), 22:22041
propagation constant of terrestrial waveguide, elf, (T), 22:5252
propagation group path and polarization rotation of, 22:52674
propagation in anisotropic plasma, (T), 22:1173 (AD-647683)
propagation in auroral ionosphere, fading on, (T), 22:46033
propagation in auroral zone, vhf bistatic backscatter phenomenon in, (T), 22:46028
propagation in F2, F1, and E layers, prediction system for, (T), 22:24186
propagation in ionosphere at vlf, effects of electron-density variations, (T), 22:34367
propagation in ionosphere high latitudes, stepped-frequency oblique soundings in, (E/T), 22:46031
propagation in ionosphere, (T), 22:2918
propagation in ionosphere, (T), 22:38907
propagation in ionosphere, (T), 22:44011
propagation in ionosphere, (T), 22:44017
propagation in ionosphere, auroral and polar cap absorption effects on, 22:46018
propagation in ionosphere, near equator, (E), 22:2965
propagation in ionosphere, scintillation observations at conjugate points, (E), 22:38915
propagation in ionosphere, solar flare effects on, (E), 22:31541
propagation in ionosphere, sporadic-E, (E), 22:46032
propagation in ionosphere, ulf, (T), 22:2921
propagation in lower ionosphere at vlf, solar flare effects on, (E), 22:19853 (RAE-TR-67201)
propagation in magnetoionic media, (E), 22:34684
propagation in magnetosphere, effects of plasmapause on, (T), 22:38920
propagation in random medium, (T), 22:5256
propagation in solar atmosphere, (T), 22:26193
propagation in the ionosphere, effects of solar cosmic rays on, 22:2877
propagation in upper atmosphere, bibliography on 1966 Soviet studies on, 22:17461(T) (JPRS-44343)
propagation measurements in interplanetary space, 22:41268
propagation of elf and vlf, below models of naturally perturbed ionospheres, (T), 22:36857
propagation of lf- and vlf, in ionosphere D region, electron content effects on, (E/T), 22:9208
propagation of vhf, in auroral-zone ionosphere, (E), 22:46026
propagation of vlf, effects of ionospheric disturbances on, (E), 22:46025
propagation of vlf, in auroral zone, (E), 22:47952
propagation of vlf, magnetospheric, (E), 22:22021
propagation of vlf, solar flare effects on, (T), 22:34199
propagation of, hf predictions for Arctic, (T), 22:46030
propagation through ionosphere during aurorae, (E), 22:9218
propagation through ionosphere, scintillations in, (E), 22:19860
properties of vlf, in the ionosphere, (E/T), 22:11324
reflection by ionosphere, coefficients for lf and vlf, 22:47957
reflection by ionosphere, fine structure of resonances in, (E), 22:41484
reflection from aurorae of vhf, (E/T), 22:29377
reflection from D layer after high-yield nuclear detonations, partial, (E), 22:36855
reflection from D region during solar eclipse of May 20, 1966, (E), 22:15442
reflection from E region, 22:36843
reflection from F2 region, effects of perturbations on, (E/T), 22:11328
reflection from ionosphere, directional dependency of slow-tail elf waveforms during, (E), 22:22014
reflection from ionosphere, drift measurements from, (E), 22:26301
reflection from ionosphere, errors in phase measurements in, (E), 22:24122
reflection from ionosphere, installation from multiple-frequency, (E), 22:15473
reflection from ionosphere, polarization in, (T), 22:19862
reflection from ionospheric D region, vhf, 22:2959
reflection from ionospheric irregularities, (E), 22:15438
reflection from ionospheric irregularities, (E), 22:24125
reflection from ionospheric irregularities, determination of drift directions and velocities from, 22:22008
reflection from ionospheric layers, oscillograms from oblique soundings, (T), 22:38955
reflection from ionospheric layers, periodic fading in, (E), 22:41456
reflection from sporadic E region of ionosphere, fading in, (E), 22:44006
reflection from Sun, interpretation of, 22:47747
reflection loss in disturbed lower ionosphere, lf and vlf, 22:46035
reflection of ultralong, from the ionosphere, (T), 22:34457
reflection of vlf, from ionospheric irregularities, (E), 22:52671
refraction and scattering of vhf, by visible auroral forms, (E), 22:34359 (AD-663663)
refraction by the ionosphere of satellite, (T), 22:13361
refraction by visible auroral forms of vhf, (E), 22:29378
refraction in Martian atmosphere, (E), 22:29133
refraction in troposphere and ionosphere, (T), 22:2920
refraction in Venus atmosphere and ionosphere, (E), 22:8864
refraction indices from collisionless magnetoionic theory, phase and group, 22:36809 (N-68-21904)
relation of 10.7-cm solar, to 5577 A [O I] night airglow intensity, (E), 22:17519

scattering at perpendicular intersection with geomagnetic field, uhf, (E/T), 22:2944
scattering at vhf from meteor trails, (E), 22:15478
scattering in auroral zone, (T), 22:47940
scattering in ionosphere, field strength predictions for, 22:36831
scattering in outer corona and the interplanetary medium at 38 Mc, (E), 22:17300
scattering on auroral magnetic disturbances at sunspot minimum, (E), 22:22022
scattering on field-aligned plasma columns, (T), 22:26412
scattering on ionosphere, ray tracing of, (E), 22:46036
scattering on ionosphere, Thomson, 22:38874 (AD-668436)
scattering on ionosphere, vlf, 22:41496
scintillations of satellite, due to ionospheric irregularities, (E), 22:41469
scintillations of satellite-emitted, latitudinal patterns of, (E), 22:48025
solar eclipse effects on long-path vlf transmission, (E), 22:19882
spectra of Jovian decametric, time-delay effects in, (E), 22:52469
spectra of Jovian millisecond pulses, (E), 22:36699
spectra of ulf atmospherics during nighttime, (T), 22:15463
spectra of vlf, at 0.1 to 20 kHz at Byrd station, 22:47845
spectrum of cosmic non-thermal, (T), 22:29308
spectrum of nonthermal cosmic, at 10 to 200 MHz, 22:38653 (N-68-16483)
study of vlf, with Ariel 3, (E), 22:17487
tropospheric absorption at 7 GHz of solar, (T), 22:19897
vlf hiss production by electron injection into geomagnetic field, (T), 22:36852

Radio Well Logging
see Well Logging

RADIOACTIVE CONTAMINATION
see also Decontamination
see also Radioactive Waste
see also Stack Disposal
analysis in barrel cactus in relation to ecology and elevation, 22:40688
atmospheric, long-period effluent release dose factors from, 22:40224 (AECL-2787, pp 59-76)
atmospheric, meteorological factors in, 22:40228 (AECL-2787, pp 161-75)
bibliography of food, 22:6792 (AED-C-02-07)
bibliography on food, 22:51557 (AED-C-02-08)
calculation for rupture of unsealed polonium-210 source, 22:49339
chemical environmental factors in marine, 22:12455(R) (EUR-3635)
content of fish and prawns used as food in India in relation to mineral and uranium content, 22:51656
content of man following inhalation of plutonium-239, equations for calculation of, 22:51566 (IDO-12067)
content of stratosphere during 1967 to 1968, 22:40661(R) (HASL-197)
content of waters of Athens during 1964 and 1965, 22:21504
control and effects of environmental, 22:27916 (BNL-12401)
control following accidents, planning for, 22:12844 (NP-17209)
control in industries, 22:490 (CONF-660649)
control in radiochemical laboratory, design and operation of ventilating system for, 22:25582
control of atmospheric, at Ispra, 22:4287
control of environmental, in United States, 22:45184 (NP-17555)
control of surface, at Los Alamos, 22:36254 (LA-DC-9005)
control of tritium at neutron generator, vacuum cartridge system for, 22:48393 (ORO-3346-29)
detection in foods in Italy, center for, 22:47536
detection on surfaces, design of G--M detector system for, 22:43036(P)
determination of surface, regulations for, 22:45509 (SZS-7/68)
development of formulas for monitoring and determining toxicity of uranium, in personnel, 22:51563 (CEA-R-3361)
dissolution of particle, of lungs, mathematical analysis of effects of particle size on, 22:28465
distribution and resuspension of beryllium oxide powder, surface and airborne, 22:43297 (AAEC/TM-448)
distribution following nuclear explosions, 22:8529(T) (JPRS-42929, pp 293-330)
distribution in Irish Sea, effects of currents on, 22:23179 (A-AC-82/G/L-1191)
environmental, effects of nuclear power plant operations on, 22:2230
estimation following reactor accident, computer program for, 22:19332 (ORNL-4086)
evaluation of internal, by radioisotopes of corrosion products, 22:19343
fallout, role of news media in public information on, 22:51608
hazards from industry, medicine, nuclear war, and weapons testing, 22:51639
hazards from surface, conference on, 22:23541
hazards of tritium, near accelerators for neutron production, 22:43310 (PHS-999-RH-29)
hazards to man, review of, 22:12779
levels for environmental plutonium-239 oxides, physical and biological aspects of, 22:51562 (BNWL-SA-1510)
location of source of, use of coolant conductivity monitoring at AFETR for, 22:35588 (AD-663923)
measurement of atmospheric, from reactors, review of meteorological developments for, 22:45191 (TID-24190, pp 1-12)
measurement of low-level, instruments for, 22:2238
measurement of strontium-90, of surfaces, efficiency of wipe test for, 22:19346
measurement of surface, methods for, 22:23549
measurements of low-level, in lead, equipment and methods for industrial control, 22:36034 (NYO-3540-1)
methods for removal of, from surfaces, 22:23558
monitoring at Goodyear Atomic Corporation, 22:49323(R) (GAT-R-430)
monitoring in agricultural products, atmosphere, and soil of Korea during 1961 to 1966, 22:36287
monitoring in drinking and waste water, radiometric device for, 22:10615 (IFA-IS-45)
monitoring in laboratories using open sources, use of measurements of radioactivity on paper wrapping of photographic film in dosimeters for, 22:21522
monitoring of, outline of methods of, 22:21387 (SC-M-68-94)
monitoring on surfaces, detector system for, 22:45272 (AAEC/M-84)
permissible limits for human skin, in Japan, 22:36277
protection against environmental, evaluation of protective clothing for, 22:40677
protection of cleanup personnel from, instruction for, 22:28493
protection of man against, in environment, evaluation of specific activity concept for, 22:10750
protection of morticians against, in corpses of man, standards for, 22:4625
radiometry in man, 22:10779
regulations for protection of personnel against, 22:51593
release by satellite impact, model for predicting human injuries from, 22:43429
removal from battle gear, methods for, 22:8530(T) (JPRS-42929, pp 331-58)
removal from skin and wounds of personnel, 22:31093
removal from surfaces, standard test for comparing, 22:30666
removal in postattack environment, methods for, 22:33809 (BNWL-SA-1509)
removal of, efficiency of Desorb 10 and 20 for, 22:38295
review of surface, 22:15003(T) (AD-662586)
safety hazards in flooring and walkway surfaces from, 22:2278 (UCRL-70720)
scavenging of atmospheric, by rainwater, tracer studies of, 22:40249 (AECL-2787, pp 553-66)
standards for content of, in crops, 22:38225
standards for personnel, 22:23555
standards for surface, 22:23548
standards for surface, 22:23545
standards for working surfaces at A.W.R.E, 22:23554
surface roughness effects on fallout, 22:40221 (AD-668327)
survey of soil samples from Eniwetok Atoll during 1952, 22:495 (UCLA-12-654)
transfer from environment to food, 22:6866 (EUR-3553.f)
zinc-65, of crustaceans, regulatory mechanisms in, 22:51449

Radioactive Elements
see Radioisotopes

Radioactive Isotopes
see Radioisotopes

RADIOACTIVE MATERIALS
see also Radioisotopes
activity counting of, factor for determining true mid-point of count rate for, 22:37
analysis for impurities using pulsed electric arc, spectrographic, 22:42624
analysis for mercury by flameless atomic absorption spectrophotometry, 22:48814 (DP-1164)
analysis for trace impurities, spectrographic, 22:4055
analysis of high-activity, double-crystal diffractometer for, 22:4512
analysis of, shielded facility for electron probe micro-, 22:27532 (GEAP-5344)
behavior in reactor hot cells of, design and testing of optical system for observation of, 22:33582 (INR-870/XIV/PS)
book: Chemical Analysis of Radioactive Materials, 22:4060
book: Safe Transport of Radioactive Materials, 22:28058
containment of, method for, 22:43020(P)
contamination of personnel by, dosimetry for determining, 22:51593
content in Bay of Banyuls sediments, 22:35955
content in Japanese atmosphere, measurements of, 22:33569
content in surface atmosphere layer, variations of, (T), 22:25540
determination of, electron-microscopic methods for, 22:14432 (ORNL-4196, pp 63-6)

diffusion in atmosphere from power reactors, radiation dose calculations for, 22:45196 (TID-24190, pp 301-77)
diffusion in atmosphere from power reactors, safety hazards from, 22:45197 (TID-24190, pp 379-99)
diffusion in seawater, development of model for prediction of, 22:37893 (SC-CR-68-3532)
diffusion in soils, 22:2178 (UJV-1899)
dilution of gaseous, in atmosphere, effects of buoyancy on, 22:42867 (GA-8369)
dispersion and movement of, in marine environments, 22:18995 (NYO-3109-26)
dispersion of gaseous, model for porous underground materials, 22:49048 (SERL-67-10)
disposal of, distribution between ground water and soil by ion-exchange reactions following, 22:16698 (SC-RR-67-861)
distribution in one-compartment biological systems, mathematical model for, 22:10705
drying of reactor-irradiated, design of forced-air equipment for, 22:48990(P)
encapsulation in welded containers, equipment and procedure for, 22:43540 (LA-3937)
filters for, development of high-efficiency, 22:21230 (AWRE-O-81/65)
flow of gaseous, design of valve for, 22:25596(P)
handling and shipping of, effects of international regulations on economics of, 22:23249
handling and storage of, use of plastics in, 22:26099 (CONF-660706-, pp 111-23)
handling and testing of, description of NRTS equipment for, 22:25571 (IN-1176)
handling during well logging, problems of, 22:28510
handling in universities, regulations for, 22:499
handling of α-active, design of steel glove box for, 22:33590
handling of liquid, tool for changing needles for, 22:12565(P)
handling of, behind shielding wall, design of equipment for remote, 22:49054(P)
handling of, design and operation of tongs for remote, 22:49056(P)
handling of, design of grab-manipulator for remote, 22:49053(P)
handling of, design of laboratory for, 22:14609 (SZS-14/67)
handling of, design of movable operator cabin for, 22:47275(P)
handling of, design of remotely operated arm for, 22:27979(P)
handling of, design of rotating-claw tongs for remote, 22:49055(P)
handling of, design of tongs for manipulator for, 22:51213(P)
handling of, handbook on methods for, 22:10779
handling of, safety hazards in, 22:51217
handling of, Scottish legal and safety regulations for, 22:8328 (NP-17195)
handling small samples of, design of pneumatic system for, 22:45227
hazards to industrial personnel legislation for protection against, 22:38283
hazards to man from industrial and medical use of, 22:51639
hazards to personnel, regulations for protection against, 22:36269
internal friction of metallic, remote control equipment for measurement of, 22:25577
laboratories for handling, recommended safe practices and national codes for fire protection of, 22:16751
legislation for handling of, in Germany and Italy, 22:10758 (ISS-66/32)
metallographic facility for, design and operation of glove box, 22:8249 (CONF-670533-9)
mixing apparatus for, design of remote controlled, 22:2475(P)
moisture content in solid, gage for measuring, 22:49143 (MLM-1554)
occurrence in Euratom countries, 22:4303 (EUR-3568)
packaging and shipping of, design of lead casks for, 22:291
packaging and shipping of, factors affecting, 22:290
packaging and shipping of, regulations of IAEA, 22:45589
packaging and shipping regulations for, effects of criticality on, 22:288
packaging for shipping low-level solutions of, design of expendable, 22:294
packaging for transport, use of polystyrene for, 22:51198 (AERE-M-2086)
packaging for, design of IAEA Types A and B, 22:28043
packing in tubes of, equipment for remote, 22:19025(P)
preparation and handling of radiation targets of, 22:53169(R) (PPAD-647-D)
preparation for unshielded microprobe analysis, microsampling method for, 22:27957 (WAPD-TM-685)
pressure of fluid, protective device for pressure gage for measurement of, 22:16962(P)
processing of, safety in, 22:8331
protection of industrial personnel against, 22:45586
radiation dose to gastrointestinal tract of man following ingestion of, measurement of, 22:49332
recovery after aircraft accident, 22:45270
remote handling of, during removal from glove boxes, 22:2338(P)
sampling of liquid, design of device for, 22:35989(P)
sampling of liquid, design of remote-control pipets for, 22:37915
sampling of liquid, equipment for, 22:4061(P)
separation from exhaust gases, design of equipment for, 22:2336(P)
separation from liquids by filtration through acid-activated diatomaceous earth, 22:21175(P)
separation from water, design of filter plant for, 22:12410
separation from water, sorption method for, 22:30671(P)
separation of trace amounts of, design of automatic chromatograph for, 22:14571
shipping accidents involving, analysis of, 22:28053
shipping and storage of, design and fabrication of containers and cradles for, 22:292
shipping and storage of, safety standards for, 22:21303
shipping and transfer of liquid, design of container for, 22:30750(P)
shipping by air, International Air Transport Association regulations on, 22:28047
shipping by flatbed tractor-trailer, dynamic environment during, 22:284 (SC-RR-66-677)
shipping by rail, IAEA and RID regulations for, 22:28048
shipping casks for, puncture resistance testing of, 22:30796 (ORNL-TM-1312(Vol.3))
shipping container for, design and testing of, 22:25574 (RFP-1042)
shipping container for, design of, 22:25630(P)
shipping container for, design of closed, 22:23251(P)
shipping container for, design of lead-lined, 22:51214(P)
shipping containers for, design of closure for, 22:49058(P)
shipping containers for, effects of fires on safety of, 22:47264 (CEA-R-3373)
shipping in France, IAEA regulations on, 22:28051
shipping in Sweden, regulations for, 22:17026
shipping in UK, IAEA regulations for, 22:28050
shipping in US, implementation of IAEA regulations for, 22:28049
shipping in USA, regulations for, 22:281 (CONF-661011, pp 11-28)
shipping of large quantities of, advantages and economic aspects of laminated uranium containers for, 22:45264 (KY-D-2554)
shipping of large quantities of, design and fabrication of laminated depleted uranium containers for, 22:45265 (KY-F-96)
shipping of large quantities of, testing of laminated uranium containers for, 22:45263 (KY-D-2553)
shipping of low specific activity, IAEA regulations on, 22:28045
shipping of, activities of specialized companies in, 22:296
shipping of, Canadian regulations on, 22:28052
shipping of, container standards for safe, 22:299
shipping of, design and testing of casks for, 22:289
shipping of, design of cask for, 22:36020(P)
shipping of, design of container for, 22:48991(P)
shipping of, design of fire-protected container for, 22:45268(P)
shipping of, design of tank trucks and trailers for, 22:297
shipping of, design of vessels for, 22:37964(P)
shipping of, East German regulations for, 22:285 (SZS-10/67)
shipping of, evaluation of IAEA regulations for Type A containers for, 22:47307 (EUR-3485(Vol.2))
shipping of, evaluation of IAEA safety tests on containers for, 22:45260 (EUR-3485(Vol.3))
shipping of, fire shield structure with decay heat dissipation method for containers for, 22:42956(P)
shipping of, German regulations for, 22:40355
shipping of, hazard classification for, 22:28040
shipping of, IAEA definition of competent authority role in, 22:28039
shipping of, IAEA packaging requirements for, 22:28042
shipping of, IAEA regulations for, 22:45262 (EUR-3485(Vol.5))
shipping of, IAEA regulations for external radiation hazards, 22:28046
shipping of, IAEA regulations on, 22:28056
shipping of, IAEA regulations on, 22:28044
shipping of, IAEA test regulations for Type B containers for, 22:45261 (EUR-3485(Vol.4))
shipping of, improper labeling in, 22:45269
shipping of, insurance and liability in, 22:28054
shipping of, insurance in United Kingdom for, 22:28055
shipping of, packaging and safety considerations in, 22:287
shipping of, packaging design for, 22:30813
shipping of, testing of Type B shielded containers for, 22:51200 (CEA-R-3372)
shipping of, thermal testing of container for, 22:42996 (NYO-2539-9)
shipping regulations for, railroad, 22:298
storage container for, design of variable volume, 22:48993(P)
storage of, design of multipurpose shielded container

for, 22:48989(P)
storage of, effects of aromatics on, 22:6337
storage of, mechanism for handling containers used for, 22:49057(P)
technology of, survey of, 22:12959
transport by surface runoff, computer models of, 22:35937(R) (AD-661249)
transport in rivers, mathematical model for, 22:35924 (ORO-490-15)
transport in U.S.S.R., regulations for, 22:6810(T) (AEC-tr-6467/2(pp 143-76))
transport of liquid, cask for, 22:47309(P)
transport of, design of flask for, 22:19088(P)
transport of, design of system in TRU for, 22:8329 (ORNL-TM-2022)
transport on public roads, regulations of International Transport Committee of the Economic Commission for Europe concerning, 22:12863
use by industries and laboratories, licensing in European countries for, 22:490 (CONF-660649)
use in gas and oil well logging, handling and storage problems of, 22:40696
weighing of, design of vacuum microbalance for, 22:4504 (MLM-290)
welding of, apparatus for arc, 22:47667(T) (RFP-Trans-37)
RADIOACTIVE MINERALS
(See also specific radioactive minerals, e.g., Pitchblendes; see also ores of radioactive minerals, e.g., Uranium Ores.)
see also Pitchblendes
see also Uranium Ores
bibliography of translations of Eastatom and Transatom publications, 22:2191 (FTB-5(Bibl.))
description of Congolese, 22:48956
radiation from Brazilian, high-background, 22:2218
radon loss from, measurement and mechanisms of, 22:6438
Radioactive Ores
see Radioactive Minerals
RADIOACTIVE STATIC ELIMINATORS
performance of radioisotopic, 22:33613
RADIOACTIVE VOLTAGE GENERATORS
(Devices primarily intended as sources of potential difference and not as current or power sources.)
design and characteristics of standard, 22:47437
development of comparison calorimeter, 22:43158 (SC-CR-68-3625)
RADIOACTIVE WASTE
(Including processing, disposal, handling, etc.)
activity of low-level liquid, device for measuring, 22:16892(P)
analysis for cesium-137, 22:16389 (CEA-R-3391)
analysis for fissionable material by neutron irradiation and measurement of delayed neutrons, 22:47075 (LA-DC-9848)
analysis for plutonium, 22:47073 (CONF-680506-2)
analysis for plutonium-238, 22:33208(R) (MLM-1456)
analysis for plutonium-238, method for, 22:1956(R) (MLM-1405)
analysis for sulfur-35 at Savannah River Plant, 22:37654 (UCRL-18140, pp 57-69)
beta activity from disposal of, from beagle colony, 22:10827(R) (UCD-472-114)
binding by clay and peat bog, 22:33505
book: Radioactive Wastes. Treatment--Storage--Disposal, in German, 22:23122
burial of, thermal analysis of tanks for, 22:8189
calcination of aqueous, 22:4231(R) (IN-1087)
calcination of aqueous, fluid-bed, 22:51064
calcination of high-level, fluidized-bed, 22:152
calcination of zirconium-containing, 22:4231(R) (IN-1087)
calcination of, equipment and facility for, 22:21299
calcination of, heat transfer in fluidized beds for, 22:4231(R) (IN-1087)
calcination of, in-bed combustion as heat source for fluidized-bed, 22:37853
calcination of, ruthenium tetroxide volatilization by, 22:15251 (IN-1013)
categories of, standard proposed definition of, 22:14743
classification by radioactive concentration, proposed scheme for, 22:53393
classification of, proposed definitions of categories for, 22:51083
combustion and concentration of, design, fabrication, and testing of incinerator for, 22:21229 (AD-664118)
combustion for disposal, design of incinerator for, 22:8291(P)
concentration of Zirflex, 22:45146 (NP-17588)
concentration of, evaporation method for, 22:40347 (DP-1135)
conference on ground disposal of, Vienna, May 29 to June 2, 1967, 22:16793 (STI/PUB-156)
content of environment of Delta Primate Research Center, 22:47544
conversion of aqueous, to glass, 22:152
conversion of high-level, to phosphate glass, 22:8189
conversion to phosphate glass, 22:6381
cooling in mines by air ventilation, requirements for, 22:16821
decontamination by chemical precipitation, evaporation, or ion exchange, 22:27887
decontamination of low-activity, Saclay pilot plant for ion-exchange, 22:37829 (CEA-N-856, pp 57-70)
decontamination of low-level, by ion exchange on activated carbon, 22:47206(T) (ORNL-tr-1771)
decontamination of low-level, precipitation-scavenging foam process for, 22:40351 (ORNL-3803)
decontamination of, effects of bacteria on, 22:27851 (CEA-N-816, pp 66-79)
decontamination of, method for, 22:51057
decontamination of, performance of vacuum distillation plant for, 22:28057
decontamination of, use of hydrated titanium oxide in, 22:42811 (HMI-B-69)
decontamination of, using ion exchange materials and surface-active agents, equipment for, 22:27851 (CEA-N-816, pp 66-79)
decontamination prior to disposal, 22:51202 (SZS-9/68)
decontamination prior to disposal, description of equipment and method for, 22:51203 (SZS-9/68, pp 1-12)
diffusion and movement of low-level liquid, in sea water, 22:16729
diffusion of gaseous reactor, calculation of atmospheric, 22:30719
disposal and storage in West German salt deposits, geologic studies of, 22:16819
disposal and storage of high-level, in mines, cooling and air ventilation requirements for, 22:16821
disposal and storage of low- and high-level, in West German salt deposits, experimental method for, 22:16820
disposal and storage of low- and intermediate level, in West German salt deposits, 22:16817
disposal and storage of low- and intermediate-level solid, in Switzerland, 22:16810
disposal and storage of, freezing method for, 22:8334(P)
disposal and underground storage of, conference on, 22:2326(T) (JPRS-42565)
disposal at Big Rock Point Power Reactor, management of, 22:10532 (ORNL-4070)
disposal at Dresden-I Power Reactor, management of, 22:10532 (ORNL-4070)
disposal at Elk River Power Reactor, management of, 22:10532 (ORNL-4070)
disposal at Humboldt Bay Power Reactor, management of, 22:10532 (ORNL-4070)
disposal at Indian Point-I Power Reactor, management of, 22:10532 (ORNL-4070)
disposal at Lohmen, German Democratic Republic, 22:40207
disposal at NRTS, hydrology of, 22:2192 (IDO-22049)
disposal at Yankee Power Reactor, management of, 22:10532 (ORNL-4070)
disposal by fixation in concrete, evaluation of cements for, 22:25515
disposal by fixation in phosphate glass, 22:15141 (BNL-50057, pp 79-100)
disposal by hydraulic fracturing, 22:6436 (ORNL-4168, pp 1-60)
disposal by hydraulic fracturing of shales, 22:8189
disposal by hydraulic fracturing, relations of rock integrity to, 22:2323(R) (ORNL-TM-1887)
disposal by sealing in concrete or bitumen, 22:27887
disposal from atomic energy installations, methods for safe, 22:47310
disposal from fuel element reprocessing using dissolution in alkali metal compounds, 22:23125(P)
disposal from JPDR operation, control measures for, 22:4420
disposal from KAPL, effects of, on uptake of isotopes by aquatic organisms, 22:21497 (HW-43112)
disposal from UKAEA sites during 1967, monitoring of radioactivity from, 22:48943 (AHSB(RP)R-86)
disposal ground for, factors affecting siting of Mexican, 22:16812
disposal in Atlantic Ocean, 22:25629(R) (KFK-663)
disposal in cements and grouts, high pressure injection method for underground, 22:16824
disposal in clay soils, ion diffusion studies in, 22:16801
disposal in Czechoslovakia, development of central underground area for, 22:2334(T) (JPRS-42565, pp 97-109)
disposal in deep permeable geologic formations, feasibility studies of, 22:16823
disposal in estuarine systems, effect on radioisotope transport by suspended silts from, 22:4272 (TID-24140)
disposal in French salt deposits, solution method for cavity formation for, 22:16818
disposal in geologic formations in Czechoslovakia, 22:16826
disposal in German salt mines, development of processes for final, 22:23248
disposal in Mol sand, ground water contamination from, 22:16804
disposal in natural salt formations, 22:6436 (ORNL-4168, pp 1-60)
disposal in natural salt formations, 22:2323(R) (ORNL-TM-1887)
disposal in Rattlesnake Hills, Washington, well logging for, 22:35920 (BNWL-776)
disposal in rivers, 22:35924 (ORO-490-15)
disposal in salt formations in East Germany, feasibility

study, 22:36017 (SZS-5/68)
disposal in salt mines, design of injection system for, 22:25629(R) (KFK-663)
disposal in salt vaults, 22:14426 (ORNL-4196, pp 12-15)
disposal in sea from Windscale Works, chemistry of ruthenium in, 22:12456 (PG-Report-819)
disposal in Socialist Republics, research on treatment methods for, 22:21301
disposal in surface ground formations, site selection criteria for, 22:18923
disposal in the sea, molecular diffusion of radioisotopes from, 22:10408
disposal in underground nuclear cavities, feasibility study of, 22:27942 (PNE-3008)
disposal in underground nuclear cavities, review of USAEC Plowshare Program for, 22:40286
disposal in United Kingdom, methods for, 22:45545
disposal in White Oak Lake, effects of, on ecological succession of vegetation on dry lake bed, 22:21462
disposal into ocean, IAEA regulations on, 22:48969
disposal of calcined, in salt mines, 22:8189
disposal of concrete-solidified, burial conditions for, 22:2329(T) (JPRS-42565, pp 23-35)
disposal of EBR-II high-level, equipment for, 22:4408
disposal of gaseous, design of equipment for, 22:6553(P)
disposal of gaseous, feasibility of underground, 22:2192 (IDO-22049)
disposal of gaseous, from reactors, design of equipment for monitoring ground-level argon-41 from, 22:18947 (BNL-12154)
disposal of gaseous, mathematical models for underground, 22:45177 (BNWL-SA-1152)
disposal of gaseous, to atmosphere, calculation of chimney height for safe, 22:12563(T) (JPRS-43977)
disposal of Halden Boiling Reactor, detailed analysis of, 22:35463 (HPR-95)
disposal of high and low level liquid and solid, from UKAEA sites, 1966, 22:279 (AHSB(RP)R-79)
disposal of high level, in salt mines, effects on properties of rock salt, (E), 22:30812
disposal of high-level Purex, effects of component concentration on phosphate solids for, 22:23244 (BNWL-544)
disposal of high-level solid, incorporated in glass, 22:16814
disposal of high-level, at Rez Nuclear Research Institute, 22:28057
disposal of high-level, in glassy matrix, 22:2323(R) (ORNL-TM-1887)
disposal of high-level, in salt formations, 22:21299
disposal of high-level, in salt mines, deformation of rock salt due to heat generation from, (E), 22:16792 (ORNL-TM-2102)
disposal of intermediate level, in asphalt, 22:2323(R) (ORNL-TM-1887)
disposal of intermediate-level liquid, fixation in asphalt for, 22:10531 (ORNL-4059)
disposal of intermediate-level, deep-well injection method for, 22:21299
disposal of intermediate-level, hydrofracturing method for, 22:21299
disposal of intermediate-level, in asphalt, 22:8189
disposal of krypton-85, underground, 22:2335
disposal of krypton-85-containing gaseous, feasibility of underground, 22:2225(R) (NYO-841-11)
disposal of liquid and gaseous, in deep wells in US, 22:16822
disposal of liquid and solid high-level, in salt mines, economic evaluation for, 22:28038 (ORNL-3358)
disposal of liquid and solid low- and intermediate-level, in western Europe, review of methods for, 22:21302
disposal of liquid and solid, to atmosphere and ground at NRTS, 1966, 22:10530 (IDO-12040(Suppl.2))
disposal of liquid, from JAPC Tokai Power Station, instrumentation and operation of facilities for, 22:16794
disposal of liquid, in deep geological formations, 22:21300
disposal of liquid, in upper soils, feasibility studies of, 22:2328(T) (JPRS-42565, pp 12-22)
disposal of liquid, into deep geologic formations, economics of, 22:45267
disposal of liquid, physicochemical conditions for underground, 22:33625
disposal of liquid, pilot plant operation using deep formations for, 22:2333(T) (JPRS-42565, pp 82-96)
disposal of liquid, use of deep formations for underground, 22:2332(T) (JPRS-42565, pp 67-81)
disposal of loaded zeolites, 22:37834 (EUR-3452(Vol.2))
disposal of long-lived, low- and high-level liquid and solid, to ground at Savannah River Plant, 22:16798
disposal of long-lived, nuclear transformation system for, 22:51199 (BNL-11915)
disposal of low- and high-level solid, to ground at Ispra, 22:16799
disposal of low- and high-level, in West German salt deposits, 22:16816
disposal of low- and intermediate-level liquid and solid, in sandy soils at Chalk River, 22:16797
disposal of low- and intermediate-level solid, in mines in southern Spain, 22:16796
disposal of low- and intermediate-level, processing methods for, 22:47201 (BNWL-723)
disposal of low-level liquid and dry solid, at Savannah River Plant, geologic aspects of underground, 22:28036 (DP-MS-67-108)
disposal of low-level liquid and solid, in clay soils near Moscow, feasibility study of, 22:2327(T) (JPRS-42565, pp 1-11)
disposal of low-level liquid to ground, ground water contamination from, 22:16805
disposal of low-level liquid, at BNL, 22:40258 (BNL-50093)
disposal of low-level solid, to ground at Windscale and Calder Works, 22:16795
disposal of miscible liquid, in homogeneous isotropic nonabsorbing granular media, (E/T), 22:27914
disposal of plutonium, methods for, 22:8200
disposal of power plant, contamination of environs by, 22:2230
disposal of radionuclides of short or medium half-life, 22:27886
disposal of reactor cooling water in Columbia River at Hanford, 22:45145 (K-1754)
disposal of solid, at shallow depths, site selection criteria for, 22:16809
disposal of solid, chemical and physical properties of Trombay soils for, 22:16808
disposal of solid, in soil at shallow depths, 22:16806
disposal of solid, into Atlantic Ocean, European Nuclear Energy Agency operation for, 22:51121
disposal of solid, USAEC interim program for, 22:16807
disposal of solidified, heat generation from underground, 22:2330(T) (JPRS-42565, pp 36-55)
disposal of solidified, in glasses and ceramics, 22:16825
disposal of solidified, parameters which affect, 22:286
disposal of SRE, description during disassembly program of, 22:53259 (AI-AEC-12572)
disposal of uranium mill, methods for, 22:51050
disposal of, by hydraulic fracturing of shale, 22:48916 (ORNL-4259)
disposal of, characterization of Trombay Island soils for, 22:28035 (BARC-297)
disposal of, chemical research in, 22:23080
disposal of, design criteria for containers for deep sea, 22:16746
disposal of, guides for, at Savannah River Plant, South Carolina, 22:43321
disposal of, handbook on methods for, 22:10779
disposal of, in Federal Republic of Germany, 22:8332
disposal of, leach tests on durability of borosilicate and phosphate glasses for, 22:18906
disposal of, production of insoluble aerosols for, 22:10323 (LF-37)
disposal of, program for, 22:49330
disposal of, regulations for, from nuclear powered ships and support facilities, AEC and ICRP, 22:28457
disposal of, research progress on, 22:6436 (ORNL-4168, pp 1-60)
disposal of, review of safe techniques for, 22:47235
disposal of, review of Soviet research on, 22:2178 (UJV-1899)
disposal of, review of West German methods for final, 22:40346 (CONF-660345-1)
disposal of, safety problems in, 22:42760
disposal of, standards for, 22:490 (CONF-660649)
disposal of, summary of safety studies on, 22:53395
disposal of, technical progress review on, 22:33526
disposal of, US developments in and plans for, 22:21299
disposal of, USSR developments in and plans for, 22:21300
disposal system for 1000 MW(e) LMFBR, description of gas and liquid, 22:9990(R) (BAW-1312)
disposal system for LITR, description of, 22:25095 (ORNL-TM-1737)
disposal to atmosphere, design of filtering device to remove particulate matter before, 22:10473(P)
disposal to atmosphere, effect of wind turbulence on hazard of, 22:6484 (SC-DC-67-2343)
disposal to ground, cesium and strontium dispersion, migration, and sorption in, (E/T), 22:8206 (BNWL-CC-208)
disposal to ground, contamination of ground waters and soils from, 22:12430(R) (SC-CR-67-2708)
disposal to ground, contamination of permeable and impermeable rocks from, 22:16802
disposal to ground, effect on ground water contamination of, 22:16803
disposal to ground, effects on contamination of natural waters around Casaccia, Italy, 22:16811
disposal to ground, ground water contamination from, 22:19085(R) (BNWL-687)
disposal to ground, sodium and ruthenium transport through aquifiers from, 22:23142
disposal to Irish Sea, effects on radioactive contamination, 22:23179 (A-AC-82/G/L-1191)
disposal to oceans, antishock properties of concrete containers for, 22:23237
disposal to surface waters, hazards from, 22:23250
evaporation of low- and intermediate-level, report of 1966 IAEA panel on, 22:25464 (STI/DOC-10/82)
filtration of low- and intermediate-level, report of 1966

IAEA panel on, 22:25464 (STI/DOC-10/82)
fixation in concretes, 22:25515
fixation in glass, 22:23094(R) (IAEA-3431-4)
fixation in glass, applicability of volcanites for, 22:23102
fixation in glass, process for, 22:35910
fixation of high-level liquid, in polysilicate by thermite process, 22:6371
fixation of high-level, in glass, 22:47306(R) (BNWL-771)
fixation of high-level, in glass, 22:45146 (NP-17588)
fixation of intermediate-level liquid, in asphalt, hot-cell evaluation of, 22:10531 (ORNL-4059)
fixation of intermediate-level, in glass, continuous and discontinuous methods for, 22:2325 (RISO-150)
fixation of, computer code for solid, 22:19087 (ORNL-3824(Suppl.1))
ground storage facility for, using polyethylene cover, 22:16806
handling and disposal of fusion process, problems and precautions in, 22:49059
heat transfer from stored, HOTANK program for, 22:19032 (BNWL-616)
immobilization of intermediate-level, in asphalt, 22:23109
incorporation in asphalt, 22:6381
incorporation in basalt, calculation of maximum amount for, 22:18875
incorporation in basalt, heat evolution and temperature distribution from, 22:18875
incorporation in glass blocks, 22:37826(T) (ANL-Trans-628, pp 51-128)
incorporation in phosphate glass, pilot plant for, 22:37900 (BNL-50082, pp 153-80)
injection in fluid-bed calciner using pneumatic nozzles, 22:23109
krypton-85 separation from, electrostatic diffusion method for, 22:28037(R) (NYO-841-12)
leaching from concretes, 22:25515
leaching rates of solidified, IAEA recommendations on method for determining, 22:25464 (STI/DOC-10/82)
management at fuel reprocessing pilot plant at Junta de Energia Nuclear of Spain, 22:6427
management at ICPP, 22:4231(R) (IN-1087)
management of, economic, engineering, and safety evaluations of methods for, 22:6436 (ORNL-4168, pp 1-60)
management programs in US, 1964 JCAE hearings on, 22:12218
management system for treatment and disposal of, description and selection of, 22:12562 (STI/PUB-170)
monitoring in coastal and surface waters of British Isles, 22:16728 (FRL-1)
monitoring in environs of nuclear facilities, 22:25858
monitoring of low-level liquid, system description for, 22:36022 (AE-317)
movement in soils, model experiments on, 22:16800
movement in soils, model of, 22:51208
packaging for disposal in salt formations in West Germany, 22:16816
plutonium-238 determination in steel drums containing, gamma scintillation spectroscopy system for, 22:43080
preparation and storage of glass blocks of, 22:27849 (CEA-N-816, pp 415-80)
processing aluminous and molybdic solutions of, by calcination, 22:27849 (CEA-N-816, pp 415-80)
processing and disposal of low- and high-level, at Petten, Netherlands, 22:33624
processing and disposal of, Czechoslovakian methods for, 22:2334(T) (JPRS-42565, pp 97-109)
processing and management in Taiwan from 1962 to 1966, 22:37868
processing and storage, review, 22:4309 (TID-24102)
processing and use of, review of technical and economic problems in, 22:40152 (CEA-R-3449)
processing at Ispra, Italy, economics of, 22:30645 (CONF-670965-1)
processing at Kjeller, Norway, 22:16356 (KR-116)
processing at the Tokai atomic power station, Japan, design of plant for, 22:6373
processing by contacting with hydrated titanium oxide, 22:4265(P)
processing by filtration through acid-activated diatomaceous earth, 22:21175(P)
processing by ion exchange, 22:25465 (SZS-3/68)
processing by precipitation method, effects of detergent on, 22:40159(T) (KFK-tr-229)
processing by underground chemothermic melting of calcinated, feasibility of, 22:2331(T) (JPRS-42565, pp 56-66)
processing fission product solutions by vitrification, 22:27849 (CEA-N-816, pp 415-80)
processing for disposal, pilot plant methods for, 22:2325 (RISO-150)
processing for removal of cesium-137 and strontium-90, use of adsorbents in, 22:51204 (SZS-9/68, pp 14-25)
processing for soil disposal, encapsulation, solidification, and vitrification methods for, 22:16813
processing in Euratom countries, catalog of facilities for, 22:4303 (EUR-3568)
processing in German Democratic Republic, 22:40207
processing in Netherlands, 22:33505
processing liquid, by evaporation, efficiency of, 22:27851 (CEA-N-816, pp 66-79)
processing low- and intermediate-level, 22:47201 (BNWL-723)
processing methods for disposal, 22:51217
processing of, 22:30588(R) (HMI-B-66)
processing of contaminated ion-exchange resins, 22:18909(P)
processing of high-level, by fluid-bed calcination, 22:23109
processing of liquid, ''CIES'' pilot plant for, 22:4253
processing of low- and medium-level liquid and solid, design of radiochemical plant for, 22:51209
processing of low-level, for disposal, equipment and facility for, 22:21300
processing of low-level, use of ferric hydroxide in, 22:33478 (AERE-R-5724)
processing of medium-level, 22:45146 (NP-17588)
processing of medium-level, by neutralization self-solidification, 22:23100 (NP-17234)
processing of moderately and weakly active, methods for, 22:25449 (CEA-N-616, pp 72-85)
processing of plutonium production plant, fission product conversion and encapsulation facility for, 22:8260
processing of Purex, development of pot and spray solidification methods for, 22:21297(R) (BNWL-677)
processing of Purex, development of pot and spray solidification methods for, 22:47306(R) (BNWL-771)
processing of radionuclides of short or medium half-life, 22:27886
processing of VAK Reactor water, analysis of equipment and procedures for safe, 22:7825
processing of, corrosion of carbon steel in, 22:152
processing of, description of plant at The Hague for, 22:45148(T) (ORNL-tr-1785)
processing of, design of mist removal devices in evaporation-condensation processes, 22:6372
processing of, effects of turbidity on water recycle, 22:2323(R) (ORNL-TM-1887)
processing of, heat transfer coefficients in plant for, 22:37854
processing of, pot-solidification, 22:6381
processing of, radiant spray calciner and melter for, 22:6381
processing of, research progress on, 22:4231(R) (IN-1087)
processing of, research progress on, 22:6313 (HMI-B-53)
processing of, review of, 22:27878
processing of, review of research in USSR on, 22:2178 (UJV-1899)
processing of, review of techniques in Federal Republic of Germany for, 22:30659
processing of, technical progress review on, 22:33526
processing of, use of Napolitan yellow tufa ion exchange material in, 22:35883 (EUR-3922)
processing of, use of silicate ion exchangers in, 22:139 (HMI-B-54)
processing of, use of vermiculite fines in two-stage, 22:23087 (BARC-315)
processing record for JPDR from 1963, 22:14178
processing solutions of, by calcination, 22:27849 (CEA-N-816, pp 415-80)
processing using coated diatomite in filters, 22:35910
processing with ion exchangers derived from sawdust, 22:6374
purification of water solutions of, equipment and method for, 22:18904
radiation monitoring of aqueous solutions of, use of immersible γ spectrometer for, 22:45564
radiation monitoring of disposal near UKAEA sites, 22:279 (AHSB(RP)R-79)
radiation monitoring of low-level liquid BNL, 1965, 22:40258 (BNL-50093)
radiation monitoring of stored, description of system for, 22:40375(P)
recovery of enriched uranium from, methods for, 22:27850 (CEA-N-816, pp 80-9)
recovery of plutonium from unmeasurable, by total incineration and laundering, 22:14560 (NUMEC-1661-1)
release in water, determination of various radioisotopes for control of, 22:18722
release of gaseous, to air at Hanford Purex Plant, reclamation of filter in system for, 22:45139 (ARH-SA-9)
reprocessing of low-level, by ion exchange, 22:152
separation from water, evaluation of materials for ion-exchange, 22:33552
separation from water, survey of methods for, 22:8173 (SZS-13/67)
separation of aluminum nitrate from redox, 22:152
separation of cerium, cesium, and strontium from, using surface-active agents, 22:25449 (CEA-N-616, pp 72-85)
separation of cesium and strontium from, 22:152
separation of cesium from aqueous, by ion exchange, 22:16669
separation of cesium from Purex, unidirectional loading, scrubbing, and elution of zeolite columns for, 22:37828 (BNWL-732)
separation of cesium from simulated, by ion exchange on titanium phosphate, 22:42834
separation of cesium iodides from, 22:8166 (BNL-50085)

separation of cesium-137 and strontium-90 from, by ion exchange, 22:25449 (CEA-N-616, pp 72-85)
separation of cesium-137 from acid, ion-exchange, 22:6366 (EUR-3625)
separation of cesium-137 from solutions of, method for, 22:33549(P)
separation of cesium-137 from, by ion exchange using iron ferrocyanide resin, 22:40201
separation of cesium-137 from, by solvent extraction, review on organic compounds for, 22:16651
separation of cesium-137 from, by sorption on sericite, 22:42827
separation of enriched uranium from, 22:37830 (CEA-N-856, pp 71-7)
separation of fission products from, by solvent extraction, 22:33526
separation of highly active fission products from, 22:48911
separation of metallic constitutents from organic solutions of, 22:10351(P)
separation of neptunium and plutonium from Purex acid sludge solutions by solvent extraction using bis(2-ethylhexyl) phosphate, 22:21154 (BNWL-583)
separation of plutonium from liquid and solid process, methods for, 22:8200
separation of plutonium from ZPPR unmeasurable, 22:47203(R) (NUMEC-1661-2)
separation of plutonium from, by fluoride volatility process, 22:6369 (RFP-1048)
separation of radioactive krypton and xenon from gaseous, by sorption in fluorocarbon solvent, 22:45144(R) (K-1745)
separation of radioisotopes from, by solvent extraction, 22:16694
separation of radionuclides from solidified, by elution, theoretical considerations of, 22:51079
separation of radionuclides from, by precipitation, 22:27886
separation of radioruthenium from, by sorption, 22:36018
separation of ruthenium from aqueous, by volatilization, 22:51064
separation of ruthenium from effluents of, precipitation method for, 22:37842(P)
separation of strontium from Purex, by precipitation with lead sulfate, 22:18874
separation of strontium from, by ion exchange and precipitation, 22:37661
separation of strontium from, by solvent extraction using D2EHPA, antagonistic and synergistic effects of organic phosphorus compounds on, 22:42807 (BNWL-759)
separation of strontium from, using strontium carbonate, 22:27851 (CEA-N-816, pp 66-79)
separation of strontium from, using zeolites, 22:37834 (EUR-3452(Vol.2))
separation of uranium from copper leach solution of, by ion exchange, 22:25485
shipping of, design of lead shielded casks for, 22:291
solidification by calcination, 22:33526
solidification in basalt, 22:16660
solidification in bituminous material for disposal, 22:21300
solidification in concrete blocks for burial, 22:21300
solidification in phosphate glass, 22:33526
solidification of, 22:6381
solidification of high-level liquid, compressive strength of concretes used for, 22:4419
solidification of high-level liquid, compressive strength of concretes used for, 22:43018(T) (NSJ-tr-113)
solidification of high-level, treatment of low- and intermediate-level condensates from, 22:47201 (BNWL-723)
solidification of liquid, in glass for disposal, 22:37861(P)
solidification of Purex and Redox, flow diagrams for, 22:21299
solidification of, method for, 22:33548(P)
solidification of, processes for, 22:21169
sorption by soils, factors affecting, 22:43233
sorption from aqueous solutions by humic acid from oxidized coal, 22:12426
storage at Eurochemic plant, 22:45146 (NP-17588)
storage container for, design of releasable closure for, 22:8292(P)
storage facilities for, within Euratom countries, siting of, 22:25628 (EUR-3664)
storage facilities for, within Euratom countries, siting of, 22:51201(T) (ORNL-tr-1973)
storage in Czechoslovak limestone mine, evaluation of, 22:36019
storage in salt mine, effects of heat, radiation, and stratigraphy on, 22:51064
storage of calcined solid, design of facility for, 22:42934 (IN-1155)
storage of calcined, in salt mines, 22:33526
storage of glass blocks of, thermal and electrostatic phenomena produced in, 22:37826(T) (ANL-Trans-628, pp 51-128)
storage of high-level solid, in stainless steel bins in concrete vaults at Idaho Chemical Processing Plant, 22:16815
storage of high-level, in underground tanks, cesium-137 and strontium-90 transport through soils from leakage during, 22:21298 (DP-1124)
storage of high-level, safety analysis of tank, 22:152
storage of liquid, design of system for, 22:49061(P)
storage of liquid, in basement rocks, 22:21299
storage of nuclear power plant, 22:36016 (RISO-M-735)
storage of solutions of, from reprocessing of zirconium alloy fuels, 22:33526
storage of, fabrication of tanks for, 22:33623 (SZS-1/68)
storage of, heat transfer in, 22:4231(R) (IN-1087)
storage of, level-alarm circuit for tank, 22:21381 (ORNL-4219, pp 68-74)
storage of, use of nuclear cavities for underground, 22:48972
storage tank structural material for, properties of Kaolite-20 as, 22:43013 (BNWL-797)
storage tanks for, retardation of cracks in steel, 22:36437
storage tanks for, testing Unarcoboard-36 insulating panels for, 22:40289 (BNWL-809)
temperature of buried tanks of, 22:152
temperature of stored, design and performance of infrared radiometer for monitoring, 22:38137 (BNWL-773)
thorium-229 recovery from, 22:25440(R) (MLM-1443)
transfer of slurry-type, test loop design for, 22:40348 (DP-1136)
transport of, facilities for, 22:40207
treatment and disposal of all levels of, from fuel reprocessing plants, 22:40171 (KR-126, pp 245-66)
treatment and disposal of, IAEA review of factors affecting, 22:12562 (STI/PUB-170)
treatment in western Europe, review of methods for, 22:21302
treatment of low- and intermediate-level, report of 1966 IAEA panel on, 22:25464 (STI/DOC-10/82)
treatment of low-level aqueous, in sewage plants, methods for, 22:51567(R) (IN-1205)
tritium management in aqueous, from fuel processing, 22:25444 (ANL-7375, pp 180-9)
uranium-234 recovery from raffinate solutions of, 22:25440(R) (MLM-1443)
vitrification of high-level, 22:47212
vitrification of solutions of, 22:37826(T) (ANL-Trans-628, pp 51-128)
vitrification of, installation at Marcoule fuel reprocessing plant for, 22:37831 (CEA-N-856, pp 434-44)
vitrification of, Marcoule pilot plant for, 22:35895
RADIOACTIVE WATERS
(This heading may be modified by location in the form Radioactive Waters (Colo.).)
decontamination by precipitation of γ-emitting nuclides using calcium permanganate and alkaline earths, 22:47230
decontamination of, effects of detergents on flocculation and ion flotation processes for, 22:30663
radioactivity of French, measurement of natural, 22:48932
RADIOACTIVE WATERS (ROMANIA)
radioisotope content in, effects of rock structure on, 22:27896 (IFA-IS-44)
RADIOACTIVITY
see also Decay Schemes
see also Gamma Radiation
book: Introduction to Radioactivity for Engineers, 22:30778
book: Monitoring The Radioactivity in Waste Water and Exhaust Air. Second Suppl. Ed. (In German), 22:4288
conference, 22:6544
contamination from nuclear weapons tests during 1945 to 1962, 22:40699
content in Hungarian milk, rainfall, surface water, and vegetables, 22:48946
content in rainwater in Kumamoto District, Japan, effect of Chinese nuclear explosions on, 22:14589
content of aerosols, environment, fallout, and water near Beloyarsk power reactor during 1963 to 1966, 22:17027
content of air, milk, oysters, rain, seawater, and silt in Galveston during 1965, effects of nuclear powered ship on, 22:28459
content of airborne particulates and precipitation in United States during 1966, β, 22:28522
content of airborne particulates and precipitation in North and South America during June 1967, 22:28506
content of airborne particulates and surface waters in North and South America during 1966, 22:28495
content of airborne particulates, precipitation, and surface waters in North and South America during 1966, 22:28502
content of atmosphere and environs of ORNL from gaseous and liquid wastes, FRC and NCRP standards for, 22:43307(R) (ORNL-4286)
content of atmosphere and precipitation in North and South America during 1967, 22:28514
content of atmosphere and precipitation in North and South America during April 1967, 22:28510
content of atmosphere and precipitation in North and South America during 1966, 22:28508
content of atmosphere and precipitation in North and South America during 1966, β, 22:23518
content of atmosphere and precipitation in North and

South America during May 1967, 22:23515
content of atmosphere and precipitation in North and South America during 1966, 22:28519
content of atmosphere in Galveston during 1966, 22:28510
content of atmosphere in North America during February 1967, 22:40697
content of atmosphere in North America during January 1967, 22:40690
content of atmosphere in North and South America during 1966, γ, 22:23520
content of atmosphere in United States, federal surveillance network for measurement of gross β, 22:51570 (NP-17401)
content of atmosphere, analytic procedures for determining, 22:51875 (TID-4060(1st Ed.))
content of atmosphere, precipitation, and surface waters in North and South America during 1966, gross, 22:23522
content of atmosphere, precipitation, and surface waters in United States during 1966, 22:28526
content of atmosphere, precipitation, and surface waters in North and South America during 1966, 22:25850
content of atmosphere, ratio of, to activity of deposited dusts, 22:19341
content of diet in United Kingdom and United States during 1965 to 1967, 22:40693
content of environment at AEC installations during 1967, 22:28506
content of environment at AEC installations during 1967, 22:28519
content of environment at AEC installations during July to Dec. 1966, 22:28510
content of environment at AEC installations during 1965 to 1966, 22:28526
content of environment at AEC installations during 1967, 22:28517
content of environment at Argonne National Laboratory, Atomics International, National Reactor Testing Station, and Oak Ridge during 1966, 22:23522
content of environment at Atomic Energy Commission installations during July to Dec. 1966, 22:40693
content of environment at Bettis Atomic Power Laboratory, Feed Materials Production Center, Knolls Atomic Power Laboratory, and S1C Prototype Reactor Facility during 1965, 22:28502
content of environment at Brookhaven and Rocky Flats installations of AEC during 1965, 22:36257
content of environment at Lawrence and Mound Radiation Laboratories during 1965, 22:28495
content of environment at Lawrence and Mound Radiation Laboratories during 1965, 22:28458
content of environment at Paducah, Portsmouth, and Shippingport installations of AEC, during 1965, β, 22:28522
content of environment in Brookhaven and Rocky Flats during 1966, 22:23518
content of environment in Oak Ridge, Paducah, and Portsmouth during 1966, 22:23520
content of environment in Pinellas Peninsula and Savannah River Plants of AEC during 1965, 22:25850
content of environment of AEC installations during 1966, 22:28508
content of environment of AEC installations during July to Dec. 1966, 22:23515
content of environment of AEC installations during 1967, 22:28514
content of food, man, and soil, 22:51875 (TID-4060(1st Ed.))
content of forest soils in New Jersey during 1964 to 1966, 22:23515
content of Fucus in Connecticut during 1961 to 1964, β, 22:28510
content of Fucus in Connecticut during 1961 to 1964, β, 22:40694
content of honey in Roumania, measurement of artificially and naturally occurring β and γ, 22:15011
content of human bone, soil, and water in Nagasaki, residual, 22:10770
content of human diet in U. S. during 1966, 22:28502
content of milk in North America during 1966 to 1967, 22:40697
content of milk in North America during 1966 to 1967, 22:40690
content of milk in North America during 1967, 22:40693
content of organisms, mechanisms for removal of, 22:51875 (TID-4060(1st Ed.))
content of precipitation in North America during 1966, 22:28458
content of precipitation in North and South America during 1966, β, 22:36257
content of surface waters in Minnesota during 1966, 22:28506
content of surface waters in U. S. during 1966, 22:28517
content of surface waters in U. S. during 1966, 22:28519
content of surface waters in U. S. during 1966, total, 22:23520
content of surface waters in United States during November 1966, 22:40690
content of surface waters in United States during March 1967, 22:23515
content of surface waters in United States during 1965, 22:28458
content of surface waters in United States during 1966, gross, 22:23518
content of surface waters in United States during 1965, β, 22:36257
content of surface waters in United States during 1967, alpha and beta, 22:28506
content of surface waters in United States during February 1967, 22:40693
content of surface waters in United States during 1966, 22:28522
content of surface waters in United States during December 1966, 22:40697
content of surface waters in US during 1966, 22:28508
content of surface waters in Washington during 1964 to 1965, 22:28458
content of surface waters in Washington during 1965 to 1966, 22:28510
content of surface waters in Washington during July 1965 to June 1966, 22:40693
content of water supplies in California during January to June, 1966, 22:40697
content of water supplies in Minnesota during 1965, β, 22:28522
content of water supplies in Minnesota during 1966, β, 22:23520
counting of, factor for determining true mid-point of count rate for, 22:37
decay in lunar surface rocks, (T), 22:8930
decay time distribution of, use of multichannel analyzers for measuring, 22:49162
detection in coal-bearing sediments in Japanese Igu lignites, 22:8217
detection in phosphorous nodules in Miyazaki Prefecture, Japan, radiometric method for, 22:6442
determination in seawater, spectrophotometric, 22:50913
dispersion in Atlantic Ocean of, from bottom-located source on continental slope of U.S., effects of ocean currents on, 22:25616 (NYO-3109-32)
dispersion in radioactive clouds, formulas for, 22:16707 (KFK-646)
dispersion in seawater, from SNAP devices, method for prediction of, 22:18995 (NYO-3109-26)
distribution in coal from Dorenaz, optical studies on, 22:10388
distribution in Swiss coal, 22:10387
distribution over Indian Ocean and its environments, maps for, 22:40265
effects of induced, on steel dissolution by sulfuric acid, 22:12981
effects of meteorite, on temperature of earth's upper mantle, (T), 22:47236
effects of natural, on isotope abundances in meteorites, review, 22:11134
effects of nuclear explosion, on operation of ports and ships, 22:47262
effects on biosphere, relation with environmental pollution from pesticides, 22:27916 (BNL-12401)
effects on development and physiology of fish and mice, fallout rainwater, 22:28671
environmental, from radon-222 in Illinois soils, measurements of natural, 22:171 (PHS-999-RH-26)
exposure from food, use of model diet to measure, 22:28524
handling of solutions containing, in glove boxes, design of apparatus for quantitative, 22:21503
hazards from atmospheric, probabilistic method for prediction and evaluation of, 22:18968 (LA-DC-9094)
hazards to biological materials from nuclear weapons testing, 22:30743
hazards to biological materials, method for estimation of, 22:496 (UCRL-50163(Pt.3))
lectures on, 22:22620 (ISS-67/23)
measurement and sampling of airborne, methods for, 22:2233
measurement by liquid scintillation counting, 22:12265
measurement in atmosphere, water, and sewage, sampling methods for, 22:40268
measurement in column chromatography eluates, method for continuous, 22:40009
measurement in Czechoslovakian waste disposal area, 22:2334(T) (JPRS-42565, pp 97-109)
measurement in deep sea sediments, 22:16731
measurement in dusts and rainwater from May 1966 Chinese nuclear explosion, 22:10380
measurement in dusts, performance of samplers for, 22:48947
measurement in fallout from second Chinese nuclear explosion, 22:25535(T) (NSJ-tr-98)
measurement in granitic rock tunnel near Salt Lake City, Utah, 22:45181
measurement in ground waters near Seoul, Korea, 22:27903
measurement in Illinois atmosphere and rainwater, 22:8220(R) (COO-1199-14)
measurement in Japanese air, rain, and sea water for October to December 1966, 22:12449
measurement in Japanese airborne dusts, April to June 1966, 22:2247
measurement in Japanese atmosphere and water from first Chinese nuclear explosion, 22:2246
measurement in Japanese rainwater, April to June 1966, 22:2249

measurement in Japanese rainwater, April to June 1966, 22:2248
measurement in Matsushiro earthquake area of Japan, 22:27909
measurement in Neogene sediments in Niigata Prefecture, Japan, 22:8229
measurement in Neogene Tertiary near Shibata City, Japan, 22:8216
measurement in Niigata, Japan, from October 1966 Chinese nuclear explosion, 22:10382
measurement in Pacific Ocean waters during Operation Wigwam, equipment and methods for, (E), 22:10411
measurement in rocks from Southern Bulgaria, 22:27906
measurement in rocks of Ehime Prefecture, Japan, 22:8231
measurement in Swedish building materials, 22:12429 (NP-17230)
measurement in UK drinking water, 1965, 22:18943
measurement in uraniferous beds in Niigata Prefecture, Japan, 22:8230
measurement in uranium ore deposits on Shodo Island, Japan, 22:8228
measurement in uranium ore deposits on Shodo Island, Japan, 22:8228
measurement of, 22:16356 (KR-116)
measurement of aluminum-26, in Pacific Ocean deep-sea sediments, 22:6459
measurement of atmospheric and precipitation, in Japan 1966, 22:10381
measurement of atmospheric, from ground testing of nuclear rockets, 22:18967 (LA-DC-9093)
measurement of atmospheric, in relation to air movements, 22:40267
measurement of atmospheric, near Vilnius, Lithuania, use of recorder with moving filter for, 22:47243
measurement of background, in Wisconsin lake waters, 22:16697(R) (COO-1281-9)
measurement of beta, in Bulgarian rocks and soils, 22:40211
measurement of chimney gas, from Project Gasbuggy underground nuclear explosion, 22:18999 (PNE-1003)
measurement of clinical, performance of gamma spectrometer for, 22:43077 (ORNL-4153)
measurement of gross, in airborne dusts in the Netherlands, 1965, 22:2227 (RA-29)
measurement of ground-level, from stack disposal of argon-41, design of equipment for, 22:18947 (BNL-12154)
measurement of ground-level, in atmosphere in Alaska, Brazil, and Richland, Wash., 1962 to 1968, 22:25523 (BNWL-SA-1739)
measurement of Italian environmental, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
measurement of Japanese atmosphere and seawater, April to October 1966, 22:27918
measurement of low-level, instruments and methods for, 22:2238
measurement of natural, effects of fallout on, 22:2214
measurement of natural, in atmosphere near ground, 22:16722
measurement of natural, in Ukrainian shield rocks, tectonic scheme for, 22:10363
measurement of natural, induced in building materials, 22:780 (CERN-67-25)
measurement of Phoebus 1B reactor effluent cloud, (E), 22:12442 (LA-3787)
measurement of Polish γ, improved method for, 22:6445
measurement of released, of exhaust stacks, use of glass dosimeters and air quantity for, 22:49346
measurement of, methods for absolute, 22:23203
measurement of, review on developments in, 22:25311
measurements for fallout particles from air sampling filter dusts, 22:25526 (HASL-193, pp I.17-26)
measurements for strontium-90 and yttrium-90 solutions, results of international comparisons of, 22:6545
measurements in air at Hanford plutonium handling facilities, (E), 22:12473 (BNWL-495)
measurements in air, food, and water in Central Florida, 22:40209 (SC-RR-68-196)
measurements in air, milk, and rainwater in Ankara, Turkey, Aug. 1965 through July 1966, 22:181(R) (TAEC-D-5)
measurements in ancient ceramics, use in thermoluminescence method of age estimation, 22:6478
measurements in atmosphere, 22:42876
measurements in atmosphere and rainwater in UK, 1967, 22:12439 (AERE-R-5575)
measurements in atmosphere over Indian Ocean, methods and results of, 22:6489
measurements in atmosphere, vegetation, milk, and water of Savannah River Plant environs, January through June 1968, 22:45178(R) (DPST-68-30-2)
measurements in Berlin from fifth Chinese nuclear explosion, 22:12446
measurements in central US rainwater, 1962 to 1966, 22:18976
measurements in Czechoslovakia atmosphere, 1966, 22:27923
measurements in Danish and Greenland atmosphere and precipitation, July through Dec. 1967, 22:51093 (FFR-401/68)
measurements in effluent cloud produced by NRX reactor, 22:182 (UCRL-50299)
measurements in German atmosphere, following third Chinese nuclear explosion, 22:18975
measurements in granites from Strzegom, Poland, 22:30702
measurements in granitic rocks of Australia, 22:25521
measurements in ground-level atmosphere and soils near Moscow, 1963 to 1965, 22:21195 (A-AC-82/G/L-1201)
measurements in IAEA mixed diet, 22:23133 (IA-1128, pp 156-9)
measurements in Japanese dusts and precipitation, 1960 to 1962, 22:30724
measurements in lower stratosphere, Project Airstream methods for, 22:25527 (HASL-193, pp I.33-207)
measurements in Pacific Ocean fish following Project Wigwam explosion, 22:10410
measurements in Pacific Ocean, following Operation Wigwam, 22:10409
measurements in Sierra Nevada batholith, 22:16701
measurements in soil-forming rocks of middle Volga region, USSR, 22:25520
measurements in southern Indian monazite areas, 22:6440
measurements in stratosphere over Berlin and Rome from June 1967 Chinese thermonuclear weapons test, 22:12445
measurements in Swedish ground air and precipitation from USSR underground nuclear explosion, Dec. 1966, 22:12441 (FOA-4-4494-28)
measurements in Thailand atmosphere, 1961 to 1963, 22:25539
measurements of atmospheric, in Japan, April to June 1967, 22:48948
measurements of deposited and fallout, in Japan following six nuclear explosions in China, 22:42848 (NP-17492)
measurements of rocks, soils, plants, and bones on Pacific Island of Niue, 22:2215
monitoring at NRTS waste disposal environs, 22:10530 (IDO-12040(Suppl.2))
monitoring at Yokosuka, Japan, 1954 to 1958, 22:2234
monitoring in air, vegetation, and water in vicinity of Paducah Plant during 1965 to 1966, 22:491 (KY-543)
monitoring in biosphere, design of laboratories for, 22:2493(T) (UCRL-Trans-1356)
monitoring in Black Sea during 1966, 22:8550
monitoring in Danish atmosphere and precipitation, Jan. to June 1967, 22:23164 (NP-17330)
monitoring in environment and population of Federal Republic of Germany during first quarter of 1967, 22:38290
monitoring in environment and population of Federal Republic of Germany during second quarter of 1967, 22:33820
monitoring in environment of nuclear-powered ship sites and nuclear reactor sites, Public Health Service programs for, 22:51570 (NP-17401)
monitoring in environs of Mexico during 1965 to 1966, 22:23514
monitoring in environs of nuclear facilities, 22:25858
monitoring in Goodyear Atomic Corporation environment, 22:18966(R) (GAT-553)
monitoring in high-background regions of Brazil, 22:2216
monitoring in lower atmosphere and on ground in Italy during 1966, gross β, 22:49327 (PROT-SAN.-01/67)
monitoring in nuclear installation environments, equipment and methods for, 22:18973
monitoring methods for airborne, 22:2232
monitoring of aerospace nuclear activities and nuclear device testing, Public Health Service programs for off-site, 22:51570 (NP-17401)
monitoring of atmosphere in North America during April 1967, 22:40693
monitoring of atmosphere, milk, seawater, and silt at Galveston during 1966, 22:40695
monitoring of environmental, at National Nuclear Research Center, Pelindaba, South Africa, 22:180 (PEL-89)
monitoring of environmental, in Euratom countries, 1966, 22:8221 (EUR-3602)
monitoring of ground-level atmospheric, spacing of stations for, 22:25547
monitoring of oysters in Texas during 1965 and 1966, α, β, and γ, 22:40691
monitoring of strontium-90 fallout, in Japan, 22:23167
monitoring of water and airborne, equipment and procedures for, 22:4288
penetration into seawater, effect of depth on, 22:2257
production by nuclear explosives for mining and public works, 22:45209 (UCRL-7870)
production by thermal and fission neutrons, graphical technique for estimating, 22:18724
production by underground nuclear explosions, method of calculating for carbonate rocks, earth's crust components, and salt domes, (T), 22:21225 (HNS-1229-54)
role in causing injuries following nuclear explosions, 22:6861
sampling air for, design of equipment for, 22:2476(P)
standards for, measurement methods for developing, 22:6547
standards in use of, users' guide for, 22:33474 (NP-17502)
transport from stratosphere to troposphere, meteorological aspects of, 22:48951
transport from stratosphere to troposphere, meteorological aspects of, 22:48950

transport of stratospheric, hemispheric analyses of potential vorticity for, 22:21207(R) (NYO-3317-3)
transport through ecosystems, 22:51875 (TID-4060(1st Ed.))
use of artificial and natural, as tracer of stratospheric air, 22:33570
use of artificial and natural, for age estimation of Antarctica snow, 22:18916
use of natural, in locating ground waters, 22:2195
use of natural, in measuring water in snow, 22:35925(T) (ORNL-tr-1935)
use of natural, in soils for measuring snow-water reserves, 22:16699
RADIOAPPLICATORS
see also Particle Sources
see also Radiation Sources
design of colpostat, for application of radium in therapy of uterine carcinomas, 22:28590
design of iodine-125, for use in radiotherapy, 22:4662(P)
dose rate from strontium-90--yttrium-90 β, used for therapy, effects of aluminum foil shielding on, 22:51787
leak testing of encapsulated radium, use of superfluid helium method for, (E), 22:6814
preparation of beta, 22:38349
preparation of silicone-enclosed radium, for therapy, 22:45652
radioprotection qualities of strontium-90--yttrium-90 beta, 22:51183
shielding of radium needle, during sterilization, storage, and threading, design of container for, 22:43340
use for contact therapy, strontium-90 β, 22:51783
Radioautography
see Autoradiography
RADIOBIOLOGY
application of data from manned space flights in, 22:51872 (LA-3848, pp 62-74)
applications to problems in cancer research, conference on, 22:43425
bibliography of Soviet literature on, 22:4637
book: Current Topics in Radiation Research, 22:40878
book: Early Radiation and Biochemical Reactions, 22:40612
book: Effect of Ionizing Radiation on Heredity, 22:21473
book: Experimental Post-Irradiation Syndrome, 22:52002
book: High-Frequency Electromagnetic Radiation; Biological Effects and Health Protection, 22:23673
book: Problems of General Radiobiology, 22:23650
book: Progress in Biomedical Engineering, 22:49416
book: Radiation Toxins: Their Nature and Role in the Biological Effect of High-Energy Radiation, 22:40944
book: Radiobiological Factors in Manned Space Flight, 22:6917
book: Reports on Biological Role of the Reticular Cells of the Marrow during an Acute Radiation Sickness, 22:45691
book: Tracing Life Processes with Radioisotopes: Experiments in Biological Science, 22:16973 (NYO-3247-4)
book: Transplantation Immunity and Radiation Chimeras, 22:425(T) (AEC-tr-6726)
book: Updating of Radiobiology, 22:33877
conference on effects of dose rate on radiosensitivity of mammals, 22:49467 (CONF-680410)
contribution of research in, to standards for radiation protection of man, 22:8520 (CONF-670305-, pp 192-6)
design of meson facility for studies on, 22:49409
development in Japan, 22:18659
development of cellular, in Soviet Union during 1917 to 1967, 22:14952
dosimetry in plants, 22:14525
dosimetry techniques in, methods for determining accuracy of, 22:49361
evaluation of equipment and procedures used in, 22:23430
evaluation of programs for bioassay sampling in, probabilistic method for, 22:51634
experimental, use of Stebel γ apparatus in, 22:51620
facilities for research in, in Soviet Union, 22:40820
facility for research in, description of 2000-Ci cesium-137, 22:219
measurement in, units for, 22:17024
nomenclature for dosimetry in use of ionendosis in, 22:45555
principles underlying radiotherapy, review of, 22:40790
programs for space, in USA and USSR, 22:47582
progress report for ORNL, 22:28628(R) (ORNL-4100)
radiation dosimetry methods in, review of, 22:23529
radioisotopes in, review of, 22:36309
research at Argonne National Laboratory, progress report for 1966, 22:28271(R) (ANL-7278)
research at Columbia University, report on, 22:49325(R) (NYO-2740-5)
research at UT-AEC Agricultural Research Laboratory, 22:40826(R) (ORO-657)
research conducted by military pharmacists, review of, 22:51829
research in cellular, mammalian, and molecular, 22:51303(R) (LA-3848)
research in Japan, 22:31155
research in Soviet Union during 50 years, review on, 22:4638
research in, biophysical aspects of, 22:51323
research in, chronological evaluation of, 22:25992
research in, review of problems in biochemical and biophysical, 22:40568
research in, sources of variability in experimental, 22:33944
research on, review of AEC, 22:21017
research program, joint NASA-AEC, 22:31207(R) (UCRL-17751)
research programs in Great Britain, progress report on, 22:49355
responsibilities of Division of Biology and Medicine of AEC in, review of, 22:51605
review on future research in, 22:49483 (CONF-680410-, pp 25.1-4)
role in health physics, review of, 22:10778
role of cell population kinetics in, 22:21579
role of hydrocarbons in, 22:40122
ruthenium reactions and transfer in, bibliography on, 22:51486 (CEA-BIB-123)
standards for epidemiological studies on, of man, review of, 22:10848
studies at molecular, cellular, and organismic levels, 22:43208(R) (UCSF-10-P-2-39)
training programs at Chalk River Nuclear Laboratories, 22:2502 (AECL-2665)
training programs at Puerto Rico Nuclear Center, 22:23481(R) (PRNC-102)
use of permanently encapsulated thermoluminescent radiation dosimeters in, 22:15013
uses of π^- mesons in, 22:14906 (BNL-50057, pp 123-37)
RADIOCHEMICAL ANALYSIS
see also Radiometric Analysis
accuracy in low level, 22:43301 (AERE-R-5474)
book: Radiochemical Methods of Enzyme Assay, 22:42622
book: Substoichiometry in Radiochemical Analysis, 22:27618
computer uses for peak location and energy measurement in, 22:33203 (AAEC/TM-437)
methods for use in fuel reprocessing, 22:39984 (KR-126, pp 153-71)
methods in, 22:37678
methods using γ-ray spectrometry and computers, 22:37693
quality control of methods for, of strontium-90 in biological materials and fallout samplers, 22:21020 (HASL-184, pp I.224-45)
resolution of complex decay curves in, iterative procedure for, (E/T), 22:7746
review in fuel reprocessing plants, 22:39983 (KR-126, pp 143-52)
scintillator for, use of 2,2'-p-phenylenebis[5-tolyoxazole], 22:45292
techniques based on substoichiometric separation, automation of, 22:40050
RADIOCHEMICAL PROCESSING PLANTS
air cleaning facilities at Y-12, survey of, 22:42938 (Y-EF-170)
cost and design study of Thorium Recycle Integrated, for HWOCR fuel, 22:23854 (CONF-660524-, pp 157-84)
criticality control in processing of irradiated uranium--zirconium alloy fuel at Idaho, using boric acid as soluble poison, 22:21155 (IN-1173)
criticality in, for plutonium, 22:8202
criticality parameters for intersecting pipes containing enriched uranyl nitrate solutions, empirical method for calculation of, 22:50807 (RFP-1197)
description and safety analysis of, for MSRE fuel, 22:25463 (ORNL-TM-907(Rev.))
description of French, for separation of cesium-137, 22:2263 (EUR-3611)
description of German, 22:30754
description of German prototype Purex, 22:51151
description of Richland, Washington, for fission product conversion and encapsulation, 22:8260
description of, at The Hague, 22:45148(T) (ORNL-tr-1785)
design and construction of, for processing of low- and medium-level liquid and solid wastes, 22:51209
design and cost estimate of, for cleaning, disassembly, and canning of LMFBR fuel elements, 22:27954 (ORNL-TM-2050)
design and operation of Eurex, 22:35972(R) (EUR-3901)
design and operation of PCUT, 22:49799
design and operation of unshielded pilot, for direct sol-gel preparation of uranium-233-enriched thorium dioxide--uranium dioxide fuel, 22:23857 (CONF-660524-, pp 417-43)
design and operation of, at Karlsruhe for fuel reprocessing, 22:25473
design and operation of, for decontamination of radioactive wastes, 22:51203 (SZS-9/68, pp 1-12)
design and operation of, for fabrication and production of plutonium and uranium fuels, 22:27970
design criteria for, 22:51144
design for recycle of SSCR fuels, 22:49796
design for spent thorium-based fuels, 22:23191 (CONF-660524-, pp 509-35)
design for strontium-90 and rare earth separation by solvent extraction, 22:2264 (EUR-3613)
design of Idaho Waste Calcining Facility, 22:42934 (IN-1155)

design of plutonium, 22:8201
design study for low-throughput fuel reprocessing, 22:23085 (AAEC/E-187)
design study for reprocessing uranium--thorium fuel for 10,000-MW(t) HTGR, 22:23092 (CONF-660524-, pp 617-45)
development activities of ENEA during 1967, 22:14382(R) (NP-17231)
development of EUREX, in Saluggia, Italy, 22:40197
development of on-site MSBR facility for fuel and blanket processing, 22:23093 (CONF-660524-, pp 653-69)
economics of fuel element, computer programs for estimation of, 22:22882
economics of Ranstad plant in Sweden, 22:25487
engineering and safety analyses of, for spent fuel reprocessing, 22:18863 (DOCKET-50201-3)
equipment configurations for, analysis of plutonium oxide (PuO_2), plutonium fluorides (PuF_4), and plutonium fluoride (PuF_6) criticality parameters in, 22:50808 (RFP-1206)
equipment design for, 22:40163 (KR-126, pp 31-53)
equipment for, design of improved valve, 22:21381 (ORNL-4219, pp 68-74)
fissile material flow control at strategic points in, 22:51047 (KFK-801)
flowsheets for thorium--uranium recycle facility, 22:8823 (ORNL-4170, pp 211-26)
fuel element disassembly machine for, design and operation of, 22:45220(T) (ORNL-tr-1976)
manual of procedures for SS material control at, 22:2322 (IN-1119)
material balance in boron isotope separation facility, 22:21157 (NUMEC-3292-3)
operation for fuel reprocessing at Marcoule, 22:47220
operation testing of unshielded pilot, for recycle of uranium-233-containing fuels, 22:23190 (CONF-660524-, pp 299-319)
performance of pilot fluoride volatility, for fuel recovery from aluminum-clad elements, 22:40292 (ORNL-4251)
requirements in Germany for, estimates to 2000AD, 22:35985
safety analysis for spent fuel reprocessing in, 22:18862 (DOCKET-50201-2)
safety analysis of trans-uranium, 22:25461 (ORNL-3954)
safety procedures for ORNL, 22:4400
siting and sizing of nuclear fuel, 22:10429 (CEA-R-3364)
wastes from Eurochemic, neutralization self-solidification process for treatment of medium-level, 22:23100 (NP-17234)

RADIOCHEMISTRY
(Study of radioactive chemical systems)
book: 1968 Book of ASTM Standards with Related Materials, Part 30, 22:37678
chemical effects of nuclear transformations in, review of, 22:27741 (BNL-12361)
detection limits of procedures in, 22:18859
developments in, review on, 22:25311
facilities and program for, at Tracerlab Western Division, 22:16422
method for identifying fission products from nuclear explosions, 22:25534 (UCRL-70782)
methods for γ-emitters in rocks, 22:2213
methods for use in chemical analysis, review on, 22:4027
radiation monitoring of air in laboratories for, 22:45560
radiation protection of personnel in laboratories for, 22:45574
radiation protection of personnel in laboratories for, 22:45587
research at IPCR, 1967, 22:26739(R) (NP-17423)
research in Soviet Union, review of, 22:18682
research in Soviet Union, review of, 22:35729(T) (JPRS-45331)
use for determining trace elements in organic and organometallic compounds, review on, 22:25309

Radiocolloids
see Colloids

RADIOELECTRIC CELLS
performance of gamma--, experimental and theoretical, (E/T), 22:47863

RADIOFREQUENCY GENERATORS
see also Pulse Generators (Electronics)
design of gigawatt lumped-element line, 22:42935 (LRP-37/68)
performance for producing controlled lesions in brains of dogs and man, 22:28567

RADIOFREQUENCY OSCILLATORS
design of 100 MHz gated clock, 22:410
effects of high-frequency, on stability of current pulse in linear accelerators, 22:1540(T) (SLAC-Trans-75)

RADIOFREQUENCY SPECTROMETERS
book: Electron Spin Resonance Spectrometers, 22:19230
circuits for nuclear quadrupole resonance, use of field-effect transistor, 22:8414
description of NQR, using field effect transistors, 22:23374
description of Pound--Watkins marginal oscillator-type NMR, operating at 100 MHz, 22:33695
description of whole-body low frequency NMR, 22:23380
design for measuring quadrupole spin echo at 150 to 300 MHz, 22:47416
design of broadband NMR dispersion detector, 22:4528
design of EPR, for gamma radiation effects studies in reactor facilities, 22:16304(P)
design of EPR, for radiation effects studies in reactor facilities, 22:16303(P)
design of ESR, for gaseous media, 22:14876 (UCRL-17306)
design of frequency sweep, field-frequency stabilized, double resonance, NMR, 22:28222
detector for NMR and EPR, design of synchronous, 22:43194
development of variable-frequency, using modified grid-dip meter, 22:8424
gating circuits for NMR, with 140 dB carrier suppression, 22:43163
heating system for NMR, design of variable, 22:12693
magnet for NMR, description of permanent, 22:19224
magnetic field homogeneity control and measurement in NMR, 22:38173
magnets for NMR, design of superconducting 47-kG, 22:21392
modification of frequency sweep of Varian HA 60/HA100, 22:12700
probe and receiver design for NMR, 22:19223
probe for NMR, design of parametric, 22:47417
temperature probes of NMR, system for protection against overheating of, 22:19225
thermostat control system for spin-echo, design of gaseous, 22:47419
use for nuclear spin--lattice relaxation measurements by tone-burst modulation, 22:25693

Radiographic Inspection
see Radiography, Industrial

RADIOGRAPHY, BIOMEDICAL
(Use of projected ionizing radiations for the production of shadow images usually through the use of photographic emulsions)
see also Autoradiography
bibliography of Soviet literature on, 22:4637
book: Medical Radiology, 22:25929
book: Progress in Radiology, 22:38392
book: Radioactive Isotopes and Their General Biological and Physical Applications, 22:36309
book: Radioisotopes for Internal Application in Diagnostics and Therapy, 22:28620
code of practice for use of x-ray equipment in, in Australia, 22:28536
design and performance of collimators for, of brain tumors in man, 22:28601
design of apparatus for emergency, 22:40808
design of equipment for dental, 22:12870
design of scanning microdensitometer-analog computer system for use in quantitative x-ray, of osteoporosis in man, 22:31168
determination of radiation effects on lymph nodes of man following therapy, 22:43465
development for diagnosis of malignant tumors in Russia, 22:8568
diagnosis of urinary tract diseases by, review of advances in, 22:28602
dose to gonads of man during, 22:2510
dose to gonads of man during intra-oral, 22:28462
dose to man from dental, 22:31100
dose to maternal ovaries from, during pregnancy, 22:2513
dosimetry for, design of Teflon-coated thermoluminescent probe for, 22:8547
dosimetry in, use of photoluminescent and thermoluminescent dosimeters for, 22:45522
duties of safety officers in departments of, 22:51640
effects on children exposed in utero, x, 22:38482
effects on human fetuses, 22:6896
effects on incidence of aberrations in chromosomes of leukocytes in man, latent, 22:51910
effects on incidence of cancer in children following prenatal exposure, x, 22:43377
effects on incidence of cancer in children following prenatal exposure, x, 22:43369
effects on incidence of cancer in children following prenatal exposure, x, 22:43368
effects on man, fibrosarcomatous, 22:31247
effects on medical personnel, analysis of lethal, 22:31242
effects on offspring of man, latent x, 22:51916
equipment for dental, safety evaluation of, 22:45525
equipment for stereo, design of, 22:40810
equipment for, design of autofluoroscope, 22:6693
equipment for, design of thermal neutron television, 22:35984
equipment for, development of spark chamber--image intensifier, 22:4543
equipment in U.S.S.R., standards for installation and operation of, 22:6809(T) (AEC-tr-6467/2(pp 177-94))
evaluation for detecting breast lesions in women, xero-, 22:531
evaluation of kidney, problems in, 22:21561
evaluation of neutrons for use in, 22:40759
evaluation of selenium-75-labeled methionine for, of lymphomas, 22:4629 (NYO-3723-1(Rev.))
hazards from dental, in New Zealand, methods for protection against x, 22:40683
hazards to human fetus, review of x, 22:43472
hazards to patients and personnel during diagnostic, review of, 22:47626

immobilization of human infants during diagnostic, design of equipment for, 22:19014
iodine-125 photons in, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)
leukemia incidence in personnel in, effects of age on, 22:38490
life span of personnel in, in USA during 1938 to 1965, 22:38456
method for determination of human organ volume, 22:38360
method for diagnosis of osteoporosis of bone in man, 22:2520 (COO-1422-17)
method for diagnosis of trauma and subdiaphragmatic abscess in man, gold-198 and iodine-131, 22:532
method for elimination of colic gases during abdominal, 22:4640
method for study of thyroid function, in vitro, 22:4632(T) (AERE-Trans-1073)
methods for improvement of, 22:14906 (BNL-50057, pp 123-37)
performance for analysis of macromolecular complexes in chloroplasts of spinach, 22:14905 (BNL-50057, pp 111-22)
performance for localization of hypophyseal tumors, 22:28228
performance in diagnosis of pyelonephritis in relation to histological findings in humans, 22:36322
performance of chromium-51 for, during phosphorus-32 radiotherapy of neoplasms in esophagus of man, 22:15021
performance of cobalt-60, for diagnosis of malignant tumors of head, neck, pelvis, and thorax, 22:28585
performance of DTPA-uranium complexes for, in swine, 22:10677 (BNWL-480, pp 99-106)
protection during dental, standards for, 22:4615
protection to patients and personnel during dental, code of practices for, 22:31178
radiation dose to bone marrow, gonads, and skin of man during cardiac catheterization and angiocardiography, x, 22:43338
radiation dose to fetus during diagnosis using fluoroscopy or film, 22:19450
radiation dose to fetus of man during pelvic, effects of equipment design on x, 22:36280
radiation dose to gonad of man during diagnostic, 22:38323
radiation dose to gonads and skin of human population of New Orleans from diagnostic, x, 22:28534
radiation dose to gonads in population of New York City from diagnostic, x, 22:28532
radiation dose to gonads in U. S. population from diagnostic, calculation of x, 22:28531
radiation dose to gonads of man during dental, x, 22:49440
radiation dose to gonads of man during, x, 22:21506
radiation dose to gonads of man during, x, 22:25835
radiation dose to gonads of man in Yugoslavia from diagnostic, 22:38321
radiation dose to human fetus from pelvic, during pregnancy, x, 22:8537
radiation dose to human fetuses during, use of ionization chamber to measure x, 22:47539
radiation dose to human gonads and skin during dental, x, 22:49373
radiation dose to man and personnel during x, 22:43339
radiation dose to man during dental, use of standard man phantoms for measurements of x, 22:25838
radiation dose to man during dental, use of standard man phantoms for measurements on x, 22:25839
radiation dose to man during dental, use of standard man phantoms for measurements of x, 22:25840
radiation dose to man during diagnostic, 22:19349
radiation dose to man during diagnostic, calculation of x, 22:38324
radiation dose to man during roentgenokymographic, use of shielding for reduction of x, 22:45573
radiation dose to man during, of uterus and fallopian tubes, x, 22:51660
radiation dose to man from dental, review of hazards of x, 22:45524
radiation doses from, to human organs, measurement of, 22:43330
radiation dosimetry for personnel in, x, 22:43332
radiation effects on development of embryos and fetuses following, x, 22:49603
radiation effects on man following, review of carcinogenic, 22:45535
radiation exposure from, hazards of x, 22:49335
radiation hazards during dental, x, 22:28486
radiation hazards to man from diagnostic, x, 22:21595
radiation hazards to man from x, 22:10780
radiation hazards to man holding animals during, 22:51810
radiation protection during dental, methods for, 22:19334
radiation protection for patients and personnel during dental, code of practice for x, 22:31175
radiation protection of man and personnel during dental, recommendations for x, 22:45551
radiation protection of medical personnel during prolonged, of patients, 22:49328
radiation protection standards for dental, 22:15009
radiation reflection by building materials during dental, x, 22:40724
radioinduced vascular lesions in mandible of man following, x, 22:10831
regulations for use of x rays in, 22:4611
regulations for use of x-ray equipment in, in Belgium, 22:38286
regulations regarding dental, in U. S, 22:43325
research for diagnosis of cancer, 22:51875 (TID-4060(1st Ed.))
research in Soviet Union during 50 years, review on, 22:4638
screen-film systems for, modulation transfer function of, 22:25658
shielding requirements for rooms used for dental, method for calculation of, 22:19350
shielding requirements for x-ray equipment used in dental, 22:28488
tissue contrast in, effects of x-ray energy on, 22:51803
training programs at Puerto Rico Nuclear Center, 22:23481(R) (PRNC-102)
use for determination of maturity of infant humans, evaluation of, 22:28551
use for determining effects of age and sex on alveolar bones of dogs, 22:28622 (ANL-7278, pp 95-131)
use for diagnosis of brain lesions in man, combined use of radioisotope scanning with, 22:38397
use for diagnosis of reno-vascular hypertension in man, 22:536
use for study of radium and x-radioinduced deformaties in bones of human children following therapy for benign and malignant tumors, 22:31151
use in diagnosis of skeletal changes in man with diabetes mellitus, 22:33862
use of computer processing of scanning data in, 22:38402
use of computers for analysis of results of, 22:31003
use of γ, for diagnosis of spinal arachnitis in man, 22:23571
use of high-energy scattered x radiation from linear accelerator for, of man, 22:25907
use of impedance pneumograph actuator for lung, during respiration, 22:49400
use of intra-arterial Thorotrast for, effects of, on incidence of chromosome aberrations in man, 22:23494
use of intraoral shielding and rectangular collimation for reduction of absorbed dose during dental, 22:51811
use of iodine-131 and mercury-197 for double tracer, of heart, 22:23585
use of iodine-131-labeled hippuran for, of kidney, 22:43375
use of technetium-99-labeled pertechnetates for, of stomach, 22:10786
use of technetium-99m for, of thyroid gland disorders in man, 22:19386
use of tritium oxide for, determination of maximum permissible levels for, 22:45543
use to determine effects of malnutrition in human children, 22:31180
ytterbium-169 photons in, use of, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)

RADIOGRAPHY, INDUSTRIAL
(Use of particles or radiations from radioisotopes or other sources for inspection (determination) of conditions existing in materials; photographic or other means are used for recording of transmitted radiation)
see also Autoradiography
cameras for, design of cable-type coupling for changing sources in, 22:16749(P)
collimator for inspecting aircraft engines, description of gamma-source, 22:38128
data on 5-MeV linear accelerator with 200- to 450-mm steel, 22:9736
detection system for neutron, 22:10618
development for inspection of aircraft ordnance devices, 22:37957
development of mobile unit for, 22:28033
development of neutron, in France, 22:16790
development of nuclear, for nondestructive testing of coatings, 22:23242
development status 1966, 22:49043
development status of, review of, 22:33620
dose to personnel during γ, 22:45580
equipment and procedures for high-resolution micro-, using ultrasoft x rays, 22:342 (ORNL-IIC-10(Vol.2), pp 522-56)
equipment for gamma, transistorized time exposure meter for, 22:28252
equipment for hot cell, neutron, 22:4371
equipment for neutron, design of, 22:37914(P)
equipment for neutron, image-detecting plate for, 22:37913(P)
equipment for pulsed x-ray, beam control of electron linear accelerator, 22:11758
equipment for thick-walled objects, betatron, 22:44551
equipment for, design of flash x-ray actuated trigger switch, 22:28247
equipment for, design of gamma camera, 22:47393(P)
equipment for, design of gamma radiation positioning tip for, 22:42998
equipment for, design of improved fluorescent screen, 22:21368(P)

- equipment for, design of remote-control gamma defectometer as, 22:19177
- equipment for, design of thermal neutron television, 22:35984
- equipment for, development of mobile, 22:28033
- equipment for, use of proton accelerator, 22:28034
- facilities for neutron, design and uses at EBR-II, 22:4370
- flaw detection in metals using beta particles, gamma radiation, or x radiation, 22:23776
- fuel plate homogeneity measurements by, 22:23235 (IN-1131, pp 116-22)
- gamma secondary emission during bremsstrahlung, calculation of, 22:43010
- gamma source for defect detection in metals, properties of iridium-192 as, 22:42988
- gamma sources for, 22:36265
- geometry of x-ray, calculation of optimum focusing, 22:43011
- hazards to personnel following accidental exposure, 22:43406
- image quality in x-ray, effects of thallium-activated cesium iodide and sodium-iodide converters on, 22:43070
- inspection of thin sections of steel and aluminum using ytterbium-169 sources, 22:253 (ORNL-IIC-10(Vol.2), pp 648-62)
- iridium-192 γ source for, 22:12551
- method for detection of defects in filament wound glass composite structures, 22:43003
- method for determination of direction of ground water flow in drill holes, 22:12437
- method for graphite salt impregnation testing in irradiation fields, 22:47675 (ORNL-4254, pp 183-240)
- method for in-space fabrication inspection, 22:43001
- method for in-space fabrication inspection, 22:43000
- method for inspecting irradiated uranium dioxide fuel elements, x-ray, 22:51194
- method for large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
- method for measuring neutron scattering in aluminum, steel, and uranium, (E), 22:49042
- method for nondestructive materials testing, review of, 22:10527
- method for pyrocarbon-coated plutonium oxide microspheres, 22:10434 (LA-3814)
- method for reliability testing, 22:12558 (N-67-23261)
- method for steel, sensitivity of scintillation detector for bremsstrahlung, 22:28117
- method for thermal neutron, 22:16790
- method for thick lead specimens using neutrons, 22:21731
- method for variable density plates, 22:19083(P)
- methods and recommended practices for, ASTM standards for, 22:40332
- methods for measuring radioinduced swelling in fuel spheres, 22:19571 (AERE-M-1977)
- methods for neutron, advantages of epicadmium neutron beams in, 22:49045
- methods for thin specimens, 22:8741 (ORNL-4170, pp 119-23)
- methods for welds of thick plates, review of, 22:40342
- methods using betatrons, development of, 22:32376
- neutron imaging methods in, review of progress in, 22:40333
- neutron sources for, optimization of antimony--beryllium, 22:26770
- performance of neutron, in heat pipe diagnostics, 22:4375
- photonuclear reactions for, 22:12559
- radiation exposure from, hazards of x, 22:49335
- radiation monitoring of, equipment for γ, 22:45578
- radiation protection of personnel during, γ, 22:45581
- radiation protection of personnel during, γ, 22:45576
- radiation protection standards for personnel in, in France, 22:36265
- radioisotope uses in, conference on, 22:28011 (CONF-660503)
- research at CENG, fast neutron, 22:51222 (TID-24730)
- response functions and line spread functions in γ ray, 22:49150
- sensitivity for nondestructive inspection using iridium-192, 22:12560
- sensitivity of x-ray image brightness intensifiers for, 22:43173
- television imaging system for thermal-neutron, 22:4540
- use for determination of radiation damage in fast breeder reactor fuel elements, 22:32778 (KFK-700(Pt. XII))
- use for determination of radiation damage in fast breeder reactor fuel elements, 22:53273(T) (EURFNR-472)
- use for determining transient radiation effects on plutonium oxide (PuO_2)--uranium oxide (UO_2) axial restrained fuel elements, 22:32970(R) (GEAP-5584)
- use in investigations of naturally occurring minerals, 22:2203
- use in nondestructive materials testing method, 22:4379(P)
- use in nondestructive testing of honeycomb heat shields, 22:271 (N-67-19360)
- use in testing of ship hull welds, guide for, 22:19077 (AD-639053)
- use of β backscattering for hardness measurements, 22:12561(P)
- use of neutron, in non-destructive examination of aerospace hardware, 22:38125
- use of tangential, for measurement of wall thickness and individual thicknesses in multilayered structures, 22:385 (Y-DA-1583)
- uses of fast-neutron, 22:4372
- uses of high-resolution, 22:4373
- uses of low-voltage and neutron, for boron cermets, 22:4374
- uses of neutron, 22:4369
- uses of neutron, for nondestructive testing, 22:4376
- uses of neutron, in research on nuclear fuels, 22:4315

RADIOIMMUNOASSAY
- method for human growth hormone using solid-phase antibodies, 22:40757

Radioisotope Applicators
- see Radioapplicators

RADIOISOTOPE SCANNERS
- averaging devices for, description of, 22:49070(T) (JPRS-46486)
- book: Instrumentation in Nuclear Medicine, 22:45299
- collimator for scintillation, optimum design of, 22:6589
- collimator performance for scintillation, line spread function measurements for determining, 22:33840
- collimators for thallium-activated sodium iodide, method for testing focused, 22:21553
- collimators for, response of double-head and single-head, 22:25854
- data recording system for medical, design of digital, 22:40381
- data recording system for scintillation, off-line digital computer interface for, 22:47436
- data recording system for, design of, 22:402
- description of bone, for determining mineral content of femur, humerus, and os calcis, 22:306 (COO-1422-10)
- description of, for isotope localization in man, 22:40433
- design, 22:23362(P)
- design for determining radioisotope distribution in human organs, 22:30841(P)
- design of linear, 22:6566
- design of linear scintillation, 22:6566
- design of linear scintillation, for small animals, 22:40377
- design of multidetector positron, 22:30829
- design of scintillation, for area, isosensitive, lamino-, positron, and double-tracer, 22:43046
- design of simultaneous x and γ radiation, 22:49083(P)
- development of high-speed section, 22:25860 (UCLA-12-668, pp 29-36)
- development of scintillation, 22:25711 (COO-78-163, pp 1-38)
- display for photo-, instrument for producing color, 22:12667 (ACRH-1000-33)
- image restoration in imaging systems of, 22:4538
- performance for determination of radioactivity in Swiss population, 22:21500
- performance for diagnosis of dyscrasias of protein metabolism in human children following injection of iodine-131-labeled albumin, whole-body, 22:33839 (UCLA-12-640, pp 1-30)
- performance for diagnosis of polycythemia in man, 22:33866
- performance for measurement of erythrocyte survival time in man, 22:33894
- performance of rectilinear, in comparison to scintillation cameras, 22:38055
- performance of scintillation, in comparison to gamma cameras, 22:38056
- performance of two opposed detectors for, of iodine-131 in thyroid gland of unrestrained rats, 22:33857
- resolution of, design of phantom for testing depth, 22:37997 (UCLA-12-689)
- scintigram quality from, in comparison to scintillation cameras, thyroid, 22:45304
- use for whole-body counting, 22:33655
- use of linear, 22:2365

RADIOISOTOPE SCANNING
- (Determination of radioisotopes within a body from external measurements--includes among other techniques scintiscanning and whole-body counting. Does not include Autoradiography.)
- analysis of double isotope technique for, of overlapping tissues, mathematical, 22:40743
- book: Progress in Radiology, 22:38392
- book: Radioactive Isotopes. Their General Biological and Medical Applications, 22:36309
- calibration factors in, of cesium-137 in man, 22:51311 (UR-49-999)
- calibration of standards for, of strontium-90 bremsstrahlung in experimental animals, 22:10827(R) (UCD-472-114)
- collimation for scintillation, method for testing focused, 22:21553
- comparison of iodine-131 and technetium-99 for, of lungs of dogs, 22:51805
- contrast in films for, enhancement of, 22:40762
- counting systems for whole-body, 22:6848
- darkroom processing technique for improvement of scan resolution in, 22:49401
- data acquisition and display systems for scintillation,

use of computers for, 22:49405
data analysis using computers, 22:36307
data averaging techniques for medical, 22:40804
data on disorders of human liver, design of system for processing of, 22:38371
data processing during, design of system for computerized, 22:6833 (CONF-671027-1)
data processing during, design of system for computerized, 22:6833 (CONF-671027-1)
design and performance of gamma cameras for, 22:19371
design of autofluoroscopic γ camera for use in, of man, 22:36297
design of collimator for use during, of lungs with xenon-133 and scintillation detectors, 22:40773
design of collimators for use with γ cameras for, 22:51821
design of computer program for use in, of metabolic systems, 22:19356
design of gamma camera for, of thyroid diseases using iodine-131 or technetium-99, 22:12887
design of grid system for, of brain, 22:38401
design of linear scintillation scanner for, of man, 22:36296
design of new apparatus for, of bone lesions, 22:38400
design of new method for, using color scintigraphy, 22:38389
design of scintillation detectors for, of organs of man, 22:51822
design of three-dimensional computer read-out system for data from, 22:12871
detection of nonradioactive nodules during, of organs of man, use of color scans for, 22:38394
detector for use in, performance of single-hole collimated, 22:12864(R) (ORO-2401-10)
determination of thyroid abnormalities during brain, 22:541
development in Russia, 22:8568
development of computerized system for low-level whole-body, 22:12864(R) (ORO-2401-10)
development of data acquisition system for use in computer analysis of data from, 22:40809
development of gamma cameras for, 22:25939
development of labeled compounds for medical, 22:25714 (COO-78-163, pp 126-36)
development of method for localized, to determine survival of pedicle skin graft, 22:40763
development of photoelectric object-plane system of, for use in microdosimetry in bone and bone marrow, 22:38309
development of scintillation counter meeting IAEA specifications for, of iodine-131 in human thyroid gland, 22:38346
development of shadow-shield mobile whole-body monitor for iron-59, 22:12855
developments in medical, review of, 22:28605
diagnosis of kidney diseases by, in man, use of computer analysis for measurement of distribution of labeled-Hippuran for, 22:31144
diagnosis of pulmonary emboli in man by, 22:28603
diagnosis of renal vascular disease using mercury-197, mercury-203, and iodine-131, 22:19381
diagnosis of tuberculosis of bone in man by, evaluation of strontium-85 method for, 22:8585
diagnosis of tumors in man using, method for assessing validity of, 22:38372
dose to organs of body following intraarticular administration of gold-198, 22:14958
dosimetry in man during, 22:28484
effectiveness for detecting neoplasms in human tissues, criteria for evaluation of, 22:36323
effectiveness for evaluation of myocardial infarction, 22:31138
equipment and procedures for medical, in man, 22:31116
equipment for evaluation of low-background readings from whole-body, 22:222
evaluation of eleven labeled compounds for brain tumor, in mice, 22:38361
evaluation of indium-113 for, of bones and kidneys in rabbits, 22:40747
evaluation of iodine-125- and iodine-131-labeled chloroquine analogs for, of malignant melanomas, 22:10820
evaluation of iodine-131-labeled analogs of 1,1-dichloro-2,2-bis(chlorophenyl) ethane for, of adrenal carcinomas, 22:10819
evaluation of iodine-131-labeled diethylstilbestrol for scintillation, of tumors of human prostate gland and testes, 22:10814
evaluation of isotopes for, of bones, 22:43386
evaluation of labeled compounds for, of brain, 22:25714 (COO-78-163, pp 126-36)
gamma sources for, use of low-energy, 22:530
gamma spectra processing for, in man, 22:28543
hazards from use of iodine-131-labeled serum albumin for, of spinal cord, 22:28599
isotope subtraction technique for simultaneous, of liver and pancreas, 22:12883
kinetic model for two-compartment system using radioisotope tracers for, approximate system for, 22:47546
localization of bone cancer by, evaluation of radioisotopes for, 22:10781(R) (NYO-910-59)
localization of bone neoplasms and metastases in man by, 22:40764
localization of bone tumors in man by, comparison of fluorine-18 and strontium-85 for, 22:40765
localization of brain tumors by barium-137, 22:28560
localization of human stomach tumors by, use of technetium-99-labeled sodium pertechnetate for, 22:31162
lung, by scintigraphy in man, development of technetium-99-labeled albumin aggregates for, 22:8453
measurement of blood circulation in forearm and hand by, 22:539
measurement of iodine-131 retention by man by, 22:468
method for anatomical localization of scintiphoto during, of man with γ cameras, 22:38341
method for circulatory diseases using Hungarian four-channel radiocirculograph, 22:40806
method for detecting cerebral lesions using iodine-131, mercury-97, mercury-203, and technetium-99, 22:40761
method for detection of lymphatic metastasis in penial cancer, use of phosphorus-32 in, 22:12874
method for determination of human organ volume, 22:38360
method for determining pulmonary blood flow, iodine-131, 22:45702
method for diagnosis of cerebrospinal fluid rhinorrhea in human adults and children, 22:49427
method for diagnosis of hemochromatosis in man, 22:51817
method for diagnosis of joint necrosis in man, strontium-85, 22:33883
method for estimating spatial distribution of radioisotopes, 22:49070(T) (JPRS-46486)
method for evaluation of thyroid function, 22:25935
method for evaluation of thyroid function by, 22:25932
method for human thyroid gland, following administration of mixed iodine-125 and iodine-131, 22:28619
method for kidney, using x-ray image amplifier camera, 22:518 (UCLA-12-655)
method for kidneys using iodine-131-labeled hippuran, 22:45610
method for localization and vascular characterization of brain tumors, 22:51806
method for localization of bone metastases using fluorine-18, strontium-85, and strontium-87, 22:40801
method for localization of bone tumors, 22:49445
method for localization of brain tumors, 22:25939
method for localization of brain tumors, 22:49399
method for localization of brain tumors and blood vessel anomalies in man, 22:25933
method for localization of brain tumors and other brain anomalies in man, 22:25934
method for localization of erythropoietic tissues in man, 22:25939
method for localization of human brain tumors, 22:49404(P)
method for localization of human organs, 22:14940
method for localization of human placenta, 22:38359
method for localization of human placenta, 22:31169
method for localization of human placenta using chromium-51, 22:33861
method for localization of neoplasms using carbon-11-labeled compounds, 22:49406
method for localization of placenta, 22:25936
method for localization of subdural hematomas using iodine-131, mercury-197, and technetium-99, 22:45609
method for lungs using technetium-99 perfusion combined with radioaerosol inhalation, 22:40784
method for measurement of blood circulation in human heart, 22:25937
method for measurement of blood circulation in man, 22:25939
method for measuring blood flow using calcium-45 and strontium-85, 22:8584
method for measuring prostate circulation, 22:10694
method for pancreas using selenium-75-labeled methionine, technique for cancelling hepatic shadow from, 22:40742
method for pancreas with elimination of liver image by dual-channel technique, 22:49402
method for parathyroid gland, use of selenomethionine in, 22:38334(R) (COO-1653-45)
method for placenta praevia using technetium-99-labeled albumin, 22:40795
method for profile, for dosimetry of γ-emitting radioisotopes deposited in man, 22:6798(R) (IAEA-2819-6)
method for quantitative, in man, 22:36332
method for simultaneous measurement of blood plasma volume and erythrocyte mass of man, 22:51824
method for skeletal, using whole-body profile scanner and strontium-85, 22:8569
method for thyroid, computer programs for interpretation of, 22:40796
method for visualization of liver, 22:51793
method for visualization of liver and spleen, 22:25938
method for whole-body, for plutonium determination in rats, 22:51630
method of whole-body, for measuring iron sorption, 22:10695
methods for bone, liver, lungs, and thyroid, 22:45650
methods for brain, heart, salivary glands, and stomach, 22:25941
methods for cardiography, development of heart phantom to

determine sources of error in chromium-51, 22:25776
methods for diagnosis of diseases and visualization of human thyroid using technetium-99, 22:51858
methods for diagnosis of diseases of spleen, 22:49466
methods for diagnosis of hemolytic anemia in man, whole-body calcium-47, 22:25956
methods for diagnosis of infections in human spinal column, iodine-131, 22:25928
methods for diagnosis of myeloma in man, 22:51785
methods for diagnosis of thyroid diseases, comparison of, 22:25922
methods for evaluation of blood circulation in brain, liver, lungs, and spleen, 22:33839 (UCLA-12-640, pp 1-30)
methods for evaluation of blood circulation in kidneys, 22:25945
methods for evaluation of blood circulation in kidneys, compartmental analysis of iodine-131, 22:25944
methods for evaluation of blood circulation in localized organs and tissues, 22:25946
methods for evaluation of blood circulation in uterus during pregnancy, xenon-133, 22:25948
methods for evaluation of kidney function, 22:25958
methods for evaluation of kidney function, 22:25943
methods for evaluation of peripheral blood circulation in human patients with diabetes, 22:51788
methods for improvement of, 22:14906 (BNL-50057, pp 123-37)
methods for kidneys, in rats, 22:51792
methods for localization of brain tumors and cerebral infarcts in humans using mercury-197, 22:51859
methods for localization of cerebral infarction, serial, 22:49460
methods for localization of human placenta, 22:49398
methods for localization of neoplasms in human spinal column, iodine-131, 22:25928
methods for localization of septic abscesses, 22:51782
methods for lung, using radioaerosols, 22:6834 (UCLA-12-656)
methods for measurement of blood circulation in areas of bone fractures, iodine-131, 22:25955
methods for measurement of blood circulation in brain, xenon-133, 22:25949
methods for measurement of blood circulation in brain, krypton-85, 22:25950
methods for measurement of blood circulation in brain, iodine-131, 22:25951
methods for measurement of blood circulation in heart, rubidium-86, 22:25952
methods for measurement of blood circulation in kidneys, 22:25942
methods for measurement of blood circulation in lungs, iodine-131, 22:25953
methods for measurement of blood circulation in lungs of dogs, 22:31262
methods for measurement of blood circulation in spleen, chromium-51, 22:25954
methods for measurement of regional lung function, xenon-133, 22:25775
methods for visualization of blood circulation, bone marrow, brain, kidney, liver, lungs, placenta, and spleen, technetium-99, 22:25940
methods for visualization of heart chambers, lungs, and veins using ultrashort-lived radioisotopes, 22:51855
methods for visualization of lymph system in lungs, colloidal gold-198, 22:25924
methods used in nuclear medicine, review of, 22:31116
performance for determination of content of protein-bound iodine-131 in plasma of man, 22:19353
performance for determination of site of iodine-131 absorption in intestines, 22:19390
performance for determining hepatobiliary disease, 22:25859 (UCLA-12-668, pp 1-28)
performance for determining regional pulmonary ventilation and bronchial patency, 22:25859 (UCLA-12-668, pp 1-28)
performance for diagnosis of bone lesions in man, 22:38344
performance for diagnosis of bone lesions in man, 22:38388
performance for diagnosis of bone necrosis following radiotherapy, 22:38343
performance for diagnosis of cysts of human spleen, 22:38339
performance for diagnosis of kidney diseases in human children, 22:38375
performance for diagnosis of kidney diseases in man, 22:38338
performance for diagnosis of liver cirrhosis in man, 22:38395
performance for diagnosis of neuro-ophthalmologic diseases in brain, 22:31134
performance for diagnosis of spleen rupture in man, 22:38357
performance for diagnosis of toxic adenomas of thyroid in man, 22:38345
performance for evaluation of kidney function in man with heart diseases, 22:38374
performance for evaluation of kidney function of man with Hodgkin's disease or leukemia, 22:38373
performance for external measurement of rate of DNA synthesis in tumors of mice following injection of iodine-125-labeled idoxuridine, 22:23412 (NYO-3924-1)
performance for localization of bone tumors, 22:21540 (ACRH-1000-34)
performance for localization of tumors in organs of man, review of, 22:33885
performance for measurement of cesium-137 and potassium-40 content of man, whole-body, 22:38302
performance for measurement of iodine-131 content of thyroid and whole-body of man following chronic, low level exposure, 22:21431
performance for measurement of physiological processes in man, 22:38393
performance for measurements of heart output in man, 22:38342
performance for urinary tract visualization, effects of incorporation of radioisotopes in contrast media on results of, 22:25957
performance of collimated scintillation detectors for, use of computer calculation of modulation transfer function for evaluation of, 22:51809
performance of collimators in, development of plane spread-function and volume response for controlling, 22:12872
performance of computers for rapid calculation of data on whole-body potassium-42, for measurement of potassium content of man, 22:19281
performance of flexible esophageal scintillation probe for, of blood output from human heart, 22:36294
performance of gamma camera and rectilinear scintillation scanner for human thyroid, 22:51784
performance of gamma cameras and scintillation scanners for, physical comparison of, 22:49418
performance of gamma cameras for, 22:25941
performance of gamma cameras for, evaluation of, 22:51856
performance of gamma cameras for, technetium-99, 22:25940
performance of γ camera and rectilinear scanner for brain, using technetium-99-labeled pertechnetate, 22:540
performance of γ cameras and scintillation detectors for, 22:25959
performance of high quantum fast section scanner for, of brain lesions following administration of chromium-51-labeled tetracycline, 22:10782(R) (UCLA-34-P-119-10)
performance of image intensifier camera for, of blood circulation in brain following administration of technetium-99 or xenon-133, 22:28614
performance of indium-113 for, of body organs of man, review of, 22:40760
performance of iodine-131, for diagnosis of pulmonary dystrophy in man, 22:51676
performance of iodine-131, for diagnosis of pulmonary silicosis in man, 22:51677
performance of iodine-131-labeled iodohippurate in diagnostic, of renal arterial hypertension in man, 22:51847
performance of linear, in diagnosis of lung cancer in humans using iodine-131-labeled macroaggregated albumin, 22:36320
performance of low-energy γ-emitting radioisotopes for, phantom evaluation of, 22:38337
performance of multi-crystal γ spectrometer for whole-body, of man, 22:38406
performance of radioisotopes for, conference on, 22:25931
performance of scintillation cameras and technetium-99-labeled sodium pertechnetate for, of blood circulation in human brain, 22:25905
performance of scintillation detectors for, of thyroid gland of man, 22:38362
performance of whole-body, of various facilities for determination of radium-226 and strontium-90 body burdens in man, 22:28483
performance with computer in processing of radioassay data, β-spectrometer, 22:14931
preparation of labeled tetraphenylsulfonate for tumor localization by, 22:8447
preparation of silver-110-labeled oleate for use in, of lymph system, 22:33891
preparation of technetium-99-labeled dextrans for use in, of liver, lungs, and kidneys, 22:33892
presentation of data from, use of four-color isocharts for, 22:49444
processing and perception of medical scans from, 22:38351
processing method for contrasting hatched scannograms from, for better interpretation, 22:49456
processing of matrices from, use of digital computer for, 22:40776
protection of thyroid during technetium-99, 22:25932
quality of, effects of energy level of γ-emitting radioisotopes on, 22:36324
radiation dose to body and thyroid gland of man during iodine-131, of goiter, calculation of, 22:4623
radiation dose to fetus during, of placenta, effects of tissue attenuation on reduction of, 22:25960
radiation dose to human children during, β and γ, 22:33826
radiation dose to man during, using technetium-99, 22:25919

radiation effects on man following, review of carcinogenic, 22:45535
radiation intensity from, color display of, 22:25939
radioisotope preparation for technetium-99m, indium-113m, and strontium-87m, 22:51779
radioisotope-labeled compounds for use in, of spleen tumors, evaluation of, 22:4645
radioisotope-labeled pharmaceuticals for use in, review of, 22:4630 (UCLA-34-P-119-16)
resolution of scintillation γ spectrometers for, methods for evaluation of, 22:51812
selenium-75-labeled selenomethionine, use of, for localization of tumors of parathyroid and thymus glands, 22:12882
technetium-99 dosimetry during, 22:17033
technetium-99 uptake by choroid plexus of human brain during, diagnostic importance of, 22:43387
uptake of technetium-99-labeled pertechnetate during, of thyroid gland, effects of decomposition of solution during storage on, 22:23583
use for analysis of lung clearance of labeled particles in rabbits, 22:25751
use for delineation and localization of spleen, chromium-51 and mercury-197, 22:38396
use for determination of barium-133 retention time following injection in man, 22:36214
use for determination of cobalt-58-labeled vitamin B_{12} sorption in man, 22:14761
use for determining cerebral hemodynamics, 22:25859 (UCLA-12-668, pp 1-28)
use for determining europium body burden in man, 22:47543
use for diagnosing organ form, size, and position, or tumor localization, review of, 22:31159
use for diagnosis of brain lesions in man, 22:38397
use for diagnosis of parathyroid adenomas in man, 22:28596
use for diagnosis of prostatic carcinomas in man, strontium-85, 22:51814
use for diagnosis of x radiation effects on liver of human adolescents following therapy, 22:40858
use for imaging of spleen, 22:40748
use for localization of bone lesions in man, 22:40735
use for localization of bone lesions in man, 22:40744
use for localization of brain lesions, 22:40817
use for localization of human fetuses, 22:28577
use for localization of intracranial neoplasms in man, review of doses and type of isotopes used, 22:31198
use for localization of lesions in human bones and joints, 22:49433
use for localization of malignant metastases in human bones, 22:49433
use for localization of metastases from human bronchogenic carcinomas in brain or liver, 22:51808
use for localization of neuroblastomas in sympathetic nervous system, 22:49448
use for measurement of erythrocyte mass of human spleen following injection of carbon-11-labeled carbon monoxide- or rubidium-81-labeled erythrocytes, 22:25906
use for measurement of neutron-activated iodine-128 in human thyroid, 22:36192
use for measurement of plasma clearance of iron in arm and hand, 22:467
use for measurement of regional lung function in man, 22:51794
use for measurement of regional lung function, xenon-133, 22:51791
use for neutron dosimetry of man following criticality accident, whole-body, 22:23504 (HW-76823)
use for visualization of lymph system in mammary glands of man, 22:40734
use in clinical and research studies, conference on, 22:25931
use in medicine, historical review of, 22:49426
use in preparation of three-dimensional scannograms, 22:45649
use of cesium-131 in, of myocardium, 22:38398
use of fluorine for, of bones, β radiation dose to man from, 22:45549
use of fluorine-18 for sequential, of bone transplants, 22:51802
use of gold-198 and iodine-125 for, of human organs, effects of Compton scattering on resolution, 22:33886
use of gold-198-incorporated colloids of gelatin or polyvinylpyrrolidinone for, comparison of, 22:43352
use of indium-113-labeled DTPA for, of brain, 22:49443
use of iodine-125, mercury-197, and technetium-99 as tracers for, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)
use of iodine-131 for, of brain of man, protective effects of potassium perchlorate on thyroid before, 22:36313
use of iodine-131 for, of human central nervous system, dose determinations for, 22:43370
use of iodine-131 for, of human central nervous system, dose determinations for, 22:43371
use of iodine-131, for determination of size of thyroid, evaluation of errors in, 22:36295
use of iodine-131- or technetium-99-labeled albumin for, of pulmonary blood vessels, 22:23566
use of iodine-131-labeled carbohydrates for, 22:38367
use of iodine-131-labeled fibrinogen for, of malignant neoplasms, 22:38404
use of iodine-131-labeled hippuran and mercury-203 for, of human kidneys, 22:38403
use of iodine-131-labeled macroaggregates of albumin for, of human lungs, 22:38399
use of iron-59, for estimation of erythrocyte loss in hookworm-infected dogs, 22:28540 (NYO-2147-13, pp 103-20)
use of labeled aerosols for, of respiratory system of dogs and man, 22:38399
use of mercury-197-labeled chlormerodrin and technetium-99-labeled pertechnetate for, of human brain, 22:28562
use of mercury-197-labeled chloromerodrin for, of brain of man, 22:2531
use of plastic- and scintillation counters for, of human body, comparisons of, 22:49420
use of radioisotope-labeled dextran for, of liver and lungs in rats, 22:43388
use of selenium-75-labeled selenomethionine for, of carcinomas of pancreas in man, 22:28576
use of split crystal scintillation camera for, of human kidneys, 22:36298
use of strontium-85 and technetium-99 for, of human brain, 22:49447
use of technetium-99-iron complex for, of kidneys of man, 22:14959
use of technetium-99-iron-ascorbic acid-glucose complex for, of kidneys of dogs, 22:45633
use of technetium-99-labeled pertechnetates for, of salivary glands of man, dosimetry and performance in, 22:51778
use of technetium-99-pertechnate for, of brain of man, 22:2531
use of technetium-99-sulfur colloids for, of human liver, 22:51767
use of technetium-99m for, of liver of man, 22:45607
use of technetium-99m-iron complex for, of kidneys of animals and man, 22:33888
use of Thorotrast for, effects of, on erythropoiesis in man, 22:47615
use of three-dimensional image reconstruction for, 22:38390
use of whole-body counters for, 22:47576
use of whole-body, for determination of cesium-137 body burdens of man, 22:25849
use of whole-body, for study of metabolism in man, 22:38405
use of xenon-133 for, of blood circulation in human kidneys, effects of cysts on, 22:43385
use to determine defects in gold-198, iodine-131, mercury-197, and technetium-99 filled liver phantom, 22:6859
use to determine details of anatomy and function of thyroid gland, application of Spintharicon for visualization during, 22:31121

RADIOISOTOPE SUBMERSIBLE ENGINE
design and development of, for use in hydrospace, 22:16743

RADIOISOTOPES
(See also specific isotopes.)
see also Fission Products
see also Isotope Generators
see also Tracer Techniques
absorbed dose of biologically distributed, equations for calculation of, 22:36262
accumulation in populations of aquatic organisms, determination of concentration factors for, 22:17002 (UCRL-50347)
activation and decay of, design and performance of hybrid computer for calculations of, 22:407
activities of, calculator for determining standard deviation and optimum conditions in measurement of, 22:14881
activities of, use of semiconductor detectors for measuring low-level, 22:37981 (CONF-670545-, pp 81-7)
activity and radiation purity of, equipment and methods for measuring, 22:4421
activity as function of time, computer method for calculation of, 22:33586 (UCLA-12-640, pp 31-44)
activity counting statistics for, nomogram for, 22:28080
activity data from liquid scintillation detectors, system for transfer to punched cards, 22:4448
activity data from liquid scintillation detectors, computer program for calculating, 22:4448
activity from liquid scintillation counter data, use of desktop computer for automatic calculation of, 22:40019
activity laws for, review of, (T), 22:27393
activity measurements in parent-daughter system of, (E/T), 22:7745
activity measurements of short-lived, using constant pause intervals, 22:36036
activity measurements of, discrimination from natural background due to radioactive aerosols, 22:51187
activity measurements using γ-γ coincidence method, equipment for, (E), 22:5867 (CEA-R-3260)
activity of β—γ emitting, apparatus for digital evaluation of dead time, random coincidences, and background corrections in coincidence measurement of, 22:43062
activity of carrier-containing, 4π β-γ coincidence

methods of determining, 22:45137
activity of soft-β-emitting, effects of phosphorescence and after-pulsing in determining absolute, 22:44997
activity of systems labeled with, differential equations for determining specific, 22:51184
activity of, coincidence resolving time of coincidence circuits used for measuring, 22:51235
activity of, Curie vs half-life plot for calculating specific, 22:18331
activity of, efficiency of internal proportional detector for absolute measurement of, 22:14776
activity of, iterative procedure for determining, in presence of other activity, (E/T), 22:7746
activity of, sensitivity of equipment for measuring low, 22:2387
activity of, use of β--γ coincidence method with single thallium-activated sodium iodide detector for absolute, 22:2370
addition to foods for analysis, effects of, on food, 22:43220
alpha decay of odd-mass, 22:25440(R) (MLM-1443)
analysis of alpha-emitting, for impurities by gamma spectroscopy, 22:8 (DPSPU-66-30-12)
analysis of biological materials, automation in, 22:43301 (AERE-R-5474)
analysis of high-specific-activity, for carrier and other nonisotopic impurities, 22:25243 (UJV-1916)
analysis of low-level beta-emitting, design and performance of anticoincidence-shielded G-M system for, 22:28067 (TID-24454)
analysis of mixtures of, by gamma or beta spectroscopy, 22:14418 (CNEA-205)
analysis of, in biological materials, gamma spectrometers for, 22:4461 (UCRL-70544)
analysis of, spectrographic, 22:16356 (KR-116)
application for medical use of, guide for preparation of, 22:51675 (TID-24457)
availability and price of, for use in electric energy generators, 22:6543
availability, cost, and properties of, for space vehicle propulsion, 22:14733
behavior in soils, relations to water movement, 22:6448
behavior in tropical rain forest, ecological evaluation of fallout, 22:47496(R) (PRNC-103)
beta activity in gases, design of proportional detector system for measuring, 22:21310 (CEA-R-3403)
beta activity of, flowthrough liquid scintillation detector for measurement of low-level, 22:25644
beta and gamma emission by, protection of pregnant medical personnel against, 22:25841
beta--gamma activity of, use of scintillation detectors in coincidence circuits for absolute measurement of, 22:2373
book: 1968 Book of ASTM Standards with Related Materials, Part 30, 22:37678
book: Advances in Tracer Methodology, Vol. 4, 22:16470
book: Analytical Toxicology of Industrial Inorganic Poisons, 22:18734
book: Chemical Analysis of Radioactive Materials, 22:4060
book: Code of Practice against Radiation Hazards, 22:4628
book: Gamma-Radiation from Radioactive Isotopes and Fission Products; Theory and Tables, (E/T), 22:18203
book: Industrial uses of Radioisotopes, 22:47297
book: Isotopes in Experimental Pharmacology, 22:2489
book: Nuclear Medicine-a Scandinavian Textbook, 22:45635
book: Principles of Nuclear Medicine, 22:49411
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Radiation Techniques, Vol. 1 (In Russian), 22:19076
book: Radioisotope Instruments in Metallurgy, 22:36050
book: Radioisotopes for Internal Application in Diagnostics and Therapy, 22:28620
book: Radioisotopes in Foundation Construction and Underground Installations, 22:37934(T) (AEC-tr-6933)
book: Radioisotopic Methods for Engineering Geology and Hydrology Studies (In Russian), 22:37944
book: Tracing Life Processes with Radioisotopes: Experiments in Biological Science, 22:16973 (NYO-3247-4)
calculation of absorbed dose from, 22:31074
catalog of, 22:23083
chemical reactivity in reactor containment system, 22:12148
conference on applications of, Japan, Nov. 13 to 16, 1967, 22:30772 (CONF-671112)
conference on industrial and geophysical uses of, Prague, Nov. 21 to 25, 1966, 22:14678 (STI/PUB-142)
conference on industrial uses of, New South Wales, Australia, Oct. 25 to 27, 1967, 22:47297
conference on industrial uses of, Rome, June 23 to 24, 1966, 22:8305
conference on metrology of, 22:6544
conference on standardization of, Vienna, Oct. 10 to 14, 1966, 22:14677 (STI/PUB-139)
conference on uses of, in hydrology, Vienna, Nov. 14 to 18, 1966, 22:19048 (STI/PUB-141)
conference on, Nippon Toshi Center, May 1966, 22:28011 (CONF-660503)
contamination of environment by, conference on, 22:1930
contamination of environment of research reactors, 22:6818
contamination of lacquer or plastic surfaces, developmen of solution for removing, 22:38289
contamination of surfaces at A.W.R.E., control measures for, 22:23554
content and behavior of artificial and natural, in world's oceans and seas, 22:51122
content in aerosols and dusts near high-energy proton accelerators, 22:1545
content in coastal and surface waters in British Isles, 22:16728 (FRL-1)
content in Columbia River from disposal of radioactive wastes at Richland, Wash, 22:18964 (BNWL-SA-1606)
content in ground-level atmosphere in Alaska, Brazil, an Richland, Wash., 1962 to 1968, 22:25523 (BNWL-SA-1739
content in ground-level atmosphere, seasonal variations in, 22:51101
content in low-level environmental samples, development of two-crystal γ-scintillation spectrometer for determining, 22:6755(R) (COO-414-6)
content in near-ground level air in Germany, factors affecting, 22:35945
content in raw and sand filtered water supplies, (E), 22:25580
content in sand materials used for filtration of water supplies, (E), 22:25580
content in seawater, 22:45207
content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
content in stratosphere over Eilson Air Force Base, Alaska, during Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
content in stratosphere over Mildura, Australia, during Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
content in stratosphere over Natal, Brazil, during Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
content in stratosphere over Panama Canal Zone, during June to Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
content in stratosphere over San Angelo, Texas, during Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
content in surface waters, use of underwater γ spectrometer to measure, 22:10373
content in underground media, calculation of nuclear explosion induced, 22:21225 (HNS-1229-54)
content in waste waters and exhaust air, methods for measuring, 22:4288
content of atmosphere, milk, and precipitation in North and South America during 1967, 22:28517
content of barrel cactus in relation to ecology and elevation, 22:40688
content of body fluids and tissues, methods for determining, 22:12779
content of bones, feces, plants, soils, and water, 22:25800 (UCLA-12-668, pp 37-58)
content of caribou and reindeer in Alaska during October to November 1966, 22:40690
content of daily diet in California during May to August 1966, 22:40690
content of daily diet in Connecticut during July to December 1966, 22:40690
content of diet in California during 1965, 22:36257
content of diet of children and young adults in United States, federal surveillance network for measurement of, 22:51570 (NP-17401)
content of diet of man in California during 1966 to 1967, 22:28506
content of environment, need for standard methods of evaluating, 22:28478
content of environmental monitoring samples, methods for determination of, 22:43301 (AERE-R-5474)
content of food chains from fallout, effects of, on animals for human food, 22:19297 (CEA-R-3306)
content of gamma-emitting, in BNL area soils, 22:40258 (BNL-50093)
content of human bones, diet, and milk during 1965 in comparison to Federal Radiation Council estimates, 22:40705
content of human diet in California during 1965, 22:23522
content of human diet in California during 1966, 22:23520
content of human diet in Connecticut during 1966, 22:28495
content of human diet in Netherlands, 22:33817 (RA-32)
content of human diet in United States during 1965, 22:28458
content of human diet in US during 1965, 22:28508
content of inhaled air and drinking water of man following occupational exposure, maximum permissible, 22:51651
content of inhaled air and drinking water of personnel, standards for maximum permissible concentrations of, 22:19330 (NP-17180)
content of long lived, in fallout from Oct. 1961 Russian nuclear explosion, 22:42878
content of lungs and lymph nodes of man, evaluation of biological model for determining maximum permissible,

22:33810 (CEA-R-3382)
content of man, use of interspecies correlations to estimate radiation guides for maximum permissible, 22:51305 (LA-3848, pp 75-96)
content of marine ecosystems, design of model for compartmental analysis of, 22:10750
content of milk in North and South America during 1966, 22:28495
content of milk in North and South America during 1966, 22:28519
content of milk in North and South America during 1966, 22:28526
content of milk in North and South America during 1966 and 1967, 22:28514
content of milk in North and South America during 1966, 22:28502
content of milk in United States during 1965, 22:28458
content of milk in United States during 1967, 22:28510
content of milk in United States during April to June 1967, 22:28506
content of milk in United States during Jan. to March 1967, 22:23515
content of milk in United States, federal surveillance network for measurement of, 22:51570 (NP-17401)
content of milk, use of gamma spectrometer to measure, 22:28503
content of natural, in components of scintillation detectors, effects on gamma detection efficiency, 22:2367
content of organisms in bottom of Columbia River, 22:10740 (BNWL-480, pp 153-93)
content of plants infected by pathogens or symbionts, 22:12798
content of plants, use of beta activity for determination of, 22:45540
content of single, in multiple-isotope sources, estimation of, 22:35996 (AD-662192)
content of snowmelt water, effects of litter, moss and vegetation of bogs on, 22:25833
content of surface waters in United States during 1966 to 1967, 22:28514
content of surface waters in United States during Feb. 1967, 22:28510
content of teenage diet in U. S. during 1965, 22:25850
content of water, state and territorial regulations and standards for, 22:28504
control in IRT-1000, Sofia, cooling water, gamma spectrometric method for, 22:18572
decay characteristics, 22:20975(R) (BMwF-FBK-67-89)
decay corrections for tracer techniques, (T), 22:7777
decay curves for several, system for simultaneous determination of, 22:28116
decay energies of highly unstable, measurement of, (E), 22:29956
decay in compounds, 22:40049
decay in ocean sediments, effect of sediment surface mixing on, (T), 22:6504
decay of, chemical reactions of recoils from, 22:33470
decay of, origins and intensities of background signals in magnetic beta spectrometers used in studying, 22:6632
decay rates of, accuracy of correlation method for determining absolute, 22:16946
decay rates of, solid-angle counting method for precise determination of, 22:14780
decay rates of, use of low-geometry coincidence methods for measuring, 22:14772
decontamination of animals, use of chelates and ion exchangers for, 22:51669
decontamination of human body, review of, 22:31058 (BNWL-SA-1511)
department for hospitals, design of, 22:10806
deposition following accident at Savannah River Plant, emergency survey of, 22:36251 (DP-MS-68-1)
detection in biological materials, use of microscope--image intensifier system for scintillation, 22:19115
detection in rainwater fallout, resolving power of lithium-drifted germanium detector for gamma-spectrometric identification in, 22:23314
detection of weak tracer, in biological samples, use of image intensifier and scintillation counters for, 22:40504
determination by densitometry of autoradiograms, 22:7988 (CEA-R-3269)
determination by liquid scintillation counting, 22:12265
determination by mathematical evaluation of multicomponent gamma spectra, 22:47091
determination by methods using γ-ray spectrometry and computers, 22:37693
determination in atmospheric precipitation and drinking water, 22:45199
determination in Brazilian foods and waters, 22:2217
determination in compounds, 22:40049
determination in compounds in tissues, high-resolution autoradiography for, 22:16473
determination in enriched uranium, methods for, 22:25236 (CEA-N-616, pp 20-71)
determination in Eurochemic reprocessing solutions, remotely operated equipment for, 22:40030
determination in field measurements using gamma spectrometers, optimum conditions for, 22:19145
determination in meteorites, 22:12338(R) (COO-1167-3)
determination in solutions, hot cell for spectrochemical, 22:39982 (JEN-188-DQ/1-64)
determination in tissues, autoradiographic methods for, 22:16474
determination of alpha-emitting nonuranic, in uranium trioxide and uranyl nitrate, 22:21022 (PG-Report-823)
determination of alpha-emitting, by autoradiography, 22:14445
determination of gamma-emitting, design of gamma-gamma coincidence spectrometer for, 22:47077(R) (NYO-844-75)
determination of γ-emitting, in soils, 22:2212
determination of long-lived, laboratory blank experience in, 22:37653 (UCRL-18140, pp 13-36)
determination of short-lived, in neutron activation by gas chromatography and scintillation counting, 22:12264
determination of short-lived, using scintillation counter and Geiger-Mueller tube, 22:48828
determination of trace amounts of, facility for, 22:14433 (ORNL-4196, pp 66-89)
determination of weakly beta-emitting, scintillation counting for, 22:14433 (ORNL-4196, pp 66-89)
determination of, computer programs for efficiency calculations on scintillation counter data for, 22:16475
determination of, facilities and program for, 22:16422
determination of, methods for, 22:18697
determination of, methods for, 22:37678
determination of, problems in choice of method for instrumental activation, 22:39992
determination of, resolution of complex gamma spectra obtained with scintillation counters for, 22:47100
determination of, size relation between chromatographic spot and its autoradiogram in, 22:8030
development and use, review, 22:4309 (TID-24102)
development by USAEC, JCAE hearings on, 22:10169
development of, review of worldwide, 22:25032
diffusion in sediments and suspended solid particles of the sea, molecular, 22:10408
diffusion in solids, 22:6313 (HMI-B-53)
diffusion in vermiculite, mechanisms of, 22:16801
dispersion and migration in soils, model experiments on, 22:16800
dispersion in sandy aquifiers, (E), 22:19073
distribution and metabolism, research on, 22:51306(R) (ORAU-106)
distribution and transport of, in streams, development of model to describe, 22:10356 (ORO-490-12)
distribution around nuclear craters, hydrologic, 22:21226 (NVO-1229-87)
distribution in aquatic and terrestrial ecosystems, bibliographies on, 22:33777 (TID-3910(Suppl.5))
distribution in body, design of autofluoroscope for determining, 22:6693
distribution in granites, homogeneity of, 22:2200
distribution in ground waters from underground nuclear explosions, methods for measuring, 22:23185 (HNS-1229-43)
distribution in human organs, design of scanner for determining, 22:30841(P)
distribution in human skeleton, evaluation of alpha-emitting, 22:38491
distribution in man, design of gamma camera for determining, 22:2344 (ORNL-IIC-10(Vol.1), pp 248-67)
distribution in natural waters, 22:35922 (ISS-66/36)
distribution in organs, linear scanning for diagnostic purposes, 22:6566
distribution in organs, scanning methods and equipment for determining spatial, 22:49070(T) (JPRS-46486)
distribution in sewage and drinking water in Germany, 1956 to 1963, 22:10368
distribution in terrestrial environment, 22:6436 (ORNL-4168, pp 1-60)
distribution in tissue-equivalent materials, optical transfer function of scintillation cameras used for determining, 22:43045
distribution of heavy, in Florida rocks and waters, 22:2204
distribution of natural, in atmosphere, 22:37883
dose to man during therapy, comparison of, to x, 22:38322
dose to man from nuclear explosions, methods of estimating, 22:40669 (UCRL-70894)
dosimetry in man during scanning, 22:28484
dosimetry of bone-seeking, in human children, relation of trabecular bone composition to, 22:31081
drop weight of solutions containing, methods for determining, 22:14880
effects of short-lived, on earth crust erosion, redeposition of sedimentary materials, and weathering, 22:35936
effects of trace, on determination of plutonium-239 in aqueous solutions by liquid scintillation, 22:40018
effects on animals following incorporation, significance of dose rate for RBE of, 22:23651
effects on animals in relation to pharmacology, review of, 22:51829
effects on man, review of medical, 22:49514
effects on productivity of beans, 22:12942
effects on self-decomposition of organic compounds, 22:50966

electron-capture rate of, using 4π proportional detector, 22:6564
exchange from cylinder, kinetic analysis of, 22:40610
excretion by animals, evaluation of methods for control of, 22:25861(T) (JPRS-39391)
fixation in solids, 22:30588(R) (HMI-B-66)
fractionation in fallout particles from third Chinese nuclear explosion, 22:16719
fractionation of, in fallout from third Chinese nuclear explosion, 22:4284
gamma emission by, regulations for protection of laboratory personnel in Poland against, 22:23588
gamma spectral analysis of mixtures of, detector--computer system for, 22:19132 (BNWL-669)
half lives of, in ms range, design of electronically-pulsed relay driver for measuring, 22:19206
half-life and type of decay of, 22:42698
half-life measurements for short-lived, using modulated excitation source, (E/T), 22:32677
half-life of, facilities and program for measuring, 22:16422
half-lives of, decaying pairs method for measuring, 22:18738(R) (MLM-1417)
half-lives of, methods for accurate measurement of, 22:29990
half-lives of, methods for measuring, 22:1956(R) (MLM-1405)
half-lives of, tables for, 22:48441 (AERE-M-2058)
half-lives of, use of prediction analysis in designing experiments for measuring, 22:18338
handling by industrial personnel, methods for radiation protection during, 22:45572
handling of, bibliography on accidents during, 22:12895 (AED-C-16-03-I)
handling of, design of bucket elevator wheel for, 22:10478(P)
handling of, design of force-reflected manipulator for remote, 22:10472(P)
hazards to personnel handling, standards for protection against, 22:501
heat generation in meteorites before solidification by, 22:31582
heat sources of, capsule development for, 22:33601 (AI-AEC-12643)
heat sources of, development of capsules for large, 22:10503 (NAA-SR-12635)
imaging systems for, image restoration in, 22:4538
incorporation in ion-exchange materials for use as radiation source, 22:8164(P)
incorporation in lipids, review of methods for, 22:50914
incorporation in silicon oxide during controlled growth of monodisperse particles, 22:12395 (UR-49-867)
incorporation into clay aerosols, performance of ultrasonic-generator for, 22:23246 (LF-38, pp 101-2)
industrial and medical uses of, Canadian program for development of, 22:8261
industrial applications of, IAEA program for promotion of, 22:8306
industrial uses in Italy, present and future plans for, 22:8311
industrial uses in Poland, 22:8318
industrial uses in western Europe, health physics regulations for, 22:8312
industrial uses of, Euratom program for promotion of, 22:8308
inventory in nuclear medicine laboratories, use of computers for, 22:36307
ion implantation in crystals for hyperfine interaction measurements, (E), 22:46257
labeled compounds containing, costs and suppliers for, 22:4224
labeling of insects, review of methods for, 22:40979 (THAI.-AEC-8)
leaching from Sedan crater ejecta, environmental effects on, 22:40284 (UCRL-70630)
legislation for use of, in Israel, 22:45593
lifetime analysis of, correction of moment method for finite range of integration for, 22:46847
localization in man for diagnostic purposes, equipment and methods for, 22:40433
localization in tissues, use of focusing collimators for improving resolution of, 22:45608
maximum permissible concentrations of, in Chambal river near Rajasthan Atomic Power Plant, 22:51558 (AEET/HP/R-13)
measurement of reactor fuel elements, description of variable-length flexible pipe for external-core, 22:37584(P)
metabolism by marine organisms, 22:51875 (TID-4060(1st Ed.))
metabolism by organisms, 22:51875 (TID-4060(1st Ed.))
metabolism in man, effects of carriers on, 22:51476
metabolism in man, use of whole-body counting to determine, 22:23526
migration and sorption in soils, liquid waste disposal experiments on, 22:2328(T) (JPRS-42565, pp 12-22)
migration in soils from liquid radioactive waste disposal, 22:2332(T) (JPRS-42565, pp 67-81)
migration in soils, distribution and dispersion coefficients for, (E), 22:10372
monitoring environmental, in Scandinavia during 1965 and 1966, 22:16704 (A-AC-82/G/L-1159)
monitoring of industrial, in Great Britain, 22:45554
monitoring program for, in North Carolina, 22:51603
movement in forest ecosystems, review of effects of, 22:47499
movement in soils, effect of aeration on, 22:16805
neutron absorption cross sections in thermal reactor spectra, method for measuring, (E/T), 22:20405 (CONF-680307-17)
nuclear magnetic resonance of short-lived β-emitting, measurement using recoil polarization, (E), 22:46724
nuclear moments and spin of, method for measuring, 22:30048(R) (PUC-937-307)
nuclear polarization of short-lived, using optical pumping, (E), 22:46752
nuclear properties and decay of, dissertation summary of research on, (E), 22:50648
nuclear properties of, 22:25243 (UJV-1916)
nuclear quadrupole moments of, measurement using repolarization of nuclear spins in magnetic fields, (T), 22:7743 (NYO-2028-2, pp 106-20)
nuclear transformations of, review of chemical effects from, 22:27741 (BNL-12361)
packaging for, design of IAEA Types A and B, 22:28043
performance of, comparison of particle accelerators and reactors with, 22:30365
permeability of membranes for, kinetic analysis of, 22:40611
positron emission by, search for low-intensity, 22:27258
potential uses for, 22:606 (CONF-661011, pp 8-10)
precipitation from aqueous solutions and fused salts, 22:10346
precipitation with hydrated titanium oxide, 22:42811 (HMI-B-69)
production and analysis of short-lived, at JINR proton synchrocyclotron, equipment for, 22:26736 (JINR-P6-3773)
production and detection in neutron activation analysis, 22:49410
production and industrial uses of, selected abstracts of non-U. S. literature on, 22:42974 (ORNL-TM-2223(Pt.2))
production and marketing of, predictions for, in 1980, 22:16633
production and research uses of, review of, 22:10521
production and sales of, 22:16637
production and sales of, in France, 22:16635
production and use in Japan, review of biological, industrial, and medical, 22:31155
production and use of, in Spain, 1964-1965, 22:16639
production and uses in Argentina, 22:33189(R) (NP-17470)
production and uses in Norway, 22:16356 (KR-116)
production and uses of new, 22:16637
production and uses of transuranium, review on, 22:30614
production and uses of, bibliography on, 22:30774 (ORNL-TM-2223(Pt.1))
production and uses of, bibliography on industrial, 22:14674 (ORNL-TM-1940(Pt.2))
production and uses of, Div. of Isotopes Development research on, 1967, 22:47294(R) (TID-24349)
production and uses of, in Spain in 1965 and 1966, 22:14728
production and uses of, technical progress review on, 22:10523
production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
production at Israel AEC, 22:48806(R) (IA-1168)
production at Sorin Nuclear Research Center, technical and organizational problems in, 22:8315
production by cosmic rays, use as tracers of atmospheric precipitation, 22:40250 (AECL-2787, pp 567-80)
production by national laboratories in Canada, 22:25612 (AECL-2782)
production by neutron activation, history and potential of US, 22:8316
production by reactions of primary and secondary particles with machine components in high-energy proton accelerator, 22:1545
production by US power reactors through 1990, 22:45245 (BNWL-716)
production capabilities in Europe, 22:49033
production facilities in Hungary for, design of exhaust systems for, 22:42943
production for industrial use, 22:23226
production from power reactor fuels, economics of, 22:49032
production in Australia, 22:42761
production in Canada, economics of, 22:16638
production in center of control elements, use of epithermal and fast neutrons for, 22:25176(P)
production in commercial power reactors, economic potential for, 22:8317
production in Czechoslovakia, 22:16634
production in geosphere by cosmic radiation, (T), 22:5177
production in HTR reactor of, description of, 22:47031
production in IAN-R1 Reactor, 22:40321 (IAN-Q-6)
production in power reactors, feasibility of, 22:8313
production in reactor control rods, design of irradiation capsule for, 22:48774(P)
production in reactors, Pontryagin's principle for calculating minimum cost for, 22:20929
production in reactors, Pontryagin's principle for

calculating minimum cost for, 22:20928
production in South Africa, 22:39837
production in spent power reactor fuel elements of, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in target ion-loaded ion exchangers by neutron irradiation, 22:40141
production in WWR-S at Rez, description of, 22:44900 (UJV-1906)
production of, 22:23080
production of, 22:6313 (HMI-B-53)
production of, 22:30588(R) (HMI-B-66)
production of carrier-free, 22:25243 (UJV-1916)
production of heat sources of, by neutron irradiation method, 22:33606
production of highly unstable, comparison of methods for, 22:30113
production of monodisperse aerosol-incorporated, for inhalation studies, 22:43300 (AERE-PR/HPM-12)
production of neutron-deficient, by irradiation of rare earth complexes of DTPA with high-energy protons, 22:40105 (JINR-P12-3887)
production of short-lived, design of circulating liquid metal target for proton synchrotron for, 22:30115
production of short-lived, for use in biology and medicine, 22:27742 (BNL-12405)
production of short-lived, generator for, 22:33611
production of short-lived, generator model for, 22:23228
production of short-lived, milking system for, 22:2091 (BNL-11849)
production of short-lived, portable antimony--beryllium neutron source for, 22:14699
production of short-lived, using photonuclear reactions, (E), 22:39552 (RPI-328-123, pp 64-72)
production of, chemicals and radiochemical quality control in, 22:4212
production of, description of methods for, 22:37939 (WASH-1095)
production of, French programs for, 22:8314
production of, use of silicate ion exchangers in, 22:139 (HMI-B-54)
production, applications, and availability of, bibliography on sources of information on, 22:10504 (ORNL-IIC-12)
properties for use as heat sources in thermoelectric generators, review of, 22:12547
properties for use as heat sources, tabulation of, 22:14729
properties for use in electric energy generation, 22:6543
properties of beta-emitting, for recoil polarization measurements, 22:7744 (NYO-2028-2, pp 121-7)
properties of natural and synthetic, discussion of, 22:25911
purchasing and distribution in Commonwealth, procedures for, 22:49324(R) (NP-17266)
purification by solvent extraction, standard addition method for, 22:23116
purity of, methods for control of, 22:4212
quality control of, 22:14433 (ORNL-4196, pp 66-89)
radiation dose from, method and unit for calculation of permissible, 22:45547
radiation intensity distribution from, device for measuring and displaying, 22:23362(P)
radiation monitoring of packages used for transportation of, 22:45567
radiation protection of personnel and public from, during demonstrations, 22:45584
radioactivity growth-decay data from, least square analysis of, 22:33634 (AD-665666)
reactions with organic compounds, 22:12798
recovery from wastes at West Valley fuel processing plant, 22:27859 (NP-17418)
regulations for shipping of, IAEA, 22:17025
regulations of licensing and use of, recommendations of Radioisotopes Licensing Review Panel on, 22:31098
removal from fabrics by various solvents, 22:6794 (CEA-R-3159)
removal from skin of man, testing of detergent mixtures for, 22:6820
removal from surfaces, efficiency of water vapor jet for, 22:31114
research in beneficial applications of, 22:51875 (TID-4060(1st Ed.))
research on short-lived beta-emitting, 22:30112
research on short-lived beta-emitting, conference on, 22:30111
research on short-lived, using on-line isotope separator, (E), 22:20646
research progress on, in Japan, 22:30420
retention stability on rocks, kinetic studies of, 22:16802
sampling of short-lived activation, in stack effluent of BGRR, 22:16266 (BNL-12169)
scintiscanning in human organs, 22:40804
separation and chemical identification of short-lived, method for continuous, 22:40051(T) (ANL-Trans-632)
separation by evaporation in vacuum, 22:23096 (INP-584/PL)
separation by precipitation with isomorphous and nonisomorphous carriers from fused salts, 22:10346
separation by zone electrophoresis on paper, 22:33492
separation from corrosion products in reactor coolant circuit, 22:19343
separation from cyclotron target material by evaporation in vacuum, 22:40203
separation from cyclotron-irradiated targets by evaporation in vacuum, 22:23096 (INP-584/PL)
separation from liquid wastes, review of processes for, 22:27878
separation from low-activity effluents, 22:37829 (CEA-N-856, pp 57-70)
separation from milk by ion exchange, studies of cation resin composition for, 22:42821
separation from radioactive waste by solvent extraction, 22:16694
separation from radioactive wastes, facilities at Richland, Washington for, 22:8260
separation from solid waste by elution, theoretical considerations of, 22:51079
separation of fission product decay isobaric, TRISTAN system for, 22:49023 (IS-1893)
separation of gaseous, electromagnetic method for, 22:37938 (ORNL-4271)
separation of short and medium half-life, from radioactive waste by precipitation, 22:27886
separation of short-lived, from fission products, methods for, 22:21162
separation of trace amounts of, design of automatic chromatograph for, 22:14571
separation of, electrophoretic method for, 22:33525
separation of, evaluation of materials for ion-exchange, 22:33552
separation of, rapid radiochemical methods for, 22:27890
separation of, survey of on-line equipment for, 22:28028
separation of, use of IRR-1 reactor with mass spectrometer for, 22:28029
separation of, use of thin-layer chromatography for, 22:4004
shipping container for highly radioactive, testing of, 22:49062
shipping container for, design of closed, 22:23251(P)
shipping containers for, advantages and economic aspects of laminated uranium, 22:45264 (KY-D-2554)
shipping of low-activity, regulations for railroad, 22:298
shipping of, bibliography on Atomic Energy Commission customer list for, 22:19047 (ORNL-IIC-13)
shipping of, design of cart for, 22:25583
shipping of, design of containers for, 22:43017 (DUN-4250)
shipping of, evaluation of IAEA regulations for Type A containers for, 22:47307 (EUR-3485(Vol.2))
shipping of, hazard classification for, 22:28040
shipping of, IAEA definition of competent authority role in, 22:28039
shipping of, IAEA packaging requirements for, 22:28042
shipping of, IAEA regulations on, 22:28056
sorption by metal surfaces, review on, 22:35767(T) (AEC-tr-6776)
sorption in soils from burial of low-level wastes, measurement of, 22:2327(T) (JPRS-42565, pp 1-11)
sorption of, participation of oxyhydrate collectors and cationic microcomponents in, 22:10347
sorption on platinum surfaces, effects of passivation on, 22:21072
specific activities of Z = 88 to 104, (T), 22:44725
spectra analysis and identification of, development of computerized system for, 22:30898
spectra of, hyperfine structure from optically excited states in, 22:37717 (UCRL-17989, pp 159-66)
stability of short-lived, 22:14525
stability of solutions containing, methods for checking, 22:14681
standardization methods for, at Atomic Energy Establishment Trombay, 22:6547
standardization of beta-emitting, efficiency tracing technique for absolute, 22:27546 (PEL-162)
standardization of, by 4π β--γ coincidence technique, 22:6618
standardization of, emitting delayed gamma rays, use of anticoincidence methods for, 22:14769
standards for common, availability of, 22:16777
standards of, users' guide for, 22:33474 (NP-17502)
storage and transport of, fire resistance of shielded containers for, 22:12496
technology, development and use of, 22:4586
toxicity for man, review of problems in protection against, 22:45583
toxicity of inhaled, in beagle dogs, 22:23400(R) (LF-38)
toxicity studies, computer based information processing and retrieval system for, 22:23407 (LF-38, pp 147-52)
toxicity to organisms, 22:51875 (TID-4060(1st Ed.))
trace impurities of short-lived, use of neutron activation analysis for determining, 22:4468
translocation in mammals, development of analog computer model for determining, 22:23502 (BNWL-SA-683)
transport by ground waters, effects of underground nuclear explosions on, 22:18913 (HNS-21)
transport by surface runoff, computer models of, 22:35937(R) (AD-661249)
transport by suspended river sediments, effect of clay minerals on, 22:4272 (TID-24140)
transport in animals of tropical rain forest,

22:49282(R) (PRNC-119)
transport in rivers, mathematical model for, 22:35924 (ORO-490-15)
transport in surface waters, effects of organic pollution on, 22:42849 (ORO-490-16)
transport through salt-marsh ecosystem, phosphorus-32 and zinc-65 tracer study of, 22:6773(R) (ORO-3238-3)
transport through soils, mathematical expressions for, 22:25843
uptake by algae, sessile method for measurement of, 22:43275
uptake by inhalation, equations for calculation of systematic retention and urinary excretion rate following, 22:30934 (RT/PROT-(67)15)
uptake by marine organisms for tracer studies of physiology, 22:19237(R) (NYO-1343-17)
uptake by marine organisms, (E), 22:12455(R) (EUR-3635)
uptake by microorganisms, 22:12798
uptake by organisms in environment of Savannah River Plant, 22:38253 (DP-MS-67-99)
uptake by rodents and plants in Nevada Test Site environs, 22:18963 (BNWL-481-1, pp 93-101)
uptake by skin of animals, method for determining, 22:49203
uptake from KAPL waste by aquatic organisms, 22:21497 (HW-43112)
uptake from soils by roots of plants, 22:43233
uptake of β-emitting, by plants, 22:2490
use as direct power source for heart transplants, (T), 22:36006
use as heat source for heating suits for swimmers in cold water, 22:47295(P)
use as heat source for heating suits of swimmers in cold water, 22:47296(P)
use as heat source for subliming solid propulsion system, 22:37947(P)
use as heat source in RIPPLE thermoelectric generator, UK program for development of, 22:8319
use as heat sources for thermoelectric generators, 22:42993
use as power source for heart pump, 22:10519
use as power source in mechanical heart for implantation in man, 22:30789
use as power source in thruster of Manned Orbital Research Laboratory, 22:246 (N-67-18580)
use as power sources in electric generators, European Nuclear Energy Agency study of, 22:8307
use as power sources in thermoelectric generators, conference on, 22:23227
use as sensing elements in automated balances, 22:4493
use as sources for radiopreservation of foods, Italian studies on, 22:8325
use as tracer for measurement of turbulent fluid flow, 22:21291
use as tracers for flow studies in industrial chemical processes, 22:14704
use as tracers for measurement of sediment movements in surface and sea waters, 22:19058
use as tracers in drilling, prospecting, and surveying for oil, 22:19050
use as tracers in evaluation of material flow in plants and natural systems, review of, 22:10508
use as tracers in Italian automotive industry, development of devices for, 22:8323
use as tracers in Italian metallurgical industry, 22:8324
use as tracers in Italian textile industry, 22:8321
use as x-ray emitter in spectroscopic analysis, 22:37668
use by pharmacists, training programs for protection against hazards from, 22:40722
use for analysis of thyroxine from animals, 22:36191
use for brain scanning, evaluation of, 22:47556
use for clinical determinations, short-lived, 22:25859 (UCLA-12-668, pp 1-28)
use for determination of ecology of rodents, 22:51445
use for diagnosis in organs of man, review of, 22:40758
use for diagnosis of kidney malfunction in chronic irradiated rabbits, 22:8576
use for endolymphatic therapy, of man, apparatus for, 22:33887
use for identifying aircraft, 22:43141(P)
use for measuring amino acid transport across membranes of human erythrocytes, use of β spectrometer with computer to analyze data from, 22:14931
use for medical research, 22:51306(R) (ORAU-106)
use for nondestructive testing of steel castings, 22:10501 (EUR-3645)
use for radiation sources in Czechoslovakia, 22:51337
use for soil physics and irrigation studies, conference on, 22:23135 (STI/PUB-158)
use for study of function and morphology of salivary glands, 22:36292
use for study of urine flow from kidneys, differentiation between functional and mechanical destruction by, 22:36293
use for surface area and roughness measurements, review of, 22:16789
use for therapy of brain tumors, 22:47585
use for therapy of human tumors, review of, 22:51679
use for therapy of vocal cord carcinoma, calculation of mathematical formulae for isodose patterns for, 22:49344
use in aerodynamic testing, 22:38126
use in agricultural entomology, review of, 22:47657
use in analysis and determination of steroids, 22:16476
use in assaying enzyme activity, review of, 22:44978 (NP-17585)
use in clinical and research facility, protection progra for, 22:49330
use in control and level gaging, 22:4366
use in development of petroleum industry products, 22:8320
use in diagnostic medicine, review of, 22:28605
use in food processing, 22:16782
use in forensic medicine, 22:38356
use in hydrology and applied geology, 22:8322
use in industrial processes, 22:36004
use in industry in Japan, 22:49232
use in industry, medicine, and research in Canada, 22:16638
use in industry, review of, 22:6247
use in industry, USAEC programs for, 22:6246
use in kinetic study of galvanic corrosion, 22:2575
use in labeling compounds, facility and equipment for, 22:30759
use in labeling copper to identify stolen wire, 22:1443 (ORNL-4196, pp 66-89)
use in measurement of movement of coastal sands, 22:51123
use in measurement of turbulent flow in rivers and artificial channels, 22:12554
use in measuring devices, development of international standards for, 22:8326
use in medicine, historical review of, 22:49426
use in medicine, review of, 22:36309
use in metal physics and metallurgy, 22:19053
use in Philippine Islands, review of industrial, 22:33201
use in phosphor-coated light source tubes, 22:23206(P)
use in plant root development studies, 22:6449
use in power generators, description of USSR, 22:27470(T) (JPRS-45100)
use in radiodiagnosis of urinary track diseases in man, review of advances in, 22:28602
use in research at Inst. of Nuclear Sciences, New Zealand, 22:10135(R) (NP-17190)
use in scanning, use of magnetic tapes for automatic entry of data on, into digital computers, 22:544
use in studies of metal complexes, 22:4138
use in study of polymer chemistry, 22:71
use in tracer method for measurement of mixer efficiency, 22:14721
use in tracer technique for engine wear measurement, 22:14684
use in tracer techniques for liquid flow measurements, accuracy and precision of, 22:14717
use in tracing ground water flow, 22:27915
use in x-ray fluorescence analysis, 22:2010
use of naturally occurring, in sedimentology, 22:30703
use of reactor produced, in medicine, review of, 22:43364
use of short-lived, in activation analysis, 22:12252
use of, at Tunisian CEA 1966-1967, 22:14875(R) (NP-17229)
use of, licensing and regulations for, 22:49028
uses as heat sources in power generators, European programs for, 22:49033
uses as tracers in geophysics and industry, 22:10507 (SGAE-IB/IA-15/1967)
uses for age estimation in archaeology and geology, 22:25522
uses for, development of, 22:22925
uses in aerospace, 22:37945
uses in aerospace waste reclamation and water systems, 22:37953
uses in agriculture, hydrology, industry, and medicine, IAEA research on, 22:16779
uses in chemical and petrochemical industries, 22:33275
uses in Czechoslovakia, France, Great Britain, and Soviet Union, 22:12546
uses in engineering geology and hydrology, 22:37944
uses in entomology, bibliography on, 22:12896 (STI/PUB-21/24)
uses in Foratom countries of western Europe, review of, 22:8310
uses in French industry, status of, 22:12545
uses in hydrological tracer techniques, review of, 22:18924
uses in hydrology in Australia, 22:30713
uses in IAEA member countries industry, 22:14683
uses in industrial analytical techniques, 22:4313
uses in industrial instrumentation in Spain, 22:14731
uses in industry, 22:22944
uses in industry and research, 22:23232
uses in industry and space, production and development of large-scale, 22:37939 (WASH-1095)
uses in industry and technology, review of, 22:42987
uses in industry, review of, 22:2315
uses in industry, review of, 22:30790
uses in industry, survey of, 22:14682
uses in Institute of General Chemistry, Warsaw, 22:4137
uses in iron ore processing, review of, 22:25623
uses in Israeli industry, review of, 22:23220 (IA-1128,

pp 160-8)
  uses in maritime radiology, bibliography on, 22:2254 (AED-C-25-01)
  uses in medicine, electronic equipment for, 22:19216
  uses in medicine, review of, 22:12879
  uses in mining, 22:12537(T) (AEC-tr-6723)
  uses in mixing and blending processes, 22:40329
  uses in space, review of, 22:8309
  uses in steel industry, 22:49040
  uses in textile industry, 22:30787
  uses in textile industry for oiling, sizing, waxing, and dressing of yarns, 22:21288 (EUR-3648)
  uses in USA oil field technology, review of, 22:14689
  uses in USSR oil field technology, 22:14690
  uses of cyclotron-produced, in medicine and research, 22:12878
  uses of short-lived, in generators for clinical use, 22:245 (BNL-11435)
  uses of, developments in, 22:16637
  uses of, educational program at Argonne National Lab. on, 22:4358
  uses of, review of industrial, 22:23226
  velocity in ground water, relation to ground water velocity, 22:16803

Radiological Monitoring
  see Radiation Monitoring

RADIOLOGY
  (The study and science of use of radiations (and radioisotopes) for their diagnostic or therapeutic values)
  see also Autoradiography
  see also Radiography, Biomedical
  see also Radiography, Industrial
  see also Radioisotope Scanning
  see also Radiotherapy
  bibliography on maritime, 22:35953 (AED-C-25-02)
  book: Medical Radiology, 22:25929
  book: Principles of Nuclear Medicine, 22:49411
  book: Progress in Radiology, 22:38392
  hazards of medical, to man, 22:49514
  hazards to mother and fetus during pregnancy, 22:4668
  medical use of, in New Orleans, 22:28534
  radiation dose to man and medical personnel during dental, methods for reduction of x, 22:38282
  radiation dose to personnel in, methods for reduction of, 22:43334
  research on, review of AEC, 22:21017
  use of three-dimensional scannograms in, 22:45649
  uses of radioisotopes in, review of, 22:12879

Radiolysis
  see Radiation Chemistry

RADIOMETERS
  (Devices for measurement of radiant energy by conversion to mechanical energy, e.g., vaned radiometer found in jewelry store window)
  design for detecting solar radio bursts, (E), 22:38648 (N-68-12859)
  design of microwave, for temperature monitoring in reactors, 22:2446 (BNWL-399)
  optical, research on, (R), 22:5416(R) (NP-17117)

RADIOMETRIC ANALYSIS
  (Quantitative chemical analysis for a radioactive component with a known specific activity, based on measurement of its absolute disintegration rate)
  book: Radiometric Titrations, 22:16469
  computer techniques in, 22:45006
  development for field determination of thorium, uranium, and potassium, 22:2414
  development for thorium, uranium, and potassium, 22:2413
  development with high-yield proportional counters and low-activity sources, 22:311 (ORNL-IIC-10(Vol.2), pp 944-62)
  equipment for, design of window assembly, 22:19181(P)
  film preparation for, 4π source-carrier, 22:4063(P)
  method for radioisotopes in lower stratosphere, 22:25527 (HASL-193, pp I.33-207)
  methods for measurement of weak β activity from sulfur-35 in blood plasma filtrates, anthracene cell, 22:51857
  methods for ore and rock compositions, 22:30709
  methods for simultaneous measurement of γ activity from chromium-51 and iodine-125 in blood samples, dual scaler, 22:51857
  methods in, 22:37678
  methods survey of, 22:30475
  methods using γ-ray spectrometry and computers, 22:37693
  performance for determination of patterns of iodine metabolism in man, whole-body, 22:28550
  principles in, review of, 22:40048
  sensitivity for trace characterization, 22:30478
  sensitivity of x-ray fluorescence analysis, influence of energy of primary radiation on, 22:42613
  separation of short-lived products of nuclear reactions in, 22:44973 (JINR-P7-3855)
  techniques based on substoichiometric separation, automation of, 22:40050
  trace characterization by, 22:30490
  use in biochemistry, review on, 22:25271
  uses in industry, 22:22944
  x radiation uses in, 22:33212

Radiometric Thickness Gages
  see Thickness Gages

RADIOMIMETIC SUBSTANCES
  (Imitating effects of radiation in biological systems)
  see also Alkylating Agents (Biological)
  see also Ethyl Carbamate
  see also Ethylenimine
  see also Mustard Gas
  see also Nitrogen Mustards
  see also Propylene Oxide
  see also Vincristine
  effects on chromosomes of Haplopappus gracilis, 22:31139
  effects on chromosomes of Vica faba, combined effects of inhibitors of DNA synthesis on aberrant, 22:47505
  effects on histamine content of tissues in rats, comparison of, to radiation and vibration effects, 22:25964
  effects on phytohemagglutinin-induced mitosis in lymphocyte cultures, 22:16996
  effects on reproductive capacity of male mosquitos, 22:52110
  effects on slime-producing mutant of Escherichia coli, 22:33795

RADIOMETRIC TESTING
  (Testing methods that employ penetrating radiation and a radiation detector)
  see also Densimeters
  see also Thickness Gages
  method for, review of French, 22:49035

Radiometric Well Logging
  see Well Logging

RADIOOPAQUE AGENTS
  see also Hippuric Acid, o-Iodo-, Sodium Salt
  see also Thorium Oxides ThO_2
  effects on bremsstrahlung- and γ-dose field measurements in water phantoms, 22:45630
  effects on iodine-131 and -132 uptake by human thyroid gland, biligrafin and urografin, 22:38340
  radiation effects on toxicity of, iodine-containing, to mice, acute x, 22:52112
  radioisotope-labeled, effects of, on resolution during radiography of urinary tract, 22:25957
  radium-224 contamination of Ixthor, 22:40709

Radiopasteurization
  see Radiopreservation

Radiophotoluminescent Detectors
  see Radiation Dosimeters, Photoluminescent

RADIOPRESERVATION
  see also Food Irradiation Facilities
  see also Radiosterilization
  bibliographies on techniques for, of fruits and vegetables, 22:599 (LS-173)
  bibliography on food, 22:38508 (AED-C-05-07)
  book: Radiation Preservation of Foods, 22:8670
  conference of AEC contractors on food, 22:17065
  design of industrial-scale facility for, of grain, γ, 22:4717
  development in USA, roles of government and industry in, 22:19464
  developments in commercial-scale food, review of, 22:14730
  developments in Member States of Eastern Bloc, review of, 22:27973
  economic aspects of, of foods, 22:4716
  effects on chemical reactions in food, 22:40990
  effects on spoilage microflora of fruits, 22:26019
  facility for grain, in bulk quantities, design of, 22:10902(P)
  food, directory of firms providing services for, 22:49664
  irradiator for seafood, operational guide for, 22:210(R) (TID-24016)
  legal aspects of food, 22:4726
  method for food, description of industrial, 22:47297
  methods for food, review of research on, 22:36424
  methods in combination with sorbic acid-coated wrappers for evaporated milk, γ, 22:43502
  regulation for food, in United Kingdom, review of, 22:17067
  regulations for, of food in United Kingdom, 22:43506
  research at Israel AEC, Jan.—Dec. 1967, 22:48806(R) (IA-1168)
  research at Puerto Rico Nuclear Center, 1967, 22:48807(R) (PRNC-121)
  research in various countries, review of, 22:45738
  research on, Div. of Isotopes Development, 1967, 22:47294(R) (TID-24349)
  research status on food, in Germany, 22:37628 (ISS-68/1)
  review of food, 22:52106
  use in food processing in the Netherlands, review of, 22:52066
  use in international food problems, review and recommendations on, 22:28727

RADIOPROTECTIVE COMPOUNDS
  see also Acetic Acid, Mercapto-, Sodium Salt
  see also AET
  see also Amines
  see also Amino Acids
  see also Benzoic Acid, p-(Hydroxymercuri)-
  see also Carbon Monoxides
  see also Cepharanthine
  see also Chlorpromazine
  see also Chromomycin A_3
  see also Cyanides

see also 1,3-Cyclohexanedione
see also 1,3-Cyclohexanedione, 2-Methyl-
see also Cysteamine
see also Cysteine
see also Cystine
see also 1,10-Decanediamine
see also Endotoxins
see also Epinephrine
see also Esculin
see also Ethylamine, 2,2'-Dithiobis[N,N-dimethyl-
see also Ethylamine, 2,2'-Thiobis-
see also 3,3',4,4',5,5',7-Flavanheptol
see also Formaldehyde Sodium Sulfoxylate
see also Gallic Acid, Propyl Ester
see also Glucans
see also Guanidine, 1,1-(Dithioethylene)di-
see also Guanidine, 2-(3-Mercaptopropyl)-
see also Hormones, Sex--chlorotrianisene
see also Indole, 3-(2-Aminoethyl)-5-methoxy-
see also Kallikrein--Trypsin Inhibitor
see also Lysozyme
see also Marinamycin
see also Mercapto Group
see also Methyl Sulfoxide
see also Methylamine
see also Metoclopramide
see also Neomycin
see also Nitriles
see also 1,9-Nonanediamine
see also Polysrobate 80
see also Pregna-1,4-diene-3,20-dione, 9-fluoro-11β,17,21-trihydroxy-16β-methyl, 17-Valerate
see also Propioamidine, 3,3'-Dithiobis-
see also Propiophenone, p-Amino-
see also Propiophenone, 3-Piperidino-
see also Propolis
see also Protamines
see also Pseudourea, 2-(3-Aminopropyl)-2-Thio-
see also 2H-Pyrido[4,3-b]indole
see also 2-Pyrrolidinone, 1-[4-(1-Pyrrolidinyl)-2-Butynyl]-
see also Pyruvaldehyde, 1-Oxime
see also Rutin, Tris(hydroxyethyl)-
see also Salsoline
see also Sodium Nitrites
see also Succinic Acid, [(Carboxymethyl)thio]-
see also 2-Thiazoline, 2-Amino-
see also Thiols
see also Tissue Extracts
see also Tryptamine
see also Tryptophan, 5-Hydroxy-
see also Urea, Seleno-
see also Wistarin
activity in animals, mechanisms of, 22:4656
Aktihaemyl, effects on survival of γ-irradiated mice, 22:38415
batylol, method for synthesis of, 22:51849
batylol, radioprotective effects of, on animals and man, γ and x, 22:51849
book: Early Radiation and Biochemical Reactions, 22:40612
book: Protection Against and Repair of Radiation Injuries, 22:25930
book: Radiation and Chemical Protection, 22:47574
criteria for development of chemical and physical, 22:51875 (TID-4060(1st Ed.))
curarizing effects of selected, in vitro study of, 22:31118
effectiveness in mice, in relation to redox potential of muscles, 22:25867
effectiveness of amino thiol-type, on bacteria during space flight, 22:28721
effectiveness of dithiocarbamate salts of pyridine and pyrimidine, in mice, 22:28579
effectiveness of soybean trypsin inhibitor as, on chicken embryos and young, γ, 22:51854
effectiveness of Thiola, for prophylaxis of leukopenia and radiation sickness in man, 22:38385
effects on animals, review of, 22:51829
effects on electromagnetic- and ionizing-radiosensitivity of tissues of man, 22:23673
effects on hematopoietic system and intestinal tract of dogs and rats, 22:25896
effects on irradiated animals, mechanisms of sulfur containing, 22:51485
effects on luminescence of uv-irradiated albumin solutions, 22:28298
effects on response of mammals to acute whole-body radiation, review of, 22:51801
effects on survival of x-irradiated mice, 22:533
effects on uv- and x-radiosensitivity of Escherichia coli, 22:36412
evaluation of, use of radioinduced loss of body weight in mice for, 22:8586
mercaptopropylamines, radioprotective effects of, on DNP, ionizing, 22:51798
MET, radioprotective effects of, on morphology of gonads and survival of rats, ionizing lethal, 22:31157
metabolism of sulfur-35 labeled, by cultured mammalian cells, effects of content, pH, and temperature on, 22:40771
methods for study of, criteria for evaluation of, 22:33944
organoselenium, protective effects on ATP and urease in x-irradiated mice, 22:25904
preparation of α-mercaptoacetamidines and derivatives for use as, 22:47120
preparation of MEA derivative, chemical, 22:525
protective effects of, on γ- and x-irradiated mice, 22:45629
radioprotective effects of, on frequency of chromosome aberrations in mice and rats, γ, proton, and x, 22:47554
reaction mechanisms for, in bacterial and mammalian cells, review of, 22:36419
reaction mechanisms of, bibliography on biochemical, 22:25902
Shir-Khecht, effects on survival of γ-irradiated rats, 22:49376 (CEA-R-3412)
statolon, radioprotective effects of, on mice, synergistic effects of auxin analogs on γ, 22:51671 (AD-644984)
synthesis of asymmetric disulfides for use as, 22:49425
use for therapy of experimental tumors of mice, x, 22:25878
vitamedin, protection against radiation sickness following therapy of head and neck tumors, 22:43381
Wobe-Mugos, effects on survival of γ-irradiated mice, 22:38415

RADIOSENSITIVITY
see also Photosensitivity
bibliography on cell, in relation to chromosome volume, 22:10854
bibliography on role of sulfhydryl groups in natural, 22:19372
control in Saccharomyces mutants, uv, 22:47519
determination for bacteria in food, evaluation of statistical methods for, 22:49675
determination for bromouracil substituted DNA, uv, 22:51838
determination for Ehrlich ascites tumor cells, effects of chromosome ploidy on x, 22:33790
determination for recovery systems in cells, 22:36178
determination for sheep and swine, effects of dose rate on γ, 22:49470 (CONF-680410-, pp 4.1-21)
determination for yeasts, effects of polysaccharide content on, 22:52019
determination in grasses, effects of genetic hybridization on x, 22:36407
determination in mice, effects of DMSO on, 22:45595
determination in plant seeds and seedlings in relation to taxonomic differences γ and x, 22:36411
determination of central nervous system, in rats, comparison of conditioned-reflex and labyrinth methods for, 22:15058
determination of uv, of pigment-free mutant of Nocardia minima, 22:45734
effects on behavior of rats, 22:33941
effects on oxygen enhancement ratios of Escherichia coli B mutants, 22:28715
effects on postradiation recovery of yeast cells, effects of cultivation conditions and nucleoprotein complexes on, 22:31290
enhancement in carcinosarcomas in rats, use of selective tissue oxygenation for, 22:10828
enhancement in Chlorella by continuous exposure during cell cycle, x, 22:12945 (NP-17125)
enhancement in cultured cells of heart of monkeys, effects of ionic strength of medium on, 22:15079
enhancement in mammalian tissues by free semiquinoid radicals, 22:47570
gamma, of Drosophila melanogaster, effects of age on, 22:2549
genetic control of uv and x, in mutants of Saccharomyces, 22:51491 (UCRL-18404)
heat treatment effects on x, of tomato plants, 22:49299
inhibition by dinitrophenol in L cells, x, 22:6749
inhibition by heterosis in mosquitoes, γ, 22:2545
measurement for silkworm embryos, effects of strain on x, 22:47501 (NP-17136)
measurement in rats in relation to oxygen uptake, 22:47547
measurement using nucleotide content and volume of chromosomes, 22:49641
measurements in tumor cells, x, 22:43424
mechanisms for role of oxygen in, physicochemical, review of, 22:15037
molecular, of DNA and DNP to ionizing radiation, factors influencing, 22:14955
plant, effect of species on γ, 22:8507
plant, in relation to chromosome, DNA, and nuclear volumes, 22:14905 (BNL-50057, pp 111-22)
prediction by DNA content and volume of nuclei in wheat, evaluation of, 22:43477
radiation dose effect on, of HeLa cell cultures, γ, 22:23491
radiation effects on, of animals, review of whole-body, 22:51955
radioinduced mutations for, in yeast, characterization of uv, 22:51542
relation of animal physiology to, 22:23657
relation of circadian clock to gamma, of mice, 22:23641
relation of nucleic acid content of bacteria to γ,

analysis of, 22:26008
relation of phylogenetic position of plants to plant, study of, 22:23682
relation to phylogenetic age in angiosperms and gymnosperms, 22:23675
relation to thyroid activity in goldfish, analysis of, 22:6872
research on, panel discussion of intestinal, 22:49554
role of DNA in, of bacteria, x, 22:45410
role of free radicals in, of seeds, 22:23424
transduction of gene controlling uv, in Escherichia coli by bacteriophages, 22:36235
use of pulse radiolysis in, 22:40126
variation among strains of mice, x, 22:17039
variation in mice, effects of age and strain on, 22:17037
variation in seed, effects of pH and temperature on γ and x, 22:17004 (RLO-353-15)
variations between circulating and peritoneal mononuclear leukocytes in mice, effects of continuous low dose-rate on γ, 22:576
variations in malignant tumors of man, effects of Ametohepazon on, 22:23582
variations in organisms following primary exposure, 22:8594 (CONF-670305-, pp 76-80)
variations in rats, effects of intrauterine irradiation on γ, 22:40875
variations of mice and rats, effects of circadian clock and season on, 22:36391

RADIOSENSITIZERS
see also Cyclohexanesulfamic Acid
Ametohepazon, effects on radiosensitivity of malignant tumors of man, 22:23582
methods for study of, criteria for evaluation of, 22:33944

RADIOSTERILIZATION
bibliography on microwave, of foods, 22:49672
code of practice for medical supplies and pharmaceuticals, 22:52068
code of practice for medical supplies and pharmaceuticals, 22:52069
conference on medical products, 22:52064 (STI/PUB-157)
design and performance of Ethicon facilities for, of pharmaceuticals, 22:4718
design of accelerator for, of medical supplies and pharmaceuticals, electron, 22:52073
design of facilities for, of medical supplies and pharmaceuticals, γ, 22:52072
developments in Member States of Eastern Bloc, review of, 22:27973
effectiveness for industrial supplies, electron, γ, and uv, 22:52113
effectiveness for medical supplies in comparison to ethylene oxide, 22:52078
effects on shrinkage and tensile strength of catgut sutures, electron and γ, 22:52092
effects on stability of aqueous solutions of atropine, lidocaine, and morphine, 22:52099
effects on stability of atropine solutions, 22:4721
facilities for medical supplies and pharmaceuticals, design and economics of γ, 22:52071
facilities for medical supplies and pharmaceuticals, design of γ, 22:52074
facility for medical supplies, design and operation of New Zealand, 22:48995
facility for, of medical supplies, design and economics of cobalt-60, 22:16744
facility for, of medical supplies, design of cobalt-60, 22:16741
gamma dose for, of medical supplies, 22:28725
medical products, activities of IAEA members in, 22:43498 (STI/DOC-10/72)
medical products, international code of practice for, 22:43498 (STI/DOC-10/72)
method for cabbage flies, γ, 22:40981
method for fascia lata transplants for repair of human eyelids, clinical evaluation of, 22:10901
method for frozen aortic valve homografts, β, 22:19465
method for medical supplies, description of industrial, 22:47297
method for soil columns for miscible displacement studies, 22:42989
methods for catgut, 22:15133
methods for medical supplies, γ, 22:52082
review of food, 22:52106
use for preparation of antigens, antitoxins, antitoxic serums, and vaccines, γ, 22:52084
use for preparation of vaccines against bacteria and viruses, α, γ, and neutron, 22:52086
use for preparation of vaccines against helminth parasites, x, 22:52085
use in agriculture and pharmacology, IAEA programs on, 22:6248
use in control of mosquitos, review of γ, 22:52110
use in food processing in the Netherlands, review of, 22:52066

RADIOTHERAPY
(Therapeutic use of radiations from external or internal sources)
see also Neutron Capture Therapy
see also Radioapplicators
accelerators for, electron and x-ray energy calibrations for betatron and linear, 22:43347 (ACRH-28, pp 111-25)
application of cell kinetics and differential radiosensitivity of cells to, 22:31131
betatron for electron, neutron dose measurements for 35-MeV Asklepitron, 22:51688
betatron for, description of Shimadzu 32-MeV, 22:53057
betatron for, dose distribution in 31-MeV, 22:24772
betatrons for electron, neutron dose from 35-MeV, 22:51687
bibliography of Soviet literature on, 22:4637
bibliography on cancer, 22:51672 (NP-16780(Vol.2))
book: Current Topics in Radiation Research, 22:40878
book: Medical Radiology, 22:25929
book: Nuclear Medicine-a Scandinavian Textbook, 22:45635
book: Progress in Radiology, 22:38392
book: Radiation Toxins: Their Nature and Role in the Biological Effect of High-Energy Radiation, 22:40944
book: Radioisotopes for Internal Application in Diagnostics and Therapy, 22:28620
book: Radium Dosage: The Manchester System, 22:45550
cobalt-60 unit for, collimator design for conformation teletherapy, 22:265
computer-based methods for dosimetry in treatment planning for external- and interstitial-source, 22:31067
control of radiation dose to man and medical personnel during, methods for, 22:4624
convergent irradiation technique for γ, development of, 22:45636
depth dose measurements in Presdwood, Presdwood with inhomogeneities, and water for electron-beam, 22:51693
design of apparatus for, of diseased tissues with minimum exposure of healthy tissues, 22:10821(P)
design of balancing ion chamber for stabilizing electron field homogeneity during electron, 22:51698
design of container for iodine-125 use in, 22:4662(P)
design of equipment for, of sunlight-deficiency diseases in underground workers, uv, 22:33837(T) (JPRS-41315, pp 26-35)
design of gamma source for short distance, 22:45651
design of moving table for large-field cobalt-60 γ, 22:27963
design of tantalum-182 wire for use in interstitial, 22:12890
development in Russia, 22:8568
development of equipment for human, review of, 22:31123
dose determination for gynecological, scintillation dosimeter for, 22:51264
dose determinations for γ, 22:31145
dose distribution in, effects of human anatomical irregularities on electron, 22:51578
dose for human leukemia, review of whole-body, 22:51773
dose to man from, 22:43457
dosimetry for γ, using electronic equipment, 22:51636
dosimetry for thoracic neoplasms, use of computer to determine γ, 22:508
dosimetry for, of humans, equivalent field principle application to computerized, 22:40670
dosimetry for, use of computers in γ, 22:8541
dosimetry in curved surfaces during, design of phantom for cesium-137 and cobalt-60, 22:8546
dosimetry in, use of cadmium sulfide detectors for, 22:6661
dosimetry in, use of slide rule for, 22:45568
dosimetry of cobalt 60, in cervical canal, uterus, and vagina, 22:25855
dosimetry planning for, of human cancers, mathematical analysis of, 22:49362
duties of safety officers in departments of, 22:51640
effectiveness of combined γ and x, on lung cancer of man, 22:40788
effectiveness of dose fractionation on, of rat neoplasms, 22:23648
effects on absorption in human intestine, 22:49547
effects on content of calcium, copper, potassium, sodium, and zinc in human blood, 22:45436
effects on human chromosomes, aberrant γ and x, 22:38243
effects on human neoplasms, effects of, on histology of bone marrow, 22:40930
effects on incidence of carcinomas in thyroid gland of man in relation to age, survey of, 22:15055
effects on malignant tumors of man, effects of Ametohepazon on, 22:23582
effects on man following mastectomy, combined effects of oxygen on, 22:40802
effects on man, development of pseudo-radiation reaction following, 22:51960
effects on morphology of the intestinal mucosa of man, x, 22:49562
effects on nervous system of human children, latent pathological, 22:43398 (NP-17495)
effects on oxygenation in osteosarcomas of mice, effects of dose fractionation on x, 22:43273
effects on properdin titer of human serum, 22:545
effects on recovery of dividing normal tissues in mammals, kinetic study of, 22:36389
effects on stomach and small intestine, incidence of β, γ, and x, 22:2550
efficiency of presurgical, of supraglottic larynx carcinomas, 22:45600
electron depth dose measurements in Rando phantom for,

22:51692
equipment and facility for, design of, 22:42949(P)
equipment and methods for human, review of, 22:51679
equipment for cancer, development of 32-MeV betatron, 22:53052
equipment for conformation, operation and dose calibration of 6-MeV linear accelerator, 22:36310
equipment for, cam production method for, 22:12501(P)
equipment for, control device for irradiation, 22:49006(P)
equipment for, design of digital control panel for cobalt-60, 22:51152
equipment for, use of betatron as, 22:32377
estimation of doses for radium-224, 22:38217
evaluation of chromium-51 seed implants for, of human tumors, 22:40777
evaluation of effectiveness of cervical cancer, using cytological methods, 22:19375
evaluation of heavy ions and pions for use in, 22:4646
evaluation of iodine-131-labeled analogs of 1,1-dichloro-2,2-bis(chlorophenyl) ethane for, of adrenal carcinomas, 22:10819
evaluation of neutron, clinical, 22:36299
evaluation of pion beams for, 22:8600 (CONF-670305-, pp 368-81)
evaluation of preoperative, of adenocarcinoma of endometrium, 22:45670
evaluation of radiation dose schedules for, equation for, 22:40684
evaluation of x, for malignant tumors in man by pathologists, 22:43382
hazards from use of radioisotopes for, reduction of, 22:51644
hazards to human surgery, 22:45705
hazards to man, evaluation of carcinogenic and leukemogenic, 22:45720
high-energy filters and protective devices for electron, 22:51694
legal aspects of use of Thorotrast in, 22:12780
management of neuroblastoma, in children of man, 22:43362
method for human neoplasms using dose fractionation of supervoltage x rays, 22:31153
method for psoriasis vulgaris, in man, evaluation of uv, 22:4650
method using interstitial implants of labeled microspheres, development of, 22:38380
methods for lymph node metastases, x, 22:45612
methods for lymphoma, in man, review of, 22:8573
methods for uniform large-area treatment, design of x-ray shielding for use in electron, 22:28615
neutron source for, design of, 22:43351
pendulous technique for, of hypopharyngeal and laryngeal malignant tumors, electron dose distribution measurements for evaluating, 22:51691
performance of 5-iododeoxyuridine- and thymidine-incorporated tritium for, of neoplasms, 22:17030
performance of conventional and supervoltage generators for, of human neoplasms, review of effects of preoperative treatment, hydrogen peroxide, and hyperbaric oxygen on, 22:28600
performance of modified γ irradiation facility for, 22:31156
performance of smaller Gravicert cobalt-60 γ sources in, 22:38353
principles of, review of biological, 22:40790
protection of personnel against hazards of, duties of safety officers in relation to, 22:51641
protection of personnel during, 22:23573
radiation alarm systems for rooms of patients during, 22:49374
radiation dose calculations during whole-body, γ or x, 22:8513 (CONF-670219)
radiation dose determinations for, computer based calculations for x, 22:43458
radiation dose distribution during electron, integral, 22:51682
radiation dose distribution during pendulum, use of computers to calculate γ, 22:49349
radiation dose distributions in moving-field, Atlas of isodose charts for, 22:51674 (STI/PUB-120(Vol.3))
radiation dose fields in, use of analog computers for calculation of, 22:45533
radiation dose schedule for radium, of malignant tumors, evaluation of, 22:43373
radiation dose to bone marrow of human patients during, from external sources or internal radioisotopes, 22:38322
radiation effects on mucosa and subcutaneous tissues during, electron, 22:51764
radiation effects on patients during, electron and x, 22:51760
radiation effects on skin and mucosa during, effect of dose fractionation on electron, 22:51762
radiation effects on skin and mucosa during, electron, 22:51763
radiation effects on skin of patients following, late electron, 22:51761
radiation hazards to man from, x, 22:21595
radiation protection during, NCRP report on, 22:23506 (NP-17328)
radiation source for, design of directional control device for, 22:228(P)
relative biological effectiveness of fast electrons in, effect of dose protraction on time factor of, 22:51759
remote effects of local irradiation in electron, 22:51899
research in cancer, 22:51875 (TID-4060(1st Ed.))
review of advances in, of human tumors, 22:51804
review of methods for, used in Soviet Union during past 50 years, 22:4638
review of use in medicine, 22:4651
safety procedures for use of accelerators for electron and x, 22:40687
shielding for fast neutron, design of, 22:8551
significance of delta-electrons to deep tissue, 22:51589
sources for, evaluation of cesium-137, cobalt-60, and x, 22:522
techniques for electron, of deep tissue tumors, 22:51752
training programs at Puerto Rico Nuclear Center, 22:23481(R) (PRNC-102)
use for treatment of malignancies, development of edema of extremities following, 22:40922
use in combination with surgery, review of, 22:47551
use of absorbers for decreasing beam energy during electron, 22:51696
use of californium-252 as interstitial source for fast neutron, 22:49375 (BNL-12409)
use of cesium-137 teletherapy units for, comparison of, with cobalt-60 units, 22:2519(R) (COO-245-7)
use of computers for planning cobalt-60, 22:36264
use of dose fractionation in, of inoperable lung neoplasm, x, 22:2524
use of dose-normalization factor for standardization of, 22:31185
use of electromagnetic waves for, physical factors in, 22:49442
use of electron beams for, of human carcinomas, 22:51700
use of electrons for, effects of tissue depth on, 22:51753
use of Evans Blue and lasers for, of carcinomas of man, efficiency of, 22:2529
use of external orthovoltage x and intraoral radium mold for, of carcinoma of buccal mucosa of man, 22:15039
use of fast neutron beams for, calculation of scattered radiation dose to man from, 22:31124
use of fast neutrons for, review of, 22:33939
use of heavy charged particle beams for, in deep tissues, 22:31177
use of hyperbaric oxygen in, of tumors, 22:31191
use of iridium-192 implants for internal γ, 22:43380
use of laser radiation for, of malignant tumors, review of, 22:43383
use of Linear Accelerator for, following methods for correction of asymmetrical x-ray beam, 22:31094
use of mesons for, design of facilities for, 22:49409
use of molded iridium-192 and radium implants for γ, review of, 22:45634
use of negative pions for, advantages and possibilities of, 22:33838 (LA-DC-9402)
use of negative pions for, of deep-tissue neoplasms, advantages and possibilities of, 22:31125
use of oxygenation with, of man, complications from, 22:36312
use of phosphorus-32 labeled-lecithin-ethiodol for, of lymphoma of man, 22:8564
use of preoperative, for malignant tumors in man, 22:38381
use of undecahydrododecaborate sulfhydryl anions in neutron capture, evaluation of, 22:51673(R) (NYO-3267-5)
use of wedge filters for, of human neoplasms, clinical indications and limitations of, 22:43365
uses of negative pion beams for, review of, 22:12891
uses of radioisotopes for, conference on, 22:25931
uses of radioisotopes in, review of, 22:12879
using high energy electrons, symposium on, 22:51681
yttrium-90-implant, for pituitary gland tumors, evaluation of, 22:31122
Radishes (Raphanus)
see Raphanus under Angiospermidae
RADIUM
see also Alkaline Earth Metals
abundance ratio to uranium in minerals, β-γ method for determining, 22:30728 (JEN-167-SIG/I-5)
activity of solutions of, design of alpha-scintillation chambers for counting, 22:16459
alpha activity from, in coal and fly ash from Pyrmont Power Station, Sydney, Australia, 22:12448
alpha emission by, effects of, on neoplasms in lungs of man, 22:28545
alpha emission by, effects of, on sheep following injection, latent pathological, 22:38427(R) (ORO-659)
alpha emission by, measurement in minerals to determine uranium migration rates, 22:33574
applicators of, leak testing of encapsulated, (E), 22:6814
assay at nanoCurie levels in man by whole-body counting of low-energy photons, efficiency of, 22:51579
book: Radium Dosage: The Manchester System, 22:45550
book: Uncommon Metals, 22:10981
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)

content in chernozem soils from Romania, 22:30690 (IFA-IS-49)
content in Estonian ground and surface waters, 22:25509
content in ground waters of artesian basins of middle Asia, 22:18944
content in ground waters of Pripyat basin of Soviet Union, 22:27905
content in ground waters, use as geochemical oil indicator, 22:12433
content in Japanese rivers, 22:2206
content in midwest USA drinking water, 22:2208
content in phosphate rocks, radiation hazard from, 22:21193
content in Polish granites, 22:30702
content in rocks, effect on radon content in ground waters, 22:8211
content in surface streams from uranium ore processing plant, effects of pH on, 22:25477
content in surface streams from uranium ore processing plant, effects of inorganic salts on, 22:25478
content in suspensions and water in Indian Ocean, 22:10406
content in Swedish building materials, 22:12429 (NP-17230)
content of bones of man, 22:2506(R) (NYO-3086-7)
corrosion resistance of nuclear materials containing, 22:31357
crystal chemistry of, 22:2018(R) (BMwF-FBK-67-76)
decay products of, hazards to man from, 22:12779
deposition in bone, carcinogenic effects of, 22:4619
determination of, procedures for geochemical, 22:48812 (CEA-R-3557)
diffusion in minerals, neutron activation method for determining, 22:33577
distribution between solid and liquid phases in synchronized precipitation with barium iodate or oxalate, 22:40096
distribution in Pacific Ocean, vertical, 22:42895 (CU-2663-9, App.E)
distribution over Indian Ocean floor, (E), 22:25553
effects on bladder, intestine, and parametria following therapy of cervical cancer, 22:49423
effects on cancer of mouth in man, methods for protection of healthy tissues during therapeutic, 22:49364
effects on cervical cancer in man, development of hydronephrosis following, 22:47597
effects on cervical carcinomas in man, complications following, 22:15027
effects on chromosomes of medical personnel, aberrant, 22:45475
effects on cobalt-60 γ- and x-radiosensitivity of cervical carcinomas in man, 22:15028
effects on human chromosomes, effects of therapeutic exposure on aberrant, 22:38244
effects on human lymphatic system following therapy for cervical cancer in comparison to surgery, 22:49627
effects on incidence of rectal lesions following uterine cancer therapy, 22:2550
effects on intestine following use for therapy of carcinoma of endometrium, 22:2551
effects on man, hazards of leukemia from, 22:12853
effects on man, review of early history of pathological, 22:31254
effects on solubility of aerosols, 22:10766
effects on uranium distribution in pitchblende, 22:33577
effects on urinary excretion of deoxyribosides and nucleases following therapy of cervical carcinoma, 22:28325
enclosure of applicators of, for therapy, use of malleable silicone for, 22:45652
fixation by zeolites, 22:37834 (EUR-3452(Vol.2))
gamma emission by implants of, carcinogenic effects of, on large intestines of man, 22:28639
gamma emission by, absorption of, in water phantoms, 22:512
gamma emission by, detection and rectal measurement of, during implant therapy, 22:51610
gamma emission by, effects of, on anal cancer, development of complications following therapeutic, 22:51974
gamma emission by, effects of, on carcinomas in uterus of man, development of bladder malfunctions following therapeutic, 22:28569
gamma emission by, effects of, on carcinomas of vagina in man, therapeutic, 22:40737
gamma emission by, effects of, on frequency of chromosome aberrations in leukocytes of luminous dial painters, 22:28438
gamma emission by, effects of, on human skin, effects of age and sex on, 22:47614
gamma emission by, effects of, on intestines of man, 22:51887
gamma emission by, effects of, on man, latent carcinogenic, 22:51825
gamma emission by, effects of, on nervous system of man following therapy, 22:51795
gamma emission by, effects of, on sheep following injection, latent pathological, 22:38427(R) (ORO-659)
gamma emission by, effects of, on vaginal carcinomas in man, development of bladder injuries during therapeutic, 22:28563
gamma emission by, protection of pregnant medical personnel against, 22:25841
gamma emission by, use of, for therapy of uterine carcinomas in man, 22:28583
gamma emission from, effects of, on growth rate of HeLa cells and roots of Vicia faba, 22:40874
hazards to medical personnel during use of, 22:23573
hazards to personnel painting dials, 22:23545
insertion of needles of, in man, method for, 22:546
metabolism in man, power function for calculation of retention time following multiple injections, 22:51368
metallurgical properties of nuclear materials containing, 22:31357
occurrence in peat, effects of ionic bonds and alkaline earth elements on form of, 22:33566
physical properties and thermal treatment of nuclear materials containing, 22:31357
precipitation with barium iodate or oxalate, 22:40096
radiation dose from implants of, to lymph system of man during therapy of gynecologic tumors, computer calculation of γ, 22:40676
radiation hazards from therapeutic use of, duties of safety officers in relation to, 22:51641
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radon leakage from therapeutic sources of, technique for detection of, 22:2515
sealed sources of, methods for leak testing of, 22:51182
separation from actinium by reversed-phase extraction chromatography, 22:14576
separation from actinum, thorium, and uranium by ion exchange, 22:42019(R) (MLM-1494)
separation from barium by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
separation from colloidal thorium hydroxide by recoil techniques, 22:48895 (CEA-R-3493)
separation from irradiated thorium target, chromatographic, 22:33516
separation from process waste by solvent cation exchange, 22:33208(R) (MLM-1456)
separation from thorium by residue adsorption, 22:18738(R) (MLM-1417)
separation from uranium ores by coprecipitation with barium and fatty acid, 22:23124(P)
shipping of, design of reusable container for, 22:47277
sorption by peat, 22:8209
sterilization of sources of, effects of peroxyacetic acid on, 22:40980
storage of sealed therapeutic sources of, 22:51614
supplies in Australia, care and maintenance of, 22:49324(R) (NP-17266)
therapy of malignant tumors, evaluation of dose schedule for, 22:43373
toxicity in sheep in comparison to strontium-90, 22:40829 (ORO-657, pp 18-34)
uptake by human skeleton, 22:38491
use for contact therapy of angiomas in human children, 22:49453
use for implant therapy of human anal carcinomas, 22:51845
use for interstitial therapy, 22:535
use for removal of facial hair, development of carcinomas, dermatitis, epitheliomas, and osteoradionecrosis following, 22:31160
use for therapy for cancer of cervix in man, arrangement and dosimetry of source for intracavity, 22:28547
use for therapy of adenoid cystic carcinomas in man, combined effects of surgery on, 22:8587
use for therapy of benign and malignant tumors in human children, development of deformed and shortened bones following, 22:31151
use for therapy of carcinomas in mouth of man, effects of dose on development of mucositis and ulcers following, 22:40803
use for therapy of carcinomas of cervix and endometrium in man, development of bowel injuries following, 22:51766
use for therapy of carcinomas of ovaries and uterus of man, effects of, on bladder, rectum, and skin, 22:31163
use for therapy of carcinomas of the genitals of man, effects of, on activity of serum enzymes, 22:31103
use for therapy of carconomas in human cervix, effects of dose on development of complications following, 22:47599
use for therapy of cervical and vaginal carcinomas, effects of, on blood coagulation, 22:45465
use for therapy of cervical cancer in man, incidence of leukemia following, 22:33858
use for therapy of cervical carcinoma, development of proctosigmoid injuries following, 22:45619
use for therapy of cervical carcinomas in man, development of bladder complications following postoperative, 22:31133
use for therapy of endometrial carcinomas, development of fistulas following, 22:6887
use for therapy of gynecological diseases of man, protection of personnel during, 22:28461
use for therapy of gynecological tumors of man, care of patients following, 22:45599
use for therapy of human bladder tumors, development of bladder and urinary tract complications following

- intracavitary, 22:31152
- use for therapy of neoplasms in man, chemical protection of skin during, 22:28549
- use for therapy of oral neoplasms in man, 22:36196
- use for therapy of tumors, shielding problems during, 22:47540
- use for therapy of uterine carcinomas, design of colpostat for use in, 22:28590
- use for therapy of vaginal carcinoma, development of complications following, 22:6888
- use for therapy of vascular malformation of human skin, 22:51825
- use in equilibrium with its decay products, for energy and total peak efficiency calibration of germanium gamma spectrometers, 22:36096
- use of mold of, for intraoral radiotherapy of cancer in man, 22:15039
- use of molded implants of, for therapy, review of, 22:45634

RADIUM BROMIDES
- crystal structure of, 22:25326 (NP-17364)
- crystal structure of, 22:37761
- preparation of, 22:37761
- preparation of, 22:25326 (NP-17364)

RADIUM CARBONATES
- crystal structure of, 22:25326 (NP-17364)
- preparation of, 22:25326 (NP-17364)

RADIUM CERATES
- crystal structure of, 22:25326 (NP-17364)
- preparation of, 22:25326 (NP-17364)

RADIUM CHLORIDES
- crystal structure of, 22:37761
- crystal structure of, 22:25326 (NP-17364)
- oxidation of radium-226-labeled, separation of radon from, 22:33523
- preparation of, 22:37761
- preparation of, 22:25326 (NP-17364)

RADIUM FLUORIDES
- crystal structure of, 22:25326 (NP-17364)
- crystal structure of, 22:37761
- preparation of, 22:37761
- preparation of, 22:25326 (NP-17364)

RADIUM FLUOROBERYLLATES
- crystal structure of, 22:25326 (NP-17364)
- preparation of, 22:25326 (NP-17364)

RADIUM IODIDES
- crystal structure of, 22:37761
- crystal structure of, 22:25326 (NP-17364)
- preparation of, 22:37761
- preparation of, 22:25326 (NP-17364)

RADIUM ISOTOPES
- content in Romanian mineral waters, effects of rock structure on, 22:27896 (IFA-IS-44)
- distribution in soils, waters, and plants of Indian monazite areas, 22:6440
- dosimetry in bones of man, factors affecting, 22:10761 (MIT-952-4, pp 132-201)
- emissions of, effects of, on biological materials, 22:23667
- metabolism in bone, effects of hydroxy apatite on, 22:45459

RADIUM ISOTOPES Ra-206
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-207
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-208
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-209
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-210
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-211
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-212
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-213
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-214
- alpha decay of, α energy and half-life for, (E), 22:9854 (JINR-P7-3613)

RADIUM ISOTOPES Ra-223
- alpha decay of, α--γ coincidence and angular correlation studies of, (E), 22:11947 (MIT-952-4, pp 220-66)
- alpha spectra of, use of semiconductor spectrometer for determining, 22:38060 (CONF-670545, pp 88-95)
- distribution in man following intravenous injection, 22:36213
- energy levels from alpha decay of thorium-227, (E), 22:11947 (MIT-952-4, pp 220-66)
- energy levels from thorium-227 decay, (E), 22:44692
- energy-level transitions from thorium-227 decay, (E), 22:35303
- gamma spectra of, line intensities in, (E), 22:44746
- internal conversion electron spectrum from thorium-227 decay, (E), 22:11944(R) (AECL-2780)
- uptake and elution by powdered rat bone, mechanism and rate of, 22:8455

RADIUM ISOTOPES Ra-224
- activity ratios in alpha decay of thorium-228, gamma spectrometric determination of, 22:48564
- alpha emission by, effects of, on radiation dose to man following injection of Ixthor, 22:40709
- content in human bones and teeth in New England, 22:2220
- content in tissues, gamma spectroscopy method for determining, 22:49099
- content of Ixthor, effects of, on radiation dose to man following intravenous injection, 22:40709
- energy-level transitions from thorium-228 decay, conversion coefficients for, (E), 22:30024
- energy-level transitions in, total internal conversion coefficients for E2, (E), 22:50611
- gamma emission by, effects of, on radiation dose to man following injection of Ixthor, 22:40709
- metabolism by man, 22:38217
- neutron strength functions for, calculation using deformed nucleus optical model, 22:27093
- range of recoil, in isotropic stopping materials, (E/T), 22:34263
- recoil from alpha decay of thorium, 22:48895 (CEA-R-3493)
- toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
- use for therapy, determination of doses for, 22:38217

RADIUM ISOTOPES Ra-226
- alpha emission by ingested, pathological effects of, on man, 22:38428 (UCRL-18140, pp 197-212)
- alpha emission by naturally-occurring, dose to human bone from, 22:8552
- alpha emission by, effects of, on chromosomes in bone marrow of rats, internal, 22:51945
- alpha emission by, effects of, on frequency of chromosome aberrations in bone marrow cells and leukocytes of man, 22:28441
- alpha emission by, effects of, on synthesis of androgens in beagles, 22:43244
- alpha emission by, tumorigenic effects of, on bones of dogs, 22:47581
- body burdens in Brazil, 22:6770(R) (NYO-3273-9)
- bremsstrahlung emission by, in man, gamma spectra in range of, 22:8556
- contamination incident in Iowa, 22:40700
- content and distribution in human skeletons in Wisconsin during 1957 to 1961, 22:38267 (UCRL-18140, pp 175-95)
- content and distribution in Maryland tobacco-growing soils, 22:37877 (UCRL-18140, pp 145-58)
- content in Atlantic and Pacific Oceans, 22:4294
- content in French mineral water springs, 22:48932
- content in human bones and teeth in New England, 22:2220
- content in Illinois soil, measurement of radioactivity from, 22:171 (PHS-999-RH-26)
- content in low-level samples, determination of, 22:2377
- content in man after occupational exposure, gamma-spectra analysis techniques for determining, 22:4458(R) (NYO-3136-4)
- content in man, mobile acclimation room for detection of low, 22:45283 (PHS-999-RH-31)
- content in Romanian mineral water springs and sediments, 22:14584
- content in seawater, effect of river inflow on, 22:8232 (ORO-2411-8)
- content in soils on Niue Island in south Pacific Ocean, 22:37878
- content in surface seawater, 22:10404 (CU-3139-1(App.A))
- content in urine of man, method for determination of, 22:40717
- content of bone, muscle, and rumen of caribou and reindeer in Alaska, 22:10776
- content of bones and food, ratio of, to calcium, 22:43305(R) (NYO-2753-6)
- content of bones of children, 22:493(R) (NYO-2753-5)
- content of bones of man, radiographic determination of, 22:10760 (MIT-952-4, pp 1-131)
- content of bones samples in Japan during 1966, 22:4605 (NP-17083)
- content of diet of children in 1966, 22:28523
- content of diet of children in United States during 1965, 22:28522
- content of honey in Roumania, 22:15011
- content of human diet in U. S. during 1966, 22:28519
- content of human diet in U. S. during 1966, 22:28517
- content of human teeth as estimate of content of bones, 22:51627
- content of institutional diets in U. S. during 1966, 22:23520
- content of institutional diets in United States during Jan. to March 1967, 22:28506
- content of living environment, 22:43301 (AERE-R-5474)
- content of man, use of log-normal function for stochastic model of, 22:8545
- content of shellfish, FRC, ICRP, and NCRP standards for, 22:23513
- content of Swiss population during 1964, effects of age, locality, and sex on, 22:21500
- content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)

content of water, state and territorial regulations and standards for, 22:28504
counting in man, performance of whole-body counters for, 22:28483
deposition in aorta of man, 22:38198 (UCRL-18140, pp 159-73)
determination in pitchblende using solvent extraction and ion exchange, 22:37676
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
determination in water, method for, 22:2415
determination in water, methods for, 22:2210
distribution in aquatic ecosystem, 22:47498
distribution in Caribbean deep waters, areal and vertical, 22:192
distribution in ground water near Great Salt Lake, 22:2209
dosimetry of, calibration of standard chair geometry for, 22:21460(R) (COO-1171-82)
effects on bones of dial painters, late pathological, 22:38417 (ACRH-1000-59)
effects on man, carcinogenic, 22:10760 (MIT-952-4, pp 1-131)
effects on radiation body burdens of man, 22:33800 (A-AC-82/G/L-1182)
excretion in urine by man, methods for calculation of safe limits of, 22:6811
gamma decay, (E), 22:20662
gamma dose to man from deposited, calculation of, use of mathematical model using radon-222 content of breath for, 22:31090
gamma dose to tissues following single administration of, to organisms, 22:31061 (NP-17201)
gamma dosimetry for interstitial and intracavitary sources of, 22:31105
gamma dosimetry for interstitial implant sources of, 22:31087
gamma emission by ingested, pathological effects of, on man, 22:38428 (UCRL-18140, pp 197-212)
gamma emission by, effects of attenuation in water on dose to human tissues during interstitial or intracavitary therapy using, 22:33827
gamma emission by, effects of, on chromosomes in bone marrow of rats, internal, 22:51945
gamma emission by, effects of, on synthesis of androgen in beagles, 22:43244
gamma emission by, tumorigenic effects of, on bones of dogs following injection, 22:47581
gamma spectra of, 22:14576
half-life and type of decay of, 22:42698
handling of, equipment for, 22:14476 (BMwF-FBK-67-87)
leak testing of sealed sources of, use of photographic film for, 22:38306
metabolism in skeleton of man, effects of age and diet on, 22:28305
metabolism, use of whole-body counters to study, 22:43300 (AERE-PR/HPM-12)
metabolisms in skeleton of dogs and man, 22:30991
neutron fission at 3 to 15 MeV, cross section and fission-fragment angular distribution for, (E), 22:24870
neutron reactions with, actinium-227 production by, 22:18738(R) (MLM-1417)
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
photofission at 9 to 25 MeV bremsstrahlung endpoint energy, fission-fragment angular anisotropy and yield for, (E), 22:24875
proton fission at 13 MeV, neutron emission and fragment energy and mass distributions in, (E), 22:44738
proton fission at 6 to 13 MeV, fission-fragment angular and mass distributions in, (E), 22:44739
toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
toxicity in man, 22:10760 (MIT-952-4, pp 1-131)
uptake and retention by beagle dogs following oral administration, 22:10827(R) (UCD-472-114)
uptake and retention by teeth of man, effects of age and fluoride content of drinking water on, 22:8465
uptake by Brazil nut seeds and tree tissues, 22:21413
use for microradiography of bone cross sections to determine surface/volume ratio, 22:31003
use for therapy of neoplasms in man, incidence of neoplasms following, 22:23638
RADIUM ISOTOPES Ra-228
alpha emission by naturally-occurring, dose to human bone from, 22:8552
beta emission by, effects of, on synthesis of androgen in beagles, 22:43244
beta emission by, tumorigenic effects of, on bones of dogs, 22:47581
body burdens in Brazil, 22:6770(R) (NYO-3273-9)
content in hot spring waters in Japan, 22:6447
content in seawater, measurement of, 22:45205 (TID-24654)
content of bones of man, radiographic determination of, 22:10760 (MIT-952-4, pp 1-131)
decay products of, dosimetry of, following incorporation in mammals, 22:19331 (NP-17202)
effects on man, carcinogenic, 22:10760 (MIT-952-4, pp 1-131)
gamma emission by, effects of, on synthesis of androgen in beagles, 22:43244
gamma emission by, tumorigenic effects of, on bones of dogs following injection, 22:47581
gamma spectra of, 22:14576
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
production of, 22:14576
purification by residue adsorption, 22:18738(R) (MLM-1417)
radiochemical assay of plants for, in Brazil, 22:25829 (TID-24488)
recoil from alpha decay of thorium, 22:48895 (CEA-R-3493)
toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
toxicity in man, 22:10760 (MIT-952-4, pp 1-131)
uptake by Brazil nut seeds and tree tissues, 22:21413
Radium Isotopes (RaA)
see Polonium Isotopes Po-218
Radium Isotopes (RaB)
see Lead Isotopes Pb-214
Radium Isotopes (RaC)
see Bismuth Isotopes Bi-214
Radium Isotopes (RaC')
see Polonium Isotopes Po-214
Radium Isotopes (RaD)
see Lead Isotopes Pb-210
Radium Isotopes (RaE)
see Bismuth Isotopes Bi-210
Radium Isotopes (RaF)
see Polonium Isotopes Po-210
Radium Isotopes (RaG)
see Lead Isotopes Pb-207
Radium Needles
see Radioapplicators
RADIUM NITRATES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADIUM MOLYBDATES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADIUM OXIDES
crystal structure of, 22:25326 (NP-17364)
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
preparation of, 22:25326 (NP-17364)
Radium Plaques
see Radioapplicators
RADIUM SELENATES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADIUM SELENIDES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADIUM SULFATES
crystal structure of, 22:25326 (NP-17364)
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
preparation of, 22:25326 (NP-17364)
RADIUM SULFIDES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADIUM TUNGSTATES
crystal structure of, 22:25326 (NP-17364)
preparation of, 22:25326 (NP-17364)
RADON
see also Rare Gases
abundance in chondrites, 22:2727
activity in atmosphere over Indian Ocean, method and results for measuring, 22:6489
chemical properties of solutions of, 22:27725
condensation in meteorites, (T), 22:5023
content in air masses over Arabian Sea, during southwest monsoon season, 22:47247
content in atmosphere, diurnal variations in, 22:33562
content in atmosphere, effects of meteorological conditions on, 22:37882
content in gas released from volcano at Surtsey, Iceland, 22:42859
content in ground water, effects on chromium-51-EDTA tracer method of ground water flow measurement, 22:19075
content in ground-level atmosphere, effect of meteorological factors on, 22:30726
content in soil air, measurement by spectral analysis of, 22:51101
content in soils, method for measurement of, 22:23139
content in the atmosphere, effect of variations of release rate on, 22:4285
content in water and soil, closed circuit technique for determining, 22:6572
content of air exhaled by man, methods of determining, 22:33761
content of air in uranium mines, methods for measurement of, 22:45561
content of atmosphere in relation to incidence of foehn disease in man, 22:12852

  content of atmosphere in uranium mines, maximum permissible concentration for, 22:21539
  content of breath in man, 22:2506(R) (NYO-3086-7)
  content of breath of personnel in radium dial painting, 22:23545
  decay products of, accumulation in aerosols of neutral and electrically charged, 22:4226 (BMwF-FBK-67-78)
  decay products of, accumulation of, in natural aerosols and polystyrene aerosols, 22:37765
  decay products of, contamination of atmosphere by, 22:43342
  decay products of, in uranium mines, methods for determining content of, 22:19328(R) (COO-1500-5)
  decay products of, radiation dose from, to human uranium miners in relation to lead-210 content of bones, 22:31082
  decay products of, standards for protection against hazards in uranium mines from, 22:33824
  determination in air, evaluation of direct and indirect methods for, 22:48833
  determination of, procedures for geochemical, 22:48812 (CEA-R-3557)
  diffusion coefficients for rocks, instantaneous source method for measuring, 22:40220
  diffusion in the ground, distances and implications of, 22:2205
  diffusion through porous materials in plane and spherical geometries, 22:10355 (MIT-952-4, pp 300-38)
  effects on human eyes following therapy of eyelid tumors, 22:40905
  leakage from radium needles, plaques, and tubes, technique for detection of, 22:2515
  loss from radioactive minerals, measurement by α spectroscopy of, 22:6438
  measurement in air, 22:19342
  measurement in ground-level air, technique for, 22:27936
  radioactivity standards of, users' guide for, 22:33474 (NP-17502)
  reactions with alkali metal atoms, mixing in ^2P state in inelastic, (T), 22:29284
  sampling methods for, in Illinois atmosphere, 1966, (E), 22:8220(R) (COO-1199-14)
  separation from radium-226-labeled radium chloride in aged persulfate solution, 22:33523
  separation from xenon, 22:18688 (HNS-1229-57)
  sorption of decay products of, to polydisperse submicron polystyrene aerosols, mechanisms in, 22:51621
  sorption on activated carbon, effects of moisture on, 22:25503
  supplies in Australia, care and maintenance of, 22:49324(R) (NP-17266)
  uptake and distribution of decay products of, in guinea pigs following inhalation, 22:40602
  use for detection of geological faults, 22:14693
RADON CHLORIDES
  formation of, heat of, 22:16556
  properties and structure of, 22:16556
RADON FLUORIDES
  formation of, heat of, 22:16556
  properties and structure of, 22:16556
RADON IONS
  content in atmosphere, effects of altitude on, 22:51100
RADON ISOTOPES
  content in Romanian mineral waters, effects of rock structure on, 22:27896 (IFA-IS-44)
  content in Tashkent mineral waters, effect of earthquakes on, 22:8211
  decay of, distribution in atmosphere of products from, 22:37883
  decay products distribution in air, effects of aerosol particles on, 22:40264
Radon Isotopes (An)
  see Radon Isotopes Rn-219
RADON ISOTOPES Rn-219
  energy levels from alpha decay of radium-223, (E), 22:11947 (MIT-952-4, pp 220-66)
  gamma spectra of, line intensities in, (E), 22:44746
  gamma spectra, (E), 22:20656
  measurement in air, 22:19342
RADON ISOTOPES Rn-220
  activity in atmosphere over Indian Ocean, method and results for measuring, 22:6489
  activity measurements for determining thorium-228 content in natural materials, 22:2376
  beta spectra of, detection of very weak Auger lines in, 22:50619
  content in air at Cincinnati, Ohio, measurement of, 22:2236
  content in atmosphere, effects of altitude and electrical carriers on, (E), 22:51100
  content in Central Florida atmosphere, effects of rainfall on, 22:40209 (SC-RR-68-196)
  content in hot spring waters in Japan, 22:6447
  content in near-ground air, ratio with radon-222, 22:35945
  content in soil air, measurement by spectral analysis of, 22:51101
  content in soils, method for measurement of, 22:23139
  content in the atmosphere, effect of variations of release rate on, 22:4285
  content of breath in relation to thorium content of body, 22:15000 (NLCO-1007)
  decay of, distribution in atmosphere of products from, 22:37883
  deposition of inhaled, in organs of rats, effects of caging on, 22:2506(R) (NYO-3086-7)
  diffusion in helium, effects of temperature on, (E), 22:11022(R) (NYO-1710-71)
  dose to man in Brazil, measurement of, by breath analysis and whole-body counting, 22:25829 (TID-24488)
  dosimetry in atmosphere of Brazil, use of scintillation flask for, 22:25829 (TID-24488)
  filters for, effect of aerosol particle size on efficiency of, 22:215(T) (LA-tr-67-81)
  measurement in air, 22:19342
  preparation of α-sources of, from thorium-228, 22:36005
  radioactivity of, calibration technique for flowthrough detector for determining, 22:40372
  release rate of, effect on lead-212 concentration on changes in, 22:4285
  transfer from soil to atmosphere, measurement of, 22:45518
  uptake by man following inhalation, 22:33715 (SZS-15/67)
  use for measuring aerosol penetration into filtering layers, 22:25826 (CEA-R-3347)
  use for measuring aerosol penetration into filtering layers, 22:45503(T) (ANL-Trans-655)
RADON ISOTOPES Rn-222
  abundance at 4500 m above Atlantic, Antarctica, and Paris, 22:17511
  activity measurements for determining radium-226 content in low-level samples, 22:2377
  chemical properties of solutions of, 22:27725
  content in air at Cincinnati, Ohio, measurement of, 22:2236
  content in Atlantic and Pacific Oceans, 22:4294
  content in atmosphere in relation to daughter products, alpha spectroscopy method for determination of, 22:30722
  content in atmosphere, effects of soil freezing on, 22:40262
  content in Central Florida atmosphere, effects of rainfall on, 22:40209 (SC-RR-68-196)
  content in ground waters near Seoul, Korea, 22:27903
  content in Illinois atmosphere, corn, and soils, measurement of natural radioactivity from, 22:171 (PHS-999-RH-26)
  content in lower stratosphere, Project Airstream measurements of, Jan. 1968, 22:25527 (HASL-193, pp I.33-207)
  content in near-ground air, ratio with radon-220, 22:35945
  content in Romanian mineral water springs, 22:14584
  content in troposphere at Warsaw, effects of fog on, 22:23166
  content in urban-rural atmosphere, meteorological effects on, 22:16712
  content in western hemisphere lower stratosphere during Nov. 1967, 22:21202 (HASL-184, pp I.119-223)
  content of breath in relation to radium-226 content of man, 22:31090
  content of coal mines in England and Scotland, 22:48918
  content of Green and Round Lakes, Fayetteville, New York, 22:45182
  content of natural gas, NCRP regulations for, 22:25853
  determination in pitchblende using solvent extraction and ion exchange, 22:37676
  determination in water, method for, 22:2415
  determination in water, methods for, 22:2210
  diffusion from soil to atmosphere, effects of ice and water on, 22:40262
  distribution in atmosphere, methods for measuring, 22:2235
  distribution in deep Atlantic, Caribbean, and Pacific waters, determination of water mixing rates from, 22:42894 (CU-2663-9, App.D)
  distribution in ground water near Great Salt Lake, 22:2209
  distribution in ground-level air, relations with lead-210, 22:2237
  distribution in soil, effects of atmospheric variables on, 22:2231
  gamma dosimetry for interstitial implant sources of, 22:31087
  half-life and type of decay of, 22:42698
  implants of, effects of, on pituitary gland, 22:51298(R) (COO-1484-3)
  range and stopping power in aluminum, copper, lead, silver, uranium, and water, (T), 22:45926 (UCRL-18127)
  release by Galician soils, effects of clay content and soil profile on, 22:6826
  release by Galician soils, effects of, on lead content of native plants and soils, 22:6826
  release from uranium deposits, method for measurement of, 22:33567
  use for therapy of nasopharyngeal cancer in man, 22:49430
Radon Isotopes (Tn)
  see Radon Isotopes Rn-220
Rainier Burst
  see Plumbob Operation
RAINWATER
  analysis and sampling for lead-210, methods for, 22:2232

analysis for beryllium-7, lead-210, phosphorus-32, polonium-210, and strontium-90, 22:35750
analysis for plutonium, method for, 22:1945 (CEA-R-3220)
analysis for silver by neutron activation methods, 22:40002
analysis for strontium-90 by solvent extraction of yttrium-90 daughter using bis(2-ethylhexyl) phosphate, 22:30425 (AAEC/TM-421)
barium-140 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
beryllium-7 activity in, use in soil layer age estimation, 22:6458
beryllium-7 content in Toulouse, France, variations in, 22:183
beryllium-7 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
beta activity in New Zealand, October to December 1967, 22:42869(R) (NP-17523)
bromine washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
bromine washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
cerium-144 content in Illinois, during convective storms, 1963, 22:30727
cesium washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
cesium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
cesium-137 content in Australian, 1966 measurements of, 22:23169
cesium-137 content in Swedish, 1965 through 1966, 22:10374 (FOA-4-4495-28)
cesium-137 content of Danish, 1966, 22:10358 (RISO-155)
cesium-137 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
cesium-137 content of, in Greenland, 1966, 22:10359 (RISO-156)
cesium-137 content of, in Netherlands during 1964, 22:4616
cosmic ray-produced radioisotopes in, detection by γ spectroscopy of, 22:18961 (BNWL-481-1, pp 85-7)
deuterium content in Tokyo, 22:8227
deuterium content in, effects on isotopic composition of ground waters, 22:18927
development of amphibian larvae in radioactive, at Bikini and Nevada Test Site, 22:15049
drops of, charge measuring system for, 22:18957 (BNWL-481-1, pp 74-6)
effects on iodine-131 washout from midwest US atmosphere, 22:25541
effects on movement and supply of ground water in Venezuela, use of carbon-13 method to study, 22:18931
effects on strontium-90 washout of stratosphere, 22:33571
effects on washout of radioactive particles from atmosphere, 22:37886
fallout content in Australian, 1966, 22:8226
fallout content of Niigata City, Japan, from Chinese nuclear explosions, 1965 to 1966, 22:40270
fallout content of Niigata City, Japan, from Chinese nuclear explosions, 1963 to 1964, 22:40271
fallout content of surface, effects of vertical mixing of tropospheric air on, 22:47238 (COO-1199-15)
fallout content of, at Sydney, Australia, 1966, 22:8225
fallout content of, in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
fallout content of, in Denmark, 1966, 22:10357 (RISO-154)
fallout in, gamma-spectrometric identification of nuclides in, 22:23314
fission product content in, from May 1966 Chinese nuclear explosion, 22:10380
fission product content in, from October 1966 Chinese nuclear explosion, 22:10382
iodine washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
iodine washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
iodine-131 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
lead-210 and stable lead content relationships in atmospheric, 22:184
lead-210 content in New Zealand, 1967, 22:42870(R) (NP-17524)
lead-210 content in Toulouse, France, variations in, 22:183
lead-210 uptake from, by tobacco plants, 22:45422
manganese-54 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
monitoring for radioactivity, in Spain, 22:2224
movement in Kenya soils, use of neutron moisture meter for measurement of, 22:23151
movement in soils, iodine-131 tracer method for measurement of, 22:23155
oxygen-18 content in French, measurements of, 22:18934
oxygen-18 content in, effects on isotopic composition of ground waters, 22:18927
particle distributions and trajectories in collisions with, high-speed photographic studies of, 22:40248 (AECL-2787, pp 514-26)
polonium-210 content in Toulouse, France, variations in, 22:183
polonium-210 uptake from, by tobacco plants, 22:6830
radiation monitoring in Japan 1966, 22:10381
radiation monitoring of Ames Laboratory area, 22:48944 (IS-1924)
radioactivity content in Hungarian, from 1962 to 1964, 22:48946
radioactivity content in Japanese, measurements of, 22:33569
radioactivity in Illinois, relation to atmospheric content, (E), 22:8220(R) (COO-1199-14)
radioactivity in Indian, monitoring methods and results for, 22:6488
radioactivity in Japanese, after Oct. 1964 and May 1965 Chinese nuclear explosions, 22:14589
radioactivity in Japanese, April to June 1966, 22:2249
radioactivity in Japanese, April to June 1966, 22:2248
radioactivity in Japanese, during 1966, 22:27918
radioactivity in Japanese, from first Chinese nuclear explosion, 22:2246
radioactivity in Niigata City, Japan, 1960 to 1962, 22:30724
radioactivity in Swedish, effect of Dec. 1966 USSR underground nuclear explosion on, 22:12441 (FOA-4-4494-28)
radioactivity in, meteorological aspects of, 22:48950
radioactivity measurements in Japanese, April to June 1967, 22:48948
radioactivity measurements in UK, 1967, 22:12439 (AERE-R-5575)
radioactivity of central US, measurements of, 1962 to 1966, 22:18976
radioactivity of French, effects of fallout on, 1961 to 1965, 22:25538
radioisotope content of, during 1965, 22:28447 (ANL-7278, pp 304-13)
rhodium-106 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
ruthenium-103 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
scandium washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
scandium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
scavenging of atmospheric pollutants by, development of tracer technique to study, 22:40249 (AECL-2787, pp 553-66)
scavenging of contaminants from atmosphere by, tracer studies of, 22:47239(R) (COO-1407-20)
silver iodide washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
silver iodide washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
soil erosion by, use of tracer techniques to measure western Congo, 22:19065
strontium isotopic ratios in, Fayetteville, Arkansas, 1967, 22:8222(R) (ORO-2529-15)
strontium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
strontium-89 and -90 content in, at selected global stations, 1957 to 1967, 22:14588(R) (HASL-184(App.))
strontium-89 content in German, 1959 to 1967, 22:25533 (SZS-4/68)
strontium-89 content in New Zealand, October to December 1967, 22:42869(R) (NP-17523)
strontium-89 content of, in New Zealand during 1966, 22:6800(R) (NP-17015)
strontium-90 content in Ankara, Turkey, 22:181(R) (TAEC-D-5)
strontium-90 content in Australian, 1966 measurements of, 22:23170
strontium-90 content in German, 1959 to 1967, 22:25533 (SZS-4/68)
strontium-90 content in Illinois, during convective storms, 1963, 22:30727
strontium-90 content in New Zealand, 1967, 22:42870(R) (NP-17524)
strontium-90 content in New Zealand, October to December 1967, 22:42869(R) (NP-17523)
strontium-90 content in, at Atlantic Ocean weather stations, 1965 to 1967, 22:14588(R) (HASL-184(App.))
strontium-90 content of Danish, 1966, 22:10358 (RISO-155)
strontium-90 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
strontium-90 content of, in Greenland, 1966, 22:10359 (RISO-156)
strontium-90 content of, in Netherlands during 1964, 22:4616
strontium-90 content of, in New Zealand during 1966, 22:6800(R) (NP-17015)
tritium activity in southwestern France, measurement of, 22:18936
tritium content in France, measurement of, 22:18937
tritium content in French, measurement of, 22:18934
tritium content in Icelandic, measurement of, 22:18933
tritium content in New Zealand, measurement of, 22:18935
tritium content in, over North Pacific Ocean, 22:6506
tritium content of, in United States, 1964 and 1965, 22:37888
use of tritiated, for ground water movement studies, 22:18939

  washout coefficient for fallout in lower troposphere, 22:23171
  zirconium-95 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
Rajasthan Power Reactor (200 MWe)
    see RAPP Power Reactor
RAMAN EFFECT
  use in chemistry, review on, 22:25360
RAMJET ENGINES
    see also Pluto Reactors (Tory)
Rana Pratap Sagar Power Reactor
    see RAPP Power Reactor
RANA Reactor
    see Critical Assemblies
Rand Ores
    see Uranium Ores
RAPP POWER REACTOR
  site for, maximum permissible concentrations of radioisotopes in Chambal river near, 22:51558 (AEET/HP/R-13)
Rapsodie
    see Cadarache Reactors (Rapsodie)
RARE EARTH ALCOHOLATES
  preparation and properties of, 22:23002 (CONF-670502-, pp 392-402)
RARE EARTH ALLOYS AND SYSTEMS
    see also Misch Metal
  analysis for scandium by atomic absorption, 22:45023
  crystal structure, 22:23835
  crystal structure of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
  crystal structure, stability, and axial ratios, mathematical analysis of, 22:696
  electric conductivity of, effect of s-f exchange interaction between conduction electrons and localized spin on, 22:24394 (CONF-670502-, pp 471-81)
  electronic structure of, review of studies of, 22:44221
  heat treatment of, 22:14482 (ORNL-4196, pp 90)
  magnetic ordering temperatures of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
  Ni--rare earths, phase studies of intermetallic compounds of, 22:23822
  phase studies of, 22:705
  positron annihilation in single crystals of, photon angular distributions from, 22:24024 (CONF-670502-, pp 487-94)
  preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  properties and uses of alloys of, with non-lanthanide heat-resisting metals, 22:43525
  properties of, role of s-f exchange in electric and magnetic, 22:24394 (CONF-670502-, pp 471-81)
  Ag--rare earth, crystal structure and phase studies of, 22:36492
  Al--rare earth, magnetic dilution of, 22:9470
  Al--rare earth, magnetic properties of intermetallic compounds in, at 1.4 to 400°K, (E), 22:15600
  Al--rare earth, phase studies, 22:34071
  Al--rare earths, crystal structure of intermetallic compounds in, 22:2650
  Al--rare earths, magnetic susceptibility and Knight shift in, 22:29592
  Al-base--rare earth, tensile properties of solid solution, 22:34071
  Au--rare earth, crystal structure and phase studies of, 22:36492
  Be--rare earth, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
  Cd--rare earth, crystal structure and phase studies of, 22:36492
  Co--rare earth, magnetic behavior of cobalt in intermetallic compounds of, (T), 22:15598
  Co--rare earth, magnetic properties of intermetallic compounds in, thermal variations of, (E), 22:9479
  Co--rare earth, magnetic properties of intermetallic TCo_5, thermal variations of, (E), 22:9480
  Co--rare earths, magnetic properties of intermetallic compounds $RECo_3$ in, at 2 to 1000°K, 22:24392 (CONF-670502-, pp 295)
  Co--rare earths, preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  Cr--rare earths, preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  crystal structure of Fe_2P Type intermetallic compounds of, data tabulation, 22:43594 (ANL-7299, pp 251-64)
  Cu--rare earth, crystal structure and phase studies of, 22:36492
  Fe--Mn--O--rare earths, Moessbauer study of crystal and magnetic structure and quadrupole coupling in ionic compounds of, 22:7345 (NP-17133)
  Fe--rare earths, phase studies of intermetallic compounds of, 22:23822
  Fe--rare earths, phase studies of intermetallic compounds of, 22:23822
  Fe--rare earths, preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  Ga--Ni--rare earth, crystal structure of intermetallic compounds of, 22:43594 (ANL-7299, pp 251-64)
  Ga--rare earth, crystal structure and phase studies of, 22:36492
  Hf--Mo-base--rare earth--Ti--V, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
  Hg--rare earth, crystal structure and phase studies of, 22:36492
  In--rare earth, crystal structure and phase studies of, 22:36492
  Ir--rare earth, internal magnetic fields in intermetallic compounds, from iridium-193 Moessbauer effect, (E), 22:1348
  Mo-base--rare earth--Ti--V--Zr, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
  Ni--rare earth, magnetic and crystallographic properties of intermetallic compounds containing two rare earths, (E), 22:39161(R) (NYO-3454-22)
  Ni--rare earth, magnetic behavior of nickel in intermetallic compounds of, (T), 22:15598
  Ni--rare earth, magnetic properties of intermetallic Ln_2Ni_{17} (Ln = lanthanide or yttrium), (E), 22:39167 (NYO-3454-22, Paper 6)
  Ni--rare earth, magnetic properties of Ln_2Ni_{17} compounds, 22:52883
  Ni--rare earths, crystal structure of intermetallic RE_3Ni, 22:49759
  Ni--rare earths, preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  Pb--rare earths, phase studies of, 22:2560(R) (IS-RD-11)
  Pu--rare earths, phase studies of, 22:2655
  rare earth--Sb, crystal structure of intermetallic compounds in, 22:37720
  rare earth--Zn, crystal structure and phase studies of, 22:36492
  rare earths--Sb, crystal structure of intermetallic compounds in, 22:24388 (CONF-670502-, pp 145-54)
  rare earths--Sn, analysis by arc spectrographic, chemical, or x-ray fluorescence methods, 22:44984
RARE EARTH ARSENIDES
  crystal structure of, 22:37720
RARE EARTH BORIDES
  electronic properties of hexaborides, (E/T), 22:44268
  magnetic ordering in, (E), 22:37051
  thermodynamic properties of, 22:10204(R) (COO-1149-102)
RARE EARTH CARBIDES
  electric conductivity of, 22:24404 (CONF-670502-, pp 635-52)
  electric conductivity of, 22:26498
  electric conductivity of, 22:42659
  electronic structure of, 22:24404 (CONF-670502-, pp 635-52)
  magnetic properties of, 22:42659
  magnetic susceptibility of, 22:24404 (CONF-670502-, pp 635-52)
  magnetic susceptibility of, 22:26498
  preparation of, 22:42659
  properties of, thermal and thermodynamic, 22:42659
  thermoelectric power of, 22:26498
  thermoelectric properties of, 22:24404 (CONF-670502-, pp 635-52)
RARE EARTH CARBONATES
  preparation of, 22:25351
RARE EARTH CHLORIDE OXIDES
  production by reactions of fused chlorides with oxygen, 22:33353
RARE EARTH CHLORIDES
  analysis for chlorine, microvolumetric, 22:48845
  chlorine NMR and NQR in, 22:39155(R) (COO-1533-7)
  chlorine-35 NQR in mixed alkali metal chlorides and, 22:39155(R) (COO-1533-7)
  crystal structure of YCl_3-type, 22:39155(R) (COO-1533-7)
  preparation by reaction of rare earth oxalates with carbon tetrachloride, 22:2560(R) (IS-RD-11)
RARE EARTH CHROMATES $RECrO_3$
  fabrication of electrodes of, method for, 22:52247(P)
RARE EARTH ETHYL SULFATES
  spectra of, crystal-field splitting in, (E), 22:15588
RARE EARTH FERRATES
  europium-153 Moessbauer effect in, exchange interactions from, (E), 22:24426
RARE EARTH FERRATES $RE(FeO_2)_3$
  magnetic properties of, effects of pressure on, 22:24378 (CONF-670502-, pp 10-17)
RARE EARTH FLUORIDES
  analysis for fluorides and rare earths, 22:18695 (UCRL-50383)
  analysis of, 22:30436(R) (UCRL-50006-68-1)
  complexes, thermodynamic properties of, use of calorimetry, potentiometry, and solvent extraction to determine, 22:30554
  formation of, standard enthalpies of, 22:36543 (ANL-7450, pp 39-74)
  reduction to mischmetal, calcio-thermic, 22:43547
  separation from fuels of molten fluorides using uranium trifluoride, 22:23126(P)
  volatilities of, relative to lithium fluoride, 22:16484 (ORNL-4075, pp 62-6)
RARE EARTH HALIDES
  formation of metallic phases in, 22:31996
  preparation of,, 22:14482 (ORNL-4196, pp 90)

RARE EARTH HYDRIDES
  stoichiometry of, effects on crystal structure defects on deviations from, 22:24387 (CONF-670502-, pp 132-44)
RARE EARTH HYDROXIDES
  aging of sols of, electron-microscopic studies of, 22:14432 (ORNL-4196, pp 63-6)
  chemistry of, solid-state, 22:44238
  crystal structure of, 22:44238
  preparation of, 22:22991 (CONF-670502-, pp 175-86)
RARE EARTH IODATES
  hydration of, thermodynamics of, 22:21054 (ORO-1797-11, pp 1-113)
RARE EARTH IONS
  complexes of, enthalpy and entropy of preparation of, 22:30554
  electric multipole interactions between, higher-degree, (T), 22:17422
  entropies of, 22:4147
  magnetic interactions between pairs of, EPR method for determination of, 22:24434
  neutron scattering by trivalent, in octahedral crystal fields, (E), 22:32423 (CONF-670969-1)
  optical transitions in crystals, review, 22:44235
  radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622
  reduction by alkali metal amalgams, 22:50983
  sorption on platinum, stearic acid, and tungsten surfaces, 22:47109 (AERE-R-5323)
RARE EARTH ISOPROPOXIDES
  preparation and properties of, 22:23002 (CONF-670502-, pp 392-402)
RARE EARTH ISOTOPES
  energy levels in rotational bands, mean square radii of, (E/T), 22:50600 (MIT-2098-479)
  internal conversion in, effects of static nuclear deformation on, (T), 22:50665
  neutron capture by, γ spectra from thermal, (E), 22:50604
  production of neutron-deficient, from proton-irradiated gadolinium and neodymium, 22:33391
  separation of neutron-deficient, from proton-irradiated gadolinium and neodymium targets by anion exchange, 22:33391
  spectra of, conversion electron, 22:14525
RARE EARTH MINERALS
    see also Allanites
    see also Gadolinites
  age of hafnium-176/lutetium-176 method for estimation of, 22:6477
  book: Flotation Properties of Rare Earth Minerals, 22:18910
  chlorination at 1000 to 1200ºC, 22:23091 (CONF-670502-, pp 702-13)
  separation of hafnium and zirconium from, 22:33225
RARE EARTH NITRATES
  complexes with pyridine-1-oxide, precipitation and solubility of, 22:33360
  complexes with triphenylarsine oxide, preparation and properties of, 22:21060
  separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
  spectra of, crystal-field splitting in, (E), 22:15588
  alkali metal nitrates--rare earth nitrates, precipitation of rare earth oxides and oxide nitrates from molten, 22:23001 (CONF-670502-, pp 385-90)
RARE EARTH NITRIDES
  crystal structure defects and nonstoichiometry of, 22:24386 (CONF-670502-, pp 112-31)
  crystal structure of, 22:37720
  electric conductivity of, 22:26498
  electric conductivity of, 22:42659
  magnetic properties of, 22:42659
  magnetic susceptibility of, 22:26498
  preparation of, 22:42659
  properties of, thermal and thermodynamic, 22:42659
  thermoelectric power of, 22:26498
RARE EARTH OXALATES
  reactions with carbon tetrachloride for conversion to chloride, 22:2560(R) (IS-RD-11)
RARE EARTH OXIDE NITRATES
    see also Lanthanum Oxide Nitrates
    see also Neodymium Oxide Nitrates
  precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
RARE EARTH OXIDES
    see also Erbium Lanthanum Oxides
    see also Holmium Lanthanum Oxides
    see also Lanthanum Lutetium Oxides
    see also Lanthanum Thulium Oxides
    see also Lanthanum Ytterbium Oxides
    see also Lanthanum Yttrium Oxides
  analysis for cerium and lanthanum by x-ray fluorescence, 22:50928
  analysis for europium and ytterbium by polarography, 22:45017
  analysis for rare earths by photon activation methods, 22:27591
  analysis of mixture of, for europium oxide by ultraviolet spectrophotometry, 22:18725
  chemistry of, solid-state, 22:44238
  crystal structure defects and nonstoichiometry of, 22:24386 (CONF-670502-, pp 112-31)
  crystal structure of, 22:44238
  crystal structure of, effects of coordination of oxygen atom on, 22:22999 (CONF-670502-, pp 329-40)
  diffusion of oxygen in, 22:42650 (COO-1109-35)
  diffusion of oxygen in, self-, 22:36537
  effects as impurity on cerium oxide crystallization, 22:41091
  effects as impurity on crystallization of thorium dioxide, 22:41091
  effects as impurity on hafnium oxide crystallization, 22:41091
  effects on magneto-optical properties of europium oxide films, 22:52882
  effects on oxidation of hydrogen, effects of oxygen mobility on catalytic, 22:6304
  elastic properties of, effect of porosity and temperature on, 22:2560(R) (IS-RD-11)
  electric conductivity of, 22:31478
  formation of, enthalpies, entropies, and Gibbs energies of, 22:42658
  incorporation in refractory concrete shielding with improved mechanical properties, 22:52250(P)
  mass transport properties of, 22:42650 (COO-1109-35)
  oxygen diffusion in, effects of temperature on, 22:2560(R) (IS-RD-11)
  phase studies, 22:4800
  precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
  preparation by sol-gel process for use in industry, 22:11031
  preparation of, 22:25351
  preparation of microspheres of, by sol-gel process, 22:4859
  preparation of single crystals of, 22:42650 (COO-1109-35)
  preparation of sols of, 22:26073 (ORNL-TM-2205)
  preparation of sols, gels, and microspheres of, 22:22991 (CONF-670502-, pp 175-86)
  rare earth isotopic distribution in, neutron activation determination of, 22:45008
  reduction to metal, 22:23727 (CONF-670502-, pp 653-64c)
  spectra of, crystal-field splitting in, (E), 22:15588
  spectra of, widths of forbidden zones in reflected, 22:4107
  thermal capacities of, 22:42658
  use in preparation of actinide oxide fuels, 22:13057(P)
  C--rare earth oxides, preparation of organosols of, 22:25370(P)
  Eu--EuO--rare earth oxides, ferromagnetic transition temperature of, (E), 22:15629
  Nb_2O_5--rare earth oxides, phase studies of, 22:4895
  Pa_2O_5--rare earth oxides, phase studies of, 22:4895
  rare earth oxides--Ta_2O_5, phase studies of, 22:4895
RARE EARTH PHOSPHIDES
  crystal structure of, 22:37720
  magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
  phosphorus nuclear magnetic resonance in, 22:24383 (CONF-670502-, pp 68-77)
  preparation and physicochemical properties of, 22:14487(T) (UCRL-Trans-10222)
RARE EARTH SELENIDES
  crystal structure defects and nonstoichiometry of, 22:24386 (CONF-670502-, pp 112-31)
  crystal structure of, 22:24388 (CONF-670502-, pp 145-54)
  crystal structure of, 22:37720
RARE EARTH SILICIDES
  effects of additions of, on deoxidation of carbon steel, 22:21670 (BM-RI-7091)
RARE EARTH SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
RARE EARTH SULFIDES
  crystal structure defects and nonstoichiometry of, 22:24386 (CONF-670502-, pp 112-31)
  crystal structure of, 22:37720
  EuO--rare earth sulfides, ferromagnetic transition temperature of, (E), 22:15629
RARE EARTH TELLURIDES
  crystal structure defects and nonstoichiometry of, 22:24386 (CONF-670502-, pp 112-31)
  crystal structure of, 22:37720
  crystal structure of, 22:24388 (CONF-670502-, pp 145-54)
RARE EARTH TUNGSTATES
  bronzes see Rare Earth Tungsten Bronze
RARE EARTH TUNGSTEN BRONZE
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
  electric properties of, 22:4872
RARE EARTH TUNGSTEN OXIDES
  bronzes see Rare Earth Tungsten Bronze
RARE EARTH VANADATES
  preparation using rare earth oxide, lead oxide, and vanadium oxide, 22:49812
RARE EARTHS
    see also Actinides
    see also Cerium
    see also Dysprosium

see also Erbium
see also Europium
see also Gadolinium
see also Holmium
see also Lanthanum
see also Lutetium
see also Neodymium
see also Praseodymium
see also Promethium
see also Samarium
see also Scandium
see also Terbium
see also Thulium
see also Ytterbium
see also Yttrium
abundance in HD 1909 and 53 Tauri, (E), 22:47730
abundance in HR 1105, 22:29117
abundance in late-type stars, 22:23971
abundance in spectrum of HD 101065, (E), 22:8886
abundance of 4f, solar, (T), 22:23982
abundances of six F stars, (E), 22:43741
alpha scattering by, optical-model potential parameters for, (T), 22:14081
amalgamation in lithium citrate solution, electrolytic, 22:18748
analysis for americium-241 by solvent extraction and alpha counting, 22:25239 (ISO-SA-11)
analysis for cerium, lanthanum, neodymium, and praseodymium in solutions of, by x-ray spectral fluorescence, 22:27581
analysis for europium, 22:4054
analysis for europium and ytterbium by polarography, 22:45017
analysis for europium, samarium, and ytterbium by oscillopolarography, 22:18719
analysis for individual, by aerosol-spark method, 22:6281
analysis for trace impurities by flame emission spectrometry, 22:25238 (IS-T-223)
analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
analysis of, spectrographic, 22:16356 (KR-116)
beta transition rates in deformed, review of data on fast allowed, (E/T), 22:30038
beta transitions in A = 144, first forbidden, (T), 22:27232
beta transitions in odd-A, calculations using diffuse potential for N-forbidden, (T), 22:14075 (JINR-P4-3650)
beta vibrations in, adiabatic treatment using Davydov model, (T), 22:16081
book: Analytical Chemistry of Rare Earth Elements and Yttrium, in Russian, 22:2015
book: Europium, 22:27738
book: The Encyclopedia of the Chemical Elements, 22:45055
chemical properties of, compared with actinides, 22:2018(R) (BMwF-FBK-67-76)
chemistry of, 22:25351
chemistry of, review of, 22:30514
complexes with 2,4-pentanedione, stability of, 22:14566 (ORO-2124-12)
complexes with 2,4-pentanedione, structure of, 22:14566 (ORO-2124-12)
complexes with 4-amino-3-penten-2-one, preparation of, 22:14566 (ORO-2124-12)
complexes with β-diketones, volatility of, 22:30560
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with dialkylmalonic acid, stability of, 22:47214
complexes with diketones, preparation of, 22:14433 (ORNL-4196, pp 66-89)
complexes with DTPA, irradiation of, with high-energy protons to produce neutron-deficient radioisotopes, Szilard-Chalmers effect in, 22:40105 (JINR-P12-3887)
complexes with EDTA and HEDTA, kinetic behavior of, 22:14496
complexes with EDTA, HEDTA, NTA, and α-picolinic acid, thermodynamic properties of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with EDTA, stability of, 22:22928 (CONF-670502-, pp 343-54)
complexes with HEDTA, electrochromatography and ion exchange studies on, 22:37870
complexes with hydrazodiacetic acid, stability of, 22:30662
complexes with mercaptopropionic acid, stability of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with mercaptopropionic acid, thermodynamic properties of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with N-substituted iminodiacetic acids, preparation and stability of, 22:30524
complexes with octamethylpyrophosphoramide, preparation of, 22:30468
complexes with organic compounds, preparation and properties of, 22:23002 (CONF-670502-, pp 392-402)
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with phosphine carbonxylic acids, preparation of, 22:40059
complexes with polyaminocarboxylic acids, enthalpy of formation of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with polyaminocarboxylic acids, stability of, 22:21054 (ORO-1797-11, pp 1-113)
complexes with transition metals and diketones, preparation of, 22:14386(R) (NYO-906-80)
complexes with various compounds, composition, stability, and uses of, 22:14501
complexes, binding energies in, 22:22998 (CONF-670502-, pp 318-28)
complexes, molecular structure of, 22:22998 (CONF-670502-, pp 318-28)
complexes, spectra of, environmental effects on, 22:22998 (CONF-670502-, pp 318-28)
complexes, thermodynamic properties of, 22:22998 (CONF-670502-, pp 318-28)
compounds and complexes of, review of chemistry of, 22:45090
compounds with 2-hydroxy-2-methylbutyric acid and picolinic acid, formation constants of, 22:44951 (IS-T-242)
compounds with singlet crystal field ground state, magnetic susceptibility of, 22:24381 (CONF-670502-, pp 48-57)
compounds, crystal structure of oxy-, effects of coordination of oxygen atom on, 22:22999 (CONF-670502-, pp 329-40)
compounds, thermal and thermochemical properties of, 22:30526
compounds, thermodynamic properties of, review of, 22:30526
conference on lanthanide--actinide chemistry, New York, New York, Sept. 13 and 14, 1966, 22:30561
conference on, Gatlinburg, Tenn., May 3 to 5, 1967, 22:23707 (CONF-670502)
content of marine environment and organisms, measurement of, 22:43311(R) (PRNC-85)
corrosion resistance of nuclear materials containing, 22:31357
cost and production of, review of 1967, 22:31317
crystal structure of metallic, 22:23835
crystal structure of, comparison of layer stacking sequence with rare earth trialuminides, 22:2650
crystal structure of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
decay schemes of deformed odd-A, dissertation review on, (E), 22:39657
determination as ascorbate, spectrophotometric, 22:2009
determination as oxide by fast neutron activation, 22:6282
determination by atomic-absorption spectroscopy using induction plasma, 22:1985
determination by isotope dilution method, substoichiometric, 22:27618
determination by luminescence sensitized by aromatic ketones, 22:16461
determination by neutron activation methods, 22:4054
determination by neutron activation methods, effects of isotopic fractionation on, 22:45008
determination by neutron activation methods, methods of separation in, 22:4034
determination by neutron activation techniques, 22:47079
determination by photon activation methods, 22:27591
determination by spark-source mass spectroscopy, 22:4045
determination by spectrophotometric titration, 22:39976 (ANL-7450, pp 108-11)
determination in alkali medium in presence of cetylpyridinium bromide by spectrophotometry using Xylenol Orange, 22:40000
determination in ash of plants and soils, activation, 22:22969
determination in basalt by isotope dilution method, 22:42617
determination in basic and ultrabasic rocks by neutron activation methods, 22:4064
determination in biological materials by automated neutron-activation methods, 22:16450
determination in corals by neutron activation methods, 22:44979 (NYO-2174-70)
determination in fast reactor fuels to measure burnup, 22:39976 (ANL-7450, pp 108-11)
determination in gadolinite and tantalocolumbite minerals by activation methods, separation processes in, 22:33246
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in hot spring waters in Japan by neutron activation methods, 22:8013
determination in igneous rocks by neutron activation methods using high resolution lithium-drifted germanium detectors, 22:25259
determination in impactite glasses, rocks, and tektites from Bosumtwi Crater area, Ghana, by isotope dilution, 22:18
determination in ionic materials by x-ray-stimulated luminescence, 22:40042
determination in irradiated fuels by photometric titration and x-ray spectroscopy, 22:50902 (ANL-7425, pp 193-7)
determination in matrices by cathode-ray-excited emission spectroscopy, 22:25270
determination in minerals by activation methods using

single comparator technique, 22:33248
determination in molten fluoride fuels, spectrographic, 22:14430 (ORNL-4196, pp 55-9)
determination in phosphate rocks by atomic-absorption flame photometry, 22:2001
determination in phosphate rocks by titration with EDTA, 22:33216
determination in presence of iron and thorium by amperometric chelometry, 22:27569
determination in presence of mercury and alkaline earth elements, chelatotitration method for, 22:4046
determination in rare earth fluorides by fusion with potassium pyrosulfate and titration, 22:18695 (UCRL-50383)
determination in rare earth-activated phosphors, 22:18703
determination in rock samples by measurement of thermal neutron capture γ rays, 22:42619
determination in rock samples by neutron activation methods after chemical group-separation, 22:25286
determination in rocks and minerals by mass-spectrometric isotope-dilution technique, 22:4044
determination in rocks and minerals by neutron activation methods, 22:40003
determination in solutions by stylometric methods, 22:18716
determination in solutions from processing of irradiated plutonium, 22:37640(T) (ANL-Trans-628, pp 2-50)
determination in solutions of EDTA by activation methods, 22:4049
determination in spent fuels, use of x-ray spectrometer for, 22:30118 (ANL-7438)
determination in thorium oxide by isotope-dilution mass spectrography, 22:22930(R) (NBL-242)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in yttrium oxide by cathodoluminescence method, 22:22978
determination in yttrium oxide by spectrophotoluminescence, 22:8025
determination of atomic diameters of, in solid solutions, 22:4804
determination of cerium subgroup, in air by precipitation and colorimetry, 22:44991
determination of fission product, by x-ray spectroscopy, 22:39976 (ANL-7450, pp 108-11)
determination of trace amounts of, electrochromatographic, 22:48824
determination of trace amounts of, evaluation of methods for, 22:18703
determination of trace amounts of, in hot spring water by neutron activation methods, 22:6277
determination of trace amounts of, in silicate rocks, spectrographic, 22:22951
determination of traces of, in yttrium oxides, spectrographic, 22:22950
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
determination using octamethylpyrophosphoramide, spectrochemical, 22:30468
determination using sodium orthovanadate, potentiometric, 22:30477
deuteron reactions (d,p) with even-A, analysis using modified Nilsson orbitals, (T), 22:32649
deuteron reactions (d,p) with odd-A, differential cross sections for excitation of rotational states in γ-vibrational bands, (T), 22:20647
diffusion out of gold, platinum, rhenium, and tungsten, 22:29795
distribution in sediment type rocks, 22:40003
effect on crystallization of carbon steel, 22:7003
effects on activation determination of carbon or oxygen, 22:27591
effects on constitution and distribution of surface oxide films formed on niobium-stabilized chromium--nickel steel by carbon dioxide at 750 and 850°C, 22:34123
effects on magnetoresistance of noble metals, (T), 22:20063
effects on photometric determination of indium, 22:2007
effects on photometric determination of thorium, 22:22946
electric and optical properties of thin films of, effects of aging on, 22:14550
electron Coulomb exchange interaction in, (T), 22:9450
electron interactions in spin-ordered metallic, calculation of effective, (T), 22:15610
electron interactions in, (T), 22:17743
energy levels in Woods-Saxon potential, E1 transition probabilities for single-particle, (T), 22:44710
energy levels of A = 150 to 174 deformed, effects of spin-quadrupole forces on collective 2^+, (E/T), 22:39664
energy levels of deformed A = 150 to 186, collective, (E), 22:27149
energy levels of deformed even--even, dipole, (T), 22:53176
energy levels of deformed even-A, in γ-vibrational bands, rotational, (T), 22:20647
energy levels of deformed even-A, K = 0^+, (T), 22:48580 (JAERI-1158, pp 106-12)
energy levels of deformed odd-A, with A = 153 to 187, collective, (T), 22:20649
energy levels of deformed, collective 0^+, (T), 22:27329
energy levels of deformed, structure and transition probabilities of 0, (T), 22:9851 (JINR-P4-3576)
energy levels of deformed, wave functions for single-particle, (T), 22:9852 (JINR-P4-3607)
energy levels of even--even, non-adiabaticity of β-vibrational, (T), 22:13992 (IIAE-LR-18)
energy levels of even-even, systematics of collective, (T), 22:48517 (JAERI-1158, pp 39-46)
energy-level excitations in (d,p) reactions, spectroscopic factors for gamma-vibrational, (T), 22:3726
energy-level transition probabilities for rotational bands of A = 150 to 190, E2, (T), 22:13993 (IIAE-LR-19)
energy-level transition probabilities for, systematics of K-forbidden, (E/T), 22:18236
energy-level transitions in deformed, internal conversion electron particle parameters for E2, (E), 22:27185
evaporation of, performance of electron beam gun for flash, 22:47265 (GEPP-40)
fabrication of high-purity, 22:23727 (CONF-670502-, pp 653-64c)
Fermi surface of, 22:24395 (CONF-670502-, pp 482-6)
hyperfine interactions in, calorimetric study of, 22:11531
ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
lattice specific heat of, theory, 22:34760
magnetic hyperfine fields at nuclei of, 22:24025 (CONF-670502-, pp 495-505)
magnetic ordering in, relation to electronic properties, (T), 22:17741
magnetic ordering temperatures of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
magnetic properties of compounds of, (E), 22:22225
magnetic properties of heavy, neutron scattering study, 22:46215
magnetic properties of, effects of pressure on, 22:24378 (CONF-670502-, pp 10-17)
metabolism in animals and man, 22:38255(R) (EUR-3918)
metallurgical properties of nuclear materials containing, 22:31357
metallurgy of, review of problems and progress in, 22:23708 (CONF-670502-, pp 403-4)
Moessbauer effect following nuclear Coulomb excitation, (E), 22:5875
Moessbauer effect studies of, 22:18735
neutron energy distributions from heavy, effects of crystalline field on, (T), 22:20497(R) (AECL-3009)
neutron inelastic scattering on, crystal field effects on, 22:41661
neutron reactions (n,α) with, survey on thermal, (E), 22:48521 (JAERI-1158, pp 123-4)
neutron resonance densities in, effects of nuclear deformation on, (T), 22:42015 (JINR-P4-3925)
neutron scattering at 0.001 to 0.12 eV, cross sections for paramagnetic, (T), 22:22537
neutron scattering by paramagnetic, (E/T), 22:11944(R) (AECL-2780)
nuclear deformabilities of, (T), 22:30081
nuclear deformation in, Y_{40}, (T), 22:48584 (JAERI-1158, pp 120-2)
nuclear deformation parameters from α inelastic scattering, (E), 22:27205
nuclear deformations in pairing + quadrupole model, (T), 22:20692
nuclear deformations in, hexadecapole, (T), 22:20607
nuclear deformations of, measurement using α inelastic scattering, (E), 22:3700 (UCRL-17547(Exp.))
nuclear equilibrium deformation in, centrifugal stretching effect on, (T), 22:48581 (JAERI-1158, pp 113-14)
nuclear level density parameters for deformed, from neutron inelastic scattering, (E), 22:27104
nuclear magnetic moments of, calculation using Tamm--Dancoff method, (T), 22:46817 (JINR-P4-3934)
nuclear masses and deformations of, (T), 22:30089
nuclear shape in ground-state rotational band, Y_{40} and Y_{60} components of, (E), 22:14007
nuclear shapes of, research using alpha elastic and inelastic scattering, (E/T), 22:22593
nuclear specific heats in, (E), 22:9104
nuclear spin relaxation in heavy, estimate of low-temperature indirect, (T), 22:15626
oxidation states of, energy level diagram for, 22:22995 (CONF-670502-, pp 259-70)
phase studies, 22:23835
phases of close-packed-hexagonal and cubic-intermediate solid solutions of, 22:4804
photoabsorption cross sections of deformed even--even, (T), 22:53176
physical properties and thermal treatment of nuclear materials containing, 22:31357
physical properties, theory of anomalies of, 22:17790
polarographic behavior in methyl sulfoxide and dimethylformamide, oscillographic, 22:40080
positron annihilation in single crystals of, photon angular distributions from, 22:24024 (CONF-670502-, pp 487-94)

preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
preparation of cyclotron targets of, by electrolytic means, 22:7590
production by fused salt electrolysis, 22:21677
production by fused-salt electrolysis, commercial, 22:23729 (CONF-670502-, pp 728-39)
production of, 22:23726 (CONF-670502-, pp 1-6)
production of, chemical aspects of industrial, 22:23727 (CONF-670502-, pp 653-64c)
production of, ore cracking by direct chlorination for, 22:23091 (CONF-670502-, pp 702-13)
properties and uses of, review of, 22:15182 (IS-1757)
properties of, 22:705
properties of, energy hand calculations of electric and magnetic, 22:24395 (CONF-670502-, pp 482-6)
properties of, for use as phosphors, 22:40413
radiation absorption calculations for, used as phosphors, gamma- and x-ray, 22:40413
radiation effects on optical and electric properties of thin films of, x, 22:14550
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
removal from animals and man, 22:38194(R) (EUR-3917)
removal from gastrointestinal tract of personnel in contaminated areas, methods for, 22:38298
removal of fission products of, from reactor fuels, pyrochemical process for, 22:21168
retention in rats, effects of EDTA on, 22:8479
separation by chromatography using paper treated with dialkyl orthophosphates, 22:42630
separation by electrophoresis, 22:16671
separation by fractional precipitation of basic nitrates of, effects of pH on, 22:18720
separation by ion exchange, 22:6277
separation by ion exchange chromatography using HEDTA, 22:33500
separation by ion exchange using α-hydroxyisobutyric acid as eluant, effects of pH on, 22:25474
separation by ion exchange using EDTA in acid media, 22:42846
separation by ion exchange using HEDTA, 22:37870
separation by ion exchange using lactic acid and 2-methyllactic acid salts, review on, 22:40193
separation by ion exchange, commercial, 22:23089 (CONF-670502-, pp 678-90)
separation by ion exchange, effects of complexing with dialkyl-substituted malonic acid on, 22:47214
separation by ion exchange, effects of polyaminopolycarboxylic acids on, 22:23022
separation by ion exchange, effects of resin grain size on, 22:40202
separation by ion-exchange chromatography, 22:18864 (NP-17286)
separation by ion-exchange chromatography, 22:18888
separation by ion-exchange chromatography, 22:8170 (INR-P-840/VIII/C)
separation by liquid--liquid extraction, review of, 22:42825
separation by multiplicative partition, 22:8174(T) (AEC-tr-6922)
separation by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of temperature on, 22:2183
separation by solvent extraction using 3,6-bis[(4-chloro-2-phosphonophenyl)azo]-4,5-dihydroxy-2,7-naphthalenedisulfonic acid, 22:6396
separation by solvent extraction using mixtures of thenoyltrifluoroacetone and TBP, 22:51049
separation by solvent extraction using naphthenic acids, 22:27868
separation from acidic aqueous solutions by solvent extraction using quaternary ammonium compounds and thiocyanate, 22:10354(P)
separation from acidic chloride solutions by solvent extraction using bis(2-ethylhexyl) phosphate, 22:6367 (IS-T-188)
separation from actinides by ion exchange chromatography using zirconium phosphate, 22:10335
separation from actinides by solvent extraction using tridodecylamine, 22:25455 (CEA-N-616, pp 295-368)
separation from actinides by solvent extraction using quaternary ammonium compounds and thiocyanate, 22:10354(P)
separation from actinides in nitric acid using TBP or tridodecylamine, effects of complexants on, 22:27848 (CEA-N-816, pp 359-414)
separation from actinides, review on, 22:33535
separation from alkaline earth elements in mixed solvents, effects of lactic acid on anion-exchange, 22:18882
separation from alkaline earth metals by ion exchange using cellulose phosphate, 22:37845
separation from alkaline earths by chelating ion exchange, 22:33289
separation from americium by solvent extraction, 22:37640(T) (ANL-Trans-628, pp 2-50)
separation from americium by solvent extraction using bis(2-ethylhexyl) ester of phosphoric acid, 22:25239 (ISO-SA-11)
separation from aqueous solutions by solvent extraction, structures of chelates formed in, 22:14566 (ORO-2124-12)
separation from aqueous solutions by solvent extraction using tridodecylamine hydrochloride, 22:16685
separation from cesium-137-free fission product solutions, design of plant for, 22:4304 (EUR-3612)
separation from chloride melts, method for, 22:33353
separation from curium by ion exchange, 22:47152 (BMwF-FBK-68-10)
separation from each other by cation exchange using α-hydroxyisobutyrate, 22:33246
separation from hafnium by precipitation with ferric hydroxide, 22:51070
separation from low-level waste by ion exchange, 22:47206(T) (ORNL-tr-1771)
separation from metals by precipitation using cinnamic acid, 22:37855
separation from minerals, flotation methods for, 22:18910
separation from molten salts by solvent extraction using liquid metals, 22:25374 (ORNL-4229, pp 22-49)
separation from molten-salt reactor fuel, 22:47204 (ORNL-4254, pp 241-78)
separation from MSRE fuel by reductive extraction by bismuth, 22:47112 (ORNL-4254, pp 88-173)
separation from nitric acid by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of enthalpy and entropy on, 22:2182
separation from ores, 22:40191
separation from radioactive waste by solvent extraction, 22:16694
separation from scandium and zirconium by precipitation using cinnamic acid, 22:37855
separation from scandium, thorium, and uranium by thin-layer chromatography, 22:51069
separation from soils following underground nuclear explosions by solvent extraction and ion exchange, 22:45159(P)
separation from solutions containing thorium and trivalent iron by solvent extraction, 22:37873(P)
separation from spent Molten Salt Breeder Reactor fuel, 22:6383
separation from thorium by anion exchange in acetone--hydrochloric acid solutions, 22:14567
separation from thorium by ion exchange, 22:30672(P)
separation from thorium by process using metallic zinc, 22:42819
separation from thorium by solvent extraction, 22:10196
separation from thorium in minerals by ion exchange, 22:33541(P)
separation from transuranium elements by anion exchange in acetone--hydrochloric acid mixtures, 22:21153 (ANL-7415)
separation from transuranium elements by solvent extraction using nitric acid--tetrabutyl hypophosphate--tetrabutyl pyrophosphate, 22:27853 (INP-591/C)
separation from uranium by ion exchange, 22:4054
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium on sulfonic acid cation exchangers, 22:42835
separation from yttrium by ion exchange, 22:27883
separation of alkali metals simultaneously from, ion exchange, 22:37866
separation of americium and curium from, by ion-focusing electrophoresis, 22:33522
separation of barium from, by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
separation of cerium and lanthanum from solutions of, by ozonation and precipitation, 22:23090 (CONF-670502-, pp 692-700)
separation of cerium and lanthanum from solutions of, by ozonation and precipitation, 22:23088 (BM-RI-7123)
separation of cerium from, by solvent extraction, 22:165(P)
separation of complex mixtures of, thin-layer chromatographic, 22:27881
separation of genetically coupled pairs of, by Szilard--Chalmers effect in complexes with EDTA or DTPA, 22:40157 (JINR-P12-3886)
separation of hafnium from, 22:40051(T) (ANL-Trans-632)
separation of hafnium from, method for, 22:140 (JINR-D6-3281)
separation of isotopes of, control of calutron ion source activation for, 22:49041(P)
separation of plutonium from, by ion exchange on zirconium phosphate silicate, 22:30678
separation of ternary mixtures of, by displacement cation exchange chromatography using chelating eluants, 22:33543
separation of ternary mixtures of, displacement chromatography studies on, 22:16664
separation of thorium from, by precipitation in hydroxide form, 22:30679
separation of trace amounts of, by ion exchange chromatography, effects of temperature on, 22:145
separation of trace impurities from, thin-layer chromatographic, 22:27881
separation of trace, from matrices of cerium subgroup by anion exchange chromatography, 22:33496
separation of uranium from, by hydrolytic precipitation, effects of pH on, 22:40196

  separation of uranium from, ion exchange method for, 22:33550(P)
  separation of yttrium from, by cation exchange using HEDTA, 22:37858
  separation of zirconium from, by precipitation using cinnamic acid, 22:37848
  separation of, using elution chromatography in cation exchange columns, 22:3697 (KFK-534)
  separation using lactic acid, calculations for ion exchange, 22:12417
  separation using primary amines, effects of diluents and chelating agents on, 22:10319 (BM-RI-7100)
  single-particle proton states in nuclei of, (T), 22:48572 (IAE-1447)
  sorption from seawater by glass, polyethylene, and suspended particles, 22:30443
  sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
  sorption in the presence of polyaminopolycarboxylic acids, kinetics of ion-exchange, 22:23022
  sorption on hot polycrystalline tungsten, lifetime of, 22:27709
  spectra of magnetically ordered, microwave, 22:54 (AD-646572)
  spectra of, sets of energy levels in solution absorption, 22:30539
  surface friction and wear, effects of crystal structure and properties on, 22:52177
  thermal and thermochemical properties of, 22:30526
  thermal capacities of, 22:42658
  thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
  thermodynamic properties of compounds with elements of groups IIIA, VA, and VIA, review on, 22:31464
  thermodynamic properties of, review of, 22:30526
  titration with [ethylenebis[[(carboxymethyl)imino]ethylenenitrilo]] tetraacetic acid, complexometric, 22:45038
  uptake by plants, effects of soil conditions on, 22:33778 (UCLA-12-640, pp 45-60)
  use as tracers in bearing wear measurement, 22:15191
  use in production of lasers, 22:24391 (CONF-670502-, pp 228-38)
  use of metallic, in pole of superconducting magnets, 22:10651
  uses in magnets and steel, review on, 22:31317
  uses of, industrial, 22:25351
  uses of, review of, 22:23726 (CONF-670502-, pp 1-6)
  x-ray emission spectra of, self-absorption effects in soft, (E), 22:7149
  x-ray emission spectra of, wavelengths and energy levels of M series, 22:24023 (CONF-670502-, pp 101-11)
  rare earths--stainless steel, fabrication of, 22:6954

RARE GAS IONS
  capture and diffusion of low-energy, in polycrystalline tungsten, 22:52205
  reactions with metals, secondary electron spectra from, (E), 22:29213
  reactions with metals, times of Auger de-excitation of holes from, 22:45967
  sputtering on metals at low energies, effects of trapped gas on, (E), 22:19753

RARE GASES
    see also Argon
    see also Helium
    see also Krypton
    see also Neon
    see also Radon
    see also Xenon
  abundance in unequilibrated ordinary chondrites, 22:11115
  accommodation coefficients of, on molybdenum and tungsten, measurements of thermal, 22:2068
  alpha reactions with, production of alkali metal and alkaline earth metal radioisotopes from, 22:4207
  analysis for oxygen, mass spectrometric method for, 22:9(R) (NBS-TN-425)
  analysis of, mass spectrometer for high-temperature, 22:33207 (LA-DC-8999)
  book: Introduction to Dynamics of Rarefied Gases, 22:20017
  book: The Encyclopedia of the Chemical Elements, 22:45055
  bounds for van der Waals coefficients from Pade approximants, (E/T), 22:7138
  chemistry in recoil reactions, 22:27741 (BNL-12361)
  collision-induced translational absorption in mixtures of, theory of line shape for, 22:36740
  content in chondrites, relations with carbon content, 22:172
  desorption from Pyrex of ionically pumped, (E), 22:9462
  determination of small quantities of, gas chromatography method for, 22:43179(P)
  determination of, use of gas chromatography in, 22:12229(T) (MLM-1472(tr))
  deuterium molecule scattering at thermal energies by, velocity dependence of total elastic cross sections for, (E), 22:5092
  deuteron reactions with, polarization of Lyman alpha radiation from charge exchange, (E), 22:15344
  diffusion following recoil labeling from plane and spherical solids, mathematical analysis of, 22:6338
  diffusion in meteorites, 22:52307(R) (AD-665431)
  diffusion in solids, 22:30588(R) (HMI-B-66)
  diffusion studies in binary systems of, 22:25331 (ORNL-4229, pp 115-18)
  distribution of fission product, between argon and liquid sodium, 22:53350
  effects on isomeric-transition-induced bromine-82 reactions with methane, 22:16565 (COO-1617-10, pp 8-36)
  effects on operation of cesium thermionic diodes, 22:31680
  effects on radioinduced isotopic exchange in gaseous nitrogen, 22:10310
  effects on radiolysis of gases, 22:40115
  electric discharges in alkali-metal-seeded, constricted positive column, 22:1237
  electric discharges in, ion waves in, 22:7321
  electrical conduction through, measurement of high temperature, 22:33087 (ANL-7310, pp 513-22)
  electromagnetic susceptibility of atoms of, relation to Rayleigh scattering, (T), 22:21880
  electron collisions with atoms of, (T), 22:8995
  electron reactions with, angular dependence of spin polarization for, (E/T), 22:38767
  electron reactions with, excitation processes in, (T), 22:21904
  electron reactions with, radial-equation system for, 22:2818
  electron velocity distribution in partially ionized, under action of electric and magnetic fields, (T), 22:9375
  excitation by collisions with ions, 22:23037(T) (AD-660408)
  helium atomic beam scattering on, cross sections for, 22:47791(T) (MLM-1553(tr))
  helium scattering at thermal energies by, velocity dependence of total elastic cross sections for, (E), 22:5092
  hydrogen molecule scattering at thermal energies by, velocity dependence of total elastic cross sections for, (E), 22:5092
  ion mobility in, doubly charged, 22:9085
  ionization and excitation from metastable electron loss in, (T), 22:38725 (N-68-22686)
  ionization in low-pressure shock tubes, analysis of profiles for, (T), 22:29288
  isotopic abundances and origins in meteorites, review, 22:26197
  mercury atom collisions with, cross sections for, 22:7178
  plasma of, automodel motion of, (T), 22:29483
  plasma of, diagnostics of, (E), 22:29473
  plasma of, electron diffusion cross sections in, 22:34676
  plasma of, ion mobility measurements in, 22:31833
  positronium thermalization in moderators of, (T), 22:19754
  production of, application of gas chromatography to, 22:12229(T) (MLM-1472(tr))
  proton reactions with, polarization of Lyman alpha radiation from charge exchange, (E), 22:15344
  radiation effects on release of, from hydroquinone clathrates, 22:23044
  radioinduced diffusion in crystals of cesium iodide, 22:4908
  reactions of atoms of, with cadmium, mercury, and zinc, cross sections for transitions between fine structure components in, 22:11205
  reactions of ions and excited atoms of, 22:36719
  reactions of ions of, with gases, charge transfer cross sections for, 22:38792
  reactions of metastable and highly excited, with hydrogen molecules and deuterium hydrides, 22:29287
  reactions with cadmium 6^3S_1 state, cross sections for, 22:45968
  reactions with hydrogen atoms, calculation of van der Waals, 22:9008
  reactions with molecular hydrogen ion, effects of deuterium on, 22:6310
  reactions with solids, interaction potentials for molecular, (T), 22:19767
  release and absorption of fission product, literature survey on, 22:53276 (HMI-B-76)
  removal from air, use of permselective membrane for, 22:7816(R) (ORNL-TM-2057)
  salt formation with alkali metal, verification of, (E/T), 22:7373
  shock wave interactions with, radiations from, (E), 22:26430
  transport in solids, bibliography on, 22:3158 (AED-C-29-01)
  use of radioactive, in studies of solids, 22:50981
  O--rare gases, combustion of fused zirconium droplets in, 22:42977(R) (SC-PR-68-451)
  propane--rare gases, radiolysis of, γ, 22:27840

Raschig Rings
    see Column Packing

Rate Meters
    see Radiation Rate Meters

RATS
  actinide content of fetus following administration to

pregnant, 22:10675 (BNWL-480, pp 21-54)
activity of L-glutaminase in kidneys of, effects of uranyl nitrate on, 22:38219
activity of phosphodiesterase and acid RNAase in intestine of, effects of chlorambucil and myleran on, 22:36399
activity of reticulo-endothelial system of, effects of, on susceptibility to traumatic shock, phagocytic, 22:40846
activity of RNA nucleotidyltransferase in hepatic nuclei of, inhibition of, by nickel carbonyl, 22:6216(R) (ORO-3461-9)
activity of tryptophan oxygenase in liver of, effects of nickel carbonyl on cortisone-induced, 22:6216(R) (ORO-3461-9)
americium-241 metabolism by, effects of route of administration on, 22:47473
barium-140 retention by, effects of DEETA, DTPA, and sodium sulfate on, 22:10729
behavior following exposure to stress, effects of ionized air on, 22:15104
beryllium excretion and toxicity in, protective effects of organophosphorus complexing agents on, 22:43206(T) (JPRS-45973)
beta emission from tumor transplants in, development of counter for continuous measurement of phosphorus-32, 22:12851
biosynthesis and catabolism of plasma albumins of, tracer study of effects of dietary proteins on, 22:30993
body composition of, relation of potassium to, 22:21460(R) (COO-1171-82)
breeding for use in laboratory research, 22:28621 (ANL-7278, pp 1-94)
bromine-82 content of blood and thyroid of, effects of perchlorates and thyrotropin on, 22:10689
cadmium effects on intestine of, protective effects of selenium and zinc against, 22:51325
calcium content of blood of, effects of parathormone, thyrocalcitonin, and vitamin D on, 22:6200(R) (COO-1668-3)
calcium metabolism in, effects of age on, 22:8466
calcium metabolism in, effects of age on, tracer studies of, 22:38202
calcium metabolism in, effects of thyrocalcitonin on, 22:6716 (ORO-284-10)
calcium sorption by intestines of, effects of alginates on, 22:19240
calcium-45 distribution in bones of, 22:14915(R) (TID-24217)
calcium-45 distribution in developing teeth of, comparison with tetracycline distribution, 22:40549
calcium-45 loss from isolated diaphragm from, effects of calcium-free solutions on, 22:51419
calcium-45 metabolism in cartilage of, autoradiographic study of, 22:51341
calcium-45 metabolism in, effects of age on, 22:38202
calcium-45 metabolism in, effects of burns on, 22:21422
calcium-45 metabolism in, effects of calcium content of diet on, 22:25770
calcium-45 uptake by bones of, autoradiographic study of, 22:2486
calcium-45 uptake by duodenum of, effects of sodium alginates on, 22:30975
calcium-45 uptake by sections of duodenum of, effects of oxydized amylose, oxycellulose, and sodium alginate on, 22:6900
calcium-47 metabolism in, effects of age on, 22:38202
calcium-47 retention in skeleton of, effects of CPDTA on, 22:43222
calcium-47 sorption by intestine of, effects of hyperthyroidism on, 22:10697
calcium-47 uptake and retention in, 22:40548
carbon-14 distribution in bones of, 22:14915(R) (TID-24217)
carcinogenesis in, effects of nickel carbonyl on incidence of, 22:6216(R) (ORO-3461-9)
cation balance in, effects of potassium on, 22:21460(R) (COO-1171-82)
cerium-144 distribution in fetal and newborn, following administration during pregnancy, 22:10675 (BNWL-480, pp 21-54)
cerium-144 distribution in fetal, neonatal, and pregnant, 22:30950
cerium-144 metabolism in, effects of epinephrine, diuretics, EDTA, or phosphates on, 22:12787
cerium-144 sorption by intestines of, effects of barium sulfate, calcium fluorite, EDTA, espatite-1, lead sulfate, and turfite on, 22:8481
cesium metabolism in, tracer studies of, 22:25762
cesium-134 distribution and retention in, effects of age on, 22:36163
cesium-134 metabolism by, effects of potassium, rubidium, and sodium content of diet on, 22:28341
cesium-134 metabolism in, effects of temperature on, 22:6772 (ORNL-4168, pp 61-118)
cesium-134 removal from muscles of, use of salts of ferrocyanic acid for, 22:4618
cesium-134 retention by, effects of age on, 22:28279 (NYO-2147-13, pp 56-7)
cesium-134 retention by, effects of weaning on, 22:28280 (NYO-2147-13, pp 58-63)
cesium-134 retention by, tracer use of, 22:14914 (ORNL-TM-2069)
cesium-137 content of muscles of, effects of potassium aspartate or potassium chloride on, 22:43249
cesium-137 metabolism by, effects of ACTH on, 22:14927
cesium-137 metabolism in, during gestation and lactation, effects of ferric cyanoferrates on, 22:30980
cesium-137 metabolism in, effects of age on, 22:10675 (BNWL-480, pp 21-54)
cesium-137 retention by, effects of age, sex, and weight on long-term, 22:6714(R) (LF-35)
cesium-137 retention in bones of, 22:47460
cesium-137 retention in, effects of potassium content of diet, and temperature on, 22:10675 (BNWL-480, pp 21-54)
cesium-137 transfer by placenta to fetuses of, 22:38329
cobalt-60 retention by, long-term, 22:51305 (LA-3848, pp 75-96)
content of ammonia in brain tissues of, effects of radioprotective compounds on, 22:19394
content of collagen in lungs of, effects of chronic ingestion of cyanide on, 22:10825 (BNWL-480, pp 55-83)
content of corticosteroids in adrenal glands and blood of, effects of cysteamine on, 22:31170
content of oxytocin metabolites of tissues of, method for tritium tracer study of, 22:49201
content of sulfhydryl groups of ascites hepatoma of, effects of, on sensitivity to nitrogen mustard, N-oxide, and x radiation, 22:31272
content of taurine in urine of, effects of cortisone and methotrexate on, 22:10825 (BNWL-480, pp 55-83)
contraction of cardiac muscle of, effects of caffeine, nitrates, and uranyl ions on, 22:10713
copper binding to globulins in blood of, effects of cysteine on, 22:19387
determination of fibrillogenesis in regenerating tendons of, use of electron microscopy for, 22:28272 (ANL-7278, pp 185-218)
determination of iodine content of thyroid of, activation analysis method for, 22:49270
distribution of cancer cells in blood of, effects of endoxan, γ radiation, and prednisolone on, 22:15101
distribution of carbon-14- and tritium-labeled tetraphenylporphinesulfonate in tissues of, 22:8447
distribution of injected thyrotropin in tissues of hypothyroid and normal, tracer studies of, 22:51374
distribution of iodine-125-labeled analogs of 1,1-dichloro-2-(o-chlorophenyl)-2-(p-chlorophenyl)ethane in tissues of, 22:36337
distribution of iodine-131-labeled albumin in heart and lungs of, 22:12794
distribution of iodine-131-labeled triiodothyronine in, effects of ACTH, adrenalin, AET, and cysteine on, 22:33895
distribution of phosphorus-32-labeled colloids of calcium, chromium, and iron in, 22:6743
distribution of radiomolybdenum and radioselenium in, autoradiographic study of, 22:40555
dosimetry of cobalt radioisotopes in, following intraperitoneal, intravenous, and oral administration, 22:43263
ecology at Eniwetok Atoll, 22:30417(R) (TID-24205)
electrolyte transport in intestines of, effects of taurocholic acid on, 22:10824 (BNWL-480, pp 1-19)
evaluation of silver-110-labeled oleate for lymph scanning in, 22:33891
evaluation of technetium-99-labeled dextran for scanning in, 22:33892
excretion of calcium and zinc in urine of, effects of dose on, 22:40521
excretion of cesium-134 in feces of, effects of cyanoferrates on, 22:40522
extraction of RNA from brains of trained, effects of, on behavior of untrained, 22:20977 (COO-825-35)
fission product metabolism in, unseparated uranium, 22:8474
fission product metabolism in, unseparated uranium, 22:8473
formation of stem cells in, effects of x-irradiated aminocaproic acid, pentosan SP 54, sanguina deproteinase, and SD-SK on, 22:16990
formation of tumor antibodies by, effects of hematopoietic tissue transplants on, 22:45712
gallium-67 distribution in, effects of stable gallium and time on, 22:51307 (ORAU-106, pp 105-34)
gallium-68 binding by blood serum protein in, 22:51307 (ORAU-106, pp 105-34)
growth of carcinomas and sarcomas in, effects of x-irradiated bone marrow on, 22:25862
growth of hepatomas in, inhibitory effects of mixtures of irradiated liver or tumor homogenates and pertussis vaccine on, 22:6709 (ACRH-1000-21)
growth of, effects of strontium-90 decontaminated milk on, 22:15008
hormone secretion by thyroid of, determination of rate of, 22:21404 (COO-301-150)
hypertension in, genetic study of, 22:14906 (BNL-50057, pp 123-37)
immune reactions to doubly incompatible antigens in, effects of pre-immunization with incompatible antigens on, 22:19235(R) (COO-1282-1)
immunity produced in, by exposure to irradiated

erythrocytes parasitized by Plasmodium berghei, 22:38473
incidence of tumors in, combined effect of dimethyl benzanthracene and strontium-90 on, 22:23609
incidence of tumors in, following injection of irradiated blood plasma, effects of hormones on, 22:40829 (ORO-657, pp 18-34)
incorporation of calcium-45 and strontium-89 in subcellular fractions of liver of, effects of uncoupling agents on, 22:16989
indium-113 binding by blood serum protein in, 22:51307 (ORAU-106, pp 105-34)
indium-113 distribution in, effects of gallium citrate on, 22:51307 (ORAU-106, pp 105-34)
indium-114 distribution in, effects of iron citrate on, 22:51307 (ORAU-106, pp 105-34)
ingestion of γ-irradiated fruits by, pathological effects of, 22:43493 (NYO-3422-1(Vol.1))
ingestion of γ-irradiated fruits by, pathological effects of, 22:43495 (NYO-3422-1(Vol.2))
ingestion of γ-irradiated onions by, pathological effects of, 22:43494 (NYO-3422-1(Suppl.)(Vol.1))
ingestion of γ-irradiated onions by, pathological effects of, 22:43496 (NYO-3422-1(Suppl.)(Vol.2))
ingestion of γ-irradiation onions by, effects of, on clinical condition, 22:23693 (AECL-2706, pp 114-21)
ingestion of irradiated food by, effects of, 22:21642
ingestion of irradiated food by, effects of, on thymus involution, 22:45743
ingestion of irradiated foods by, evaluation of effects of, 22:26018
ingestion of irradiated foods by, toxic effects of, 22:43514
iodine content of glands, ovaries and visceral organs of, effects of infectious disease on, 22:40681
iodine-125 metabolism in thyroid gland of, effects of hypophysectomy on, 22:40517(R) (ORO-1643-89)
iodine-131 metabolism in, 22:33778 (UCLA-12-640, pp 45-60)
iodine-131 metabolism in respiratory tract of, effects of drugs on, 22:431
iodine-131 metabolism in thyroid gland of, effects of melatonin and ovariectomy on, 22:30977
iodine-131 metabolism in thyroid gland of, effects of iodine-deficient diet on, 22:45386
iodine-131 metabolism in thyroid of, 22:14961
iodine-131 retention by, effects of age on, 22:10675 (BNWL-480, pp 21-54)
iodine-131 uptake by blood plasma and uterus of ovariectomized, effects of progesterone on ratios of, 22:8472
iodine-131 uptake by body and thyroid of, effects of methylthiouracil and potassium iodides on, 22:19254
iodine-131 uptake by submaxillary glands of, effects of adrenalectomy, hormones, sex, and thyroidectomy on, 22:12768
iodine-131 uptake by thyroid gland of, following pinealectomy, 22:47475
iodine-131 uptake by thyroid of female and male, effects of castration and seasons on, 22:14966
iodine-132 incorporation by thyroglobulin of, effects of propylthiouracil on, 22:14949
iron-59 distribution in lungs of, following intratracheal administration, 22:21450
iron-59 distribution in tissues of, 22:21450
iron-59 distribution in tissues of, following intratracheal injection in insoluble or soluble compounds, 22:21605
iron-59 distribution in tissues of, following intratracheal injection, 22:21451
iron-59 excretion by, effects of CDTA combined with PVP on, 22:21456
iron-59 excretion in, effects of CDTA, EDTA, and pectin on, 22:21455
iron-59 metabolism in, 22:6772 (ORNL-4168, pp 61-118)
iron-59 retention by, following ingestion of labeled barley and wheat, 22:45400
iron-59 uptake by, with fatty livers, effects of pancreas extract on, 22:49244
isolation of RNA from brain of trained, effects of, on behavior of controls, 22:20976 (COO-825-34)
lead-210 excretion by, following intravenous injection, 22:38203
lead-212 content of bronchial epithelium of, following inhalation, effects of caging on, 22:2506(R) (NYO-3086-7)
leukemia transfer in, through cell injections, 22:23594 (LF-38, pp 108-12)
leukocytosis induced in, by blood transfusions from x-irradiated donors, 22:19414
life span of intestinal cells of, use of tritium-labeled thymidine for determination of, 22:28621 (ANL-7278, pp 1-94)
localization of acid mucopolysaccharides in cells of intestines in, use of thorium-containing stains for, 22:10824 (BNWL-480, pp 1-19)
measurement of particle passage time through gastrointestinal tract of, effects of age and particle size on, 22:49331
metabolism in atherosclerotic arteries of, use of activation analysis for study of, 22:30497
metabolism in bones of, effects of parathormone, thyrocalcitonin, and vitamin D on, 22:7939 (COO-1668-4)
metabolism in cell cultures from pituitary gland of, effects of hypothalamic extracts on oxidative, 22:12175(R) (NYO-3827-3)
metabolism in, effects of potassium on rate of, 22:21460(R) (COO-1171-82)
metabolism of ADU in, following inhalation, 22:33740
metabolism of amino acids in, following ingestion of γ-irradiated potato tubers, 22:43262
metabolism of ephedrine by, reverse isotopic dilution method for analysis of, 22:16976
metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
metabolism of glycogen in, effects of glucagon and hydrocortisone on, 22:28623 (ANL-7278, pp 132-43)
metabolism of iodine-125- and iodine-131-labeled chloroquine analogs by, evaluation of, 22:10820
metabolism of iodine-131-labeled analogs of 1,1-dichloro-2,2-bis(chlorophenyl) ethane in, evaluation of, 22:10819
metabolism of nickel carbonyl in, tracer study of, 22:6216(R) (ORO-3461-9)
metabolism of selenium-75-labeled methionine in, 22:30979
metabolism of selenium-75-labeled sodium selenite in, 22:33723
metabolism of technetium-99-labeled pertechnetate in, 22:8451
metabolism of tritium-labeled water in, use of liquid scintillation counter to determine, 22:430
metabolism of, design of whole-body scintillation detector for studying, 22:6567
mitosis in taste bud cells of, effects of colchicine on, 22:49486(R) (NYO-3359-4)
niobium-95 metabolism by, 22:8475
niobium-95 metabolism by, following inhalation, assessment of hazards from, 22:40583
parathyroid activity in, in relation to calcium and phosphate content of diet, 22:6201 (CU-2530-10)
phagocytosis of plutonium oxide particles in peritoneal cavity of, effects of DTPA and particle size on, 22:10677 (BNWL-480, pp 99-106)
phosphate content of blood of, effects of parathormone, thyrocalcitonin, and vitamin D on, 22:6200(R) (COO-1668-3)
phosphorus-32 uptake by, effects of blocking agents on, 22:21418
phosphorus-32 uptake by, protective effects of AET against, 22:21551
plutonium determination in, whole-body counting method for, 22:51630
plutonium distribution in liver of, 22:51295 (AWRE-O-28/68)
plutonium inhalation by, kinetics of, 22:8477
plutonium metabolism by, effects of pregnancy on, 22:8478
plutonium retention by, effects of complexing agents on, 22:8480
plutonium uptake by lungs and pulmonary lymph nodes of, following inhalation, 22:21507
plutonium-239 distribution and metabolism in, following inhalation of its compounds, 22:14954
plutonium-239 metabolsim in, effects of epinephrine, diuretics, EDTA, and phosphates on, 22:12787
potassium-42 retention in, 22:51308 (ORAU-106, pp 171-93)
preparation of labeled RNA from tissues of, improved methods for, 22:12746 (EUR-3669)
proliferation of kidney cells in weanling, effects of renal work load on, 22:43349 (UCSF-10-P-2-39, pp 125-260)
protein synthesis in cell cultures from pituitary gland of, effects of hypothalamic extracts on, 22:12175(R) (NYO-3827-3)
radiation detection by olfactory system of, x, 22:28625 (NYO-2147-13, pp 181)
radiation detection by, interchangeability of ozone and ethyl butyrate as conditional stimuli for x, 22:28282 (NYO-2147-13, pp 182-92)
radiation dose distribution in frozen and phantom, determination of x, 22:40723
radiation dose to liver of, measurement of strontium-90 β, 22:49347
radiation dose to, comparison of specific activity of sodium-24 and mortality data for determining neutron, 22:45523
radiation dose to, following ingestion and injection of tritium-labeled thymidine, β, 22:45521
radiation dose to, following ingestion of radioactive particles, effects of gastrointestinal retention time on α, β, and γ, 22:49228
radiation dose to, from orally administered tungsten-185 and tungsten-187, γ, 22:38212
radiation dosimetry in cadavers of, use of thermoluminescent microdosimeters for x, 22:28476
radiation dosimetry in lungs of, following uptake of iron-59, β, 22:21605
radiation dosimetry in, using tissue-equivalent phantoms, effects of penetration depth on, 22:6652 (ORNL-4168, pp 183-230)

radiation effect on brain of, x, 22:23621
radiation effects on , effects of functional state of adrenal glands on acute γ, 22:49458
radiation effects on absorption and excretion of tritium-labeled water by, effects of dose on x, 22:49233
radiation effects on acetylcholinesterase activity and protein content in brain of, prenatal x, 22:447
radiation effects on acid phosphatase and proteins in neoplasms of, x, 22:459
radiation effects on acid secretion and bioelectric potential in stomach of, x, 22:49226
radiation effects on acidity and clearance of stomach in, effects of atropine on, 22:28683
radiation effects on activity and electrophoretic characteristics of alkaline phosphatase in organs and serum of, whole-body x, 22:2484
radiation effects on activity and localization of acid phosphatase in testes of, γ, 22:33774
radiation effects on activity of acid and alkaline phosphatases in subcellular fractions of liver and spleen cells in, whole-body x, 22:6730
radiation effects on activity of acid hydrolases in cells of tumors from, x, 22:28377
radiation effects on activity of alanine aminotransferase and aspartate aminotransferase in, protective effects of saturated fatty acids against x, 22:12796
radiation effects on activity of aminotransferases in serum of, whole-body x, 22:40909
radiation effects on activity of DNAase in liver and spleen of, protective effects of AET and cysteamine against x, 22:4661
radiation effects on activity of enzymes in liver and spleen of, whole-body ionizing, 22:40589
radiation effects on activity of enzymes in, x, 22:25753
radiation effects on activity of lysosomal enzymes in tissues of, protective effects of cysteine and vitamin K_7 against whole-body γ, 22:10738
radiation effects on activity of phosphodiesterase and RNAase in intestine of, whole-body x, 22:36399
radiation effects on activity of tryptophan peroxidase in liver of, x, 22:19383
radiation effects on adenohypophysis and hypothalamo-hypophyseal neurosecretory system in, effects of dose on chronic x, 22:31260
radiation effects on adenohypophysis of castrated, cytological study of γ, 22:45663
radiation effects on adenosine triphosphatase activity of hematopoietic tissues of, protective effects of drugs against γ, 22:8592(R) (AD-629311)
radiation effects on adrenal cortex activity in, protective effects of cysteamine against x, 22:23576
radiation effects on adrenal cortex of, acute and latent γ, 22:49612
radiation effects on adrenal function in, protective effects of chemical agents against, 22:45628
radiation effects on adrenal gland function in, protective effects of antibiotics, bone marrow, and drugs against x, 22:45628
radiation effects on adrenal gland of, x, 22:45665
radiation effects on adrenal glands and ovaries in female, chronic γ, 22:33960
radiation effects on adrenocortical functions of, whole-body supralethal, 22:19280
radiation effects on alkaline phosphatase activity in blood of, γ, 22:40562
radiation effects on alkaline ribonuclease content of mucosa of intestine of, role of neuroendocrine reactions in acute x, 22:49272
radiation effects on ammonia-glutamine system of brain of, x, 22:49234
radiation effects on antibody formation in, effects of lymphocyte injections on x, 22:4573
radiation effects on antibody response of, to bovine serum albumin, sheep erythrocytes, and tetanus toxoid, effects of lymphocytes on x, 22:51360
radiation effects on antigen localization in lymphoid follicles of, 22:28621 (ANL-7278, pp 1-94)
radiation effects on arylamine content of blood in, effects of metabolic activity on x, 22:28347
radiation effects on arylesterase activity in blood serum and organs of, whole-body x, 22:33735
radiation effects on aspartate aminotransferase activity in blood serum and liver tissues of, effects of liver excision on x, 22:28348
radiation effects on α-glucan phosphorylase and glycogen in livers of, effects of adrenalectomy and fasting on whole-body x, 22:40569
radiation effects on barium meal aversion in, role of gastric emptying in, x, 22:23605
radiation effects on basal and carbohydrate metabolism of, effects of acetylcholine, adrenaline, histamine, noradrenaline, and serotonin on x, 22:40584
radiation effects on behavior and metabolism of, effects of age on x, 22:49500
radiation effects on behavior and physiology of, chronic x, 22:51902
radiation effects on behavior of, combined effects of apomorphine and lithium chloride on x, 22:12932
radiation effects on behavior of, effects of dose fractionation on x, 22:51990
radiation effects on behavior of, γ, 22:23654
radiation effects on behavior of, relation of, to radiosensitivity, 22:33941
radiation effects on bioelectric activity in brain of, effects of prenatal exposure on γ, 22:40604
radiation effects on blood clot retraction in, γ, 22:45713
radiation effects on blood condition and survival of, protective effects of selenourea against γ, 22:33884
radiation effects on blood counts and mortality of, effects of dose on proton, 22:28645
radiation effects on blood of, plutonium-239 α and γ, 22:49503
radiation effects on blood of, protective effects of platelet extract on in vivo, 22:33869
radiation effects on blood of, proton and x, 22:15078
radiation effects on blood of, whole-body γ, 22:12756(T) (NASA-TT-F-413, pp 175-91)
radiation effects on blood pressure and epinephrine synthesis in, whole-body x, 22:45666
radiation effects on blood pressure of, effects of procaine on, 22:19364
radiation effects on blood serum proteins and fetal bone system of, effects of thyroidectomy on γ and x, 22:19445
radiation effects on blood vessels and mucosa in intestines of, x, 22:49556
radiation effects on blood vessels in kidneys of, following injection of polonium-210, pathologic α and γ, 22:23628
radiation effects on body weight and life span of, protective effects of groundnut oil against γ, 22:49494
radiation effects on bone development and serum proteins of, combined effects of thyroidectomy on chronic γ and x, 22:36387
radiation effects on bone marrow and intestine of, comparison of γ, neutron, and x, 22:12908
radiation effects on bone marrow and intestines of, protective effects of AET against, 22:25885
radiation effects on bone marrow cells of, effects of shielding on, 22:51950
radiation effects on bone marrow cells of, renewal response following continuous, 22:49469 (CONF-680410-, pp 3.1-12)
radiation effects on bone marrow in, regeneration of x, 22:31271
radiation effects on bone marrow of, effects of dose on regeneration of injuries following x, 22:43399
radiation effects on bone marrow of, effects of, on lipid metabolism, γ, 22:51874 (ORAU-106, pp 5-104)
radiation effects on bone marrow of, fast neutron, γ, x, 22:40844
radiation effects on bone marrow of, internal β, 22:51937
radiation effects on bone marrow stem cells of, effects of nonuniform exposure on γ and x, 22:49581
radiation effects on brain of, behavioral and histological analysis of direct x, 22:38464
radiation effects on brain of, effects of age on x, 22:23592(R) (COO-1474-11)
radiation effects on brain of, protective effects of hair, scalp, and skull against laser, 22:8633
radiation effects on β-fructofuranosidase activity in brain, heart, kidney, and liver of, x, 22:23422
radiation effects on β-glucuronidase activity in, whole-body x, 22:33755
radiation effects on calcium, mucopolysaccharide, and strontium metabolism in, x, 22:49225
radiation effects on calcium-45 uptake by, following local knee irradiation, abscopal electron, 22:51899
radiation effects on capillaries and glial cells in brain of, x, 22:4693
radiation effects on capillary ultrastructure of nervous tissue in, whole-body, 22:33742
radiation effects on cardiac muscle and central nervous system of, x, 22:19295
radiation effects on cardiovascular, nervous, and respiratory systems of, tritium β, 22:19412
radiation effects on cell count in peripheral blood of, γ, 22:6772 (ORNL-4168, pp 61-118)
radiation effects on cell proliferation and regeneration in liver of, following partial hepatectomy, effects of prior continuous exposure on γ, 22:31211
radiation effects on cell proliferation in intestine of, effects of LET on γ, 22:6903
radiation effects on cell renewal systems in hematopoiesis and intestinal mucosa of, comparison of lethal neutron and x, 22:49491 (UCSF-10-P-2-40)
radiation effects on cell structure of neurons of hypothalamus of, acute γ, 22:49186
radiation effects on cells of bone marrow, liver, and thrombocytes of, electron microscopy of manganese-54 γ, 22:38452
radiation effects on cells of subependymal layer of brain of, following injection of tritium-labeled thymidine, β, 22:40861
radiation effects on cellular ultrastructure in transplants of thyroid gland of, effects of dose on x, 22:12813
radiation effects on central nervous system of, combined effects of convulsant drugs on x, 22:47625
radiation effects on central nervous system of, following

prenatal exposure, protective effects of AET against x, 22:45623
radiation effects on central nervous system of, x, 22:14906 (BNL-50057, pp 123-37)
radiation effects on cerebral cortex of, γ, 22:33906(R) (UCLA-34-P-132-S1)
radiation effects on chemistry and histology of liver of, x, 22:442
radiation effects on cholesterol and neutral fat content in liver of, effects of time on, x, 22:36198
radiation effects on choline content of liver of, effects of dose on fission neutron, γ, and proton, 22:47490
radiation effects on choline metabolism in phospholipids of blood and marrow cells in, strontium-90 β, 22:10675 (BNWL-480, pp 21-54)
radiation effects on cholinesterase activity in brain of, x, 22:19241
radiation effects on cholinesterase activity in liver and muscles of, thermal neutron and x, 22:23446
radiation effects on cholinesterase activity in, neutron and x, 22:19296
radiation effects on chromosomes in bone marrow of, internal radium-226 alpha and γ and strontium-90 β, 22:51945
radiation effects on circulating eosinophil count in, effects of ACTH and corticoid content on local and whole-body x, 22:23631
radiation effects on composition and thyroxine-binding capacity of blood serum proteins in, whole-body γ, 22:49236
radiation effects on conditioned reflex activity of, pulsed and nonpulsed microwave, 22:43471
radiation effects on conditioned reflexes of, combined effects of vibrations on x, 22:12759(T) (NASA-TT-F-413, pp 229-43)
radiation effects on conditioned reflexes of, comparison of fast neutron, γ, and proton, 22:12755(T) (NASA-TT-F-413, pp 158-74)
radiation effects on conditioned reflexes of, effects of age on x, 22:25965
radiation effects on conditioned reflexes of, effects of dose on whole-body γ, 22:12756(T) (NASA-TT-F-413, pp 175-91)
radiation effects on consumption by, of water flavored with hydrochloric acid and quinine, x, 22:38426(R) (NYO-3698-1)
radiation effects on contact digestion in, x, 22:47624
radiation effects on content of acid-soluble free nucleotides in liver of, effects of dose on γ and x, 22:51914
radiation effects on content of adenine nucleotides in blood cells, liver, and mitochondria of, whole-body ionizing, 22:51484
radiation effects on content of amino acids in brain of, x, 22:23447
radiation effects on content of amino acids, DNA, and nucleotides in tissues of, method for measuring x, 22:8441
radiation effects on content of amino compounds in plasma of, 22:419 (AD-648223)
radiation effects on content of β-aminoisobutyric acid and taurine in urine of, 22:31264
radiation effects on content of β-lipoproteins in organs and tissues of, x, 22:8488
radiation effects on content of cerebrosides in brain of, effects of prenatal exposure on x, 22:33924
radiation effects on content of choline in liver of, fission neutron, γ, and proton, 22:21434
radiation effects on content of collagen in lungs of, following plutonium-239 inhalation, α, 22:10825 (BNWL-480, pp 55-83)
radiation effects on content of corticosteroids in adrenal glands and blood of, x, 22:23616
radiation effects on content of cytochromes, enzymes, and nicotinamide nucleotides in adrenal glands of, combined effects of ACTH on whole-body x, 22:14957
radiation effects on content of deoxycytidine in blood plasma of, use of, for dosimetry, x, 22:43201 (AD-664676)
radiation effects on content of disulfide and sulfhydryl proteins in tissues of, ionizing, 22:51485
radiation effects on content of enzymes in liver of, effects of glucagon, hydrocortisone, and starvation in whole-body, 22:19271
radiation effects on content of fatty acids and phosphatides in liver of newborn, x, 22:10699
radiation effects on content of fatty acids and total lipids in heart muscles and kidneys of, whole-body x, 22:33921
radiation effects on content of fatty acids in blood plasma of fetal and maternal, x, 22:49565
radiation effects on content of hexosamines, hexoses, and proteins in serum of, whole-body x, 22:40909
radiation effects on content of histones and acid-soluble proteins in thymus of, whole-body γ, 22:40540
radiation effects on content of hydroxyproline and lipids in lungs of, x, 22:10825 (BNWL-480, pp 55-83)
radiation effects on content of quinone-type toxins in bone marrow and liver of, methods for detection of, 22:49512
radiation effects on content of RNAase in blood plasma and tissues of, whole-body x, 22:40538
radiation effects on content of serotonin in central nervous system of, phosphorus-32 β, 22:21417
radiation effects on content of taurine in organs and urine of, 22:28374
radiation effects on content of vitamin C in bone marrow, spleen, and testes of, γ, 22:25763
radiation effects on contents of soluble fats and proteins in myocardium of, whole-body x, 22:40579
radiation effects on corneal epithelium of eyes of, effects of dose on aberrant laser, 22:8452
radiation effects on corticosterone content of adrenal glands and blood plasma of, protective effects of testosterone propionate against, 22:51797
radiation effects on cortisol-induced glycogen synthesis in liver of, effects of adrenalectomy on x, 22:40834
radiation effects on count of cells in peripheral blood of, combined effects of open skin wounds on x, 22:45707
radiation effects on cytochromes and membranes of mitochondria in thymus of, γ, 22:45426
radiation effects on cytology of mast cells in blood of, use of saponin-hemolysis method for study of x, 22:40525
radiation effects on deposition of fibrinogen in tumor-bearing, effects of epsilon aminocaproic acid on x, 22:49486(R) (NYO-3359-4)
radiation effects on detoxication of benzoate and resorcinol in, role of coenzyme A in x, 22:23474
radiation effects on developing dental tissues of, effects of age on x, 22:4696
radiation effects on development and estrogenic activity of ovaries in, x, 22:33959
radiation effects on development and mortality of, following exposure in utero, γ, 22:38460
radiation effects on development of ciliated epithelium and rudimentary cilia in lungs of, x, 22:579
radiation effects on development of neurons in brain of, effects of age on x, 22:23597(R) (MIT-3045-34)
radiation effects on development of teeth of, histological study of x, 22:45697
radiation effects on digestion in intestine of, x, 22:49509
radiation effects on digestive and phagocytic functions of reticulo-endothelial system of, tracer study of ionizing, 22:23610
radiation effects on distribution of phosphorus-32 in blood serum proteins, brain, and liver of, proton, 22:52001
radiation effects on distribution of silver nitrate in brain tissues of, chronic γ, 22:38457
radiation effects on distribution of substance P in central nervous system and small intestines of, effects of age on whole-body x, 22:36201
radiation effects on DNA content and nuclei of epidermal cells of, uv, 22:49253
radiation effects on DNA content and nuclei of epidermal cells of, uv, 22:49253
radiation effects on DNA content of nuclei in lymphocytes of liver and spleen in, whole-body x, 22:21433
radiation effects on DNA in liver of, 22:51450
radiation effects on DNA metabolism in isolated perfused intestine of, x, 22:49227
radiation effects on DNA of liver of kangaroo, effects of environmental contamination on tritium β and γ, 22:49184 (UCRL-50461)
radiation effects on DNA of thymus of, effects of hydrodynamic forces following, 22:49198
radiation effects on DNA synthesis and mitosis in corneal epithelium of, strontium-90 β, 22:45411
radiation effects on DNA synthesis and mitosis in eye tissues of, strontium-90 β, 22:45655
radiation effects on DNA synthesis by tumors of, effects of dose fractionation on x, 22:2481
radiation effects on DNA synthesis in intestine and liver of, x, 22:12814
radiation effects on DNA synthesis in thyroid gland of, β, 22:2534(R) (COO-1243-8)
radiation effects on DNAase content of urine of, diagnostic value of neutron, 22:33919
radiation effects on DNAase II activity in blood serum, bone marrow, and spleen of, strontium-90 β, 22:8487
radiation effects on early development of embryos in, strontium-90 and yttrium-90 β, 22:28275 (NYO-2147-13, pp 11-15)
radiation effects on electrocardiogram of, cobalt-60 γ, 22:45664
radiation effects on electroencephalogram of, protective effects of AET on x, 22:15103
radiation effects on electrolyte metabolism in, in relation to adrenal cortex function, acute polonium-210 γ, 22:49608
radiation effects on electrolyte transport and voltage measurements in isolated ileum from, x, 22:49543
radiation effects on electrolyte transport in intestines of, x, 22:10824 (BNWL-480, pp 1-19)
radiation effects on electrophoretic behavior of proteins from lungs of, x, 22:51423
radiation effects on embryos and fetuses of, effects of continuous exposure on γ, 22:10865
radiation effects on embryos of, protective effects of diapause and progesterone against preconception x,

22:45642
radiation effects on energy mechanisms in liver mitochondria of, protective effects of mustard gas solutions against x, 22:19378
radiation effects on enzyme activity and content of proteins in bone marrow of, x, 22:45414
radiation effects on enzyme activity in liver and spleen of, x, 22:43226
radiation effects on enzyme activity in plasma of, protective effects of dimethyl sulfoxide against x, 22:38358
radiation effects on enzyme activity of, comparison of, to radiomimetic effects, 22:49239
radiation effects on enzymes and pathways of thymine metabolism in, 22:45508(R) (PG-Report-826)
radiation effects on enzymes in liver microsomes of, localized and whole-body x, 22:33759
radiation effects on erythrocytes of, effects of age on γ, 22:12913
radiation effects on erythropoiesis in, effects of stem cell activity on x, 22:560
radiation effects on erythropoiesis in, effects of 19-nortestosterone phenylpropionate on x, 22:36368
radiation effects on erythropoiesis in, following chronic injection of iron-59, β and γ, 22:21450
radiation effects on erythropoiesis in, iron-59 tracer study of γ, 22:15098
radiation effects on erythropoiesis in, protective effects of hydrocortisone against whole-body, 22:10810
radiation effects on erythropoiesis in, x, 22:2532 (AD-647907)
radiation effects on ethanol metabolism in liver of, 22:19244
radiation effects on excretion of 2'-deoxycytidine by, effects of age, dose, and splenectomy on whole-body x, 22:12916
radiation effects on excretion of 5-hydroxyindoleacetic acid in, in relation to radiosensitivity, x, 22:28658
radiation effects on excretion of anthranilic acid and xanthurenic acid in, x, 22:19383
radiation effects on excretion of deoxycytidine in urine of, x, 22:43461
radiation effects on eyes of, RBE of γ and x for cataract induction, 22:40854
radiation effects on fatty acids of liver mitochondria of, whole-body lethal and sublethal x, 22:33733
radiation effects on fear response of, whole-body γ, 22:10862
radiation effects on ferrochelatase activity in tissues of, in vitro, 22:40590
radiation effects on fertility of male, effects of prenatal exposure on γ, 22:563
radiation effects on fetuses of, effects of, on postnatal radiosensitivity, γ, 22:40875
radiation effects on food intake and excretion of glucuronides in, effects of dose on γ, 22:31267
radiation effects on foot and mouth virus multiplication in, x, 22:51429
radiation effects on formation of antibodies, blood cells, and hemolysins in, combined protective effects of AET, cysteamine and serotonin and marrow transplants against x, 22:45648
radiation effects on free radical reactions in liver cells of, graft copolymerization study of, 22:14956
radiation effects on function of adrenal glands of, supralethal whole-body, 22:4673
radiation effects on function of endocrine glands of, radio wave, 22:51994
radiation effects on function of endocrine glands and incidence of obesity in, proton, 22:33961
radiation effects on gastrointestinal tract of, phosphorus-32 β, 22:49537
radiation effects on glucose metabolism in brain of, x, 22:448
radiation effects on glucuronic acid synthesis in, whole-body x, 22:43253
radiation effects on glycogen synthesis in liver of, combined effects of starvation on, 22:40558
radiation effects on glycolysis in erythrocytes of, effects of dose, oxygen and temperature on γ, 22:8489
radiation effects on glycolysis in thymocytes of, x, 22:45431
radiation effects on glycolytic metabolism of, whole-body x, 22:33764
radiation effects on gonads and spleen of, microwave, 22:40895
radiation effects on granulocytopoiesis in, effects of dose on, 22:49575
radiation effects on growth and morphology of, following prenatal injection of tritium-labeled thymidine, 22:40601
radiation effects on growth of bones in, effects of age on neutron and x, 22:8643
radiation effects on growth of incisor teeth of, effects of dose on x, 22:15095
radiation effects on growth of vertebrae in tails of young, x, 22:36355
radiation effects on growth of, following exposure of head, effects of dose on x, 22:6910
radiation effects on growth, life span, and reproduction in, following ingestion of irradiated diet, γ, 22:17069
radiation effects on hair follicles and tumor incidence in skin of, effects of LET on α and electron, 22:47633
radiation effects on healing of wounds in, protective effects of B vitamins against x, 22:36303
radiation effects on hematopoiesis and survival of, effects of dose on γ and x, 22:49578
radiation effects on hematopoiesis and survival of, protective effects of methandrostenolone against x, 22:45627
radiation effects on hematopoiesis in, 22:12750(R) (RLO-1377-3)
radiation effects on hematopoiesis in bone marrow of, effects of dose on β, γ, and x, 22:52009
radiation effects on hematopoiesis in fasted, acute fractionated γ, 22:51981
radiation effects on hematopoiesis in spleen of, effects of isologous bone marrow transplants on, 22:28694
radiation effects on hematopoiesis in, effect of spleen on x, 22:38461
radiation effects on hematopoiesis in, effects of dose homogeneity on x, 22:8638
radiation effects on hematopoiesis in, effects of dose on recovery from, 22:15057
radiation effects on hematopoiesis in, γ, 22:14969
radiation effects on hematopoiesis in, protective effects of bone marrow shielding against acute x, 22:49363
radiation effects on hematopoiesis in, protective effects of isogenic marrow lymphocytes against x, 22:8567
radiation effects on hematopoiesis in, therapeutic effects of DNA on whole-body γ, 22:25898
radiation effects on hematopoietic organs of fetuses of, x, 22:49583
radiation effects on hematopoietic stem cell recovery in, effects of repeated sublethal doses on x, 22:38435
radiation effects on hematopoietic stem cells in bone marrow and spleen of, effects of age on γ, 22:6901
radiation effects on hematopoietic system of, comparison of RBE for β, fast neutron, and x, 22:40822(T) (JPRS-44070, pp 1-9)
radiation effects on hematopoietic system of, following inhalation of strontium-90 aerosols, 22:23594 (LF-38, pp 108-12)
radiation effects on hematopoietic system of, protective effects of bone marrow transplants against, 22:19399
radiation effects on histamine content of, comparison of, to radiomimetics and vibration effects, 22:25964
radiation effects on histamine content of, γ, neutron, and proton, 22:25726
radiation effects on histochemical reactions and cellular morphology in adrenal glands of, whole-body x, 22:429
radiation effects on histochemical reactions in adrenal glands of, whole-body x, 22:429
radiation effects on hydrolytic enzymes in reticular cells of thymus gland of, whole-body x, 22:441
radiation effects on hypertrophic kidneys of, biochemical and histological study of γ, 22:40920
radiation effects on immune reactions in, effects of thymectomy and grafts from tolerant rats on, 22:51433
radiation effects on immune reactions in, following injection of mixed liver and spleen extracts in relation to protein synthesis, 22:25771
radiation effects on immune reactions of, to injected bovine gamma globulin, effects of endotoxin stimulation on, 22:8462
radiation effects on immune reactions of, to transplants of sensitized spleen cells, 22:40535
radiation effects on immune response in, effects of lymphocyte transplants on repair of x, 22:14920
radiation effects on immune response of, cytological analysis of γ, 22:38222
radiation effects on immune response of, role of lymphocytes in x, 22:30945
radiation effects on immune response of, to skin transplants, extracorporeal x, 22:49221
radiation effects on immune response of, tracer study of, 22:10853
radiation effects on immunity of, against transplants of Yoshida sarcoma cells, 22:47492
radiation effects on incidence of ectoparasites of, at Nevada Test Site, 22:8495 (COO-1355-17)
radiation effects on incidence of inflammation in skin of, following intracutaneous injection of Escherichia coli, microwave and radio wave, 22:19406
radiation effects on incidence of neoplasm in lungs of, α, 22:2537
radiation effects on incidence of pulmonary metastases in, following therapy of mammary cancer, x, 22:21616
radiation effects on incidence of Tyzzer's disease in, effects of cortisone on x, 22:47586
radiation effects on incised muscle of, protective effects of cystamine against, 22:47567
radiation effects on incisor teeth of, histologic study of x, 22:51895
radiation effects on interferon content of, effects of adrenalectomy, cortisol, and sindbis virus on x, 22:52000
radiation effects on internal organs of, sensitizing effects of vitamin K_3 on x, 22:49396
radiation effects on intestinal function in, combined effects of bile on x, 22:49544
radiation effects on intestinal mucosa of, acute γ,

neutron, and x, 22:49552
radiation effects on intestinal mucosa of, combined effects of bile on x, 22:49561
radiation effects on intestines of, carcinogenic cerium-144 β and γ, 22:43442
radiation effects on intestines of, histopathologic study of urethan effects on x, 22:36316
radiation effects on intestines of, role of lysosomes in x, 22:49558
radiation effects on intrauterine development of, strontium-90 β, 22:40904
radiation effects on kidneys of parabiont, x, 22:19423
radiation effects on kinase activity in liver of, protective effects of AET against x, 22:4589
radiation effects on leukocytes of, β and γ, 22:49516
radiation effects on lick rates in, effects of saccharin on γ, 22:49609
radiation effects on life span of Dipodomys sp., in Mojave desert, 22:25800 (UCLA-12-668, pp 37-58)
radiation effects on life span of, effects of age and dose fractionation on γ, neutron, and x, 22:8645
radiation effects on lipases in adipose tissues of, effects of noradrenaline and pH on uv, 22:19260
radiation effects on lipid balance in fetal and maternal liver and placenta of pregnant, whole-body x, 22:435
radiation effects on lipid metabolism in adipose cells of, uv, 22:21441
radiation effects on lipid peroxide production in subcellular fractions from liver cells of, electron, 22:454
radiation effects on lipids of, x, 22:30929 (BMwF-FBK-67-84)
radiation effects on liver cells of, histochemical analysis of internal gold-198 β and γ, 22:33957
radiation effects on liver of, effects of diethylnitrosamine and phenobarbital on γ, 22:28623 (ANL-7278, pp 132-43)
radiation effects on liver of, effects of dose and postirradiation time on acute x, 22:25969
radiation effects on liver of, following chronic ingestion of strontium-90, β, 22:28667
radiation effects on liver of, protective effects of DNA against γ, 22:10783
radiation effects on living cells from liver of, effects of acridine orange on laser, 22:51976
radiation effects on localization of acid mucopolysaccharides in cells of intestines of, acute x, 22:49273
radiation effects on lung tissues of, effects of parabiosis on x, 22:40862
radiation effects on lungs of, following uptake of iron-59, pathological β and γ, 22:21605
radiation effects on lymph nodes and spleen of, histological analysis of chronic strontium-90 β, 22:38434
radiation effects on lymph system in, protective effects of DNA against γ, 22:51867
radiation effects on lymphocytes and plasma cells in lymph nodes of, effects of typhoid-paratyphoid vaccination on x, 22:436
radiation effects on lymphocytes in peripheral blood of, extracorporeal and whole-body x, 22:31227
radiation effects on lymphopoiesis in, effects of mumie on restoration of γ, 22:51850
radiation effects on lysosomes in skin of, uv, 22:51911
radiation effects on mast cells in peritoneal fluid of, microwave, 22:559
radiation effects on maternal-embryonic interactions in, protective effects of cysteamine against x, 22:47635
radiation effects on mercapto content of heart in, x, 22:12808
radiation effects on mesenteric blood vessels of, combined effects of hypertension on x, 22:45602
radiation effects on metabolism in liver of, 22:8639
radiation effects on metabolism of calcium-45 and phosphorus-32 in, effects of dose on x, 22:51482
radiation effects on metabolism of chlorides, rubidium-86, and sodium-22 in, x, 22:51483
radiation effects on metabolism of citric acid cycle substrates by liver mitochondria of, 22:8457
radiation effects on metabolism of DNA in, ionizing, 22:51478
radiation effects on metabolism of fluids and sodium in intestine of, protective effects of AET and cysteamine against, 22:6854
radiation effects on metabolism of glyceryl trioleate and oleic acid by, whole-body x, 22:43469
radiation effects on metabolism of hexobarbital in microsomes of liver of, x, 22:8592(R) (AD-629311)
radiation effects on metabolism of histidine in, acute carbon-14 beta, 22:49620
radiation effects on metabolism of nucleic acids in liver of, γ and x, 22:49259
radiation effects on metabolism of nucleic compounds in, review of prolonged γ, 22:23653
radiation effects on metal ion transport in mitochondria of liver in, electron, 22:440
radiation effects on microbial populations in feces of, whole-body x, 22:6927
radiation effects on microsomal enzyme system in liver of, effects of head exposure on x, 22:23467
radiation effects on mitochondria from liver of, uv, 22:28315
radiation effects on mitochondria of, lethal whole-body x, 22:23453
radiation effects on mitosis in cells of bone marrow and thymus of, effects of divalent cations on γ, 22:23572
radiation effects on mitosis in cells of regenerating liver in, x, 22:8468
radiation effects on mitosis in hematopoietic and lymphatic cells of, effects of calcium content of blood, colchicine, disodium hydrogen phosphate, and EDTA on γ, 22:8604
radiation effects on mitosis in regenerating liver of, in comparison to effects on tumor tissue, electron, γ, photon, and x, 22:40851
radiation effects on mitosis of corneal epithelial cells of, γ, 22:49513
radiation effects on mitotic activity of liver cells of, electron, γ, and x, 22:8463
radiation effects on molecular composition of myelin of, effects of age on x, 22:25723 (UCLA-12-668, pp 71-84)
radiation effects on molecular structure of DNA in liver and thymus of, effects of dose on γ, 22:23435
radiation effects on morphogenesis of ciliary body and iris of, culture study of x, 22:38467
radiation effects on morphology and number of nucleoli in cells of regenerating liver in, whole-body x, 22:10733
radiation effects on morphology and survival of cells in normal tissues and sarcomas in, fast neutron and x, 22:49419
radiation effects on morphology and weight of kidneys of, effects of unilateral nephrectomy on x, 22:45708
radiation effects on morphology of adrenal glands of, effects of dose on strontium-90 β, 22:51967
radiation effects on morphology of cerebellum in brain of infant, effects of dose fractionation on x, 22:49533
radiation effects on morphology of gonads and survival of, protective effects of AET, antibiotics, bone marrow, MET, serotonin, and vitamin B_{12} against lethal ionizing, 22:31157
radiation effects on morphology of nuclei in thymocytes of effects of respiration on x, 22:21437
radiation effects on morphology of organs in, protective effects of AET against x, 22:21551
radiation effects on morphology of peritoneal mast cells of, x, 22:43427
radiation effects on morphology of tissues in teeth and tooth appendages in, γ, 22:23625
radiation effects on mortality of, effects of dose and skin wounds on x, 22:21596
radiation effects on mortality of, protective effects of antibiotics against whole-body, 22:10851
radiation effects on myelin content of brain of, effects of head exposure on x, 22:21448
radiation effects on myelopoiesis in bone marrow of, β, 22:6875
radiation effects on nasal mucosa and survival of, internal strontium-90 β and external proton, 22:51992
radiation effects on neoplasms of, effects of fractionated dose on, 22:23648
radiation effects on neoplasms of, effects of oxygen on protective effects of AET against x, 22:36304
radiation effects on nerve transplants in, comparison of, with effects of azathioprine, 22:40951
radiation effects on nervous system and physiology of, effects of dose, drugs, and environmental temperature on microwave, 22:554(R) (UR-49-810)
radiation effects on nervous system and survival of, effects of dose and strain on, 22:23659
radiation effects on nervous system of, in utero x, 22:51892
radiation effects on nervous system of, use of electroshock seizures as indicator of x, 22:36390
radiation effects on neurons of spinal cord in, effects of parabiosis on x, 22:49567
radiation effects on neurosecretory function of hypothalamus of, effects of adrenotropic substances on, 22:51991
radiation effects on neurosecretory processes in hypothalamus and posterior pituitary of, protective effects of cystamine and cysteamine against γ and x, 22:40565
radiation effects on nitrogen balance, polyuria, and weight of, protective effects of nortestosterone against γ and x, 22:51775
radiation effects on nitrogen excretion in large intestine of, whole-body x, 22:33922
radiation effects on nucleated bone marrow cells of, combined effects of cytotoxic drugs on x, 22:45624
radiation effects on nuclei of glial and nerve cells of, effects of dose on, 22:51361
radiation effects on nuclei of lymphocytes and thymocytes of, effects of dose and incubation time on pan, 22:33756
radiation effects on nucleic acid content of brain of, in utero x, 22:49249
radiation effects on nucleoside phosphorylases in erythrocytes of, effects of dose on, 22:45508(R) (PG-Report-826)
radiation effects on number of immunologically competent cells in spleen of, effects of bone marrow grafts on, 22:40518(R) (RT/BIO-(68)3)

radiation effects on number of neoplastic cells in blood of, yttrium-90, 22:36367
radiation effects on olfactory bulb neurons in, x, 22:552(R) (COO-1669-1)
radiation effects on olfactory receptors of, x, 22:38426(R) (NYO-3698-1)
radiation effects on olfactory system of, mechanisms in acute x, 22:51870(R) (COO-1669-4)
radiation effects on oral tissues of, histochemical and histological analysis of deuteron, 22:568
radiation effects on organelles in liver cells of, chemiluminescence and ESR studies of, 22:51401
radiation effects on organs and tissues of, laser, 22:31276
radiation effects on organs and tumors of, combined effects of natulan on, 22:40838
radiation effects on organs of, fast neutron, 22:43468
radiation effects on ovaries of, differential counting of follicles for determining, 22:45710
radiation effects on ovaries of, effects of progesterones on ionizing, 22:33945
radiation effects on oxidative phosphorylation in mitochondria of, neutron and x, 22:16981
radiation effects on oxidative phosphorylation in mitochondria of liver and spleen in, whole-body γ and x, 22:6750
radiation effects on oxidative phosphorylation in mitochondria from liver and spleen of, whole-body γ, 22:8442
radiation effects on paws of, protective effects of low temperature and tourniquet on, 22:40774
radiation effects on performance of nerve heterografts in, effects of pretreatment with specific antiserum on, 22:51364
radiation effects on peripheral blood cells in, following intratracheal injection of insoluble or soluble compounds of iron-59, β and γ, 22:21601
radiation effects on peripheral blood of rats, cerium-144 β and γ and strontium-90 β, 22:19442
radiation effects on peripheral nerve of, recovery from fractionated x, 22:45714
radiation effects on phagocytic activity of reticuloendothelial system in, effects of dose on γ, 22:45706
radiation effects on phagocytosis in, following injection of India ink, 22:23617
radiation effects on phosphatase content of kidney and liver of, neptunium-237 α, 22:47471
radiation effects on phospholipase activity in intestinal mucosa of, x, 22:553(R) (ORO-3329-3)
radiation effects on phosphorus-32 uptake by DNA and RNA of ascites hepatoma cells in, combined effects of carcinostatics on cobalt-60 γ, 22:31025
radiation effects on physiology and survival of albino, combined effects of heat treatment on ionizing, 22:10883
radiation effects on physiology of cerebral cortex of, x, 22:575
radiation effects on pituitary hormones of, effects of head exposure on x, 22:40539
radiation effects on platelet count of, effects of thiols on, 22:47578
radiation effects on polyribosomes of liver in, effects of regeneration and surgery on x, 22:45388
radiation effects on pre-, peri-, and post-natal survival of, following pre-fertilization maternal exposure, x, 22:40644
radiation effects on production and secretion of corticosteroids in, protective effects of cysteamine against x, 22:31170
radiation effects on production of antibodies by, protective effects of serotonin against phosphorus-32 β, 22:40805
radiation effects on progesterone use in, x, 22:25998
radiation effects on proliferation of bone marrow cells in, combined effects of fasting on acute fractionated γ, 22:51984
radiation effects on proliferation of bone marrow cells of, effects of post irradiation bleeding on, 22:40837
radiation effects on proliferation of cells during scar formation in injured spinal cord of, x, 22:40926
radiation effects on proliferation of maternal blood cells in male, effects of irradiation of fetus on x, 22:6893
radiation effects on protein fractions of blood, bone marrow, and liver of, x, 22:446
radiation effects on protein metabolism in blood of, x, 22:23429
radiation effects on protein synthesis in blood plasma of, whole-body fast neutron, 22:6752
radiation effects on protein synthesis in liver microsomes of, x, 22:453
radiation effects on proteins in blood of, whole-body ionizing, 22:52004
radiation effects on proteins in skin of, chromatographic and electrophoretic analyses of x, 22:51886
radiation effects on proteins in urine of, γ, 22:51384
radiation effects on quality of semen in, effects of dose fractionation on γ, 22:10868
radiation effects on quenching properties of blood plasma and serum from, γ, 22:38247 (A-AC-82/G/L-1163)
radiation effects on rate of growth of, following exposure as fetuses, γ, 22:38427(R) (ORO-659)
radiation effects on rate of mitosis in tumor cells transplanted into, RBE of electron, γ, and x, 22:12763
radiation effects on regeneration of bone marrow cells of plethoric, x, 22:38470
radiation effects on regeneration of bone marrow of, effects of shielding on x, 22:40850
radiation effects on regeneration of bone marrow of, 22:47617
radiation effects on regeneration of muscles in, effects of coamides on x, 22:8438
radiation effects on release of free fatty acids from epididymus of, effects of adrenalectomy and reserpine on whole-body x, 22:12789
radiation effects on replication kinetics of ileal cells in, following administration of tritium-labeled DNA, β, 22:45660
radiation effects on reproduction in, x, 22:15099
radiation effects on reproduction of cells in intestine of, fast neutron, 22:40918
radiation effects on reproduction of cells in liver of, following partial hepatectomy, chronic whole-body γ, 22:31250
radiation effects on reproduction of goitrogen-stimulated thyroid cells in, 22:38376
radiation effects on resistance of, to low temperature, effects of dose on whole-body x, 22:43392 (AD-665664)
radiation effects on respiration in brain tissue slices from, in vitro x, 22:49495
radiation effects on respiration in cultured brain cells from, laser, 22:43444
radiation effects on respiration of leukocytes of, β and x, 22:23607
radiation effects on retention of stomach content in, effects of irradiation site on, 22:28688
radiation effects on rodent teeth of, x, 22:15111
radiation effects on root formation in teeth of, x, 22:52012
radiation effects on saccharose digestion in intestine of, effects of bile on x, 22:23622
radiation effects on sarcomas of, effects of drugs on, 22:33878
radiation effects on sciatic nerve cells of, combined effects of crush injury on x, 22:31221
radiation effects on secondary immune reactions in, x, 22:12805
radiation effects on secondary sex ratio of, cumulative x, 22:40643
radiation effects on secretion of adrenocorticotropin in, following exposure of head to x, 22:36393
radiation effects on secretion of aldosterone and corticosterone by adrenal glands of, whole-body x, 22:4690
radiation effects on serotonin-secreting cells in intestine of, γ, 22:49539
radiation effects on serum proteins of, whole-body x, 22:463
radiation effects on sexual maturation of female, effects of hypothalamic lesions on x, 22:49634
radiation effects on skin and tumors of, effects of dose fractionation on neutron and x, 22:49480 (CONF-680410-, pp 21.1-25)
radiation effects on skin grafts in, γ, 22:19336
radiation effects on skin of, RBE of α, deuteron, fast neutron, and x for, 22:8596 (CONF-670305-, pp 128-42)
radiation effects on small intestine cells of, renewal response following continuous, 22:49469 (CONF-680410-, pp 3.1-12)
radiation effects on small intestine of, in vivo-generated uv, 22:51882
radiation effects on small intestine of, x, 22:28656
radiation effects on small intestines of, whole-body x, 22:40595
radiation effects on sodium-24 excretion in, neutron, 22:51874 (ORAU-106, pp 5-104)
radiation effects on soft oral tissues of rats, effects of pulsing on laser, 22:40938
radiation effects on soluble proteins in tissues of brain and intestinal walls of, x, 22:28696
radiation effects on sorption of vitamin B_{12} by intestine of, x, 22:49545
radiation effects on sorption of vitamin B_{12} in intestines of, x, 22:10824 (BNWL-480, pp 1-19)
radiation effects on spermatocytes in, RBE for fast electron, 22:51884
radiation effects on spermatogenesis in, effects of cell phase on x, 22:33953
radiation effects on spinal cord of developing, x, 22:28640
radiation effects on spinal cord of, x, 22:49569
radiation effects on spontaneous motility of isolated segments of intestine from, following whole-body exposure, x, 22:25981
radiation effects on stomach motility of, protective effects of papaverine against, 22:21556
radiation effects on structure of thymocyte nuclei in, effects of phosphates on γ, 22:21581
radiation effects on sulfonamide content of blood of, 22:21614
radiation effects on survival and weight of, effects of oxygen uptake on, 22:47547
radiation effects on survival of cartilage cells in,

effects of anoxia on x, 22:23637
radiation effects on survival of cells in bone marrow of, x, 22:38437
radiation effects on survival of cells in growth cartilage of tibia of, effects of hypoxia on x, 22:36357
radiation effects on survival of cotton, calculation of lethal dose for γ, 22:49518
radiation effects on survival of cultured thymocytes from, effects of dose on γ and x, 22:40883
radiation effects on survival of fetuses in, effects of progesterone treatment on x, 22:38350
radiation effects on survival of normal and tumor-bearing, protective effects of cysteine combined with fructose and N-acetyl-homocysteine-thiolactone against x, 22:40791
radiation effects on survival of offspring of female, effects of age of fetus on x, 22:49629
radiation effects on survival of transplanted tumor cells in, effects of oxygen on x, 22:10797
radiation effects on survival of, effects of age at exposure on x, 22:49629
radiation effects on survival of, effects of beam orientation on fast neutron, 22:40822(T) (JPRS-44070, pp 1-9)
radiation effects on survival of, effects of bone marrow transplants on lethal x, 22:49491 (UCSF-10-P-2-40)
radiation effects on survival of, effects of secretion of adrenal cortical hormones on x, 22:45709
radiation effects on survival of, effects of shock on x, 22:40846
radiation effects on survival of, effects of spatial distribution of tissue dose on γ and x, 22:51951
radiation effects on survival of, effects of time of day on, 22:38449
radiation effects on survival of, following inhalation of plutonium-238 and plutonium-239, α, 22:10825 (BNWL-480, pp 55-83)
radiation effects on survival of, in relation to mercapto group content of bone marrow, x, 22:19393
radiation effects on survival of, internal β, 22:51377
radiation effects on survival of, protective effects of amygdalin and cystamine against γ, 22:51946
radiation effects on survival of, protective effects of intravenous pyridoxal-5-phosphate against whole-body x, 22:31137
radiation effects on survival of, protective effects of serotonin against x, 22:31261
radiation effects on survival of, protective effects of thymus extract against, 22:33844
radiation effects on survival of, protective effects of Shir-Khecht, against γ, 22:49376 (CEA-R-3412)
radiation effects on survival of, protective effects of caffeine against, 22:25914
radiation effects on survival of, protective effects of pentetrazole against, 22:25914
radiation effects on survival of, relation of, to activity of adrenal cortex, x, 22:36398
radiation effects on survival of, whole-body γ, 22:49534
radiation effects on synthesis and utilization of ATP in cell nuclei of thymus gland in, whole-body x, 22:30951
radiation effects on synthesis of ACTH in, x, 22:23458
radiation effects on synthesis of cholesterol in adrenal glands and liver of, x, 22:33766
radiation effects on synthesis of cortisol in, x, 22:25998
radiation effects on synthesis of DNA in regenerating cells in injured spinal cord of, x, 22:40926
radiation effects on synthesis of DNA, nucleoprotein, and RNA in germ cell nuclei of male, x, 22:51418
radiation effects on synthesis of enzymes in regenerating liver of, γ, 22:16986
radiation effects on synthesis of glycerolphosphate dehydrogenase in brain of, x, 22:33718 (UCLA-12-640, pp 61-80)
radiation effects on synthesis of proteins in liver of, effects of whole-body exposure on x, 22:19258
radiation effects on synthesis of proteins in nuclei of liver cells from, in vitro, whole-body γ, 22:43431
radiation effects on synthesis of RNA by cells of ascites hepatoma in, x, 22:30957
radiation effects on synthesis of tryptophan pyrrolase in, following administration of hydrocortisone or tryptophan, x, 22:36210
radiation effects on taurine content in urine of, γ, 22:36181
radiation effects on taurine release by lymph tissues, mucosa of intestine, and spleen of, γ, 22:36181
radiation effects on thymus cells of, in vitro and in vivo study of mechanisms of acute lethal x, 22:49618
radiation effects on thymus of, effects of age, castration of sex, endocrine status, and sex on x, 22:31223
radiation effects on thymus of, effects of shielding on x, 22:40848
radiation effects on thyroid gland of, effects of dose on response to goitrogenic stimulus following x, 22:33969
radiation effects on thyroid glands of, effects of, on incidence of gonadotropic adenomas of pituitary, β and x, 22:10871
radiation effects on thyroid of, iodine-131 β and γ, 22:10675 (BNWL-480, pp 21-54)
radiation effects on toxicity of alloxan to, γ, 22:36319
radiation effects on toxicity of fruit juices for, γ, 22:40978(R) (NP-17182)
radiation effects on transfer of galactose, glucose, and sorbose in intestines of, γ and x, 22:43216
radiation effects on transfer of Rous sarcoma viruses from cells of virogenic tumors from, to cells of chick embryo fibroblasts in mixed cultures, x, 22:33991
radiation effects on transport of glucose and water in intestine of, protective effects of AET against x, 22:45647
radiation effects on transport of iodine-131-labeled iodide and thyroxine in placenta of, γ, 22:47495
radiation effects on transport of sodium and water in intestines of, x, 22:10824 (BNWL-480, pp 1-19)
radiation effects on tumors of, effects of oxygen on, 22:40749
radiation effects on ultrastructure of adenohypophysis of, acute γ, 22:49271
radiation effects on ultrastructure of adrenal cortical cells of, electron microscopy of x, 22:45395
radiation effects on ultrastructure of liver cells of, effects of age on whole-body x, 22:14963
radiation effects on ultrastructure of nerve cells in solar plexus of, effects of dose on x, 22:10723
radiation effects on uptake of carbon-14-labeled glycine by proteins in tissues of, x, 22:28675
radiation effects on uptake of labeled triiodothyronine by erythrocytes of, x, 22:2548
radiation effects on uptake of trace elements by isolated mitochondria from spleen of, whole-body x, 22:40853
radiation effects on uptake of tritium-labeled thymidine by mast cells of, x, 22:14941
radiation effects on uridine diphosphate glucose system of glycogen synthesis in bone marrow of, x, 22:33728
radiation effects on urinary excretion of β-aminoisobutyric acid, creatine, and taurine, use of, for indication of injury, 22:49492
radiation effects on urinary excretion of deoxyuridine and thymidine by, effects of adrenalectomy on γ, 22:28655
radiation effects on uv fluorescence of cells from blood and bone marrow of, x, 22:33931
radiation effects on uv fluorescence of lymphosarcoma cells of, 22:36350
radiation effects on uv-fluorescence of ascites cells of, x, 22:33772
radiation effects on vascular permeability in skin of, acute uv, 22:51996
radiation effects on vascular permeability of, iodine-131 tracer study of acute x, 22:49621
radiation effects on visual responses in, effects of prenatal exposure on x, 22:19421
radiation effects on vitamin D synthesis in skin of, role of uv, 22:51328
radiation effects on Walker sarcomas of, 9-MeV electron, 22:51901
radiation effects on water content of brain, intestine, and kidneys of, iodine-131 β and γ, 22:45435
radiation effects on weight of salivary glands in, protective effects of cystamine against γ, 22:33925
radiation effects on wound healing in, protective effects of bone marrow against x, 22:25851
radiation effects on, assay of serum factors affecting recovery from, 22:15052
radiation effects on, assessment of protective effects of ACTH and serotonin against x, 22:33879
radiation effects on, combined effect of Endoxan and spleen cell injections on, 22:33872
radiation effects on, combined effects of diet and bacterial flora in feces on whole-body x, 22:557
radiation effects on, combined effects of drum trauma and partial-body shielding on pathological x, 22:25978
radiation effects on, combined effects of iodine-131 on local neoplastic x, 22:43452
radiation effects on, combined effects of timing of wounds on whole-body γ, 22:33859
radiation effects on, effects of age at exposure on fast neutron, 22:40890
radiation effects on, effects of age on latent fast neutron, 22:33896 (AD-662222)
radiation effects on, effects of continuous or fractionated dose on x, 22:23656
radiation effects on, effects of dose and injection path on polonium-210 α and γ, 22:49502
radiation effects on, effects of epsilon aminocaproic acid on, 22:43350
radiation effects on, effects of ether anesthesia on lethal, 22:8583
radiation effects on, effects of, on toxicity of morphine, 22:21615
radiation effects on, fractionation and protraction factors in late γ, x, and neutron, 22:49468 (CONF-680410-, pp 2.1-27)
radiation effects on, genetic x, 22:40652
radiation effects on, laser, 22:38421 (CONF-660573-, pp 35-48)
radiation effects on, mathematical model for estimation of cumulative γ, 22:12918
radiation effects on, pathological iodine-131 β and γ, 22:45693

radiation effects on, protective effects of autotransplants of bone marrow against, 22:25909
radiation effects on, protective effects of barium sulfate diet against γ, 22:51839
radiation effects on, protective effects of chemicals and drugs against, 22:25863
radiation effects on, protective effects of cysteamine and related substances against x, 22:4656
radiation effects on, protective effects of dietary calcium and fluorine against γ, 22:51993
radiation effects on, protective effects of DNA and RNA against γ, 22:6849
radiation effects on, protective effects of inert diet against whole-body γ, 22:49412
radiation effects on, protective effects of injections of heterologous DNA against γ, 22:36328
radiation effects on, protective effects of mixtures of cystamine and pyridoxine against γ, 22:4658
radiation effects on, protective effects of pyridoxine against x, 22:15041
radiation effects on, protective effects of quaternary ammonium salts against, 22:25876
radiation effects on, protective effects of shielding of bone marrow against, 22:49368
radiation effects on, protective effects of sulfur-containing compounds against whole-body x, 22:4657
radiation effects on, protective effects of vasotrophic compounds and vitamins against x, 22:49436
radiation effects on, protective effects of vitamin B_{12} against x, 22:47549
radiation effects on, RBE of 120 MeV proton, 22:23668
radiation effects on, RBE of 17.5 MeV electron and x, 22:33943
radiation effects on, RBE of external and internal phosphorus-32 β, 22:23651
radiation effects on, RBE of γ, proton, and x, 22:23652
radiation effects on, RBE of high energy proton, 22:23670
radiation injuries to cells of regenerating liver and thymus of, effects of dose on ionizing, 22:45447
radiation injuries to placenta of, during oxygen starvation, repair of, 22:51953
radiation processing of bananas for use in diet of, effectiveness of cobalt-60 γ, 22:10897(R) (NYO-3734-2)
radiation sickness in, behavior of adrenals, hypophysis, and thyroid during polonium-210 α and γ, 22:47606
radiation sickness in, development of thermal inflammations during, 22:6897
radiation sickness in, prophylactic effects of B vitamins on, 22:36331
radiation sickness in, treatment of, with bone marrow, 22:51864
radiation sickness of, effects of, on function and morphology of adrenal glands, 22:33961
radioinduced aberrations of chromosomes of liver cells of, effects of dose fractionation on x, 22:31054
radioinduced aging of, factors affecting, 22:43422
radioinduced bone lesions, lymphocyte anomalies, and weight loss in, strontium-90, β, 22:43395 (CEA-R-3388)
radioinduced cancers in thyroid of, effects of thiouracil and dose on iodine-131 β and γ, 22:49628
radioinduced carcinoma in, effects of 2,7-diacetylaminofluorene and gum acacia on fission neutron, 22:28621 (ANL-7278, pp 1-94)
radioinduced carcinomas in male, whole-body fast neutron and x, 22:28661
radioinduced carcinomas in, effects of Teflon implants on x, 22:28623 (ANL-7278, pp 132-43)
radioinduced chromosome aberrations in bone marrow cells of, γ, neutron, and x, 22:8577
radioinduced chromosome aberrations in, protective effects of chemical agents against γ, proton, and x, 22:47554
radioinduced creatinuria in, suppressive effects of insulin on x, 22:31167
radioinduced death of leukocytes of, effects of dose on time of, 22:36353
radioinduced development of glomerulosclerosis in, effects of age on x, 22:43422
radioinduced diarrhea in, effects of dose on, 22:51896
radioinduced edema in brain of, α and proton, 22:40863
radioinduced epithelial tumors in, strontium-90 β, 22:45717
radioinduced fatty liver in, 22:10675 (BNWL-480, pp 21-54)
radioinduced free radicals in lyophilized tissues of, effects of oxygen and water on, 22:28369
radioinduced glomerulosclerosis in, effects of food restriction and uninephrectomy on ultrastructure of x, 22:40859
radioinduced glomerulosclerosis in, effects of malnutrition and uninephrectomy on x, 22:36341 (AD-661795)
radioinduced hypertension and nephrosclerosis in, relation of x, 22:49521
radioinduced inactivation of bone marrow cells of, in vitro, effects of dose on, 22:51949
radioinduced increase of Proteus in intestine of, following whole-body exposure, 22:6909
radioinduced injuries to fetuses of, whole-body x, 22:12897 (SZS-12/67)
radioinduced injury to hematopoiesis in, method of determining x, 22:33713(R) (NYO-3728-2)
radioinduced injury to liver of, laser, 22:23630
radioinduced kidney lesions in, effects of age, dose, splenectomy, and thymectomy on x, 22:43225
radioinduced lesions in liver of, pathology and repair of pulsed ruby laser, 22:31232
radioinduced leukemia in, following inhalation of strontium-90 aerosols, β, 22:23594 (LF-38, pp 108-12)
radioinduced loss of sodium in small intestine of, effects of bile on x, 22:51998
radioinduced luminescence of isolated brains from, effects of oxygen on x, 22:40923
radioinduced macroadenomas and thyroid carcinomas in, effects of methylthiouracil on iodine-131 β, 22:47594
radioinduced malaise in, effects of, on value of flavor or size of food pellet as conditioned stimulus, x, 22:28686
radioinduced mammary adenocarcinomas in, x, 22:28636
radioinduced mammary carcinomas in, effects of DNA synthesis on whole-body x, 22:28623 (ANL-7278, pp 132-43)
radioinduced mammary neoplasms in, fission neutron, 22:28621 (ANL-7278, pp 1-94)
radioinduced mutations in, protective effects of plasma factors against lethal x, 22:12833
radioinduced neoplasms in skin of, 13 MeV proton, 22:40852
radioinduced neoplasms in skin of, effects of age on fast neutron and x, 22:21576
radioinduced neoplasms in thyroid gland of, analysis of changes in cell nuclei during development of β, 22:2534(R) (COO-1243-8)
radioinduced neoplasms of mammary tissues of, in vitro x, 22:51948
radioinduced neoplasms of skin in, from reactor debris, β, 22:36249 (AD-661489)
radioinduced nuclear pyknosis in lymphocytes of, use of, for evaluation of dosimetry, x, 22:38422 (EUR-3939)
radioinduced osteogenic sarcomas in, following head exposure, x, 22:40932
radioinduced osteoradionecrosis in mandibles of, effects of tetracycline on x, 22:40873
radioinduced osteosarcomas in, following intramuscular injection of strontium-90, β, 22:43395 (CEA-R-3388)
radioinduced pneumonitis in, pathogenesis of, 22:40936
radioinduced pneumonitis in, x, 22:4671
radioinduced production of elastic waves in tissues of, laser, 22:43467
radioinduced saccharin and sucrose aversion in, x, 22:10858
radioinduced saccharin and sugar aversion in, γ and x, 22:49488(R) (ORO-2903-43)
radioinduced saccharin aversion in, effects of age and dose on x, 22:36346
radioinduced saccharin aversion in, effects of anesthesia on x, 22:36345
radioinduced saccharin aversion in, effects of circadian rhythm on, 22:49488(R) (ORO-2903-43)
radioinduced saccharin aversion in, effects of time of exposure on γ, 22:49607
radioinduced saccharin aversion in, effects of time of exposure on x, 22:49606
radioinduced saccharin aversion in, γ, 22:28627 (NYO-2147-13, pp 196-225)
radioinduced saccharin aversion in, x, 22:49486(R) (NYO-3359-4)
radioinduced saccharin-aversion behavior in parabiont, x, 22:4665 (USNRDL-TR-67-95)
radioinduced saccharin-aversion behavior in, combined effects of proferrin on, x, 22:19455
radioinduced saccharin-avoidance behavior in, effects of anosmia on x, 22:8646
radioinduced saccharin-avoidance behavior in, γ, 22:51888
radioinduced sarcomas in, following plutonium-239 injection, α, 22:28623 (ANL-7278, pp 132-43)
radioinduced sarcomas in, following subcutaneous implantation of stronium-90 and ytterium-90, β, 22:28623 (ANL-7278, pp 132-43)
radioinduced skin tumors in, effects of dose on β, 22:47581
radioinduced spatial avoidance behavior in, effects of confinement on x, 22:40893
radioinduced sucrose aversion in, effects of dose and time on x, 22:43447
radioinduced thrombohemorrhagic phenomena in, protective effects of sensitization with carrageenans, indium chloride, and tannic acid against Throtrast, 22:10817
radioinduced thyroid adenomas in, iodine-131 β and γ, 22:43450
radioinduced tumor of pituitary gland of, astitine-211, 22:2538
radioinduced tumors in endocrine system of, x, 22:28647
radioinduced tumors of, determination of small doses for fast neutron and proton, 22:38483
radioisotope distribution and excretion in, cerium-144, cesium-134, and strontium-85, 22:51475
radioisotope distribution in tissues of, calcium-45 and strontium-89, 22:51465
radioisotope effects on gastrointestinal tract of, plutonium, ruthenium-106--rhodium-106, and strontium-

89, 22:49331
radioisotope excretion by, following contamination by activated corrosion products, 22:19343
radioisotope fixation in bones of, effects of growth hormone and hypophysectomy on calcium-45 and sulfur-35, 22:47494
radioisotope inhalation by, kinetics of, 22:8476
radioisotope metabolism in, effects of age, hormones, and sex on cerium-144 and cesium-137, 22:43231
radioisotope metabolism in, following intravenous injection, europium-152 and -154, 22:51343
radioisotope removal from lungs of, 22:38255(R) (EUR-3918)
radioisotope sorption from intestine of, effects of aluminum phosphates and sodium alginate on calcium-45 and strontium-85, 22:49245
radioisotope uptake by epididymus and testes of, cadmium-109 and zinc-65, 22:51365
radioisotope uptake from brown algae by, effects of algal alginate content on calcium-45 and strontium-85, 22:45399
radiometry of tryptophan 5-hydroxylase activity in tissues of, 22:457
radioprotective effects of cysteamine on, effects of physiological state on, 22:38408
radiosensitivity of carcinosarcomas in, enhancement of, by selective tissue oxygenation, 22:10828
radiosensitivity of central nervous system of, comparison of methods for determination of, 22:15058
radiosensitivity of chromosomes in cornea of, effects of adrenalectomy on x, 22:4596
radiosensitivity of lymphocytes in peripheral blood of, in relation to other animals, 22:19438
radiosensitivity of, biochemical factors affecting, 22:19269
radiosensitivity of, effects of age on x, 22:21612
radiosensitivity of, effects of circadian clock on, 22:36391
radiosensitivity of, effects of dose and seasonal changes on γ, 22:8640
radiosensitivity of, effects of local hypoxia on x, 22:40949
radiosensitivity of, effects of monoiodoacetic acid on, 22:45618
radiosensitivity of, use of 5-hydroxyindoleacetic acid excretion as indicator of x, 22:28658
radiotherapy of sarcomas of, effects of dietary protein on x, 22:40856
rare earth retention in, effects of EDTA on, 22:8479
reactions of alveolar endothelium of, to nickel carbonyl, pathological, 22:6216(R) (ORO-3461-9)
reactions of oxidative phosphorylation in liver mitochondria of, effects of radioprotective compounds on, 22:25893
reflux of ureter in, use of technetium-99-labeled colloidal sulfur to study, 22:28330
reproduction of cultured liver cells from, 22:30409(R) (NYO-2356-29)
rhodium-106 inhalation by, dynamics of, 22:8538
rubidium metabolism in, tracer studies of, 22:25762
rubidium-86 metabolism by, 22:12760(T) (UCRL-Trans-10175)
ruthenium-106 inhalation by, dynamics of, 22:8538
ruthenium-106 sorption by intestines of, effects of age and particle size on, 22:10676 (BNWL-480, pp 85-97)
scanning of kidneys in, use of gallium-68-labeled EDTA for, 22:51792
scanning of kidneys of, use of gallium-68-labeled gallium polymetaphosphate magnesium polymetaphosphate for, 22:36326
scanning of kidneys of, use of iodine-131 and mercury-203 for, 22:38403
scanning of liver and lungs of, use of radioisotope-labeled dextran for, 22:43388
scanning of thyroid gland in unrestrained, use of iodine-131 and two opposed counters for, 22:33857
selenium metabolism by, tracer studies of, 22:49278
selenium-75 metabolism in, 22:49278
silver-110 removal from vagina of, effects of estradiol and inflammation on, 22:14960
sodium-22 transport in intestines of, effects of nitrogen mustards on, 22:10824 (BNWL-480, pp 1-19)
sorption and metabolism of plutonium citrate in, effects of age on, 22:10675 (BNWL-480, pp 21-54)
sorption of plutonium oxide by intestines of, effects of age and particle size on, 22:10676 (BNWL-480, pp 85-97)
sorption of Thorotrast by pericardium of, electron microscopy study of, 22:51317
sorption of Thorotrast from pericardium of, lymphangiographic study of, 22:51318
strontium retention in, effects of EDTA on, 22:8479
strontium sorption by gastrointestinal tract of, inhibition of, by ion exchangers, 22:8484
strontium sorption by intestines of, effects of sodium alginates on, 22:19240
strontium uptake by femoral bones of, 22:8450
strontium-85 metabolism in fractured bones of, in relation to calcium mobilization, 22:51319
strontium-85 metabolism in old and young, compartmental and experimental analysis of, 22:30961
strontium-85 metabolism in, following inhalation in aerosols, 22:23404 (LF-38, pp 65-72)
strontium-85 retention in bones of, effects of sex hormones on, 22:51345
strontium-85 retention in skeleton of, effects of CPDTA, DIMEDTA, and PDTA on, 22:43222
strontium-85 toxicity to, following inhalation, 22:23404 (LF-38, pp 65-72)
strontium-85 uptake by duodenum of, effects of sodium alginates on, 22:30975
strontium-85 uptake by sections of duodenum of, effects of oxydized amylose, oxycellulose, and sodium alginate on, 22:6900
strontium-85 uptake by, in relation to osseous activity in dental extraction wounds, 22:33713(R) (NYO-3728-2)
strontium-89 distribution in subcellular fractions of liver in, effects of time on, 22:25769
strontium-89 metabolism in, effects of calcium content of diet on, 22:25770
strontium-89 retention in liver of, role of mitochondria in, 22:33751
strontium-90 content of bones of, effects of content of diet on, 22:12767
strontium-90 elimination from bones of, effects of immunization on, 22:6745
strontium-90 equilibrium with yttrium-90 in, following oral administration, 22:25772
strontium-90 excretion by, 22:2479 (BNWL-SA-1252)
strontium-90 excretion by, effects of calcium content of diet on, 22:30959
strontium-90 excretion by, effects of polyvinylpyrrolidone on, 22:21456
strontium-90 inhalation by, dynamics of, 22:8538
strontium-90 metabolism and toxicity in, 22:8466
strontium-90 metabolism and toxicity in pregnant and young rats, 22:8486
strontium-90 metabolism by, following chronic ingestion, 22:49246
strontium-90 metabolism in, effects of age and calcium intake on, 22:47472
strontium-90 metabolism in, effects of calcium, phosphorus, and sex hormones on, 22:45404
strontium-90 metabolism in, following inhalation in aerosols, 22:23404 (LF-38, pp 65-72)
strontium-90 solubility in gastrointestinal tract of, relation of calcium content of food to, 22:51373
strontium-90 toxicity to, following inhalation, 22:23404 (LF-38, pp 65-72)
strontium-90 uptake and retention in skeleton of, effects of age and dose on, 22:6754
strontium-90 uptake by, from food, effects of alginates on, 22:49262
strontium-90 uptake by, relation of content of calcium and fluorine in diet to, 22:51377
strontium-90 uptake by, transfer to offspring following, 22:14926
sulfur-35 distribution in liver cells of, following chronic administration of labeled sodium sulfate, 22:12807
synthesis of ACTH in pituitary gland of, effects of adrenalectomy on, 22:23458
synthesis of cytochrome P-450 in liver of, inhibition of phenobarbital-induced, by nickel carbonyl, 22:6216(R) (ORO-3461-9)
synthesis of enzymes in liver of, effects of actinomycin D on, 22:16986
synthesis of enzymes in pathogen-free, effects of growth hormone on, 22:28287 (ORNL-4100, pp 160-4)
synthesis of RNA in liver of, effects of insulin on, 22:28287 (ORNL-4100, pp 160-4)
synthesis of tyrosine aminotransferase by liver of, effects of glucagon, growth hormone, and insulin on, 22:7955 (ORNL-P-3466)
synthesis of tyrosine transaminase in cultured liver tissues of fetal, effects of hydrocortisone on, 22:28289 (ORNL-4100, pp 178-201)
technetium-99 metabolism in thyroid of, 22:14961
tellurium toxicity in, 22:6720(T) (TT-1283)
thorium-232 uptake by liver fractions in, 22:51371
Thorotrast distribution in tissues of young, following intravenous injection, 22:51366
toxicity of benzene for, protective effects of α-batylol alcohol and bone marrow lipids against, 22:51849
toxicity of biscuits made from irradiated eggs to, 22:52123
toxicity of γ-irradiated chicken meat for, 22:52107
toxicity of irradiated fish to, 22:52123
toxicity of irradiated food to, following ingestion, 22:31306
toxicity of irradiated foods for, following ingestion, 22:47659
toxicity of irradiated fruits for, 22:47650 (NYO-3422-1(Vol.4))
toxicity of irradiated fruits to, 22:52061 (CONF-670945)
toxicity of irradiated mushrooms to, 22:52123
toxicity of irradiated onion diet for, 22:47649 (NYO-3422-1(Suppl.)(Vol.3))
toxicity of uranyl nitrate for, 22:40554
transport of iodine-131-labeled thyroidal iodide in, effects of actinomycin on, 22:38224
transport of tritium-labeled water in intestines of, effects of nitrogen mustards on, 22:10824 (BNWL-480,

pp 1-19)
  treatment of radiation sickness in, review of, 22:51861
  tritium uptake by chemical fractions of liver in, 22:40572
  tritium uptake by, through lungs and skin, 22:51619
  tumor incidence in, following subcutaneous injection of cells from leukemia-bearing adults, effects of recipient age on, 22:23594 (LF-38, pp 108-12)
  tungsten metabolism in, 22:38212
  uptake and elution of barium-133, calcium-45, radium-223, and strontium-85 by powdered bone of, mechanism and rate of, 22:8455
  uptake of actinide elements by fetuses and placenta of, 22:30948
  uptake of carbon-14-labeled alginates by, from diet, 22:49262
  uptake of iodine-131-labeled triiodothyronine by, protective effects of AET against, 22:21551
  uptake of selenium-75-labeled selenomethionine by parathyroid glands in, 22:28596
  uptake of selenomethionine by parathyroid glands of, effects of EDTA on, 22:38334(R) (COO-1653-45)
  uptake of sulfur-35-labeled AET by, effects of cysteine and epinephrine on, 22:21551
  uptake of synkavit by carcinoma of, 22:19384
  uranium fission product clearance from lungs of, 22:8538
  uranium uptake by female, from drinking water, effects of, on function of parathyroid and thyroid glands and sexual maturation, 22:51376
  use of technetium-99m-iron complex for renal scintigraphy of, method for, 22:33888
  use of tritium for determining blood and brain water space of, 22:40572
  xenon-133 distribution in tissues of, in vivo determination of, 22:4575
  yttrium-90 inhalation by, dynamics of, 22:8538
  yttrium-91 metabolism in, effects of epinephrine, diuretics, EDTA, and phosphates on, 22:12787
  yttrium-91 sorption by intestines of, effects of barium sulfate, calcium fluorite, EDTA, espatite-1, lead sulfate, and turfite on, 22:8481
  yttrium-91 uptake by bones of, autoradiographic study of, 22:2486
  zinc-65 metabolism in, effects of age and sex on, 22:30941
  zinc-65 metabolism in, effects of cirrhosis on, 22:45385
  zinc-65 metabolism in, effects of corticosterone on, 22:28384
  zinc-65 metabolism in, effects of corticosterone, adrenalectomy, and administration of stable zinc on, 22:28383
  zinc-65 uptake by bones of, autoradiographic study of, 22:2486

RB (Vinca, Yugoslavia)
  see Reactors, Research

RB-1 (Reattore Bologna No. 1, Italy)
  see Reactors, Research

RBE
  see Relative Biological Effectiveness

RC-1 (Reattore Casaccia No. 1, Italy)
  see Reactors, Research

RCPA Reactor
  see Elk River Power Reactor

RE-775
  see DIDO Reactors

REACTION MECHANISMS
  (Limited to chemical reaction mechanisms.)
  see also Organic Syntheses
  see also Photochemistry
  see also Photosynthesis
  see also Szilard-Chalmers Reactions
  book: Annual Review of Physical Chemistry, 22:2073
  book: Kinetic Isotope Method and Its Applications, in Hungarian, 22:50952
  book: Progress in Reaction Kinetics. Vol. 3, 22:4145
  design of bio-mathematical models for analysis of, 22:4564 (N-67-18203)
  diffusion, for movement of fission products through complex (non-ideal) soil systems, 22:40516 (ORO-657, pp 65-92)
  hot atom reactions in gas-phase, 22:4173
  isotope effects on, 22:14513 (BNL-50057, pp 60-78)
  kinetics in, representation of, as trajectories in concentration space, 22:22897 (LA-3875)
  kinetics of hydrated electron and hydroxyl radical, with constituents in irradiated foods, 22:52119
  models for, use of isotope effects for evaluation of, 22:87
  oxidation, of chlorophyllous pigments, review of photosensitized, 22:25794
  oxidation-reduction, in solution, 22:2019 (BNL-50070)
  photodynamic inactivation, of viruses, review of, 22:25797
  photodynamic sensitivity, of retina of eye and Yoshida hepatoma ascites cells, 22:25796
  research progress on, 22:1916(R) (COO-958-12)
  scattering in, optical model interpretation of elastic, 22:43934
  simulation of defect reactions in fcc crystal lattices, computer, 22:48147(T) (AERE-Trans-1103)
  use in chemical analysis, review on, 22:25290
  use of tracer techniques to study, for development of new chemical processes, 22:14723

REACTIVITY
  analysis for Phoenix core in PRCF, 22:12085 (BNWL-472, pp 3.1-33)
  analysis for Phoenix water reflected core using multigroup transport theory, 22:12085 (BNWL-472, pp 3.1-33)
  analysis in square water-uranium oxide (UO_2) lattices by one-velocity diffusion approximation, (E/T), 22:22878
  background counts in Rossi-α uncorrelated term, analysis of time-dependent, (E/T), 22:42562
  balance determination for core lifetime of Obrigheim Power Reactor, 22:14184
  blanket optimization of 1000 MW(e) steam-cooled fast breeder reactor, alteration of 26-group-ABN-set for few-energy-group, (T), 22:44864
  calculation and measurement of JEZEBEL, comparison of values from, 22:43629(R) (LA-3933)
  calculation and measurement of TOPSY, comparison of values from, 22:43629(R) (LA-3933)
  calculation and measurement of ZPR-3, comparison of values from, 22:43629(R) (LA-3933)
  calculation by space independent kinetics equations, GAPOTKIN computer program for, 22:39770 (GA-8204)
  calculation for critical systems of integral, technique for, 22:12146
  calculation from solution of neutron transport equation, using Monte Carlo method, (T), 22:5712
  calculation in natural uranium and graphite lattices of, zero reactivity method for, (E/T), 22:10074 (EUR-3637)
  calculation in square lattices, Dancoff correction effects on, 22:12085 (BNWL-472, pp 3.1-33)
  calculation of α_0, use of pulsed source method for JEN-2, 22:12149
  calculation of DIORIT and EBWR dynamics, methods for, (T), 22:44919 (EIR-119)
  calculation of enriched uranium fueled heavy water-moderated reactor, Keepin and Cox kinetic equations for, 22:24965 (IS-1808)
  calculation of fuel movement effects on uranium oxide (UO_2)-fueled compact-core rocket reactor, computer program for, (T), 22:46998 (N-68-23894)
  calculation of heavy water-moderated 63-rod natural uranium critical assembly, GYMEA-WDSN computer programs for, (T), 22:50787 (AAEC/TM-461)
  calculation of MSBR temperature coefficient of, 22:7816(R) (ORNL-TM-2057)
  calculation of multi-charge core effects on RBI research reactor, use of neutron spectra for, 22:47015(T) (N-68-24522)
  calculation of Plutonium Recycle Test Reactor, effects of cross section uncertainties on, 22:20906 (BNWL-SA-1485)
  calculation of plutonium-fueled thermal reactor, effects of cross section uncertainties on, 22:20782 (BNWL-SA-1501)
  calculation of power reactor, description of computer programs for, (T), 22:32742 (BNWL-738)
  calculation of pulsed reactor prompt critical power and temperature transients, two-dimensional phase space, (T), 22:48744
  calculation of SGHW-type reactor, analysis of METHUSELAH--AIMAZ method of, 22:30319
  calculation of steel rod- and water-reflected water-moderated uranium oxide (UO_2)-fueled NORA mock-up of bare core reactor, one-dimensional two-group diffusion model for, (T), 22:42377
  calculation of three-dimensional bare and reflected fissile systems, use of Monte Carlo KENO computer program for, 22:50845 (Y-DD-23)
  calculation of uniform material-moderated and -reflected reactor, two-group approximation for heterogeneous analysis of, (T), 22:37559 (ITEF-563)
  calculation of uranium--water heterogeneous reactor, two-group diffusion method for, (T), 22:42493
  calculation of uranium--water heterogeneous reactor, two-group diffusion method for, (T), 22:42494
  calculation using Monte Carlo method, computer program for, 22:20931 (AHSB(S)R-146)
  calculation using multigroup diffusion theory, computer program for solving one-dimensional equations for, 22:15916 (GA-7543)
  calculations for FTR core-reflector configuration, preliminary, 22:7788(R) (ANL-7382)
  calculations for HWOCR, effects of hydrogen scattering kernel on, 22:3813(R) (AI-CE-54)
  calculations for Phoenix fuels for marine reactors, 22:14289 (BNWL-635)
  calculations for unreflected unmoderated subcritical assemblies, use of prompt neutron decay data for, 22:33004
  calculations for various STSF-1 core loadings, 22:30302(R) (GA-8377)
  calculations in heavy water lattices, PROCELLA code for, 22:37555 (EUR-3921)
  calculations including space-dependent resonance self-shielding in soft-spectrum fast assemblies, effect of heterogeneity on, (T), 22:35646
  calculations of FRO reactor, computer program for time-dependent S/sub N/-, (E/T), 22:35632
  calculations of, comparison of few-group with

conventional, (T), 22:5718
calibration by digital analysis of neutron flux transients, (E/T), 22:35681
coefficient determination for fast power reactors, synthesis method for determining, 22:32800
coefficient determination for reactors, use of transport perturbation theory in GAPER code for, 22:44817 (GA-8667)
coefficients for 2000 MW(e) Molten Salt Breeder Reactor, calculation of optimum, 22:48652 (ORNL-4254, pp 50-87)
coefficients for boron and cadmium in the Cornell University ZPR, (E/T), 22:18587 (CURL-15)
coefficients for BWR and PWR, effects of use of plutonium fuel on, 22:22658 (BNWL-475)
coefficients for critical reactors, theorem for integral, 22:20933 (FEI-77)
coefficients for homogeneous reactors, energy-dependent kinetic equation analysis for volume related integral, (T), 22:42385(T) (ANL-Trans-645)
coefficients for large fast sodium-cooled power reactors, evaluation of, 22:46958
coefficients for materials in Sandia Pulsed Reactor 2, measurement of, 22:42366 (SC-CR-68-3571)
coefficients for Rapsodie, determination of, 22:12092 (CEA-R-3354)
coefficients for reactors, use of synthesis techniques for calculation of three-dimensional, 22:16328
coefficients of SEFOR, 22:16191
coefficients of steam-cooled fast breeder reactors, 22:5921 (EURFNR-398)
coefficients of, calculation of power reactor steady state, 22:1756 (EUR-3013)
comparison between measured and predicted, in Elk River Power Reactor, 22:24938 (CONF-660524-, pp 681-94)
control in constant-level heavy water-moderated reactors, use of helium bubbles for, 22:39831(P)
control in processing of uranium--zirconium alloy fuel, 22:21155 (IN-1173)
control in pulsed reactors by measurement of subcritical state, (T), 22:18595
control in reactors by hydrogen diffusion into porous beds of zirconium hydride, (E/T), 22:16331
control in reactors, identification of parameters for on-line adaptive, (E/T), 22:7933
control in space electric-nuclear power systems, liquid, 22:6087
control methods for Carolinas--Virginia Tube Reactor, description of, 22:27404 (CVNA-285)
control of heavy water-moderated reactor, description of double poison solution variation with burnup for, 22:25044(P)
control of temperature feedback point reactor model, description of variational synthesis technique for optimum, (T), 22:39933
control rod worth measurements in NORA, grey, 22:16283(R) (IAEA-3498-21)
control system for power reactors, description of multi-tube varying-level boric acid-filled zirconium alloy tube, 22:35518(P)
coolant void effects on, in heavy water-moderated uranium oxide (UO_2)-fueled lattices, (E/T), 22:32976(R) (MIT-2344-12)
coupling coefficient determination in UTR-10, use of cross-spectral density technique for, 22:14271
coupling coefficients for fast coupled cores, analytical techniques for calculating, 22:53348
determination by Rossi--α measurement, evaluation of SN ratio for, 22:22843
determination for Annular Core Pulse Reactor, individual fuel element contributions for determining excess, 22:33007
determination for subcritical reactors, neutron spectral correction to Garelis-Russell formula for, (E/T), 22:18567
determination in subcritical solution reactors, use of pulsed-neutron technique for, 22:6112
determination in uranium--water lattices, significance of effective fraction of delayed neutrons in, (E/T), 22:25104
determination of LACBWR core excess, use of boric acid for, 22:7786 (ACNP-67533)
determination of negative, by transfer function measurement in subcritical reactor, 22:30322
determination of, model for simplification of meters for, (T), 22:18586 (CONF-661056-1)
determination of, model for simplification of meters for, (T), 22:18594
determinations for fast converter reactors, effects of sodium voiding on, 22:32734 (ANL-7310, pp 137-248)
determinations for small bare fast assemblies, synthetic approach to three-dimensional transport theory for, 22:32981
distribution analysis of, description of Garelis-Russell, Gozani, and pulsed neutron methods for, (T), 22:35703
distribution in 1000 MW(e) two-zoned fast reactor, effects of fuel enrichment and composition on radial, (E/T), 22:35468 (PNR/SETR-R.-010)
distribution in Dounreay Fast Reactor materials-testing loadings of, analysis of, (E/T), 22:35475 (TRG-Report-1571)
distribution in reactor core, effects of gross power tilt allowance on, (T), 22:30366
Doppler coefficient for plutonium-239 in fast reactors, 22:46955
Doppler coefficient for uranium-238, calculations using p-wave neutron cross sections, (T), 22:48426 (RPI-328-133, pp 60-100)
Doppler coefficient measurements for thermionic reactors, conceptual design of critical assembly for, 22:48728 (GA-7472)
Doppler coefficient of, calculations for neutron absorption at isolated resonances, (T), 22:44581
Doppler coefficient of, measurement in uranium oxide zoned core of ZPR-9, 22:30118 (ANL-7438)
Doppler coefficient of, method for determination of, (E/T), 22:30155(R) (NAA-SR-12296)
Doppler coefficients for MCR-type cores, (T), 22:32929 (NDA-2143-13)
Doppler coefficients for uranium-235 and -238 in fast reactor spectrum, (E), 22:3706
Doppler coefficients of, calculation using statistical treatment of neutron absorption in unresolved resonance region, (T), 22:32455
Doppler coefficients of, method for calculating, 22:22529 (UJV-1932)
Doppler coefficients of, methods development for calculating, (T), 22:39551 (RPI-328-123, pp 39-52)
Doppler effect calculations in fast reactors, Monte Carlo code for, 22:35720
Doppler effect measurements in fast ZPR-3, effects of heating on, 22:33037
Doppler effect on 1000 MW(e) liquid sodium-cooled fast reactor, (T), 22:18601
Doppler effect on fast breeder reactor, Monte-Carlo, perturbation, and successive-K analysis of, 22:18514
Doppler effect on fast reactor, analysis of, (E/T), 22:18513
Doppler effect on fast reactor, perturbation analysis method for, 22:18510
Doppler effect on large fast reactor, calculational methods for, 22:18508
Doppler effects on large fast reactor, 22:18569
Doppler effects on Prototype Fast Reactor, 22:18509
effect of fuel element fabrication process on, (E), 22:30343(R) (EURAEC-1992)
effects caused by voiding AARR internal thermal column, 22:7788(R) (ANL-7382)
effects in fast reactors, analysis of ceramic fuel element melting on, 22:53382
effects of boric acid concentration in water and heavy water and gas pressure on tritium, analysis of, (E/T), 22:32972 (IN-1139)
effects of boron deposition on, during SENA Power Reactor accidents, 22:3822 (EUR-3609)
effects of burnable poisons on water-cooled-reactor, measurement of, 22:42355(T) (ANL-Trans-637)
effects of control rods on, comparison of methods for calculating, 22:50866
effects of control system response on pressurized-water reactor, analysis of, 22:30167(R) (WCAP-3708)
effects of coolant flow rate on EBR-2, analysis of, (E/T), 22:32846
effects of coolant pH on Saxton Power Reactor, 22:16165(R) (WCAP-3696-6)
effects of fission products on fast breeder power reactor, analysis of, 22:35629
effects of fuel motion restrictor configuration on FTR fuel pin melting, analysis of, (E/T), 22:50794 (BNWL-623)
effects of lithium concentration on Saxton Power Reactor 3 x 3 fuel assembly, analysis of, (E), 22:35477(R) (WCAP-3696-7)
effects of moderator density, temperature, and boron concentration on pressurized-water reactor, computer program analysis of, 22:30164(R) (WCAP-3703)
effects of moderator density, temperature, and boron concentration on pressurized-water reactor, computer program analysis of, 22:30165(R) (WCAP-3706)
effects of moderator density, temperature, and boron concentration on pressurized-water reactor, computer program analysis of, 22:30166(R) (WCAP-3707)
effects of movable beryllium and iron reflectors on SORA mockup assembly, analysis of, 22:35605 (ORNL-4263)
effects of nitrogen core flush on UHTREX, measurement of, 22:42360(R) (LA-3965)
effects of opposite movement for known and unknown absorption cross section samples on core, use of reactor oscillator for, 22:37589(P)
effects of pH variation on Trino Power Reactor, 22:18416(R) (EUR-3657)
effects of pressure and temperature on MSRE, 22:16157 (ORNL-4233)
effects of reactor core parameters on xenon-135 oscillations, analysis of, (T), 22:50839 (DPST-68-372)
effects of single pulses on transfer functions of Fermi Fast Breeder Reactor, analysis of, 22:32879
effects of temperature coefficient in, calculation using zero-dimensional two-group model for Trino Power Reactor, 22:18416(R) (EUR-3657)
effects of UHTREX coolant pressure and flow rate variations, measurement of, 22:53416(R) (LA-4009)
effects of UHTREX core rotation, measurement of, 22:42360(R) (LA-3965)

effects of uranium-238 on fast critical assemblies, comparison of measured and calculated, 22:32734 (ANL-7310, pp 137-248)
effects of varying recirculation flow on Garigliano Power Reactor, 22:22713(R) (TID-24304)
effects of void coefficients on SGHWR, physics testing for, 22:16161 (TRG-Report-1343)
effects of water height on NORA H_2O core No. 1, analysis of, (E/T), 22:50809 (TID-24646)
effects of xenon transients on Shippingport Pressurized-Water Reactor shutdown, analysis of, 22:32789(R) (WAPD-MRP-124)
effects of Xenon-135 and Samarium-149 poisoning on Peach Bottom Power Reactor, Unit 1, computer analysis of, 22:24959 (GAMD-7910)
effects on Doppler coefficient of temperature-dependent neutron cross-section measurements in fast reactors, (T), 22:35709
effects on fissile material expansion in fast reactors, calculational procedure for determining, 22:32734 (ANL-7310, pp 137-248)
effects on neutron distribution in reactors, 22:6139
effects on pressurized-water reactor peak power, analysis of reactor behavior during, 22:48648(R) (IDO-17271)
effects on stability of fast reactors, safety analysis of feedback, 22:32735 (ANL-7310, pp 249-375)
eigenvalue determination for LACBWR, comparison of calculated and measured, 22:7786 (ACNP-67533)
excursion accidents in TAPIRO reactor, analysis of analog simulated, 22:39883
excursions in fast reactors, use of quasi static model for analysis of, 22:53347
excursions in Fermi Fast Breeder Reactor, description of design safety precautions for, 22:46963
fast fission factor in reactor lattice, multigroup and Monte Carlo methods for effects of backscattering and interaction in, (T), 22:44944
feedback coefficients for fast reactor, analysis of, 22:32735 (ANL-7310, pp 249-375)
feedback in NERVA reactors, (E/T), 22:6082
fuel assembly, configuration design for temperature stability effects on, 22:12037
fuel element substitution effects on, measurement in organic-moderated lattices of, 22:50816
heterogeneity effects in fast reactors, computer program for calculation of, (E/T), 22:35470 (RT/FI-(68)11)
heterogeneity effects on fast ZPR, discrete ordinate transport theory calculations of, 22:6122
heterogeneity effects on uranium carbide (UC)-fueled ZPR-6 assembly-5, measurement of, 22:33042
homogeneity effects in fast neutron spectra, calculation of, 22:53378
insertion accidents in AARR, analysis of, 22:32960 (ANL-7310, pp 31-135)
insertion into reactors, use of singular perturbation theory for determining excursion parameters from ramp, 22:42380
insertions in fast reactors, analytical method for evaluating effects of large step, 22:53388
insertions in time-varying reactors, effects on neutron population of large step, 22:18609
insertions in zero-power reactors, solution to equations for sinusoidal, 22:3940
kinetic calculations for oversized burst in FRAN Prompt Burst Machine, 22:22818 (IDO-17231(Add.))
kinetic equations for multiregion Bohunice Power Reactor, solution of spatially dependent, (T), 22:50744 (ZJE-23)
kinetics equations for TAPIRO fast, approximate analytical solution for , (E/T), 22:30313
kinetics for nine various configuration and fuels in critical assemblies, calculation of, 22:47022
kinetics for zero power reactor, equation derivation for relating, (E/T), 22:30358
kinetics of fast reactor, analysis of optimum, 22:46952
kinetics of Swedish Reactors (R-4), measurement of, (E/T), 22:30256
materials analysis in research reactors, methods for, 22:12115
measurement below 30 keV in fast critical assemblies, effects on Doppler-effects of energy- and temperature-dependent capture, (E/T), 22:35626
measurement in fast reactors, design and use of meters for, 22:7820 (TRG-Report-1526)
measurement in heavy water-moderated uranium oxide (UO_2)-fueled lattices, (E/T), 22:32976(R) (MIT-2344-12)
measurement in Minerve Reactor of ERMINE thermal-fast assembly, analysis of, (E/T), 22:35631
measurement in presence of interference and white noise, signal reduction method for, 22:25026
measurement in RA research reactor, effects of core configurations on, 22:12111
measurement in research reactors of, methods for, 22:12108
measurement in Russian SM-2 reactor neutron traps, effect of moderator density on, 22:35639
measurement in Siloette, use of continuous current ion chamber for on-line, 22:37545
measurement in uranium-235--graphite systems, 22:6113
measurement of aluminum-clad uranium oxide (UO_2) multi-rod water-moderated critical assembly, analysis of, 22:32740(R) (BAW-3647-7)
measurement of ATR, description of startup, 22:50805 (IN-1136)
measurement of bare plutonium-239 critical sphere, effects of gram-size curium-244 plutonium-239 and uranium-235 on, (E/T), 22:35636
measurement of BR-2 fast-reactor fuels core assembly, analysis of, 22:35622
measurement of Britanny Power Reactor (EL-4), operation problems in, 22:30230
measurement of ceramic-fuel fast breeder reactor, effects of core composition and configuration on, 22:1775 (RT/FI-(67)23)
measurement of core kinetics for fast reactor, effects of time-dependent coupling coefficients on, (T), 22:35544
measurement of CVTR Core 1 Cycle 1 and 2, analysis of, (E/T), 22:35427 (CVNA-287)
measurement of EBR-2 Run 24 and Run 25, effects of core configuration on, 22:32848
measurement of EBR-2 Run 26 power coefficient of, 22:32847
measurement of effective multiplication coefficient of, effect of reactor core configuration on, (T), 22:35690
measurement of effects of boron concentration in water on TTR, analysis of, (E/T), 22:32743(R) (BNWL-739)
measurement of Epithermal Critical Experiment Laboratory assembly rod worth, use of computer program for, 22:14260 (NAA-SR-Memo-12290(Rev.))
measurement of ERMINE fast--thermal flux assembly in MINERVE, 22:14263(T) (AEC-tr-6910)
measurement of excess, effects of varying boric acid flow rates in La Crosse Boiling-Water Reactor on, 22:3805(R) (ACNP-67530)
measurement of exponential pile, calculational methods for neutron buckling corrections in, 22:22831
measurement of fast breeder reactor, mathematical methods for, (T), 22:35471 (STI/PUB-165(Vol.1))
measurement of fast reactor, second order perturbation method for error estimation in, 22:37558 (IA-1156)
measurement of FRO Core 9, effects of heavy water on criticality, (E/T), 22:50788 (AE-330)
measurement of Gundremmingen Power Reactor, 22:20822(R) (TID-24283)
measurement of Halden Boiling Reactor, effects of 20 MW operation on, 22:5926 (HPR-90)
measurement of heavy water zero power RB research reactor, pulsed neutron method for, 22:12116
measurement of heavy-water moderated, water-cooled, enriched uranium reactor, effects of kinetic parameters on, 22:12010 (CEA-R-3318)
measurement of heterogeneous power reactor, stochastic technique for, (T), 22:37459
measurement of heterogeneous system, multi-group approximation method for, (T), 22:18658
measurement of low, description of reactor oscillator method of, 22:44910
measurement of magnox reactor fuel elements burnup, computer program analysis of, (E/T), 22:22773
measurement of MARYLA-2 WWR-SM reactor, calculation methods for micro- and macroscopic, 22:35597 (INR-878/XXI/PR)
measurement of Modified Critical Facility excess, analysis of, (E/T), 22:32969 (GA-8468)
measurement of multi-fueled heavy water-moderated reactor infinite multiplication constant, use of Methuselah code for, 22:37477
measurement of negative, using pulsed source technique, 22:35207
measurement of neutron spectral index for k/sub infinity/ in RB-1 reactor, detector system for, 22:20911 (RT/FI-(67)30)
measurement of neutron streaming effects of empty channels on graphite lattice, calculational methods for, (E/T), 22:25148
measurement of Northern Universities Reactor temperature coefficients of, effects of coolant flow rate and power level on, (E/T), 22:30337
measurement of NPTF, during meltdown, (T), 22:7891 (BNWL-611)
measurement of Otaniemi TRIGA reactor, description of analog computer for, 22:35621
measurement of Otto Hahn Reactor pulsed neutron, effects of boric acid on, 22:46989
measurement of Otto Hahn Reactor second core, effects of core configuration on, 22:46996
measurement of Otto Hahn Reactor thermal neutron flux distribution, foil activation method for, 22:46983
measurement of Otto Hahn Reactor, analysis of, 22:46984
measurement of Otto Hahn Reactor, analysis of, (E/T), 22:46988
measurement of Otto Hahn Reactor, effects of core configuration on design, (E/T), 22:46985
measurement of PCTR 5 x 5 lattice uranium-fueled bismuth metal-target, computer program and activation analysis for, (E/T), 22:44885 (BNWL-692)
measurement of Physical Constants Testing Reactor multiple-configuration fuel-target lattices, use of EXTERMINATOR-2 and HAMMER computer program combinations for, 22:53412 (DUN-SA-55)
measurement of plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled zoned and unzoned core, optimum fuel cycle management from, 22:42164(R) (BNWL-775)

measurement of Plutonium Subcritical Experiment 264-rod lattice, analysis of, 22:39880(R) (GEAP-5193)
measurement of PRCF uranium oxide (UO_2)-fueled core excess, analysis of, 22:32743(R) (BNWL-739)
measurement of pressurized-water reactor core mockup, effects of fuel enrichment and boron concentration on, (E/T), 22:30168(R) (WCAP-3710)
measurement of reactor, description of combined neutron flux and heat detectors for, 22:35701(P)
measurement of reactor, instrument for, 22:47406(P)
measurement of reflector savings in thorium oxide (ThO_2)-uranium oxide (UO_2) exponential pile, use of computer calculations of radial-flux distributions for, (E), 22:35633
measurement of ROSPO reactor, comparison of methods for, 22:3898 (RT/FI-(67)22)
measurement of Sandia Pulsed Reactor II glory hole, analysis of, 22:33073
measurement of SEFOR Doppler, effects of power level on, 22:35595 (GEAP-5576)
measurement of SEFOR, analysis of static, oscillator, and transient testing for, 22:30153 (KFK-649)
measurement of sodium void effects on Assembly 5 of ZPR-6 reactor, 22:33041
measurement of SPERT-3 E-core, 22:6095(R) (IDO-17245)
measurement of spherical sodium-cooled fast oxide reactor, effects of diffusion and discrete ordinates S4 transport theory on, 22:7808(R) (GEAP-5522)
measurement of steam-cooled fast breeder reactor, effects of core shape and enrichment on, 22:27401 (BNWL-713)
measurement of subcritical assembly, use of moments method and computer programs for, 22:22857 (MIT-2344-11)
measurement of temperature coefficient of, PCRF-Phoenix core, 22:22804(R) (BNWL-685)
measurement of thorium, uranium-235, and uranium-238 temperature coefficient of, effects of thermal expansion on, (E/T), 22:32977 (NAA-SR-Memo-12289)
measurement of transients in startup of mockup of Rankine-cycle SNAP-8, analysis of, 22:37516 (N-68-22257)
measurement of Trino Power Reactor core 1 cycle 1, analysis of, 22:39769 (EUR-3932)
measurement of uranium carbide (UC)-fueled ZPR-6 assembly-5, analysis of, 22:33040
measurement of void coefficient of, in Hitachi Training Reactor, 22:20925
measurement of water-moderated natural-uranium rod exponential pile, use of spontaneous fission for neutron source in, 22:30334
measurement of water-moderated reactor thermal neutron, effects of irradiation loops on, (E/T), 22:18582 (CEA-R-3173)
measurement of water-moderated reactors, computer program for, 22:24932 (BNWL-735)
measurement of water-moderated reactors, use of control rods for, 22:30352
measurement of water-moderated Type 304 stainless steel- and aluminum-clad Hi-C pellet-type uranium oxide (UO_2)-fueled DIMPLE assemblies, effects of configuration on, 22:53433
measurement of water-moderated type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled THETIS Reactor, effects of core configuration on, (E/T), 22:35594 (EURAEC-1882(Annex))
measurement of zirconium deuteride and zirconium hydride variable slowing-down power moderating rods effects on reactor, description of, 22:37600(P)
measurement of ZPR-6, use of perturbation techniques for sodium void effects on, 22:35628
measurement techniques for exponential piles, description of, (E/T), 22:35623
measurement using pulsed source techniques, (T), 22:29854
measurements for heavy water-moderated reactors, analysis of zero-reactivity method for, (E/T), 22:30338
measurements in ARMF, use of one-dimensional multigroup calculations for analysis of, 22:44895 (IN-1067)
measurements in EBR-2, effects of nuclear parameters on, 22:7788(R) (ANL-7382)
measurements in ESSOR research reactor, analysis of zero-power, (E/T), 22:30330
measurements in fast and thermal regions of STARK, 22:16296(T) (EURFNR-352)
measurements in fast critical assemblies, determination of cross section inaccuracies using, 22:33053
measurements in fast critical assemblies, evaluation of methods for analysis of sodium-void, (E/T), 22:47005 (APDA-216(Vol.2))
measurements in fast critical assemblies, neutron cross section evaluation and data testing for analysis of sodium-void, (E/T), 22:47004 (APDA-216(Vol.1))
measurements in fast flux converter of ARMF, 22:6096 (IN-1143)
measurements in fast ZPR-9 assemblies 13-17, effects of temperature on, 22:32734 (ANL-7310, pp 137-248)
measurements in fast--fission zone of loadings 3 and 4 of STARK, (E/T), 22:22829(T) (EURFNR-424)
measurements in fast-thermal critical assembly ERMINE, 22:20916(T) (ANL-Trans-556)
measurements in fast-thermal reactor STARK, 22:1859 (KFK-592)
measurements in Iowa UTR-10, direct shutdown margin determination by, 22:14285
measurements in NERVA reactors, use for fuel element composition determination of, 22:6083
measurements in PCTR, null, 22:48727 (BNWL-834)
measurements in Peach Bottom HTGR during zero-power experiments, 22:24939 (CONF-660524-, pp 695-715)
measurements in RB-1 research reactor, use of supercritical method for, 22:50831
measurements in RB-2 research reactor, 22:50828
measurements in SEFOR of coefficients of, control methods for balanced oscillator, 22:24966 (KFK-650)
measurements in SNEAK-1 and ZPR-3-41, comparison of, 22:6090 (EURFNR-395)
measurements in sodium--plutonium core of ZPR-3 of perturbed, 22:7788(R) (ANL-7382)
measurements in tantalum, thorium, tungsten, and uranium-235, surface-to-mass ratio effects on fast neutron, (E/T), 22:35667 (NAA-SR-Memo-12288)
measurements in ZPR-6, pulsed neutron techniques for, 22:32734 (ANL-7310, pp 137-248)
measurements of BSR negative, use of ionization chamber fluctuations for, (E/T), 22:35635
measurements of JEZEBEL, TOPSY, and ZPR-3, ENDF/B computer code comparisons of, 22:22821 (LA-DC-9216)
measurements of NORA, effects of boron steel control plate and steel rod and water reflectors on, 22:3892(R) (IAEA-3498-20)
measurements of PCTR Phoenix Core, description of, 22:42164(R) (BNWL-775)
measurements of PCTR thorium oxide (ThO_2)--uranium oxide (UO_2) lattice, description of, 22:42164(R) (BNWL-775)
measurements of Peach Bottom Power Reactor Unit 1 rise-to-power variations in, effects of core temperature and power coefficients during January to June 1967, (E/T), 22:39772 (GAMD-7909)
measurements of Physical Constants Testing Reactor multi-composition and multi-configuration fuel assemblies, computer program method for physics, (E/T), 22:37531 (DUN-SA-70)
measurements of pulsed neutron, application to HFIR zero power experiments, 22:12114
measurements of sodium in ZPR-3 assemblies 48, 48B, and 49, analysis of, 22:33036
measurements of Spert 3 E-core power bursts, analysis of, 22:35596(R) (IDO-17260)
measurements of STSF-1 assemblies, analysis of loading, 22:27462(R) (GA-8543)
measurements of trisected FTR core, description of, 22:42164(R) (BNWL-775)
measurements of water-moderated type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled THETIS Reactor, effects of core configuration on, (E/T), 22:35593 (EURAEC-1882)
measurements on subcritical enriched-uranium cylinders, 22:15925 (ORNL-TM-1736)
measurements using generation time formulation of prompt neutron decay constants, 22:20947
meter for measuring, detailed description of continuous on-line, 22:53486
monitoring system for power reactor, evaluation of two-detector cross-correlation 2DCT, 22:50738 (ORNL-4255)
multiplication factor for multiple configuration thorium oxide (ThO_2)-target supercell of 8 x 8 lattice PCTR, measurement of infinite medium, 22:50800 (BNWL-792)
multiplication factor measurements in RB-1 reactor natural uranium--graphite lattice, null reactivity method for infinite, 22:42368
neutron cross section energy dependence of, effects of computer approximations on, 22:27466 (LA-DC-9404)
neutron cross section variation effects on, uranium-235 and uranium-238, 22:32960 (ANL-7310, pp 31-135)
neutron generation time for fast reactor, description of discrete time and discrete state Markov process for, (E/T), 22:35545
neutron generation time formulation of, use of prompt decay constants for, 22:14301
neutron prompt decay constants of exponential pile, use of harmonic free transfer functions for, (E/T), 22:35706
neutron resonance spacing, use of synthetic kernel method for analysis of, (T), 22:30362
noise analysis for fast reactor, probability distribution for p-method, (E/T), 22:35705
noise analysis for reactor, model effects in triple-correlation, (T), 22:35704
noise analysis in Fermi Fast Breeder Reactor, measurements for multiparameter, 22:32890
noise in Otto Hahn Reactor for zero power range, calculation of, 22:46986
oscillations analysis for boiling reactor stability, description of, 22:35537
oscillations in pulsed neutron coupled-core reactor, analysis of, (E/T), 22:25162
oscillations in reactors, calculation of nonlinear, 22:25154
oscillator testing of reactor, description of automatic analog control system of Balanced Oscillator Tests for, 22:35662 (EURFNR-498)
period measurements for low power reactor, technique for large neutron source asymptotic, 22:39934

period measurements in ANNA, prompt neutron generation effect on stable, (E/T), 22:10058 (INR-P-815/IX/R)
period transient behavior of Spert 4 Capsule Driver Core, analysis of short, (E), 22:44890(R) (IDO-17270)
perturbation measurement in Dragon Reactor, analysis of optimum, 22:35420 (AEEW-R-571)
physics calculations for reactor, mathematical models for, 22:42559
physics measurements of ROSPO, description of pulsed source method for critical to subcritical, 22:20924
plutonium-239 Doppler coefficient for fast critical assemblies, (T), 22:1655 (NAA-SR-12515)
poisoning of Bucharest WWR-S research reactor, effects of operation schedule and power level on thermal fission product, 22:48731 (IFA-FR-41)
power and flux maps for Cavity Reactor Critical Experiment, analysis of, 22:47010(R) (GEMP-629)
power distribution for core configurations of 1000 MW(e) heavy water-moderated organic-cooled power reactors, analysis of optimum radial, 22:50741 (WASH-1083)
power distribution of Aircraft Nuclear Propulsion reactor, use of computer programs for, 22:50782 (APEX-918)
pulse device for fast reactor, description of double-window synchronized rotating pre- and excess-pulse screens, 22:22853(P)
pulse device for fast reactor, description of synchronized rotating pre- and excess-pulse screens, 22:22852(P)
pulsed, description of multi-region movable medium for reactor, 22:10100(P)
pulses in Fermi Fast Breeder, transfer functions for regulating rod generated, 22:14131 (APDA-NTS-14)
resonance cross section in material lattice cell, methods of calculating effects of heterogeneity on large, (E/T), 22:5923 (EURFNR-402)
safety analysis of fast reactors, effects of configuration on, 22:53292
simulation of coupled-core reactor, performance of analog computer Chezem-Helmick model, 22:35687
sodium temperature coefficient calculations for PFR, use of multigroup diffusion theory and first-order perturbation theory for, 22:35560
sodium void effects in large fast reactors, accuracy of standard sets of multigroup constants for, (T), 22:35517
spatial modes in Calder Hall-type reactor, stability analysis of neutron flux-shaped, (T), 22:35546
stability of Fermi Fast Breeder Reactor, effects of noise at .05 to 88 MW(t) on, 22:24928 (APDA-NTS-13)
stability of reactor, calculation methods for, (T), 22:44919 (EIR-119)
stability of thermal reactors, Lyapunov analysis of xenon effects on, (T), 22:35510
step insertions in uranium oxide (UO_2)-fueled Spert 3 Oxide Core Kinetics Test E-core, effects on transient behavior of 0.67 to 1.25$, (E/T), 22:44890(R) (IDO-17270)
temperature coefficient measurements in fast-thermal STARK, 22:16287 (KFK-668)
temperature coefficient measurements in Peach Bottom Power Reactor-1, 22:12023(R) (GA-8153)
temperature coefficient of, calculational techniques for determining thermal reactor, 22:50754
temperature coefficient of, effects of central water gaps on water-moderated reactor, 22:39884
temperature coefficient of, effects of Phoenix fuel on PRTR, 22:14289 (BNWL-635)
temperature coefficient of, effects of plutonium isotopic content on, 22:27396(R) (AI-AEC-12638)
temperature coefficient of, measurement in IAN-R1 Research Reactor of, 22:32971 (IAN-R-1-2)
temperature coefficient of, methods for measuring gas-cooled reactor, 22:50753
temperature coefficients for reactors, model for determination of, 22:30384
temperature effect measurements in multizone critical assembly, 22:53378
temperature effects on AARR excess, 22:32960 (ANL-7310, pp 31-135)
test for existence of solar quadrupole moment, (T), 22:11120
transfer function analysis of L-54 reactor, use of spectral power density and neutron flux noise for, (E/T), 22:50827
transfer function measurements in UTR-100, use of reactivity oscillator for, 22:3901 (SRRC-19/67)
transfer function of Kansas State University TRIGA Mark 2 reactor, use of computer programs and linear motion pile oscillator for zero power, (E/T), 22:44899 (TID-24579)
transfer functions in SEFOR for 0 to 20 MW operation, measurement of, 22:22814(R) (GEAP-5498)
transient effects in FTR, parameter analysis of ramp, 22:14254 (BNWL-657)
transients due to fission product poisoning in LOFT core, 22:1766(R) (IDO-17240)
transients in AARR, safety analysis of accidents involving, 22:37526 (ANL-7448)
transients in AARR, summary of reactor responses to, 22:32960 (ANL-7310, pp 31-135)
transients in DFR-type fast reactor, calculation methods for, (T), 22:46954
transients in sodium-cooled reactors, effects of sodium temperature coefficients on, 22:6011
transients in SPERT, one-point model for calculation of, (T), 22:44913
transients in STSF-1, determination of, 22:30302(R) (GA 8377)
transmission functions for reactor, two-group diffusion approximation of, (T), 22:35689
variations in EBR-2, determination of fuel-temperature feedback by measuring, 22:16265(R) (ANL-7403)
variations in fast critical assemblies, autorod transfer function measurements for determination of small, 22:33074
variations in fast reactors due to melting of uranium oxide (UO_2) fuel, (T), 22:27402 (BNWL-717)
variations in fast reactors, Doppler measurements on, 22:30155(R) (NAA-SR-12296)
variations in HFIR, on-line calculations of, 22:16274 (CONF-671011-, pp 61-8)
variations in large fast power reactors, effects of, 22:53387
variations in MSRE, on-line calculations of, 22:16124 (CONF-671011-, pp 58-60)
variations in ORR from an in-core cadmium--boron neutron filter, (E), 22:20910(R) (ORNL-TM-2147)
variations in reactors, analysis of anomalous operation using, 22:16275 (CONF-671011-, pp 89-101)
variations in steam-cooled fast breeder reactors, effect of design parameters on, (T), 22:35556
variations with coolant density in plutonium-fueled steam-cooled fast reactor lattice, (E/T), 22:35641
variations with coolant density in steam-cooled fast reactors, (T), 22:35557
variations with plutonium-239 neutron capture-to-fission ratio, (E), 22:32589
void coefficient measurements in fast-thermal STARK, 22:16287 (KFK-668)
void effects on fast reactor, analysis of liquid sodium, (E/T), 22:18513
void effects on fast reactor, perturbation analysis method for sodium, 22:18510
void effects on large fast reactor, analysis of liquid sodium, 22:18569
void effects on Prototype Fast Reactor, analysis of sodium, 22:18509
worth calculation for control rod in cylindrical reactor, two-group method for interrupted, 22:35685
worth determination for boron poisoning in Saxton Power reactor fuel elements, 22:50743(R) (WCAP-3385-16)
worth determinations for reactor materials using method of statistical weights, (E/T), 22:27504
worth measurement of uranium-235, effects of mass on, 22:27396(R) (AI-AEC-12638)
worth measurements for Fermi Fast Breeder Reactor control rods, description of, 22:32739 (APDA-NTS-18)
worth measurements for ORR control rods, differential and integral, 22:3895(R) (ORNL-TM-2033)
worth measurements in subcritical assemblies of rod-type neutron absorbers, 22:27471
worth measurements in ZPR-3, comparison of calculations with, 22:6123
worth measurements of boron carbide (B_4C) control elements, calculational method for, (E/T), 22:27468 (RCN-90)
worth measurements of FTR control elements, analysis of, 22:22804(R) (BNWL-685)
worth measurements of NPTR blade-shaped rod-type boron carbide (B_4C) tertiary control elements, analysis of, 22:48725 (BNWL-767)
worth measurements of Rapsodie control elements, 22:12092 (CEA-R-3354)
worth measurements of thorium and uranium-238 in fast spectrum reactor, 22:27396(R) (AI-AEC-12638)
worth measurements of UHTREX fuels, relative, 22:12029(R) (LA-3835)
worth measurements on control rod banks in Connecticut Yankee Power Reactor, 22:22708 (NYO-3250-11)
worth of Latina Power Reactor, measurement of initial, 22:50761
worth of material components in critical reactors, integral relation for statistical weights of, 22:35719
worth of MSRE control rods, calculated effects of use of uranium-233 and uranium-235 fuels on, 22:14140 (ORNL-TM-2111)
worth of Netherlands research reactor control rods, use of computer for calculating, 22:20922
worth of Peach Bottom Unit 1 control rods, use of on-line computer for, 22:22694 (GAMD-7912)
worth of plutonium solutions, effects of nitrate ion on, 22:25078 (CEA-R-3367)
worth of subcritical systems, method for determining, 22:32990
worth of uranyl nitrate as function of uranium-235 enrichment, determination of maximum excess, 22:14251(R) (BNWL-534)
worths in organic moderated lattices, comparison of measured and calculated, 22:50815
xenon-power spatial transients in thermal power reactor, use of three-dimensional model for optimum control sequence of, (E/T), 22:39931

REACTOR CONTAINMENT STRUCTURES
(Does not include reactor pressure vessels)
see also Pressure Vessels
aerodynamic effects of EBR-II, on effluent concentration, 22:40226 (AECL-2787, pp 87-104)
air locks in Elk River, leak rate testing of personnel and emergency, 22:18420(R) (NUS-428)
analyses of heavy-water gas-cooled power, 22:18449
blowdown tests in mockup of, results of transient, 22:10002(R) (IITRI-578-P-21-32)
coatings for, evaluation of commercial protective, 22:42191 (IN-1169)
compartmenting of, effects on gaseous fission product deposition of, 22:30121(R) (BMI-X-10229)
configuration of 2000 MW(e) Molten Salt Breeder Reactor, design parameters for, 22:48652 (ORNL-4254, pp 50-87)
configuration of heat exchanger-draining gas-filled shock wave-attenuating, description of, 22:42566(P)
configuration of Hinkley Point-2 Reactor, description of, 22:46971
configuration of JRR-3 research reactor, description of, 22:48733 (JAERI-6004)
configuration of marine reactor pipe-connected valve-operated shell and enclosed ship inner bottom, description of, 22:48719(P)
configuration of metallic rod-reinforced hollow interior concrete, use of rod-connected metal cover in, 22:37612(P)
configuration of SEFOR, description of, 22:47023
configuration of spherical reactor energy absorption, hydrodynamic analysis of accidents in, (T), 22:48767
configuration of valve-controlled water-sealed and -shielded multiple vessel pressure-suppression-vented, description of, 22:44939(P)
configuration of Yugoslavia power reactors, comparison of three types of, 22:48666
construction methods for, discussion of, 22:14314
construction of concrete, for U.S. power reactors, 22:37472
construction of Dodewaard Power Reactor, description of, 22:39795
construction of Gentilly Power Reactor prestressed concrete, description of, 22:35507
construction of, use of concrete in, 22:48665
decontamination effectiveness on painted and stainless steel-lined surfaces of LOFT, (T), 22:37532(R) (IDO-17242)
decontamination of, description of chemically removable coatings for, 22:50840 (IN-1170)
description of, 22:20955(P)
description of boiling water reactor, 22:30182
description of concrete-shield steel-shell, 22:32868
description of double-vessel liquid-filled pressure-vented, 22:16335(P)
description of double-wall, with inside-outside separation valves, 22:14212(P)
description of hollow elliptical 70 and 45 m diameter prestressed concrete self-sealing, 22:18643(P)
description of inner surface sprays and cloth curtain for, 22:14336(P)
description of Japanese fast critical assembly, 22:18561
description of multi-cylinder concentric blankets for seismic protection, 22:14343(P)
description of personnel escape device for, with vertical dropping hemi-spherical chamber and sealing trap door, 22:18650(P)
description of SGHWR, 22:30218
description of SNAP-50/SPUR test facility, 22:6070 (CNLM-5931)
description of underwater concrete, for large power reactors, 22:30221
description of water-cooled non-return vented double-vessel, 22:16234(P)
description of water-spray pressure-suppression chambers for, 22:18651(P)
description with water-sealed vent for reduction of initial pressure during accidents, 22:18639(P)
design and development of Fermi Fast Breeder Reactor machinery dome, description of, 22:37404 (APDA-303)
design calculations for, techniques for, 22:3946
design for 1000 MW(e) SCOTT-R, analysis of optimum economic and technical conceptual, 22:50742 (WCAP-2240)
design for water-cooled reactors, missile generation and protection criteria for, 22:50739 (ORNL-NSIC-22)
design of 800 MW(e) pressurized-water power reactors prestressed concrete, U.S.A. requirements for optimum, 22:53317
design of advanced gas-cooled, safety evaluation of, 22:18453
design of earthquake-resistant, seismic testing for, 22:23184
design of power, systems approach to, 22:18440
design of prestressed concrete pressure, 22:3962(P)
design of prestressed concrete, for Gentilly power station, 22:25033
design of prestressed concrete, for Robert E. Ginna Power Reactor Unit 1, 22:18469
design of, structural considerations in, 22:10013(T) (AEC-tr-6722)
design parameters for French and British prestressed concrete, tabular summary of, 22:53471
design parameters of EL-4, 22:20842
design with inner flexible vessel connected to pressure suppression chamber, 22:10102(P)
designs of, analysis of antiseismic, 22:7816(R) (ORNL-TM-2057)
development of prestressed concrete, summary of, 22:53471
effects of 300 to 17000 psi shock loading on porous solid, 22:2316 (IITRI-578-P-21-22)
effects on safety factors for power reactor siting, 22:18439
electrical penetration systems for, development of Fermi, Peach Bottom, and Dresden Unit 2, 22:24992
evaluation of various hemispherical, for HWOCR, 22:3813(R) (AI-CE-54)
explosion testing of, structural response to, 22:14298(T) (ANL-Trans-555)
fission product dispersion from, method for estimating, 22:18438
fission product transport in, development of analytical models to describe, 22:7816(R) (ORNL-TM-2057)
force sensors for, fabrication and calibration of, 22:10002(R) (IITRI-578-P-21-32)
glass filament, description of pressurized-water reactor, 22:37498(P)
hydrodynamic response to high-energy excursions, (T), 22:24925(R) (ANL-7427)
iodine removal from water-cooled, experimental determination of, 22:18459
leak rate of Otto Hahn Reactor, measurements of, 22:53404
leak rate testing of BR-2, procedures and results for, 22:18452
leak rate testing of EFFBR, 22:7817(R) (PRDC-EF-50)
leak rate tests on Connecticut Yankee, 22:32745 (CYAP-105)
leak testing and surveillance requirements for, 22:3846 (TID-24085)
leak testing of BONUS, 22:24974 (PRWRA-120)
leakage from simulated pressure-type, under maximum credible accident conditions, 22:30272
mechanical properties of prestressed concrete, effects of thermal stress on, 22:18589(T) (ORNL-tr-1876)
melt-through in coolant-loss accidents, unenriched uranium oxide (UO$_2$) barrier for prevention of, (T), 22:44861
methyl iodide removal from atmospheres in, use of activated carbon for, 22:18460
methyl iodide removal from, effectiveness of reactive hydrazine sprays for, (E), 22:44810 (BNWL-SA-1736)
mockup of Rapsodie, determination in integrity of, 22:46964
penetrations of FTR, description of, 22:14250(R) (BNWL-470)
performance of mockup, analysis of steam-gas mixture injection under water for measuring, 22:25098(R) (ORNL-TM-2164)
pressure differentials across power, model for calculating, 22:18446
pressure vessel with heat-shock absorbing plates spaced on inner surface, description of, 22:7870(P)
radioiodide removal from atmospheres in French, methods for, 22:18463
relationship of double, and aerosol behavior to large fast breeder reactor safety, 22:7805 (EURFNR-425)
response of finite circular cylindrical, calculation of dynamic elastic, 22:7788(R) (ANL-7382)
safety analyses of Steam-Generating Heavy Water, 22:18454
safety of, momentum equations in finite difference form for calculation of, 22:9988(R) (ANL-7391)
seals for electrical penetrations in San Onofre Reactor, design of, 22:10051
seismic design of Fort Calhoun Power Reactor, analytical model for, 22:16133 (DOCKET-50285-3)
standards for carbon and low alloy steel, for operation at less than 300°C, 22:14330
strain dynamics analysis under internal blast loading, effectiveness of reduced-scale model tests for, (E/T), 22:44918 (CONF-660669-1)
suppression tanks for, description of pressure, 22:33119(P)
water-seal for spherical, description of water-containing suppression chamber for actuating, 22:37588(P)
water-seals for, description of water-containing suppression chamber for actuating, 22:37581(P)
REACTOR CONTAINMENT SYSTEMS
(Including all components except containment shells)
see also Reactor Containment Structures
air-cleaning systems for, summary of applications of, 22:46912 (ORNL-NSIC-25)
bibliography on filters for, 22:24962 (HMI-B-68)
bibliography on, July 1968, 22:42203 (ORNL-NSIC-45)
blowdown effects on, use of shock tube mockups for determination of, 22:39775(R) (IITRI-578-P-21-35)
coatings for, effects of temperature on liquid-phase iodine deposition on, 22:14132(R) (BMI-X-10213)
coatings for, iodide ion deposition on, 22:22657(R) (BMI-X-10222)
coatings for, iodine deposition on, (E), 22:42161(R) (BMI-X-10237)

- coatings for, liquid-phase deposition of cesium ions from aqueous cesium chloride on, 22:30121(R) (BMI-X-10229)
- coatings for, liquid-phase hydrogen iodide deposition on, 22:30121(R) (BMI-X-10229)
- coatings for, methyl iodide deposition on, 22:14132(R) (BMI-X-10213)
- coatings for, removal of iodine and methyl iodide by scavenger, (E/T), 22:42161(R) (BMI-X-10237)
- configuration of multiple vent-tube-connected suppression tanks for, description of, 22:47059(P)
- configuration of power reactor lower pressure suppression chambers and upper spray ejectors, description of, 22:50755(P)
- configuration of pressure chamber and melting ice pressure suppression, description of pressurized-water reactor, 22:48674(P)
- construction of Gentilly Power Reactor, description of, 22:32863
- construction of Oyster Creek Power Reactor, description of, 22:32866
- construction of power, evaluation of problems in, 22:22719
- controlled flow with blow-off valve in water-cooled reactor primary and secondary, description of baffled, 22:30277(P)
- coolant loss accident effects on water-cooled, analysis of, 22:48660
- cooling sprays for, efficiency for air-cleaning of, 22:46912 (ORNL-NSIC-25)
- description of accident gas release for, with pipe vent pressure equalizer, 22:3964(P)
- description of Army 1.5 MW(e), conceptual, 22:22787(R) (ORNL-4216)
- description of boiling water reactor, 22:30203
- description of dry pool, for accident flooding, 22:7873(P)
- description of dry pool, for dual-pipe accident flooding, 22:7865(P)
- description of dry pool, for fluid condensing, 22:7864(P)
- description of Halden, 22:20816 (HPR-94)
- description of hydraulic water sprays from rupture pressure release drive for, 22:14338(P)
- description of ice condenser-type, for Donald C. Cook Power Reactor Units 1 and 2, 22:32867
- description of Israel IRR-1, 22:20921
- description of KEMA Suspension Test Reactor, 22:35613
- description of liquid metal cooled and fast, 22:7792 (BNWL-477)
- description of LITR, 22:25095 (ORNL-TM-1737)
- description of Pickering Power Reactor Unit 1 negative-pressure, 22:32865
- description of SGHWR, 22:18468
- description of sub-atmospheric container with pressure relief valve-connected, for gas tight atmospheric reactors, 22:30401(P)
- description of water-cooled reactor engineered safeguards, 22:27444
- design criteria for FFTF, 22:16268 (BNWL-607)
- design of AARR, safety analysis of, 22:37526 (ANL-7448)
- design parameters for, analysis of, (T), 22:39908
- designs for British power reactors, descriptions of, 22:18458
- development of French, program for, 22:18456
- development of water-cooled reactor coolant-loss spray cooling, model studies for, (E/T), 22:48777
- economic considerations for EL-4-type, 22:18451
- effects on power reactor siting of engineered safeguards and, analysis of, 22:18447
- evaluation of subatmospheric-type, 22:32864
- evaluation of various concepts of, 22:25022
- failure of power, review of methods for radioactivity control following hypothetical, 22:46914 (ORNL-NSIC-27)
- filters for, effects of accident conditions in Yankee Power Reactor on charcoal, 22:22707 (NYO-3250-10)
- fission product behavior in, effects of vessel size on, 22:20855
- fission product concentration following coolant loss accidents in, methods for reducing, 22:46912 (ORNL-NSIC-25)
- fission product monitoring in PRTR, effects of September 29, 1965 plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on, 22:32744 (BNWL-SA-668)
- fission product removal from vented, 22:18462
- fission product transport and deposition in, analytical description of, 22:5960
- hydrodynamic response to high-energy excursion, 22:16265(R) (ANL-7403)
- integrity of pressurized-water, during coolant-loss accidents, 22:5978
- iodine deposition in, effects of accident conditions on, 22:22749
- iodine vapor removal from NSPP, efficiency of spray for, 22:32796
- iodine vapor removal from, use of activated charcoal filters for, 22:50872
- leak rate instrumentation for, evaluation of CVTR, 22:30124 (CVNA-295)
- leakage rate calculations for AARR, 22:32960 (ANL-7310, pp 31-135)
- leakage rate testing of Gundremmingen Power, reference method for, 22:18455
- leakage rate tests for KEMA Suspension Test, use of pressure change methods for, 22:18562
- leakage rates for MSRE, 22:14140 (ORNL-TM-2111)
- leakage rates for, comparison of methods for determining 22:32735 (ANL-7310, pp 249-375)
- methyl iodide behavior in, bibliography on, 22:12060
- methyl iodide removal from, efficiency of sprays for, 22:42160(R) (BMI-1844)
- methyl iodide removal from, use of hydrazine sprays for airborne, 22:5965
- performance of Halden Boiling Reactor, 22:22701 (HPR-93
- performance of liquid metal-cooled fast reactor, effects of sodium burning and aerosol release on, 22:32783 (ORNL-TM-1937)
- piping for SGHWR, description of, 22:42229
- pressure history during coolant loss accidents, 22:3977 (IDO-17272)
- pressure loadings on fast, measurement of accident-induced, 22:22655 (AWRE-R-5/65)
- pressure suppression chamber for, description of pipe connected water contact steam, 22:10090(P)
- pressure suppression chamber for, description of steam filled dry well connected, 22:10101(P)
- pressure-suppression pools for, analysis of steam condensation and fission product entrainment in, 22:42160(R) (BMI-1844)
- pressure-temperature response during coolant loss accidents, 22:39774 (IDO-17272)
- radioisotopes in, chemical reactivity of, 22:12148
- safety analysis of Donald C. Cook Plants 1 and 2, preliminary, 22:12017 (DOCKET-50315-3)
- safety analysis of fast breeder sodium cooled Karlsruhe prototype, 22:18450
- safety analysis of Russellville Power Reactor, preliminary, 22:22678 (DOCKET-50313-3)
- safety analysis reports on, CHORD-S retrieval system for information from, 22:7816(R) (ORNL-TM-2057)
- spray solutions for, interactions between coatings and, 22:14132(R) (BMI-X-10213)
- spray system for Fort Calhoun Power Reactor, heat transfer capabilities of, 22:16133 (DOCKET-50285-3)
- spray systems for, evaluation of, 22:7816(R) (ORNL-TM-2057)
- spray systems for, iodine-131 attenuation following coolant loss accidents using, 22:39774 (IDO-17272)
- sprays for aerosol, description of dual-jet opposing-motion pivotal converging, 22:44949(P)
- sprays for, effects on coatings of, 22:22657(R) (BMI-X-10222)
- sprays for, evaluation of fission product removal efficiency of, 22:32797
- sprays for, radiation and thermal stability of, 22:32792
- sprays for, rates for methyl iodide uptake by reactive, 22:42160(R) (BMI-1844)
- summary of third IAEA symposium on, 22:20858
- testing of water cooled power, evaluation of, 22:46913 (ORNL-NSIC-26)
- testing of, review of techniques for, 22:32869
- turbine hall mockup of SGHWR, analysis of burst gas flow efficiency in, 22:30217
- use of ice for thermal energy absorption in, ACRS report on, 22:20862

REACTOR CONTROL ELEMENTS

- acceleration rate of FTR safety, 22:14254 (BNWL-657)
- albedo calculations for, boundary conditions at nondiffusion surfaces for, 22:33137
- bearing lugs for HFIR plate-type, results of high-load low-cycle fatigue tests on, 22:47017(R) (ORNL-TM-2243)
- Beznau Power Reactor, description of, 22:42237
- book: Control and Electronics of Nuclear Reactors, 22:30273
- book: Testing the Control Rod Drives of Marine Nuclear Reactors, 22:14233(T) (JPRS-43834)
- boric acid in U-tube, for shutdown of ORGEL Reactor, 22:32887
- bowing of aluminum--cadmium shim safety rods in ORR, 22:24991
- bowing of boron--stainless steel, in CVTR Core 1, 22:35428 (CVNA-289)
- braking mechanism for scram rods, design of rotation-producing, 22:10096(P)
- calibration calculations for fast, multigroup diffusion theory method for, 22:35469 (PNR/SETR-R.-022)
- calibration of EBR-II stainless steel, use of rod drop technique for, 22:12006(R) (ANL-7399)
- calibration of EFFBR, 22:1752 (APDA-NTS-11)
- calibration of FRAN Prompt Burst Machine, 22:22818 (IDO-17231(Add.))
- calibration of HFIR, use of rod oscillation technique for on-line, 22:3894 (ORNL-TM-1961)
- calibration of JRR-4, 22:16285 (JAERI-1139)
- calibration of La Crosse Boiling-Water Reactor, 22:3805(R) (ACNP-67530)
- calibration of LACBWR, initial, 22:7786 (ACNP-67533)
- calibration of MASURCA, 22:14149(T) (ORNL-tr-1764)
- calibration of MSRE, 22:16157 (ORNL-4233)
- calibration of PCRF-Phoenix core, 22:22804(R) (BNWL-685)
- calibration of Queen Mary College Reactor, description of pulsed neutron method for, 22:27474
- calibration of Rapsodie, 22:1871

calibration of UHTREX, 22:53416(R) (LA-4009)
chain-type, description of multi-region, 22:25164(P)
cladding for, determination of mechanical properties in dynamic sodium atmosphere of, 22:27396(R) (AI-AEC-12638)
configuration analysis for FTR, (E/T), 22:12086 (BNWL-472, pp 4.1-43)
configuration for optimum location and management of 1000 MW(e) fast breeder superheating D-1 reactor, calculation of, (T), 22:53274 (EURFNR-544)
configuration modifications of Piqua Power Reactor, description of improved, 22:46856 (AI-AEC-12696)
configuration of 250 MW(e) ORGEL-type reactor, description of optimum, 22:53272 (EUR-4042)
configuration of Aircraft Nuclear Propulsion, evaluation of optimum, 22:50782 (APEX-918)
configuration of core-enclosing multiple cobalt plate-containing square cross-sectioned tubular dual-wall vented, 22:48793(P)
configuration of gas-cooled reactor electromagnet-retained multiple spherical boron steel shutdown, description of, 22:53329(P)
configuration of hermetically sealed boron steel multiple spring-braced plate-type cross-shaped cross-section, description of, 22:48772(P)
configuration of interconnected multi-section combination fuel element and, description of, 22:44931(P)
configuration of liquid moderated reactor vertical-motion horizontal-grid, description of, 22:48795(P)
configuration of multi-zone cylindrical fast rocket reactors self-regulating yttrium hydride, description of, 22:46999 (N-68-24559)
configuration of multiple suspended rectangular plates in cross-shaped cross-section, for heterogeneous reactors of, 22:48672(P)
configuration of water-cooled reactor shutdown, description of water pressure-supported gravity-driven cylindrical rod, 22:39840(P)
configuration of water-cooled spring-separated roller-supported plate-type fuel-and-control, 22:50857(P)
coolant flow around, effects on power spectral density in HFIR and ORR, 22:1860 (ORNL-4149)
cooling system for pressurized-water reactor three-coil positioned, performance of forced air, 22:30166(R) (WCAP-3707)
creep properties of cadmium--indium--silver, effects of drop tests on, 22:30168(R) (WCAP-3710)
cylinder-type lower-end fuel and upper-end, description of center rod removal device for dual-purpose, 22:37583(P)
dash-pot development for FTR, 22:12091(R) (BNWL-639)
description of, 22:18626(P)
description of concentric, with inner rod for controlling built-in excess reactivity, 22:6185(P)
description of double-plate vertical-motion fuel assembly containing, for swimming-pool reactors, 22:12137(P)
description of electromagnetic driven boron steel chain, for gas cooled reactors, 22:20868(P)
description of Halden Boiling Reactor, 22:5926 (HPR-90)
description of Halden Boiling Reactor, 22:20816 (HPR-94)
description of hollow concentric cylinder support for multi-rod, 22:14335(P)
description of hydraulically operated, in two-region heat exchanger liquid-cooled reactor, 22:16245(P)
description of improved fast reactor neutron absorber- and moderator-type, 22:14224(P)
description of interconnected intermediate, for power output regulation, 22:42268(P)
description of JEN-2 Reactor, 22:37546
description of lower, on upper driven chain, 22:22885(P)
description of Mihama Power Reactor, Unit 1, 22:16174
description of moderator tube enclosed by absorber plates, 22:7866(P)
description of multi-layer concentric cylinder, for fast, thermal, and epithermal neutrons, 22:14283(P)
description of multi-medium concentric square tube, 22:7869(P)
description of Obrigheim Power Reactor finger-type, 22:30220
description of overhead, for liquid metal-cooled fast reactors, 22:10052(P)
description of part length, for axial power distribution and axial xenon oscillation control, 22:22867 (WCAP-7072)
description of SEFOR, 22:22814(R) (GEAP-5498)
description of spherical, with means for insertion in core on pressure drop in coolant flow, 22:6064(P)
description of spring-activated, for positive rod insertion, 22:6187(P)
description of symmetric multi-blade, 22:16343(P)
description of trapezoidal, multi-plate, vertical, weight-suspended, 22:10111(P)
description of valve actuated SGHWR fluid, 22:30188
description of vertical axis rotating external plates for, 22:20867(P)
description of vertical overhead, with grooved sides and free-falling operation, 22:14366(P)
design analysis of Halden Boiling, detailed, 22:35463 (HPR-95)
design criteria for steam cooled fast breeder, 22:53367
design for 1000 MW(e) SCOTT-R, analysis of optimum economic and technical conceptual, 22:50742 (WCAP-2240)
design of CVTR Core 1, 22:35428 (CVNA-289)
design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
design of Phoenix, 22:14289 (BNWL-635)
design of roller-containing square tube-type, mounted inside an enclosing tube, 22:10103(P)
design of vertical shutdown, for liquid cooled reactor with vertical coolant flow, 22:3954(P)
design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
design parameters of Phenix, 22:16188
design without mechanical drive for natural uranium fuel, heavy water-moderated, gas-cooled reactor, 22:1826
drive device for, description of mono-directional clutch for hydraulic actuator, 22:25200(P)
drive device for, design of electromagnetic, 22:51215(P)
drive for chain-type, description of vertical, 22:25168(P)
drive for chain-type, description of vertical, 22:25167(P)
drive for, description of common external, 22:3947(P)
drive for, description of common external, 22:3949(P)
drive for, description of external synchro-oscillator signaled internal, 22:10095(P)
drive for, description of surge tank pressure valve release sequence for, 22:10071(P)
drive mechanism for EBOR, description of, 22:18555(R) (GA-7485)
drive mechanism for multi-purpose shim-safety and regulating, description of, 22:18657(P)
drive mechanism for NERO, design of, 22:6067(R) (EUR-3647)
drive mechanism for, description dual-purpose control and safety, 22:20959(P)
drive mechanism for, description of coolant-pressurized piston and cylinder gravity, 22:16344(P)
drive mechanism for, description of fluid-activated, 22:3951(P)
drive mechanism for, description of multi-piston control electromagnet fastened high-pressure fluid, 22:14332(P)
drive mechanism for, description of stopper device for limited withdrawal, 22:18653(P)
drive mechanism for, description two-position movement fluid-actuated piston, 22:18656(P)
drive mechanism for, design of external access for liquid metal-cooled reactor, 22:3876(P)
drive mechanisms for hermetically-sealed pressurized-water reactor, description of dual-sealed rod and coaxial tube, 22:25050(P)
drive mechanisms for maritime, performance testing of, 22:3879
drive mechanisms for water- or steam-cooled, development of hydraulic, 22:37444 (KFK-665)
drive mechanisms for, description of vertical electromagnetic fastened multi-cylinder compressed air, 22:14352(P)
drive mechanisms for, design of a mechanical joint for, 22:1906(P)
drive requirements for MCR, 22:32931 (TID-21091)
drive system for shim, description of safety multiple delay switches for continuous push-button-activated, 22:50855(P)
drive system for, description of multi-cylinder travelling gear, 22:14324(P)
drive system for, description of vertical, weighted, 22:10093(P)
drives for boiling water, 22:25012
drives for dual-purpose, design for emergency shutdown and normal operation, 22:1897(P)
drives for EBOR, design of long-term operation in high temperature helium, 22:7893 (GA-7319)
drives for emergency, description of explosion-actuated telescopic cylindrical, 22:53476(P)
drives for hydraulic, for water-cooled and superheating reactors, 22:46897(T) (EURFNR-497)
drives for liquid-moderated, description of pneumatic, 22:37470(P)
drives for multi-rod, description of separate cable-connected simultaneous external, 22:14363(P)
drives for multiple suspended rod-type, description of potentiometer-monitored automatic geared induction motor with electromagnetic clutch, 22:48783(P)
drives for Obrigheim Power Reactors, description of magnetic jacks with latches for, 22:30220
drives for Phenix Fast Reactor, description of, 22:18518
drives for Power Brust Facility, testing of prototype hydraulic transient, (E/T), 22:44890(R) (IDO-17270)
drives for pressurized-water reactor cadmium--indium--silver, description of shock absorber and three-coil, 22:30165(R) (WCAP-3706)
drives for pressurized-water reactor, description of internal and external pressurized-water hydraulic, 22:35503(P)
drives for pressurized-water reactor, description of heat exchanger head loss actuated, 22:37475(P)
drives for pressurized-water reactors, description of, 22:30167(R) (WCAP-3708)
drives for pressurized-water reactors, development of sequencing variable speed, 22:30168(R) (WCAP-3710)

drives for Savannah River Reactor Mockup, description of malfunctions in, 22:50811 (TID-24698)
drives for scram operation of, description of pressurized-gas piston, 22:37580(P)
drives for sealed rod-type, description of concentric cylinder-enclosed permanent magnet and electromagnet, 22:44937(P)
drives for shutdown safety, description of electromagnet-retained pipe-guided spring, 22:53484(P)
drives for spring-loaded, description of rotating variable-pitch helical cam, 22:37599(P)
drives for vertical gravity-restrained, description of upward nozzle-controlled fluid, 22:39921(P)
drives for, description of double-sealed pressure equalizing cylinder for, 22:20871(P)
drives for, description of fixed and movable racks with floating pinion system, 22:50875(P)
drives for, description of fluid-bleed piston in spring-loaded electromagnetic-activated hydraulic, 22:50858(P)
drives for, description of lift-lower mechanism with electromagnet and mechanical couplings for, 22:25182(P)
drives for, description of pressurized fluid supported with gravity release, 22:20969(P)
drives for, description of spring-supported magnetic jack, 22:18644(P)
drives for, description of wire-and-drum system with gear release free-falling scram, 22:35694(P)
drives for, design of, 22:1894(P)
drives for, drag effects on scram travel and time of flight, 22:47017(R) (ORNL-TM-2243)
drop testing of EBR--2, 22:24925(R) (ANL-7427)
economics and efficiency of water-cooled power reactor, analysis of, 22:30190
effects of boron, on heat fluctuations in fast reactors, (E), 22:10014(T) (ANL-Trans-542)
effects of liquid sodium environment on fast reactor, 22:18503
effects of temperature coefficient in Trino Power Reactor of, super-cell theory analysis of, 22:18416(R) (EUR-3657)
effects of xenon burnup on position of, in Shippingport Pressurized-Water Reactor Core 2 Seed 1, 22:20824 (WAPD-MRP-123)
effects on neutron flux, comparison of methods for calculating, 22:50866
effects on reactivity of boron steel plate, in NORA, 22:3892(R) (IAEA-3498-20)
effects on reactor breeding rate of, determination of eigenvalues for calculating, 22:39903 (KFK-741)
efficiency of rotating disc-type, statistical tests for calculating, 22:12041
fabrication for PM-1 and PM-3A reactors, 22:14229 (HIT-242)
fabrication for Type 2 core assembly, for PM-1, PM-2, and PM-3 reactors, 22:14231 (NYO-10743)
fabrication of, 22:6954
fabrication of corrosion-resisting high neutron-absorption steel, 22:642(P)
fabrication of HFIR cylindrical aluminum plate-type, 22:2591
fabrication of Japanese power reactor, description of domestic, 22:35486
fabrication of metal-matrix, incorporating coated particles of boron carbide, 22:28910(P)
fabrication of Phoenix, 22:14289 (BNWL-635)
fabrication of pressurized-water reactor cadmium--indium--silver, description of, 22:30164(R) (WCAP-3703)
fabrication of uranium oxide (UO_2) and uranium boride, for NERO, 22:6067(R) (EUR-3647)
fabrication of, Argentina industrial capacity for, 22:3837 (NP-16984)
fabrication of, electric welder for, 22:19010
fluid system for double-wall square-lattice water-cooled reactor, description of variable neutron absorber, 22:39802(P)
guide for pressure tube reactor, design of roller, 22:3958(P)
guide plates for, description of bottom-supported fuel element assembly with, 22:37570(P)
guide tubes for Peach Bottom Power Reactor Unit 1, description of 150 equivalent full-power day maintenance inspection of, 22:39771 (GA-8679)
guide tubes for, description of radially extending horizontal support rods for, 22:37586(P)
guide tubes in fuel element clusters for, description of, 22:30398(P)
handling of, development of equipment for remote, 22:7788(R) (ANL-7382)
heat transfer in rocket reactors vane-type, analysis of, 22:32941
inspection of BONUS, description of, 22:16160(R) (PRWRA-118)
inspection of BONUS, description of, 22:18422(R) (PRWRA-119)
installation in fuel element channels of fast reactor, description of, 22:10028(P)
liquid metal-reflector juxtaposed segments, description of pressure controlled fluid levels in, 22:37594(P)
loading machine for, description of three member pivotally coupled, 22:25166(P)
locking device for reactor, description of core transfer, 22:39926(P)
magnet control amplifier for, manual for ORNL Model Q-2613, 22:6676 (ORNL-TM-1638(Pt.13))
magnets for, testing of DR-3 Reactor release, 22:3897 (RISO-M-627)
maintenance manual for Relay Safety Element ORNL-2623, 22:16936 (ORNL-TM-1638(Pt.23))
maintenance of Garigliano Power Reactor, description of, 22:22713(R) (TID-24304)
materials for, development of, 22:21749
mechanical properties of, testing methods for, 22:30385
moderator flow, description of rotating offset longitudinal axis-mounted fuel elements for liquid, 22:30393(P)
monitoring of, use of digital computers for, 22:16947
movement in Sioux Falls Power Reactor of, effects on reactivity of, 22:9983 (ACNP-67515)
movement of, dynamic programming technique for optimization of, 22:32913
multiplication factor measurement in Swedish Reactors (R-4), description of, 22:30256
neutron capture in hafnium, effects of new cross section data on calculated, 22:33147
neutron flux extrapolation distance in cylindrical grey and black material, use of Kofink's formulation of P/sub N/ method for, 22:39932
operation configuration sequence for thermal power reactor, xenon-power spatial transients control by optimum, (E/T), 22:39931
operation of concentric multi-region reactor T-shaped cross section, description of vertical axial, 22:37582(P)
operation of superheat reactor external-core gas pressure regulated fluid, description of core enclosing, 22:37487(P)
oscillation tests on Garigliano, for stability and noise analyses, (E/T), 22:32765 (EURAEC-2002)
oscillator tests in Garigliano reactor rod, procedures and results from, 22:20813 (GEAP-5534(Pt.1))
performance at 67 Mw(t) operation of Fermi Fast Breeder Reactor, 22:18521
performance at full power of Elk River Power Reactor, 22:16104 (ACNP-64546(Add.))
performance of 1000 MW(e) heavy water-moderated organic-cooled power, analysis of optimum, 22:50741 (WASH-1083)
performance of boron-containing rods in water-cooled power reactors, 22:30199
performance of Brookhaven Beam Research, high-exposure, 22:30316
performance of pressurized-water reactor, computer analysis of optimum, 22:30168(R) (WCAP-3710)
performance of silver--indium--cadmium, in pressurized water reactors, 22:30198
poison materials for, review of, 22:12958
position indication for UHTREX, development of methods for, 22:53416(R) (LA-4009)
position of, design of indicator for, 22:12512(P)
preparation of boron carbide, by vibrational compacting, 22:13050
production of carbide, methods for, 22:43639(P)
radiation effects on aluminum-base europium oxide dispersion-type, neutron, 22:11091 (ORNL-4199)
radiation effects on dimension of Fort St. Vrain Power Reactor boronated graphite, measurement of fast and thermal neutron, 22:48644 (GAMD-8619)
radiation effects on hafnium, from Shippingport Core 1, 22:32812
radioisotope production in center of, use of epithermal and fast neutrons for, 22:25176(P)
reactivity calibration of, by digital analysis of neutron flux transients, (E/T), 22:35681
reactivity effects of, comparison of methods for calculating, 22:50866
reactivity perturbations in Dragon Reactor, analysis of step, 22:35420 (AEEW-R-571)
reactivity variation in EBR-2 No. 5, 22:16265(R) (ANL-7403)
reactivity worth calculation in cylindrical reactor, two-group method for interrupted, 22:35685
reactivity worth calculations for FTR, 22:14251(R) (BNWL-534)
reactivity worth calibration measurements for Fermi Fast Breeder Reactor, description of, 22:32739 (APDA-NTS-18)
reactivity worth for Otto Hahn Reactor, description of rod drive method for calculation of, 22:46990
reactivity worth measurement in rod-type, in subcritical assemblies, 22:27471
reactivity worth measurements for BN-350 type, 22:18570
reactivity worth measurements for FTR, 22:6121
reactivity worth measurements for FTR, analysis of, 22:22804(R) (BNWL-685)
reactivity worth measurements for water-moderated, 22:1758 (EUR-3615(Vol. 2))
reactivity worth measurements for water-moderated, in PR-10 and ALIZE, 22:1757 (EUR-3615(Vol. 1))
reactivity worth measurements in Epithermal Critical Experiment Laboratory assembly, use of computer program in dynamic, 22:14260 (NAA-SR-Memo-12290(Rev.))

reactivity worth measurements in fast-thermal STARK, 22:16287 (KFK-668)
reactivity worth measurements in PBF, 22:1857 (GEMP-560)
reactivity worth measurements in Peach Bottom HTGR during zero-power experiments, 22:24939 (CONF-660524-, pp 695-715)
reactivity worth measurements of boron carbide (B_4C), calculational method for, (E/T), 22:27468 (RCN-90)
reactivity worth measurements of CVTR Core 1, analysis of, 22:35427 (CVNA-287)
reactivity worth measurements of hollow cadmium, effects of Lucite on, 22:16269 (BNWL-618)
reactivity worth measurements of Prototype Fast Reactor, 22:18509
reactivity worth measurements of Rapsodie, 22:12092 (CEA-R-3354)
reactivity worth measurements of SORA mockup, 22:35605 (ORNL-4263)
reactivity worth measurements on Pakistan Research Reactor, 22:22825 (PINSTECH/R.O.-4).
reactivity worth measurements on, endogenous pulsed source technique for, 22:53454 (BNWL-828)
reactivity worth of aluminum--cadmium--indium, measurement of, 22:32740(R) (BAW-3647-7)
reactivity worth of ATR, calibration of, 22:50805 (IN-1136)
reactivity worth of bare and cadmium-covered poison rods in PRTR Batch Core, 22:53454 (BNWL-828)
reactivity worth of blade-shaped rod-type NPTR boron carbide (B_4C) tertiary, analysis of, 22:48725 (BNWL-767)
reactivity worth of cadmium--indium--silver, measurement of, 22:30164(R) (WCAP-3703)
reactivity worth of EBWR, 22:32960 (ANL-7310, pp 31-135)
reactivity worth of Elk River Power Reactor Cycle 3, measurement of, 22:1769(R) (NUS-405)
reactivity worth of FTR, (E/T), 22:12086 (BNWL-472, pp 4.1-43)
reactivity worth of grey, measurement in NORA of, 22:16283(R) (IAEA-3498-21)
reactivity worth of horizontal, in vertical fuel element configurations, (T), 22:1827
reactivity worth of Modified Critical Facility, calculation of, 22:32969 (GA-8468)
reactivity worth of MSRE, effects of use of uranium-233 and uranium-235 fuels on, 22:14140 (ORNL-TM-2111)
reactivity worth of NORA, 22:16356 (KR-116)
reactivity worth of ORR rod, analysis of, 22:35608(R) (ORNL-TM-2237)
reactivity worth of Otto Hahn Reactor mockup, measurement of, 22:46982
reactivity worth of Peach Bottom, Unit 1, differential and integral, 22:16148(R) (GA-8370)
reactivity worth of Plutonium Subcritical Experiment 264-rod lattice, analysis of, 22:39880(R) (GEAP-5193)
reactivity worth of power, spatial neutron flux distribution effects on measured, 22:18475
reactivity worth of pressurized-water reactor, analysis of, (T), 22:30166(R) (WCAP-3707)
reactivity worth of pressurized-water reactor, measurement of, 22:30168(R) (WCAP-3710)
reactivity worth of RB-2, 22:50828
reactivity worth of rod--configurations in EBR--2, (T), 22:24925(R) (ANL-7427)
reactivity worth of UHTREX, integral and differential, 22:42360(R) (LA-3965)
reactivity worth of Yankee Power Reactor, effects of boron concentration on, 22:30167(R) (WCAP-3708)
reactivity worth of, measurement techniques for, (E/T), 22:35623
reactivity worth of, scram testing device for, 22:37569(P)
reactivity worths for Sena, differential and integral, 22:16164 (WCAP-2785)
regulation system for, design and fabrication of tiristor phase-sensitive demodulator for, 22:19212
reliability evaluation of HWOCR shutdown, 22:3813(R) (AI-CE-54)
rod drop testing of Connecticut Yankee Power Reactor, prestartup, 22:22708 (NYO-3250-11)
RTS-1 Galileo, description of, 22:50825
shock absorber for, design of material elongation, 22:1903(P)
shutdown testing of Puerto Rico Power Reactor, measurement of drop times in, 22:3845(R) (PRWRA-117)
spherical vacuum-supported shutdown, description of floating, 22:30394(P)
stresses on HFIR, effects of rod position on static load induced, 22:47017(R) (ORNL-TM-2243)
tensile properties of HFIR plate-type, radiation effects on, 22:47017(R) (ORNL-TM-2243)
testing of grey (stainless steel--1.09 w/o B), in uranium oxide (UO_2)--water lattices in NORA, (E/T), 22:30305(R) (IAEA-3498-22)
testing of JMTR, description of flow and heat transfer, (E), 22:33028
testing of marine, procedures for reliability, 22:14233(T) (JPRS-43834)
testing of pressurized-water reactor cadmium--indium--silver, analysis of thermal and wear, 22:30164(R) (WCAP-3703)
thimble deformation on EBR-2, 22:22653(R) (ANL-7419)
travel time of Halden, effects of temperature on, 22:12027(R) (HPR-88)
use for reactivity measurements in water-moderated reactors, 22:30352
use of boron absorber rods for burnup compensation in fast reactors, effect on heat-release distribution of, (E/T), 22:35551
variable reflector area, description of thermal reactors, 22:7871(P)
vibration of, coolant cross flow and parallel flow induced, 22:7927
withdrawal of multi-rod, use of computer during startup for, 22:14339(P)
worth measurements for ESSOR and ISPRA-1, procedure for, 22:20923

REACTOR CONTROL SYSTEMS
(Including all components except the control elements)
see also Reactor Control Elements
actuator environmental design criteria for S8DR, 22:16250 (NAA-SR-12605)
alarm analysis and indication system for Oldbury plant, 22:48679
algorithm for zero-power, development of linearized sampled-data, 22:32961 (ANL-7310, pp 377-430)
analysis of, statistical evaluation of power spectral density, 22:22684 (EUR-3734)
bibliography on, July 1968, 22:42203 (ORNL-NSIC-45)
book: Reactor Dynamics and Control: State Space Techniques, 22:46976
boric acid-filled zirconium tube system for power, description of multi-tube varying-level, 22:35518(P)
Brittany Power Reactor (EL-4) monitoring and safety, description of, 22:30270
burnable poison solutions for, description of double, 22:25044(P)
calibration of RB-1 research, 22:50831
calibration of SEFOR, description of, 22:35595 (GEAP-5576)
circuit diagrams of Halden Boiling Reactor, 22:20816 (HPR-94)
circuit for, design of controller, 22:53473(P)
circuits for fission chamber automatic, 22:33691 (ZfK-121, pp 249-319)
components of, failure rate coefficients for, 22:16115 (CEA-R-3380)
computer programming for pressurized-water reactor on-line, development of, 22:53318
computer programs for processing input data to Garigliano Power Reactor on-line digital computer, description of six, 22:39767 (EUR-3780)
configuration of JRR-3 research reactor, description of, 22:48733 (JAERI-6004)
configuration of ZR-4 zero power reactor self-checking safety and interlock, description of, 22:47020
data acquisition system for, design of on-line computer input remote, 22:32961 (ANL-7310, pp 377-430)
description of 0.1 MW(e) boiling, (T), 22:22787(R) (ORNL-4216)
description of 1200 MW Wylfa Reactor, 22:6039
description of automate concept for SENA, 22:48683
description of automatic, 22:18626(P)
description of automatic, for Hitachi Training Reactor, 22:30317
description of automatic, for power plants, 22:48686
description of AVR, MZFR, and VAK, 22:39828
description of Beznau, 22:42237
description of BN-350 Reactor, 22:18520
description of boiling reactor valve release water supply shutdown, 22:14213(P)
description of CDC 636 computer, for CANDU Reactor, 22:9985 (AECL-2948)
description of commercial nuclear power plant, 22:18485
description of computer programs for HTLTR operation, 22:22801 (BNWL-651(Vol. 1 and 2))
description of computerized Wylfa Reactors, 22:27445
description of delayed coolant response, for sudden load increase in power reactors, 22:14215(P)
description of digital computer system for detecting malfunctions in Fermi Fast Breeder Reactor, 22:22742
description of direct digital control, 22:6066
description of EDF-4 automatic, using digital computer, 22:48681
description of EL-4, 22:1782
description of emergency shutdown, activated by pressure drop in cooling system, 22:6064(P)
description of fail-safe, with solid-state dynamic logic circuits, 22:18597
description of fast breeder, 22:18527
description of gas controlled variable-level liquid poison containing pipes for, 22:18645(P)
description of gravity--coolant flow driven absorber spheres for, 22:20880(P)
description of heavy water variable-volume concentric cylinders for heavy water-moderated, 22:18534(P)
description of high- and low-pressure water coolant safety flow, for reactor run-away, 22:14351(P)
description of HTLTR computer, 22:33070
description of hydrogen reversible flow, 22:10108(P)
description of instrumentation and power supply for, for power reactors, 22:20835
description of JRR-1 computer startup, 22:16286 (JAERI-

1152)
description of liquid neutron absorber regulating and safety, 22:20973(P)
description of liquid poison injection system in coolant loop for emergency shutdown, 22:18649(P)
description of liquid poison multi-signal response, 22:14331(P)
description of liquid reflector with movable absorption plates, 22:14334(P)
description of LITR, 22:25095 (ORNL-TM-1737)
description of Manchester and Liverpool Universities' Reactor on-off servomechanism, 22:12104
description of means for equalizing vapor pressure in two secondary heat transfer circuits, 22:42287(P)
description of minimal time-to-power startup, 22:12073(P)
description of multi-concentric cylinder separated liquid poison and coolant water flow channels for, 22:18537(P)
description of NERVA, 22:1843
description of optimal, with spatial process effects, (T), 22:14302
description of power reactors safety, 22:22743
description of Prototype Fast Reactor, 22:18507
description of rapid shutdown, with means for pouring pellets of poison material into core, 22:12153(P)
description of reflector with removable absorber plates, 22:14333(P)
description of safety, 22:25024
description of scram-prevention system during sample handling, 22:14278(P)
description of SENA power plant automatic, 22:48684
description of SGHWR, 22:16161 (TRG-Report-1343)
description of SNEAK, 22:6093 (EURFNR-401)
description of superheated turbine water feedback circuit for reactor core inlet, 22:18535(P)
description of Tokai-Mura Power Reactor, 22:14159
description of turbine superheat steam feedback circuit for reactor core inlet, 22:18536(P)
description of variable lithium concentration spectral shift, for sodium-cooled fast reactors, 22:16246(P)
description of VVR-S, 22:22849
description of whistle orifice sound regulated fluid flow, 22:16336(P)
description of ZR-4, 22:42367
description with means for distillation of poison solution from primary circuit, 22:16338(P)
design analysis of Halden Boiling, detailed, 22:35463 (HPR-95)
design and operation of fast-trip comparator for, 22:36127 (ORNL-TM-1638(Pt.9))
design and operation of feedback, lectures on, 22:36131 (WAPD-TM-724)
design for 1000 MW(e) SCOTT-R, analysis of optimum economic and technical conceptual, 22:50742 (WCAP-2240)
design for maintaining power levels in PEGGY, 22:22808 (CEA-R-3323)
design of AARR, safety analysis of, 22:37526 (ANL-7448)
design of automatic range switch, 22:33683 (LFEN-NI.-30-B)
design of digital analyzer for transfer function measurements in reactors, 22:32967 (EUR-3916)
design of fluid, for high temperature and high radiation environment, 22:1832
design of ionization chamber, for startup, 22:47324(P)
design of linear coincidence-redundancy, 22:16113 (CEA-R-3335)
design of magnetic reed switch for, 22:3961(P)
design of numerical ictometer, with variable time constants and integrated circuits, 22:16926 (CEA-R-3331)
design of Obrigheim, 22:14191
design of on-line digital, 22:18470
design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
design of shutdown amplifier for neutron-flux protection, 22:400
design parameters and standards for ECO, 22:48742
design parameters for Melusine, 22:22806 (CEA-R-3131(Vol.1))
design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
design principles for protection instrument, analysis of, 22:50843 (ORNL-NSIC-51)
design problems of nuclear power plant, 22:20829
design standards for Hanford Production, 22:48647 (HW-78912)
detector pattern efficiency for pressurized-water reactor, analysis of neutron, 22:30164(R) (WCAP-3703)
development at ORNL during Sept. 1966 to Sept. 1967, 22:22858 (ORNL-4219, pp 87-109)
development of Halden Boiling Reactor on-line digital computer, analysis of, 22:53280 (NP-17638)
development of hydraulic, for water-cooled and superheating reactors, 22:46897(T) (EURFNR-497)
development of on-line digital computer system for Halden, 22:16177
development of PDP-8 computer-based, for DR-2, 22:51279(R) (RISO-M-729)
development program for HBWR digital computer, progress during April to June 1968, 22:48646 (HPR-102)
development program for HBWR on-line computer, 22:48713
distributed-parameter reactor optimum, clarification of integral equation for, 22:39935
economic aspects of, industrial, 22:23275
effectiveness of hydrogen diffusion into porous beds of zirconium hydride for reactivity control, (E/T), 22:16331
effects of coolant temperature transients on, (T), 22:18592
electric circuits protective, configuration of Lucens Reactor, 22:46957
equations for Lur'e type, asymptotic stability determination for, 22:30363
equations for, application of state variable techniques for solution of, 22:46976
evaluation of optimum pressurized-water, (T), 22:50771
evaluation of power reactor two-detector cross-correlation 2DCT shutdown reactivity meter, 22:50738 (ORNL-4255)
failure mode analysis for FTR, 22:22802 (BNWL-661)
failures in boiling water reactor, analysis of, 22:30207
failures in optimum, economic effects of, (T), 22:1828
flow control in, description of dual interconnected piston-actuated temperature sensors for valve-operated, 22:48782(P)
flux-flattening liquid concentrations and multi-rod, operation of, 22:35692(P)
fuel element failure detection system for, design of amplifiers for fluid switches in, 22:1909
gas pressure-vacating fuel-free core zones for moderator-filled, configuration for pressurized-water reactor of, 22:48676(P)
harmonic method for statistical evaluation of power spectral density, 22:22684 (EUR-3734)
heavy water-moderated, description of, 22:30158 (STI/PUB-163)
hydrogen propellant flow, for rocket reactors, 22:30286
in-core instrumentation for, Halden Boiling description of, 22:30268
instrumentation for German, review of, 22:53485
instrumentation for MSRE, manual on, 22:16159 (ORNL-TM-729(Pt.2A))
instrumentation for San Onofre, description of, 22:22757
instrumentation for SNAP-8 simulator facility, performance of, 22:39864 (N-68-19001)
integration of MCR digital, with plant engine speed and electrical generating and distribution systems, 22:32921 (GMAD-3078-24)
Karachi Power, description of, 22:30228
kinetics for TR-0 reactor hydraulic, analysis of optimum, (T), 22:44838 (UJV-1944)
Lingen Power, description of, 22:30180
maintenance of period safety module ORNL Model Q-2635, manual for, 22:30891 (ORNL-TM-1638(Pt.35))
monitoring instrumentation performance in, checking signal circuit for determination of electrical, 22:42266(P)
monitoring of, method and device for, 22:25191(P)
neutron flux detectors in, calibration of boron trifluoride-filled and boron-coated proportional and fission chamber, 22:28063 (CONF-661020-18)
neutron flux detectors in, performance in NERVA of gamma-compensated, 22:28085
neutron flux shape function for point reactor kinetics equations for, description of dependent, 22:18606
neutron flux-heat output meters for, description of combined signal, 22:14358(P)
neutron spectral calculations for, absorption lethargy dependence determination of, 22:1798
neutron spectral shift, method for heavy water moderated reactor, 22:7906(P)
noise problems in, 22:36123 (CONF-680303-, pp 235-8)
nuclear counting channels for, comparison of wide-range analog, wide-range digital, and counting-Campbelling, 22:53488
operating experience with German safety, 22:22720
operation of 1000 MW(e) heavy water-moderated organic-cooled power, description of optimum, 22:50741 (WASH-1083)
operation of Garigliano Power Reactor, testing for stability in, 22:18418 (EURAEC-1985)
operation of Savannah River Production Reactors on-line digital computer, description of, 22:44914 (DPSPU-68-30-1)
optimization of, mathematical model for, 22:18470
optimization of, use of analog techniques for, 22:16278 (EUR-3735)
performance at 67 MW(t) operation of Fermi Fast Breeder Reactor, 22:18521
performance characteristics of power, 22:35522
performance of 1000 MW(e) steam-cooled fast power reactor, effects of perturbations and accidents on stability, (T), 22:37399 (AE-321)
performance of CANDU Reactor digital computer, analysis of, 22:30269
performance of digital computers in boiling water power, 22:48685
performance of digital, for automatic startup of HTR, 22:22848
performance of electronic equipment in large power, 22:48682

performance of Garigliano Power Reactor on-line digital computer, analysis of, 22:39768 (EUR-3781)
performance of Garigliano Power Reactor on-line GE 412B digital computer, analysis of, 22:30146 (EURAEC-1983)
performance of HFIR, 22:47017(R) (ORNL-TM-2243)
performance of Hunterston A Reactor, discussion of, 22:20841
performance of on-line digital computer in UHTREX, 22:48734 (LA-DC-9638)
performance of Peach Bottom Power Reactor unit 1, engineering testing of, 22:30148 (GA-8040)
performance of power reactor, analysis of, 22:42220
performance of power, effects of optimum power response on, 22:35536
performance of pressurized-water reactor, effects of response on, 22:30167(R) (WCAP-3708)
performance of pressurized-water reactor, error analysis for, (T), 22:30168(R) (WCAP-3710)
performance of rocket reactor, analysis of quasi-linear programming for calculating optimum, (T), 22:53406
performance of water-moderated rocket reactor helium-3, analysis of, 22:35575
performance reliability of instrumentation for Gundremmingen Power, analysis of, 22:53320
physics measurements for 1.5 to 15 MW(e) MCR, analysis of optimum economic and technical, 22:50777 (GMAD-3078-20(Vol.1))
physics measurements for Beloyarsk Power Reactor Unit 1, 22:22770
piping for SGHWR, description of, 22:42229
power equilibrium, description of optimum multiple, 22:39924
pressure balance, use of vapor condensation and vaporization heat for, 22:18641(P)
programming calculations for rocket reactors, description of linear, (T), 22:30285
radiation effects on NERVA, analysis of neutron, 22:35576
ramp generator circuit for very long period simulation in, 22:37620
reactivity response for SPR-6 reactor, description of, 22:42344(R) (UCRL-50004-67-3(Pt.1))
response calculations for 2000 MW(e) Molten Salt Breeder Reactor, analysis of, 22:48652 (ORNL-4254, pp 50-87)
RTS-1 Galileo, description of, 22:50825
safety analysis of Donald C. Cook Reactors 1 and 2, preliminary, 22:12018 (DOCKET-50315-4)
safety analysis of Russellville Power Reactor, preliminary, 22:22678 (DOCKET-50313-3)
safety flow-scheme for boiling power reactor, analysis of, 22:53314
safety instrumentation for, reliability analysis for, 22:16111 (CEA-R-3292)
safety requirements for boil-safe design of power reactor, analysis of, 22:53319
safety requirements for instrumentation of in-pile loop, analysis of, 22:53426
safety requirements for optimum power reactor, analysis of, (T), 22:53309
safety requirements for pulsed, analysis of, 22:44909
safety systems for, effects of test frequency on reliability of engineered, 22:32856
sensor probe circuits for shutdown, description of, 22:1910(P)
shutdown monitoring device for reactor safety, description of, 22:6181(P)
simulation of power reactor neutron flux and period measurement in, error analysis by analog computer, 22:39819
simulation of, startup of clustered NERVA reactor, analog, 22:20900 (WANL-TME-1154)
stability criteria for time-delay, analysis of N. N. Krasovkii's theory for, (T), 22:18591
stability testing of Garigliano Power Reactor, closed-loop transfer function Bode plot for, 22:16149(R) (GEAP-5517)
temperature feedback point reactor model optimum, description of variational synthesis technique for, (T), 22:39933
testing of power reactor, procedure for operational, 22:5919 (CONF-671011-2)
transfer function from spectral power for on-line, description of single time-constant, (T), 22:18478
trip set-points for protective, criteria for determining, 22:44867
use of boron solution concentration, for xenon-135 equilibrium, 22:27510(P)
use of computer controlled, for uniform withdrawal of control rods, 22:14339(P)
use of general coincidence logic in HFIR, operating experience with, 22:22851
use of poison gas in coolant tubes for shutdown, 22:18652(P)
use of variable phase moderator liquid for, 22:25051(P)

REACTOR COOLANTS
(For general studies. Coolants for specific reactors or reactor types are treated at the reactor or reactor-type entry.)
analysis for fission-product krypton and xenon by trapping and gamma spectroscopy, 22:6257 (PG-Report-807)
analysis of aqueous, ultracentrifugation techniques in, 22:45145 (K-1754)
analysis of decomposition products of organic, by gas chromatography, review on, 22:37667
analysis of water in swimming pool, for radioisotopes, method for, 22:35760
analysis of, use of lithium-drifted germanium gamma spectrometers for, 22:30404(P)
blowdown-induced water hammer in LOFT, 22:6517 (TID-24137)
boiling burnout heat flux for, in subcooled forced-convection systems, 22:51174
boiling burnout in, summary of research on, 22:44850
book: Coolants for Nuclear Power Plants, in Russian, 22:32802
book: Thermo-Physical Properties of Materials of Nuclear Technology, in Russian, 22:27449
condensate from carbon dioxide, system for measuring mass flow of, 22:38164(P)
contamination in Garigliano Power Reactor, during April 1 to June 30, 1967, 22:3847(R) (TID-24131)
cooling properties of, testing of electrically heated detector for measuring, 22:40293 (RISO-M-760)
density of liquid, neutron radiometric device for measuring, 22:36121(P)
effects of boiling water, on Type 304 stainless steel at 550°F, 22:15174(R) (GEAP-5554)
flow analysis of Piqua Power Reactor, 22:10006(R) (NAA-SR-12561)
flow characteristics of, method of hydraulic calculation for, (T), 22:7928
flow in fuel bundle subchannels, analysis of natural mixing of, (T), 22:33165
flow of liquid metal, design and operation of system for control and measurement of, 22:23189 (BNWL-705)
fluid flow siphon breaker control system for swimming-pool type, 22:14284(P)
fluid flow velocity profile in multichannel HWOCR, measurement of water-simulated, 22:9986 (AI-CE-TDR-1089)
fluid level control system for swimming-pool reactor, description of plate-plug valve hole in core container for, 22:14280(P)
heat transfer by organic, effects of temperature and tube cross section on turbulent, (T), 22:27999
heat transfer characteristics in, description of grid thermal accumulator for regulating, 22:16346(P)
heat transfer in BWR core, effects of turbulent flow on, 22:14202
heat transfer properties of emergency additive-containing water, testing of boiling, 22:42206(R) (SNE-40)
impurities in sodium, development of ultrasonic transducer scanner for determining, 22:40480 (APDA-210(Add.))
monitoring of surface of water, splash protection for large-area detector for, 22:47348
phase change through porous fuel elements, description of liquid, 22:42247(P)
pressure control of, use of vapor condensation and vaporization heat for, 22:18641(P)
properties of anthracene oil, 22:35867
properties of terphenyl isomeric mixture as, 22:20817 (CONF-660553-4)
purification of Orgel, methods for, 22:42809 (CONF-660553-8)
purification of Piqua Power Reactor, effects of out-of-core deposits on, 22:3833(R) (NAA-SR-Memo-12540)
radiation effects on organic, 22:27832
radio-chemical processes in gas-cooled reactors, description of, 22:35679
radioactive pollution of Columbia River at Hanford following disposal of, 22:45145 (K-1754)
solvent properties of liquid, for gases, 22:4084
temperature of, effects of step increase in power on, 22:10019
void fraction measurements of water, design of neutron densimeter for, 22:30875

REACTOR EXPERIMENTAL FACILITIES
(See also specific reactors designed particularly as experimental facilities.)
see also In-Pile Loops
see also Reactor Thermal Columns
ARMF-1 and ARMF-2 liquid and gas sample, description of, 22:32972 (IN-1139)
availability of Air Force Engineering Test Reactor, 22:53410 (AD-669685)
beam hole configuration for ASTRA reactor, description of 751 eV proton energy spectra measurement at 10^{-5} to 10^{-9} torr in, 22:44898 (SGAE-PH-67/1968)
beam holes for research reactor, description of external and internal, 22:16302
beam holes, description of operation techniques for, 22:12125
beam tubes for, development of straight and curved, 22:10066(T) (AERE-Trans-1074)
configuration of in-pile gas flow for radiation chemistry, description of, 22:53428
configuration of liquid-drive vane-rotated cylinder-shaped sample holder, description of research reactor, 22:53439(P)
configuration of LPR high-temperature tank, for testing rhodium-type activation detector, 22:37528(R) (BAW-

3647-8)
configuration of remote-handling fast neutron cryogenic, description of reactor in-pile loop, 22:53430
configuration of semi-homogeneous reactor vertical, description of thermal neutron flux flattening, 22:53434(P)
configuration of shielded rod-actuated ring-type sample-cutting device for, description of, 22:48739(P)
construction of tangential through channel, for 1 MW TRIGA reactor, 22:3900 (RT/ING-(67)10)
coolant flow reversal and water-hammer pressure in closed AARR hydraulic rabbit-tube facility, analog analysis of, 22:10057 (ANL-7336)
cooling system design for horizontal hole, 22:10070(P)
cooling system for PEGASE, use of phase methods for analysis of temperature control of, (T), 22:37550
description of 180° rotation, 22:1876(P)
description of aqueous suspension fueled pulsed exponential pile, 22:25107
description of ASTRA, for biological material irradiation with fast neutrons, 22:30308 (SGAE-R-2/1967)
description of BARN biological, 22:25110
description of Brookhaven HFBR, 22:25115
description of cryogenic, for Argonne Research Reactor, 22:20919
description of cryogenic, for MELUSINE and SILOE research reactors, 22:12121
description of cryogenic, in FR-2, 22:12122
description of epithermal neutron converter in USSR BR-5, 22:18565
description of ETR Cycles Testing Facility, 22:25088 (KAPL-P-3171)
description of HOR, 22:25108
description of improved neutron diffraction, 22:14281(P)
description of LFR, 22:25112
description of LITR, 22:25095 (ORNL-TM-1737)
description of Melusine Reactor, 22:22807 (CEA-R-3131(Vol.2))
description of NaK environment, for irradiation of stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel pins, 22:25083(R) (GEAP-5541)
description of NBSR, 22:25113
description of neutron capture, for monoenergetic gamma ray production, 22:25085 (IEA-133)
description of neutron radiography facility at DMTR, 22:16922
description of PEC, for fast fuel element testing, 22:1867(T) (ORNL-tr-1786)
description of pressure vessel enclosed core center access, for high flux swimming-pool reactor, 22:14279(P)
description of SEFOR foil container, 22:22814(R) (GEAP-5498)
description of swimming-pool reactor, 22:3914
description of swimming-pool reactor system for γ irradiation during shutdown, 22:39889(P)
description of VVR-S multi-range spectrum biological, 22:22849
description of VVR-SZ, 22:12119
description of water-moderated enriched uranium fueled HFR, 22:25114
description of WWR-M large vertical biological, 22:12100
design for neutron time-of-flight studies, 22:32453
design of Argonne Advanced Research Reactor, preliminary safety analysis of, 22:37526 (ANL-7448)
design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
design of Plum Brook Reactor Horizontal Through Hole 1 irradiation, nuclear data for, 22:37536 (N-68-15855)
design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
design proposal for Repetitively Pulsed Test Facility, 22:16284 (IN-1149)
development of thermal neutron collimator, for Triga Mark II, 22:30324
drive mechanism trolley for swimming-pool reactor, design of two-directional, 22:3916(P)
EPR spectrometer for gamma radiation effects studies in, 22:16304(P)
EPR spectrometer for radiation effects studies in, 22:16303(P)
experiments in ORR, tabulation of, 22:10062(R) (ORNL-TM-2087)
fast reactor-fuel high-burnup SOCRATE, for BR-2, description of, 22:35630
fuel element failure location in multichannel, (T), 22:33003
fused-salt convection loop for ORR, description of, 22:12035(R) (ORNL-4191)
gamma radiation dose rate in Plum Brook HB-6 beam hole, (E), 22:37538 (N-68-17022)
gamma spectral measurements in HFIR, 22:44897 (ORNL-TM-2221)
gas sealing chamber for, description of air-cooled membrane-type, 22:48758(P)
instrumentation for FFTF, design and operations criteria for, 22:50799 (BNWL-779)
instrumentation for ORNL, review of, 22:22824 (ORNL-4219, pp 121-4)
instrumentation for ORNL, review of, 22:22823 (ORNL-4219, pp 119-20)
irradiation assembly in EBR-2, for ceramic thermionic fuel rods, 22:25090 (LA-DC-9025)
irradiation plug for, description of cylindrical multi-pressure environment pipe-access, 22:44912(P)
layout of SORA, description of optimum, 22:39874(T) (ANL-Trans-616)
loading machine for NASA Research Reactor, description of remote-control, 22:33067
modifications to RC-1, description of, 22:3905
neutron beam control device for, description of helical-grooved ball-and-shutter, 22:25195(P)
neutron beam extraction through tangential channel of, effect of material, geometry, and position of scatterers on, 22:44904
neutron collimators for, analysis of lead for in-pile, (E), 22:24369 (PINSTECH/PHY-9)
neutron converter designs for DMTR, 22:6133
neutron flux and gamma background measurement in ZR-3 mockup of WWR-S, 22:18605
neutron flux and reactivity measurements in IAN-R1 Research Reactor, 22:32971 (IAN-R-1-2)
neutron flux and spectral measurements in HFIR, 22:44897 (ORNL-TM-2221)
neutron flux measurements in WWR-S, residual, 22:3911
neutron flux profiles of PTB, 22:35611
neutron spectra at beam port of Triga Mark-II, use of nuclear emulsion for measurement of fast, 22:30332
NPD, description of, 22:30224
operation in DIDO and PLUTO, safety procedures for, 22:12135
physics measurements for BR-2 fast reactor-fuel high-burnup SOCRATE, analysis of, 22:35630
pipe for swimming-pool reactor, description of core-enclosing vertically-rising spiral, 22:37548(P)
plug for in-pile loop, description of shielded fluid-cooled, 22:37567(P)
plug handling device for beam hole, description of ring-shielded spring-supported multiple rod-actuated electric, 22:50824(P)
plug-handling machine for, description of rotating inclined-plane plates for ring-connecting, 22:44903(P)
pneumatic rabbit system for, design of electronic control system for, 22:23358 (IA-1128, pp 185-212)
rabbit facility for FTR, design of, 22:14250(R) (BNWL-470)
rabbit for research reactor, description of horizontal liquid-cooled hydraulic, 22:53435(P)
rabbit for research reactor, description of shield-penetrating multiple-sample pneumatic, 22:53436(P)
rabbit for, description of vertical closed-end sample separation device for horizontal pneumatic, 22:37568(P)
rabbit system for swimming pool, description of hydraulic, 22:47036(P)
rabbit system for, description of bobbin-wound lead measuring wire for hydraulic, 22:48740(P)
rabbit system, description for STARK pneumatic, 22:12106
rabbit system, description of one-directional-flow check valve for sample holder in concentric tube hydraulic, 22:50823(P)
rabbit system, description of rapid-stop transport container for slide-ejected capsule in pneumatic, 22:50820(P)
rabbit system, electronic control of STARK pneumatic, 22:12106
rabbit systems for experimental isotope irradiations in Savannah River reactors, description of mechanical and pneumatic, 22:44915
rabbit systems for research, description of cylindrical-coupling variable-selector for multi-tube hydraulic, 22:47035(P)
rabbit systems for research, description of thread-drive rod-type, 22:47034(P)
radiation effects testing of fuel element prototypes in gas cooled cycle in DIORIT, 22:3927 (EIR-124)
reactivity worth measurements on Pakistan Research Reactor beam tubes and graphite thermal column, 22:22825 (PINSTECH/R.O.-4).
reactivity worths of PTB, 22:35611
remote-handling equipment for, description of shielded irradiated sample-removal, 22:37573(P)
RTS-1 Galileo, description of, 22:50825
sample container for research, description of gas-insulated and electric-heated, 22:47033(P)
shielding materials for beam hole, neutron effects on magnetic, 22:12103
stopper-sealed tube-access, description of swimming pool reactor, 22:25120(P)
target cans for, method for temperature control of, 22:22850
techniques used in worldwide, conference on, 22:12107
temperature profiles in AARR hydraulic and gas-cooled rabbits, 22:30118 (ANL-7438)
test fluid pump and pressure equalizer with sealed heat exchanger for, description of, 22:3956(P)
use for chemical research, review of, 22:12123
use for LMFBR core design program of available, description of, 22:46928 (WASH-1106)
use of fast, description of present availability for, 22:30300 (BNWL-SA-1754)
voiding of AARR internal thermal column, calculated reactivity effects of partial, 22:7788(R) (ANL-7382)

712 144, 22:39779 (JUL-519-RG)
ablation testing of zirconium--uranium hydride, 22:6078
accident behavior of argon-bonded pin-type, TREAT testing of, 22:32735 (ANL-7310, pp 249-375)
activation products and fission products in EBR-II driver-type, determination by gamma scanning, 22:43629(R) (LA-3933)
activity of γ sources from spent, calculation of cosine distribution for, (E/T), 22:7929
activity ratios for spent FFTF, calculation of beta-gamma/alpha, 22:14252 (BNWL-566)
alignment in coolant channels, end plug configuration for stacked, 22:42522(P)
alignment structure for, description of radial direction opening claws, 22:14214(P)
analysis for fission products by radiochemical method, 22:40023
analysis for fissionable material by neutron irradiation and measurement of delayed neutrons, 22:47075 (LA-DC-9848)
analysis for fissionable materials, nondestructive activation method for, 22:21049(P)
analysis for plutonium and uranium isotopes by mass spectroscopy, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for plutonium isotopes by neutron-transmission methods, 22:4035
analysis for sulfur, amperometric, 22:8015
analysis of failed, inert-atmosphere cell for, 22:4413
analysis of fast-breeder, shielded facility for electron probe micro-, 22:27532 (GEAP-5344)
analysis of irradiated, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of irradiated, burnup determination by isotopic, 22:37647 (EUR-3949)
analysis of irradiated, for carbon, hydrogen, nitrogen, and oxygen by remote combustion and inert gas fusion, 22:22983
analysis of irradiated, for rare earths by photometric titration and x-ray spectroscopy, 22:50902 (ANL-7425, pp 193-7)
assemblies for 1000 MW(e) heavy water-moderated organic-cooled power reactors, analysis of optimum, 22:50741 (WASH-1083)
assemblies for Garigliano Power Reactor, description of instrumented, 22:18418 (EURAEC-1985)
assemblies for gas-cooled reactor, description of uranium oxide (UO_2) multi-rod, 22:25045(P)
assemblies for neutron economy, description of, 22:42442(P)
assemblies for PM-1 and PM-3A, post-irradiation analysis of performance of, 22:32820
assemblies for water-cooled and -moderated reactor, description of center-positioned burnable poison rod in equally spaced multiple rod annular, 22:42232(P)
assemblies for water-cooled and -moderated reactor, description of concentric cooling and insulating cylinder-enclosed multiple rod annular-shaped, 22:42233(P)
assemblies from Piqua Core I, mechanical integrity, coolant deposition, and burnup capabilities of irradiated, 22:44860
assemblies in Fermi Fast Breeder, coolant flow blockage tests on, 22:46860 (APDA-CFE-21)
assemblies of 1000 MW(e) SCOTT-R uranium oxide (UO_2), analysis of optimum economic and technical conceptual design for, 22:50742 (WCAP-2240)
assemblies of 18-element CANDU-BLW rod-type Zircaloy-4-clad uranium oxide (UO_2), effects of configuration and coolant on neutron flux peaking in, 22:44883 (AECL-3143)
assemblies of 19-element bundle-type rod-shaped, effects of temperature and pressure on water flow instability in simulated, (E/T), 22:53257 (AECL-2716)
assemblies of aluminum-clad uranium oxide (UO_2), criticality of multi-rod circular, 22:32740(R) (BAW-3647-7)
assemblies of ATR, analysis of isothermal hydraulic measurements in, 22:53415 (IN-1158)
assemblies of ATR, description of, 22:53415 (IN-1158)
assemblies of boiling reactor, computer analysis of three-dimensional power and void distributions in, 22:22763
assemblies of bottom-supported vertical multiple rod-type, description of graphite-moderated gas-cooled reactor central suspended control rod, 22:53328(P)
assemblies of bundle-type cylindrical, calculation of temperature distribution in liquid metal-cooled, (T), 22:44865
assemblies of circular and hexagonal cross section ceramic dispersion-type tubular, description of multi-pattern cluster, 22:37610(P)
assemblies of clustered rod, descriptions of spaced guide tubes in, 22:30398(P)
assemblies of clusters of, description of, 22:33111(P)
assemblies of clusters of, with a retaining member, 22:33110(P)
assemblies of container-enclosed, description of removable end-plug and coolant nozzle for, 22:42419(P)
assemblies of cylindrical casing-enclosed, description of top-locked bottom-supported upward coolant flow, 22:42420(P)
assemblies of cylindrical cluster-type, measurement of 6.7 eV resonance absorption for uranium-238, 22:18607
assemblies of cylindrical multiple vertical-stacked hollow cup-shaped magnesium alloy-end-plugged and Zircaloy- or graphite-end-pieced, description of, 22:42504(P)
assemblies of cylindrical stainless steel-clad fission product-absorbing carbon-containing graphite-moderated, description of moderated and reflected, 22:42456(P)
assemblies of fast reactor, design requirements of shipping casks for irradiated, 22:42168 (BNWL-SA-2002)
assemblies of FCA, production of, 22:47029
assemblies of FTR, calculation of 5 MW operation to 45 MWD/kg decay heat distribution for, (T), 22:48723 (BNWL-648)
assemblies of gas-cooled reactor sleeve-insulated, description of, 22:35515(P)
assemblies of GKN Reactor, description of optimum thermal performance for, 22:35530
assemblies of grid-supported longitudinal projection-spaced parallel vertical-sheathed rod-type cluster, description of, 22:42511(P)
assemblies of grid-supported thermal-insulated multiple parallel clad rod-type, description of gas-cooled reactor, 22:42273(P)
assemblies of groove-secured multiple vertical and parallel sheathed bar-type, description of upward-flow liquid metal-cooled reactors, 22:42243(P)
assemblies of Halden Boiling Reactor, description of, 22:35462 (HPR-89)
assemblies of Halden Boiling Reactor, power measurement instrumentation for, 22:20814 (HPR-79)
assemblies of heavy water-moderated natural uranium, analysis of core parameters for, (E), 22:22765
assemblies of high-temperature gas-cooled, description of hexagonal-shaped sleeve-covered columnar moderator block with multiple parallel symmetrically-arranged, 22:48671(P)
assemblies of Incoloy 800- and chromium--nickel--stainless steel-clad uranium oxide (UO_2) pellet-type and vibratory compacted, fabrication of, 22:42213 (WCAP-3374-5)
assemblies of internally-supported bowing-compensating, description of, 22:25189(P)
assemblies of irradiated, CVTR nondestructive examinations of, 22:48658(R) (WCAP-3850-3)
assemblies of jacket-enclosed thermal-insulated multiple rod-type, description of heavy water-moderated reactor, 22:42253(P)
assemblies of L- and T-shaped pellet-type, description of parallel equi-spaced right angle-intersecting walls for, 22:37604(P)
assemblies of liquid sodium-cooled fast reactor, analysis of coolant mixing in, (E/T), 22:35476 (WASH-1096)
assemblies of liquid-moderated reactor, description of burnable poison parallel multi-plate, 22:25170(P)
assemblies of load-bearing cup-core, description of arrangement for, 22:42437(P)
assemblies of longitudinally elongated trifids with three slab-type angularly displaced fins, description of self-supporting and self-aligning, 22:37590(P)
assemblies of mechanical properties of SEFOR heated mockup of, 22:22814(R) (GEAP-5498)
assemblies of multiple annular member-spaced rod-type, description of, 22:42550(P)
assemblies of multiple axially-supported carbon- and stainless steel-coated conical-connected, description of, 22:42512(P)
assemblies of multiple canned parallel cluster-type, description of lateral ring supports for concentric circle, 22:42417(P)
assemblies of multiple concentric cylinder multi-region, description of reactor control system by rotating, 22:42406(P)
assemblies of multiple concentric cylinder-enclosed internally-cooled annular-shaped, description of superheating reactor, 22:42255(P)
assemblies of multiple elongated cylindrical, description of lattice-forming alternating dimple and strip-spring spacing system for, 22:50877(P)
assemblies of multiple elongated parallel, description of servo-driven tube-type or cage-type control rod for, 22:42408(P)
assemblies of multiple flexible metal-clad liquid metal-insulated multi-region variable-geometry elongated tube-type, description of square lattice, 22:53479(P)
assemblies of multiple grid-supported clad pencil-type, description of helical-grooved, 22:42531(P)
assemblies of multiple grid-supported fission gas-channeled pencil-type cluster, description of, 22:42549(P)
assemblies of multiple interlocking helical-finned pencil-type, description of collar-supported, 22:42405(P)
assemblies of multiple interlocking tubular spine-type, description of, 22:42505(P)
assemblies of multiple longitudinally-spaced rod-type bundles, description of clad, 22:42530(P)
assemblies of multiple moderator-sheathed cluster-type, description of grid-supported parallel array, 22:42477(P)

assemblies of multiple moderator-spaced, description of heterogeneous heavy water-cooled and -moderated reactor, 22:42274(P)
assemblies of multiple parallel annularly spaced sheathed rod-type, description of perforated jacket-enclosed centrally-cooled, 22:42453(P)
assemblies of multiple parallel bundle-type, description of uniform concentration and varying concentration pencils in, 22:42416(P)
assemblies of multiple parallel clad ceramic, description of longitudinal-connected, 22:42498(P)
assemblies of multiple parallel cluster-type, description of heterogeneous reactor key-coupled longitudinal radially-directed straight fins in, 22:42235(P)
assemblies of multiple parallel edge-supported rectangular plate-type, description of, 22:39916(P)
assemblies of multiple parallel graphite-moderated rod-type, description of, 22:42539(P)
assemblies of multiple parallel low flow-resistance cross-section rod-type, description of, 22:42425(P)
assemblies of multiple parallel pencil-type, description of multiple metal ring-connected circular moderator block, 22:42542(P)
assemblies of multiple parallel pin-type, description of plate-penetrating deformed support pegs for, 22:42476(P)
assemblies of multiple parallel star-shaped cross-section, description of convex-shaped container-enclosed, 22:42421(P)
assemblies of multiple parallel tube-enclosed coolant-deflecting rod-type, description of water-cooled reactor, 22:42565(P)
assemblies of multiple parallel vertical-clad cluster, description of spaced annularly-arranged, 22:42500(P)
assemblies of multiple parallel vertical-sheathed cluster, description of spaced, 22:42497(P)
assemblies of multiple parallel vertical-sheathed thermal-insulated pencil-type, description of, 22:42538(P)
assemblies of multiple parallel vertical-sheathed bar-type, description of upward-flow liquid metal-cooled reactor, 22:42254(P)
assemblies of multiple parallel vertical-sheathed symmetrically-arranged, description of disk-supported and -interconnected column-type, 22:42478(P)
assemblies of multiple parallel vertical-sheathed, description of gas-cooled reactor, 22:42257(P)
assemblies of multiple parallel, description of cross-spacers and axial spacer for, 22:30395(P)
assemblies of multiple parallel, description of symmetric nodule-separated concentric rings, 22:25174(P)
assemblies of multiple parallel, description of transverse braced and padded, 22:25173(P)
assemblies of multiple parallel-spaced vertical-sheathed rod-type, description of multiple male-and-female-connected, 22:42422(P)
assemblies of multiple parallel-spaced, description of strip-fabricated support grids for, 22:42469(P)
assemblies of multiple pin bundle-type, description of upward coolant flow core hold-down system for, 22:42411(P)
assemblies of multiple rod-type ceramic, description of ceramic moderator annular-shaped core for, 22:42414(P)
assemblies of multiple sheathed stacked cluster-type, description graphite sleeve-supported equal-spaced, 22:42418(P)
assemblies of multiple sleeve-enclosed variable-fuel pellet-type, description of spaced, 22:42551(P)
assemblies of multiple slug-type, description of multiple longitudinal graphite fin-separated graphite cylinder- and sleeve-enclosed, 22:42475(P)
assemblies of multiple spaced cluster, description of dual end-located web-type support grids for, 22:42541(P)
assemblies of multiple stacked annular-shaped link-connected helical-flow spine-type, description of cylindrical moderated, 22:42423(P)
assemblies of multiple tubular fixed and removable, description of sequentially-operated dual-latch for, 22:42455(P)
assemblies of multiple vertical and parallel, description of interconnected helical longitudinal deflecting plates on sheathed, 22:42454(P)
assemblies of multiple vertical cylindrically-enclosed parallel end-supported, description of, 22:42426(P)
assemblies of multiple vertical hexagonal-shaped, description of liquid-cooled fast reactor, 22:42252(P)
assemblies of multiple vertical-sheathed cluster-type, description of graphite-sleeved and plate-supported, 22:42404(P)
assemblies of multiple vertical-sheathed insulated multi-section ring-shaped, description of grid-supported cluster-type, 22:42474(P)
assemblies of multiple vertical-sheathed parallel pencil-type, description of rod-connected end plugs for, 22:42403(P)
assemblies of multiple vertical-sheathed tubular, description of coolant flow-controlling apertures for, 22:42472(P)
assemblies of multiple vertical-stacked end-spaced and -stabilized radially-baffled, description of, 22:42508(P)
assemblies of multiple vertical-stacked end-spaced and -stabilized, description of, 22:42507(P)
assemblies of multiple vertically-cooled and -moderated, description of ladder-like horizontal, 22:42540(P)
assemblies of multiple-level four-square-lattice rods of pellet-type, description of flat-spacer-divided and -enclosed, 22:42513(P)
assemblies of niobium--zirconium clad uranium oxide (UO_2), radiation effects on, 22:22830
assemblies of Peach Bottom Power Reactor Unit 1, description of ISO equivalent full-power day maintenance inspection for, 22:39771 (GA-8679)
assemblies of Physical Constants Testing Reactor, computer program methods for physics measurements in multi-composition and multi-configuration, (E/T), 22:37531 (DUN-SA-70)
assemblies of plutonium oxide (PuO_2), effects of 6.1 wt. percent burnup in BR-5 on, (E), 22:35615
assemblies of plutonium oxide (PuO_2)--uranium oxide (UO_2) Fast Test Reactor, use of MARS computer code for effects of configuration and enrichment on meltdown of, 22:37554 (APDA-209)
assemblies of plutonium oxide (PuO_2)--uranium oxide (UO_2) sintered pellet, radiation effects on, 22:32985
assemblies of rod-type, description of cylindrical sleeve with triangular spacers for forming hexagonal, 22:42529(P)
assemblies of rod-type, description of dual spring-clip spacer for box-shaped, 22:48785(P)
assemblies of rod-type, description of end-to-end latch-connected, 22:37597(P)
assemblies of rod-type, description of opposing wave-formed spring strip spacers with grid bodies for, 22:37572(P)
assemblies of rod-type, description of skewed helical wart spacers for, 22:39923(P)
assemblies of rod-type, description of zig-zag wire grid spacers for, 22:42526(P)
assemblies of rod-type, FABCOST 9 computer program for calculation of fabrication costs of, 22:44924 (ORNL-4287)
assemblies of Saxton Power Reactor, effects of crud chemistry on heat transfer in 3 x 3, (E), 22:35477(R) (WCAP-3696-7)
assemblies of SEFOR plutonium oxide (PuO_2)--uranium oxide (UO_2), description of, 22:47023
assemblies of sleeve-enclosed upper fissile material pin and lower fertile material pin cluster-type, description of liquid metal-cooled fast reactor, 22:42244(P)
assemblies of SPR-6 reactor, reference design, 22:42344(R) (UCRL-50004-67-3(Pt.1))
assemblies of stacked rod-type, description of, 22:42444(P)
assemblies of stainless steel-clad plutonium oxide (PuO_2), effects of irradiation to high burnup on, (E), 22:37527(T) (ANL-Trans-609)
assemblies of STSF critical assembly, description of, 22:47008(R) (GA-8715)
assemblies of thermal reactor, description of parallel-spaced, 22:20880(P)
assemblies of thermal-insulated multiple vertical-sheathed rod-type, description of boiling reactor, 22:42258(P)
assemblies of thorium oxide (ThO_2)-breeding blanket and uranium oxide (UO_2)-seed, description of thermal reactors, 22:42269(P)
assemblies of tubular metal-clad ceramic, description of superheating reactor, 22:42259(P)
assemblies of tungsten-clad uranium oxide (UO_2)--tungsten, description of rocket reactor multi-plate, 22:35574(P)
assemblies of two end-to-end connected, description of collar-locked shaft and sleeve inter-engaging, 22:25180(P)
assemblies of type 304 stainless steel-clad enriched uranium oxide (UO_2) pellet-type, hydraulic and thermal testing of pressurized-water reactor, 22:30165(R) (WCAP-3706)
assemblies of type 304 stainless steel-clad enriched uranium oxide (UO_2) pellet-type, fabrication and thermal testing of pressurized-water reactor, 22:30164(R) (WCAP-3703)
assemblies of uranium oxide (UO_2), description of Savannah River Reactor Mockup, 22:25082 (DP-1122)
assemblies of uranium oxide (UO_2), performance analysis for optimum configuration for heavy water-moderated, 22:30264
assemblies of VENUS-Vulcain, neutron physics measurements on subcritical, 22:30343(R) (EURAEC-1992)
assemblies of vertical-sheathed bottom-plugged reflected tubular, description of gas-cooled reactor, 22:42260(P)
assemblies of water/steam-cooled, bracing grid deflectors for entrained water removal in, 22:42514(P)
assemblies of water-cooled marine reactor, model studies for lateral vibration effects on, (E/T), 22:48718
assemblies of water-moderated THETIS Reactor type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled, effects of configuration on physics measurements of, (E/T), 22:35593 (EURAEC-1882)

assemblies of water-moderated THETIS Reactor type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled, effects of core configuration on physics measurements of, (E/T), 22:35594 (EURAEC-1882(Annex))
assemblies of Zircaloy 2-clad uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), description of HBWR test, 22:48646 (HPR-102)
assemblies of Zircaloy-2 clad uranium oxide (UO_2) pellet-filled tubes, description of surface convex nodules for separation of, 22:25175(P)
assemblies of Zircaloy-2 clad uranium oxide (UO_2) sintered pellet and compacted powder, fabrication of, 22:27415(R) (GEAP-5585)
assemblies of Zircaloy-2-clad uranium oxide (UO_2), post-irradiation analysis of performance of SA-1, 22:32821
assemblies of, analysis of departure from nucleate boiling in rod bundle, (E/T), 22:35716
assemblies of, analysis of natural mixing of coolant in, (T), 22:33165
assemblies of, configuration of liquid metal-cooled fast reactor multiple vertical and parallel elongated triple-region, 22:50775(P)
assemblies of, description of bearing-fitted cantilevered end-supported vertical-aligned, 22:37611(P)
assemblies of, description of bottom-supported control rod-guiding, 22:37570(P)
assemblies of, description of bottom-supported hook-and-groove fastened, 22:37587(P)
assemblies of, description of bridge joined alternately arranged plates with symmetric swellings for, 22:25169(P)
assemblies of, description of centrally-cooled cylindrically-enclosed multiple concentric circle-arranged, 22:42424(P)
assemblies of, description of circular-cluster symmetrically braced, 22:14361(P)
assemblies of, description of failure-disconnecting multi-section vertical-suspended, 22:39833(P)
assemblies of, description of fast reactor dual-region core multiple, 22:48701(P)
assemblies of, description of flexible wire spacers for bundle-type, 22:39939(P)
assemblies of, description of grid-supported parallel bundle-type, 22:39925(P)
assemblies of, description of improvements in FTR, 22:32986
assemblies of, description of longitudinal rippled-spring strips with lateral grid support for, 22:35698(P)
assemblies of, description of multi-rod can-enclosed end-to-end seal-connected, 22:37605(P)
assemblies of, description of multiple tube-enclosed bundle-type orificed, 22:39929(P)
assemblies of, description of multiple zigzag-shaped wire lattice square grid support for, 22:48780(P)
assemblies of, description of multiple, cantilever-connected centrally-tilted, 22:25187(P)
assemblies of, description of radial coolant feeding for, 22:42431(P)
assemblies of, description of removable top- and bottom-access moderator tank for, 22:25197(P)
assemblies of, description of thermal expanding support for multi-tube, 22:14360(P)
assemblies of, description of upper and lower multi-shoe torsion bar-actuated clamping system for core, 22:37607(P)
assemblies of, description of upper-end support and locking system for, 22:42479(P)
assemblies of, description of water-cooled enriched uranium flow tube with symmetric multi-rod, 22:25040(P)
assemblies of, γ and neutron radiation testing of Shippingport Pressurized-Water Reactor core 2, 22:16163 (WAPD-PWR-TE-204)
assemblies of, heat transfer characteristics of, 22:25190(P)
assemblies of, hydraulic and burnout analysis of, 22:49011 (AEEW-R-582)
assemblies of, integral transport methods for analysis of neutron flux distribution in, 22:30390
assemblies of, thermal flux trap for plutonium recycle, 22:33179
assemblies spacer grid for, description of multi-section hexagonal-shaped strip-and-wire, 22:48764(P)
assemblies support guide for, description of cylinder-enclosed top and bottom multi-plate rhombic-shaped, 22:48756(P)
assembly configuration for PM-1 low enriched replacement core, 22:20895 (HIT-3583-88(Add.))
assembly configuration, description of four groups, parallel, side-by-side, 22:10099(P)
assembly for boiling reactors, description of horizontal channel, 22:10033(P)
assembly for heavy water-moderated organic-cooled reactor, description of finned multi-rod, 22:20866(P)
assembly grid structure for, with vanes for promoting coolant mixing, 22:47058(P)
assembly having plates fixed to hollow cylindrical center support, description of, 22:42458(P)
assembly of clad, method for, 22:12503(P)
assembly of multiple hexagonal, description of liquid-cooled reactor honeycomb, 22:16240(P)
assembly of ORR during January to March 1968, description of, 22:35608(R) (ORNL-TM-2237)
assembly of SEFOR, description of heated mockup, 22:22814(R) (GEAP-5498)
assembly of water-moderated plutonium, computer program for analysis of burnup and power distribution in, (E/T), 22:22775
assembly of, analysis of turbulent velocity distribution of liquid sodium flow in infinite triangular, 22:24961 (GEAP-5411)
assembly of, description of Halden Boiling Reactor, 22:20816 (HPR-94)
assembly of, description of lattice dividers with optimum support springs for, 22:20961(P)
assembly of, description of stackable clad, 22:42537(P)
assembly of, description two-zone fast sodium-cooled, 22:18539(P)
assembly of, use of welded tubes for, 22:35987
assembly support system for, description of pressure vessel connected bent pipe, 22:14326(P)
axially supported sheath enclosed fuel-segment type, description of, 22:42461(P)
bar-type, description of multiple submerged superheating reactor, 22:42248(P)
behavior of defective, effects of burnup, fuel form, and specific power on, 22:19669 (BNWL-624, pp 2.1-32)
behavior of sodium-bonded metallic fast, effects of accident conditions on, 22:22747
beryllium oxide for, preparation of fine-grained, 22:23882(P)
bond-testing of EBR-2 irradiated, 22:12006(R) (ANL-7399)
bonding of zirconium cladding on uranium--zirconium, by diffusion, 22:23746(P)
book: Dispersion Fuel Elements, 22:15205
book: Dispersion-Fuel Nuclear Reactor Elements, 22:38618(T) (AEC-tr-6878)
boron content in ETR and ATR, determination of, 22:12094(R) (IN-1126)
bowing analysis of PM reactors, computer programs for, 22:20895 (HIT-3583-88(Add.))
bowing in rod-type, computer program for inelastic analysis of axial thrust, (T), 22:33173
bowing of axially unrestrained cylindrical, analysis of thermoelastic, (T), 22:48776
bowing of EBR-2, analysis of temperature effects on, 22:5955
bowing of EBR-2, post irradiation measurements of, 22:9988(R) (ANL-7391)
bowing of Elk River, in-core measurements of, 22:3842(R) (NUS-409)
bowing of Elk River, measurement of, 22:18420(R) (NUS-428)
bowing of nonhomogeneous plate-type, from nonuniform temperature distributions, (T), 22:30368
bowing of subassemblies in EBR-2, effect on power coefficient of, 22:16129 (CONF-671011-, pp 367-9)
bowing of two or three equal-length span-supported rod-type, effects of forced convection cooling on thermal, 22:44925 (TRG-Report-1662)
bowing of, elastic analysis of thermal gradient, 22:22866 (WAPD-TM-726)
bowing of, elastic analysis of thermal-gradient, 22:6143
bowing of, thermal stability analysis of, 22:16306 (AERE-R-5601)
brazing of, 22:16356 (KR-116)
bundle configuration for multi-rod, use of variable-enrichment material for symmetric, 22:37593(P)
burnout detection of, testing of meter for, 22:40293 (RISO-M-760)
burnout detectors for Halden Boiling Reactor, testing of in-pile, 22:44823 (HPR-77)
burnout detectors for, description of Halden Boiling Reactor, 22:5926 (HPR-90)
burnout in annuli and bundles of, comparison of correlations for, 22:25122 (AEEW-R-558)
burnout limits for 8-rod, in PRTR, (E/T), 22:20905 (BNWL-624, pp 5.1-16)
burnout limits for simulated Swedish Reactors (R-4), effects of forced and natural circulation on, 22:1760 (FRIGG-1)
burnout limits of, effects of high pressure water coolant flow on, 22:22812 (EUR-3881)
burnout measurements in-pile in HBWR, 22:12025 (HPR-78)
burnout simulation of water-cooled reactor, description of, 22:42378
burnup analysis at 1250 to 1400°C of HTGR, 22:22688 (GA-7549)
burnup analysis of CVTR, description of, 22:24977(R) (WCAP-3850-2)
burnup analysis of irradiated plutonium-containing, destructive and nondestructive, 22:20779 (BNWL-624, pp 3.1-159)
burnup analysis of NaK-cooled type-316 and type-347 stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:25083(R) (GEAP-5541)
burnup analysis of Shippingport Pressurized-Water Reactor Core 2 Seed 2, 22:20824 (WAPD-MRP-123)
burnup analysis of, improvement of accuracy of, 22:16316(R) (GEAP-5505)
burnup analysis of, thermomechanical method for, (T), 22:16327(T) (ANL-Trans-558)
burnup and production of plutonium in, nondestructive

method for estimating, 22:14525
burnup calculation from statistical space distribution of pebble bed, KUGEL program for, 22:37565
burnup calculations for, application of perturbation theory to, 22:10080 (NAA-SR-Memo-12491)
burnup characteristics for AGR, flux distribution analysis for optimum, (E/T), 22:22774
burnup characteristics for power reactor, calculational methods for optimum, (E/T), 22:22759
burnup control in Dungeness B, use of ODYSSEUS 2A program for, 22:7819 (TRG-Report-1424)
burnup determination in coated uranium-containing, γ spectroscopy nondestructive method for, 22:53460 (JUL-529-RX)
burnup determination of EBWR, by γ scanning, (E), 22:30122 (BNWL-653)
burnup determination of, by comparison of equivalent uranium content, 22:37564
burnup distribution in Saxton plutonium, calculation of, 22:50743(R) (WCAP-3385-16)
burnup effects on Zircaloy-2 clad 87 percent density uranium oxide (UO_2), photographic analysis of, 22:16280 (GEAP-5100-H)
burnup efficiency of pressurized-water reactor enriched uranium oxide (UO_2) pellet-type, computer analysis of, 22:30164(R) (WCAP-3703)
burnup in BR-5 research reactor of plutonium oxide (PuO_2), analysis of efficiency of, 22:27470(T) (JPRS-45100)
burnup in EBR-2 of plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of ingot from, 22:32817
burnup in enriched plutonium--uranium, determination of, 22:7787 (AERE-R-5309)
burnup in fast reactors, determination of, 22:39976 (ANL-7450, pp 108-11)
burnup in fast reactors, methods for determining, 22:50902 (ANL-7425, pp 193-7)
burnup in GETR of plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:32970(R) (GEAP-5584)
burnup in thermal, computer program for analysis of uranium, 22:30346 (RISO-M-684)
burnup in zero-power experiment, gamma-spectrometric determination of, 22:10181
burnup in, FLEF transport computer code for, 22:16317 (HPR-84)
burnup limits for magnox reactors, computer program analysis of, (E/T), 22:22773
burnup measurements in graphite- and heavy water-moderated reactors, analysis of, (E/T), 22:22772
burnup measurements on, by x-ray spectroscopy, 22:39976 (ANL-7450, pp 108-11)
burnup of 1000 MW(e) liquid metal-cooled fast breeding, economic analysis of, 22:10005 (KFK-568)
burnup of advanced gas-cooled, calculation of optimum equilibrium cycle managment system for, (E/T), 22:22779
burnup of advanced gas-cooled, calculation of optimum management for, (E/T), 22:22778
burnup of boiling reactors, calculation of optimum management for, (E/T), 22:22777
burnup of BR-5 (USSR) Reactor during 1964, 22:18571
burnup of chromium carbide- and iron-modified plutonium carbide--uranium carbide, (E), 22:8807(R) (WCAP-3791-10)
burnup of EBWR plutonium oxide (PuO_2)--uranium oxide, gamma scan analysis of, 22:32743(R) (BNWL-739)
burnup of EL-4, computer program for optimum management system for, (T), 22:22780
burnup of Garigliano Power Reactor, analysis of, 22:22713(R) (TID-24304)
burnup of Garigliano Power Reactor, during April 1 to June 30, 1967, 22:3847(R) (TID-24131)
burnup of Halden Boiling, analysis of, 22:53280 (NP-17638)
burnup of heavy water-moderated uranium oxide (UO_2), analysis of, 22:25082 (DP-1122)
burnup of HFIR, analysis of, 22:35606 (ORNL-TM-2196)
burnup of Indian Point Power Reactor Unit 1 Core A Type 304 stainless steel-clad Zircaloy 2-clad thorium oxide (ThO_2)--uranium oxide (UO_2), profilometer and metallographic analysis of, 22:53261(R) (BAW-3809-4)
burnup of MTR, use of analog computer in radiochemical determination of, 22:24
burnup of Peach Bottom Power Reactor Unit 1, measurement of fission products from, 22:22690(R) (GA-8500)
burnup of plutonium dioxide--uranium dioxide, clad with type 316 stainless steel, 22:17189
burnup of PM-1 low enriched replacement core, analysis of, 22:20895 (HIT-3583-88(Add.))
burnup of pressurized-water reactor type 304 stainless steel-clad uranium oxide (UO_2) pellet-type, computer analysis for optimum, 22:30168(R) (WCAP-3710)
burnup of pressurized-water reactor type 304 stainless steel-clad enriched uranium oxide (UO_2), computer analysis of, 22:30165(R) (WCAP-3706)
burnup of PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type analysis of radiation effects in, 22:32743(R) (BNWL-739)
burnup of Saxton Power Reactor plutonium oxide (PuO_2)--uranium oxide (UO_2), use of isotopic composition calculation of, (E/T), 22:27417(R) (WCAP-3385-14)
burnup of superheat reactor, description of water-cooled core shelves for efficient, 22:10027(P)
burnup of thermal reactor, analysis of optimum calculations for, (T), 22:35533
burnup of Type 304 stainless steel- and Zircaloy 4-clad uranium oxide (UO_2) ETR-type, analysis of failures during, 22:53422 (WCAP-3269-61-A)
burnup of uranium dioxide pellets and powders, under melting conditions, 22:17186 (GEAP-5100-M)
burnup of uranium oxide (UO_2), effects of fission product migration on, 22:7930
burnup of uranium, methods for measuring, 22:18604
burnup of uranium--plutonium, 22:9988(R) (ANL-7391)
burnup of uranium-fueled water-moderated thermal reactor, computer program for measurement of, 22:25134 (PRNC-117)
burnup of Zircaloy 2-clad thorium--uranium--zirconium, analysis of, 22:53456 (BNWL-861)
burnup of Zircaloy-2 clad uranium oxide (UO_2) sintered pellet and compacted powder, schedule for testing for, 22:27415(R) (GEAP-5585)
burnup of Zircaloy-clad uranium oxide (UO_2) pressurized and boiling water reactor, analysis of, 22:32894
burnup of, bibliography on, 22:33085 (AAEC/TM-449)
burnup of, calculation of ratios of effective cross sections from least squares analysis of, 22:25142
burnup of, FLARE code analysis of, 22:16116 (CEND-291)
burnup of, FLARE code analysis of, 22:16121 (CEND-317)
burnup of, FLARE code analysis of, 22:16119 (CEND-299)
burnup of, FLARE code analysis of, 22:16122 (CEND-318)
burnup of, isotope dilution mass spectrometric techniques for determination of, 22:47074(R) (IN-1215)
burnup of, measurement of fast fission yields for determination of, 22:42588(R) (IN-1207)
burnup of, non-destructive determination of, 22:19080
burnup of, use of semiconductor detectors for analysis of, 22:35702
burnup parameter determinations in irradiated, use of thermal column measurements and pile oscillation techniques for, (E/T), 22:48749 (AE-326)
burnup performance in Canadian heavy water-moderated reactors Zircaloy-2 clad uranium oxide (UO_2), analysis of, 22:30263
burnup performance in NPD Reactor during 1962 to 1968 of, analysis of, 22:30224
burnup performance of BR-3/Vulcain, analysis of, (E/T), 22:30314
burnup performance of stainless steel-clad tungsten carbide (W_2C)-coated plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type, effects of fabrication and stoichiometry on, 22:39783(R) (NUMEC-3432-32)
burnup performance of Type 316 stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of 125,000 MWd/Te, 22:50732(R) (GEAP-5631)
burnup performance of Whiteshell Reactor No. 1, analysis of, 22:30327
burnup performance of Zircaloy 2-clad uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of HBWR, 22:48646 (HPR-102)
burnup properties of SAP-clad uranium carbide (UC), CRAYON computer program for, 22:39899 (EUR-4031)
burnup rate of, use of computer codes for prediction of, 22:22854 (ANL-RE-391)
burnup ratio measurements on mixed-oxide, 22:30343(R) (EURAEC-1992)
burnup simulation of thermal, description of computer program for, 22:50764
burnup testing of plutonium oxide (PuO_2)--uranium oxide (UO_2) rods in PRTR, 22:20779 (BNWL-624, pp 3.1-159)
burnup testing of Zircaloy-2-clad thorium--uranium--zirconium alloy, 22:2662 (BNWL-479)
burnup to 10,000 Mwd/t of natural uranium and enriched uranium, comparison of, 22:1830
calibration of Peach Bottom Unit 1, use of on-line reactivity computer for, 22:22694 (GAMD-7912)
can for assemblies of pin-type, description of, 22:18636(P)
can rupture detection in PHENIX, methods for, 22:14257 (CEA-R-3339)
canning of, pressure method for, 22:12515(P)
cans for gas-cooled, development of high performance heat transfer surfaces of, (E), 22:7852
cans for gas-cooled, heat transfer and friction coefficients at 1000°C for walls of, (E/T), 22:7856
cans for gas-cooled, heat transfer and pressure drop along herringbone finned, (E), 22:7853
cans for gas-cooled, heat transfer and pressure drop along herringbone finned, (T), 22:7851
cans for gas-cooled, performance of roughened heat transfer surfaces of, (E/T), 22:7854
cans for helium-cooled, convective heat transfer correlations for, (E/T), 22:7855
cans for, description of end closures for cylindrical, 22:18620(P)
cans for, design of internally pressurized, 22:10470(P)
cans for, design of machine for grinding, 22:14662(P)
cans for, heat transfer in, 22:2294 (KFK-604)
carbon analysis for uranium oxide (UO_2) plate-type, 22:12006(R) (ANL-7399)
carbon determination in silicon carbide--uranium dicarbide, using electron-probe microanalyzer, fluorescence correction in, 22:2458

casting uranium carbide, method for continuous, 22:28903(P)
caulking device for plate-type, description of cam-driven multi-section rectangular plate, 22:35696(P)
cavity formation in uranium oxide (UO_2) rod-type, effects of radial temperature gradient on axial, (E/T), 22:44856
cesium condensation in coated-particle, effects of fission product, (T), 22:37617
channels for heavy water-cooled reactor, description of shielded tubular top-loading, 22:37608(P)
characteristics of CVTR failed, tabular summary of, 22:48658(R) (WCAP-3850-3)
characteristics of zoned uranium dioxide--plutonium dioxide recycle, 22:6016
chemical analyses of irradiated pin-type, 22:7788(R) (ANL-7382)
clad materials for sodium and steam cooled, stress analyses of austenitic steel and nickel, 22:53273(T) (EURFNR-472)
clad materials for sodium and steam cooled, stress analyses of austenitic steel and nickel alloys for, 22:32774 (KFK-700(Pt. VIII))
cladding alloys for, mechanical properties of, 22:9988(R) (ANL-7391)
cladding burst test data, review on, 22:43564 (BNL-50115)
cladding by extrusion, using metal tubes, 22:28911(P)
cladding by joining sheath and end closing plugs of, magnetic pulse method for, 22:28913(P)
cladding closure equipment and method for, 22:45762(P)
cladding defects detection in, ultrasonic-probing method for Zircaloy and stainless steel, 22:14169
cladding defects for plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of annealing and cold-working on Type 316 stainless steel, 22:50732(R) (GEAP-5631)
cladding defects in Elk River, determination of, 22:18420(R) (NUS-428)
cladding defects in irradiated CVTR, examination of, 22:11007(R) (WCAP-3850-1)
cladding deformation during bonding of EBR--2, 22:24925(R) (ANL-7427)
cladding effects on the uranium-238 resonance integral in lattices, (T), 22:42401
cladding fabrication for carbon dioxide-cooled reactor, description of coated iron- or nickel-base alloy, 22:42281(P)
cladding fabrication for, pressure welding technique for sintered aluminum powder sheath and end-plug, 22:42473(P)
cladding failure analysis in LOFT, TCP code for, 22:37532(R) (IDO-17242)
cladding failure detection system for, use of helium scrubbing gas for, 22:18638(P)
cladding failure detection system with means for external pressure indication, 22:16339(P)
cladding failure in CANDU-type, γ spectrometer coolant monitor for detecting, 22:9984 (AECL-2786)
cladding failure in Halden burn-out detector assembly, post irradiation analysis of, 22:37442 (HPR-98)
cladding failure in liquid-cooled, description of rotating-vane gas-collection alarm system for, 22:25185(P)
cladding failures of, description of pressure vessel-contained coolant sampling facility for detecting, 22:42276(P)
cladding failures of, description of shielded neutron detector coolant-monitoring system for, 22:42560(P)
cladding for Big Rock Point Power Reactor uranium oxide (UO_2), residual stress measurements in Type 304 stainless steel, 22:50730 (GEAP-4221)
cladding for carbon dioxide-cooled heavy water-moderated 600 MW(e) power reactor, analysis of mechanical properties of, 22:30241
cladding for CVTR rod-type, radiation effects on Zircaloy-4, 22:48658(R) (WCAP-3850-3)
cladding for CVTR, steam-temperature induced corrosion of, 22:48658(R) (WCAP-3850-3)
cladding for EBR-2, mechanical testing of, 22:12006(R) (ANL-7399)
cladding for EBR-II, eddy current inspection of, 22:267 (ANL-7334)
cladding for experimental TREAT, calculation of temperatures of Zircaloy, 22:27416(R) (ORNL-4228)
cladding for fast breeder, design criteria for type-304 and -316 austenitic stainless steel, 22:6019
cladding for fast breeder, radiation effects on, 22:32776 (KFK-700(Pt. X))
cladding for fast breeder, radiation effects on, 22:53273(T) (EURFNR-472)
cladding for FTR pins, specifications for, 22:1849 (BNWL-SA-1388, pp 4.1-5)
cladding for Halden, effects on fuel temperature of gap between fuel and, 22:22699 (HPR-80)
cladding for irradiated CVTR, burst testing of, 22:48658(R) (WCAP-3850-3)
cladding for LMFBR carbide, compatibility of materials for fuels and, 22:30118 (ANL-7438)
cladding for LMFBR metallic, interaction of fuel material with, 22:30118 (ANL-7438)
cladding for Orgel-type, description of ultrasonic inspection method for finned-tube, 22:39798
cladding for SEFOR, in-pile testing of integrity of, 22:22695 (GEAP-5309)
cladding for SNAP-8, properties of Hastelloy N for, 22:8743 (ORNL-4170, pp 160-1)
cladding for sodium-cooled, 22:27396(R) (AI-AEC-12638)
cladding for SPERT F-type, integrity of, 22:48648(R) (IDO-17271)
cladding for thermal-insulated, description of longitudinal groove-spaced, 22:42409(P)
cladding for tubular, description of circumferential edge-welded end plugs for shroud-enclosed sheath-type, 22:42415(P)
cladding for uranium, description of fabrication of dual-layer magnesium alloy finned-tube, 22:42470(P)
cladding for Vallecitos Boiling-Water Reactor uranium oxide (UO_2), residual stress measurements in Type 304 stainless steel, 22:50730 (GEAP-4221)
cladding for water-cooled reactor, effects of metallurgical properties on use of zircaloy, 22:35493
cladding for water-cooled, testing austenitic stainless steel, 22:34012 (GEAP-5530)
cladding for, creep model of internally pressurized, 22:40345
cladding for, description of method for securing end cap to, 22:42440(P)
cladding for, description of system for detection of rupture of, 22:25126 (CEA-R-3342)
cladding for, description of zirconium alloy dual-jackets and end-plugs, 22:37571(P)
cladding for, design of clamp for compressive loading of, 22:12504(P)
cladding for, design of clamp for compressive loading of, 22:12505(P)
cladding for, determination of mechanical properties in dynamic sodium atmosphere of, 22:27396(R) (AI-AEC-12638)
cladding for, development of chromium-base, 22:4753
cladding for, dimensional stability of, 22:3859
cladding for, dissolution of zirconium oxide on Zircaloy, using ammonium fluoride--ammonium nitrate, 22:37827 (BNWL-600)
cladding for, effects of steam and liquid sodium on austenitic steels and nickel alloys for, 22:32772 (KFK-700(Pt. III))
cladding for, effects of steam and liquid sodium on austenitic steels and nickel alloys for, 22:53273(T) (EURFNR-472)
cladding for, effects of thermal neutron flux peaking on thermal stress in finned and smooth, 22:3821 (EUR-3557)
cladding for, effects of thermal neutron flux peaking on temperature distribution in finned and smooth, 22:3821 (EUR-3557)
cladding for, electric welder for end closures, 22:19010
cladding for, equipment for extruding, 22:41017(P)
cladding for, evaluation of design criteria for fission product retention by, 22:27492
cladding for, evaluation of irradiation performance of, 22:41128 (CEND-2936-335, V.1-25)
cladding for, evaluation of type 316 stainless steel, Vanstar-7, and Vanstar-9 as, 22:34046(R) (WARD-3791-17)
cladding for, fabrication of aluminum--aluminum oxide cermet, 22:42570(P)
cladding for, induction heating equipment for brazing wear pads to, 22:49007(P)
cladding for, intergranular cracking study of stainless steels as, 22:26027 (GEAP-5495)
cladding for, literature survey of properties of, 22:21759 (LA-3799)
cladding for, mechanical properties of Type 304L stainless steel, 22:30118 (ANL-7438)
cladding for, method of calculating disadvantage factors for, 22:50850
cladding for, neutronic and physical characteristics, 22:32772 (KFK-700(Pt. III))
cladding for, neutronic and physical characteristics, 22:53273(T) (EURFNR-472)
cladding for, preparation of chromate coating for magnesium or magnesium alloy, 22:18622(P)
cladding for, properties of Hastelloy X, 22:49707 (AGN-8289(Vol.1))
cladding for, stresses caused by zirconium oxide (ZrO_2) phase change in, 22:42160(R) (BMI-1844)
cladding for, testing by tangential elongation of beryllium, 22:15218
cladding for, testing chromium--zirconium alloy, 22:34016 (GEAP-5589)
cladding for, testing for use in high-temperature steam and water, 22:36484
cladding for, time dependence of oxygen saturation of Zircaloy, 22:42160(R) (BMI-1844)
cladding leak detector for pressurized gas-filled, description of gas-activated whistle for, 22:42410(P)
cladding material for LMFBR, development and testing, 22:21699(R) (WARD-3791-13)
cladding material procurement procedures for, 22:30155(R) (NAA-SR-12296)
cladding materials evaluation for, sampling blanks for oxygen control in liquid sodium for, 22:12223 (NAA-SR-12616)

cladding materials for Grosswelzheim Superheat, mechanical properties of, 22:25006
cladding materials for liquid-metal-cooled fast breeder reactor, review of, properties of, (E), 22:35425 (BMI-1900)
cladding materials for LMFBR reactor, corrosive effects of liquid sodium on, 22:44821(R) (GEAP-5546)
cladding materials for LMFBR, mechanical properties testing in liquid sodium corrosion loops of, 22:50735(R) (GEAP-5648)
cladding materials for LMFBR, short time stress-rupture tests on, 22:44822(R) (GEAP-5582)
cladding materials for sodium-cooled, development of cobalt-base, 22:38510 (BNL-50082, pp 93-152)
cladding materials for, compatibility with fuel carbides of, 22:24925(R) (ANL-7427)
cladding materials for, corrosion and radiation embrittlement of, 22:47660 (CONF-671007-2)
cladding materials for, corrosion and stress-rupture testing of, 22:40288 (AI-AEC-12681)
cladding materials for, effects of Emergency Core Cooling Systems operation on emissivity of, 22:51276(R) (IDO-17269)
cladding materials for, effects of liquid sodium- and steam-induced corrosion on, 22:32775 (KFK-700(Pt. IX))
cladding materials for, effects of liquid sodium- and steam-induced corrosion on, 22:53273(T) (EURFNR-472)
cladding materials for, evaluation for HWOCR, 22:3813(R) (AI-CE-54)
cladding materials for, mechanical properties measurements in liquid sodium on, 22:30155(R) (NAA-SR-12296)
cladding materials for, mechanical properties of, 22:16202
cladding materials for, radiation effects on, 22:7788(R) (ANL-7382)
cladding materials for, tube--burst properties of, 22:24925(R) (ANL-7427)
cladding materials of, properties evaluation for, 22:48791
cladding of CVTR, mechanical properties of, 22:48658(R) (WCAP-3850-3)
cladding of EVESR Mark II, irradiation testing of materials for, 22:5925 (GEAP-5510)
cladding of EWA Core 2 EK-10 type, measurement of temperature transients for, 22:35598 (INR-879/XI/R)
cladding of liquid metal-cooled fast breeder reactor, economics analysis of type 316 stainless steel and vanadium alloys for, 22:32909
cladding of Osiris, system for failure detection of, 22:22809 (CEA-R-3328)
cladding of pin-type, description of swaging and welding end-closing methods for fabrication of dual-tube, 22:42555(P)
cladding of type 304L stainless steel for EBR-II, radiation effects of fast neutrons at 370 to 472ºC on, 22:32827
cladding of uranium base, fabrication and materials for, 22:8718(P)
cladding of uranium, effects of ternary additions on plutonium diffusion in magnesium--zirconium and aluminum--magnesium laminated, 22:37575(P)
cladding of, effects of temperature and surface defects on mechanical properties of type 304 stainless steel and titanium--vanadium, 22:27479 (BNL-50096)
cladding of, mechanical properties of, 22:773
cladding of, properties of zirconium and zirconium alloys for, 22:52184
cladding of, rates of interdiffusion in, 22:773
cladding of, reactions with water, 22:773
cladding of, temperature distribution in cylindrical, 22:1890
cladding of, ultrasonic inspection of bonding of, 22:14740
cladding of, welding methods for SAP, 22:10933
cladding penetration seals for instrument leads to, development of aluminum--stainless steel, 22:627 (AI-CE-72)
cladding performance for organic cooled and moderated reactors, 22:49822
cladding removal from EBR-II driver, methods for, 22:43629(R) (LA-3933)
cladding stress and strain distributions from thermal expansion of cracked fuel pellets, (T), 22:50844 (TRG-Report-1547)
cladding stresses in, COMET computer-code for analysis of mechanical and thermal, 22:53458 (EUR-4049)
cladding temperature dependence on core cooling during blowdown, 22:39774 (IDO-17272)
cladding temperature history during coolant loss accidents, 22:39774 (IDO-17272)
cladding test loop for, sodium sampling equipment for, 22:4314
cladding testing for liquid cooled reactor, description of centripetal forced bubble trace for, 22:14359(P)
cladding tubes for, creep bowing under external pressure of, (T), 22:30353
cladding with aluminum, 22:17162
cladding-coolant interactions in meltdown accidents, 22:22653(R) (ANL-7419)
coated particles for gas cooled, bonding of, 22:46911(R) (ORNL-4266)
coated shaped, description of, 22:42429(P)
combustion-dissolution process for graphite, 22:4231(R) (IN-1087)
compatibility of liquid sodium-bonded metal-clad plutonium carbide (PuC)--uranium carbide (UC), analysis of, 22:39790(R) (UNC-5201)
compatibility of plutonium carbide--uranium carbide, with cladding at 800ºC, 22:4877
compatibility of Type 316 stainless steel-clad sodium-bonded plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of interface, 22:50732(R) (GEAP-5631)
components for high-temperature gas-cooled reactor, fabrication method for, 22:11040(P)
composition of NERVA, reactivity measurements for determining, 22:6083
composition of, description of variable-length flexible pipe for external-core measurements of radioisotopes, 22:37584(P)
configuration modifications of Piqua Power Reactor, description of improved, 22:46856 (AI-AEC-12696)
configuration of 500 MW(e) CIRENE-type reactor thorium oxide (ThO_2), calculations for optimum economic, 22:44835 (RT/FI-(66)42-bis)
configuration of annular-shaped thin vaulted wafer spherical- or truncated conical-shaped end-plug for tubular, description of, 22:42510(P)
configuration of cartridge-type, description of can-enclosed central rod-supported, 22:37602(P)
configuration of clad dual-zone burnable-poison plate-type, description of flux-trap reactor, 22:42557(P)
configuration of clad multiple pellet-type axial spring-supported ceramic, description of, 22:53474(P)
configuration of expansion-void-accommodating clad end-plug-sealed, description of, 22:42502(P)
configuration of fuel-filled sphere-shaped moderator with cylindrical penetrating moderator plug, description of, 22:48786(P)
configuration of gas-cooled graphite-moderated reactor flow-diverting multiple interlocking-sleeve, description of on-load refueling, 22:53327(P)
configuration of graphite-clad magnesium-spaced graphite--uranium pellet-type, description of end-plug-sealed, 22:42532(P)
configuration of heat pipe-effect sealed liquid metal-cooled, 22:39940(P)
configuration of high temperature liquid metal-cooled reactor metal-clad liquid metal-bonded multiple wafer, description of, 22:42246(P)
configuration of high-oxidation alloy leak detector system for canned, 22:42546(P)
configuration of hook-connected longitudinal fin-cooled and -stabilized fast, description of, 22:42263(P)
configuration of interconnected multi-section combination control element and, description of, 22:44931(P)
configuration of LMFBR, description of, 22:46928 (WASH-1106)
configuration of metal-clad ceramic, description of metal-fuel wire in central void, 22:42554(P)
configuration of metal-spaced graphite- or ceramic-supported rod- or plate-type, description of, 22:42552(P)
configuration of multi-zone uranium-238 and thorium-232, 22:42486(P)
configuration of multiple integral longitudinal stiffening lugs with equal-internal lifting lugs for, description of, 22:42506(P)
configuration of multiple tube, with interconnected- and common-tube sheets for multi-pass fluid flow, 22:50874(P)
configuration of multiple vertical-stacked cylindrical core spring-braced pellet-type, description of clad end-plug-sealed, 22:42509(P)
configuration of multiple-fin dual-layer Magnox-sheathed uranium, description of gas-cooled reactor, 22:42545(P)
configuration of rocket reactor, description of tungsten-clad uranium oxide (UO_2)--tungsten-184 multiple plate, 22:50785(P)
configuration of SAP-enclosed liquid lead-insulated aluminum wire-gauge-spaced bar- or pellet-type, description of, 22:42488(P)
configuration of stainless steel-clad helium-filled multi-zone ring-shaped uranium oxide, 22:42487(P)
configuration of stainless steel-clad helium-filled multi-zone ring-shaped uranium oxide (UO_2), description of, 22:42468(P)
configuration of superheating, description of variable volume gas-filled recesses for heat flux control in, 22:39830(P)
configuration of superheating, with prestressed coolant-pass tubes for improved fatigue life, 22:53483(P)
configuration of thin-wall corrugated stainless steel-enclosed insulated cylindrical, description of groove-positioning, 22:42544(P)
configuration of thin-wall-clad welded end-cap-closed cylindrical pellet-type, description of, 22:42499(P)
configuration of vertical-sheathed dual coaxial cylindrical varying-material, description of superheating reactor, 22:42275(P)
configuration of yttrium hydride dispersed coated-uranium oxide (UO_2) particles fuel--moderator, description of

enamel coating on refractory metal-clad, 22:42556(P)
configuration of zirconium alloy-clad uranium alloy-insulated uranium, description of, 22:42487(P)
configuration of zirconium-containing liquid metal-insulated, description of multi-layer, 22:42463(P)
containers for damaged, design of tight sealing, 22:49050(P)
coolant channel thickness of, ultrasonic system for measuring, 22:51276(R) (IDO-17269)
coolant channel-fuel containing-sheathed, description of combined, 22:42435(P)
coolant channels of, ultrasonic transducer for post-irradiation dimension measurements of, 22:30899
coolant erosion analysis of modified design for Piqua, 22:12031 (NAA-SR-Memo-12401)
coolant flow restraining support for, description of sonic venturi throat for downward pressure in gas, 22:25041(P)
coolant flow turbulence in, description of pressure tube rings to impart, 22:22786(P)
coolant gas flow mixing in parallel rods of, use of Freon for measuring axial, 22:1831
coolant loss accident effects on fast, thermal analysis of liquid sodium, 22:53381
coolant velocity measurements in mockup of SEFOR, mass flow distribution determination from, 22:42190 (GEAP-5184)
cooldown of Zircaloy-clad uranium oxide (UO_2)-core, effects of emergency coolant spray on, 22:27397 (ANL-7375, pp 135-59)
cooling apparatus for, during unloading from reactors, 22:18617(P)
cooling of high-temperature tubular, flow analysis for liquid film, (E/T), 22:33146
cooling of, control of coolant flow in, 22:4333(P)
cooling sheath for uranium rod-type, machine design for automatic milling of, 22:27984(P)
core materials for annular-pellet, 22:2697
core positions in Fermi Fast Breeder Reactor during March 1968, description of, 22:37405 (APDA-CFE-20)
core structure calculations using WIMS computer program, 22:5915 (AEEW-R-538)
core thickness variations of MTR, destructive testing for, 22:23762 (IN-1131, pp 101-15)
corrosion behavior of defected Zircaloy-clad uranium silicide (U_3Si), in pressurized and boiling water coolants, (E), 22:47038 (AECL-3106)
corrosion in CVTR, post-irradiation examination of, 22:24977(R) (WCAP-3850-2)
corrosion of cladding materials for, by nonaqueous liquids, 22:773
corrosion of PRTR, inspection methods and results through December 1967, 22:42163 (BNWL-726)
corrosion of Zircaloy-2-clad uranium, by high temperature steam--water mixtures, 22:49690
corrosion protection of UHTREX, testing of thin layers of pyrocarbon for, 22:53416(R) (LA-4009)
corrosion studies on irradiated EDF and EL 4, 22:28732 (CEA-N-816, pp 102-39)
corrosion testing of prototype twisted tape clusters, 22:9996(R) (EUR-3651)
cost model for production of, 22:19669 (BNWL-624, pp 2.1-32)
coupling configuration for multi-section tubular, description of outer-end spaced-slots and inner-end flange, 22:48770(P)
creep of heat treated magnox-clad, effects of air and carbon dioxide at 350 to 450°C on, 22:4786
critical heat flux for rod clusters and annuli, analysis of, (T), 22:33072
criticality measurements in Experimental Boiling Water Reactor plutonium, 22:9987 (ANL-7368)
criticality measurements on water-moderated uranium-233 and uranium-235 spherical, 22:33080
criticality studies of Hanford Production Reactors (N), comparison of computer program and experimental, 22:37553 (DUN-SA-69)
criticality studies on Phoenix, 22:6115
criticality studies on plutonium recycle, 22:25008
crushing of graphite-base, 22:14564 (ORNL-4139, pp 23-42)
cutting of coaxial, machine tools for, 22:4263(P)
cycle analysis for fast reactors, 22:3853
cycle economics for water-moderated uranium oxide (UO_2), using stainless steel or Zircaloy cladding, 22:6017
cycle for Shippingport Pressurized-Water Reactor, description of, 22:32789(R) (WAPD-MRP-124)
cycle management of power reactor, effects of cross section uncertainties on economics of, 22:24973 (ORNL-TM-2157)
cycle management of sodium-cooled plutonium oxide (PuO_2)--uranium oxide (UO_2), economics of, 22:25083(R) (GEAP-5541)
cycle performance of CVTR Core 1, analysis of calculated and measured, 22:35427 (CVNA-287)
cycles of European fast reactors plutonium oxide (PuO_2)--uranium oxide (UO_2), development program for optimum, 22:35500
cylinder-type upper-end control rod and lower-end, description of center rod removal device for dual purpose, 22:37583(P)
cylindrical, description of slotted, 22:42443(P)
cylindrically-canned coated-particle, description of, 22:42452(P)
decanning of, 22:45146 (NP-17588)
decanning of stainless steel-clad ceramic, fluidized-bed process for, 22:8169(R) (EURAEC-1934)
decanning of, apparatus for continuous chemical, 22:35902(P)
decanning of, chemical processes for, 22:40164 (KR-126, pp 54-73)
decladding by hydrochlorination in gas-fluidized bed, 22:33539
decladding of, 22:2173(R) (K-L-1780(Pt.21))
decladding of, 22:37825(T) (ANL-Trans-626, pp 36-58)
decladding of fast reactor, use of zinc for, 22:25442 (ANL-7375, pp 19-45)
decladding of irradiated, method for, 22:51154(P)
decladding of irradiated, using high frequency ac, 22:10458(P)
decladding of stainless steel-clad ceramic, 22:33528
decladding of stainless steel-clad, thermal processes for, 22:149
decladding of Zircaloy-clad, 22:12405 (ORNL-4094, pp 50-60)
decladding of, device for, 22:10462(P)
decladding of, device for, 22:10463(P)
decladding of, fusion process for, 22:33528
decladding of, mercury dissolution process for, 22:4267(P)
decladding of, research progress on chemical, 22:27852(R) (EURAEC-2011)
decladding of, use of hydrogen fluoride--oxygen mixture in, 22:40156(R) (EURAEC-2031)
defects of, determination by ultrasonics, 22:23236 (INR-856/XIV/PS)
deflection in graphite moderated reactor, effects of creep on, 22:220
deformation in assemblies, device for measuring, 22:1888
deformation in cylindrical, computer program for measurement of steady-state, 22:25125 (BNWL-663)
deformation of fast, analysis of, 22:32735 (ANL-7310, pp 249-375)
deformation of Na-1, effects on reactivity of, 22:53278 (KFK-539/3)
density effects on fuel temperature in, 22:22699 (HPR-80)
density of plutonium dioxide--uranium dioxide, control of, 22:4860
description for water-cooled reactors with coolant deflecting grid and peripheral flow channels, 22:20890(P)
description of annular, with magnesium alloy-clad outer surface and zirconium alloy-clad inner surface, 22:42264(P)
description of arrangement of, 22:6093 (EURFNR-401)
description of axially twisted multi-plate square tubular, with side and end support-plates, 22:14353(P)
description of boiling reactor flow tube spray and seal device for, 22:20889(P)
description of boiling water and steam cooled, 22:20953(P)
description of clad cylindrical multiple uranium carbide (UC)--based pellets for, 22:25067(P)
description of double-plate vertical-motion swimming pool reactor assembly of, containing control elements, 22:12137(P)
description of EBOR, 22:18555(R) (GA-7485)
description of EBR-2 Mark-IIB oscillatory, 22:16265(R) (ANL-7403)
description of ESSOR, 22:30330
description of finned tubular uranium, with corrugated inner cladding, 22:14217(P)
description of fixed multiple-section spring-supported, 22:37576(P)
description of granular fueled, for liquid metal cooled reactor, 22:33121(P)
description of graphite moderated liquid sphere, 22:20882(P)
description of Halden Boiling Reactor, 22:5926 (HPR-90)
description of HFR reactor, 22:22811 (EUR-3650)
description of hollow tubular body surface coated, with gas-filled insulating spaces on inner surface, 22:25161(P)
description of initially poisoned, for safety in fabrication and reactor operation, 22:22886(P)
description of internally and externally clad tubular, with flared end section and annular plug, 22:18631(P)
description of joined multi-plate coaxial tube, with brace extensions and coolant flow control ring, 22:14275(P)
description of liquid metal cooled and fast, 22:7792 (BNWL-477)
description of liquid-cooled, using coiled capillary vent tube for gaseous fission products, 22:25159(P)
description of LITR, 22:25095 (ORNL-TM-1737)
description of MGCR, 22:7806 (GA-1100(Suppl.1))
description of Mihama Power Reactor, Unit 1, 22:16174
description of multi-assembly independent motion, 22:14357(P)
description of multiple cartridge-type for gas-cooled reactor, with moderator jacket and coolant duct, 22:16239(P)

description of multiple parallel sealed plate, with coolant transfer holes and leak testing grooves, 22:30397(P)
description of multiple pellet ceramic-filled metal-clad cermet-cylinder, 22:39834(P)
description of Niederaichbach, 22:39823
description of notched helical fin, 22:14347(P)
description of Otto Hahn, detailed, 22:39847
description of porous, for improved heat exchange, 22:18613(P)
description of sectioned, for minimum coolant flow variation during unloading of gas-cooled reactor, 22:3875(P)
description of sheathed uranium carbide (UC), 22:18632(P)
description of sheathed, for graphite-moderated, natural uranium fueled, gas-cooled reactors, 22:18619(P)
description of spherical moderator-integrated, 22:42496(P)
description of square lattice assemblies of rod, with top and bottom rod connections for control, 22:3959(P)
description of stainless steel clad magnesium sheathed uranium slug, 22:22888(P)
description of stainless steel clad uranium dioxide, for AGR-type reactors, 22:6061
description of star-shaped or triangular Vapotron-type, with graphite fins, 22:6188(P)
description of STSF-1 assemblies of, 22:27462(R) (GA-8543)
description of test configurations of, for Swedish R-4, 22:1760 (FRIGG-1)
description of thermionic, with means for prevention of emitter electrode distortion, 22:44844(P)
description of tubular, with herringbone-pattern fins over inner surface, 22:3952(P)
description of tungsten-clad uranium oxide (UO_2)--tungsten-184, for nuclear rocket, 22:42349(P)
description of Vapotron-type, for burnout prevention in pressurized water coolant, 22:6190(P)
description of Vapotron-type, with uranium dioxide fuel and beryllium oxide fins, 22:6189(P)
description of vented, 22:33112(P)
description of water-cooled multi-concentric tubes of enriched uranium rod, 22:14226(P)
description of Yankee Power Reactor, 22:24978 (WCAP-6087)
description of zero-power ANNA reactor, 22:20907 (INR-821/IXA/PR)
description of zirconium clad uranium oxide (UO_2), 22:3808 (AECL-2928)
description of, using dysprosium or europium burnable poisons, 22:1900(P)
description with central strengthening bar and end cap allowing stacking, 22:42520(P)
description with end surface configuration to ensure correct position in coolant channel, 22:42516(P)
description with four bands of helical cooling fins for contacting adjacent elements in side by side arrangement, 22:42515(P)
description with grooved fuel rod to prevent fuel growth from fission gas trapping, 22:42519(P)
description with helical cooling fins containing longitudinal baffles, 22:42517(P)
description with internal spacers for separating fuel and sheath, 22:42521(P)
description with two coaxial tubes of fuel material separated by an insulating layer, 22:42525(P)
design of ceramic, for organic cooled and moderated reactors, 22:49822
design analysis of Halden Boiling, detailed, 22:35463 (HPR-95)
design and fabrication of plutonium-bearing, for Zero Power Reactor, (E), 22:15153 (ANL-7313)
design and fabrication of Saxton Power Reactor 97- and 78-per cent density uranium oxide (UO_2) 2 x 2, 22:39793 (WCAP-3269-64)
design and fabrication of thorium dioxide--uranium dioxide, for Kilorod Facility, 22:49798
design and performance characteristics of high power density, 22:42283
design and properties of ceramic, 22:19646
design configuration of assembly for 1000 MW(e) LMFBR, 22:9990(R) (BAW-1312)
design considerations for, survey of, 22:33092 (KFK-700(Pt. I))
design considerations for, survey of, 22:53273(T) (EURFNR-472)
design for clustered elongated pin-type, 22:12156(P)
design for columnar detachably coupled, 22:1904(P)
design for containment of fission gases, 22:37918(P)
design for gas-cooled reactors, basic factors in development of, 22:6044
design for heavy water-moderated reactor, 22:14632(P)
design for improved cooling, 22:8289(P)
design for increased thermal flux in neutron beam experiments, 22:8284(P)
design for low-power reactor or critical assembly, 22:10479(P)
design for uranium--plutonium carbide fast breeder, 22:53368
design having sheath of anticlastic form, 22:14341(P)
design of assemblies of Shippingport Pressurized-Water Reactor Core 1 and Core 2, effects of hot-channel factor analysis on, 22:22727
design of ceramic, for gas-cooled reactors, 22:12508(P)
design of ceramic-coated, for high-temperature gas-cooled reactors, 22:14659(P)
design of cluster type assemblies, 22:8283(P)
design of cruciform assemblies of parallel fuel rods, 22:18629(P)
design of doubly canned, for water-cooled reactors, 22:12513(P)
design of EDF-1 Reactor, 22:37452
design of flexible, to allow deformation without fracture, 22:1898(P)
design of FTR, 22:1847 (BNWL-SA-1388, pp 2.1-13)
design of improved ceramic fuel pellets for use with rod-type, 22:2686(P)
design of improved, for superheat reactors, 22:12516(P)
design of improved, having higher loading and thermal conductivity, 22:45808(P)
design of longitudinally finned heavy water-moderated gas-cooled, optimal, 22:16320 (UJV-1840)
design of Mark II and Mark III superheating, for EVESR, 22:1792
design of mixed oxide, 22:43663
design of parallel rod assembly-type, 22:14340(P)
design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
design of Phoenix, 22:14289 (BNWL-635)
design of pin-type for fast breeder reactors, reliability margin analysis for, 22:32837
design of refractory, incorporating a solid moderator, 22:21714(P)
design of ribbed-clad superheating, for EVESR Mark-5 core, 22:3930 (GEAP-5408)
design of rod-type, incorporating metal rings inserted between pellets, 22:53482(P)
design of Sena, 22:16164 (WCAP-2785)
design of spaced concentric tube, 22:10460(P)
design of spherical graphite, filled with potted fissile material, 22:10105(P)
design of stainless steel-clad uranium dioxide, dispersed in europium oxide--nickel matrix, 22:23859 (IN-1131, pp 127-39)
design of thermally insulated, for pressure tube reactors, 22:10471(P)
design of vented, 22:10905(P)
design of vented-to-coolant, for use in sodium-cooled fast breeders, 22:53396
design parameters and drawings for FTR, 22:14250(R) (BNWL-470)
design parameters for BWR and PWR, reference, 22:44841 (WASH-1082)
design parameters for FTR driver pin, description of, 22:32987
design parameters for mixed oxide, 22:50804 (BNWL-841)
design parameters for optimum fast breeder power reactor, analysis of, (E/T), 22:39810
design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
design parameters for plutonium, 22:25007
design parameters for Shippingport Core 2, 22:39791 (WAPD-296)
design parameters of niobium--zirconium clad uranium oxide (UO_2), for WR-1, 22:35415 (AECL-2758)
design specifications for FFTF, preliminary, 22:27461 (BNWL-SA-1066)
design specifications of rod type, 22:19030(P)
design with dispersed activated carbon for fission product retention, 22:7931(P)
design with improved heat transfer, 22:1899(P)
design with low-melting metal filler between carbide fuel and can, 22:14342(P)
design with means to prevent creep of metal end plugs, 22:42524(P)
development and fabrication of uranium aluminide and uranium oxide dispersion, 22:8686 (ORNL-4170, pp 108-14)
development and testing for ATR, 22:23843 (IN-1131, pp 37-55)
development and testing for BONUS reactor, 22:8742 (ORNL-4170, pp 151-7)
development and testing metallic, 22:12999 (BNWL-473, pp 9.1-18)
development for FFTF plutonium oxide (PuO_2)--uranium oxide (UO_2), literature survey discussion of conceptual design, 22:50795 (BNWL-645)
development for HFIR, 22:632 (ORNL-4108)
development for water-cooled reactors, 22:16356 (KR-116)
development in the United Kingdom, design and fabrication procedures in, 22:46937
development of aluminum--uranium intermetallic compound, for use in high-flux, high-power-density reactors, 22:15135 (IN-1133)
development of coated high temperature gas cooled, 22:32810
development of dispersion-type, 22:734
development of fueled-graphite, in TURF for HTGR, 22:8823 (ORNL-4170, pp 211-26)
development of graphite spherical pebble-type, incorporating particulate ceramic fuels, 22:23855 (CONF-660524-, pp 293-8)

development of instrumented simulated, for analysis of liquid sodium superheat boiling, 22:37614
development of niobium--uranium dioxide cermet, 22:34096 (GMAD-3078-21)
development of superheating, history of EVESR, 22:1762(R) (GEAP-5485)
development of Zircaloy-clad uranium oxide (UO_2), for CIRENE Reactor, 22:7830
development of, chemical research for, 22:25144
development program for CANDU-type reactor, description of, 22:35419 (AECL-3126)
diameter of EDF-3, analysis of effects of increase in, 22:46939
diameter of fast, effects on Doppler coefficient of, 22:14227
diffusion of fission products from melted irradiated, 22:4231(R) (IN-1087)
dimensional changes in irradiated EBR-2 driver subassemblies, 22:22653(R) (ANL-7419)
dimensional measurements of, summary of postirradiation, 22:12006(R) (ANL-7399)
disassembly and examination of plutonium-enriched, facility design for, 22:4407
disassembly of failed, 22:3927 (EIR-124)
disassembly of FTR, criticality safety calculations for underwater, 22:12089 (BNWL-594)
disassembly of, design and operation of equipment for, 22:45220(T) (ORNL-tr-1976)
disintegration of SNAP, effects on reactor power of, 22:6079
dissolution and iodine separation from uranium, equipment and method for, 22:4302 (CEA-R-3259)
dissolution in nitric acid, mercury-catalyzed, 22:4234 (RT/CHI-(67)8)
dissolution of, 22:4231(R) (IN-1087)
dissolution of aluminum-clad thorium dioxide, 22:40151 (BNWL-240)
dissolution of EBR-II, in nitric acid, properties of solutions from, 22:48896 (IN-1192)
dissolution of SAP-clad, 22:149
dissolution of thorium dioxide--uranium dioxide, in nitric and hydrofluoric acids, 22:47702(R) (BAW-3809-3)
dissolution of, pilot-scale studies of, 22:40189 (NP-17542)
distribution of plutonium oxides (PuO_2) and uranium oxides (UO_2) in, determination of radial, 22:30343(R) (EURAEC-1992)
Doppler coefficients for FTR, effects on fuel temperature of variations of, 22:14251(R) (BNWL-534)
drive mechanisms for clustered, description of releasable, 22:42449(P)
economics of CIRENE-type thorium oxide, 22:22827 (RT/FI-(67)29)
economics of plutonium, for BWR, 22:6024
economics of reprocessing fast oxide, 22:3939
effects of liquid sodium environment on fast reactors, 22:18600
effects of steam outlet pressure on size of fast breeder reactor, analysis of, 22:27401 (BNWL-713)
electric connectors for instrumented organic-cooled, mechanical problems in development of, 22:2471
end cap for, description of lock-type remotely removable, 22:42536(P)
end caps for, design of linear movement operated, 22:1902(P)
end closure of sheathed tubular, methods for, 22:4760(P)
end plates for, effects on HWOCR performance of, 22:3813(R) (AI-CE-54)
end plugs for advanced zirconium, development of duplex tube, 22:16263(R) (AEG-E-31-873)
end-plug for evacuated, description of pin-sealing vacuum access in, 22:42471(P)
evaluation of irradiated plutonium, facility design for, 22:4403
evaluation of irradiated, shielded facility design for, 22:4402
evaluation of Piqua, postoperation, 22:6026
examination of irradiated Fermi, hot cell for, 22:4411
examination of PM-3A, equipment and methods for, 22:4412
extrusion of aluminum-clad uranium dioxide, dispersed in magnesium, 22:7047
extrusion of composite, method for, 22:8716(P)
fabrication, 22:49780
fabrication and in-pile testing of plutonium dioxide--uranium dioxide, methods for, 22:34125 (EURAEC-1999)
fabrication and installation of instrumented, development of techniques for, 22:8708 (ORNL-4190)
fabrication and properties of zirconium alloy clad uranium silicide, 22:43642(P)
fabrication and quality control of ceramic and metallic, laboratory facilities for, 22:27960
fabrication and testing for HFIR, 22:8706 (ORNL-4170, pp 173-83)
fabrication and testing of clad uranium dioxide, 22:34097 (GMAD-3078-25)
fabrication and testing of mixed oxide, description of, 22:50804 (BNWL-841)
fabrication and testing of ZPPR, equipment and methods for, 22:12477 (RFP-1078)
fabrication and testing stainless steel clad plutonium carbide--uranium carbide, 22:45806(R) (WARD-3791-21)
fabrication at Port Hope, Canada, 22:28898
fabrication by pneumatic vibration of powders, valve gripper device for, 22:30343(R) (EURAEC-1992)
fabrication costs for annular graphite cylinders filled with bonded coated uranium oxide (UO_2) particles, 22:48654 (ORNL-TM-2241)
fabrication costs for low-enrichment high-temperature gas-cooled Dragon Project concept, 22:48654 (ORNL-TM-2241)
fabrication for Doppler effect experiments, 22:43627 (ANL-7299, pp 14-113)
fabrication for in-pile irradiation, 22:732 (EURFNR-318)
fabrication for PM-1 and PM-3A reactors, 22:14229 (HIT-242)
fabrication for RAPSODIE first core, processes and facilities for, 22:44886 (CEA-R-3501(Pt.1))
fabrication for Trino Power Reactor, 22:50751
fabrication from reprocessed fuel, design of argon fuel cell for, 22:27879
fabrication from sol-gel microspheres, 22:26073 (ORNL-TM-2205)
fabrication from sol-gel plutonium dioxide--uranium dioxide, methods for, 22:8704 (ORNL-4170, pp 124-7)
fabrication in Argentina of, economic analysis of, 22:3931 (NP-16987)
fabrication in Spain, 22:1787
fabrication method for, 22:12503(P)
fabrication method for grooved coaxial tube-type, 22:10109(P)
fabrication method for prevention of end-cap deformation, 22:1892(P)
fabrication methods for plutonium, 22:6037
fabrication methods for uranium metal, oxide base, and plate-type, 22:12486
fabrication of, 22:14463
fabrication of 0.01 mm metal-clad, description of end-plug welding, 22:42464(P)
fabrication of 100 to 300 MW(e) fast breeder, description of, 22:18529
fabrication of aluminum clad tubular, by hot-swaging, 22:26025(P)
fabrication of aluminum clad, oblong parallel-spaced multi-plate, description of, 22:25160(P)
fabrication of aluminum--uranium alloy, by casting and rolling, 22:49706(P)
fabrication of aluminum--uranium alloy, improved method for, 22:6973(P)
fabrication of aluminum--uranium oxide (U_3O_8) and aluminum--uranium intermetallics, description of techniques for, 22:37541 (ORNL-TM-2197)
fabrication of aluminum--uranium oxide cermet, 22:28895
fabrication of aluminum-clad uranium-233 oxide (UO_2) plate, by cold-pressing powder compacts, 22:14241 (AAEC/TM-404)
fabrication of annular and tube-in-shell uranium dioxide, description of vibratory compaction method for, 22:28891
fabrication of annular sintered-pellet core surrounded by granular fuel and enriched helical wire, description of, 22:25194(P)
fabrication of AVR and THTR spherical pellets, description of, 22:27426
fabrication of boride-containing uranium dioxide, 22:11034(P)
fabrication of CANDU Reactor Zircaloy-clad uranium oxide (UO_2) bundle-type, description of, 22:42152 (AECL-3067, pp 45-52)
fabrication of carbide, method for, 22:43639(P)
fabrication of carbon-containing resin-bonded stick-type silicon carbide (SiC)-coated uranium oxide (UO_2) and thorium oxide (ThO_2), description of, 22:42200(R) (ORNL-4200)
fabrication of central bar-stabilized sheathed multiple stacked-wafer ceramic, description of, 22:42483(P)
fabrication of central-insulated molded molten metallic rod-type, for gas-cooled power reactors, 22:44848(P)
fabrication of ceramic, by vibratory compaction, 22:8809
fabrication of ceramic, vibration compaction method for metal clad, 22:15243(P)
fabrication of clad actinide oxide, method for, 22:49804(P)
fabrication of clad cylindrical-shaped, description of mandrel-formed electron beam-welded multiple-plate, 22:42571(P)
fabrication of clad rod, with deformation-free end-plugs, 22:14356(P)
fabrication of clad, method for control of expansion during, 22:49802(P)
fabrication of cladding for, description of high hydrostatic pressure support container for, 22:25183(P)
fabrication of coated sintered ceramic bar-type, description of hot-pressing end-plug enclosing, 22:42466(P)
fabrication of collapsed clad, for irradiation testing in supercritical water-cooled in-pile loop, 22:42214 (WCAP-3374-8)
fabrication of compacted powder-insulated bar-type, description of, 22:42547(P)
fabrication of concentric cylinder-clad annular-fueled tube-type, method for, 22:44935(P)

fabrication of concentric cylinder-clad sealed-edge multiple-section tube-type, method for, 22:44934(P)
fabrication of concentric metal tubes for test-type, method for, 22:49696(P)
fabrication of cooling-duct-penetrated sintered plutonium oxide (PuO_2)--uranium oxide (UO_2) rings, description of vibration-compaction, 22:37577(P)
fabrication of CP-5, by magnetic pulse forming, 22:202 (ANL-7343)
fabrication of dual-layer sandwich-clad pressure-formed plate-type, method for, 22:44936(P)
fabrication of end-plugs and sheaths for, description of argon-arc Y-shaped groove welding, 22:42467(P)
fabrication of end-plugs and thin-walled sheaths for helium-filled pin-type, description of argon-arc and helium-arc welding, 22:42465(P)
fabrication of fast breeder, description of, 22:18527
fabrication of Fast Flux Test Facility, conference on, 22:603 (BNWL-SA-1388)
fabrication of FFTF, safety hazards of, 22:280 (BNWL-SA-1388, pp 12.1-15)
fabrication of foil-containing TR-1 natural and enriched uranium, description of, 22:35592 (CNAEM-47)
fabrication of Fort St. Vrain Power Reactor silicon carbide (SiC)-coated and -uncoated thorium carbide (ThC_2)--uranium carbide (UC_2) particle-type proof test, method of, 22:44818 (GAMD-8552)
fabrication of four rod-cluster Zircaloy-2 clad 87 percent density uranium oxide (UO_2), 22:16280 (GEAP-5100-H)
fabrication of four rod-cluster Zircaloy-2 clad uranium oxide (UO_2), 22:16281 (GEAP-5100-K)
fabrication of FTR and Nuclear Proof Test Facility plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet, detail description of, 22:30299 (BNWL-SA-1750)
fabrication of grid type cermet, methods for, 22:8816(P)
fabrication of Halden Boiling Reactor plutonium oxide (PuO_2)--uranium oxide (UO_2) and uranium oxide (UO_2), description of, 22:35464(R) (HPR-99)
fabrication of heavy water-moderated water-cooled silicon oxide (SiO_2)--uranium oxide (UO_2) cylindrical rod, description of, 22:30262
fabrication of helical, method of, 22:18615(P)
fabrication of helically seamed, method for, 22:8285(P)
fabrication of helium and sodium bonded mixed carbide, for LMFBR, (E), 22:8807(R) (WCAP-3791-10)
fabrication of HFIR, 22:632 (ORNL-4108)
fabrication of HFIR, quality control analysis for, 22:35606 (ORNL-TM-2196)
fabrication of high heat conductivity, description of method for, 22:42451(P)
fabrication of HWCTR Zircaloy-2-clad uranium--zirconium driver, description of, 22:44896 (NMI-4379)
fabrication of joints in graphite envelopes and end-plugs of, by electric-resistance heating, 22:43641(P)
fabrication of Kyoto University, description of, 22:14272
fabrication of laminated sheets of actinide containing unitary sintered refractory metal, description of, 22:37598(P)
fabrication of magnesium powder coated uranium, description of electrophoresis, 22:42489(P)
fabrication of magnesium-coated uranium rod-type, description of method for, 22:42572(P)
fabrication of Magnox clad uranium rod, description of compression at 100 to 380°C for, 22:14354(P)
fabrication of metal-clad fissile carbide pellet-type, description of, 22:42548(P)
fabrication of metal-clad liquid metal-insulated sheathed bar-type plutonium, description of, 22:42484(P)
fabrication of metal-insulated stainless steel-clad uranium carbide, description of, 22:42485(P)
fabrication of metallic clad nonsintered ceramic, vibratory compacting method for, 22:8814(P)
fabrication of metallic, for water-cooled reactors, 22:41024(P)
fabrication of mixed-oxide, powder filling and tamping characteristics for, 22:30343(R) (EURAEC-1992)
fabrication of molybdenum-clad depleted and enriched uranium nitride (UN) and uranium oxide (UO_2), description of, 22:37561 (N-68-22587)
fabrication of MTR-type, description of, 22:18568
fabrication of multi-plate, with groove positioned sandwich support plates, 22:14348(P)
fabrication of multiple serially-connected thermionic diode, description of, 22:39835(P)
fabrication of NERVA rocket reactor, description of optimum, 22:39867 (N-68-21402)
fabrication of NIE and NOE tubular, by extrusion and forging, 22:31335(R) (RMI-10)
fabrication of Norwegian, economics of, 22:16356 (KR-116)
fabrication of pellet type subassemblies for, procedure for, 22:1777(R) (WCAP-3696-5)
fabrication of pellet-type, with improved method for compression spring insertion, 22:14325(P)
fabrication of pelleted uranium dioxide, for Re-SuCo subcritical reactor, 22:49807
fabrication of Phoenix, 22:14289 (BNWL-635)
fabrication of Phoenix MTR plate-type, description of, 22:42164(R) (BNWL-775)
fabrication of pin type, by welding, 22:21674(R) (WARD-3791-12)
fabrication of plate-type, 22:18618(P)
fabrication of plate-type multi-density uranium oxide (U_3O_8), effects of metallurgical properties on, 22:37566
fabrication of plate-type, description of sealed-cylinder rolling, 22:48754(P)
fabrication of plutonium dioxide--uranium dioxide, clad with type 316 stainless steel, 22:17189
fabrication of plutonium dioxide--uranium dioxide, using pellet-in-tube process, 22:7048
fabrication of plutonium oxide (PuO_2) and uranium oxide (UO_2), process facility description and cost estimates for, 22:18581 (BNWL-273(Vol.2))
fabrication of plutonium oxide--uranium dioxide, criticality safety in, 22:748 (BNWL-SA-1388, pp 11.1-26)
fabrication of plutonium oxides (PuO_2)--uranium oxide (UO_2), for Prototype Fast Reactor, 22:14209
fabrication of plutonium reactivity-coefficient, radiation exposures to personnel during, 22:43526 (ANL-7299, pp 114-19)
fabrication of plutonium, safety procedures for, 22:36439 (ANL-7365)
fabrication of plutonium--uranium, 22:21776(R) (EURAEC-1937)
fabrication of plutonium--uranium carbide, for GETR testing, 22:38626(R) (WARD-3791-18)
fabrication of plutonium--uranium--zirconium alloy, 22:43627 (ANL-7299, pp 14-113)
fabrication of power reactor, welding techniques for and closures in, 22:33170
fabrication of pressurized-water reactor type 304 stainless steel-clad enriched uranium oxide (UO_2) pellet-type, description of, 22:30164(R) (WCAP-3703)
fabrication of prototype twisted tape clusters, 22:9996(R) (EUR-3651)
fabrication of rod-type thoria, 22:7054(P)
fabrication of SAP-clad enriched uranium, 22:19493
fabrication of SEFOR hexagonal channel plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type, description of, 22:44889(R) (GEAP-5629)
fabrication of Shippingport Pressurized-Water Reactor Core 2 Seed 2, 22:20824 (WAPD-MRP-123)
fabrication of sintered oxide cylindrical pellet-type, description of optimum, 22:32838
fabrication of sintered uranium dioxide--uranium carbide (UO_2--UC), for the DON reactor, 22:10059 (JEN-173-DMe/I-14)
fabrication of SM-1A Core III stationary and moveable plates, specifications for, 22:1841 (CONF-661011, pp 173-99)
fabrication of sodium-cooled fast reactor, description of, 22:18511
fabrication of spaced multiple-rod helix-convolution, description of extrusion, 22:42436(P)
fabrication of stainless steel clad uranium carbide, with diffusion barriers, 22:36533(P)
fabrication of stainless steel clad, by annealing and swaging, 22:45761(P)
fabrication of stainless steel--uranium dioxide, incorporating zirconium boride poison, 22:4856
fabrication of stainless steel-clad enriched uranium, 22:19493
fabrication of stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), description of, 22:32970(R) (GEAP-5584)
fabrication of thin foil clad uranium, 22:20865(P)
fabrication of thin-walled metallic tube powder-filled, description of longitudinal helical groove, 22:39944(P)
fabrication of thorium, technology of, 22:47053
fabrication of titanium nitride-coated zirconium-clad uranium oxide (UO_2) pellet-type, description of, 22:42553(P)
fabrication of tubular sheath-enclosed, welding technique for annular end-cap, 22:42482(P)
fabrication of two component uranium-base, 22:38605(P)
fabrication of Type 2 core assemblies for PM-1, PM-2, and PM-3 reactors, 22:14231 (NYO-10743)
fabrication of Type 316 or Type 347 stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2), description of, 22:27423
fabrication of United Kingdom power reactor, economics of, 22:27441
fabrication of uranium carbide, dispersed in silicon carbide, 22:52241
fabrication of uranium carbide, hot pressing method for, 22:52240
fabrication of uranium dioxide, vibratory compaction method for, 22:2679
fabrication of uranium oxide (UO_2)--tungsten thin plate and rod, description of hot isostatic compaction, 22:39905 (N-68-21705)
fabrication of uranium, by rotary-piercing, 22:2588 (NLCO-991)
fabrication of uranium--plutonium--zirconium stainless steel jacketed, 22:16265(R) (ANL-7403)
fabrication of uranium-233-enriched uranium dioxide, direct, 22:23858 (CONF-660524-, pp 537-45)
fabrication of welded end-plug-sealed clad rod-type,

description of temporary plug support for, 22:42501(P)
fabrication of wire-wrapped, for Canadian power reactors, 22:35418 (AECL-3089)
fabrication of yttrium hydride moderator--fuel particle dispersion, for spacecraft reactors, 22:23885(P)
fabrication of Zircaloy 2-clad aluminum alloy--uranium alloy-lined uranium ceramics and cermets cylindrical, description of slip-fitting and swaging, 22:48769(P)
fabrication of Zircaloy 2-clad thorium--uranium, description of, 22:53456 (BNWL-861)
fabrication of Zircaloy-2 clad sintered uranium oxide (UO_2) pellets four rod cluster, 22:16282 (GEAP-5100-L)
fabrication of Zircaloy-2 clad uranium oxide (UO_2) compacted powder and cored pellet rod cluster, 22:16279 (GEAP-5100-2)
fabrication of Zircaloy-2 clad uranium oxide (UO_2) pellet, with axial voids, 22:30392(P)
fabrication of Zircaloy-2 clad uranium oxide (UO_2), for Big Rock Point Power Reactor, 22:22698 (GEAP-5591)
fabrication of Zircaloy-2-clad aluminum--plutonium, methods for, 22:43552
fabrication of Zircaloy-2-clad EPW-6/8A, 22:4868 (GEAP-5100-G)
fabrication of zircaloy-clad enriched uranium, 22:19493
fabrication of Zircaloy-clad uranium dioxide, 22:16356 (KR-116)
fabrication of Zircaloy-clad, brazing and welding procedures for, 22:25156
fabrication of zirconium alloy-clad nickel--iron--chromium alloy-brazed stainless steel-spaced multiple uranium oxide (UO_2) pellet-type, description of, 22:42503(P)
fabrication of ZPR and ZPPR, flowsheets for, 22:43627 (ANL-7299, pp 14-113)
fabrication of, Argentina industrial capacity for, 22:3837 (NP-16984)
fabrication of, containing uranium oxide pellets, 22:19506(P)
fabrication of, density and thickness control during, 22:7052(P)
fabrication of, design of vibrating device for, 22:6520(P)
fabrication of, fuel cycle effects on, 22:14161
fabrication of, incorporating burnable poison and fissionable oxide, 22:11024(P)
fabrication of, technology of, 22:14188
fabrication of, Trisaia facility for remote-controlled, 22:33547
fabrication of, vibratory compacting and swaging methods for, 22:28893
fabrication of, x-ray control of welding processes in, 22:43560(P)
fabrication parameters for, peak heat flux factor dependence on, 22:6140
fabrication plants for, computer programs for estimation of capital and operating costs of, 22:22882
fabrication procedure for highly enriched MTR-type, for JRR-2, 22:6127
fabrication procedures for aluminum clad uranium oxide (U_3O_8)--aluminum, for HFIR, 22:35603 (ORNL-4242)
fabrication process for spherical pebble-bed type, 22:30403(P)
fabrication processes for, criticality safety requirements in, 22:10081 (NYO-9714)
fabrication processes for, description of, 22:48791
fabrication ribbed-clad superheating, for EVESR Mark-5 core, 22:3930 (GEAP-5408)
fabrication techniques for ceramic, description of, 22:14206
fabrication techniques for instrumented ATR plates, 22:53418 (ORNL-4268)
failure behavior of Zircaloy-clad uranium oxide (UO_2) rod, during coolant-loss accidents in light-water reactors, 22:48655 (ORNL-TM-2347)
failure detection by gas sampling monitoring in HBWR, description of, 22:48646 (HPR-102)
failure detection in fluid-cooled, sampling circuits and radiation detector system for, 22:47057(P)
failure detection in, description of scintillation method for, 22:18584 (CEA-R-3330)
failure detection methods in JPDR, 22:16152 (JAERI-1147)
failure detection monitoring system of Halden Boiling Reactor, description of, 22:22701 (HPR-93)
failure detection system for EDF-3, defects in, 22:22726
failure detection, description of dual-column M.S.-13X and M.S.-5A molecular sieves for, 22:48765(P)
failure detector for gas-cooled reactor, description of electrostatic precipitator chamber for, 22:6050(P)
failure detector for, plugging meter and sampler for, 22:7788(R) (ANL-7382)
failure experiments on EBR-2 cluster-type, analyses of, 22:5948
failure in fast breeder reactors, fission product deposition in reactor systems following, 22:6020
failure in supercritical water loop, analysis of fission product release from, 22:46926 (WARD-3843-1)
failure of CVTR, metallographic analysis of, 22:24977(R) (WCAP-3850-2)
failure of EBR-2 driver, analysis of gas-type, 22:32845
failure of EBR-2, detection and analyses for determining, 22:53442
failure of extruded beryllium cladding on, analysis of, 22:23780
failure of gas-cooled plate-type, dynamic pressure limits for, (E/T), 22:42389 (N-68-16227)
failure of Incoloy 800 and Hastelloy clad plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:25083(R) (GEAP-5541)
failure of stainless steel clad ceramic, effects of bubbles in sodium bonding on, 22:4910
failure of uranium oxide (UO_2), fission product analysis from, 22:20909(R) (ORNL-TM-2095)
failure of uranium, detection in carbon dioxide flow of, 22:1885
failure of, determination of Weibull density function parameters from data on, 22:39894 (BNWL-SA-1920)
failure of, factors affecting in-pile, 22:19646
failure of, fission product distribution in sodium coolant from, 22:6138(R) (LA-3820)
failure of, methods for detecting, 22:50902 (ANL-7425, pp 193-7)
failure of, scintillation and Cherenkov detectors for monitoring, 22:16863
failure of, use of amplifiers for fluid switches in detection of, 22:1909
failure on September 29, 1965 of PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2), fission product monitoring for, 22:32744 (BNWL-SA-668)
failure testing at 400°C of enriched-alloy, for pulsed reactor, 22:40331 (NP-17544)
failure testing in Halden Boiling Water Reactor, 22:12026 (HPR-87)
failures in gas-cooled, method for detection of, 22:25052(P)
failures in uranium oxide (UO_2), effects of irradiation in carbon dioxide on fission products from, 22:18583 (CEA-R-3329)
failures of CVTR Core 1 Cycle 1 and Cycle 2, analysis of, 22:35427 (CVNA-287)
failures of Elk River, summary of, 22:3843(R) (NUS-411)
failures of Halden Boiling Reactor, analysis during January to March 1968 of, 22:35464(R) (HPR-99)
failures of NPD Reactor, during 1962 to 1967, 22:35417 (AECL-3085)
failures of Zircaloy-2-clad uranium oxide (UO_2) Spert 4 Capsule Driver Core, metallurgical analysis of, 22:35596(R) (IDO-17260)
failures of Zircaloy-clad thorium oxide (ThO_2)--uranium oxide (UO_2), effects of time and temperature on, (E/T), 22:33174
failures of, description of modified loading machine for coolant sampling in detecting, 22:42569(P)
fastening mechanism for, description of double plate connection with rotating levers in, 22:14349(P)
fin reinforcement by metal strips for protection against deformation, 22:25181(P)
fission gas analysis of failed CVTR, 22:48658(R) (WCAP-3850-3)
fission gas diffusion from fissioning, model of, 22:49863
fission gas diffusion in Browns Ferry, determination in, 22:27416(R) (ORNL-4228)
fission gas outlet device for, description of, 22:20954(P)
fission gas piston-actuated acoustic transducer electromagnetic chart-recorder pressure gage for, description of, 22:39946(P)
fission gas pressure measurements in irradiated mixed-oxide, 22:53454 (BNWL-828)
fission gas release from silicon carbide (SiC)-coated and -uncoated thorium carbide (ThC_2)--uranium carbide (UC_2) Fort St. Vrain Power Reactor proof test, measurement of, 22:44818 (GAMD-8552)
fission gas release from, comparison of calculated and measured, 22:9988(R) (ANL-7391)
fission gas release rates from, tapping measurements of, 22:30343(R) (EURAEC-1992)
fission gas sampling from, description of piercing needle device for, 22:42527(P)
fission product content in irradiated, computer program for determining, 22:39895 (DUN-4136)
fission product decay in spent, scintillation detector system for measuring, 22:36038(P)
fission product diffusion from uranium dioxide, relations with irradiation time, 22:2709 (RT/FIMA-(67)2)
fission product distribution in Incoloy 800-clad and Type 316 and Type 347 stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:50732(R) (GEAP-5631)
fission product gas pressure in failed urania, calculation of, 22:1779
fission product inventories in FFTF, calculation of, 22:14252 (BNWL-566)
fission product release from HBWR irradiated, 22:12026 (HPR-87)
fission product release from heated uranium oxide (UO_2), gamma scan analysis of, 22:25098(R) (ORNL-TM-2164)
fission product release from irradiated, analysis of, 22:1879 (EUR-3623)
fission product release from molten, estimated half-life of, 22:42160(R) (BMI-1844)
fission product release from Peach Bottom Power Reactor-1, 22:12023(R) (GA-8153)

fission product release from sodium-bonded Type 347 and Type 316 stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), testing of, 22:50732(R) (GEAP-5631)
fission product release from spherical coated particle, two-zone diffusion model for description of, (T), 22:33126
fission product release from Zircaloy clad uranium oxide (UO_2), 22:27416(R) (ORNL-4228)
fission product release from, simulation of, 22:27490 (ORNL-4229, pp 149-55)
fission product release from, under reactor transient conditions, 22:27490 (ORNL-4229, pp 149-55)
fission product release under steam-cooled operating conditions for EVESR, 22:16184
fission product venting system for operating, 22:16340(P)
fission products from, space-dependent ion production by, 22:1001
fission products released in irradiated Yankee Power Reactor, analysis of gaseous, 22:24978 (WCAP-6087)
flaw detection in, development of ultrasonic camera for, 22:23365
flow channels in rod-bundle type, water mixing in, 22:4349
flow channels in, measurement of mixing between parallel, 22:8294 (BNWL-371(Pt.2))
flow meters for Garigliano, pressure drop measurements using, 22:48645 (GEAP-5623)
fluorination of pellets of fission product--plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:9988(R) (ANL-7391)
fuel cycle history of ORR, 22:10062(R) (ORNL-TM-2087)
fuel inhomogeneities in metal-clad oxide, γ-attenuation method for detection of, 22:14739
fuel motion in ceramic, effect of heat input from transient accidents on, (T), 22:24925(R) (ANL-7427)
fuel relocation in FTR, use of rod-plugs for minimization of, 22:12086 (BNWL-472, pp 4.1-43)
fuel rod characteristics for SPERT F-type, 22:48648(R) (IDO-17271)
fuel-cladding compatibility in HWOCR uranium carbide (UC)--SAP, (E), 22:46857 (AI-CE-77)
fuel-disc type, having improved heat transfer characteristics, 22:42462(P)
fuel-graphite dispersion having improved heat transfer characteristics for, description of, 22:42433(P)
gamma activity of LOFT, following critical experiment, (T), 22:37532(R) (IDO-17242)
gamma radiation scan of sodium-cooled fast reactor ceramic, analysis of, 22:7808(R) (GEAP-5522)
gamma scanning of failed CVTR, results of, 22:48658(R) (WCAP-3850-3)
gas pressure buildup in plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of burnup on, 22:32814
gas pressures in pin-type, design of miniature gages for, 22:12670 (ANL-7380, pp 65-9)
gas vent for, description of diving-bell trap with non-return valve, 22:48779(P)
grid for cluster arrangement of, 22:18634(P)
grid structures for, description of recessed tab, 22:14346(P)
grids for dimple-supported rod-type, description of spot welded octogon-shape multiple cell, 22:39912(P)
grids for rod-type, description of variable tension ferrule-connected loop-positioned square lattice wire, 22:39910(P)
gripper and holddown force-limit device for, calibration of, 22:30118 (ANL-7438)
growth and displacement of, eddy current transducers for measuring diametrical, 22:51276(R) (IDO-17269)
γ scan measurements for radial power distribution in 1B cycle of Garigliano Power Reactor, 22:3828 (EURAEC-1916)
handling and storage facility for STSF, 22:7894(R) (GA-8191)
handling and unloading of, device for safe, 22:19019(P)
handling device for, description of water-filled double-wall containment vessel guide duct, 22:14337(P)
handling of enriched uranium, critical mass and neutron buckling measurements in light water for safety in, 22:12087 (BNWL-472, pp 5.1-16)
handling of irradiated and nonirradiated FTR, 22:14250(R) (BNWL-470)
handling of MZFR, system for automatic, 22:14181
handling of spent, computer program for calculating shielding for, 22:40356
handling of spent, safety methods for, 22:43015 (DPSPU-67-30-8)
handling of, design of tongs for remote, 22:14660(P)
handling of, evaluation of plastic magazine for, 22:26037 (CONF-660706-, pp 91-103)
handling of, shock absorber design to prevent free fall in, 22:1907(P)
hazard ratings for fission products released from irradiated, for advanced gas-cooled reactors, 22:51572 (RD/B/N-1143)
heat diffusion in, analog solution for transient, 22:19038
heat flux distribution in plutonium oxide (PuO_2)--uranium oxide (UO_2) rod-type, effect of fissile material segregation and geometrical tolerances on, (T), 22:44941
heat flux distribution in, FRG-code for calculating, 22:35673 (RT/ING-(67)11)
heat from FTR irradiated driver, analysis of decay, (T), 22:27460 (BNWL-634, pp 4.1-55)
heat from unirradiated FTR driver, analysis of decay, (T), 22:27460 (BNWL-634, pp 4.1-55)
heat generation in, effects on coolant temperature of, 22:10019
heat production in cylindrical, with homogeneous distribution of fuel material, 22:6527 (ITEF-455)
heat transfer analysis of gas-cooled graphite moderated power, 22:1767 (JUL-486-RB)
heat transfer analysis of HFIR, steady state, 22:7899 (ORNL-TM-1904)
heat transfer calculations for, model for, 22:33094 (KFK-700(Pt. IV))
heat transfer calculations for, model for, 22:53273(T) (EURFNR-472)
heat transfer calculations in, discussion of Monte Carlo computer codes for, 22:33132
heat transfer characteristics of fast ceramic, effects of reactor transients on, 22:32735 (ANL-7310, pp 249-375)
heat transfer characteristics of mixed-oxide, effect of longitudinal enrichment profile on, (T), 22:30343(R) (EURAEC-1992)
heat transfer characteristics of vitreous-ceramic gas cooled, 22:46899 (IFA-TR-55)
heat transfer coefficients of Piqua Power Reactor, measurement of, 22:10006(R) (NAA-SR-12561)
heat transfer from longitudinally finned, method of calculating, 22:2301
heat transfer from sodium-bonded, (E), 22:8807(R) (WCAP-3791-10)
heat transfer from spray-cooled rod-bundle type, analysis of, 22:10493
heat transfer from VVR-S, electrohydrodynamic method for improving, 22:51162 (IFA-FR-60)
heat transfer in Halden Boiling Reactor thin-walled tubular metallic uranium, analysis of, (E/T), 22:35462 (HPR-89)
heat transfer in Halden Boiling Reactor, measurement of, 22:35464(R) (HPR-99)
heat transfer in Zircaloy-2-clad uranium oxide (UO_2)-fueled Spert 3 E-core, analysis of, (T), 22:35596(R) (IDO-17260)
heat transfer in, use of GENGTC computer program for calculation of, 22:4341 (ORNL-TM-1942)
heat transfer measurement in bulk oxide cylindrical, computer program for, 22:16324 (WAPD-TM-618(Add.1))
heat transfer measurements on roughened helium-cooled, in-pile, 22:22725
heat transfer measurements on simulated 36-rod Marviken, with uniform heat flux distribution, 22:48643 (FRIGG-2)
heat transfer of fast, description of improved, 22:42446(P)
heat transfer performance for 1000 MW(e) gas-cooled fast reactor, effects of partial surface roughening on optimum, (T), 22:50728 (GA-8268)
heat transfer properties of sodium-bonded, effects of bond defects on, 22:27487(R) (LA-3880)
heat transfer studies on roughened helium-cooled, in-pile, 22:5941
heat transfer to water in transition and film boiling regions, simulation studies on, 22:42960 (GEAP-5563)
heat transfer within water-cooled, 22:14155
heating in graphite moderated tubular, calculation of fission-product gamma, 22:6135 (BNWL-625)
high heat conductivity, description of, 22:42451(P)
high-temperature high-pressure fast, description of, 22:42240(P)
homogeneity of plate-type, radiographic determination of, 22:23235 (IN-1131, pp 116-22)
hydraulic characteristics of Fast Test Reactor, analysis of, 22:25076 (BNWL-599)
hydraulic testing of inner process tube of modified PNPF, 22:12033 (NAA-SR-Memo-12536)
hydridation and oxidation in Zircaloy-2 and Zircaloy-4 cladding for, analysis of, 22:32895
hydrodynamic instability of, effects of high pressure water coolant flow on, 22:22812 (EUR-3881)
hydrodynamic measurements on simulated 36-rod Marviken, 22:48643 (FRIGG-2)
hydrodynamic stability of simulated Swedish Reactors (R-4), effects of configuration and void fraction on, 22:1760 (FRIGG-1)
hydroelastic instabilities in MTR-type flat-plate, analysis of static and dynamic, (E), 22:48743
identification of stainless steel-tagged pin-type, description of magnetic field for, 22:37579(P)
in-pile test loop for, analysis of transient caused by reactor shutdown in, 22:16295 (UJV-1937)
inspection and evaluation Incoloy-800-clad uranium oxide (UO_2) superheating clustered, for EVESR Mark-3 core, 22:3830 (GEAP-5481)
inspection of assemblies of BONUS, description of, 22:18422(R) (PRWRA-119)
inspection of damaged EFFBR, preliminary, 22:16183
inspection of EBR-2, postirradiation, 22:16265(R) (ANL-7403)

inspection of inside of, optical system for, 22:23385(P)
inspection of irradiated uranium dioxide, x-ray, 22:51194
inspection of irradiated, by neutron radiography, 22:4376
inspection of plate, use of ultrasonic imaging lamb-wave system for, 22:2318
inspection of plutonium, equipment and facilities for, 22:6512 (EUR-3619)
inspection of small superheater, postirradiation, 22:16263(R) (AEG-E-31-873)
inspection of swimming-pool reactor, description of watertight radiological transmitter and receiver for underwater, 22:25119(P)
instrumentation for Garigliano, description of, 22:48645 (GEAP-5623)
investigation of bambooed SPERT rod-type, 22:48648(R) (IDO-17271)
irradiation assembly for ceramic thermionic rod, in EBR-2, 22:25090 (LA-DC-9025)
irradiation conditions for testing of SEFOR ceramic, 22:16192
isotope content in Big Rock Point, ISOCHECK method for determining heavy, 22:16117 (CEND-292)
isotope content in BONUS, ISOCHECK method for determining heavy, 22:16118 (CEND-296)
isotope content in Peach Bottom Power Reactor, Unit 1, use of ISOCHECK method for determining heavy, 22:12011 (CEND-294)
isotopic analysis of Dresden Power Reactor Core V, ISOCHECK method for, 22:16121 (CEND-317)
isotopic analysis of fast reactor, comparison of methods for, 22:16120 (CEND-308)
isotopic analysis of Humbolt Bay Power Reactor Cores IIIA and IIIB, ISOCHECK method for, 22:16122 (CEND-318)
isotopic analysis of mixed oxide, preirradiation, 22:50804 (BNWL-841)
isotopic analysis of Nine Mile Point Power Reactor Core I, ISOCHECK method for, 22:16119 (CEND-299)
isotopic analysis of Piqua Power Reactor Core II, ISOCHECK method for, 22:16116 (CEND-291)
isotopic analysis of, CETIC computer program for use with ISOCHECK method for, 22:16310 (CEND-300)
isotopic composition analysis of irradiated mixed-oxide, 22:30343(R) (EURAEC-1992)
isotopic compositions of Modified Critical Facility, description of, 22:32969 (GA-8468)
jacket alloys for, radiation effects on, 22:30118 (ANL-7438)
jacket-alloys for, sodium corrosion of, 22:22653(R) (ANL-7419)
lattice measurements on uranium--plutonium assemblies in Aquilon II and Cesar, 22:22844
leak detectors for, description of, 22:5918 (CEA-Bib-78)
leak detectors for, electrostatic precipitation, 22:16958
leak testing of, description of method for, 22:42460(P)
lifetime behavior analysis of Shippingport Core I, use of TNT02 code for, 22:12036 (WAPD-TM-637)
lifetime of, effects of other reactor parameters on, 22:5993
liquid metal-cooled tube-and-shell heat exchanger pebble-bed fast breeder reactor, description of, 22:35490(P)
loading coated fuel particles into graphite, 22:11046 (ORNL-TM-2061)
loading of EDF-1 Reactor, 22:37452
loading of LACBWR, initial, 22:7786 (ACNP-67533)
loading techniques for moderated can-enclosed rod-type, description of, 22:42481(P)
location of failed, in multichannel irradiation facilities, (T), 22:33003
machining grooves in tubular, design of tool for, 22:19028(P)
management of Italian power, description of optimum cycles for, 22:22776
marking for differentiating between normal and test, 22:4759(P)
materials for SEFOR Core 1, specifications for, 22:18551 (DOCKET-50231-5)
materials for, measurements of internal damping of vibrations in, 22:6142
mechanical analysis of, mathematical models and methods available for, 22:25145
mechanical properties of ARBUS Power Reactor, effects of neutron irradiation and temperature on, 22:35478
mechanical properties of carbon-containing resin-bonded stick-type silicon carbide (SiC)-coated uranium oxide (UO_2) and thorium oxide (ThO_2), effects of carbonization and curing on, 22:42200(R) (ORNL-4200)
mechanical properties of cylindrical waterlogged, effects of transient power increase on, (E/T), 22:30170
mechanical properties of sodium-cooled fast reactor, effects on temperature on, 22:18511
mechanical properties of, effects of coolant flow velocity and temperature on, 22:30391
meltdown and dispersal of mixed-oxide, in sodium-cooled reactors, (E/T), 22:27397 (ANL-7375, pp 135-59)
meltdown during coolant-loss accidents, safeguards against, 22:5980
meltdown experiments for EBR-2 cluster-type, use of integral liquid sodium loop for, 22:5974
meltdown in EFFBR, preliminary evaluation of, 22:53369
meltdown in TREAT of, fast neutron hodoscope for determination of, 22:32735 (ANL-7310, pp 249-375)
meltdown in TREAT, summary of studies on, 22:53450
meltdown incidents of Engineering Test Reactor plates, 22:16276 (CONF-671011-, pp 370-6)
meltdown measurements on vibrationally compacted uranium oxide (UO_2) rods in TREAT, 22:24925(R) (ANL-7427)
meltdown of water-submerged Zircaloy-2-clad pelletized and vibra-packed uranium oxide (UO_2), analysis of, 22:53260 (ANL-7425, pp 130-71)
meltdown of Zircaloy-2 clad uranium oxide (UO_2), effects of water at 2200ºC on, 22:30388
meltdown of Zircaloy-clad, 22:4231(R) (IN-1087)
meltdown of Zircaloy-clad uranium oxide (UO_2)-core, in simulated water-coolant loss accidents, 22:27397 (ANL-7375, pp 135-59)
meltdown of Zircaloy-clad uranium oxide (UO_2)-core, in TREAT simulated excursion accidents, 22:27397 (ANL-7375, pp 135-59)
meltdown studies in TREAT, 22:12006(R) (ANL-7399)
melting failure of plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of power transients on, 22:50732(R) (GEAP-5631)
melting of ceramic fast, analysis of effects on reactivity of, 22:53382
melting of FTR, effects of fuel motion restrictor configuration on reactivity change from, (E/T), 22:50794 (BNWL-623)
melting of, fission product release during in-pile, 22:27490 (ORNL-4229, pp 149-55)
melting point of plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of burnup on, 22:33172
melting point of plutonium oxide (PuO_2)--uranium oxide (UO_2), nonstoichiometric effects on, 22:33171
metal alloys for, postirradiation density measurements on, 22:16265(R) (ANL-7403)
metallographic analyses of damaged Fermi Fast Breeder, 22:1751 (APDA-CFE-13)
metallographic analysis of failed CVTR, results of, 22:48658(R) (WCAP-3850-3)
metallurgy of Zircaloy clad uranium oxide (UO_2), effects of burnup on, 22:22810 (DP-995)
mockups of Rover, criticality parameter determination in, 22:33058
modifications of, reactivity effects on PEGASE resulting from, 22:6089 (CEA-R-3213)
monitoring of leached, 14-MeV neutron generator for, 22:14433 (ORNL-4196, pp 66-89)
multiplication factor of BWR-type, determination of infinite, (E/T), 22:44839 (UNC-5195)
neptunium-237 production in tubular uranium, Monte Carlo calculations of resonance interference during, 22:33149
neutron absorbers in locking mechanisms for, description of, 22:42434(P)
neutron absorption in boron-10-poisoned, use of Monte Carlo codes for calculating, 22:39902 (KAPL-P-3432)
neutron buckling measurements in lattices of, precision of radial, 22:30343(R) (EURAEC-1992)
neutron capture rate measurements in Agesta, epithermal-to-thermal, 22:3807 (AE-299)
neutron fission and absorption rates in WWR-SM, measurement of, 22:48732 (INR-919)
neutron fission energy profiles for UHTREX, 22:53416(R) (LA-4009)
neutron fission rates in UHTREX, measurement of absolute, 22:53416(R) (LA-4009)
neutron flux distribution in Garigliano Power Reactor, thermal, 22:22713(R) (TID-24304)
neutron flux distribution in plutonium oxide (PuO_2)--uranium oxide (UO_2) rod type, use of transport theory for calculation of, (T), 22:44941
neutron flux distribution in pressurized-water reactor type 304 stainless steel-clad uranium oxide (UO_2) pellet-type, effects of temperature on, 22:30167(R) (WCAP-3708)
neutron flux peaking in, methods for calculating, 22:50850
neutron flux perturbation in single uranium and uranium--plutonium, method for calculation of, 22:1874
neutron flux profile calculations in UHTREX, one- and two-dimensional thermal, 22:24969 (LA-DC-9426)
neutron fluxes in plate-type, graphical method for determining, 22:30345 (KAPL-M-6914)
neutron multiplication factors for Phoenix, comparison of experimental and calculated values for, 22:14251(R) (BNWL-534)
neutron parameter determination in heterogenous lattices, (E/T), 22:32976(R) (MIT-2344-12)
neutron reaction rate measurements in plutonium, 22:33079
neutron resonance absorption in, use of integral transport theory for, 22:33012
neutron resonance escape probability in uranium and uranium oxide, Monte Carlo calculation of, 22:32989
neutron space and energy distribution in cylindrical heterogeneous, thermal, 22:3934 (UJV-1836)
neutron spectra across Triga, in cadmium-bearing heavy water, (E), 22:39541(R) (GA-8626)
neutron spectra indices for ORGEL-type uranium carbide (UC), epithermal and thermal, 22:16145 (EUR-3736)

neutron spectra measurements in cylindrical graphite- and water-moderated plutonium, Cadilhac method for thermal, (E/T), 22:27482 (EUR-3350)
neutron spectra with upscattering in, comparison of measurement and calculation of, 22:30320
neutron temperature measurements in, method for integral, (E/T), 22:32976(R) (MIT-2344-12)
nondestructive testing of EBR-2 irradiated, 22:12006(R) (ANL-7399)
operating history of SPERT oxide-type, 22:48648(R) (IDO-17271)
orifices for Hallam Power Reactor, design and testing of, 22:32779 (NAA-SR-Memo-11658)
oxidation of high temperature gas cooled, results of in-pile, 22:27416(R) (ORNL-4228)
performance at 1175°C of clad uranium--zirconium hydride, 22:31474
performance at 67 MW(t) operation of Fermi Fast Breeder Reactor, 22:18521
performance evaluation of low-burnup mixed oxide plutonium, 22:7802(R) (EURAEC-1923)
performance in Saxton Power Reactor of plutonium, evaluation of experimental and theoretical, 22:50743(R) (WCAP-3385-16)
performance of 1000 MW(e) LMFBR ceramic, calculations for optimum, 22:18517
performance of aluminum-clad uranium dioxide in Halden Boiling Reactor, 22:16356 (KR-116)
performance of AVR Reactor spherical, analysis of, 22:32819
performance of clad uranium dioxide, 22:16356 (KR-116)
performance of DFR, analysis of, 22:18522
performance of EBR-2 driver, 22:16181
performance of fast gas-cooled, effects of surface roughening on, 22:5939
performance of Fermi Fast Breeder Reactor, post-irradiation analysis for, 22:32813
performance of Halden Boiling Reactor, review from 1954 of, 22:30265
performance of HTGR, in accidents with steam entering core, 22:27490 (ORNL-4229, pp 149-55)
performance of plutonium dioxide--uranium dioxide, at 50,000 MWd/t burnup, 22:4913
performance of plutonium dioxide--uranium dioxide, in EBWR, 22:6025
performance of pressurized-water reactor type 304 stainless steel-clad uranium oxide (UO_2), effects of nucleate boiling on, 22:30168(R) (WCAP-3710)
performance of sodium-bonded plutonium carbide--uranium carbide, effects of transient conditions on, (E), 22:8807(R) (WCAP-3791-10)
performance of SPR II, review of early, 22:27469 (SC-DR-67-801)
performance of stainless steel and vanadium alloy clad uranium, uranium--zirconium, molybdenum--uranium, and plutonium--uranium--zirconium, analysis for FTR optimum, 22:27458 (BNWL-514)
performance of stainless steel clad uranium carbide (UC) and plutonium carbide (PuC)--uranium carbide (UC), analysis for FTR optimum, 22:27457 (BNWL-513)
performance of stainless steel-clad plutonium dioxide--uranium dioxide, 22:11090 (NUMEC-3432-24)
performance of thorium oxide (ThO_2)--uranium oxide (UO_2), analysis of void migration and cracking, (E/T), 22:47047 (WAPD-TM-794)
performance of Zircaloy-2-clad thorium--uranium--zirconium alloy, in water-cooled reactors, 22:2662 (BNWL-479)
performance of Zircaloy-2-clad uranium dioxide, at high burnup, 22:17186 (GEAP-5100-M)
performance of Zircaloy-2-clad uranium oxide (UO_2), under central fuel melting conditions, 22:50736(R) (GEAP-5661)
performance of zirconium-clad uranium oxide (UO_2) Canadian water-cooled power, 22:42155 (AECL-3068)
performance predictions for mixed oxide, 22:50804 (BNWL-841)
performance specifications for FFTF, preliminary, 22:27461 (BNWL-SA-1066)
performance testing of Prototype Fast Reactor, 22:18512
performance testing of SPERT F-type, 22:48648(R) (IDO-17271)
physical properties of LPR high-temperature tank facility uranium oxide (UO_2), description of, 22:37528(R) (BAW-3647-8)
physical properties of oxide fast, radiation effects on, 22:32735 (ANL-7310, pp 249-375)
physics characteristics of thorium-containing, in PRTR, (T), 22:20905 (BNWL-624, pp 5.1-16)
physics characteristics of water-moderated seed-blanket reactors using uranium-233--thorium rod-type, 22:6116
physics measurements for mixed-fuel-target, computer programs for, 22:33128
physics measurements for PCTR light water-moderated plutonium oxide (PuO_2)--uranium oxide (UO_2), description of, 22:32743(R) (BNWL-739)
physics measurements for uniform cluster arrays of uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:18471
physics measurements for, one-group calculations for multi-group effects on, (T), 22:27505
physics measurements in Ozenji superheating, 22:10067
physics measurements of rod clusters, computer program for, 22:16144(R) (DPST-68-83-1)
physics measurements on single, pulsed neutron method for, (E/T), 22:32976(R) (MIT-2344-12)
physics parameter measurements in uranium oxide (UO_2), comparison of metal and oxide foils for, (E), 22:32976(R) (MIT-2344-12)
physics parameters of enriched uranium--thorium oxide (ThO_2) and --thorium metal HWOCR assemblies of, (E/T), 22:20807 (DP-1125)
plate fuel and support members for, fabrication using electron beam welding, 22:8290(P)
plutonium distribution in, resolution of alpha autoradiography with platinum film insert for determining, 22:44942
plutonium formation in, effects on reactivity of heterogeneous thermal reactors of, (T), 22:50848
pore migration in ceramic, in thermal gradients, 22:38631
positioning device for, design of, 22:1905(P)
positioning device for, design of electrical, 22:10094(P)
power density in boiling water, use of twisted-tape configuration for increase of, 22:25001
power density increase in boiling water, use of twisted tapes for, 22:12045
power distribution in BWR-type, measurement of local, (E/T), 22:44839 (UNC-5195)
power distribution in cylindrical uranium oxide (UO_2), method of fission product analysis for, (E), 22:37621
power distributions in cluster, Monte Carlo method for calculation of axial, 22:22872
power distributions in Phoenix, measurement in PRCF of, 22:14251(R) (BNWL-534)
power distributions in TRIGA Mark II, during excursions, (E), 22:30339
power history of Yankee Power Reactor, description of, 22:24978 (WCAP-6087)
power measurements in core and FERTF channels in PRTR, relative, 22:12085 (BNWL-472, pp 3.1-33)
power optimum in 1000 MW(e) steam-cooled fast reactor, systems analysis for, 22:5924 (EURFNR-405)
preparation and testing molybdenum--uranium dioxide thermionic, 22:23730 (DLR-MITT-66-07, pp 69-72)
preparation and transport in U.K.A.E.A, 22:47046 (TRG-Report-1694)
preparation of ceramic, for use in gas-cooled reactor, 22:12509(P)
preparation of dispersion-strengthened uranium base, 22:11032
preparation of graphite-clad, method for, 22:18614(P)
preparation of impermeable uranium--carbon dispersion, 22:23884(P)
preparation of pelleted plutonium--uranium oxide, clad with Hastelloy x or stainless steel, 22:725 (BMI-1809, Sect.E)
preparation of stainless steel-clad uranium oxide (UO_2), Windscale AGR, 22:50750
preparation of tungsten-doped uranium carbide, for irradiation swelling tests, 22:45755 (NAA-SR-12629)
preparation of zirconium-clad uranium--zirconium, by low temperature rolling or extruding, 22:23746(P)
pressure buildup in, analytical expression for determining internal, 22:33095 (KFK-700(Pt. V))
pressure buildup in, analytical expression for determining internal, 22:53273(T) (EURFNR-472)
pressure buildup of, design and performance of miniaturized ADIT pressure gage for measuring, 22:30906
pressure losses from gas-cooled graphite moderated power, analysis of, 22:1767 (JUL-486-RB)
pressure measurements on PRTR, 22:19669 (BNWL-624, pp 2.1-32)
pressure tube assembly for, description of graphite moderated coolant channel, 22:18642(P)
pressure tubes for CVTR Core I, analysis of radiation effects on Zircaloy-4, 22:35428 (CVNA-289)
processing irradiated aluminum-clad, pilot plant performance using fluoride volatility, 22:40292 (ORNL-4251)
processing of irradiated, design and operation of Eurex plant for, 22:27962
processing of irradiated, separation of neptunium in, 22:16649(T) (ORNL-tr-1847)
processing of LMFBR, design and cost estimate of facility for, 22:27954 (ORNL-TM-2050)
processing of zirconium alloy, corrosion of Monel 400 and stainless steel by acids in, 22:19475 (IN-1134)
processing of, disposal of krypton-85 from off-gas stream in, 22:2335
processing of, technical progress review on, 22:1816
processing of, use of in-line alpha counters for determining plutonium in solutions from, 22:7 (CONF-671012-2)
processing plants for, optimum sizes and siting of, 22:10429 (CEA-R-3364)
processing spent EBR-II, equipment for, 22:4414
processing spent Rapsodie, equipment for mechanical treatment phase of, 22:4416
processing spent Zircaloy-2 clad, safety of, 22:283 (ORNL-4061)

production by precision extrusion of uranium, feasibility of and techniques for, 22:12987(R) (RMI-9)
production for Fast Test Reactor, vendor selection for, 22:727 (BNWL-SA-1388, pp 14.1-10)
production from mixed enriched uranium and plutonium powders, by vibratory compaction, 22:10075(R) (EURAEC-1929)
production method for ceramic, 22:19619(P)
production of graphite-thorium carbide, for thermal breeder reactor, 22:6975(P)
production of Grosswelzheim superheating, 22:14165
production of high-density graphite--thorium carbide, 22:36448(P)
production of laminated, oxide, and uranium--graphite, in France, 22:2589(T) (WAPD-Trans-75)
production of matrix-type, for fission product retention, 22:28771(P)
production of sheathed, by hydrostatic pressure, 22:23881(P)
production of sintered uranium dioxide, incorporating borides, 22:36532(P)
profilometer tests on failed CVTR, results of, 22:48658(R) (WCAP-3850-3)
properties of boiling and pressurized-water reactor, evaluation of mechanical and physical, 22:35461 (GEMP-482)
properties of irradiated plutonium, equipment for study of, 22:4377
radial-flow liquid metal-cooled fast breeder reactor, description of conical annular, 22:35488(P)
radiation damage in fast gas-cooled reactors, 22:26093 (ORNL-4229, pp 125-41)
radiation dose rates from reprocessed breeder, 22:10322 (KFK-603)
radiation dose rates from spent, computer program for calculating, 22:40356
radiation effects at 17000 MWd/t on pin-type, in bismuth--lead filled Zircaloy-2 capsules, 22:28861
radiation effects at 6500 MWd/t on hollow uranium, neutron, 22:17153
radiation effects at high temperatures on uranium dioxide, 22:41130 (CONF-670967-1)
radiation effects on, 22:734
radiation effects on advanced ceramic, 22:30118 (ANL-7438)
radiation effects on AEC fuel cycle assembly SA-1 at burnup of 27,200 MWd/t, neutronic and radiochemical data on, 22:49712(R) (GEAP-5624)
radiation effects on assemblies of Zircaloy 2-clad uranium oxide (UO_2) rod-type, in HBWR of IFA-10, 22:46898 (HPR-101)
radiation effects on assemblies of Zircaloy 4-clad uranium oxide (UO_2) and SAP-clad uranium carbide (UC), in NRU Reactor, 22:47003 (AI-CE-75)
radiation effects on axially restrained pelleted, analysis of, 22:6144
radiation effects on carbide, summary of, 22:12006(R) (ANL-7399)
radiation effects on carbide, x-ray analysis of, 22:17188
radiation effects on central melting in Zircaloy-2 clad uranium oxide (UO_2), neutron, 22:16281 (GEAP-5100-K)
radiation effects on clad ceramic, in-pile, 22:49817(R) (EURAEC-2036)
radiation effects on clad plutonium carbide--uranium carbide, at 19,000 to 32,000 MWd/t, 22:4911
radiation effects on clad plutonium carbide--uranium carbide, in-pile, 22:4912
radiation effects on clad plutonium carbide--uranium carbide, fast and thermal neutron, 22:36509 (CONF-671005-7)
radiation effects on clad uranium dioxide, at 27,000 MWd/t, 22:41131(R) (GEAP-5598)
radiation effects on clad uranium dioxide, at 7000 MWd/tU, 22:49857 (GEAP-5626)
radiation effects on clad uranium dioxide, in-pile, 22:52127(R) (RISO-179)
radiation effects on clad-metal fuel, 22:7788(R) (ANL-7382)
radiation effects on cladding for, neutron, 22:52126 (BNL-50127)
radiation effects on cladding materials for, in-pile, 22:711 (BMI-1809, Sect.B)
radiation effects on CVTR, post-irradiation examination of in-pile, (E), 22:11007(R) (WCAP-3850-1)
radiation effects on EBR-2 pin-type, TREAT testing of, 22:32735 (ANL-7310, pp 249-375)
radiation effects on EBR-2 plutonium carbide (PuC)--uranium carbide (UC), analysis of neutron, 22:50841(R) (LA-3993)
radiation effects on EBR-II encapsulated Mark-II, 22:30118 (ANL-7438)
radiation effects on fast breeder, examination techniques for determination of, 22:53273(T) (EURFNR-472)
radiation effects on fast breeder, examination techniques for determination of, 22:32778 (KFK-700(Pt. XII))
radiation effects on fast oxide, metallographic analyses of, 22:32735 (ANL-7310, pp 249-375)
radiation effects on FTR driver, measurement of fast and thermal neutron, 22:30299 (BNWL-SA-1750)
radiation effects on GAIL-IV, in-pile, 22:8846 (GA-7997)
radiation effects on LMFBR oxide, 22:30118 (ANL-7438)
radiation effects on low-density plutonium dioxide--uranium dioxide, at 1200 MWd/t, 22:41125 (BNWL-SA-1679)

radiation effects on mechanical properties of CaO--UO_2--ZrO_2, analysis of neutron, 22:32789(R) (WAPD-MRP-124)
radiation effects on mechanical properties of PBF type 304 stainless steel-clad calcium oxide (CaO_2)--uranium oxide (UO_2)--zirconium oxide (ZrO_2), measurement of neutron, (E/T), 22:35596(R) (IDO-17260)
radiation effects on mixed oxide (PuO_2--UO_2) vented pin type, analysis of in-pile, 22:6141
radiation effects on niobium--uranium dioxide, in-pile, 22:4831
radiation effects on nonfuel components of, 22:773
radiation effects on partial-burnup fast oxide, metallographic analyses of, 22:32735 (ANL-7310, pp 249-375)
radiation effects on physical properties of metal-clad helium-bonded plutonium carbide (PuC)--uranium carbide (UC) pellet-type, analysis of fast neutron, 22:39789 (UNC-5198)
radiation effects on physical properties of metal-clad plutonium carbide (PuC)--uranium carbide (UC) pellet-type, analysis of fast neutron, 22:39790(R) (UNC-5201)
radiation effects on physical properties of Saxton Power Reactor Type 304 stainless steel-clad 97- and 78-percent density uranium oxide (UO_2), analysis of neutron, 22:39793 (WCAP-3269-64)
radiation effects on pin-type, safety analysis of effects of flowing sodium and, 22:32735 (ANL-7310, pp 249-375)
radiation effects on plutonium, 22:6124
radiation effects on plutonium dioxide--uranium dioxide, in-pile, 22:8845 (EURFNR-423)
radiation effects on plutonium oxide (PuO_2)--uranium oxide (UO_2), postirradiation examination of, 22:53454 (BNWL-828)
radiation effects on SAP-clad at high burnup, 22:49859
radiation effects on Shippingport Core 2 Seed 2 plate-type, 22:14147(R) (WAPD-MRP-122)
radiation effects on sintered pellet-type, in-pile, 22:771
radiation effects on sodium-bonded carbide, at high burnups, in-pile, 22:45806(R) (WARD-3791-21)
radiation effects on SPERT IV stainless steel-clad uranium oxide (UO_2) pellet-type, measurement of transient neutron, 22:33066
radiation effects on stainless steel cladding for, fast neutron, 22:19589
radiation effects on stainless steel--uranium dioxide, relations of uranium dioxide density with in-pile, 22:4830
radiation effects on Swedish instrumented, 22:12003 (AE-306)
radiation effects on thermal conductivity of, in-pile, 22:42994 (ANL-7299, pp 173-97)
radiation effects on uranium carbide SAP-clad, 22:3813(R) (AI-CE-54)
radiation effects on uranium--plutonium--zirconium, postirradiation analysis of, 22:12006(R) (ANL-7399)
radiation effects on Zircaloy clad uranium oxide (UO_2), examination of, 22:27416(R) (ORNL-4228)
radiation effects on Zircaloy cladding of, neutron, 22:4823
radiation effects on Zircaloy-2-clad EPW-6/8A, 22:4868 (GEAP-5100-G)
radiation effects on Zircaloy-2-clad hollow-core uranium, at 260°C, neutron, 22:33001
radiation effects on Zircaloy-2-clad uranium oxide (UO_2), transient, 22:32984
radiation effects on Zircaloy-2-clad vibrationally packed uranium dioxide, in-pile, 22:41124 (BNWL-SA-1674)
radiation effects on Zircaloy-2-clad, in-pile, 22:4824
radiation effects on Zircaloy-4 clad uranium dioxide, in-pile, 22:49858 (WAPD-TM-631)
radiation effects on Zircaloy-4-clad low-density uranium dioxide rod, evaluation of neutron, 22:41133 (WAPD-TM-596)
radiation effects on Zircaloy-clad uranium dioxide, at 27,200 MWd/t, 22:49712(R) (GEAP-5624)
radiation effects on, design of hot cells for determination of, 22:51150
radiation effects on, equipment and methods for determination of, 22:51147
radiation effects on, equipment and methods for determination of, 22:52216
radiation effects on, methods for mechanical analysis of, 22:25145
radiation effects on, produced by vibratory compacting and swaging, 22:28893
radiation effects on, roles of uranium dioxide--can distances and filling gas in, 22:31528
radiation effects testing of high temperature gas cooled, 22:46911(R) (ORNL-4266)
radiation effects testing of plutonium dioxide--uranium dioxide--zirconium dioxide, 22:45816(R) (NUMEC-3505-27)
radiation effects testing of Shippingport PWR, 22:46924(R) (WAPD-MRP-125)
radiation effects testing of, techniques for, 22:6164
radiation monitoring of melted stainless steel-clad uranium oxide (UO_2), effects of humidity on aerial,

22:14294 (ORNL-4198)
radiation stability of Russian SM-2, (E), 22:37544
radiation testing in EL-4 of EXOR, high temperature, 22:37462
radiation testing in FR-2, design and operation of helium loops for, 22:42374
radiation testing in PRTR during March through May 1968, 22:53454 (BNWL-828)
radiation testing of aluminum-clad uranium oxide (UO_2), in HBWR, 22:44824 (HPR-100)
radiation testing of Big Rock Point Power Reactor Zircaloy-2-clad uranium oxide (UO_2) centermelt, 22:35460(R) (GEAP-5605)
radiation testing of gas-cooled, design and operation of natural circulation in-pile loops for, 22:42373
radiation testing of Incoloy-800 clad uranium oxide (UO_2) pellet-fueled, in supercritical water loop, 22:46926 (WARD-3843-1)
radiation testing of Marviken superheater, in steam loop of R2 reactor, 22:14243 (AE-308)
radiation testing of mixed-carbide, 22:53463(R) (UNC-5217)
radiation testing of mixed-oxide, local maximum power measurements in, 22:30343(R) (EURAEC-1992)
radiation testing of plutonium, 22:6037
radiation testing of plutonium oxide (PuO_2)--uranium oxide (UO_2), in EBR-2, 22:42358 (BNWL-650)
radiation testing of plutonium, in BR-2, 22:10075(R) (EURAEC-1929)
radiation testing of SEFOR, under steady-state and transient conditions, 22:22695 (GEAP-5309)
radiation testing of water-cooled, design of in-pile loops for, 22:42372
radiation testing of wire-wrapped, for Canadian power reactors, 22:35418 (AECL-3089)
radiation testing of Zircaloy-2-clad uranium oxide (UO_2) pellet-type, analysis of, 22:32988
radiation testing of Zircaloy-clad cored uranium silicide (U_3Si), rate of swelling during, 22:18603
radiation testing of, compilation of use of Halden Reactor for, 22:22700 (HPR-81)
radiation testing of, criteria for, 22:32777 (KFK-700(Pt. XI))
radiation testing of, criteria for, 22:53273(T) (EURFNR-472)
radiation testing of, design and fabrication of capsules for, 22:42490
radioactive material containment from damaged, method for, 22:43020(P)
radioactivity in void spaces in, empirical diffusion method for calculation of volatile, 22:25333 (ORNL-4229, pp 162-79)
radioactivity levels from unirradiated FTR driver, (T), 22:27460 (BNWL-634, pp 4.1-55)
radioinduced property changes of EBR-II driver, data on in-pile, 22:43629(R) (LA-3933)
radioinduced swelling during one reactor period, 22:4827
radioinduced swelling in solid rod-type, during a reactor period, 22:28846
radioinduced swelling in, effects of bubbles on, 22:49777
radioinduced swelling of dispersion type, effects on void volume, 22:31527
radioinduced swelling of EBR II Mark I driver, 22:43627 (ANL-7299, pp 14-113)
radioinduced swelling of metallic uranium, in-pile, 22:8754
radioinduced swelling of Zircaloy canned uranium dioxide, effects of initial diametral clearance on in-pile, (E), 22:26092 (CEA-R-3358)
radioisotope buildup in plutonium, effects of long exposure on, 22:6014
radioisotope production in spent power, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
rare earth fission products in spent, use of x-ray spectrometer for determination of, 22:30118 (ANL-7438)
reactivity defect calculations for EBR-2 subassemblies of, 22:12006(R) (ANL-7399)
reactivity parameters of ceramic fast breeder, 22:1775 (RT/FI-(67)23)
reactivity worth measurements on irradiated and unirradiated mixed-oxide, 22:53454 (BNWL-828)
reactivity worth of PRTR, measurement of, 22:14251(R) (BNWL-534)
release of fission products from metal-clad uranium oxide (UO_2), during burnout, 22:20909(R) (ORNL-TM-2095)
remote-handling equipment for spent, description of water-submerged transfer container, 22:50859(P)
removal of spent, system for protection of fuel channel tubes from thermal shock during, 22:6184(P)
reprocessing and fabrication methods for fast oxide, discussion of, 22:3939
reprocessing at Marcoule, plutonium concentration and purification in, 22:35891
reprocessing at Marcoule, waste vitrification in, 22:37831 (CEA-N-856, pp 434-44)
reprocessing at West Valley Plant, application for licensing amendment for neptunium recovery in, 22:33481 (DOCKET-50201-5)
reprocessing at West Valley Plant, neptunium recovery in, 22:33483 (DOCKET-50201-7)
reprocessing by fluidized-bed fluoride volatility process, 22:30664
reprocessing by fluidized-bed fluoride-volatility techniques, 22:33527
reprocessing by fluoride volatility techniques, criticality calculations for, 22:45143 (K-1734)
reprocessing by fluoride-volatility techniques, problem of radioactively generated heat in, 22:4232 (K-L-1979)
reprocessing by Purex process, fast extractors for use in, 22:16643 (KFK-652)
reprocessing by Purex process, suppression of radioiodine release in, 22:30667
reprocessing by shear-leach methods, uranium-235 determination in sheared cladding from, 22:12225 (ORNL-4135)
reprocessing fast-breeder, mechanical head-end procedure in, 22:27867 (ORNL-4204, pp 52-9)
reprocessing for recovery of neptunium, installation and economics for, 22:10342
reprocessing in Argentina of, economic analysis of, 22:3931 (NP-16987)
reprocessing in Japan, 22:4243
reprocessing in Spain, development of, 22:33536
reprocessing of aluminum--uranium, effects of silicon content on, 22:48907
reprocessing of aluminum--uranium, vitrification of wastes from, 22:37826(T) (ANL-Trans-628, pp 51-128)
reprocessing of breeder, nitric acid dissolution for use of Purex process in, 22:42810(T) (EURFNR-471)
reprocessing of breeder, nitric acid dissolution for use of Purex Process in, 22:25460 (KFK-673)
reprocessing of ceramic fast-breeder, flowsheet for continuous salt transport process for, 22:35880 (ANL-7450, pp 7-20)
reprocessing of ceramic, by fluoride volatility process, 22:30647 (EURAEC-1694)
reprocessing of ceramic, by volatilization, 22:25470(T) (ANL-Trans-590)
reprocessing of ceramic, use of high-pressure hydraulic jet in, 22:27865 (ORNL-4204, pp 46-51)
reprocessing of ceramic, use of mechanical separations and solid-state reactions in, 22:45140 (BMwF-FBK-68-08)
reprocessing of clad uranium dioxide, chopper and dissolver for, 22:51048(T) (ORNL-tr-1974)
reprocessing of coated-particle, economics of, 22:42812 (GAMD-8458)
reprocessing of EBR-2, skull-oxidation equipment for, 22:12397 (ANL-7338)
reprocessing of enriched uranium, criticality in, 22:6377
reprocessing of enriched, criticality analysis of moderated unit containing solutions of uranium-235 in, 22:6378
reprocessing of enriched-uranium, 22:37830 (CEA-N-856, pp 71-7)
reprocessing of enriched-uranium, by ion-exchange and fluoride volatility processes, 22:16695(P)
reprocessing of Fast Breeder Reactor, calculations for volatility in, 22:42813(R) (K-L-1780(Pt.26))
reprocessing of fast breeder, commercial TBP process for, 22:23108
reprocessing of fast breeder, salt-transport process for, 22:23107
reprocessing of fast, radiation damage to chlorine fluorides in fluoride volatility, 22:42725 (EURAEC-2024)
reprocessing of fast-breeder, by solvent extraction using TBP, 22:27857 (KFK-680)
reprocessing of fast-breeder, by solvent extraction using TBP, 22:51046(T) (EURFNR-499)
reprocessing of graphite-base, separation of thorium and uranium in, 22:33529
reprocessing of graphite-matrix, 22:35888
reprocessing of graphite-matrix, 22:33529
reprocessing of graphite-matrix Rover, pilot plant for headend, 22:33486 (IN-1181)
reprocessing of graphite-matrix, use of cesium metal in, 22:33514
reprocessing of high-burnup oxide, extraction procedure used in Japanese plant for, 22:35892
reprocessing of high-plutonium, development of fast separators for use in Purex process for, 22:30646(T) (EURFNR-460)
reprocessing of high-plutonium-content, criticality and toxicity problems in aqueous, 22:48897 (KFK-709)
reprocessing of highly enriched uranium, 22:45146 (NP-17588)
reprocessing of highly irradiated enriched uranium oxide, 22:37823(T) (ANL-Trans-619)
reprocessing of HTGCR, effects of beryllium oxide moderator on economics of, 22:20774 (AAEC/E-179)
reprocessing of HTGR, economics of, 22:42812 (GAMD-8458)
reprocessing of irradiated, pyrochemical techniques for, 22:151
reprocessing of irradiated, radiation protection of personnel in, 22:10321 (EURAEC-1938)
reprocessing of irradiated, research on volatility process for, 22:27852(R) (EURAEC-2011)
reprocessing of irradiated, solvent extraction and fluoride volatility method for, 22:14577(P)
reprocessing of low-enrichment, 22:37837(R) (K-1744)

reprocessing of low-enrichment, 22:23099(R) (K-L-1780(Pt.23)
reprocessing of magnesium-clad uranium, economics of aqueous, 22:40161 (KR-126, pp 9-20)
reprocessing of Marcoule, pilot plant for, 22:6420
reprocessing of molybdenum--uranium, Purex process for, 22:27889
reprocessing of molybdenum--uranium, vitrification of wastes from, 22:37826(T) (ANL-Trans-628, pp 51-128)
reprocessing of Na 1 breeder, 22:10322 (KFK-603)
reprocessing of oxide, fluidized-bed fluoride volatility techniques for, 22:35881 (ANL-7450, pp 21-38)
reprocessing of oxide, salt-transport process for, 22:33528
reprocessing of plutonium oxide (PuO$_2$)--uranium oxide (UO$_2$), fluoride volatility process for, 22:16265(R) (ANL-7403)
reprocessing of pyrolytic-carbon-coated sol-gel oxide, evaluation of grind-leach, 22:18866 (ORNL-4213)
reprocessing of SAP-clad carbide or oxide, nitric acid dissolution in, 22:23108
reprocessing of Shippingport, by Redox Process, 22:2172 (ISO-SA-46)
reprocessing of short-cooled, economics of, 22:27867 (ORNL-4204, pp 52-9)
reprocessing of slightly alloyed uranium, vitrification of waste from, 22:37826(T) (ANL-Trans-628, pp 51-128)
reprocessing of solid cylindrical pellets, 22:23099(R) (K-L-1780(Pt.23)
reprocessing of stainless steel- or Zircaloy-clad uranium oxide, economics of aqueous, 22:40161 (KR-126, pp 9-20)
reprocessing of stainless steel-clad oxide, TBP process for, 22:23108
reprocessing of uranium dioxide, Aquafluor process for, 22:23106
reprocessing of uranium dioxide, development of fluidized-bed fluoride volatility process for, 22:12400 (K-L-6142)
reprocessing of uranium dioxide, hazards evaluation of fluidized-bed fluoride-volatility pilot plant for, 22:33487 (ORNL-TM-2092)
reprocessing of uranium oxide, dissolution in molten alkali metal compounds in, 22:23125(P)
reprocessing of Zircaloy-clad plutonium dioxide--uranium dioxide, fluidized-bed fluorination in, 22:21172
reprocessing of Zircaloy-clad uranium dioxide, Nitrofluor process for, 22:23106
reprocessing of zirconium alloy, storage and treatment of wastes from, 22:33526
reprocessing of zirconium-clad, 22:23121(P)
reprocessing of zirconium-containing, corrosion in, 22:4231(R) (IN-1087)
reprocessing of, activities at Eurochemic plant, 1964-1966, for, 22:45146 (NP-17588)
reprocessing of, analysis of pilot plant for, 22:6429
reprocessing of, analysis of process streams in, 22:16356 (KR-116)
reprocessing of, analytical methods for control of, 22:45146 (NP-17588)
reprocessing of, aqueous methods for, 22:6382
reprocessing of, Citriflex process for Zircaloy decanning in, 22:45146 (NP-17588)
reprocessing of, commissioning and operation of Eurochemic plant for, 22:45146 (NP-17588)
reprocessing of, compact pyrochemical methods for, 22:6383
reprocessing of, compact pyrochemical methods for, 22:8187
reprocessing of, compact pyrochemical processes for, 22:23107
reprocessing of, compact pyrochemical processes for, 22:51044 (ANL-7425, pp 19-41)
reprocessing of, compact pyrochemical processes for, 22:33528
reprocessing of, compact pyrochemical processes for, 22:35880 (ANL-7450, pp 7-20)
reprocessing of, conference on design of pilot plant for, Turin, September 23 and 24, 1965, 22:6419
reprocessing of, criticality calculations for, 22:27856(R) (K-1738)
reprocessing of, criticality of dissolvers for, 22:4231(R) (IN-1087)
reprocessing of, description of Norwegian techniques for, 22:16356 (KR-116)
reprocessing of, design and operation of Karlsruhe plant for, 22:25473
reprocessing of, design criteria for Eurochemic plant at Mol for, 22:6424
reprocessing of, design of argon cell for, 22:27879
reprocessing of, design of mechanical handling and chop-leach equipment for use in, 22:40163 (KR-126, pp 31-53)
reprocessing of, development of aqueous methods for, 22:8185
reprocessing of, development of aqueous methods for, 22:23108
reprocessing of, development of aqueous methods for, 22:37824(T) (ANL-Trans-626, pp 1-35)
reprocessing of, development of fluoride volatility process for, 22:12399 (K-L-1780(Pt.22))
reprocessing of, development of grind-leach methods for, 22:16647 (ORNL-4075, pp 24-37)
reprocessing of, development of methods for, 22:27863(R) (ORNL-4204)
reprocessing of, development of nonaqueous methods for, 22:37825(T) (ANL-Trans-626, pp 36-58)
reprocessing of, dose rates to solvent in first Purex extraction cycle for, 22:16650(T) (ORNL-tr-1902)
reprocessing of, economic study of low-throughput facility for, 22:23085 (AAEC/E-187)
reprocessing of, efficiency of dry methods of, 22:48898(T) (KFK-tr-249)
reprocessing of, electrolytic dissolution of fuel from can in, 22:8192
reprocessing of, electrolytic methods for, 22:33528
reprocessing of, electronic control of plutonium extraction battery in, 22:8167 (CEA-R-3224)
reprocessing of, engineering and safety analyses of Nuclear Fuel Services, Inc., plant for, 22:18863 (DOCKET-50201-3)
reprocessing of, engineering studies of fluidized-bed volatility process for, 22:8181
reprocessing of, equipment and plant design for aqueous, 22:6382
reprocessing of, equipment fabrication from special alloys in, 22:6426
reprocessing of, Eurex pilot plant for, 22:6430
reprocessing of, Eurochemic process for, 22:30649 (NP-17368)
reprocessing of, explosive perturbations in ventilation system of Eurex plant for, 22:45149 (RT/PROT-(68)8)
reprocessing of, extraction-evaporation pilot plant for Eurochemic, 22:45146 (NP-17588)
reprocessing of, facilities in Spain for, 22:45150
reprocessing of, fate of niobium and zirconium in TBP process for, 22:16679
reprocessing of, final inactive tests of Eurochemic plant for, 22:8171 (NP-17174)
reprocessing of, fissile material flow control at strategic points in plant for, 22:51047 (KFK-801)
reprocessing of, fluidization and volatility techniques in, 22:51045 (ANL-7425, pp 42-93)
reprocessing of, fluidized-bed fluoride volatility process for, 22:8169(R) (EURAEC-1934)
reprocessing of, fluoride volatility program for, 22:27858(R) (K-L-1780(Pt.24))
reprocessing of, fluoride-volatility methods for, 22:150
reprocessing of, fluoride-volatility techniques for, 22:8186
reprocessing of, from breeder reactors at Fontenay aux Roses and the Hague, 22:10343
reprocessing of, from thorium reactors, 22:48909
reprocessing of, General Electric's Midwest Fuel-Recovery Plant for, 22:33526
reprocessing of, head-end processes for Eurochemic, 22:45146 (NP-17588)
reprocessing of, heat load from fission products on fluidized bed in, 22:2173(R) (K-L-1780(Pt.21))
reprocessing of, high-temperature techniques for, 22:8175(T) (ANL-Trans-544)
reprocessing of, Japanese plant for, 22:35889
reprocessing of, Japanese regulations on, 22:8188
reprocessing of, mechanical dismantling and cutting in, 22:48910
reprocessing of, modifications of 250-ton prototype shear for, 22:14564 (ORNL-4139, pp 23-42)
reprocessing of, multipurpose of units in Eurochemic plant for, 22:6425
reprocessing of, Nitrofluor method for, 22:6384
reprocessing of, nonaqueous methods for, 22:47213
reprocessing of, Norwegian--Dutch research on, 22:33508
reprocessing of, operation of Kjeller, Norway, pilot plant for, 22:16356 (KR-116)
reprocessing of, pilot plant at Junta de Energia Nuclear of Spain for, 22:6427
reprocessing of, pilot plant studies of, 22:45146 (NP-17588)
reprocessing of, pilot plants for, 22:4231(R) (IN-1087)
reprocessing of, plant at Moncloa, Spain for, 22:33546
reprocessing of, plant at Rotondella for, 22:6428
reprocessing of, plutonium and uranium determination in dissolver solutions in, 22:22932 (NP-17233)
reprocessing of, problems in pilot plant design for volatility, 22:6423
reprocessing of, purification and recovery of TBP after, 22:6434(P)
reprocessing of, Rapsodie plant for, 22:37823(T) (ANL-Trans-619)
reprocessing of, remotely operated equipment for analysis of solutions from Eurochemic, 22:40030
reprocessing of, research at Eurochemic extraction-evaporation pilot plant on, 22:6422
reprocessing of, research on fluoride volatility process for, 22:40156(R) (EURAEC-2031)
reprocessing of, research on fluoride volatility process for, 22:40158(R) (K-L-1780(Pt.25))
reprocessing of, research on volatility techniques for, 22:6384
reprocessing of, research progress on, 22:2173(R) (K-L-1780(Pt.21))
reprocessing of, research progress on, 22:4231(R) (IN-1087)

reprocessing of, research progress on, 22:27856(R) (K-1738)
reprocessing of, research progress on, 22:12404 (ORNL-4094, pp 19-27)
reprocessing of, research progress on, 22:37837(R) (K-1744)
reprocessing of, research progress on aqueous methods for, 22:37823(T) (ANL-Trans-619)
reprocessing of, review of, 22:148
reprocessing of, review of developments in aqueous, 22:149
reprocessing of, review of nonaqueous methods in France for, 22:35890
reprocessing of, review of solvent stability in, 22:18865 (ORNL-4212)
reprocessing of, ruthenium decontamination in TBP process for, 22:16677
reprocessing of, safety analysis of neptunium recovery facility at West Valley Plant for, 22:33479 (DOCKET-50201-1)
reprocessing of, safety analysis of Nuclear Fuel Services, Inc., plant for, 22:18862 (DOCKET-50201-2)
reprocessing of, safety analysis of West Valley Plant for, 22:33480 (DOCKET-50201-4)
reprocessing of, semiworks program on, 22:23099(R) (K-L-1780(Pt.23)
reprocessing of, shear-leach and grind-leach techniques in, 22:27865 (ORNL-4204, pp 46-51)
reprocessing of, shear-leach method of preparation for, 22:149
reprocessing of, short-residence extractors for reducing solvent degradation in, 22:30648 (NP-17366)
reprocessing of, solvent extraction contactor for, 22:47205 (ORNL-TM-2290)
reprocessing of, stability of tributyl phosphate in Purex process for, 22:18873(T) (ORNL-tr-1901)
reprocessing of, stacked-clone contactor for solvent extraction in, 22:37838 (ORNL-4267)
reprocessing of, studies on, 22:42813(R) (K-L-1780(Pt.26))
reprocessing of, systems analysis and conceptual plant studies for, 22:2173(R) (K-L-1780(Pt.21))
reprocessing of, technical progress review on, 22:7983
reprocessing of, technical progress review on, 22:25172
reprocessing of, technical progress review on aqueous, 22:33529
reprocessing of, techniques and efficiency of Eurochemic plant for, 22:33506
reprocessing of, testing of stacked-clone contactor in solvent-extraction, 22:14562 (ORNL-4139, pp 4-18)
reprocessing of, treatment of medium-level waste from Eurochemic, 22:23100 (NP-17234)
reprocessing of, Trisaia facility for, 22:33547
reprocessing of, use of analytical methods in automatic control of, 22:47211
reprocessing of, use of bromine pentafluoride in fluoride volatility, 22:42806 (ANL-7412)
reprocessing of, use of fluoride volatility techniques in, 22:8175(T) (ANL-Trans-544)
reprocessing of, use of liquid-liquid extraction in, 22:30655
reprocessing of, ventilation filter reclamation at Hanford Purex Plant for, 22:45139 (ARH-SA-9)
reprocessing of, volatility method for, 22:25476
reprocessing of, volatility processes for, 22:23106
reprocessing of, Windscale pilot plant for, 22:6421
reprocessing plant for, performance of krypton-85 monitor in, 22:14613
rod-type, description of end-coupled, 22:42445(P)
rod-type, description of metallic container with thermal insulating gap between fuel and container for, 22:42432(P)
rod-type, description of stacked, 22:42450(P)
rupture of PRTR, description of, 22:22816 (HW-75557(Rev.)(Del.))
safeguards inspection procedures for unirradiated MTR-type, 22:42393 (RISO-M-732)
safety of plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of effects of molten fuel movement on, 22:25083(R) (GEAP-5541)
sealing thermocouples in clad, methods for, 22:12995(P)
separation of plutonium from spent, by solvent extraction, 22:33507
sheath for pin-type, description of closure for, 22:18621(P)
sheath-enclosed multi-section cylindrical, description of angular-displaced diametric heat transfer holes for, 22:42413(P)
sheath-enclosed multi-sections male-and-female-coupled, description of breeder material-containing, 22:42412(P)
sheaths for, design of apparatus for corrugating sets of fins on, 22:8281(P)
shielding plug caps for Halden Boiling Reactor, description of, 22:20816 (HPR-94)
shipping cask design criteria for spent, 22:27416(R) (ORNL-4228)
shipping cask for Peach Bottom Power Reactor Unit 1, temperature analysis for, 22:22690(R) (GA-8500)
shipping casks for Chinon Reactor, calculations for thermal cooling of, 22:293
shipping casks for irradiated, development of design criteria for, 22:7816(R) (ORNL-TM-2057)
shipping container for uranium, design, fabrication, and testing of, 22:30810 (KY-546)
shipping containers for, advantages and economic aspects of laminated uranium, 22:45264 (KY-D-2554)
shipping containers for, design and fabrication of laminated depleted uranium, 22:45265 (KY-F-96)
shipping containers for, testing of laminated uranium for, 22:45263 (KY-D-2553)
shipping costs by rail and truck for spent, 22:2321 (GAMD-7979)
shipping of irradiated HNPF, design of container for, 22:8254 (NAA-SR-12547)
shipping of irradiated Shippingport Pressurized-Water Reactor, thermal testing of containers for, 22:32789(R) (WAPD-MRP-124)
shipping of irradiated, design of container for, 22:49049
shipping of irradiated, regulations for railroad, 22:29
shipping of Ispra, design and thermal testing of container for, 22:47269
shipping of spent, cask design for, 22:36021(P)
shipping of spent, design of container for, 22:12564
shipping of spent, design of fire and shock resistant container for, 22:51210(P)
shipping of spent, from HNPF to Savannah River Plant, design of containers for, 22:45266 (NAA-SR-Memo-10549)
shipping of, design of lead shielded casks for, 22:291
shipping procedures for JRR-2, 22:6035
shock absorbers for, description of impact disc penetrated by varying dimension cylinders for, 22:25165(P)
sleeves for, description of brittle cylindrical reinforced, 22:16334(P)
spacer arrangement in rod bundle type, to minimize thermal and fission gas loads on cans, 22:6183(P)
spacer design for finned, for heterogeneous gas-cooled reactors, 22:1836(P)
spacer design for, effects on coolant swirling of, 22:1895(P)
spacers for multiple metal-clad rod-type, description of hairpin- and crank-shaped spot-welded flexible wire, 22:42567(P)
spacers for square lattice, description of spring-braced parallel circular rod, 22:16332(P)
specific power distribution in boron oxide (B_2O_3)--uranium oxide (UO_2) and uranium oxide (UO_2), measurement of, 22:37542 (RT/FI-(68)13)
stability system for assemblies of, description of ascending coolant flow activated ball-and-groove, 22:25184(P)
stacked-pellet type, description of sheathed, 22:42438(P)
stockpile at SENA Power Reactor during July to September 1967, description of, 22:18424(R) (TID-24282)
storage in aqueous solutions of magnesium oxide or sodium carbonate, 22:26026 (CEA-N-616, pp 106-44)
storage in water of spent, criticality calculations for, 22:33183
storage of irradiated, in aqueous solutions of magnesium oxide, 22:26026 (CEA-N-616, pp 106-44)
storage of SENA Power Reactor, enrichment analysis during April to December 1967 for, 22:24975(R) (TID-24368)
storage of spent, cooling pond and transfer facility for, 22:20968(P)
storage of, three-dimensional Monte Carlo code for criticality problems in, 22:10079 (NAA-SR-Memo-12490)
stress analysis of pressurized-water reactor type 304 stainless steel-clad enriched uranium oxide (UO_2) pellet-type, 22:30165(R) (WCAP-3706)
stress distribution in rod-type, mathematical model for determining compressive, 22:42160(R) (BMI-1844)
stress in long cylindrical, infinite series method for determination of, 22:12523
stress--strain testing of Advanced Test Reactor aluminum-clad uranium oxide (U_3O_8), effects of temperature on compression, (E), 22:27464 (IN-1179)
stresses in fast-pulsed cores of, calculation of dynamic, (T), 22:20918
stresses in simulated superheat reactor, measurement of, 22:6046
stresses in, use of sagging bar method for determination of, 22:15199
stresses on pulsed reactor bolted assembly of, analysis of thermoelastic, 22:3912
stresses on, effects on economics of temperature-induced surface, 22:32773 (KFK-700(Pt. VII))
stresses on, effects on economics of temperature-induced surface, 22:53273(T) (EURFNR-472)
structural integrity of Shippingport PWR, analysis of, 22:46924(R) (WAPD-MRP-125)
subassemblies of, design of instrumented, 22:7788(R) (ANL-7382)
substitution in organic moderated lattices, measurement of effects of, 22:50816
support device for stacked, description of spring-loaded, 22:42518(P)
support device in vertical coolant channel for, description of releasable, 22:42523(P)
support for assemblies of gas-cooled fast, description of open-end box, 22:16244(P)

support for, description of graphite seat three-arm extension, 22:20960(P)
support grid for reduced-diameter neck, description of, 22:20958(P)
support grid for, description of multiple layer interconnected three-directional parallel vertical-edge strips in hexagonal, 22:48771(P)
support grids for, description of multiple parallel four-sided spring-braced, 22:48773(P)
support grids for, description of three equi-spaced barrel-shaped lobes for spacing in symmetric saucer-shaped, 22:37603(P)
support structure for assemblies of multiple parallel sheathed rod-type, description of strip-formed web-type, 22:42427(P)
support structure for boiling reactor, description of square lattice helical twist, 22:20886(P)
support structure for, description of disc mounted vertical cylindrical sleeve, 22:18655(P)
support structure for, description of four graphite bars symmetrically separated for, 22:16333(P)
support structure for, description of grid-type, 22:42459(P)
support structure for, Rayleigh-Ritz energy method analysis of stress in, 22:37563
support structures for, description of concentric tubular, 22:42430(P)
supports for fast reactor, in upward coolant flow, design of overhead, 22:1839(P)
supports for positioning within core of, description of retractable strut-type, 22:42448(P)
supports for, design of, 22:10939(P)
supports of, description of coolant freezing and melting device for plugs for, 22:37601(P)
surface area determination for neutron resonance integral calculations, 22:3924 (AECL-2775)
surface roughening of, evaluation for gas-cooled fast breeder reactors of, 22:35466 (KFK-689)
surveillance system for ZPPR, design of magnetic-signaled automatic, 22:4511
swelling of EBR--2, effect of casting conditions on, 22:24925(R) (ANL-7427)
swelling of EBR--2, effect of trace--element impurities on, 22:24925(R) (ANL-7427)
swelling of EBR-2, effect of enrichment on, 22:22653(R) (ANL-7419)
swelling of EBR-2, effects of temperature and pressure on, 22:16265(R) (ANL-7403)
swelling of fast, computer programs for determination of effects of, 22:53277 (KFK-539/2)
swelling of Mark-1A, effects of pressure on, 22:12006(R) (ANL-7399)
swelling of stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of burnup on, 22:25083(R) (GEAP-5541)
swelling of tungsten-dispersed uranium carbide, radiation effects on, 22:27396(R) (AI-AEC-12638)
swelling of, effects of fission product buildup on, 22:33100 (RT/ING-(68)4)
swelling of, effects of pressure on radioinduced, 22:30118 (ANL-7438)
swelling rate and melting loss models for, analytical expression for, 22:33095 (KFK-700(Pt. V))
swelling rate and melting loss models for, analytical expression for, 22:53273(T) (EURFNR-472)
tape configuration of assembly of, effect on heat transfer of twisted, 22:14202
temperature analyses for Shippingport Core 2 Seed 2, fuel plate surface, 22:14147(R) (WAPD-MRP-122)
temperature and power coefficients for, 22:16164 (WCAP-2785)
temperature changes in plutonium oxide, molar enthalpy changes for, 22:30118 (ANL-7438)
temperature coefficients of reactivity for UHTREX, computer code analysis of, 22:25092 (LA-DC-9425)
temperature distribution calculations in defected, electrical analog method for three dimensional, 22:53466
temperature distribution in 3300 MW(t) boiling reactor, measurement of axial, 22:37402 (ANL-7450, pp 75-89)
temperature distribution in cylindrical low-density oxide, effect of internal geometry on radial, (T), 22:44825 (KFK-751)
temperature distribution in cylindrical or annular, computer program for calculating, 22:27486 (KAPL-P-3175)
temperature distribution in Halden Boiling Reactor uranium oxide (UO_2), measurement of, 22:44804 (AE-318)
temperature distribution in lower end grid support plate of Piqua Power Reactor, effects of configuration on, 22:35421 (AI-AEC-Memo-12574)
temperature distribution in pin-type, during coolant loss accidents, 22:39774 (IDO-17272)
temperature distribution in, FRG-code for calculating, 22:35673 (RT/ING-(67)11)
temperature distributions for vitreous-ceramic gas cooled, 22:46899 (IFA-TR-55)
temperature distributions in Fermi Fast Breeder, effects of coolant blockage on, 22:53371
temperature distributions in, equations for time- and space-dependent, 22:24987
temperature distributions in, method for calculating, 22:33094 (KFK-700(Pt. IV))
temperature distributions in, method for calculating, 22:53273(T) (EURFNR-472)
temperature distributions with self-shielding in oxide, MUTTR program for calculation of radial, 22:35664 (KAPL-3199)
temperature fields in clustered rod tube bundles, two-dimensional multiregion analysis of, (T), 22:10022
temperature gradients for tungsten--uranium oxide (UO_2), determination of allowable, (E), 22:39904 (N-68-14986)
temperature measurements in Air Force Nuclear Engineering Test Facility, 22:35587 (AD-663921)
temperature monitoring of EBR-2 subassemblies, 22:7788(R) (ANL-7382)
temperature of plutonium oxide (PuO_2)--uranium oxide (UO_2) DFR and DMTR pin-type, thermocouple configuration for measurement of center, 22:44811 (CONF-660521-6)
temperature of UHTREX, description of melt-method for measuring, 22:53416(R) (LA-4009)
temperature of, calibration of uranium dioxide intrinsic thermocouples for measuring, 22:51276(R) (IDO-17269)
temperature profiles of irradiated tungsten-dispersed uranium carbide, 22:27396(R) (AI-AEC-12638)
temperature profiles of sodium-cooled fast ceramic, use for failure testing of, 22:7808(R) (GEAP-5522)
temperature transients for uranium oxide (UO_2) pressurized water, use of NURLOC-code for determination of, 22:42160(R) (BMI-1844)
temperatures of large assembly of, during shear-leach processing, 22:14564 (ORNL-4139, pp 23-42)
temperatures of mixed oxide pin-type, direct in-pile measurement of central, 22:6162
temperatures of oxide, effects of initial system temperature and reactor period on hot-spot, 22:48648(R) (IDO-17271)
temperatures of plate-type, graphical method for determining central, 22:30345 (KAPL-M-6914)
temperatures of subassemblies at 50 and 62.5 MW(t) in EBR-2, (T), 22:22653(R) (ANL-7419)
temperatures of, effects of coolant and fuel element radius on internal, 22:33094 (KFK-700(Pt. IV))
temperatures of, effects of coolant and fuel element radius on internal, 22:53273(T) (EURFNR-472)
testing air-tightness of VVR-M, procedure for, 22:20917(T) (JPRS-44332)
testing clad plutonium dioxide--uranium dioxide, by transients in TREAT, 22:31526 (GEAP-4469)
testing of chromium--zirconium clad, in Big Rock Point Reactor, 22:34039(R) (GEAP-5603)
testing of irradiated, facilities and equipment for, 22:16356 (KR-116)
testing of irradiated, gamma spectrometer for nondestructive, 22:45328
testing of JMTR, description of flow and heat transfer, (E), 22:33028
testing of RAPSODIE, design of CABRI liquid sodium loop for, 22:53451
testing of reaction force of PBF, instrumentation for, 22:51276(R) (IDO-17269)
testing of, analysis of purge gas from in-pile, 22:14427 (ORNL-4196, pp 15-32)
testing of, design of high temperature furnace for, 22:28251
testing of, emittance-independent infrared method for nondestructive, 22:45256
testing of, nondestructive methods for, 22:43002
testing of, review of methods for nondestructive, 22:2319
themocouple connection for radial splitter fin-type metallic can-enclosed, description of cable-straightening device for hot junction, 22:39914(P)
thermal analysis of, 22:1886
thermal behavior of oxide, in fast reactors, 22:4906
thermal calculations for heavy water-moderated gas-cooled tubular, 22:16319 (UJV-1839)
thermal characteristics of Halden Boiling Reactor at 20 MW, 22:20816 (HPR-94)
thermal characteristics of rod-type, analytical expression for, 22:33095 (KFK-700(Pt. V))
thermal characteristics of rod-type, analytical expression for, 22:53273(T) (EURFNR-472)
thermal conductivity and thermal expansion of, analytical expression for, 22:33095 (KFK-700(Pt. V))
thermal conductivity and thermal expansion of, analytical expression for, 22:53273(T) (EURFNR-472)
thermal conductivity calculations for pyrolytic carbon, 22:27416(R) (ORNL-4228)
thermal conductivity of Type 347 and Type 316 stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:50732(R) (GEAP-5631)
thermal conductivity of Zircaloy-2-clad uranium oxide (UO_2) at 2750°C, in GETR, 22:35457 (GEAP-5100-6)
thermal disadvantage factor in, method for calculation, (E/T), 22:3848 (WAPD-TM-672)
thermal efficiency for, method for determining, 22:33094 (KFK-700(Pt. IV))
thermal efficiency for, method for determining, 22:53273(T) (EURFNR-472)
thermal expansion of plutonium dioxide--uranium dioxide, effects of stoichiometry on, 22:4878
thermal expansion of Zircaloy-clad uranium dioxide,

effects on voids in, 22:612(R) (GEMP-69)
thermal expansion temperature dependence of, 22:49858 (WAPD-TM-631)
thermal gradient effects on thermal conductivity of uranium dioxide, 22:15190(T) (EURFNR-382)
thermal migration of pores in ceramic, 22:4802
thermal performance during central melt conditions of Zircaloy-2 clad uranium oxide (UO_2) from rod cluster, analysis of, 22:16282 (GEAP-5100-L)
thermal performance during central melt conditions of Zircaloy-2 clad uranium oxide (UO_2) four rod cluster, analysis of, 22:16279 (GEAP-5100-2)
thermal performance of 7-rod cluster, computer program for calculation of, 22:14663 (EUR-3733)
thermal performance of center-melting Zircaloy-2 clad uranium oxide (UO_2), 22:22698 (GEAP-5591)
thermal performance of four rod-cluster Zircaloy-2 clad uranium oxide (UO_2), 22:16281 (GEAP-5100-K)
thermal performance of four rod-cluster Zircaloy-2 clad 87 percent density vibratory compacted uranium oxide (UO_2), 22:16280 (GEAP-5100-H)
thermal performance of ORGEL reactor, computer program analysis of, 22:27483 (EUR-3905)
thermal performance of Shippingport Pressurized-Water Reactor Core 1 and Core 2, effects of hot-channel factor analysis on, 22:22727
thermal properties of coated particle, 22:53416(R) (LA-4009)
thermal sources in, effects of gamma absorption and fast neutron fission on spatial distribution of, 22:16321 (UJV-1876)
thermal stresses in, from sudden internal localized heat generation, (T), 22:45235 (ANL-7420)
thermal testing of laminated stainless steel, 22:49844
thermal testing of prototype twisted tape clusters, 22:9996(R) (EUR-3651)
thermal transients in boiling water, calculational model for, 22:25003
thermionic converters for, theory of, 22:36775 (CONF-680508-4)
thermionic diode converter, description of ceramic-centered spring-positioned variable-spaced concentric electrodes for, 22:39838(P)
thermocouple connection for radial splitter fin-type metallic can-enclosed, description of cable-straightening device for hot junction, 22:48781(P)
thermocouple development for, 22:647(R) (BNL-50077)
thermocouple location in Saxton Power Reactor type 347 stainless steel--uranium oxide (UO_2), description of, 22:35477(R) (WCAP-3696-7)
thermocouples for Garigliano, calibration of, 22:48645 (GEAP-5623)
thermocouples for high temperature SEFOR, calibration of, 22:14123 (ANL-7380, pp 15-21)
thermocouples for subassembly of Fermi Fast Breeder Reactor, response testing under normal and fuel failure conditions, 22:4508
thermodynamics of boiling reactor, effects of geometry on, 22:3825(R) (EURAEC-1899)
trace-element impurities in EBR-2, effects on swelling of, 22:16265(R) (ANL-7403)
transfer into leak-tight reactor containment, device for, 22:12157(P)
transport of, design and operation of elevators for, 22:49000
uranium-235 content in, design of self-correcting thallium-activated sodium iodide scintillation detector for determining, 22:30820 (NLCO-1011)
uranium-238 fission in low-enriched rod, method of calculating fast, 22:6170
use as radiation source in testing natural salt formations, 22:2323(R) (ORNL-TM-1887)
use as radiation sources in irradiation facility, 22:10426 (AAEC/TM-347)
use of fresh-used-fresh, in sandwich row-arranged loading configuration, 22:48768(P)
use of plutonium, in BWRs, 22:6021
use of plutonium, in Gargliano and Trino power reactors, economic and technological aspects of, 22:22685 (EUR-3890)
use of plutonium, in pressurized-water reactors, 22:6022
use of single, for determination of reactor physics parameters, 22:3893 (MIT-2344-10)
use of spent, for vulcanizing rubber tires, 22:2283
use of zone-loaded plutonium, in Saxton, 22:6023
valves for Halden instrumented, description of pneumatic throttle, 22:12027(R) (HPR-88)
vent for, design of, 22:7932(P)
vibration eigenfrequencies and damping of rod-type, analysis of transverse liquid-metal coolant flow-induced, (E/T), 22:44922 (KFK-731)
vibration of, coolant cross flow and parallel flow induced, 22:7927
vibration stability of liquid-metal fast-breeder reactor, analysis for optimum, (E/T), 22:32970(R) (GEAP-5584)
vibrations in ORGEL-type, model studies for parallel flow, (E/T), 22:48688
vibrations in sodium-cooled, analysis of, 22:25083(R) (GEAP-5541)
void-detector in metal-clad, description of, 22:18648(P)
volume balances for, specifications for, 22:33097 (KFK-700(Pt. XIII))
volume balances for, specifications for, 22:53273(T) (EURFNR-472)
vortex-flow liquid-cooled helical-ribbed cylindrical, description of, 22:25121(P)
wafer-type horizontal moderator-tube enclosed, description of, 22:42447(P)
welding end plugs by programmed cycles, equipment and procedures for, 22:49694
welding end plugs for LMFBR mixed carbide, procedures and tests for, (E), 22:8807(R) (WCAP-3791-10)
welding of, 22:16356 (KR-116)
welding of CVTR, tabulation of data on, 22:48658(R) (WCAP-3850-3)

REACTOR FUELS

(For general and economics studies and fuel material not in a precise configuration. See also the specific fissile and fertile materials listed below.)
see also Plutonium
see also Plutonium Alloys and Systems
see also Plutonium Carbides
see also Plutonium Nitrides
see also Plutonium Oxides PuO_2
see also Thorium
see also Thorium Alloys and Systems
see also Thorium Carbides
see also Thorium Nitrides
see also Thorium Oxides ThO_2
see also Uranium
see also Uranium Alloys and Systems
see also Uranium Carbides
see also Uranium Nitrides
see also Uranium Oxides UO_2
abundance during 1967 to 1980 of, estimates of USA, 22:27429
abundance in USA and world during 1980 to 2000, estimates of, 22:27428
analyses of irradiated, determination of trace element amounts by, 22:9988(R) (ANL-7391)
analysis for cesium-137, 22:30445(P)
analysis for impurities, methods for, 22:25236 (CEA-N-616, pp 20-71)
analysis for plutonium and uranium isotopic composition of, mass spectrographic, 22:25236 (CEA-N-616, pp 20-71)
analysis for plutonium, coulometric, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of irradiated coated-particle, for fission products, 22:39998
analysis of irradiated oxide, identification of constituents in electron probe, 22:33214
analysis of irradiated, burnup determination by isotopic, 22:37647 (EUR-3949)
analysis of irradiated, for krypton and xenon, gas chromatographic, 22:33258
analysis of irradiated, methods for, 22:25321 (ANL-7375, pp 95-134)
analysis of molten fluoride, spectrographic, 22:14430 (ORNL-4196, pp 55-9)
analysis of molten-salt, for oxides, 22:14427 (ORNL-4196, pp 15-32)
analysis of solutions of, for plutonium and uranium by x-ray fluorescence techniques, 22:44974 (KFK-747)
behavior of impregnated spherical beryllium oxide, effects of Hertzian stresses on, 22:11052
bibliography on plutonium, 22:1883(T) (ANL-Trans-523)
book: Dispersion Fuel Elements, 22:15205
breeding ratio for steam-cooled fast breeder reactors, effects of core shape and enrichment on, 22:27401 (BNWL-713)
burnup analyses for Yankee, 22:1778(R) (WCAP-6085)
burnup analyses of, methods for, 22:7787 (AERE-R-5309)
burnup analysis in large recirculating fuel reactors, calculation method for, 22:14288 (AAEC/E-184)
burnup analysis of aluminum--plutonium, from PRTR irradiations, 22:12085 (BNWL-472, pp 3.1-33)
burnup analysis of, by x-ray spectrometric determination of rare earth fission products, 22:22653(R) (ANL-7419)
burnup analysis of, PROTEUS computer program for multi-dimensional, 22:53455 (BNWL-850)
burnup calculation equations for, 22:1887
burnup calculations for MTR-Phoenix, 22:14289 (BNWL-635)
burnup calculations for Novo Voronezh, three-dimensional method of, (E/T), 22:22739
burnup calculations in water-cooled, water-moderated reactors, two- and three-dimensional programs for, 22:5935(T) (JPRS-42542)
burnup characteristics of spherical thorium and uranium carbide (ThC_2--UC_2) pellet, for AVR and THTR reactors, 22:6040
burnup determination by analysis for cesium-137, 22:30445(P)
burnup determination by fission product analysis in, 22:27477 (ANL-7375, pp 178-9)
burnup determination in coated uranium-containing, γ spectroscopy nondestructive method for, 22:53460 (JUL-529-RX)
burnup determination in, evaluation of methods for, 22:1880(R) (IN-1113)
burnup determination in, methods development for, 22:24855(R) (IN-1157(Rev.))
burnup determination of, methods development for, (E),

22:25129(R) (IN-1178)
burnup determination, methods for, 22:43670
burnup improvement by continual exchange of, in flat flux central core zone, (T), 22:22881
burnup in boiling-water reactors, methods for analysis of, 22:22737
burnup in SENA Power Reactor, method of determining, 22:21776(R) (EURAEC-1937)
burnup in thermal reactors, Czechoslovak methods for calculation of, 22:22731
burnup in thermal reactors, French studies on, (E/T), 22:22732
burnup in thermal reactors, review of Japanese studies on, 22:22735
burnup in thermal reactors, review of studies on, (E/T), 22:22711 (STI/PUB-172)
burnup in thermal reactors, review of U.S. studies on, 22:22733
burnup in thermal reactors, Swedish calculational methods for, 22:22736
burnup measurement on operating, design of device for, 22:10104(P)
burnup measurements of Phoenix, 22:14289 (BNWL-635)
burnup monitor for uranium oxide, possible use of molybdenum as, 22:12006(R) (ANL-7399)
burnup monitors for oxide, 22:39976 (ANL-7450, pp 108-11)
burnup of 1000 MW(e) LMFBR, effects of central void on, 22:9990(R) (BAW-1312)
burnup of heavy water-moderated reactor, effects of physics parameters on calculation of, (T), 22:44866
burnup of spherical heterogeneous pebble-bed reactors, description of variable opposing flow coolant channels for control of, 22:48700(P)
burnup of uranium carbide and uranium dioxide, effects of cladding on, 22:11087 (AI-CE-76)
burnup of uranium dioxide, effects of boron carbide on, 22:4909
burnup of, bibliography on, 22:33085 (AAEC/TM-449)
burnup of, BURNUP computer code for calculating, 22:3929 (GEAP-5355)
burnup of, computer program for calculating, 22:32425 (GA-8307)
burnup of, fission-product yields for determining, (E), 22:3690 (GEAP-5356)
burnup of, measurements of plutonium-239 fission yields for determination of, 22:44680(R) (IN-1189)
burnup of, nondestructive method for measuring, 22:39539 (AEET/NP-16)
burnup of, review of European American Committee on Reactor Physics studies on, 22:22880
burnup of, use of gamma scanning and cobalt wire monitoring to determine, 22:16292 (RT/ING-(67)14)
burnup physics determinations in Halden, review of program for, (E/T), 22:22738
burnup testing of plutonium-containing, in EBWR, 22:20779 (BNWL-624, pp 3.1-159)
burnup theory for, discussion of approximations to, 22:7926
canning pelleted cermet, by extrusion, 22:49814(P)
carbon coatings for, reaction rate determination for steam and, 22:46911(R) (ORNL-4266)
characteristics of ceramic and metallic, 22:33093 (KFK-700(Pt. II))
characteristics of ceramic and metallic, 22:53273(T) (EURFNR-472)
chemical equilibria with fission products, 22:25333 (ORNL-4229, pp 162-79)
chemistry of fast, 22:52257 (ANL-7425, pp 94-129)
chemistry of, review on French studies on, 22:47225
cladding materials for, mechanical properties and radiation effects on, 22:14149(T) (ORNL-tr-1764)
coated particle, bibliography on, 22:7913 (LA-3791)
coating by gas pyrolysis in fluidized beds, 22:15246(P)
coating contamination by uranium in pellet-type, effect of temperature on, 22:39900 (GAMD-8325)
coating of particulate uranium dioxide by vapor deposition of beryllium oxide, 22:45810(P)
coating of particulate, by pyrolyzed silicon carbide, 22:743(P)
coating of particulate, engineering-scale system for pyrolytic carbon, 22:4317
coating of particulate, with pyrolytic carbon, 22:8822 (ORNL-4170, pp 163-72)
coating of spherical particulate, with pyrolytic carbon, using entrained-fluidized-beds, 22:23212 (ORNL-TM-2113)
coating particulate, using pyrolytic carbon, 22:21757(P)
coating plutonium dioxide, with pyrolytic carbon, 22:724 (BMI-1809, Sect.C)
coating removal from particulate, one-step process for, 22:12500(P)
coating spherical particulate, using rhenium—tungsten alloy, 22:45811(P)
coating with pyrolytic carbon of particulate, in TURF,, 22:8823 (ORNL-4170, pp 211-26)
coating with pyrolytic graphite, fluidized bed method for, 22:45804 (SGAE-M-16/1968)
coatings for, eddy current techniques for measurement of anisotropy of pyrolytic carbon, 22:46911(R) (ORNL-4266)
combustion characteristics of ZPPR, ignition and burning measurements on, 22:30297 (ARH-471)
compatibility of carbide-type, with cladding materials, 22:21759 (LA-3799)
compatibility of ceramic, reactor environmental, 22:33093 (KFK-700(Pt. II))
compatibility of ceramic, reactor environmental, 22:53273(T) (EURFNR-472)
compatibility of mixed-carbide, with stainless steel-clad at 800ºC, 22:53463(R) (UNC-5217)
compatibility of molten-salt, with graphite and Hastelloy N, 22:25374 (ORNL-4229, pp 22-49)
compatibility of sodium-bonded carbide and nitride, with cladding materials, 22:27487(R) (LA-3880)
compatibility of sodium-bonded fast, with cladding materials, 22:6138(R) (LA-3820)
compatibility with water vapor of silicon carbide coated, 22:46911(R) (ORNL-4266)
composition of molten-salt, 22:47112 (ORNL-4254, pp 88-173)
composition of MSRE, description of, 22:14140 (ORNL-TM-2111)
conference on procurement and management of, Oklahoma City, Oklahoma, May 23 to 24, 1968, 22:51108
consumption by 2000 of, analysis of U. S. and EURATOM power, 22:35513
consumption for electric power generation, predictions to 1985 of US, 22:48958
containment characteristics in gaseous-core nuclear rockets, effect of buffer layer velocity and chamber length-to-diameter ratio on, (E), 22:37513(R) (N-68-16664)
containment characteristics in gaseous-core rocket reactors with confined radial outflow and superimposed axial flow, (E/T), 22:37514 (N-68-17131)
containment in open-cycle gaseous rocket reactors, characteristics of radial-outflow vortexes for, (E), 22:39861 (N-68-18243)
conversion ratio determination for water-moderated mixed-oxide, 22:53454 (BNWL-828)
cooling age of irradiated, determination by gamma count rates, 22:45831(P)
corrosive effects of ceramic—sodium paste-type, on stainless steel at 1400ºF, 22:2573
cost factors for plutonium, 22:44841 (WASH-1082)
cost of uranium, 22:27927
crack configurations in coated-particle, 22:11049
creep swelling in ceramic, continuum dilatation model for, 22:2688 (WAPD-TM-649)
critical dimensions of homogeneous, spheres containing uranium-235, uranium-235, and carbon in various proportions, 22:32975 (LA-3883)
cycle analysis of plutonium, for thermal reactors, 22:19669 (BNWL-624, pp 2.1-32)
cycle comparisons for FORATOM fast, 22:3861
cycle costs for thorium-fueled HWOCR's, 22:23854 (CONF-660524-, pp 157-84)
cycle costs, method for calculating, 22:53273(T) (EURFNR-472)
cycle costs, methods for calculating, 22:32773 (KFK-700(Pt. VII))
cycle economics for fast breeder, 22:48635 (BNWL-SA-2052)
cycle economics for fast-thermal reactor complexes, analysis of re-use, 22:42162(R) (BNWL-254)
cycle economics for Phoenix fuels for marine reactors, 22:14289 (BNWL-635)
cycle economics for pressurized-water power reactors, effect of uranium-236 and neptunium-237 on uranium, 22:37447 (MIT-2073-6(Vol.2))
cycle economics for pressurized-water power reactors, effect of uranium-236 and neptunium-237 on uranium, 22:37446 (MIT-2073-6(Vol.1))
cycle economics for steam-cooled fast breeder reactor, effects of outlet steam pressure on, 22:27401 (BNWL-713)
cycle economics for thermal power reactors, effect of neptunium-237 and uranium-236 on value of feed uranium in, (T), 22:46903 (MIT-2073-7)
cycle economics for THTR, 22:53337
cycle economics for, effects on power production costs of, 22:46938
cycle economics of plutonium, 22:39776 (JAERI-1154)
cycle economics of uranium-thorium, in thermal near-breeders, 22:42156 (AECL-3081)
cycle economics, effects on power costs of, 22:27438
cycle economics, procedure for optimization of, 22:32773 (KFK-700(Pt. VII))
cycle economics, procedure for optimization of, 22:53273(T) (EURFNR-472)
cycle economy for central power station, 22:7830
cycle efficiency of, analysis of power production from, 22:7826
cycle for heavy water-cooled and -moderated reactor, analysis of economics of thorium, (E/T), 22:30248
cycle for uranium, description of typical, 22:14312
cycle in light water power reactors, financial aspects of, 22:16227
cycle management for 1000 MW(e) Pickering-type heavy water-moderated reactor, computer program analysis of optimum economic, 22:53264 (BNWL-833)
cycle management for optimum burnup performance of power,

analysis of, 22:53291
cycle optimization by linear and quadratic programming, (T), 22:30364
cycle performance for 1000 MW(e) heavy water-moderated, analysis of optimum economic, 22:30255
cycle performance for boiling and pressurized heavy water-moderated reactors, analysis of optimum, 22:30260
cycle performance for European fast breeder reactors, description of optimum, 22:35491
cycle performance for fast breeder, development of optimum, 22:35514
cycle performance for heavy water-cooled and -moderated reactors, analysis of optimum, 22:30252
cycle performance for heavy water-cooled and -moderated reactors, analysis of long-term optimum economic, 22:30254
cycle performance for heavy water-moderated reactors, analysis of optimum economic, 22:30158 (STI/PUB-163)
cycle performance in U. S. of heavy water-cooled and -moderated reactors, analysis of optimum economic, 22:30253
cycle performance of heavy water-moderated water-cooled 500 MW, analysis of optimum economic, 22:30261
cycle performance of thorium oxide (ThO_2) in heavy water-moderated organic-cooled 1000 MW(e), analysis of economic, (E/T), 22:30247
cycle performance of thorium oxide (ThO_2) in ORGEL Reactor, analysis of economic, 22:30246
cycle schedules for power reactors to 1995, analysis of optimum, 22:35535
cycle, 1966 conference on thorium, 22:24934 (CONF-660524)
cycles for European fast breeder reactors, description of optimum, 22:35501
cycles for Japanese boiling power reactors, analysis of sources and economics for, 22:32849
cycles in power reactors of uranium-233, description of optimum, 22:35497
cycles of European fast reactor, description of optimum, 22:35496
cycling of Japanese fast breeder power reactor, development of optimum domestic, 22:35485
cycling of power reactor, analysis of optimum, 22:37504
cycling of, analysis for optimum economic, 22:48796
defect concentration in oxide-type, effects of free gas atoms on, 22:33096 (KFK-700(Pt. VI))
defect concentration in oxide-type, effects of free gas atoms on, 22:53273(T) (EURFNR-472)
density of pressure sintered ceramic, 22:9988(R) (ANL-7391)
description of spherical uranium carbide (UC), for 1000 MW(e) OBFR, 22:9992 (BNL-50027)
design of fast breeder, 22:17113 (JAERI-1144)
design of pyrolytic carbon-coated ceramic, 22:24957 (GA-7698)
design variations of, effects on core burnup reactivity on, 22:14289 (BNWL-635)
development, 22:15175(R) (GEMP-1002)
development and testing carbon-coated, 22:8822 (ORNL-4170, pp 163-72)
development and testing plutonium oxide--uranium oxide--zirconium oxide, for plutonium recycling in thermal reactors, 22:19649(R) (NUMEC-3505-30)
development by USAEC, JCAE hearings on, 22:10168
development by USAEC, JCAE hearings on, 22:10169
development for high-temperature reactors, 22:16168
development for pulsed reactors, 22:37900 (BNL-50082, pp 153-80)
development in Japan, 22:18659
development of ceramic, 22:41082 (CEND-2936-335)
development of ceramic, for fast reactors, 22:647(R) (BNL-50077)
development of chromium-containing carbide, for improved compatibility with cladding, 22:23840(P)
development of coated particle, for Dragon project, 22:5932(R) (NP-17118)
development of coated--particle, 22:734
development of enriched uranium oxide (UO_2) ceramic, for use in pressurized water reactors, 22:14147(R) (WAPD-MRP-122)
development of fast reactor, description of optimum economic, 22:46952
development of fast-breeder, description of FFTF for, 22:27475
development of French fast, summary of, 22:14149(T) (ORNL-tr-1764)
development of graphite-base, 22:11089(R) (GA-7100)
development of plutonium dioxide--uranium dioxide--zirconium dioxide, 22:45816(R) (NUMEC-3505-27)
development of plutonium for fast breeders, 22:7804 (EURFNR-422)
development of plutonium Phoenix-type, (E/T), 22:27459 (BNWL-634, pp 3.1-27)
development of plutonium--uranium--zirconium alloy, 22:34065(R) (MLM-1445)
development of plutonium-239 trichloride--uranium-238 trichloride fused salt, 22:4130
development of, review, 22:12954
development program for, 22:12962(R) (BNWL-473)
development program for Canada, description of, 22:4215 (AECL-3067, pp 45-52)
development program for U. S. A. liquid metal-cooled fas breeder reactor, description of, 22:46951
development program for Western Europe, discussion of, 22:48697
diffusion coefficients for pressure sintered ceramic, 22:9988(R) (ANL-7391)
diffusion of fission products from coated-particle, effects of post-irradiation annealing on, 22:26093 (ORNL-4229, pp 125-41)
diffusion of iodine from broken coated-particle, 22:26093 (ORNL-4229, pp 125-41)
dimensional stability of cermet, under thermal cycling, 22:21684 (BMI-1824)
dispersal in sodium and water coolants, heat transfer an pressure generation by high temperature, (E/T), 22:27397 (ANL-7375, pp 135-59)
dissolution and boiling of breeder, formation of hexavalent plutonium during, catalytic effects of iron on, 22:27845 (CEA-N-816, pp 150-276)
dissolution and extraction of plutonium from irradiated, ATl process for, 22:25452 (CEA-N-616, pp 154-214)
dissolution of clad ceramic, by liquid ammonia and mineral acids, 22:19670 (BNWL-624, pp 6.1-20)
distillation of carrier salt for, 22:47204 (ORNL-4254, pp 241-78)
Doppler effect with anisotropic scattering and nonunifor temperature distributions, calculation using modified P/sub n/ method, (T), 22:7627
dynamics of high-temperature pebble-bed reactor, effects of coolant flow on, 22:6047
economic optimization in AGR cycle, 22:22730
economics for fast breeder power reactor, analysis from 1972 to 2000, 22:37448 (NP-17521)
economics for use in nuclear power plants, 22:16209
economics in maritime applications, 22:14230 (NUS-265-A
economics in nuclear power production of, 22:12049
economics in power reactors, analysis of control system for optimum, (T), 22:42238
economics of, 22:16210
economics of 1000 MW(e) LMFBR, effects of sodium void coefficient on, 22:9990(R) (BAW-1312)
economics of bred, in power reactors, 22:3851
economics of German power reactor, 22:37502
economics of natural uranium, estimates of free world requirements to 1985 for, 22:27420(T) (ORNL-tr-1825)
economics of nitride, for fast breeders, (T), 22:22659 (BNWL-606)
economics of thorium, for heavy water reactors, 22:37506
economics of, compared with conventional fuels, 22:48957
economics of, effects of reactor types on cycle, 22:3832 (KFK-566)
economics of, effects of reprocessing on, 22:25158
economics of, engineering evaluation of, 22:6166
economics of, management methods for optimum, 22:53284
economics of, parametric analyses for, 22:33097 (KFK-700(Pt. XIII))
economics of, parametric analyses for, 22:53273(T) (EURFNR-472)
effects on physics characteristics of 1000 MW(e) heavy water-moderated organic-cooled power reactors, analysis of, 22:50741 (WASH-1083)
enrichment of uranium for power, economics of, 22:44841 (WASH-1082)
enrichment of uranium, legal aspects of private enterprise ownership of plants for, 22:47048
enrichment of, effects on neutron spectra, 22:7897 (LA-DC-9110)
enrichment services for uranium, AEC criteria on toll, 22:18624
enthalpy and specific heat of uranium dioxide and uranium dioxide--plutonium dioxide solid-solution, 22:31480
enthalpy and thermal capacity of plutonium bearing alloy, 22:19538
equilibria in mixtures with fission products at 2000 to 3000°K, 22:31490
fabrication and performance of plutonium--uranium oxide, 22:2707 (BNWL-SA-1346)
fabrication and processing in US, economics of, 22:23175
fabrication and processing, review, 22:4309 (TID-24102)
fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
fabrication and use of plutonium, 22:8715
fabrication capabilities in South Africa, 22:39837
fabrication costs of, library of computer programs for, 22:8806 (ORNL-4170, pp 206-10)
fabrication in Euratom countries, catalog of facilities for, 22:4303 (EUR-3568)
fabrication in United Kingdom, review of, 22:30361
fabrication methods for, descriptions of, 22:30385
fabrication methods for, tabular summary of, 22:33093 (KFK-700(Pt. II))
fabrication methods for, tabular summary of, 22:53273(T (EURFNR-472)
fabrication of enriched uranium, economics in Great Britian during 1975 to 1980, 22:14208
fabrication of European fast reactor, economics of, 22:35499
fabrication of Fast Flux Test Facility, conference on, 22:603 (BNWL-SA-1388)
fabrication of fluidized-bed, description of conical-shaped gas distributor for gas-coating, 22:44933(P)

fabrication of light water power, costs of, 22:44841 (WASH-1082)

fabrication of low-density seed-size urania—thoria pellets, using sugar to produce porosity, 22:41088 (WAPD-TM-721)

fabrication of phenolic resin-bonded silicon carbide (SiC)-coated uranium oxide (UO_2) and thorium oxide (ThO_2) spheres, description of, 22:42200(R) (ORNL-4200)

fabrication of plutonium and uranium, 22:22877

fabrication of plutonium ceramic, 22:8810

fabrication of pyrolytic carbon-coated spherical pellet of uranium oxide (UO_2), description of, 22:27512(P)

fabrication of shaped ceramic dioxide, 22:11036(P)

fabrication of sintered spherical pellets of plutonium oxide (PuO_2)—uranium oxide (UO_2), quality control in using autoradiography of, 22:27489(R) (NUMEC-3524-47)

fabrication of spherical particles for, method for, 22:47055

fabrication of spherical thorium and uranium carbide (ThC_2—UC_2) pellet, for AVR and THTR reactors, 22:6040

fabrication of spheroidal silicon carbide (SiC) coated pyrolytic carbon enclosed uranium carbide (UC), description of, 22:27506(P)

fabrication of spheroidal uranium carbide (UC_2), description of, 22:27507(P)

fabrication of thorium, extraction process to provide recycle material for, 22:8185

fabrication of tubular, equipment for remote, 22:19025(P)

fabrication of uranium dioxide, simplified method for powders, 22:19508(P)

fabrication of ZPPR, recovery of plutonium from wastes in, 22:47203(R) (NUMEC-1661-2)

fabrication of, review of improvements and advancements in, 22:25158

fabrication processes for coated-particle, 22:39937

failure mechanisms for breakup of pyrolytic carbon-coated particle-type, analysis of heat transfer and energy deposition, (E/T), 22:53461 (LA-3547)

fission damage processes and mechanisms in, E/T), 22:30155(R) (NAA-SR-12296)

fission effects in metallic uranium- and thorium-based, 22:25133 (NAA-SR-12549)

fission gas release from carbon coated, effect of burnup on, 22:11046 (ORNL-TM-2061)

fission of uranium and plutonium, low-mass atom production in fast-neutron, 22:46859 (ANL-7434)

fission product concentration in molten-salt, 22:47112 (ORNL-4254, pp 88-173)

fission product distributions in coated-particle, gamma spectrometric studies of, 22:39998

fission product distributions in irradiated, gamma spectrometric studies of, 22:36543 (ANL-7450, pp 39-74)

fission product release from annealed coated particle, 22:11046 (ORNL-TM-2061)

fission product release from coated, calculation of, 22:47054

fission product release from high burnup coated particle, use of post irradiation annealing for, 22:46911(R) (ORNL-4266)

fission product release from pyrocarbon-coated microspheres of, mechanisms of, 22:26093 (ORNL-4229, pp 125-41)

fission product release measurement in irradiation capsules, helium sweep circuit for, 22:42371

fission product release measurements from fast breeder, review of, 22:53396

fission product transport and deposition measurements for gas cooled, 22:46911(R) (ORNL-4266)

fission products from uranium oxide (UO_2), effects of high heat rating operation on prompt release of, 22:7816(R) (ORNL-TM-2057)

fission rate effects on oxide-type, 22:33096 (KFK-700(Pt. VI))

fission rate effects on oxide-type, 22:53273(T) (EURFNR-472)

flow of pebble-bed reactor, analysis of bead path, (E), 22:30191

fluorination of molten-salt, 22:47204 (ORNL-4254, pp 241-78)

fragmentation of metallic, dynamics of, 22:12006(R) (ANL-7399)

fuel containment system for gas-fueled rocket reactors, description of magnetic field, 22:32948

gamma heating in, calculation using infinite medium spectra, 22:3156

grain structure of uranium dioxide, control by addition of iridium, 22:23877(P)

heat capacity of uranium oxide (UO_2), analysis of, 22:53260 (ANL-7425, pp 130-71)

heat transfer in compacted uranium oxide (UO_2) and plutonium oxide (PuO_2)—uranium oxide (UO_2) powders, (E/T), 22:27485 (EURAEC-1998)

heat transfer over surface of spherical pebbles in a rhombohedral fixed bed, (E/T), 22:10021

homogeneity of metal-clad oxide, γ-attenuation method for inspection of, 22:14739

international commerce in, legal and political aspects of control of, 22:40354

international commerce in, legal and political aspects of control of, 22:40353

international commerce in, legal and political aspects of control of, 22:40352

irradiation testing of molten-salt, 22:25374 (ORNL-4229, pp 22-49)

isotopic content of PCTR enriched uranium, analysis of, 22:18545 (BNWL-622)

isotopic content of, effects on dynamics of large fast reactors of, 22:14180

management efficiency for thorium—uranium-233, 22:20970(P)

management of, description of accurate accounting for, 22:37616

management program for USA, computer simulation of, 22:25042

management scheme for SGHW-type, METHUSELAH—AIMAZ analysis of, 22:30319

management scheme for SGHWR, calculation of optimum, 22:22781

management schemes for steam-generating heavy water-moderated reactors, analysis of optimum, 22:30259

marking for differentiating between normal and test, 22:4759(P)

mass for subcritical assembly Ressuco, calculation of uranium oxide (UO_2), 22:27463 (IEA-130)

mass transport model for oxide-type, 22:33096 (KFK-700(Pt. VI))

mass transport model for oxide-type, 22:53273(T) (EURFNR-472)

materials development for, 1967, 22:23760(R) (IN-1131)

materials development for, summary for 1965, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))

materials for development of, 22:21650

materials for SEFOR, radiation testing of, 22:18549 (DOCKET-50231-3)

materials for, bibliography on effects of steam and water on, 22:24962 (HMI-B-68)

materials for, review of selection methods for, 22:52192

mechanical properties of fueled and unfueled resin-stick-type, 22:11046 (ORNL-TM-2061)

mechanical properties of high temperature oxide, 22:9988(R) (ANL-7391)

mechanical properties of oxide, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)

mechanical properties of Phoebus 2A carbon coated and uncoated uranium carbide (UC)—zirconium carbide (ZrC), 22:35568 (LA-DC-9589)

mechanical properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)

meltdown testing in TREAT, improvements in fast neutron hodoscope used in, 22:28076

melting in fast reactors of ceramic, computer code for calculation of, 22:30202

melting of uranium oxide (UO_2), effects on reactivity change in fast reactors, (T), 22:27402 (BNWL-717)

metallurgy development for, 22:602(R) (BMI-1809)

mixtures of fission products and, chemical equilibria of, 22:27416(R) (ORNL-4228)

monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)

monthly progress report on, Argonne National Laboratory, 22:37401(R) (ANL-7457)

monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)

monthly progress report on, Argonne National Laboratory August 1968, 22:50699(R) (ANL-7487)

neutron flux improvement in, using californium-252 additions, 22:12498(P)

neutron resonance absorption by uranium-238 in cylindrical cell, epithermal, (T), 22:44581

neutron resonance integrals for, effective, (T), 22:24794

neutronics characteristics of Phoenix, 22:14289 (BNWL-635)

oxidation of bonded pyrolytic carbon coated particle-type, steam, 22:42201 (ORNL-4269)

oxidation of coated particle, literature survey on steam, 22:53276 (HMI-B-76)

oxide measurements in MSRE fused salt, 22:12035(R) (ORNL-4191)

particle size measurement in graphite—uranium dioxide, 22:1781

performance in gas-cooled fast reactors of coated particle, analysis of, 22:42215

performance of 1.5 to 15 MW(e) MCR, analysis of optimum economic and technical, 22:50777 (GMAD-3078-20(Vol.1))

performance of alternate concept of 1.5 to 15 MW(e) MCR, analysis of optimum economic and technical, 22:50780 (GMAD-3078-20(Vol.4))

performance of Canada power reactors, analysis for optimum economic, 22:42154 (AECL-3067, pp 61-4)

performance of ceramic, 22:46938

performance of coated-particle, irradiation testing of, 22:39937

performance of plutonium dioxide—uranium dioxide, at 120,000 MWd/t burnup, 22:4914

performance of plutonium nitride (PuN)—uranium nitride (UN) fast, analysis of thermal, 22:32818

performance of pyrolytic carbon-coated ceramic, analysis of, 22:24957 (GA-7698)

performance of unclad metal, 22:5945
performance test code for, proposal for, 22:28885
phase studies of ceramic, 22:21700(T) (EURFNR-387)
physical properties of plutonium and plutonium--uranium, data manual on, 22:43651 (TRG-Report-1601)
physical properties of uranium oxide, analysis of, 22:10010(R) (NP-17126)
physics characteristics of MTR Phoenix-core mockup in PRCF, 22:27459 (BNWL-634, pp 3.1-27)
physics characteristics of plutonium Phoenix, in PRTR, (T), 22:27459 (BNWL-634, pp 3.1-27)
physics characteristics of thorium--uranium, in PRTR, (T), 22:27459 (BNWL-634, pp 3.1-27)
physics measurements on hydrogen moderated colloidal uranium carbide (UC)--zirconium carbide (ZrC) suspension, for analysis of optimum performance of rocket reactors, 22:32943
plutonium and uranium isotopic distributions in natural uranium, irradiated to 22,000 MWd/MTU, (E/T), 22:20943
plutonium for, economics of use of, 22:10050
plutonium migration in mixed-oxide, (E), 22:27397 (ANL-7375, pp 135-59)
plutonium procurement for FFTF, administrative aspects of, 22:726 (BNWL-SA-1388, pp 13.1-3)
porosity and density control of irradiated sintered powder plutonium oxide (PuO_2)--uranium oxide (UO_2), effects of organic additives on, 22:27488(R) (NUMEC-3524-39)
preparation and properties of carbide-type, (E), 22:30155(R) (NAA-SR-12296)
preparation and properties of mixed plutonium dioxide--uranium dioxide, review of, 22:49800
preparation and properties of pelleted uranium dioxide, compacted without binder, 22:49795
preparation and properties of uranium dioxide, produced by hydrogen reduction of ammonium diuranate, 22:23873(P)
preparation and properties thorium nitride--uranium nitride, for thermal breeder reactors, 22:49852
preparation and testing pyrolytic carbon-coated particulate uranium dioxide, for ETR X-basket-2 experiment, 22:26082 (ORNL-TM-2097)
preparation and transport in U.K.A.E.A, 22:47046 (TRG-Report-1694)
preparation of carbides by fluidized--bed technique, 22:24925(R) (ANL-7427)
preparation of ceramic, 22:36543 (ANL-7450, pp 39-74)
preparation of ceramic plutonium, 22:27487(R) (LA-3880)
preparation of ceramic plutonium bearing, 22:15261(R) (BMI-1819)
preparation of ceramic uranium bearing, 22:15261(R) (BMI-1819)
preparation of cerium oxide-base uranium dioxide, for radiation testing, 22:41087 (CEND-2936-335, III.1-10)
preparation of coated particle, HFIR irradiation design parameters for, 22:46911(R) (ORNL-4266)
preparation of coated, for high-temperature gas-cooled reactors, 22:11040(P)
preparation of dense spherical, from actinide oxide aquasols, 22:28904(P)
preparation of dense, hollow uranium dioxide spheres for, 22:28907(P)
preparation of doped hypostoichiometric thorium dioxide and uranium dioxide, 22:38611(P)
preparation of enriched uranium carbide rod-type, using copper-bonded diamond saws and wheels, 22:23868
preparation of enriched uranium oxide (UO_2) pellets for Windscale AGR, 22:50750
preparation of glass, containing at least 40 wt percent of fissionable material, 22:41139(P)
preparation of high-density cermet, methods for, 22:26076
preparation of high-density uranium dioxide pellet, 22:4131
preparation of high-density uranium monocarbide, using uranium dicarbide and uranium metal, 22:38599 (BARC-319)
preparation of improved, using combinations of niobium carbide, plutonium carbide and uranium carbide, 22:52251(P)
preparation of microspheres for, method for, 22:13057(P)
preparation of mixed plutonium phosphide--uranium carbide, for fast breeder reactors, 22:11037(P)
preparation of molybdenum-coated uranium dioxide cermet-type, 22:23871
preparation of natural uranium, for Canadian reactors, 22:36449
preparation of particulate, with pyrolytic carbon coating, 22:11038(P)
preparation of pellet, pressure canning method for, 22:12515(P)
preparation of pelleted uranium dioxide, process for, 22:49793
preparation of plutonia--urania, gel-addition process for, 22:2016(R) (BAW-3714-4)
preparation of plutonium dioxide, production of stable low-nitrate sols for, 22:52244(P)
preparation of plutonium dioxide--uranium dioxide and uranium dioxide, sol-gel process for, 22:738
preparation of plutonium dioxide--uranium dioxide, incorporating metal powder, 22:49814(P)
preparation of plutonium dioxide--uranium dioxide, by gel-addition process, 22:19608(R) (BAW-3714-5)
preparation of plutonium--uranium monocarbide by precipitation from nitrates using sucrose, 22:19609(R) (NYO-3713-3)
preparation of pyrolytic carbon-coated, 22:21167
preparation of small spherical particles of, 22:11035(P)
preparation of spherical particles of, by sol-gel process, 22:8056
preparation of spherical particulate actinide carbide, 22:28915(P)
preparation of spherical particulate, by sol/gel method, 22:28912(P)
preparation of spherical thorium dioxide--uranium dioxide particulate, by KEMA sol-gel process, 22:23856 (CONF-660524-, pp 377-90)
preparation of spherical, for pebble-bed reactors, 22:52252(P)
preparation of ternary U-base alloy, 22:23743(P)
preparation of tungsten-coated uranium dioxide cermet-type, 22:23871
preparation of uranium-233-enriched thorium dioxide--uranium dioxide, pilot plant design and operation for direct sol-gel, 22:23857 (CONF-660524-, pp 417-43)
preparation of zirconium oxide-base uranium dioxide, for radiation testing specimens, 22:41087 (CEND-2936-335, III.1-10)
preparation process for plutonium, thorium, or uranium carbides from their halides, 22:8817(P)
processing by fluoride volatility, facility for, 22:4418
processing for recovery of plutonium dioxide and uranium dioxide, 22:19618(P)
processing irradiated uranium dioxide pellets using hydrofluoric acid in oxygen followed by fluorination, 22:25443 (ANL-7375, pp 46-94)
processing of coated-particle, one step-method using potassium hyperoxide and/or sodium peroxide melt, 22:12500(P)
processing of future power plant, economics of, 22:27974
processing of irradiated, plant for, 22:25453 (CEA-N-616, pp 215-45)
processing of irradiated, shielding calculations for Karlsruhe facility for, 22:5397 (NP-17030)
processing of irradiated, using 18-stage centrifugal mixer-settler, 22:8250 (DP-MS-67-71)
processing of MSBR, on-site, 22:23093 (CONF-660524-, pp 653-69)
processing of MSRE, description and safety analysis of plant for, 22:25463 (ORNL-TM-907(Rev.))
processing of spent, for recovery of fission products and transuranium isotopes, economics of, 22:49032
processing of spent, from power reactors, economic potential for isotope production in, 22:8317
processing of spent, recovery of plutonium dioxide and uranium dioxide by electrolysis in, 22:30669
processing of spent, solvent partitioning method for, 22:36473
processing of zirconium-alloy, control using boric acid as soluble poison in, 22:21155 (IN-1173)
processing of, optimizing startup and shutdown procedures in, 22:33540
processing of, redox properties of plutonium in, 22:47224
processing of, review of five years experience at Marcoule plant for, 22:47220
processing of, technical progress review on, 22:22883
processing uranium dioxide fuel pellets, development studies on, 22:25443 (ANL-7375, pp 46-94)
procurement of plutonium, for FFTF, 22:1852 (BNWL-SA-1388, pp 7.1-8)
procurement program at ORNL for research reactors, 22:10060 (ORNL-4170, pp 162)
production and fabrication of, vibratory compacting method for, 22:2564
production and properties of yttrium oxide-modified uranium dioxide, 22:41093(P)
production at Springfields, review of, 22:28899
production for organic-cooled heavy water reactor, plant design for, 22:13049
production from mixtures of uranium carbide and uranium silicide, 22:45812(P)
production in Argentina, 22:33189(R) (NP-17470)
production in South Africa of, investigations of, 22:52228
production in South Africa, review of, 22:10903
production method for microspheres of, 22:49827(P)
production method for microspheres of, 22:49801(P)
production of ceramic, by sol-gel process, 22:28887 (ORNL-4204, pp 22-39)
production of compacted uranium dioxide, under carbon dioxide, 22:49794
production of dense oxide, method for, 22:19507(P)
production of dense, crack-free plutonium castings for, 22:10941(P)
production of enriched uranium, economics of, 22:10505 (PG-Report-824)
production of enriched uranium-235, economic and legal analysis of European, 22:30209
production of granular ceramic, methods for, 22:21758(P)
production of graphite-dispersed uranium dioxide, method for, 22:8815(P)
production of high-density impregnated beryllium oxide,

incorporating carbide or oxide additives, 22:15247(P)
production of pelleted uranium dioxide, from hydrated uranium trioxide, 22:38601 (DP-1085)
production of power reactor, analysis of economics for, 22:48705
production of uranium, 22:30683
production of uranium carbide, by casting and melting, 22:49790
production of ZPR, during Feb. 1968, 22:24925(R) (ANL-7427)
production of, description of U.K. Capenhurst facilities for, 22:48797
production of, economics of, 22:1823
production of, economics of, 22:30682
production of, facilities in Germany for, 22:30754
production of, method for, 22:34105(P)
production of, use of blending in reprocessing of uranium for, 22:30682
production requirements by 1990 of, analysis of breeder reactor, 22:35691
production requirements by 1990, effects of fast breeder reactor development on, 22:37464
production techniques for uranium silicide, 22:25157
properties evaluation of, analysis of, 22:48791
properties of ceramic plutonium, determination of high temperature, 22:27487(R) (LA-3880)
properties of ceramic, for liquid-metal-cooled fast breeders, 22:30123 (BNWL-SA-1550)
properties of coated particulate, 22:15261(R) (BMI-1819)
properties of irradiated, 22:27856(R) (K-1738)
properties of plutonium, 22:43663
properties of uranium carbide--uranium nitride solid-solution, 22:31468
properties of uranium dioxide, effects of yttria additions on, 22:23879(P)
properties of vaporized fast, aerosol, 22:5950
properties of, review, 22:19645
pyrochemical processes for fast oxide breeder, development of, 22:12006(R) (ANL-7399)
radiation damage to fast breeder, 22:14259 (LA-3768)
radiation effects measurements on carbides, 22:24925(R) (ANL-7427)
radiation effects on beryllium oxide dispersion-type, beta, fission fragment, and neutron, 22:774
radiation effects on beryllium oxide-base, fast and thermal neutron, 22:19587
radiation effects on calcium oxide stabilized uranium dioxide--zirconium dioxide, at 40 to 70 percent burnup, 22:41127 (CEND-2936-335, IV.1-41)
radiation effects on ceramic, 22:15263
radiation effects on ceramic, review, 22:21650
radiation effects on cerium oxide--uranium dioxide, at 40 to 70 percent burnup, 22:41127 (CEND-2936-335, IV.1-41)
radiation effects on coated particle, fast neutron, 22:11046 (ORNL-TM-2061)
radiation effects on coated particle, for HTGCR, in-pile, 22:11046 (ORNL-TM-2061)
radiation effects on coated-particle ceramic, fast neutron, 22:4915
radiation effects on dimensional changes in carbon coated, neutron, 22:11097
radiation effects on fast, determination of neutron, 22:27487(R) (LA-3880)
radiation effects on fast, equipment and methods for examination of neutron, 22:6138(R) (LA-3820)
radiation effects on fast, review of, 22:16330
radiation effects on high-temperature, 22:7788(R) (ANL-7382)
radiation effects on metallic, review, 22:21650
radiation effects on orientation and thermal expansion of pyrolytic carbon-coated, neutron, (E), 22:11096
radiation effects on oxide-type, 22:33096 (KFK-700(Pt. VI))
radiation effects on oxide-type, 22:7788(R) (ANL-7382)
radiation effects on oxide-type, 22:53273(T) (EURFNR-472)
radiation effects on pellets of plutonium dioxide--uranium dioxide, in-pile, 22:49772(R) (NUMEC-3432-44)
radiation effects on plutonium, 22:10050
radiation effects on plutonium oxide (PuO_2)--uranium oxide (UO_2), electron microprobe analysis of, 22:24925(R) (ANL-7427)
radiation effects on plutonium-containing, review on, 22:8804
radiation effects on properties of coated-particle, in-pile, 22:23853 (CONF-660524-, pp 273-92)
radiation effects on pyrolytic-carbon-coated, STRETCH program for, 22:23846 (ORNL-TM-2127)
radiation effects on sodium--uranium paste-type, in-pile, 22:43613 (ANL-7299, pp 144-9)
radiation effects on temperature distribution in, as a function of oxygen migration, 22:11088 (BNWL-536)
radiation effects on thermal conductivity of ceramic, at high burnups, 22:41129 (CEND-2936-335, VI.1-7)
radiation effects on, description of optical examination methods for neutron, 22:27497
radiation effects on, review, 22:12954
radiation effects testing of pyrolytic carbon coated microsphere, high temperature fast neutron, 22:46911(R) (ORNL-4266)
radiation testing of ceramic, in MTR, 22:22653(R) (ANL-7419)
radiation testing of coated-particle, development of capsules for, 22:42375
radiation testing of liquid plutonium-alloy, in-pile loops for, 22:35600 (LA-3832)
radiation testing of pyrolytic-carbon-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
radiation testing of silicon carbide-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
radiation testing of uranium oxide (UO_2) and uranium oxide (UO_2)--niobium, for MCR, 22:32924 (GMAD-3078-30)
radiation testing of uranium oxide (UO_2)--stainless steel dispersion, for AARR, 22:32973 (IN-1160)
radiation testing of, design of capsules for high-temperature, 22:42491
radioactivity of reprocessed breeder, calculation of, 22:23247(T) (EURFNR-385)
radioinduced bubbles in, effects on fuel stability, 22:17151
radioinduced fission gas release and swelling of ceramic, at high burnups, 22:41129 (CEND-2936-335, VI.1-7)
radioinduced gas bubble formation in ceramic, 22:31529
radioinduced swelling of coated spheres of, microradiographic measurement of, 22:19571 (AERE-M-1977)
raw material procurement and fabrication of, 1966 JCAE hearings on, 22:12217
raw materials procurement for, 1964 JCAE hearings on, 22:12218
reaction of plutonium and uranium ceramic, at high temperatures, 22:36550
reaction of steam and pyrolytic carbon coated, rates of, 22:27416(R) (ORNL-4228)
reaction rates for steam and, effects of temperature on, 22:27416(R) (ORNL-4228)
reactions of bonded coated-particle, with steam, 22:26070 (ORNL-4229, pp 119-24)
reactions of plutonium dioxide--uranium dioxide, with Incoloy-800 and stainless steel at 1400°F, 22:4739
reactions of pyrolytic-carbon-coated particles of, with water vapor, 22:26070 (ORNL-4229, pp 119-24)
reactivity worth measurements in cavity reactor, 22:3881(R) (NASA-CR-72234(Vol.1))
recovery and reprocessing of, 22:14312
recovery of enriched uranium from, process for, 22:21167
recovery of plutonium and uranium from, pyrochemical process for, 22:21168
recycle of ceramic and cermet, capability of PCUT plant for, 22:49799
recycle program for, description of optimum, 22:32896
recycling of uranium-233-containing, in unshielded pilot plant, 22:23190 (CONF-660524-, pp 299-319)
refining and conversion of light water power, projected costs for uranium, 22:44841 (WASH-1082)
removal of rare earth fission products from, pyrochemical process for, 22:21168
reprocessing by fluoride volatility process, fluorine disposal in, 22:48901 (RFP-1200)
reprocessing by fluoride volatility techniques, 22:40175 (KR-126, pp 342-60)
reprocessing costs for, international conference on, 22:16169
reprocessing cycle for, operation of ANL, 22:7788(R) (ANL-7382)
reprocessing in Spain, development of, 22:33536
reprocessing of alloys containing enriched uranium, 22:47221
reprocessing of ceramic, for fast breeder reactors by salt transport, 22:40184 (KR-126, pp 476-93)
reprocessing of coated uranium--thorium carbide, for 10,000-MW(t) HTGR, 22:23092 (CONF-660524-, pp 617-45)
reprocessing of coated-particle, in oxidizing alkali salt melts, 22:33515
reprocessing of coated-particle, reactions of cesium with graphite matrix in, 22:33514
reprocessing of European fast reactor, economics of, 22:35499
reprocessing of fast breeder and molten-salt breeder, pyrochemical methods for, 22:51063
reprocessing of fast breeder, aqueous methods for, 22:40178 (KR-126, pp 394-404)
reprocessing of fast breeder, fluoride volatility process for, 22:40181 (KR-126, pp 425-51)
reprocessing of German, description of prototype Purex plant for, 22:51151
reprocessing of high-plutonium-content, extraction method for, 22:51082
reprocessing of irradiated, by dissolution in oxidizing alkaline earth melts, 22:35916(P)
reprocessing of irradiated, description of fluidized alumina bed for, 22:25454 (CEA-N-616, pp 246-94)
reprocessing of irradiated, to recover uranium, plutonium, neptunium, and other fission products, 22:35908(P)
reprocessing of irradiated, using organic solvent in presence of aqueous salting agent, 22:4268(P)
reprocessing of molten salt, 22:23107
reprocessing of molten-salt, 22:47204 (ORNL-4254, pp 241-78)
reprocessing of molten-salt, 22:27861 (ORNL-4204, pp 60-7)

reprocessing of molten-salt, by distillation, 22:14565 (ORNL-4139, pp 48-72)
reprocessing of molten-salt, measurement of relative volatilities in, 22:47204 (ORNL-4254, pp 241-78)
reprocessing of MSRE, 22:47112 (ORNL-4254, pp 88-173)
reprocessing of natural uranium, enriched uranium oxides, uranium dioxide--plutonium dioxide, and aluminum--uranium, uranium--zirconium alloys, 22:47223
reprocessing of power reactor, analysis of economics for, 22:48705
reprocessing of slightly enriched oxide, decontamination factors in, 22:47222
reprocessing of spent graphite-coated, process for, 22:30657(P)
reprocessing of thorium, aqueous processes for, 22:40173 (KR-126, pp 298-323)
reprocessing of thorium, review of methods for, 22:42387 (KR-126, pp 279-97)
reprocessing of thorium-based, engineering cost studies of, 22:23191 (CONF-660524-, pp 509-35)
reprocessing of uranium-containing, chlorine chloride volatility process for, 22:30673(P)
reprocessing of, amine extraction process for, 22:40169 (KR-126, pp 201-28)
reprocessing of, analytical chemistry in, 22:39983 (KR-126, pp 143-52)
reprocessing of, analytical methods for, 22:39984 (KR-126, pp 153-71)
reprocessing of, aquafluor process for, 22:40176 (KR-126, pp 361-84)
reprocessing of, chemical and radiolytic stability of diluents and solvents in, 22:47226
reprocessing of, description of AT1 plant for, 22:25472(T) (ORNL-tr-1765)
reprocessing of, description of The Hague Center for, 22:45148(T) (ORNL-tr-1785)
reprocessing of, design and operation of equipment and plant for, 22:51061
reprocessing of, design of fast contactors for solvent-extraction, 22:40180 (KR-126, pp 415-24)
reprocessing of, development of future market for, 22:40162 (KR-126, pp 21-30)
reprocessing of, dissolution process for, 22:40165 (KR-126, pp 74-96)
reprocessing of, dry methods for, 22:40183 (KR-126, pp 468-75)
reprocessing of, economics of aqueous methods for, 22:40161 (KR-126, pp 9-20)
reprocessing of, effects of fission-product chemistry on TBP process for, 22:40052 (KR-126, pp 101-19)
reprocessing of, electrolytic reduction of solutions during, 22:10262(P)
reprocessing of, French plants for, 22:12412
reprocessing of, from fast breeder reactors, 22:40177 (KR-126, pp 385-93)
reprocessing of, from fast breeder reactors, aqueous methods for, 22:40179 (KR-126, pp 405-14)
reprocessing of, ion-exchange method for final purification in, 22:40170 (KR-126, pp 229-44)
reprocessing of, management of tritium in aqueous wastes from, 22:25444 (ANL-7375, pp 180-9)
reprocessing of, mixing of fluids in tanks of large length-to-diameter ratio by recirculation for, 22:33538
reprocessing of, molten ammonium nitrate method for, 22:47229(P)
reprocessing of, Netherlands--Norwegian Reactor School course on, Aug. 21 to Sept. 1, 1967, 22:40160 (KR-126)
reprocessing of, pilot plant and sampling methods for, 22:27846 (CEA-N-816, pp 277-323)
reprocessing of, pretreatment of aqueous feed solutions prior to solvent extraction in, 22:40166 (KR-126, pp 87-100)
reprocessing of, pyrometallurgical processes for, 22:40182 (KR-126, pp 452-67)
reprocessing of, review of halide volatility method for, 22:40174 (KR-126, pp 324-41)
reprocessing of, safety aspects of aqueous methods for, 22:40185 (KR-126, pp 494-504)
reprocessing of, safety aspects of nonaqueous, 22:40186 (KR-126, pp 505-18)
reprocessing of, separation of strontium and cesium ions from uranyl ions in, 22:47227(P)
reprocessing of, solvent extraction and fluorination methods for, 22:8203(P)
reprocessing of, technical and economic evaluation of, 22:40187 (KR-126, pp 519-32)
reprocessing of, treatment and disposal of wastes from, 22:40171 (KR-126, pp 245-66)
reprocessing of, tritium behavior in fluidized-bed fluoride volatility and pyrochemical methods for, 22:25444 (ANL-7375, pp 180-9)
reprocessing optimization for, 22:25472(T) (ORNL-tr-1765)
reprocessing plant for, description of EUREX, 22:40197
reprocessing plants for, description of U.K, 22:48797
reprocessing plants for, mathematical model for optimization of, 22:27521(R) (ORNL-4236)
reprocessing studies for gas cooled, silicon carbide coatings depositions for, 22:46911(R) (ORNL-4266)
reprocessing times for light water power, 22:44841 (WASH-1082)
requirements for Canadian, anticipated future, 22:42157 (AECL-3136)
requirements for future power reactor development, 22:39822
requirements for power stations, economics of uranium, 22:39814
requirements for Western world, uranium, 22:14312
requirements of uranium, for Czechoslovakian power reactors during 1970 to 1990, 22:50746 (ZJE-25)
research on laboratory techniques for, 22:4315
research progress on, in Japan, 22:30420
resources and requirements for, review of uranium, 22:25155
resources in Latin America, 22:39965 (PRNC-112)
response of SORA, effects of temperature on thermoelastic, 22:12093 (EUR-3654)
sampling of irradiated, laser-beam vaporization for micro-, 22:36543 (ANL-7450, pp 39-74)
self-shielding factors for closely spaced, calculation of, (T), 22:5720
separation of fission products from MSRE, by volatilization, 22:47112 (ORNL-4254, pp 88-173)
separation of fission products, plutonium, and uranium from spent, by solvent extraction using TBP in kerosene, 22:25484
separation of neptunium and uranium from zirconium-alloyed, using boric acid and hydrofluoric acid, method for, 22:23095 (IN-1091)
separation of plutonium and uranium from fast breeder, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
separation of plutonium and uranium from uranium dioxide pellets, fluid-bed fluoride volatility process for, 22:25443 (ANL-7375, pp 46-94)
separation of plutonium from undissolved uranium, by solvent extraction, 22:45162(P)
separation of plutonium from, by solvent extraction using tributyl phosphate, electronic control of, 22:23123(P)
separation of rare earth fluorides from molten fluoride, using uranium trifluoride, 22:23126(P)
separation of ruthenium from effluents from irradiated, precipitation method for, 22:37842(P)
shipping of spent, summary of safety studies on, 22:53395
shipping of, design of casks for, 22:290
sintering of oxide, effects of atmospheric conditions on, 22:12006(R) (ANL-7399)
sintering plutonium or uranium compound, high-temperature furnace design for, 22:42950(P)
stability of coated-particle, at high burnup, 22:26093 (ORNL-4229, pp 125-41)
stability of graphite--plutonium dioxide at high temperatures, 22:38597 (AECL-2783)
stability of graphite--uranium dioxide, at high temperatures, 22:38597 (AECL-2783)
stability of uranium carbide--uranium nitride solid-solution, 22:31467
stability of, effect of fission gases on, 22:26045
stoichiometric properties of oxide, comparisons of, 22:12006(R) (ANL-7399)
storage design for JRR-2, 22:16738 (JAERI-1153)
stress analysis in pebble-bed reactor spherical, axisymmetric heat transfer solution for temperature and thermoelastic, (T), 22:32803
supply effects on development of optimum economic 1000 MW(e) U. S. power reactors, analysis of, 22:48703
supply of North and South America, analysis of, 22:48796
supply services for U. K. reactors, description of, 22:47045 (NP-17599, pp 41-4)
survey study on the U. S. uranium market, 22:18623
swelling of, effects of silicon and carbon on, 22:9988(R) (ANL-7391)
swelling of, effects of trace element impurities on, 22:9988(R) (ANL-7391)
technetium determination in irradiated uranium--plutonium--zirconium, 22:22653(R) (ANL-7419)
technology of fast breeder, 22:18501
temperature coefficient of reactivity for MSRE circulating, calculation of, 22:16157 (ORNL-4233)
testing encapsulated microspheres of plutonium dioxide, in high-velocity impact, 22:42995 (MLM-1499)
testing of, Halden program for in-pile, 22:12027(R) (HPR-88)
thermal characteristics of, 22:33093 (KFK-700(Pt. II))
thermal characteristics of, 22:53273(T) (EURFNR-472)
thermal conductivity integration, correction for density in, 22:41097 (GEAP-5493)
thermal conductivity of cylindrical coated-particle, under helium and argon, effects of pressure and temperature on, 22:41099 (JUL-511-RX)
thermal conductivity of plutonium dioxide--uranium dioxide, as a function of oxygen to metal ratio, 22:28934
thermal diffusivity of uranium carbide (UC) and plutonium carbide (PuC), 22:22653(R) (ANL-7419)
thermal expansion of cracked pellet-type, stress and strain distributions in collapsed cladding from, (T), 22:50844 (TRG-Report-1547)
thermal properties of cerium oxide-base uranium dioxide composite, 22:41086 (CEND-2936-335, II.1-20)
thermal properties of thorium uranium carbide and thorium

  uranium nitride, 22:11072 (ORNL-TM-2015)
 thermal properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)
 thermal testing uranium dioxide--zirconium dioxide, 22:11068
 thermodynamic and optical properties of uranium plasma, for rocket reactors, 22:18541 (GA-8244)
 thermodynamic properties of plutonium dioxide--uranium dioxide solid-solution, 22:31479
 thermodynamics of, mass-spectrometric studies for determination of, 22:7788(R) (ANL-7382)
 thorium for, evaluation of use of, 22:12150
 transformation temperatures of fizzium--plutonium--uranium, 22:19537
 uranium measurements in MSRE salts, trivalent, 22:12035(R) (ORNL-4191)
 uranium resources for, survey of European, 22:25000
 uranium-236 content in, obtained by recycling spent uranium, effects of, on separative work, 22:30681
 use in fast breeder reactors of fused chlorides of plutonium, NaK, and uranium, 22:16151 (INR-842/C)
 use of ceramics for, 22:4880
 use of plutonium as, 22:10075(R) (EURAEC-1929)
 use of plutonium as, development during Oct. to Dec. 1967, 22:30343(R) (EURAEC-1992)
 use of plutonium in power reactors, development program for, 22:20778(R) (BNWL-624)
 use of plutonium in reactors designed for uranium, economics of, (T), 22:20780 (BNWL-624, pp 4.1-16)
 use of plutonium in water-cooled thermal power reactors, review of physics data for, 22:37407 (BNWL-801)
 use of plutonium Phoenix, in maritime reactors, (T), 22:27459 (BNWL-634, pp 3.1-27)
 use of uranium oxide (UO_2) and thorium oxide (ThO_2)--uranium oxide (UO_2) aqueous suspension, in exponential piles, 22:25107
 uses of plutonium, in European reactors, 22:5931(R) (NP-17110)
 utilization at various Italian power stations, 22:16169
 voids in reflector-controlled reactors caused by cermet, effects on specific mass of, 22:16318 (UCID-15268)
Reactor Fuses
 see Reactor Control Elements
REACTOR LOADING MACHINES
 configuration of 17 heavy water-moderated, description of, 22:46921 (TID-24679(Vol.2))
 configuration of centrally-supported lateral extension-movement, 22:42407(P)
 configuration of Hinkeley Point 2 Reactors, description of, 22:46948
 configuration of light-activated transducer system for remote position-indication, description of, 22:48763(P)
 configuration of liquid-cooled reactor rotating-drum shielded tank-storage, description of, 22:48794(P)
 configuration of multiple tube-connected coolant-sampling fuel element failure-detecting, description of modified, 22:42569(P)
 configuration of roller bearing-connected screw-activated multiple-link chain-drive, description of, 22:50876(P)
 configuration of SEFOR, description of, 22:47023
 configuration of SGHWR, 22:42229
 configuration of spherical-connection multiple movable jaws for, 22:42457(P)
 description for reactors with top rotating biological shield covers, 22:16238(P)
 description for sodium-cooled reactor, 22:3872(P)
 description of 550 MW integral unit gas cooled reactor, 22:3852
 description of BN-350 Reactor, 22:18520
 description of control rod three member pivotally coupled, 22:25166(P)
 description of door-sealed lock-chamber with remote control, for gas-cooled reactors, 22:14218(P)
 description of enclosed twin-arm, for gas-cooled reactors, 22:18640(P)
 description of gas pressure balanced liquid-sodium filled, for liquid sodium-cooled reactors, 22:16237(P)
 description of gas-cooled reactor, 22:18628(P)
 description of gas-cooled reactor, located in shielded gas-filled chamber above core, 22:10112(P)
 description of gas-cooled reactor, with magazine for rapid fuel element transfer, 22:10114(P)
 description of gas-cooled reactor, with means for monitoring refueling through a periscope, 22:10113(P)
 description of gas-cushion bearing supported radial arm, for gas-cooled reactors, 22:10041(P)
 description of heterogeneous gas-cooled reactor pressure vessel enclosed rotating arm, 22:20872(P)
 description of lock-chamber tunnel, for gas-cooled reactors, 22:10035(P)
 description of pneumatically-driven telescoping coaxial tubes for, 22:25196(P)
 description of pressure vessel enclosed, 22:3950(P)
 description of rotatable cylindrical, with sealed storage area, 22:3955(P)
 description of SGHWR, 22:18468
 description of vertical pressure vessel, for organic-cooled reactors, 22:3860
 description of water-filled double-wall containment vessel guide duct connected, 22:14337(P)
 description with means for positioning fuel elements in central position under access port, 22:25047(P)
 design analysis of Halden Boiling, detailed, 22:35463 (HPR-95)
 design and operation of, 22:8252 (EUR-3629)
 design for unloading fuel from containers, 22:19019(P)
 design of below core, with above core interlocking key device, 22:1893(P)
 design of cylindrical overhead, with swivelling plug and movable trolley, 22:14322(P)
 design of movable-arm, for graphite-moderated gas-cooled reactors, 22:12071(P)
 design of overhead beam, for gas-cooled reactors, 22:12070(P)
 design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
 design parameters for liquid sodium-cooled and steam-cooled plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled European fast reactors, analysis of, 22:35498
 design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
 drive design for, electric powered screw-nut translational, 22:1901(P)
 effects of liquid sodium environment on fast reactor, 22:18503
 fabrication of Yugoslav power, 22:10087
 fluid-cooled external-overhead-movable, for pressurized fluid-cooled reactor, 22:35523(P)
 grab for vertically mounted fuel assemblies, description of water cooled, 22:44932(P)
 grabs for cable-suspended power-driven hoist-type, description of dual coaxial tube ball-latched, 22:42568(P)
 grippers for, description of wire-actuated double-hook, 22:39928(P)
 heavy water-cooled and -moderated boiling reactor, description of, 22:30266
 heavy water-moderated boiling water-cooled plutonium self-sustaining power, description of, 22:30238
 multiple-jet liquid injecting, description of pebble-bed reactor, 22:37578(P)
 operation of large power reactor, summary of, 22:16146 (GA-8075)
 performance of 17 heavy water-moderated, analysis of, 22:46920 (TID-24679(Vol.1))
 performance of Shippingport Pressurized-Water Reactor, description of improvements in, 22:32789(R) (WAPD-MRP-124)
 performance of various, for FFTF, 22:25077 (BNWL-683)
 position control system for, description of multiple-row varying-number receiving coils for electromagnetic exciter coil varying-frequency position, 22:48784(P)
 pressure lock tube for, description of vertical-access dual-section with removable plug, 22:39941(P)
 pressure vessel-penetrating externally-driven vertical axis-rotating turntable with extending arm and grippers, description of liquid sodium-cooled fast reactor, 22:39801(P)
 pressure vessel-penetrating horizontal pivot and transverse member vertical-access, description of liquid sodium-cooled fast reactor, 22:39800(P)
 pressure vessel-penetrating internal electric-driven standpipe-guided spool-wound cable with sling-connection, description of, 22:39913(P)
 screw-and-nut gripper drive for hollow cylinder contained, description of, 22:30396(P)
 support for, description of, 22:18630(P)
 testing of gas-cooled reactor on-power, description of, 22:46975
 transducers for, description of sodium-immersed ultrasonic, 22:22654 (APDA-220)
REACTOR MODERATORS
 (For general studies. Moderators for specific reactors or reactor types are treated at the reactor or reactor-type entry.)
 book: Nuclear Graphite, 22:34106
 core structure for solid, description of brick-type multiple hexagonal column key-coupled, 22:39945(P)
 description of deuterium bearing substance and hydrogen bearing substance mixtures, 22:20971(P)
 description of prismatic graphite rods for, with minimum transverse thermal expansion in reactor cold zone, 22:3948(P)
 description of rod, with lateral surface helical slots, 22:3960(P)
 description of solid multi-side polygon column, with key slots and control rod holes, 22:14323(P)
 description of solid prismatic block, key-joined, 22:10107(P)
 description of zirconium deuteride and zirconium hydride, in various densities and geometries, 22:14364(P)
 design of dimensionally stable graphite, 22:23874(P)
 development of refractory materials for, 22:30155(R) (NAA-SR-12296)
 disadvantage factors for, methods for calculating, 22:50850
 effects of boron concentration, temperature, and density on efficiency of pressurized water, 22:30165(R) (WCAP-3706)
 effects of boron concentration, temperature, and density in efficiency of pressurized water, 22:30164(R) (WCAP-3703)

  materials development for, 22:614
  materials for, development of, 22:21749
  materials for, properties of transition metal hydrides as, 22:19528
  materials for, review of, 22:52192
  mechanical properties of, testing methods for, 22:30385
  neutron absorption time distribution in poison-bearing, (T), 22:20406 (FEI-85)
  neutron ages in, tables of calculated values for, (T), 22:32466
  neutron attenuation in nonhydrogenous infinite homogeneous, solution of differential equations for, (T), 22:25149
  neutron behavior in, use of time-dependent transport equation for describing thermal, 22:30372
  neutron buckling calculations in, determination of diffusion length from, 22:30371
  neutron cross sections for, models for calculating Doppler-broadened effective, (T), 22:15927 (UCRL-50323)
  neutron decay in crystalline, (T), 22:5749
  neutron decay states in noncrystalline, energy dependent transport theory for determining unstable pulsed, 22:33155
  neutron density distributions from pulsed sources in time-dependent, (T), 22:20417(T) (JPRS-43682, pp 106-22)
  neutron density from pulsed source in finite moderating volumes, time-dependent, (T), 22:29882
  neutron diffusion and rethermalization in hydrogenous, thermal, (E), 22:29874
  neutron energy and time distributions from hydrogen-bearing radiators, (T), 22:44572(T) (ANL-Trans-638)
  neutron flux determinations in beryllium, use of high and low energy neutron pulses for, 22:30376
  neutron flux in heavy gaseous, Laguerre polynomials in calculation of thermal, 22:50852
  neutron flux in, effects on resonance integral of nonuniformity of, 22:30381
  neutron leakage spectra from hydrogenous, angular- and energy-dependent thermal, (T), 22:29866
  neutron pulse decay constants and density in, thermal, (T), 22:29861
  neutron pulse propagation in, discussion of experimental techniques for studying, 22:33157
  neutron scattering in graphite, effects of temperature on inelastic, 22:30377
  neutron scattering in organic, calculations of thermal neutron spectrum and, 22:30379
  neutron scattering in polyphenyl, calculation of thermal, 22:30380
  neutron scattering kernels for graphite and beryllium, computer program for calculating effective temperature using Debye model for determining, 22:24413 (WANL-TME-1666)
  neutron scattering law data for, at various temperatures, 22:48411 (AERE-R-5778)
  neutron scattering measurements in heavy and light water, neutron spectral density determination from, 22:30378
  neutron slowing down in, time moments of, (T), 22:48426 (RPI-328-133, pp 60-100)
  neutron thermalization in hydrogenous, time-dependent, (E), 22:48412(T) (AERE-Trans-1088)
  neutron thermalization in organic, Monte Carlo analyses of time-dependent, 22:30382
  neutron thermalization in, asymptotic properties of energy distribution during, (T), 22:5711
  neutron thermalization in, survey on, (E/T), 22:15929
  neutron thermalization in, time-dependent, (T), 22:41929
  neutron thermalization in, with nonuniform temperature distribution, calculations using heavy-gas model, (T), 22:11887
  neutron thermalization power of Miramid plastic, method for measuring, (E), 22:53068
  neutron wave propagation in graphite, calculations using diffusion approximation, (T), 22:48440
  neutron wave propagation in polycrystalline, velocity-dependent transport theory analysis of, (E/T), 22:35714
  performance of carbon dioxide, analysis of, 22:25153
  phonon frequency distributions in, temperature dependence of, (T), 22:48414(R) (GA-8773)
  properties evaluation of, analysis of, 22:48791
  properties of beryllium oxide, 22:21778 (UCID-15285)
  properties of magnesium oxide, 22:21778 (UCID-15285)
  reactor control using variable phase liquid, 22:25051(P)
  structure of solid, description for heterogeneous reactors, 22:3874(P)
  structure of solid, description of key aligned, 22:3873(P)
  tank for pressure-tube type, description of collapsible, 22:25192(P)
  thermal stability of graphite, distribution of graphite with varying coefficients of expansion for, 22:39942(P)
  use of ceramics for, 22:4880
  voids in, pulsed source techniques for measurement and calculation of effects of, 22:39778 (JUL-518-RG)
Reactor Multiplication Factor
    see Reactivity
REACTOR OSCILLATORS
  calibration of epithermal, 22:37615
  control system of Balanced Oscillator Tests, description of automatic analog, (E/T), 22:35662 (EURFNR-498)
  description of HTLTR, 22:22804(R) (BNWL-685)
  description of Milan Polytechnic L-54, 22:50834
  description of RB-2 research, 22:25103
  description of Saxton Power Reactor, for dynamic measurements, 22:1777(R) (WCAP-3696-5)
  drives for multiple upper-side-open square tube, description of switch-actuated gear, 22:53472(P)
  pulse generator for, description of electromagnetic, 22:18637(P)
  testing of SEFOR, description of, 22:35595 (GEAP-5576)
  use for measurement of low reactivity, 22:44910
  use for reactivity measurements in RB-2, 22:12097
  use for zero power transfer function of Kansas State University TRIGA Mark 2 reactor, description of, (E/T), 22:44899 (TID-24579)
  use in burnup parameter determinations for irradiated fuel pins, (E/T), 22:48749 (AE-326)
  use in Halden Boiling Reactor of, description of, 22:35462 (HPR-89)
  use of, description of opposite movement for known and unknown absorption cross section samples for improved, 22:37589(P)
Reactor Pressure Vessels
    see Pressure Vessels
REACTOR SAFETY
    (Theoretical or experimental investigations of the time-dependent behavior of various reactor types and designs, and in particular, the behavior of reactor types and designs under various real or hypothetical accident conditions.)
  accident analyses for EDF-4, 22:18441
  accident analyses for, summary of, 22:12054
  accident analysis for 90 MW(t) JPDR-2, description of, 22:53302
  accident analysis for CANDU-BLW-250 reactor, 22:30233
  accident analysis for high-temperature, gas-cooled reactors, 22:13062 (BNWL-473, pp 5.19-23)
  accident analysis for HWOCR, maximum credible, 22:3813(R) (AI-CE-54)
  accident analysis for large fast breeders, relationship of double containment and aerosol behavior to, 22:7805 (EURFNR-425)
  accident analysis of aqueous uranyl nitrate excursion in Oak Ridge Critical Experiments Facility on January 30, 1968, 22:35607 (ORNL-TM-2207)
  accident analysis of pressurized-water and gas-cooled reactors, methods used in U. S., Canada, and U. K. for, 22:30195
  accident analysis of TAPIRO reactor, use of analog simulators for reactivity insertion, 22:39883
  accident analysis, description of one-dimensional computer program for hypothetical, 22:25124 (BNWL-612)
  accident calculations for 1000 MW(e) reactor, computer code for, 22:9988(R) (ANL-7391)
  accident calculations for large fast, core configuration effects on explosive yields for, 22:53390
  accident flooding system, description of dry pool containment, 22:7873(P)
  accident prevention for SNAP, use of gadolinium for water-immersion, 22:6080
  accident probability concept for, analysis of, 22:22723
  accident simulation for 3300 MW(t) boiling reactor, CHEMLOC-2 computer program for coolant loss, 22:53260 (ANL-7425, pp 130-71)
  accident simulation for fast, use of chemical explosives for rapid energy release, 22:22655 (AWRE-R-5/65)
  accidents associated with, tabular summary of, 22:12044
  accidents in AVR Reactor, simulation of coolant loss, 22:53308
  accidents in liquid-cooled fast breeder reactor, plutonium oxide (PuO_2)--sodium--uranium oxide (UO_2) aerosol behavior simulation for, 22:53262 (BNL-12757)
  accidents in NPTF, analysis of simulated meltdown, (T), 22:7891 (BNWL-611)
  accidents in pulsed fast reactors, theoretical models for analysis of maximum hypothetical, 22:35644
  ACRS report on Dresden Power Reactor Unit 2, 22:46864 (DOCKET-50237-2)
  ACRS report on Dresden Power Reactor Unit 3, 22:46872 (DOCKET-50249-4)
  ACRS report on Pilgrim Power Reactor, 22:50708 (DOCKET-50293-4)
  ACRS report on Quad Cities Power Reactor Units 1 and 2, 22:46879 (DOCKET-50254-1)
  AEC design criteria for reactor pressure vessels, proposed, 22:22884
  aerosol characteristics during sodium fires, 22:5952
  air cleaning system for UHTREX, efficiency testing of carbon and HEPA filters in, 22:44826 (LA-DC-9483)
  alarm and warning system for Juelich Nuclear Research Plant, description of, 22:51241
  alarm systems for cooling system failure and fuel element leakage in reactors, description of gas-activated whistle, 22:42410(P)
  analysis and evaluation of inspection methods, review, 22:30799
  analysis for Buenos Aires area power plant, 22:3835 (NP-16982)
  analysis for gas-cooled fast reactors using coated

particle fuel, 22:42215
analysis for urban siting of advanced gas-cooled power reactors, 22:18443
analysis from pulsed neutron measurements of the kinetics parameters, 22:12116
analysis methods for fast breeders, survey of, 22:42204 (RT/ING-(68)7)
analysis of 1000 MWe German steam cooled fast breeder, 22:53365
analysis of critical parameters for, handbook on, 22:1862(T) (JPRS-42322)
analysis of Elk River Reactor operations, 22:3842(R) (NUS-409)
analysis of failure of emergency reactor core cooling systems, 22:12057
analysis of high temperature gas cooled reactor for, 22:12056
analysis of Hinkley Point B pressure vessel and penetrations, 22:18457
analysis of LITR operation at 3 MW, 22:18559 (ORNL-TM-1924)
analysis of MCR design criteria, 22:32925 (GMAD-3078-31)
analysis of MSRE with uranium-233 fuel salts, 22:14140 (ORNL-TM-2111)
analysis of ORR for operation at 45 MW, 22:20908 (ORNL-4169(Vol.2))
analysis of Palisades Power Reactor, preliminary, 22:37412 (DOCKET-50255-4)
analysis of plutonium-fueled fast reactors, effects of reactivity variations on, 22:53387
analysis of Rapsodie, 22:53372
analysis of RB-1 research reactor, 22:3899 (RT/ING-(66)27)
analysis of use of recycle plutonium as fuel for fast and thermal, 22:53386
analysis procedures for rocket reactors, 22:16258
analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16137 (DOCKET-50285-7)
analytical description of a blowdown accident, activities during Oct. to Dec. 1967, 22:16108(R) (BMI-1825)
analytical methods for evaluating step reactivity insertions for fast, 22:53388
auxiliary equipment design requirements for, 22:42222
behavior of aerosols during sodium fire for sodium-cooled, mathematical model for determining, 22:5953
behavior of superheat boiling sodium in simulated fuel rod cluster, analysis of, (E/T), 22:37614
beta dose rates of particulate effluent from Phoebus 1B EP-IV test run, E/T), 22:35565 (AD-661221)
Bethe--Tait calculation of second excursions with delayed neutrons and Doppler feedback for cylindrical cores, (T), 22:20944
bibliography on U.S.S.R. shielding studies for, 22:50806 (ORNL-RSIC-23)
bibliography on, covering Sept. 1965 through Dec. 1966, 22:30160 (TID-3525(Rev.5)(Suppl.3))
bibliography on, Feb., 1968, 22:22710 (ORNL-NSIC-42)
bibliography on, indexed NSIC, 22:32780 (ORNL-NSIC-44)
bibliography on, July 1968, 22:42203 (ORNL-NSIC-45)
bibliography to Nov. 1967 on, indexed, 22:7815 (ORNL-NSIC-40)
blast loading inside reactor vessels, simulation using reduced-scale models, (E/T), 22:44918 (CONF-660669-1)
blowdown analysis for boiling heavy water, dimensional analysis method for, 22:39808
blowdown calculations for, description of models for, 22:39774 (IDO-17272)
blowdown calculations for, development of pressure-coupled core-cooling model for, 22:42160(R) (BMI-1844)
blowdown effects on containment systems, use of shock tube mockups for determination of, 22:39775(R) (IITRI-578-P-21-35)
blowdown effects on, subcooled and saturated, 22:39774 (IDO-17272)
blowdown experiments for, description of, 22:39774 (IDO-17272)
blowdown of two-phase two-component media, analysis of rarefaction wave propagation in, (T), 22:33182
blowdown tests for water-cooled, decompression effects during simulated, 22:5951
blowdown-simulation test facility for Japanese water-cooled, description of, 22:42267
bolting materials design criteria for power reactors, recommendations for codification of, 22:12034 (NYO-3660-1)
book: Nuclear Reactor Radiation Safety, in Russian, 22:32801
calculations for, formulation of statistical methods for, 22:22721
calculations for, modification of NURLOC-1.0 computer code for, 22:1753(R) (BMI-1815)
chemical aspects of, bibliography on, 22:24962 (HMI-B-68)
chemical aspects of, literature survey on, 22:1764 (HMI-B-64)
chemical aspects of, literature survey on, 22:53276 (HMI-B-76)
coincidence circuit monitoring for, maintenance manual for Coincidence Matrix Monitor Model Q-2624 used for, 22:16937 (ORNL-TM-1638(Pt.24))
combustion rates for sodium coolant in liquid metal cooled reactor, 22:1819
conference on fast, Aix-en-Provence, France, Sept. 19 to 22, 1967, 22:53380
conference on fast, discussion of papers at, 22:22746
construction description of Mihama Power Reactor, Unit 1, 22:16174
construction of anti-earthquake structures for Tsuruga Power Reactor, description of, 22:32854
containment blowdown accident in water-cooled reactor, PTHISTRY computer program for pressure-temperature history of secondary, 22:50837 (ANL-7455)
containment buildings for Yugoslavia power reactors, comparison of three types of, 22:48666
containment leak rate tests on Connecticut Yankee, 22:32745 (CYAP-105)
containment of power reactors in underwater caissons, feasibility and advantages of, 22:30221
containment response to high-energy excursions, hydrodynamic analysis of primary, (T), 22:24925(R) (ANL-7427)
containment spray systems efficiency determination for, 22:32795
containment spray systems for, fission product removal efficiency evaluation for, 22:32797
containment spray systems for, radiation effects on solutions for, 22:32792
containment structure for, description of redundant spray cooled subatmospheric, 22:18596
containment structures for reactors, description of water-containing suppression chamber for actuating water-seal for spherical, 22:37588(P)
containment structures for reactors, description of water-containing suppression chamber for actuating water-seal for, 22:37581(P)
containment structures for spherical reactors, hydrodynamic analysis of accidents for energy absorption, (T), 22:48767
containment system for atmospheric reactors, description of sub-atmospheric container with pressure relief valve-connected gas tight, 22:30401(P)
containment system for boiling reactor, description of inside-outside separation valves in double-wall, 22:14212(P)
containment system for boiling water power reactors, description of fission product, 22:30203
containment system for gas-cooled aircraft reactor, analysis of, 22:35581
containment system for radioactive aerosols, description of dual-jet opposing-motion pivotal converging spray-type, 22:44949(P)
containment system of inner surface sprays and cloth curtains for pressure vessel rupture for, 22:14336(P)
containment system testing for light water power, evaluation of, 22:46913 (ORNL-NSIC-26)
containment systems for Israel IRR-1 operational accidents, 22:20921
containment systems for power, review of methods for radioactivity control following hypothetical failure of, 22:46914 (ORNL-NSIC-27)
containment systems for prevention of fission product release to atmosphere, analysis of double, 22:53353
containment systems for reactors, design parameters for, (T), 22:39908
containment systems, description of, 22:20955(P)
containment technology for fast reactors, analysis of, 22:50812 (TID-24706)
containment vessel leakage under simulated maximum credible accident conditions, 22:30272
containment vessel melt-through prevention in coolant-loss accidents, passive unenriched uranium oxide (UO_2) barrier for, (T), 22:44861
control instrumentation for power reactors, analysis of boil-safe design requirements for, 22:53319
control rod reactivity worth, scram testing device for, 22:37569(P)
control rod scram operation for, description of pressurized-gas piston drive for, 22:37580(P)
control system for Fermi Fast Breeder Reactor, description of digital computer system for detecting malfunctions in, 22:22742
control system for run-away reactor, description of high- and low-pressure water coolant safety flow, 22:14351(P)
control system requirements for pulsed-, analysis of, 22:44909
control systems for boiling power reactor, analysis of safety flow-scheme for, 22:53314
control systems for MGCR, description of, 22:7806 (GA-1100(Suppl.1))
control systems for power reactors, description of, 22:22741
control systems for power reactors, description of, 22:22743
control systems for, effects of test frequency on reliability of, 22:32856
control systems for, reliability analysis of automatic, 22:16115 (CEA-R-3380)
coolant boiling and two-phase flow on sodium-cooled reactors, (E/T), 22:30155(R) (NAA-SR-12296)
coolant boiling for liquid sodium-cooled fast, analysis of coolant expulsion and pressure transients from, 22:53374

coolant boiling from severe transients in liquid metal-cooled reactors, TRANSFUGUE-IIa code for analysis of, 22:22705 (NAA-SR-12503)

coolant feedback effects on steam cooled fast breeder reactor stability during accidents, 22:3829 (EURFNR-406)

coolant fires in sodium-cooled reactors, energy and fission product release in, (E/T), 22:30155(R) (NAA-SR-12296)

coolant flow effects on, study of partially confined nonmetallic fluids in rapidly heated tubes to determine, (E), 22:8293 (ANL-7337)

coolant flow in pressurized-water reactor, computer program for analysis of pump failure effects on transient, 22:33101 (WAPD-TM-428)

coolant flow transients during pressure loss accidents in reactors, use of Venturi tube measurements for analysis of, (T), 22:35674 (WAPD-TM-735)

coolant leakage evaluation for pressurized water, primary-to-secondary, 22:32794

coolant loss accident analysis for, systems engineering approach to, 22:39774 (IDO-17272)

coolant loss accident effects on containment systems for water cooled, analysis of, 22:48660

coolant loss accident effects on pressure suppression containment systems for, CONTEMPT-PS code for determining, 22:32881

coolant loss accident in superheating reactor, description of boiling region pressure-relief valve for, 22:37490(P)

coolant loss accident in water-cooled reactors, power variation following, (T), 22:25027

coolant loss accidents for conceptual 3300 MW(t) BWR, analysis of, 22:16265(R) (ANL-7403)

coolant loss accidents for N. S. Savannah, analysis of, 22:42302 (DOCKET-50238-22)

coolant loss accidents for N. S. Savannah, analysis of, 22:42303 (DOCKET-50238-43)

coolant loss accidents for pool-type, analysis of, 22:42365(T) (ORNL-tr-1904)

coolant loss accidents for water-cooled, calculation of metal-water reactions and core heating during, 22:5979

coolant loss accidents for, estimated radiolytic hydrogen produced by spray and coolant decomposition during, 22:42160(R) (BMI-1844)

coolant loss accidents in AARR, analysis of, 22:37526 (ANL-7448)

coolant loss accidents in large water-cooled reactors, thermal transient behavior following, (T), 22:37532(R) (IDO-17242)

coolant loss accidents in PWR's, BURST program for hydrodynamics calculation of acoustic phenomena during, 22:10001 (IDO-17254)

coolant loss accidents in water-cooled reactors, aerosol particle transport and deposition during, 22:51160 (BNWL-848)

coolant loss accidents in water-cooled reactors, heat transfer analysis model for, 22:30186

coolant loss accidents in water-cooled reactors, metal-water reaction, core heating, and core motion following, (T), 22:27397 (ANL-7375, pp 135-59)

coolant loss accidents, analysis of radiolytic production of hydrogen during, 22:42160(R) (BMI-1844)

coolant loss accidents, computer program for hydraulic and thermal analysis of reactor core channel, 22:22656 (BMI-1832)

coolant loss accidents, containment response during, 22:39774 (IDO-17272)

coolant loss accidents, core response during, 22:39774 (IDO-17272)

coolant loss accidents, primary system response during, 22:39774 (IDO-17272)

coolant loss accidents, safeguards against fuel meltdown during, 22:5980

coolant loss and energy transfer studies for fast liquid metal-cooled and thermal water-cooled reactors, analysis of, 22:37402 (ANL-7450, pp 75-89)

coolant losses for pressurized-water, space-dependent analysis of, 22:5977

coolant outflow plug for reactor coolant loss, description of pressure controlled inflated bag, 22:44930(P)

coolant pipe rupture pressure release for, description of hydraulic water sprays from, 22:14338(P)

coolant pump power failure in sodium-cooled bare-metal fast breeders, flywheel-augmented flow coastdown following, (T), 22:37449 (ORNL-TM-2132)

coolant safety for liquid metal-cooled fast reactor, analysis of liquid sodium combustion and aerosol release, 22:32783 (ORNL-TM-1937)

coolant-loss accidents in boiling water reactors, performance of core standby cooling systems following, 22:50701 (APED-5458)

coolant-loss accidents in light-water reactors, failure behavior of Zircaloy-clad fuel rods during, 22:48655 (ORNL-TM-2347)

cooling cycle design effects on dynamic stability of steam-cooled fast reactors, 22:7803 (EURFNR-421)

cooling cycle parameter effects on, in steam-cooled fast reactors, (T), 22:35555

cooling loop failures in pressurized-water, subcooled pressure gradient calculations following primary, 22:5975

cooling system failure in gas-cooled reactors, counterflow brake for depressurization reduction following, 22:47056(P)

cooling system failures in pressurized-water reactors, analysis of subcooled pressure gradients from, (T), 22:32766 (IDO-17243)

cooling system for reactor, testing of water additives for emergency, 22:25135(R) (SNE-38)

cooling system for superheating reactor, description of superheat steam line rupture, 22:50759(P)

cooling system for water-cooled reactors, testing of additives for emergency water, 22:42206(R) (SNE-40)

cooling system safety valve for swimming-pool reactors, description of coolant loss-actuated water pressure-closed and gravity-opened, 22:53437(P)

cooling system spray device for boiling reactor fuel element flow tube, 22:20889(P)

cooling system, analysis of methyl iodide removal by spray, 22:25098(R) (ORNL-TM-2164)

core design and construction for water-cooled reactors, quality control aspects of, 22:18448

core handling in reactors, description of control rod locking device for, 22:39926(P)

core heatup during coolant loss in boiling reactors, use of computer programs for analysis of, 22:35424 (BMI-1841)

core loading analysis for, plastic deformation of cylindrical shells in, (T), 22:22653(R) (ANL-7419)

core meltdown accidents in 1000 MW(e) fast ceramic-fueled reactors, modified Bethe-Tait method analysis of, (T), 22:20853

core meltdown analysis for fast, analytical method for, 22:53391

core meltdown in liquid metal-cooled fast reactor, use of TREAT reactor for analysis of simulated, 22:39813

core meltdown simulation of Fast Test Reactor, use of MARS computer code for effects of plutonium oxide (PuO_2)--uranium oxide (UO_2) configuration and enrichment on, 22:37554 (APDA-209)

core spray cooling system performance in water-cooled reactors, (E), 22:24964 (IDO-17249)

core test facility for analyses for, description of proposed, 22:32735 (ANL-7310, pp 249-375)

cracks analysis in Japanese Power Demonstration Reactor pressure vessel, 22:30197

description of 1000 MW(e) ceramic fuel LMFBR, 22:18517

description of CHORD-S data bank system for information storage for, 22:20909(R) (ORNL-TM-2095)

description of EURATOM fast breeder, 22:18529

description of French 1000 MW(e) fast reactors, 22:18518

description of liquid poison injection system for emergency shutdown system, 22:18649(P)

description of magnetic amplifier tripping circuit for, 22:12072(P)

description of multi-cylinder concentric blankets for seismic protection, 22:14343(P)

description of personnel escape device for containment structure with vertical dropping hemi-spherical chamber and sealed trap door, 22:18650(P)

description of poison-containing insulating wall for, 22:18633(P)

description of self-screwing rotating disk for pulsed reactors, 22:14287(P)

description of SENA Power Reactor performance during July to September 1967, 22:18424(R) (TID-24282)

description of shutdown and containment systems for KEMA Suspension Test Reactor, 22:35613

description of siting criteria for nuclear power plants, 22:14157

description of systems for BN-350 Reactor, 22:18520

design analysis of Halden Boiling Reactor, detailed, 22:35463 (HPR-95)

design considerations for boiling water, 22:30208

design criteria for Phenix Fast Reactor, 22:53361

design criteria for test loop instrumentation for FFTF, 22:50799 (BNWL-779)

design features of Otto Hahn, review of, 22:53404

design for 1000 MW(e) SCOTT-R, analysis of optimum economic and technical conceptual, 22:50742 (WCAP-2240)

design of FTR-associated systems for FFTF, background philosophy on, 22:16267 (BNWL-500)

design of steam cooled fast reactor cooling system components for, 22:53366

design parameters for liquid sodium-cooled and steam-cooled plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled European fast reactors, analysis of, 22:35498

detection systems for, logic circuits for transient, 22:32961 (ANL-7310, pp 377-430)

development in Japan, 22:18659

development of containment systems for, 22:30121(R) (BMI-X-10229)

development program for LMFBR reactors, analysis of, 22:46930 (WASH-1110)

developments at Brookhaven National Laboratory during 1967, 22:39875 (BNL-50082, pp 1-18)

device and method for monitoring control systems for, 22:25191(P)

dose calculations for LASL criticality excursion in 1946, blood-sodium and mockup analysis for revised personnel,

22:27465 (LA-3861)
dose calculations for reactor accidents, computer program for time and space dependent, (T), 22:33089(T) (EURFNR-461)
dry pool containment system for, description of dual-pipe accident flooding, 22:7865(P)
dry pool containment system for, description of fluid condensing, 22:7864(P)
earthquake resistant designs for, basic factors in, 22:53283(T) (ORNL-tr-1940)
earthquake resistant designs for, detailed analysis of, 22:37440 (HN-192)
earthquake-proof characteristics of AGR design, 22:3854
earthquake-resistant floating breakwater concept for power, 22:32793
earthquake-resistant floating power station design, 22:39787 (TID-24558)
effects of boron deposition on reactivity during SENA Power Reactor accidents, 22:3822 (EUR-3609)
effects of coolant critical flow on, 22:1820
effects of initially poisoned uranium-235 fuel elements on, 22:22886(P)
effects of integrated cooling cycle on steam-cooled fast reactors, 22:20846
effects of safety requirements on optimum operation of power reactors, (T), 22:22687 (EURFNR-458)
effects of use of uranium-235 as fast reactor fuel in place of plutonium, 22:53384
effects on economics of 1000 MW liquid metal-cooled fast breeder reactors, 22:5970
effects on power reactor standards, analysis of, 22:24993
effluent control for, environmental and waste disposal program for, 22:20861
effluent particle release from Phoebus 1B, collection and evaluation of large, 22:37511 (LA-3796)
emergency conditions in BOR fast, definition of, 22:53349
emergency cooling systems for B and W pressurized-water reactors, description of, 22:32862
Emergency Core Cooling System for Cooper Power, design of, 22:18402 (DOCKET-50298-3)
Emergency Core Cooling System operation effects on pressure vessel integrity, 22:35454 (DOCKET-50309-11)
Emergency Core Cooling Systems for, ACRS comments on Advisory Task Force report on, 22:32900
Emergency Core Cooling Systems for, complete analysis of, 22:32785 (TID-24226)
Emergency Core Cooling Systems for, emissivity of fuel pin cladding material under operating conditions of, 22:51276(R) (IDO-17269)
Emergency Core Cooling Systems for, evaluation of, 22:32861
engineered safeguards effects on coolant loss accidents, 22:39774 (IDO-17272)
engineered safeguards for light water cooled power, air cleaning methods as, 22:46912 (ORNL-NSIC-25)
engineered safeguards for water-cooled power reactors, 22:27444
engineers for, systems engineering approach to education of, 22:12062
evaluation in nuclear power plants, 22:8536
evaluation of BN-350 and BOR cooling systems, 22:53359
evaluation of FFTF design, 22:53440
evaluation of PEC Fast Test Reactor, 22:53444
excursion accidents in water-cooled reactors, metal-water reaction, fuel heating, and fuel failure during, (E/T), 22:27397 (ANL-7375, pp 135-59)
excursion analyses for, effects of fuel element rupture on, 22:5981
excursion analysis in cylindrical Fermi core, MARS code for two-dimensional, 22:32737 (APDA-198)
excursion analysis in fast pulsed reactors, DOPPELAS and SOREX 1 codes for, 22:32966 (EUR-3915)
excursion analysis methods for UHTREX, numerical calculations on accuracy of, (T), 22:16155 (LA-3789)
excursion calculations for fast, analysis of effects of feedback on, 22:53389
excursion calculations for, eigenfunction expansion method for, 22:5999
excursion incidents in MSRE with uranium-233 fuel loading, analysis of hypothetical, 22:48651 (ORNL-4254, pp 1-49)
excursion simulation for pressurized-water, step-reactivity induced, 22:48648(R) (IDO-17271)
excursions caused by shock wave generation, estimate of magnitude of, 22:5972
excursions in fast steam-cooled reactors, mechanical damage from, (T), 22:18419 (FOA-2-2498-44)
excursions in water cooled reactors, shock generation in pressure vessels due to reactivity, 22:3870
excursive-flow instabilities in water-cooled reactors, 22:10068
explosions from liquid metal and water reactions, analysis of, 22:18574
fail-safe control system design with solid-state dynamic logic circuits, 22:18597
failure detection in reactor primary systems, methods for, 22:22748
failure of FTR control systems, mode analysis for, 22:22802 (BNWL-661)
failure prevention in boiling reactor, description of primary circuit and containment vessel for, 22:30182
failures in power reactors, methods for diagnosis of incipient, 22:16123 (CONF-671011)
FFTF Underwater Examination Facility criticality safety evaluation, 22:12090 (BNWL-595)
filters for aerosol dispersions from rocket reactors, effects of up to 148 db sound pressure on efficiency of, 22:44873 (LA-DC-9484)
filters for British, methods for testing of, 22:18461
fission product behavior in atmosphere surrounding sodium fires for sodium cooled fast, 22:53351
fission product behavior in cooling system of sodium-cooled reactors, (E), 22:30155(R) (NAA-SR-12296)
fission product behavior in gas-cooled reactors, calculational techniques for convective, 22:46915 (ORNL-TM-2218)
fission product contamination and control in sodium-cooled fast breeder reactor cooling systems, (E/T), 22:39734 (AI-AEC-12687)
fission product deposition under water-cooled reactor accident conditions, (E/T), 22:42161(R) (BMI-X-10237)
fission product monitoring in PRTR plutonium oxide (PuO_2)—uranium oxide (UO_2) fuel element failure on September 29, 1965, analysis of, 22:32744 (BNWL-SA-668)
fission product release and transport control in liquid-metal-cooled fast breeders, review of methods for, 22:53396
fission product release during water coolant loss accidents, analysis of factors affecting, 22:42197(T) (NSJ-tr-112)
fission product release in coolant-loss accidents, boundary-layer diffusion model of, 22:48792
fission product release, transport, and behavior in water reactors, analytical model development for prediction of, 22:46910 (ORNL-4265)
fission product removal from reactor buildings, use of activated charcoal filters for iodine, 22:50872
fission product removal from reactor containment systems for, efficiency of reactive sprays for, 22:42160(R) (BMI-1844)
fission product removal in containment vessels, effectiveness of reactive hydrazine sprays for methyl iodide, (E), 22:44810 (BNWL-SA-1736)
flow testing of simulated HFBR emergency cooling system, description of natural and reverse, 22:32963 (BNL-12476)
French studies on, outline of, 22:14176
FTR fuel pin centerline temperature under accident conditions, 22:14251(R) (BNWL-534)
fuel cladding failure, description of filtered neutron and electrostatic collection detector system for, 22:10110(P)
fuel element failure detection system for EDF-3, 22:22726
fuel element failure in Osiris, system for detection of, 22:22809 (CEA-R-3328)
fuel element meltdown and dispersal effects in sodium-cooled reactors, (E/T), 22:27397 (ANL-7375, pp 135-59)
fuel element meltdown for EFFBR, preliminary evaluation of, 22:53369
fuel element response to heat input from transient accidents, (T), 22:24925(R) (ANL-7427)
fuel element rupture detection methods in PHENIX reactor, 22:14257 (CEA-R-3339)
fuel handling accidents in AARR, analysis of, 22:37526 (ANL-7448)
fuel material vaporization during postulated fast reactor accidents, 22:5949
fuel meltdown accidents in Fast Test Reactor, analysis of energy release from, 22:24926(R) (APDA-214)
fuel meltdown energy release studies for fast, 22:32871
fuel meltdown experiments in fast liquid sodium loop for, 22:5974
fuel meltdown in Fermi Fast Breeder, anomalous reactivity and fission product analyses of, 22:16128 (CONF-671011-, pp 355-66)
fuel meltdown pattern analysis in NPTF, (T), 22:27460 (BNWL-634, pp 4.1-55)
fuel meltdown transients for fast, analysis of, 22:32892
fuel performance in FTR, analysis of stainless steel and vanadium alloy clad uranium, uranium—zirconium, molybdenum—uranium, and plutonium—uranium—zirconium, 22:27458 (BNWL-514)
fuel pin melting in FTR, effects of fuel motion restrictor configuration on reactivity change from, 22:50794 (BNWL-623)
fuel pin temperature distribution during coolant loss accidents, 22:39774 (IDO-17272)
hazards analysis and control in, review of developments in, 22:53393
hazards analysis and control in, technical progress review on, 22:20854
hazards analysis for BORAX-type excursion with and without fuel meltdown in AHFR, 22:3887 (ANL-5715(Add.), pp 3-20)
hazards analysis for BORAX-V type internal superheater critical experiments, 22:3889 (ANL-5715(Add.), pp 43-65)
hazards analysis for FTR fuel irradiations in EBR-2, 22:42358 (BNWL-650)

hazards analysis for high conversion ZPR-VII, 22:3888 (ANL-5715(Add.), pp 21-42)
hazards analysis for operation of Dounreay Fast Reactor, description of, 22:30192
hazards analysis for oxide critical experiments, 22:3886 (ANL-5715(Add.))
hazards analysis of BR-5 research reactor, description of, 22:30331
hazards analysis of JRR-3, 22:48733 (JAERI-6004)
hazards of fission and fusion nuclear reactors, analysis of, 22:25132 (LA-DC-9519)
health physics aspects of PRTR recovery and decontamination following fuel element failure incident, 22:37529 (BNWL-752)
heat removal capability of Yankee Power Reactor containment air cooling system, 22:22706 (NYO-3250-9)
heat transfer model analysis of core failure in water-cooled reactors, (E), 22:32873
incidents involving, compilation of 1966, 22:22751
index to Nuclear Safety TPR, Vols. 1 to 8, 22:16158 (ORNL-NSIC-41)
information operations at Nuclear Safety Information Center on, summary of, 22:50842 (ORNL-NSIC-46)
inspection of Tokai-Mura Power Reactor, description of first annual, 22:53296
inspection testing of Fermi Fast Breeder Reactor, analysis of, 22:46953
instrumentation for MSRE systems, manual on, 22:16159 (ORNL-TM-729(Pt.2A))
instrumentation for, design of geophysical and seismological, 22:19221
instrumentation of in-pile loops, requrements for, 22:53426
iodine penetration in building protective coatings in reactor accidents, 22:2713 (IN-1095)
kinetics equations for fast breeder reactor, analysis of, (E/T), 22:35471 (STI/PUB-165(Vol.1))
kinetics equations for, description of MOVER program for solution to one-group space independent excursion, 22:33086 (ANL-7310, pp 431-511)
leak hazard in EBOR, analysis of main loop oil, 22:18555(R) (GA-7485)
leakage control in steam-brine heaters for desalination reactors, analysis of, 22:30289 (ORNL-TM-2049)
leakage in gas-cooled vessels, system for prevention of moderator combustion during, 22:6052(P)
licensing of Germany power reactors, discussion of policy reforms for, 22:37505
liquid metal-cooled reactor, analysis of liquid sodium superheat values for, (E/T), 22:35534
maintenance of liquid metal-cooled fast reactor liquid sodium cooling system, equipment and procedures for, 22:46960
maximum credible accident in 100 MW(t) ship reactor, factors affecting analysis of, (T), 22:39846
maximum hypothetical accidents in FTR, parametric analyses of, 22:27460 (BNWL-634, pp 4.1-55)
meltdown accident of 1000 MW(e) ceramic-fueled fast power reactor, Bethe-Tait analysis of parameters for, 22:1761 (GEAP-4809)
metal-water reactions during water coolant loss accidents, analysis of effects of, 22:42202 (ORNL-NSIC-23)
methods for estimating fast reactor, description of, 22:30193
methyl iodide removal from air, effects of humidity on, 22:32798
methyl iodide removal from reactor containment atmospheres, use of activated carbons for, 22:18460
missile generation and protection criteria for water-cooled power reactors, 22:50739 (ORNL-NSIC-22)
monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)
monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)
monthly progress report on, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress report on, Argonne National Laboratory August 1968, 22:50699(R) (ANL-7487)
nuclear engineering education for, social responsibilities of, 22:12061
Nuclear Safety Information Center, summary of 1967 activities of, 22:27416(R) (ORNL-4228)
numerical evaluation of risk method for, description of, 22:53357
operating experience of German, 22:22720
operating limits for Flexible Split Table Critical Assembly, description of, 22:47009 (GEMP-627)
operating limits for the PCA, 22:32978 (ORNL-TM-2232)
operation criteria for, review of, 22:22925
operation in United States of fast breeder reactors, description of, 22:18527
operation of 166 MW(e) Tokai-Mura Power Reactor, effects of anti-earthquake design variations on, 22:14170
operation of BR-5 for, 22:53441
operation of ERMINE fast--thermal flux assembly in MINERVE, description of, 22:14263(T) (AEC-tr-6910)
operation of FRAN Prompt Burst Machine, 22:22817 (IDO-17231)
operation of FRAN Prompt Burst Machine, 22:22818 (IDO-17231(Add.))
operation of SENA Power Reactor during October to December 1967, 22:24975(R) (TID-24368)
operation of water-moderated enriched uranium fueled HOR reactor, 22:25111
operation procedure for ORNL Research Reactor, 22:14261 (ORNL-TM-689)
operation procedures for British Harwell research reactors, review of, 22:12109
operation requirements for power reactors, description of, 22:48707
overpressure release valves for cooling system of organic-cooled reactor, 22:20869(P)
parameters for boiling water, discussion of, 22:25017
performance of Containment Systems Experiment spray removal system, description of, 22:35591 (BNWL-SA-1863)
performance of FTR fuels, analysis of stainless steel clad uranium carbide (UC) and plutonium carbide (PuC)--uranium carbide (UC), 22:27457 (BNWL-513)
performance of simulated aerosols and uranium oxide (UO_2) fission products in Containment System Experiment, comparison of, 22:25123 (BNWL-581)
personnel safety hazards of power reactors, analysis of, 22:42150 (AECL-3067, pp 29-33)
philosophy of, evaluation of USAEC, 22:22723
physics measurements of excursions in SPERT III pressurized-water reactor, analysis of, 22:33030
piping system for Tsuruga Power Reactor, description of problems for, 22:14167
power distributions in reactor cores during transients, space-time analysis of, 22:25130 (KAPL-P-3425)
power excursion calculations for, asymptotic expansions for approximate, 22:5998
power level operation for plutonium fueled fast reactors, (T), 22:5934 (RT/EC-(67)1)
power plant development in USSR, description of, 22:35480
power plant fabrication, description of boiling reactor, 22:30196
power plant siting, analysis of federal and state legal aspects of nuclear, 22:27430
power reactor siting in metropolitan areas, method for fission product dispersion calculations for, 22:18465
pressure generation caused by particle-coolant energy transfer, 22:16265(R) (ANL-7403)
pressure suppression chamber for reactor accident, description of steam filled dry well connected, 22:10101(P)
pressure suppression chamber for steam release in reactor accident, description of pipe connected water contact, 22:10090(P)
pressure suppression following reactor accidents, description of ejector-condenser system for, 22:50755(P)
pressure suppression system for containment structures, description of, 22:33119(P)
pressure vessel design recommendations for France power reactors, analysis of prestressed concrete, 22:44832(T) (ORNL-tr-1966-e)
pressure vessel for coolant loss prevention, description of vertical axial plate divided, 22:10029(P)
pressure vessels for water-cooled reactors, technology of steel, 22:10082 (ORNL-NSIC-21)
pressure vessels for, effects of hydrogen embrittlement on irradiated, 22:10089
pressure wave propagation in two-phase flow, effects of flow regime on velocity of, (E/T), 22:33181
pressure-suppression pools for, analysis of steam condensation and fission product entrainment in, 22:42160(R) (BMI-1844)
probabilistic methods for assessing fast, application of, 22:53358
probability methods of analysis of heavy water-cooled and -moderated reactors, description of, 22:30267
program for rocket engine testing at NRDS, 22:25059 (CONF-670445-, pp 18.25-32)
program for U. S. sodium cooled fast breeder, description of, 22:53356
prompt-critical excursion analysis for, coherence effects on, 22:16265(R) (ANL-7403)
protection instrument systems for, design principles for, 22:50843 (ORNL-NSIC-51)
protection systems for power plants, performance and reliability of automatic electronic, 22:37438 (DUN-SA-65)
protection systems for, principles of design of, 22:12059
protective system for HFIR, procedures for on-line testing of, 22:16273 (CONF-671011-, pp 16-27)
proton penetration of aluminum and tissue, comparison of computer codes for, 22:35668 (ORNL-RSIC-22(Pt.2))
public relations aspects of, proposals for improving, 22:12048
pulsed reactor, description of shear pin-retained screw-drive rotating disc for, 22:48761(P)
pumps for FFTF, effects of coolant loop location on liquid sodium, 22:35590 (BNWL-729)
radiation monitoring activities at Elk River Reactor, in-plant, (E), 22:3817(R) (COO-651-49)
radiation monitoring for ARBUS Power Reactor, analysis of operation, 22:53342
radiation monitoring of Garigliano Power Reactor,

22:22713(R) (TID-24304)
radiation monitoring of KIWI-Transient Nuclear Test effluent, analysis of environmental, 22:39849 (LA-3449)
radiation monitoring of melted stainless steel clad uranium oxide (UO_2) fuel elements, 22:14294 (ORNL-4198)
radiation monitoring of SNAP-8 heat transfer system, analysis of, 22:18543 (NAA-SR-Memo-11131)
radiation monitoring system for Bulgarian pressureized-water reactor, description of, 22:32767(T) (JPRS-45161)
radiation monitoring system for FRJ-2 reactor experimental facilities, description of, 22:42375
radioiodide removal from reactor containment systems, methods for, 22:18463
RDT Standards for, development of, 22:20861
reactivity effect of moderator voids in CANDU-type lattices, (E/T), 22:20775 (AECL-3002)
reactivity excursion analysis for fast, use of quasi static model for, 22:53347
reactivity excursions in Fermi Fast Breeder Reactor, description of design safety precautions for, 22:46963
reactivity of fast reactors, effects of configuration on, (E/T), 22:53292
reactivity transients in AARR, analysis of accidents involving, 22:37526 (ANL-7448)
reactor coolant expulsion analysis for, effects of coolant-structure coupling on, 22:5956
reactor siting criteria in the United Kingdom, 22:6056
RELAP2 code for water reactor blowdown and power excursion analysis, 22:39773 (IDO-17263)
reliability analysis of Dual Bus Reactor Protection System, (T), 22:24931 (APED-5179)
reliability analysis of protective systems for, 22:10000(R) (HN-190)
removal from Fermi Fast Breeder Reactor core of inlet plenum object, description of, 22:37405 (APDA-CFE-20)
removal of iodine vapor from air and steam--air in Nuclear Safety Pilot Plant, analysis of spray, 22:35604 (ORNL-4253)
research and development at ORNL, 22:1772(R) (ORNL-TM-1986)
research and development for, 22:22744
research and development in water, summary of May--June 1968, 22:22752
research and development programs for, outline of, 22:44855
research and development projects for, summary of, 22:20861
research programs on light water power, description of, 22:44841 (WASH-1082)
response of fast reactors during sodium boiling accidents, theoretical analysis of, 22:5971
safeguards system for Bradwell Reactors, experience with designing of, 22:32911
safeguards systems of Indian Point Reactor, Unit 2, description of engineered, 22:16225
safety analyses for steam cooled fast, 22:53364
safety analysis and testing for boiling reactor fabrication, description of, 22:30206
safety analysis for fuel element center-melting condition in Big Rock Point Power Reactor, 22:22698 (GEAP-5591)
safety analysis for heavy water-moderated boiling water-cooled plutonium self-sustaining power reactor, 22:30238
safety analysis for Turkey Point Power Reactor Units 1 and 2, 22:53268 (DOCKET-50250-1)
safety analysis of AARR, 22:32960 (ANL-7310, pp 31-135)
safety analysis of Edwin I. Hatch Power Reactor Unit 1, preliminary, 22:53271 (DOCKET-50321-5)
safety analysis of Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16135 (DOCKET-50285-5)
safety analysis of Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16143 (DOCKET-50285-14)
safety analysis of LACBWR, AEC Division of Licensing and Regulation, 22:24943 (DOCKET-1155-4)
safety analysis of PEC Fast Test Reactor, 22:53445
safety analysis of SEFOR, 22:18547 (DOCKET-50231-1)
safety analysis on Surry Power Reactor Units 1 and 2, preliminary, 22:18375 (DOCKET-50280-1)
safety analysis report for adding Unit 2 to Unit 1 at Quad Cities Reactor Station, preliminary, 22:46884 (DOCKET-50254-6)
safety analysis report for Cooper Power Reactor, preliminary, 22:18405 (DOCKET-50298-6)
safety analysis report for Fort St. Vrain Power Reactor, preliminary, 22:12012 (DOCKET-50267-10)
safety analysis report for Maine Yankee Power Reactor, preliminary, 22:18409 (DOCKET-50309-2)
safety analysis report for Salem Power Reactor, Units 1 and 2, preliminary, 22:18365 (DOCKET-50272-3)
safety analysis report in Diablo Canyon Power Reactor, preliminary, 22:7797 (DOCKET-50275-7)
safety analysis report in SEFOR, 22:22664 (DOCKET-50231-10)
safety analysis report on AARR, preliminary, 22:37526 (ANL-7448)
safety analysis report on Advanced Test Reactor, 22:48729 (IDO-17021(Rev.)(Vol.1))
safety analysis report on Advanced Test Reactor, 22:48730 (IDO-17021(Rev.)(Vol.2))
safety analysis report on Argonne Advanced Research Reactor, preliminary, 22:37526 (ANL-7448)
safety analysis report on Bell Power Reactor, preliminary, 22:22682 (DOCKET-50319-3)
safety analysis report on Bell Power Reactor, preliminary, 22:22680 (DOCKET-50319-1)
safety analysis report on Bell Power Reactor, preliminary, 22:22681 (DOCKET-50319-2)
safety analysis report on Big Rock Point Power Reactor, preliminary, 22:39740 (DOCKET-50155-2)
safety analysis report on Big Rock Point Power Reactor, preliminary, 22:39741 (DOCKET-50155-3)
safety analysis report on Big Rock Point Power Reactor, preliminary, 22:35429 (DOCKET-50155-1)
safety analysis report on Big Rock Point Power Reactor, revised preliminary, 22:39742 (DOCKET-50155-4)
safety analysis report on Bolsa Island Nuclear Reactor Unit 2, preliminary, 22:53270 (DOCKET-50308-1)
safety analysis report on Brown's Ferry Power Reactor Unit 3, preliminary, 22:50723 (DOCKET-50296-7)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, engineering, 22:35441 (DOCKET-50259-9)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35439 (DOCKET-50259-7)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35435 (DOCKET-50259-3)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35437 (DOCKET-50259-5)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35434 (DOCKET-50259-2)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35440 (DOCKET-50259-8)
safety analysis report on Browns Ferry Power Reactor Unit 3, preliminary, 22:50722 (DOCKET-50296-6)
safety analysis report on Browns Ferry Power Reactor Unit 3, preliminary, 22:32758 (DOCKET-50296-1)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35438 (DOCKET-50259-6)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35436 (DOCKET-50259-4)
safety analysis report on Browns Ferry Power Reactor Units 1 and 2, preliminary, 22:35433 (DOCKET-50259-1)
safety analysis report on Brunswick Power Reactor Units 1 and 2, preliminary, 22:46895 (DOCKET-50324-3)
safety analysis report on Brunswick Power Reactor Units 1 and 2, preliminary, 22:48642 (DOCKET-50324-4)
safety analysis report on Brunswick Power Reactor Units 1 and 2, preliminary, 22:46894 (DOCKET-50324-2)
safety analysis report on Brunswick Power Reactor Units 1 and 2, preliminary, 22:46893 (DOCKET-50324-1)
safety analysis report on Calvert Cliffs Power Reactor, Units 1 and 2, preliminary, 22:39760 (DOCKET-50317-5)
safety analysis report on Calvert Cliffs Power Reactor, Units 1 and 2, preliminary, 22:50726 (DOCKET-50317-6)
safety analysis report on Calvert Cliffs Power Reactor, Units 1 and 2, preliminary, 22:32763 (DOCKET-50317-4)
safety analysis report on Calvert Cliffs Power Reactor, Units 1 and 2, preliminary, 22:18414 (DOCKET-50317-2)
safety analysis report on Calvert Cliffs Power Reactor, Units 1 and 2, preliminary, 22:18415 (DOCKET-50317-3)
safety analysis report on Cooper Power Reactor, preliminary, 22:18403 (DOCKET-50298-4)
safety analysis report on Cooper Power Reactor, preliminary, 22:20803 (DOCKET-50298-7)
safety analysis report on Cooper Power Reactor, preliminary, 22:18404 (DOCKET-50298-5)
safety analysis report on Cooper Power Reactor, preliminary, 22:18401 (DOCKET-50298-2)
safety analysis report on Cooper Power Reactor, preliminary, 22:18400 (DOCKET-50298-1)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35446 (DOCKET-50302-1)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35450 (DOCKET-50302-5)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35448 (DOCKET-50302-3)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35451 (DOCKET-50302-6)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35453 (DOCKET-50302-8)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35449 (DOCKET-50302-4)
safety analysis report on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35447 (DOCKET-50302-2)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20797 (DOCKET-50275-7)
safety analysis report on Diablo Canyon Power Reactor Unit 2, preliminary, 22:37436 (DOCKET-50323-2)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20800 (DOCKET-50275-10)
safety analysis report on Diablo Canyon Power Reactor Unit 2, preliminary, 22:37437 (DOCKET-50323-3)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20798 (DOCKET-50275-8)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:7798 (DOCKET-50275-8)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:18370 (DOCKET-50275-3)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:7796 (DOCKET-50275-6)
safety analysis report on Diablo Canyon Power Reactor,

preliminary, 22:18369 (DOCKET-50275-2)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20795 (DOCKET-50275-5)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20799 (DOCKET-50275-9)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:7800 (DOCKET-50275-10)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:7794 (DOCKET-50275-4)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20796 (DOCKET-50275-6)
safety analysis report on Diablo Canyon Power Reactor Unit 2, preliminary, 22:37435 (DOCKET-50323-1)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:7799 (DOCKET-50275-9)
safety analysis report on Diablo Canyon Power Reactor, preliminary, 22:20794 (DOCKET-50275-4)
safety analysis report on Diablo Canyon Power Reactor, 22:7795 (DOCKET-50275-5)
safety analysis report on Donald C. Cook Power Reactor, Units 1 and 2, preliminary, 22:48638 (DOCKET-50315-9)
safety analysis report on Donald C. Cook Power Reactor Units 1 and 2, preliminary, 22:37433 (DOCKET-50315-5)
safety analysis report on Donald C. Cook Power Reactor Units 1 and 2, preliminary, 22:48639 (DOCKET-50315-10)
safety analysis report on Donald C. Cook Power Reactors, 1 and 2, preliminary, 22:12019 (DOCKET-50315-5)
safety analysis report on Donald C. Cook Power Reactors 1 and 2, preliminary, 22:12018 (DOCKET-50315-4)
safety analysis report on Donald C. Cook Power Reactor Units 1 and 2, preliminary, 22:37432 (DOCKET-50315-4)
safety analysis report on Donald C. Cook Power Reactors 1 and 2, preliminary, 22:12017 (DOCKET-50315-3)
safety analysis report on Donald C. Cook Power Reactor Units 1 and 2, preliminary, 22:37431 (DOCKET-50315-3)
safety analysis report on Donald C. Cook Power Reactor Units 1 and 2, preliminary, 22:44814 (DOCKET-50315-8)
safety analysis report on Dresden Power Reactor Unit 2, preliminary, 22:46869 (DOCKET-50237-7)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46874 (DOCKET-50249-6)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46875 (DOCKET-50249-7)
safety analysis report on Dresden Power Reactor Unit 2, preliminary, 22:46868 (DOCKET-50237-6)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46896 (DOCKET-50249-3)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46871 (DOCKET-50249-2)
safety analysis report on Dresden Power Reactor Unit 2, preliminary, 22:46870 (DOCKET-50237-8)
safety analysis report on Dresden Power Reactor Unit 2, preliminary, 22:46867 (DOCKET-50237-5)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46873 (DOCKET-50249-5)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46876 (DOCKET-50249-8)
safety analysis report on Dresden Power Reactor Unit 3, preliminary, 22:46878 (DOCKET-50249-10)
safety analysis report on Easton Power Reactor, preliminary, 22:27406 (DOCKET-50300-3)
safety analysis report on Easton Power Reactor, preliminary, 22:46889 (DOCKET-50300-5)
safety analysis report on Easton Power Reactor, preliminary, 22:20804 (DOCKET-50300-2)
safety analysis report on Easton Power Reactor, preliminary, 22:18406 (DOCKET-50300-1)
safety analysis report on Edwin I. Hatch Power Reactor Unit 1, preliminary, 22:30141 (DOCKET-50321-2)
safety analysis report on Edwin I. Hatch Power Reactor Unit 1, preliminary, 22:30142 (DOCKET-50321-3)
safety analysis report on Edwin I. Hatch Power Reactor Unit 1, preliminary, 22:30143 (DOCKET-50321-4)
safety analysis report on Edwin I. Hatch Power Reactor Unit 1, preliminary, 22:30140 (DOCKET-50321-1)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16142 (DOCKET-50285-13)
safety analysis report on Fort Calhoun Power Reactor Unit 1, preliminary, 22:22676 (DOCKET-50285-17)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16134 (DOCKET-50285-4)
safety analysis report on Fort Calhoun Power Reactor, preliminary, 22:18393 (DOCKET-50285-1)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16140 (DOCKET-50285-11)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16136 (DOCKET-50285-6)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16131 (DOCKET-50285-16).
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16132 (DOCKET-50285-2)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16139 (DOCKET-50285-10)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:18394 (DOCKET-50285-8)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16138 (DOCKET-50285-9)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16133 (DOCKET-50285-3)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, updating of preliminary, 22:16141 (DOCKET-50285-12)
safety analysis report on Fort Calhoun Power Reactor, Unit 1, preliminary, 22:16130 (DOCKET-50285-15).
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:39750 (DOCKET-50267-8)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:39746 (DOCKET-50267-4)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:39749 (DOCKET-50267-7)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:39747 (DOCKET-50267-5)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:37426 (DOCKET-50267-10)
safety analysis report on Fort St. Vrain Power Reactor, preliminary, 22:39751 (DOCKET-50267-9)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:42185 (DOCKET-50267-12)
safety analysis report on Fort St. Vrain Power Reactor Unit 1, preliminary, 22:27405 (DOCKET-50267-2)
safety analysis report on Fort St. Vrain Power Reactor, Unit 1, preliminary, 22:18362 (DOCKET-50267-1)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37423 (DOCKET-50261-7)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37425 (DOCKET-50261-9)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37419 (DOCKET-50261-3)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37422 (DOCKET-50261-6)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37424 (DOCKET-50261-8)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37417 (DOCKET-50261-1)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37418 (DOCKET-50261-2)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37420 (DOCKET-50261-4)
safety analysis report on H. B. Robinson Power Reactor Unit 2, preliminary, 22:37421 (DOCKET-50261-5)
safety analysis report on High Flux Isotope Reactor, final, 22:27467 (ORNL-3572(Rev.2)(Vol.1A))
safety analysis report on Indian Point Power Reactor Unit 3, preliminary, 22:53269 (DOCKET-50286-5)
safety analysis report on Indian Point Power Reactor Unit 3, preliminary, 22:48636 (DOCKET-50286-4)
safety analysis report on Indian Point Power Reactor Unit 3, preliminary, 22:37427 (DOCKET-50286-1)
safety analysis report on Indian Point Power Reactor, Unit 3, 22:12014 (DOCKET-50286-2)
safety analysis report on Indian Point Power Reactor, Unit 3, preliminary, 22:12015 (DOCKET-50286-3)
safety analysis report on Indian Point Power Reactor Unit 3, preliminary, 22:37428 (DOCKET-50286-2)
safety analysis report on Indian Point Power Reactor Unit 3, preliminary, 22:37429 (DOCKET-50286-3)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:18408 (DOCKET-50309-1)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:35454 (DOCKET-50309-11)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:32760 (DOCKET-50309-8)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:39754 (DOCKET-50309-13)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:20806 (DOCKET-50309-5)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:32761 (DOCKET-50309-9)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:27407 (DOCKET-50309-6)
safety analysis report on Maine Yankee Power Reactor, revisions for preliminary, 22:18411 (DOCKET-50309-4)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:32762 (DOCKET-50309-10)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:39753 (DOCKET-50309-12)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:27408 (DOCKET-50309-7)
safety analysis report on Maine Yankee Power Reactor, preliminary, 22:18410 (DOCKET-50309-3)
safety analysis report on Millstone Point Power Reactor Unit 1, final, 22:30138 (DOCKET-50245-4)
safety analysis report on Millstone Point Power Reactor, Unit 1, final, 22:22670 (DOCKET-50245-1)
safety analysis report on Millstone Point Power Reactor Unit 1, final, 22:53267 (DOCKET-50245-5)
safety analysis report on Millstone Point Power Reactor, Unit 1, final, 22:22672 (DOCKET-50245-3)
safety analysis report on Millstone Power Reactor, Unit 1, final, 22:22671 (DOCKET-50245-2)
safety analysis report on N.S. Savannah, preliminary, 22:44868 (DOCKET-50238-1)
safety analysis report on N.S. Savannah, preliminary, 22:46980 (DOCKET-50238-47)
safety analysis report on N.S. Savannah, preliminary, 22:44869 (DOCKET-50238-2)
safety analysis report on N.S. Savannah, preliminary, 22:44870 (DOCKET-50238-3)
safety analysis report on N.S. Savannah, preliminary, 22:44871 (DOCKET-50238-4)
safety analysis report on N.S. Savannah, results of sea trials for, 22:46979 (DOCKET-50238-46)
safety analysis report on N.S. Savannah, summary,

22:46978 (DOCKET-50238-45)
safety analysis report on Oyster Creek Power Reactor Unit 2, preliminary, 22:48640 (DOCKET-50320-4)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30126 (DOCKET-50219-2)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30132 (DOCKET-50219-8)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30130 (DOCKET-50219-6)
safety analysis report on Oyster Creek Power Reactor, Unit 2, preliminary, 22:27409 (DOCKET-50320-1)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30133 (DOCKET-50219-9)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30135 (DOCKET-50219-11)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30127 (DOCKET-50219-3)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30136 (DOCKET-50219-12)
safety analysis report on Oyster Creek Power Reactor, Unit 2, preliminary, 22:27411 (DOCKET-50320-3)
safety analysis report on Oyster Creek Power Reactor Unit 2, preliminary, 22:48641 (DOCKET-50320-5)
safety analysis report on Oyster Creek Power Reactor, Unit 2, preliminary, 22:27410 (DOCKET-50320-2)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30129 (DOCKET-50219-5)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30137 (DOCKET-50219-13)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:46863 (DOCKET-50219-15)
safety analysis report on Oyster Creek Power Reactor Unit 1, preliminary, 22:30125 (DOCKET-50219-1)
safety analysis report on Palisades Power Reactor, preliminary, 22:37412 (DOCKET-50255-4)
safety analysis report on Palisades Power Reactor, preliminary, 22:37414 (DOCKET-50255-6)
safety analysis report on Palisades Power Reactor, preliminary, 22:42184 (DOCKET-50255-10)
safety analysis report on Palisades Power Reactor, preliminary, 22:39745 (DOCKET-50255-7)
safety analysis report on Palisades Power Reactor, preliminary, 22:37411 (DOCKET-50255-3)
safety analysis report on Palisades Power Reactor, preliminary, 22:37413 (DOCKET-50255-5)
safety analysis report on Palisades Power Reactor, preliminary, 22:37409 (DOCKET-50255-1)
safety analysis report on Palisades Power Reactor, preliminary, 22:37415 (DOCKET-50255-8)
safety analysis report on Palisades Power Reactor, preliminary, 22:37416 (DOCKET-50255-9)
safety analysis report on Palisades Power Reactor, preliminary, 22:37410 (DOCKET-50255-2)
safety analysis report on Peach Bottom Power Reactor, Units 2 and 3, preliminary, 22:22674 (DOCKET-50277-4)
safety analysis report on Peach Bottom Power Reactor, Units 2 and 3, preliminary, 22:22673 (DOCKET-50277-3)
safety analysis report on Peach Bottom Power Reactor, Units 2 and 3, preliminary, 22:18373 (DOCKET-50277-5)
safety analysis report on Peach Bottom Power Reactor Units 2 and 3, preliminary, 22:18371 (DOCKET-50277-1)
safety analysis report on Peach Bottom Power Reactor Units 2 and 3, preliminary, 22:18372 (DOCKET-50277-2)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50709 (DOCKET-50293-5)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50713 (DOCKET-50293-11)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50710 (DOCKET-50293-7)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50718 (DOCKET-50293-16)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50711 (DOCKET-50293-8)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50719 (DOCKET-50293-17)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50714 (DOCKET-50293-12)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50712 (DOCKET-50293-10)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50715 (DOCKET-50293-13)
safety analysis report on Pilgrim Power Reactor, preliminary, 22:50717 (DOCKET-50293-15)
safety analysis report on Point Beach Power Reactor Unit 2, preliminary, 22:20805 (DOCKET-50301-2)
safety analysis report on Point Beach Power Reactor Unit 2, preliminary, 22:24950 (DOCKET-50301-3)
safety analysis report on Point Beach Power Reactor, Unit 1, preliminary, 22:20792 (DOCKET-50266-8)
safety analysis report on Point Beach Power Reactor, Unit 1, preliminary, 22:20791 (DOCKET-50266-7)
safety analysis report on Point Beach Power Reactor, Unit 1, preliminary, 22:20785 (DOCKET-50266-1)
safety analysis report on Point Beach Power Reactor, Unit 1, preliminary, 22:20787 (DOCKET-50266-3)
safety analysis report on Point Beach Reactor, Unit 2, preliminary, 22:18407 (DOCKET-50301-1)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:18391 (DOCKET-50282-2)
safety analysis report on Prairie Island Power Reactor Units 1 and 2, preliminary, 22:20802 (DOCKET-50282-5)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:18392 (DOCKET-50282-3)
safety analysis report on Prairie Island Power Reactor Units 1 and 2, preliminary, 22:20801 (DOCKET-50282-4)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:24946 (DOCKET-50282-6)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:24947 (DOCKET-50282-7)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:18390 (DOCKET-50282-1)
safety analysis report on Prairie Island Power Reactor, Units 1 and 2, preliminary, 22:24948 (DOCKET-50282-8)
safety analysis report on Proof Test Facility, modifications to technical specifications for, 22:18554 (DOCKET-50290-3)
safety analysis report on Proof Test Facility, preliminary, 22:18552 (DOCKET-50290-1)
safety analysis report on Proof Test Facility, preliminary, 22:18553 (DOCKET-50290-2)
safety analysis report on Quad Cities Power Reactor Units 1 and 2, preliminary, 22:46883 (DOCKET-50254-5)
safety analysis report on Quad Cities Power Reactor Units 1 and 2, preliminary, 22:46882 (DOCKET-50254-4)
safety analysis report on Quad Cities Power Reactor Unit 1, preliminary, 22:46887 (DOCKET-50254-9)
safety analysis report on Quad Cities Power Reactor Units 1 and 2, preliminary, 22:46880 (DOCKET-50254-2)
safety analysis report on Quad Cities Power Reactor Unit 1, preliminary, 22:46886 (DOCKET-50254-8)
safety analysis report on Robert E. Ginna Power Reactor, Unit 1, final, 22:18360 (DOCKET-50244-1)
safety analysis report on Robert E. Ginna Power Reactor, Unit 1, final, 22:18361 (DOCKET-50244-2)
safety analysis report on Robert E. Ginna Power Reactor Unit 1, final, 22:24944 (DOCKET-50244-3)
safety analysis report on Robert E. Ginna Power Reactor Unit 1, preliminary, 22:50707 (DOCKET-50244-5)
safety analysis report on Robert E. Ginna Power Reactor Unit 1, preliminary, 22:50706 (DOCKET-50244-4)
safety analysis report on Robert E. Ginna Power Reactor Unit 1, preliminary, 22:53266 (DOCKET-50244-6)
safety analysis report on Russellville Power Reactor, preliminary, 22:39757 (DOCKET-50313-7)
safety analysis report on Russellville Power Reactor, preliminary, 22:39756 (DOCKET-50313-6)
safety analysis report on Russellville Power Reactor, preliminary, 22:46892 (DOCKET-50313-11)
safety analysis report on Russellville Power Reactor, preliminary, 22:22679 (DOCKET-50313-4)
safety analysis report on Russellville Power Reactor, preliminary, 22:22678 (DOCKET-50313-3)
safety analysis report on Russellville Power Reactor, preliminary, 22:42186 (DOCKET-50313-5)
safety analysis report on Russellville Power Reactor, preliminary, 22:42187 (DOCKET-50313-8)
safety analysis report on Russellville Power Reactor, 22:44813 (DOCKET-50313-10)
safety analysis report on Russellville Power Reactor, preliminary, 22:18412 (DOCKET-50313-1)
safety analysis report on Salem Power Reactor Units 1 and 2, preliminary, 22:20793 (DOCKET-50272-6)
safety analysis report on Salem Power Reactor Units 1 and 2, preliminary, 22:18367 (DOCKET-50272-5)
safety analysis report on Salem Power Reactor Units 1 and 2, preliminary, 22:30139 (DOCKET-50272-8)
safety analysis report on Salem Power Reactor, preliminary, 22:24945 (DOCKET-50272-7)
safety analysis report on Salem Power Reactor, Units 1 and 2, preliminary, 22:18363 (DOCKET-50272-1)
safety analysis report on Salem Power Reactor, Units 1 and 2, preliminary, 22:18364 (DOCKET-50272-2)
safety analysis report on Salem Power Reactor, Units 1 and 2, preliminary, 22:18366 (DOCKET-50272-4)
safety analysis report on San Onofre Power Reactor, final, 22:20783 (DOCKET-50206-1)
safety analysis report on San Onofre Power Reactor, final, 22:20784 (DOCKET-50206-2)
safety analysis report on SEFOR, 22:22668 (DOCKET-50231-14)
safety analysis report on SEFOR, 22:22667 (DOCKET-50231-13)
safety analysis report on SEFOR, 22:22666 (DOCKET-50231-12)
safety analysis report on SEFOR, 22:22660 (DOCKET-50231-6)
safety analysis report on SEFOR, 22:22662 (DOCKET-50231-8)
safety analysis report on SEFOR, 22:22661 (DOCKET-50231-7)
safety analysis report on SEFOR, 22:18550 (DOCKET-50231-4)
safety analysis report on SEFOR, 22:18549 (DOCKET-50231-3)
safety analysis report on SEFOR, 22:22669 (DOCKET-50231-15)
safety analysis report on SEFOR, 22:22665 (DOCKET-50231-11)
safety analysis report on SEFOR, 22:18548 (DOCKET-50231-2)
safety analysis report on SEFOR, 22:22663 (DOCKET-50231-9)
safety analysis report on SEFOR Core 1, 22:18551

(DOCKET-50231-5)
safety analysis report on SEFOR, preliminary, 22:35431 (DOCKET-50231-17)
safety analysis report on SEFOR, preliminary, 22:30301 (DOCKET-50231-16)
safety analysis report on SEFOR, preliminary, 22:44812 (DOCKET-50231-20)
safety analysis report on SEFOR, preliminary, 22:35432 (DOCKET-50231-18)
safety analysis report on Shoreham Power Reactor Unit 1, preliminary, 22:39763 (DOCKET-50322-3)
safety analysis report on Shoreham Power Reactor, Unit 1, preliminary, 22:39764 (DOCKET-50322-4)
safety analysis report on Shoreham Power Reactor, Unit 1, preliminary, 22:39765 (DOCKET-50322-5)
safety analysis report on Shoreham Power Reactor, Unit 1, preliminary, 22:39762 (DOCKET-50322-2)
safety analysis report on Shoreham Power Reactor, preliminary, 22:50727 (DOCKET-50322-6)
safety analysis report on siting and environment of Indian Point Power Reactor, Unit 3, 22:12013 (DOCKET-50286-1)
safety analysis report on Southwest Experimental Fast Oxide Reactor, preliminary, 22:50704 (DOCKET-50231-22)
safety analysis report on Southwest Experimental Fast Oxide Reactor, preliminary, 22:50703 (DOCKET-50231-21)
safety analysis report on Southwest Experimental Fast Oxide Reactor, preliminary, 22:50705 (DOCKET-50231-23)
safety analysis report on Southwest Experimental Fast Oxide Reactor, preliminary, 22:39744 (DOCKET-50231-19)
safety analysis report on Surry Power Reactor, 22:18386 (DOCKET-50280-12)
safety analysis report on Surry Power Reactor, 22:18385 (DOCKET-50280-11)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:22675 (DOCKET-50280-16)
safety analysis report on Surry Power Reactor Units 1 and, preliminary, 22:18376 (DOCKET-50280-2)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:18378 (DOCKET-50280-4)
safety analysis report on Surry Power Reactor Units 1 and, preliminary, 22:18377 (DOCKET-50280-3)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:18379 (DOCKET-50280-5)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:18388 (DOCKET-50280-14)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:18389 (DOCKET-50280-15)
safety analysis report on Surry Power Reactor Units 1 and 2, preliminary, 22:18380 (DOCKET-50280-6)
safety analysis report on Surry Power Reactor, preliminary, 22:18381 (DOCKET-50280-7)
safety analysis report on Surry Power Reactor, preliminary, 22:18383 (DOCKET-50280-9)
safety analysis report on Surry Power Reactor, preliminary, 22:18384 (DOCKET-50280-10)
safety analysis report on Surry Power Reactor, Units 1 and 2, preliminary, 22:18382 (DOCKET-50280-8)
safety analysis report on Surry Reactor Power, preliminary, 22:18387 (DOCKET-50280-13)
safety analysis report on Three Mile Island Power Reactor Unit 1, preliminary, 22:35444 (DOCKET-50289-8)
safety analysis report on Three Mile Island Power Reactor, Unit 1, preliminary, 22:18396 (DOCKET-50289-2)
safety analysis report on Three Mile Island Power Reactor Unit 1, preliminary, 22:35443 (DOCKET-50289-7)
safety analysis report on Three Mile Island Power Reactor Unit 1, preliminary, 22:35445 (DOCKET-50289-9)
safety analysis report on Three Mile Island Power Reactor, Unit 1 preliminary, 22:35442 (DOCKET-50289-6)
safety analysis report on Three Mile Island Power Reactor, Unit 1, preliminary, 22:18395 (DOCKET-50289-1)
safety analysis report on Three Mile Island Power Reactor Unit 1, preliminary, 22:18398 (DOCKET-50289-4)
safety analysis report on Three Mile Island Unit 1, preliminary, 22:18397 (DOCKET-50289-3)
safety analysis report on Three Mile Island, Unit 1, preliminary, 22:18399 (DOCKET-50289-5)
safety analysis report on University of Virginia Research Reactor, preliminary, 22:25080 (DOCKET-5062-2)
safety analysis report on University of Virginia Research Reactor, preliminary, 22:25081 (DOCKET-5062-3)
safety analysis report on University of Virginia research reactor, 22:25079 (DOCKET-5062-1)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32751 (DOCKET-50295-2)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32754 (DOCKET-50295-5)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32755 (DOCKET-50295-6)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32756 (DOCKET-50295-7)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32757 (DOCKET-50295-8)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32750 (DOCKET-50295-1)
safety analysis report on Zion Power Reactor Units 1 and 2, preliminary, 22:32753 (DOCKET-50295-4)
safety analysis reports for, guide to preparation of, 22:44836 (TID-24631)
safety analysis reports on Crystal River Power Reactor Units 3 and 4, preliminary, 22:35452 (DOCKET-50302-7)
safety criteria for PEC Fast Test Reactor, 22:53446
safety evaluation of Cooper Power Reactor, AEC--DRL, 22:24949 (DOCKET-50298-8)
safety evaluation of Diablo Canyon Power Reactor, AEC Division of Reactor Licensing, 22:18368 (DOCKET-50275-1)
safety evaluation of Fort St. Vrain Power Reactor, AEC Division of Reactor Licensing, 22:39752 (DOCKET-50267-11)
safety evaluation of Maine Yankee Power Reactor, USAEC Division of Reactor Licensing, 22:46891 (DOCKET-50309-15)
safety evaluation of Pilgrim Power Reactor, USAEC Division of Reactor Licensing, 22:37430 (DOCKET-50293-1)
safety evaluation of Surry Power Reactor, Units 1 and 2, AEC Division of Reactor Licensing, 22:32749 (DOCKET-50280-17)
safety evaluation of Zion Power Reactor Units 1 and 2, USAEC Division of Reactor Licensing, 22:48637 (DOCKET-50295-9)
safety outline for power reactor operation, 22:10010(R) (NP-17126)
safety system testing for power plants, design provisions for, 22:5919 (CONF-671011-2)
safety systems for boiling power reactors, analysis of engineered, 22:32859
safety systems for boiling reactors, analysis of failures in, 22:30207
safety systems for Hanford Production, design standards for, 22:48647 (HW-78912)
seismic research for, ACRS comments on, 22:32900
seismic studies for Tokai-Mura Power Reactor, description of, 22:14159
shielding calculations for Aircraft Nuclear Propulsion reactor, use of computer programs for, 22:50782 (APEX-918)
shock wave-induced excursion in fast, analysis of effects of, 22:32735 (ANL-7310, pp 249-375)
shutdown criteria for, procedures for determining trip set-points for, 22:44867
shutdown environment of L54M, analysis of iodine-131 in, 22:25102
shutdown flooding system for coolant loss accident, description of, 22:10030(P)
shutdown monitor for reactor to prevent unauthorized use, 22:6181(P)
shutdown reactivity meter for power reactor, evaluation of two-detector cross-correlation 2DCT, 22:50738 (ORNL-4255)
shutdown safety analysis for cooling system of BN-350 Reactor, 22:20903
shutdown safety analysis for cooling system of BOR reactor, 22:20903
shutdown system for boiling heavy water-moderated reactor, description of pipe-connected moderator tank for steam condensation, 22:30276(P)
shutdown system for boiling reactor, description of valve release water supply, 22:14213(P)
shutdown system monitoring configuration for FR-2 research reactor, description of, 22:42374
shutdown system with poison gas in coolant tubes, 22:18652(P)
shutdown transient characteristics of Fermi Fast Breeder Reactor, testing of, 22:24929 (APDA-NTS-15)
siting aspects of, JCAE comments on, 22:22753
siting criteria for, 22:12054
siting criteria for Japanese nuclear power plants, 22:14151
siting evaluation for power, engineering aspects of, 22:18445
siting for, analysis of meteorological factors involved in, 22:5958
siting for, evaluation of factors affecting AEC decisions on, 22:12055
siting in Netherlands of reactors, analysis of, 22:35683
siting of Hinkley Point 2 Reactor, analysis of, 22:46971
siting policies for, comparison of Canadian and U. S, 22:50697 (AECL-3156)
sodium boiling accidents for large fast power reactors, physical models and equations for analysis of liquid, 22:53383
sodium boiling and flashing in fast reactors, liquid, 22:20834
sodium boiling in fast reactors, analysis of liquid, 22:53392
sodium boiling overpower transient analysis for ceramic-fueled sodium-cooled fast breeder reactor, (T), 22:20832
sodium boiling simulation for fast, description of liquid, 22:53373
sodium fires analyses for LMFBR, characterization of energy release and transport for, 22:53352
sodium-water reactions for, calculations of pressures produced in, 22:14149(T) (ORNL-tr-1764)
specifications for MIT Research Reactor technical, 22:20926
spray efficiency for iodine vapor removal for, NSPP tests of, 22:32796

stability of 1000 MW(e) steam-cooled fast power reactors, effects of design parameters and control systems on, (T), 22:37399 (AE-321)
stability testing for Garigliano Power Reactor, analysis of closed-loop transfer function Bode plot, 22:16149(R) (GEAP-5517)
stability testing of Garigliano Power Reactor, analysis of, 22:18418 (EURAEC-1985)
standards and codes for, evaluation of use of, 22:44852
standards for, compilation of national and international nuclear, 22:48653 (ORNL-NSIC-50)
standards for, handbook on, 22:33123
startup experiments on CABRI for, procedure for blind, 22:16114 (CEA-R-3341)
startup procedure for Otto Hahn Reactor, analysis of, 22:53400
startup procedures for RAPSODIE reactor, analysis of, 22:39878 (CEA-R-3406)
startup testing of Cadarache Reactors (Rapsodie), description of sodium leakage incidents during, 22:30318
steam corrosion of fuels, effects of pyrolytic carbon coatings on, 22:42200(R) (ORNL-4200)
studies in reactor kinetics, summary of, 22:12063
summary of AEC research and development projects on, 22:53395
surveillance program for power reactor, description of proposed pressure vessel and component, 22:53341
surveillance test program for JPDR pressure vessel, description of, 22:37483
system for liquid-cooled and moderated reactors, description of, 22:18627(P)
systems for, assessment of sensing channels for, 22:53480
systems for, book on, 22:30273
systems overlap between Dresden Power Reactor Units 2 and 3, definition of areas of, 22:46865 (DOCKET-50237-3)
systems reliability analysis from component failure-rate data, development of techniques for, 22:53487
technical progress review of, Sept.--Oct. 1968, 22:44849
technical progress review on, July-August 1968, 22:32901
testing of Fort St. Vrain Power Reactor prestressed concrete pressure vessel, 22:30149 (GA-8623)
testing of high-temperature gas-cooled reactor systems, 22:25098(R) (ORNL-TM-2164)
testing of Japanese fabricated power reactor core materials, description of, 22:35486
testing of pressure-components for reactors, description of Huber-Hencky method of stress, 22:39907
tornado effects on reliability of design of nuclear power plants, 22:5959
training program for, summary of UKAEA, 22:42210 (TID-24564)
transient response of high enthalpy water for, coolant loss accident effects on pressure-time, 22:32799
tritium monitoring and personnel protection for Savannah River Production Reactors, analysis of, 22:35455 (DPSPU-66-30-13)
use of probability methods for analysis of fast reactor, description of, 22:35543

REACTOR SAFETY EXPERIMENTS
see also Containment Mockup Facility
see also Containment Research Installation
see also Containment Systems Experiment
see also Nuclear Safety Pilot Plant
accident in TREAT, simulation of transient, 22:27416(R) (ORNL-4228)
blowdown analysis for LOFT, dynamic hydraulic forces calculations for reactor loop component, 22:1766(R) (IDO-17240)
blowdown analysis for LOFT, oscillatory pressure phenomena measurements in semiscale, 22:1766(R) (IDO-17240)
blowdown analysis for LOFT, WATER-HAMMER program for, 22:6517 (TID-24137)
blowdown process testing in quarter-scale LOFT vessel, hydrodynamics and mechanical response measurements during, 22:37532(R) (IDO-17242)
containment atmosphere in LOFT, continuous sampler-monitor for sampling, 22:4231(R) (IN-1087)
containment shell coatings for LOFT, 22:4231(R) (IN-1087)
converter-system design for fast fuel cluster testing in TREAT, 22:22653(R) (ANL-7419)
coolant loss tests in LOFT, analysis by FLASH-2 computer code of, 22:5976
coolant temperature profiles in TREAT, effects of oxide and carbide fuel power transients on, 22:32735 (ANL-7310, pp 249-375)
core for TREAT, design parameters for softer spectrum, 22:30118 (ANL-7438)
core for TREAT, fission neutron density ratios and neutron flux lethargy distributions in, 22:32735 (ANL-7310, pp 249-375)
core for TREAT, physics parameters for thermal-to-fast converters for, 22:32735 (ANL-7310, pp 249-375)
core loading analysis in LOFT blowdown tests, comparison of techniques for, 22:37532(R) (IDO-17242)
core meltdown in liquid metal-cooled fast reactor by TREAT, analysis of simulated, 22:39813
criticality studies by computer program analysis for, 22:14293 (DP-1121)
description of ERMINE assembly, in MINERVE fast--thermal flux region, 22:14263(T) (AEC-tr-6910)
description of French, 22:18464
description of LOFT, 22:39774 (IDO-17272)
emergency core coolant injection in LOFT, boron poison concentration in, (T), 22:37532(R) (IDO-17242)
emergency core coolant injection in simulated LOFT tests, heat transfer mechanisms during, (E), 22:37532(R) (IDO-17242)
excursions in SPERT pressurized-water oxide core mockup, effects of cold-startup and hot-standby conditions on short-period, 22:48648(R) (IDO-17271)
fission gas release to fuel rod plenum during LOFT tests, (T), 22:37532(R) (IDO-17242)
fission product behavior in LOFT, characterization of, 22:7816(R) (ORNL-TM-2057)
fission product behavior testing in LOFT, assistance program for analytical model support of, 22:46910 (ORNL-4265)
fission product release sampling in LOFT, effectiveness of removable plateout capsules for, (E), 22:37532(R) (IDO-17242)
fission product release studies in TREAT, 22:1772(R) (ORNL-TM-1986)
fission product removal in LOFT, effects of spray injection on, 22:20909(R) (ORNL-TM-2095)
fission product transport and deposition studies for LOFT, 22:1772(R) (ORNL-TM-1986)
fuel cladding failure analysis in LOFT, TCP code for, 22:37532(R) (IDO-17242)
fuel element mechanical properties in SPERT-1, effects of transient power increase and waterlogging on, 22:30170
fuel element meltdown in TREAT simulated excursion accidents, 22:27397 (ANL-7375, pp 135-59)
fuel element radiation levels following LOFT critical experiment, (T), 22:37532(R) (IDO-17242)
fuel element testing in TREAT, effects of flowing sodium on EBR-2 Mark I, 22:32735 (ANL-7310, pp 249-375)
fuel element testing in, radiation and transient effects on partial-burnup fast oxide, 22:32735 (ANL-7310, pp 249-375)
fuel elements for SPERT IV, transient neutron radiation effects on stainless steel-clad uranium oxide (UO_2) pellet-type, 22:33066
fuel elements in TREAT, effects of transient radiations on Zircaloy-2-clad uranium oxide (UO_2) rod, 22:32984
fuel meltdown in TREAT, summary of studies on, 22:53450
fuel meltdown loop for TREAT, description of instrumentation for sodium, 22:32735 (ANL-7310, pp 249-375)
fuel meltdown measurements on vibrationally compacted uranium oxide (UO_2) rods in TREAT, 22:24925(R) (ANL-7427)
fuel meltdown studies in TREAT, ceramic, 22:12006(R) (ANL-7399)
fuel meltdown studies in TREAT, metallic, 22:9988(R) (ANL-7391)
fuel meltdown testing in TREAT, improvements in fast neutron hodoscope used in, 22:28076
fuel rod failure in SPERT-4, generation of mechanical energy from, 22:6095(R) (IDO-17245)
fuel rods for SPERT, design characteristics of F-type, 22:48648(R) (IDO-17271)
gamma heating in LOFT core during operation, QAD-B code analysis of, 22:37532(R) (IDO-17242)
kinetic behavior of SPERT-3 E-core, temperature-dependent, 22:5957
LOFT air samplers, testing in NSPP of prototype, 22:10012 (ORNL-TM-1908(Pt.1))
LOFT design and construction, 22:12063
meteorology studies at NRTS for LOFT, 22:10375(R) (IDO-12059)
monthly progress report on TREAT, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress reports on TREAT, Argonne National Laboratory, 22:35422(R) (ANL-7445)
neutron hodoscope for TREAT, circuit diagrams for amplifier discriminator boards for fast, 22:32735 (ANL-7310, pp 249-375)
operations summary for TREAT, 22:16265(R) (ANL-7403)
operations summary for TREAT, August 1968, 22:50699(R) (ANL-7487)
operations summary for TREAT, June 1968, 22:42158(R) (ANL-7460)
physics characteristics of LOFT core, effects of control rod and fuel pin configuration on, 22:22819(R) (IDO-17241)
physics measurements of excursions in SPERT III pressurized-water reactor, analysis of, 22:33030
power distribution calculations for LOFT, computerized variational synthesis techniques for, 22:1766(R) (IDO-17240)
power transient testing of E-core of SPERT-3, 22:6095(R) (IDO-17245)
pumps for TREAT sodium loop, development of annular linear induction, 22:32735 (ANL-7310, pp 249-375)
pumps for TREAT, development of Mark-2 in-pile loop liquid sodium annular linear-induction, 22:44884 (ANL-7369)
radiation dose rates in containment building following LOFT emergency core cooling system test, (T),

22:37532(R) (IDO-17242)
reactivity transients in SPERT, one-point model for calculation of, (T), 22:44913
sodium coolant flow coastdown transients in TREAT, analysis of, 22:32735 (ANL-7310, pp 249-375)
sodium coolant for TREAT, hydrodynamics equations for, 22:32735 (ANL-7310, pp 249-375)
sodium loop experiments in TREAT, analysis of metallic fuel meltdown in, 22:12006(R) (ANL-7399)
sodium vapor void fraction profiles in TREAT, effects of oxide and carbide fuel power transients on, 22:32735 (ANL-7310, pp 249-375)
Spert 3 E-core uranium oxide (UO_2)-fueled, description of, 22:35596(R) (IDO-17260)
SS materials accountability procedures at LOFT and SPERT, 22:6204 (IDO-17246)
temperature calculations for TREAT, analog-digital computer program for transient, 22:14122 (ANL-7374)
temperature coefficient for, analytical determination of, 22:32735 (ANL-7310, pp 249-375)
testing of Spert 4 Capsule Driver Core, analysis of transient, 22:35596(R) (IDO-17260)
testing program for TREAT, review of, 22:18515
testing uranium dioxide--zirconium oxide in TREAT, 22:11068
transient behavior of Spert 4 Capsule Driver Core, analysis of short period, (E), 22:44890(R) (IDO-17270)
transient behavior of uranium oxide (UO_2)-fueled Spert 3 Oxide Core Kinetics Test E-core, analysis of 0.67 to 1.25$ step reactivity, (E/T), 22:44890(R) (IDO-17270)
transient sodium behavior under accident conditions in TREAT, 22:16265(R) (ANL-7403)
use of TREAT, for meltdown analysis of Zircaloy-2-clad pelletized and vibra-packed uranium oxide (UO_2), 22:53260 (ANL-7425, pp 130-71)
Reactor Shielding
see Shielding
Reactor Shielding Materials
see Shielding Materials
REACTOR SIMULATORS
see also Computers
accuracy of Chezem-Helmick coupled-core analog, 22:35687
analog computer, for startup transients analysis of clustered NERVA reactor, 22:20900 (WANL-TME-1154)
control requirements for FFTF, 22:3815 (BNWL-SA-1443)
control system for 0.1 MW(e) boiling, 22:22787(R) (ORNL-4216)
control system for Manchester and Liverpool Universities', description of analog computer, 22:12104
description for Magnox and AGR systems, 22:7921
description of analog iterative model of coolant density in channels of pressure-tube boiling reactor, 22:20820 (RT/ING-(67)16)
description of analog, for analysis of hydraulic and nuclear stability of boiling light water-cooled heavy water-moderated reactors, 22:20777 (BNWL-574)
description of analog, for analysis of nuclear rocket engine dynamic behavior, 22:32953
description of analog-hybrid computer, for FFTF, (E/T), 22:32964 (BNWL-707)
description of hybrid analog--digital, for optimization of plant control, 22:49009
digital input to analog system for natural circulation boiling, 22:35482
effects of void coefficients on SGHWR reactivity using PACE analogue computer, analysis of, 22:16161 (TRG-Report-1343)
hazard analysis for FFTF, 22:3815 (BNWL-SA-1443)
model analysis by analog and digital computers, description of heat transfer transients in self-pressurized pressurized-water reactor, 22:53290
operation stability of FFTF, 22:3815 (BNWL-SA-1443)
oscillator tests for SEFOR using analog, description of, 22:35595 (GEAP-5576)
performance of analog computer, for error analysis of power reactor neutron flux and period measurement control systems, 22:39819
performance of digital computer, effects of data processing methods on, 22:53469
power transients in fast liquid sodium-cooled reactors by digital computer, analysis of bulk boiling, 22:39811
program for analog computer potentiometer setting record and storage in linked analog-digital, 22:48753 (LA-DC-9838)
reactivity insertion accident analysis using TAPIRO reactor analog, description of, 22:39883
training programs for FFTF, 22:3815 (BNWL-SA-1443)
use for analog analysis of rocket reactor inherent control concept, 22:30286
use of analog computer for dynamics and kinetics of steam-cooled fast breeder, (T), 22:32770 (KFK-657)
use of analog computer, for calculation of radial flux distribution in multiregion fast reactors, 22:46956
use of analog computer, for reactivity meter simplification analysis, 22:18586 (CONF-661056-1)
use of analog computer, for reactivity meter simplification analysis, (T), 22:18594
use of analog computer, for study of dynamics of sodium-cooled thermal reactors, 22:35481
use of digital computer programs for coolant loss core heatup analysis in boiling reactors, description of, 22:35424 (BMI-1841)
use of IBM 7094 digital computer for, testing direct digital control system by, 22:6066
use of on-line process analog computer, for testing rocket reactors, 22:35566 (LA-DC-9460)
Reactor Stability
see Reactivity
Reactor Testing Station
see National Reactor Testing Station
REACTOR THERMAL COLUMNS
see also Reactor Experimental Facilities
design for DOSAR thermal neutron facility, 22:2272 (ORNL-TM-2009)
use in burnup parameter determinations for irradiated fuel pins by measurement of fast neutron production, (E/T), 22:48749 (AE-326)
REACTORS
see also Army Reactors
see also Critical Assemblies
see also Exponential Piles
see also Naval Reactors
see also Reactors, AGR-type
see also Reactors, Aircraft
see also Reactors, Boiling
see also Reactors, Breeder
see also Reactors, Canada
see also Reactors, CANDU-type
see also Reactors, Enriched
see also Reactors, Fast
see also Reactors, Fluid-Fueled
see also Reactors, France
see also Reactors, Gas-Cooled
see also Reactors, Gas-Fueled
see also Reactors, Germany
see also Reactors, Graphite-Moderated
see also Reactors, Great Britain
see also Reactors, Heavy Water-Moderated
see also Reactors, Heterogeneous
see also Reactors, Homogeneous
see also Reactors, India
see also Reactors, Intermediate
see also Reactors, Japan
see also Reactors, Liquid Metal-Cooled
see also Reactors, Maritime
see also Reactors, Molten-Salt
see also Reactors, Organic-Cooled
see also Reactors, Organic-Moderated
see also Reactors, Pebble-Bed
see also Reactors, Power
see also Reactors, Pressurized-Water
see also Reactors, Process-Heat
see also Reactors, Production
see also Reactors, Research
see also Reactors, Rocket
see also SReactors, Sweden
see also Reactors, Swimming-Pool
see also Reactors, Test
see also Reactors, Thermal
see also Reactors, U.S.S.R.
see also Reactors, Water-Cooled
see also Reactors, Water-Moderated
accident analysis for, description of one-dimensional computer program for maximum hypothetical, 22:25124 (BNWL-612)
accident conditions in, formation of iodomethane under, 22:2017 (BMI-1816)
accidents at Hanford, installation for treatment of injuries following, 22:36270
accidents in, filtration technology developments for, 22:25333 (ORNL-4229, pp 162-79)
accidents in, iodine deposition during, 22:22749
accidents in, release of radioactive materials to atmosphere from, 22:16356 (KR-116)
accidents in, tabular summary of, 22:12044
Advisory Committee on Reactor Safeguards for, listing of members of 1968, 22:22753
alarm system for heat rise in, description of transducer melting plug-activated boiling liquid-generated acoustic, 22:42563(P)
argon-14 monitoring near, gamma spectrometer for, 22:45357(R) (UCRL-50007-68-1)
Argonne National Lab. annual report, July 1, 1966-June 30, 1967, 22:32733(R) (ANL-7310)
auxiliary equipment in, performance of metallic seals for viewing parts in pressurized, 22:1891
blasting near, control measures for, 22:36956
blowdown of two-phase two-component media, analysis of rarefaction wave propagation in, (T), 22:33182
book: Control and Electronics of Nuclear Reactors, 22:30273
book: Design of Nuclear Plants, 22:10013(T) (AEC-tr-6722)
book: Energy Conversion, 22:31679
book: Introduction to Reactor Physics, 22:30274
book: Nuclear Radiation and Atomic Reactors, in Russian, 22:35520
book: Nuclear Reactor Materials, 22:15137
book: Problems of Thermal Physics of Nuclear Reactors, 22:30391
book: Reactor Physics, Vols. 1 and 2, 22:42559
calculations for, effects of accuracy of nuclear

constants on, 22:18107
calorimeter calibration for radiation heating measurements in, (T), 22:39918
calorimetry for dosimetry in, methods for, 22:18590(T) (UCRL-Trans-10217)
chemistry in, research progress on, 22:6313 (HMI-B-53)
chemistry of, research progress on, 22:16356 (KR-116)
chemistry research progress for, 22:25462(R) (ORNL-4229)
CHORD-S program for data on, description of hardware and procedures development for, 22:27416(R) (ORNL-4228)
codes and standards for, 22:30156 (ORNL-NSIC-43)
component construction for, legislative standards of, 22:32804
component reliability in, development of techniques for prediction of, 22:53487
components and materials for, description of NRTS equipment for handling and testing of, 22:25571 (IN-1176)
components of, evaluation of chemical vapor deposition for fabricating, (E), 22:8709 (ORNL-TM-2066)
conference on water chemistry in, Rome, May 20 to 22, 1963, 22:27740
configuration of, effects of moderator level on control and xenon poison in enriched fuel element bundles on, 22:53293(P)
construction and operation of, listing of approved DRDT tentative standards for, 22:7816(R) (ORNL-TM-2057)
construction materials for, properties of zirconium oxide as, 22:17127
containment and siting of, meteorological research for, 22:40242 (AECL-2787, pp 415-25)
containment atmospheres of, methyl iodide washout by hydrazine sprays from, 22:14477(R) (BNWL-530)
containment buildings for, design of quick-acting seal for walls of, 22:8288(P)
containment system for, design of fast-acting relief valve for, 22:14661(P)
containment systems for, design parameters for, (T), 22:39908
control and operation of, use of on-line computers for, 22:35483
control and stability analysis of spatially dependent, 22:10073 (ANL-7322)
control of distributed parameter, space-time description of power level changes for, 22:5987
control of distributed-parameter, direct technique for analysis of optimal, (T), 22:22876
control of pulsed, by measurement of subcritical state, (T), 22:18595
control of spatially-dependent, analysis of optimum, (T), 22:25171
control of, comparison of anti- and cross-correlation functions for, 22:42396(T) (SC-T-68-1532)
control of, elementary physics of, 22:30273
control of, error analysis for cross-spectral and auto-spectral density measurements for, 22:1785
control of, neutron detectors used in, 22:30273
control of, Pontryagin theory of optimum, 22:20946
control of, Pontryagin's maximum principle method for optimum, (T), 22:22856 (ITEF-539)
control of, variational synthesis for optimal, 22:5986
control solution recovery loop in, flow diagram for boric acid, 22:39943(P)
control systems for, development of logarithmic and period amplifier for, 22:21386 (RT/EL-(67)12)
control systems for, maintenance manual for ORNL Model Q-2607 servo demand drive unit for, 22:4505 (ORNL-TM-1638(Pt.7))
coolant boiling detection in, review of methods for, 22:16311 (CONF-671011-, pp 41-55)
coolant boiling in, impedance method for determinating bulk, 22:24986
coolant burnout in, instrument for determining, 22:6679 (RISO-M-643)
coolant channels of, analysis of axial temperature distributions in, (T), 22:48762
coolant expulsion from, effects of coolant-structure coupling on, 22:5956
coolant flow control system for, description of movable partitions in concentric cylindrical sleeves for, 22:25186(P)
coolant flow in bundles of cylindrical fuel rods in, pressure drop and velocity distribution characteristics of, (T), 22:30360
coolant flow in, design of device to control, 22:10466(P)
coolant flow in, equations for transport of decaying activity through laminar and turbulent, 22:32961 (ANL-7310, pp 377-430)
coolant flow rate in, equipment and methods for measurement of, 22:8282(P)
coolant flow through, description of device for regulating, 22:12155(P)
coolant flow transients during pressure loss accidents in, use of Venturi tube measurements for analysis of, (T), 22:35674 (WAPD-TM-735)
coolant gas impurities in, use of microwave cavity resonators for determining, 22:4509
coolant loop for, description of overhead upward flow, 22:7868(P)
coolant loss accidents in, fission product release during, 22:27490 (ORNL-4229, pp 149-55)
coolant pumps for, development of internal axial-mounted, 22:25147
coolants for, LUPO computer program for calculation of heat transfer and hydraulic behavior of, 22:10482 (EUR-3643)
cooling channels in, use of Hankel transforms for Lie series analysis of transient temperatures in, 22:22704 (LA-3833)
cooling system channel burnout in, effect of nonuniform heat flow on, (E/T), 22:18580 (BAW-3238-13)
cooling system failure alarm for, description of melting plug-release gas-activated whistle for, 22:42410(P)
cooling system flow regulators for, description of radially finned cylindrical, 22:25198(P)
cooling system for description of cooling tubes embedded in fissile material for, 22:42241(P)
cooling system for integral heat exchanger-enclosed, description of sealed annular-shaped secondary flow, 22:42291(P)
cooling system for, description of dual interconnected piston-actuated temperature sensors for valve-operated flow control in, 22:48782(P)
cooling system for, description of gag valve regulating pressurized-fluid, 22:20972(P)
cooling system for, using pressurized liquids, 22:18616(P)
cooling system structural materials for, properties of Zircaloy-2, 22:19526
cooling systems for, flow-induced vibration for, 22:1817
cooling systems for, heat transfer characteristics of, (T), 22:27501
cooling systems for, heat transfer mechanics for boiling in, 22:30391
cooling systems for, inspection methods for pressurized, 22:30803
cooling systems for, method for calculation of convective transport and deposition of fission products in, 22:5964
cooling systems for, out-of-pile simulation of fission product behavior in, 22:33100 (RT/ING-(68)4)
cooling systems for, testing of water additives for emergency, 22:25135(R) (SNE-38)
cooling systems of, analysis of failures in pipes of, (E/T), 22:35459(R) (GEAP-5587)
core assembly of liquid-moderated, description of flange-braced standpipes for multiple pressure tube, 22:25202(P)
core assembly of multi-tube, with calandria with standpipe terminated pressure tubes, 22:14362(P)
core clamping system for, description of upper and lower multi-shoe torsion bar-actuated, 22:37607(P)
core configuration for, description of longitudinally elongated trifid fuel elements with three slab-type angularly displaced fins for self-aligning and self-supporting, 22:37590(P)
core configuration of solid moderator, 22:3957(P)
core corrosion protection for, metal plating method for, 22:28747(P)
core deformation under impulsive loading, analysis of cylindrical, (T), 22:22653(R) (ANL-7419)
core for reflector-controlled, effects on specific mass of voids in, 22:16318 (UCID-15268)
core for, description of use of neutron moderator for obtaining constant thermal neutron flux over, 22:42251(P)
core for, description of varied moderator-to-fuel volume, 22:42249(P)
core for, DINPEC-code for calculating temperature and power distribution in, 22:39784 (RT/FIMA-(68)1)
core for, mathematical expression for fuel concentration for thermal flux flattening in, 22:16323 (UJV-1904)
core for, plastic deformation determinations for, 22:16265(R) (ANL-7403)
core for, statistical model for calculating hot channel factors for, 22:50870
core for, synthesis method for uncertainty analysis of thermal design of, 22:18608
core gamma distribution in, use of Langevin's technique for analysis of data from gaseous Cherenkov detectors used in measuring, 22:30832
core handling safety in, description of control rod locking device for, 22:39926(P)
core of liquid-moderated, description of corrugated-symmetric-wall-separated multiple calandria square-lattice, 22:25188(P)
core simulation of, testing of tungsten and uncarburized thoriated tungsten electron bombardment heater for, 22:33142
core structural dynamics in, displacement--time responses from flow tests on, (E/T), 22:24925(R) (ANL-7427)
core structure for solid-moderator, description of brick-type multiple hexagonal column key-coupled, 22:39945(P)
core structure for, computer analysis of fuel burnup in uranium and plutonium--uranium fueled graphite and heavy water moderated, 22:22832
core structure formation from solid moderator columns, 22:14323(P)
core support for, MAIN computer program for stress analysis of coupled axisymmetric two-plate, 22:50836 (ANL-7162(Suppl.))

core support for, stress analysis for two axisymmetric interconnected multiregion plates for, (E/T), 22:10072 (ANL-7162)
core support grid for, description of multiple layer interconnected three-directional parallel vertical-edge strips in hexagonal, 22:48771(P)
core support materials for, friction and wear in carbon and graphite, 22:15250 (GAMD-8374)
core support structure for liquid-cooled, with hydraulic counterflow brake device, 22:39938(P)
core support structure for, description of cylindrical skirt with bearing plate separated multi-pillar compression bars, 22:14328(P)
core support structure for, description of positioning of upper, 22:42250(P)
core void detection in, description of insulated wire in clad fuel element for, 22:18648(P)
core-heat exchanger, description of pressure vessel-contained, 22:35693(P)
cores for, analysis of neutron response in coupled, 22:6005
cores for, geometric buckling determinations for polygonal, 22:48800
cores for, problems associated with high-velocity coolant flow induced vibration of, 22:7927
cores for, time synthesis calculations for coupled-, 22:5982
critical parameters of, handbook on, 22:33123
criticality accidents in, design of equipment for separation of krypton and xenon from gas streams in, 22:8253(R) (K-1725)
criticality calculations for, iterative procedure for solution to Chebychev elliptic boundary value problems occurring in, 22:20935 (KAPL-P-3400)
criticality calculations for, use of ergodic theory for asymptotic, 22:30375
criticality changes with composition in, use of perturbation formula for computing, (T), 22:14310
criticality conditions for, use of adjoint biasing technique in Monte Carlo calculations of, 22:32982
criticality equations for, determination of, 22:48694
criticality equations for, examination of albedo formulation of, (T), 22:26771
criticality of high-leakage thermal, core and reflector temperature parametric effects on, (E/T), 22:5745
criticality of secant-shaped, bipolar co-ordinates method for lowest Helmholtz equation eigenvalue in, 22:44947
criticality of two-zone reflected, effects of flat central zone on calculations of, (T), 22:5927 (IBK-466)
criticality studies for, use of energy-dependent Boltzmann equation for, 22:27493
description of clustered fuel rod core, with spaced guide tubes for control pins and coolant flow, 22:30398(P)
description of fluid-cooled, 22:18633(P)
description of independent-motion multiple fuel assembly, 22:14357(P)
description of limit switch controlled chain-pulley drive horizontal plug for, 22:14345(P)
description of liquid-cooled, 22:16245(P)
description of liquid-cooled and liquid-moderated integral, 22:25179(P)
description of multiple hexagonal fuel tube liquid-cooled, 22:16240(P)
description of rotatable core, with fixed subcritical masses for supercritical periods, 22:3917(P)
description of Spanish, general, 22:1787
description of U. S. facilities, 22:14142 (TID-8200(17th Rev.))
description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
description with spray coolant conduits on core assembly guide tubes, 22:10037(P)
design analyses using Monte Carlo techniques, discussion of, 22:33133
design and physics calculations for, description of ARC program system for, 22:33086 (ANL-7310, pp 431-511)
design of dual-cycle, for nitrogen fixation, (T), 22:15141 (BNL-50057, pp 79-100)
design of, discussion of Monte Carlo codes for, 22:33131
design of, effects of earthquake characteristics on, 22:6436 (ORNL-4168, pp 1-60)
design of, effects of, on neutron capture therapy of neoplasms in mice, 22:31148
design of, module definitions for NOVA computer programs for, 22:44921 (KAPL-P-3397)
design of, use of DATATRAN input language for NOVA Program for, 22:5929 (KAPL-P-3372)
design of, use of diffusion-like transport approximations in, 22:48802
development by USAEC, JCAE hearings on, 22:10168
development for production of desalted water, 22:23204
development in Euratom countries, 22:4303 (EUR-3568)
development in South Africa, review of, 22:10903
development in, research at Studsvik, Sweden on, 22:33399
development of future, technological possibilities in, 22:27425
development of technology during 1967, 22:22925
development of U. S., JCAE hearings on, 22:10044
development of U. S., JCAE hearings on, 22:10046
development of U. S., JCAE hearings on, 22:10045
development of, plutonium technology in, 22:35726 (BNWL
672)
development of, technical progress review on, 22:1816
development of, technical progress review on, 22:25172
development programs for, 1964 JCAE hearings on, 22:12218
differential equations for, summary of numerical techniques for solutions to ordinary and partial, 22:50853
diffusion equations for, positivity theorems for discret
form of multigroup, 22:48801
Doppler broadening calculations for, use of 6-point Gaus
quadrature with the complex integral for, 22:33136
dynamics and operation of, book on, 22:30273
dynamics calculations for, discussion of computer system
for, 22:10088
dynamics measurements for, frequency domain transformation corrections of Winfrith binary cross correlator responses in, 22:53453 (AEEW-R-602)
dynamics of coupled-core, summary of, 22:20860
dynamics of liquid-cooled, COSTANZA programs for computing, 22:5920 (EUR-3633)
economics of dual-purpose, for production of fresh water and electric power, 22:10445
economics of dual-purpose, for production of fresh water and electric power, 22:10446
economics of dual-purpose, for water desalination and electric power production, 22:14626
economics of mobile, low-power, for water desalination, 22:14630
economics of, mathematical model for, 22:27521(R) (ORNL-4236)
effluent disposal into soil systems, 22:12008(R) (BNWL-537)
eigenvalues for cylindrical, use of control rod sectioning technique for calculating, 22:39903 (KFK-741)
eigenvalues of shutdown, asymmetry source experiment for measuring, 22:14297 (WAPD-T-1955)
electronic systems for, reliability analyses of, 22:37904 (DUN-SA-66)
energy conversion from, thermoelectric cell for, (E), 22:15394(P)
excursions in cylindrical core, Bethe—Tait calculation with delayed neutrons and Doppler feedback for second, 22:20944
excursions in, coherence effects in super prompt critical, (T), 22:22653(R) (ANL-7419)
excursions in, effects of shock wave generation on, 22:5972
excursions in, singular perturbation methods and nonlinear boundary value solutions to equations describing, 22:33129
experimental equipment for high-flux, design of high-resolution cold neutron spectrometer, 22:8368(T) (AERE-Trans-1080)
fast fission factor in, multigroup and Monte Carlo methods for effects of backscattering in interaction on, (T), 22:44944
fire protection of, recommended practices and national codes for, 22:18610
fissile material production in, system of international nuclear safeguards for control of, 22:37445 (KFK-800)
fission product release from, computer program for radiological safety analysis of, 22:42866 (IDO-17261)
fission product release to atmosphere from, review of meteorological developments for measurement of, 22:45191 (TID-24190, pp 1-12)
fission product removal heat exchanger system for liquid-cooled liquid-moderated, description of, 22:16342(P)
fission product trapping system for, use of impregnated charcoal for methyl iodide, 22:44927(P)
fission-product trappings in air released from, tracer studies of performance of charcoal bed in, 22:6807 (TRG-Report-1548)
four-factor-formula for, use of first collision probability for determination of, 22:50854
fuel element assemblies for pressure tube, design of thermal baffles for, 22:10471(P)
fuel element assemblies for, design of cluster type, 22:8283(P)
fuel element storage pool for, with means for avoiding thermal shock and fission product release, 22:20968(P)
fuel element storage pool liners for, design of, 22:12494
fuel element swelling during one period of, 22:4827
fuel elements for low-power, design and fabrication of, 22:10479(P)
fuel elements for, design for improved cooling, 22:8289(P)
fuel elements for, design for increased thermal flux, 22:8284(P)
fuel elements for, design of internally pressurized cans for, 22:10470(P)
fuel elements for, design of spaced concentric tube, 22:10460(P)
fuel elements for, fabrication of helically seamed, 22:8285(P)
fuel rod assemblies for, method of fabrication of, 22:12503(P)
fuels for high-flux, high-power-density, development of,

22:15135 (IN-1133)
fuels for, uses of nuclear materials for, 22:606 (CONF-661011, pp 8-10)
gamma flux measurements in, design of thermometer for, 22:43055
gamma transport equations for, Monte Carlo integration of adjoint, 22:6148
gamma-neutron fields in, use of polymethylmethacrylate for dosimetry of, 22:2434
gaseous effluents from, control of atmospheric contamination from release of radioactive, 22:2225(R) (NYO-841-11)
gaseous effluents from, method of calculating atmospheric dilution of, 22:30719
geometries of, spherical harmonics calculations for approximations of cylindrical, 22:6153
graphite development for high-temperature, 22:11021(R) (GA-7390)
graphite materials development program for, 22:34108(R) (LA-3932)
graphite sampling in, design of remotely controlled equipment for, 22:6525(P)
heat exchange platens between core and pressure vessel in, description of location of, 22:20963(P)
heat exchanger for, description of outlet coolant temperature dynamics system for feedback control optimization in, 22:20948
heat exchanger supports for, design of coolant submerged, 22:1896(P)
heat exchangers for, description and arrangement of, 22:18611(P)
heat exchangers for, description of variable flow rate counter current, 22:3953(P)
heat exchangers for, description of variable length liquid-liquid, 22:1911(P)
heat from, use of heat pipe for direct energy conversion of, 22:25046(P)
heat transfer and fluid flow studies for, equipment and techniques for, (E), 22:10490 (WAPD-TM-386)
heat transfer and fluid mechanics of, bibliography on, 22:6528 (WAPD-315(Vol.1))
heat transfer and fluid mechanics of, bibliography on, 22:6529 (WAPD-315(Vol.2))
heat transfer from, to thermionic converters, use of heat pipes for simulation of, 22:47282 (BMwF-FBK-68-18)
heat transfer system for, description of liquid metal superheater, reheater and evaporator heat exchanger, 22:18646(P)
heating of working medium, description of improved, 22:33120(P)
high-pressure vessels for, properties of welds used in fabrication of, 22:634
history of the first nuclear, 22:14315
instrument systems for protection of, design principles of, 22:50843 (ORNL-NSIC-51)
instrument systems for protection of, principles of design of, 22:12059
instrument systems for, noise problems in, 22:36123 (CONF-680303-, pp 235-8)
instrumentation development for detection of incipient malfunctions in, application of noise analysis techniques to, 22:16312 (CONF-671011-, pp 71-86)
instrumentation for, development at ORNL during Sept. 1966 to Sept. 1967, 22:22858 (ORNL-4219, pp 87-109)
instrumentation for, development in Denmark, 22:6678(R) (RISO-M-578)
instrumentation for, development of microwave, 22:390 (BNWL-SA-1314)
instrumentation for, reliability of, 22:51278 (RISO-M-722)
instrumentation for, transmission characteristics of in-core coaxial cables used for, 22:8407(R) (GEAP-4797)
internals for, mathematical model for determining stationary temperature distributions of, 22:47050
iodine containment in, 22:25333 (ORNL-4229, pp 162-79)
iodine production in operating, effects of isotopic dilution on, 22:6546
irradiation facilities for activation analysis in, 22:7992(R) (NBS-TN-428)
isotope buildup and depletion in, TURBO-40 code for two-dimensional calculations of, 22:47043 (IN-1184)
kinetic equations for coupled-core, modal analysis method for space-time, (T), 22:35688
kinetic equations for coupled-core, transport equation solution of, (T), 22:6173
kinetic equations for zero-power, amplitude dependent asymptotic solution for, (T), 22:25137
kinetic equations for, method for solving, 22:20420(T) (JPRS-43682, pp 150-64)
kinetic equations for, methods for solving, 22:20414(T) (JPRS-43682, pp 43-62)
kinetic equations for, use of Langevin technique for iterative solutions of nonlinear feedback, 22:42386 (BNWL-SA-2003)
kinetics calculations for, finite difference space-angle synthesis equations for, 22:48803
kinetics calculations for, mathematical models for, (T), 22:42495
kinetics calculations for, two-group time-dependent S/sub n/ transport equation solution for spatially dependent, 22:10078 (NAA-SR-Memo-12319)
kinetics calculations for, use of time synthesis technique for nodal analysis of, 22:6146
kinetics equations for coupled core, numerical solution techniques for, 22:32822
kinetics equations for loosely coupled-core, modal expansion interpretation of nodal space-time, 22:32823
kinetics equations for multiregion, analytic solution to time linearized, 22:6145
kinetics equations for multiregion, analytic solution for space-time, 22:7911 (KAPL-P-3389)
kinetics equations for, approximate analytical solution of, (T), 22:32462
kinetics equations for, determination of properties of composite matrix used in solution of, 22:48766
kinetics equations for, formulation of time-dependent importance distribution for, 22:33158
kinetics equations for, formulation using neutron transport theory, (T), 22:3599
kinetics equations for, formulation using telegraphers equation, (T), 22:39558
kinetics equations for, methods development for solution of, (T), 22:48426 (RPI-328-133, pp 60-100)
kinetics equations for, normal-mode expansion in spherical geometry for, 22:6161
kinetics equations for, operator-algebraic formulation of, 22:6163
kinetics equations for, semidirect least squares variational methods for solution to, 22:6157
kinetics equations for, solution including higher harmonics of neutron flux, (T), 22:46696 (FEI-103)
kinetics equations for, time-dependent doublet Boltzmann, 22:3937
kinetics equations for, use of Helmholtz equation and natural mode techniques for numerical solution to space-time, 22:44929
kinetics equations for, use of matrix notation for eigenfunction solution to, (T), 22:32811
kinetics equations for, use of synthesis techniques for solving one-group space dependent, 22:42558
kinetics equations for, use of three-dimensional nodal analysis for, 22:6155
kinetics equations for, variances and covariances of neutrons and precursors in, 22:18609
kinetics equations in cylindrical geometry for, use of expanded synthesis techniques for solution to, 22:39920
kinetics equations in rectangular geometry for, use of expanded synthesis techniques for solution to, 22:39919
kinetics equations with positive feedback for, use of comparison function technique for determining stability from spatially dependent nonlinear, 22:42286
kinetics for two-zone, analysis of two-point statistical calculation of, (T), 22:44916(T) (ANL-Trans-651)
kinetics for, comparison of Volterra series and nonlinear operator for calculation of, (T), 22:50880
kinetics of coupled-core, delay-time distribution function for, (T), 22:6173
kinetics of steady-state, effects of neutron population fluctuations on, (T), 22:6191
kinetics of two coupled core, effects of first-flight neutrons on, 22:14311
kinetics of, discussion of mathematical and experimental treatments of, 22:6137 (CONF-670431)
kinetics of, methods for measurement of, 22:12114
kinetics of, parameter identification by spaced reactivity insertions for, (E/T), 22:7933
kinetics of, stability analysis of nonlinear space-dependent, (T), 22:15938
kinetics problems in, natural mode approximations for space-time, 22:3938
krypton-85 release from, permissible limits for, 22:12463 (UCID-15251)
lattice calculation techniques in neutron thermalization and transport theory, review of approximation, 22:6177
lattice parameters for uranium oxide (UO_2) 19-cluster, analysis using RBV Monte Carlo code for, 22:14251(R) (BNWL-534)
lattice physics measurements for, reentrant hole neutron spectra perturbations in, (E), 22:44920(R) (GA-8622)
lattice physics of, (E/T), 22:20934(R) (GA-8462)
lattices for, temperature coefficient calculations for uranium-233 oxide (UO_2)—thorium-232 oxide, 22:14251(R) (BNWL-534)
licensing and regulation of U. S., JCAE hearings on, 22:10025
licensing and regulation of, JCAE hearings on, 22:20879
loading configuration, description of perpendicular coolant flow for sandwich fresh-used-fresh row-arranged fuel elements in, 22:48768(P)
maintenance and refueling of, design and operation of elevator for use in, 22:49000
materials development for, 22:21649
materials development for, summary for 1965, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
materials fabrication for, powder-metallurgy techniques for, 22:6951
materials for construction of, review of corrosion resistant, 22:34061
materials for nuclear, 22:14463
materials for nuclear, corrosion mechanisms in, (E), 22:23718

materials for use in, requirements for, 22:6933
materials for welding, review of, 22:19499
materials for, development of, 22:49739
materials for, development of cladding and structural, 22:21651
materials for, effects of fast neutrons on, 22:21734
materials for, effects of neutrons on, 22:19676
materials for, fabrication techniques and properties of, 22:613
materials for, handbook on corrosion resistance of, 22:33109
materials for, plane-strain displacement equations for stress analysis of, 22:14667 (WAPD-TM-737)
materials for, radiation effects at high temperatures and high ratings on, 22:12037
materials for, review of, 22:12955
matrix technique applications for, bibliography on, 22:47042 (IFA-FR-66)
metals for, radiation damage to, 22:13036 (BNWL-473, pp 7.1-71)
neutron albedo and critical slab problems in, use of transfer matrix method for numerical solution to one-speed, 22:6149
neutron balance equations for, use of time-integrated approximation for converting from multiple variable dependence to single variable dependence in, 22:3944
neutron beams from, use of transmission and reflection matrices for flux determinations for, 22:27496
neutron buckling in reflected, importance-shape method for geometric, (T), 22:14296 (RPI-328-100, pp 140-87)
neutron buckling measurements from neutron space distribution in, (T), 22:3865
neutron collision probability matrices in lattice cells of, MINOS code for production of, 22:14317
neutron cross sections for enriched uranium--boron-10-Zircaloy--water cores in, CAINE Library 51 of, 22:33091 (KAPL-M-6738)
neutron decay constant for reflected, prompt, (T), 22:5734
neutron decay constants in, comparison of waiting-time alpha and Rossi-alpha techniques for measuring prompt-mode, (E/T), 22:5731
neutron decay in reflected, analysis by two-group time-dependent solution of the diffusion equations, (T), 22:5733
neutron detectors for, instrumentation associated with, 22:30273
neutron detectors for, optimal estimation technique for spatial power profile determination from, 22:32880
neutron diffusion coefficient for cylindrical, derivation of Benoist's formula for axial, 22:53477
neutron diffusion coefficient in, effect of thin regions in inhomogeneous media on, (T), 22:37619
neutron diffusion equations for reflected, two-group space-dependent, 22:33086 (ANL-7310, pp 431-511)
neutron diffusion equations for, comparison of finite differences and differential equations solutions to, 22:14321
neutron diffusion equations for, computer program for solving multigroup one-dimensional, 22:20407 (GA-8286)
neutron diffusion equations for, computerized solution to one-group three-dimensional, 22:1881 (KAPL-P-3381)
neutron diffusion equations for, error determination using reciprocal variational principles for, 22:14320
neutron diffusion equations for, existence theorems for discrete form of multigroup, 22:6156
neutron diffusion equations for, matrix methods for solution to, 22:50864
neutron diffusion equations for, use of polynomial representation for flux distribution in, 22:7923
neutron diffusion in axially symmetric, multigroup calculations of, 22:18089
neutron diffusion in multiregion, Laplace-transform solution of one-dimensional equation for, (T), 22:1571
neutron diffusion theory equations for, computer program utilizing polynomial expansions for, 22:12141 (GA-7544)
neutron diffusion theory equations for, use of adjoint weighting in collapsed group-space synthesis solutions for, 22:16329
neutron diffusion theory for, computer program for fitted constants on, 22:7616 (WAPD-TM-671)
neutron diffusion theory for, numerical solution to time-dependent, 22:14304
neutron diffusion theory for, transport effects in, 22:6158
neutron disadvantage factor for clad fuel cell, computer program for, 22:20932 (BNWL-515)
neutron distributions in, single-channel flux synthesis for determining static and dynamic, 22:32825
neutron distributions in, solutions to stationary neutron diffusion equations for, 22:6139
neutron dose equivalent rate measurements near, performance of detectors for, 22:14746 (AERE-M-1848)
neutron energy spectra in heterogeneous, calculation of thermal, (T), 22:1574
neutron fission measurements using uranium foils, corrections for fast, 22:10565
neutron fluctuations in seed-blanket, analysis of space-correlated, 22:32877
neutron flux calculations for, properties of spherical integrodifferential Boltzmann equation for, 22:10084(T) (ORNL-tr-1505)
neutron flux calculations using conversion of energy- and space-dependent integral transport equation into energy-dependent form, (T), 22:48419 (RCN-95)
neutron flux density distribution in, activation system for measuring, 22:28116
neutron flux density in, use of microwave cavity resonators for determining thermal, 22:4509
neutron flux detectors in, calculation of optimum efficiency for multiple, (T), 22:35677
neutron flux determination in, use of Boltzmann equation with fluctuating parameters for, 22:30321
neutron flux determinations for, method for approximating adjoint from, 22:33138
neutron flux distribution control in, analysis of, (T), 22:25138
neutron flux distribution in critical, use of stationary Boltzmann equation for, 22:12146
neutron flux distribution in fuel assemblies of, description of integral transport methods for analysis of, 22:30390
neutron flux distribution in, description of multiple-capsule feeder for measurement of, 22:48757(P)
neutron flux distribution in, formulation of equations for unique positive critical, 22:48801
neutron flux distribution in, irreversible process transport theory for, (T), 22:14160
neutron flux distribution in, one- and two-group model analysis of optimum, (T), 22:53468
neutron flux distributions in, effects of neutron absorbers on, 22:33148
neutron flux distributions in, multichannel space-time synthesis technique formulation from discontinuous expansion coefficients for, 22:48799
neutron flux distributions in, recording system for detectors used in measuring, 22:43025 (EUR-3943)
neutron flux flattening by non-uniform fuel distribution in, effect of resonance capture on, (T), 22:7910 (JINR-P4-3581)
neutron flux flattening in a flat central zone natural uranium fuel, method for thermal, (T), 22:5928 (IBK-532)
neutron flux flattening in central zone of, continual fuel exchange method for, (T), 22:22881
neutron flux flattening in multiregion, analytical method for determining, 22:14171
neutron flux in, coaxial activation detectors for monitoring, 22:10572(P)
neutron flux in, design and performance of Campbelling detection system for measuring, 22:6605
neutron flux in, JASON-code for P3 approximation to Boltzmann transport equations for, in FORTRAN II or IV, 22:42357 (BNWL-482)
neutron flux in, statistical gamma discrimination method for measurement of, 22:35684
neutron flux measurements in, BETA code for extracting delayed neutron parameters from, 22:12140 (BNWL-CC-788)
neutron flux measurements in, calibration of activation detectors for fast, 22:21321(T) (ORNL-tr-1843)
neutron flux measurements in, current variations from ionization chambers for, 22:25638
neutron flux measurements in, design and performance of miniaturized ADIT fission thermocouples for, 22:30905
neutron flux measurements in, design of fission thermocouples for, 22:30838
neutron flux measurements in, design of in-core regenerative fission chamber for, 22:30837
neutron flux measurements in, development of regenerative fission-chamber detectors for thermal, 22:304 (BNWL-430)
neutron flux measurements in, fission and ionization chambers for, 22:12568 (AEEW-M-492)
neutron flux measurements in, performance of averaging and rms type detector circuits using Campbelling technique for, 22:28084
neutron flux measurements in, polynomial method for analysis of data from activation detectors for, 22:2368
neutron flux measurements in, use of copper activation detectors for, 22:16857 (CEA-R-3295)
neutron flux measurements in, use of flow-thru air activation for perturbed thermal, 22:18585 (CEA-R-3338)
neutron flux measurements using isomer production by neutron inelastic scattering, (E/T), 22:7705
neutron flux monitoring in, development of regenerative fission chamber for in-core, 22:36025 (BNWL-SA-1621(Rev.))
neutron flux monitoring in, proportional counter with gamma discrimination for, 22:49084
neutron flux monitoring system for, design of wide-range Campbelling, 22:303 (ANL-7224)
neutron flux optimization in, 22:6150
neutron flux perturbation analysis in, use of Green's function modes and variational methods for, (T), 22:14296 (RPI-328-100, pp 140-87)
neutron flux perturbations by foil activation detectors, method for avoiding thermal, 22:53470
neutron flux phase space distribution in, analysis of adjoint, (E/T), 22:1833

neutron flux profile measurements in, during zero power experiments, small semiconductor detectors for in-core, 22:37989 (CONF-670545, pp 191-9)
neutron flux spectra in, effects of resonance-scattering interfaces on, 22:33086 (ANL-7310, pp 431-511)
neutron flux synthesis in, variational method for, (T), 22:22653(R) (ANL-7419)
neutron fluxes in, use of Wigner-Wilkins method for spectral fitting of, 22:50868
neutron group constants in regular lattices of, determination of thermal, (E/T), 22:10063 (RCN-62)
neutron importance and adjoint functions in, phase space distribution of, (E/T), 22:18587 (CURL-15)
neutron kinetics of cylindrical-cavity, 22:6167
neutron leakage determinations in, use of Eigenvalue bias method to compare age measurements with age calculations for, 22:32991
neutron multiplication in, use of californium-252 in fuels to increase, 22:12498(P)
neutron noise and fluctuations in, comparison of methods for analysis of, (T), 22:47049
neutron noise experiments in, adjoint-weighted detector efficiency for, 22:30833
neutron perturbation equations for, CIAP-1D-code for determining importance function for, 22:42395 (RT/FI-(68)9)
neutron physics equations for, solution in terms of albedo operators to, 22:1789
neutron physics research program for, international co-operation in, 22:29843
neutron population fluctuations in, Monte Carlo and experimental analyses of, 22:33124
neutron population in, P-zero condition in Rossi-α experiments on, (E/T), 22:26776
neutron populations in one-mode stochastic model for, use of time-dependent Monte Carlo computer program for corrections to, 22:14307
neutron resonance absorption by uranium-238 in cylindrical cell, epithermal, (T), 22:44581
neutron resonance absorption in, effect of resonance width on, (E/T), 22:26768
neutron resonance absorption in, use of Boltzmann integral equation for calculation of, 22:12147
neutron resonance escape probability calculations for heavy-water-moderated, RESCUE method for, (T), 22:1578
neutron resonance reaction rates in square lattices of, Dancoff correction effects on, 22:12085 (BNWL-472, pp 3.1-33)
neutron shielding calculations for, cross-section requirements for, 22:18102
neutron slowing down in, time moments in space-time, 22:6159
neutron sources for high flux, description of, 22:3913
neutron space-time effects in coupled core, analysis of multimode time synthesis approximation for, (E/T), 22:30351
neutron spectra in pulsed, simplified mathematical model for determining, 22:14309
neutron spectra in, conference on, 22:29856 (STI/PUB-160(Vol.1))
neutron spectra in, conference on, (E/T), 22:29872 (STI/PUB-160(Vol.2))
neutron spectra in, measurement using scintillation counters, (E), 22:7619
neutron spectra in, symposium on, 22:20412(T) (JPRS-43682)
neutron spectra in, transmission method for measuring, 22:23288
neutron spectra measurements in the keV range using resonance foils, (E/T), 22:5737
neutron spectra measurements in, efficiency of semiconductor detectors for, 22:36090
neutron spectra measurements in, lithium-6-sandwiched semiconductor detectors for, 22:36055
neutron spectra variations in large, spatial effects on, (T), 22:50879
neutron transport calculations for, use of optimum biasing functions for Monte Carlo, 22:6147
neutron transport calculations for, use of recursive technique for solution of the B_1 equations for, 22:33135
neutron transport equation for, computerized solution to the multigroup discrete S/sub n/ approximation to Boltzmann, 22:3925 (AEEW-R-498)
neutron transport equations for, error bounds determinations using P/sub N/ solutions for, 22:10085
neutron transport equations for, error bounds for eigenvalue approximations for, 22:33086 (ANL-7310, pp 431-511)
neutron transport equations for, mathematical techniques for solving, 22:12142 (JEN-171-DF/I-51)
neutron transport equations for, solution by transformation of integrodifferential form into singular integral equation for, 22:3932 (TID-24099)
neutron transport equations for, use of variational principles with arbitrary adjoint source for solution to monoenergetic Boltzmann, 22:33139
neutron transport in, properties of vector solution to Boltzmann equation for, 22:30349 (WAPD-TM-730)
neutron transport problems in, use of space-angle synthesis techniques for, 22:14305
neutron transport theory calculations for, polynomial flux approximations for integral, 22:6154
neutron transport theory for, formulation of S/sub n/ discrete ordinates method for, 22:7914 (LA-DC-9092)
neutron transport theory for, relation of variational principle to pseudoentropy production, (T), 22:7626
neutron transport theory for, use of quadrature for solving directly the singular integral form of one-velocity, 22:33141
neutron transport theory for, use of reflection-transmission matrix methods for, 22:33140
neutron utilization in, thermal flux trap for increased, 22:33179
neutronics calculations for, discussion of IBM-704 computer programs for, 22:50867
noise analysis for, modal effects in triple-correlation, (T), 22:35704
noise analysis in, development of Rossi-α measurement methods for, 22:47044(T) (LA-tr-68-39)
noise analysis in, performance of Cherenkov detector system for, 22:32976(R) (MIT-2344-12)
noise analysis of, detection system for measuring probability of zero counts for various time intervals in, 22:12087 (BNWL-472, pp 5.1-16)
noise level effects on pulse amplifier sensitivity, 22:14292 (CEA-R-3333)
noise measurements in, by prompt fission gamma ray detection, 22:22846
noise measurements in, review of methods used for, 22:14316
noise power spectral density in, with external control loops, (T), 22:35724
nuclear analysis of, discussion of Monte Carlo computer programs for, 22:33134
nuclear data compilation and evaluation for calculations on, 22:18099
nuclear data evaluation and compilation at UKAEA library, developments in, 22:35195 (AEEW-M-802)
nuclear data file for, ENDF/B, 22:3586 (BNL-50066)
nuclear data for, conference on, Vol. 1, 22:18078 (STI/PUB-140(Vol.1))
nuclear data for, conference on, Vol. 2, 22:18079 (STI/PUB-140(Vol.2))
nuclear data for, EURATOM research programs on, 22:37340(R) (EANDC(E)-89(U))
operation efficiency of, thorium--uranium-233 fuel management for, 22:20970(P)
operation of coupled-core, analysis of N. N. Krasovkii's theory for stable, (T), 22:18591
operation of land-based nuclear, French legislation on civil responsibilities for, 22:33622 (NP-17432)
operation of, review of basic principles for, 22:27513
operations personnel for, training of, 22:22683 (DUN-1617)
operator training for, basic physics notes for course in, 22:5917 (APIO-1038)
operator training for, handbook on radiation safety and control for, 22:10011 (ORNL-TM-2034(Vol.2))
operator training for, instrumentation and controls handbook for, 22:35670 (ORNL-TM-2034(Vol.5))
operator training for, reactor physics instruction handbook for, 22:35669 (ORNL-TM-2034(Vol.3))
operator training program for, detailed curriculum and schedule for, 22:37450 (WCAP-7170)
operators and senior operators for, guide for licensing of, 22:46919 (TID-24662)
parametric studies for, use of multidimensional least squares technique for, 22:6151
performance of, comparison of isotopic sources and particle accelerators with, 22:30365
period and power measurement in, comparison of wide-range analog, wide-range digital, and counting-Campbelling channels for, 22:53488
period and power measurements for, use of simultaneous linear and logarithmic circuits for, 22:10627 (CEA-R-3368)
period measurement of, description of circuit using radiation detectors with pulse integrators, 22:10091(P)
period measurement of, design of pulse integrator for, 22:7934(P)
period meter for, 22:27508(P)
period meter for, 22:27509(P)
period meters for, performance during compromising scram-delay and fluctuation, 22:42390(T) (NSJ-tr-101)
period simulation in, ramp generator for very long, 22:37620
perturbations in, correlation of change in fast neutron source worth to, 22:3943
physics analysis of hexagonal lattice, coordinate system generation for, (T), 22:44945
physics analysis of, computer code development for, 22:27480(R) (BNWL-634)
physics analysis of, computer code development for, 22:27481 (BNWL-634, pp 2.1-8)
physics analysis of, description of Argonne Reactor Computation (ARC) system for, 22:47039 (ANL-7332)
physics analysis of, experimental and theoretical methods for, 22:50847
physics analysis of, use of Monte Carlo method for numerical, 22:3941
physics calculation methods for, comparison of quadrupole

theory and transmission matrix, 22:48778
physics calculations and measurements on, progress summary Jan. to Mar. 1967, 22:12138(R) (BNWL-472)
physics calculations for uniform material-moderated and -reflected, two-group approximation for heterogeneous analysis of, (T), 22:37559 (ITEF-563)
physics calculations for, application of Monte Carlo techniques to, 22:50849
physics calculations for, application of Monte Carlo methods to, 22:39902 (KAPL-P-3432)
physics calculations for, bibliography on use of Monte Carlo method in, 22:30344 (IFA-FR-53)
physics calculations for, description of NOVA computer system for, 22:33150
physics calculations for, development and evaluation of computer codes for, 22:20779 (BNWL-624, pp 3.1-159)
physics calculations for, international co-operation in nuclear data compilation and evaluation for, 22:18109
physics calculations for, mathematical models for, 22:42559
physics calculations for, Monte Carlo computer codes available for, 22:14290 (BNWL-SA-1513)
physics calculations for, use of digital computer for, 22:6165
physics calculations for, use of ELEA 6001 computer for, 22:50869
physics calculations for, use of modern perturbation theory in, 22:20849
physics calculations of, use of digital systems for Boltzmann equation and group constants, 22:1889
physics measurements for, description of college course for, 22:33104
physics measurements for, techniques for calculation for, (T), 22:18658
physics measurements in fuel assemblies of, one-group calculations for multi-group effects on, (T), 22:27505
physics of, bibliography on computer programs for, 22:3585 (AED-C-34-02)
physics of, book on elementary, 22:30274
physics of, book on use of matrix calculations in, 22:35680
physics of, summary of 1966 Israel research activities on, 22:25128 (IA-1128, pp 1-11)
physics parameters for, bibliography on, 22:7912 (LA-3740)
physics parameters for, comparison of theoretical and experimental values for, 22:33154
physics parameters for, description of NOVA modular system for, in Fortran, 22:39901 (KAPL-P-3431)
physics parameters for, evaluation of Single Element Method for determination of, 22:3893 (MIT-2344-10)
pipe joint seals in, description of inclined radial groove, 22:10092(P)
pipe seal for, description of concentric cylinder with sphere covered hole for horizontal, 22:7867(P)
piping for, description of plug-seal coaxial pipe for coolant, 22:30402(P)
piping for, use of acoustical emission for crack detection in pressure, 22:12008(R) (BNWL-537)
piping of, testing by acoustic emission, 22:21294(R) (BNWL-CC-763)
poisoning by isomeric cobalt-58 and copper-64, (T), 22:44674
power calculations for, effects of choice of trial functions and weighting functions on synthesis technique of, 22:1882 (KAPL-P-3392)
power density measurements in, design of fission thermocouples for, 22:30838
power density spectral determination in, design of digital transferometer for fission chamber for, 22:23261 (CEA-R-3241)
power distribution in, response of out-of-core radiation detectors for measuring, 22:30839
power excursion calculation in multi-region, SPEX-1 code for space-dependent, 22:35718
power excursion calculations for, asymptotic expansions for approximate, 22:5998
power excursion in, expansion method for solution of nonlinear boundary-value problems for distribution of energy release from, 22:18593
power level measurements in, fission electric cell for, 22:45289
power level monitoring in, gaseous Cherenkov detector for detection of prompt high-energy gamma rays for, 22:4440
power levels of, plasma production and analysis technique for determining, 22:37613(P)
power measurements in, design of comparator circuit for, 22:23392(P)
power monitoring in, microwave diagnosis of plasma produced in gas-filled cavity resonator by γ heating for, 22:37585
power of, effects of collapsed group cross sections on calculations of, 22:33086 (ANL-7310, pp 431-511)
power of, maintenance of log current and period amplifier used with gamma-compensated ionization chamber for monitoring reactor power, 22:43029 (ORNL-TM-1638(Pt.36))
power output of, description of combined neutron flux and heat detectors for, 22:35701(P)
pressure tubes for, acoustic emission behavior of, 22:268 (BNWL-545)
pressure vessel design and fabrication for, 22:27450
pressure vessel fabrication for, 22:7915 (NUCLEX-66)
pressure vessel for, concrete mix and prestressing cable specifications for spherical prestressed concrete, 22:22863 (TRG-Report-1204(Pt.5))
pressure vessel for, description of cylindrical prestressed concrete, 22:25193(P)
pressure vessel for, description of multi-section cylindrical prestressed concrete, 22:39922(P)
pressure vessel for, description of permeable barrier coolant flow regulator for prestressed concrete, 22:37591(P)
pressure vessel for, description of prestressed concrete, 22:20964(P)
pressure vessel for, failure test data for spherical prestressed concrete, 22:22864 (TRG-Report-1204(Suppl.1))
pressure vessel for, long-term temperature loading prediction methods for spherical prestressed concrete, 22:22862 (TRG-Report-1204(Pt.4))
pressure vessel for, structural behavior and safety of spherical prestressed concrete, (E/T), 22:22859 (TRG-Report-1204(Pt.1))
pressure vessel for, test data on structural behavior and safety of spherical prestressed concrete, 22:22860 (TRG-Report-1204(Pt.2))
pressure vessel for, with magnetically fastened pressure relief ports, 22:20967(P)
pressure vessel materials, use of nickel steel as, 22:2671
pressure vessel steel for, fatigue crack propagation in, 22:23767
pressure vessel support for, design of load-absorbing, 22:10097(P)
pressure vessels for description of liquid-cooled support structures for pressure tubes in, 22:25163(P)
pressure vessels for, AEC proposed design criteria for, 22:22884
pressure vessels for, calculations for fabrication of laminated steel, 22:30354
pressure vessels for, description of earthquake-proof circumference-ringed cylindrical concrete, 22:48755(P)
pressure vessels for, description of enclosed multiple coolant channels and instrumentation channels in, 22:30399(P)
pressure vessels for, description of prestressed, lined concrete, 22:12152(P)
pressure vessels for, design and fabrication of prestressed concrete, 22:27953 (ORNL-4227)
pressure vessels for, design and inspection of Swedish, 22:30801
pressure vessels for, design and testing of steel, 22:27499
pressure vessels for, design data on radial nozzles in, (E/T), 22:30347 (TID-24342)
pressure vessels for, design of closure for penetrations in walls of, 22:10469(P)
pressure vessels for, design of thermal insulation for concrete, 22:6180(P)
pressure vessels for, determination of stresses in cylindrical models of, (E), 22:27498
pressure vessels for, development of prestressed concrete, 22:6186
pressure vessels for, development of prestressed concrete, 22:15267(R) (BMI-X-10220)
pressure vessels for, development of steel cylindrical, 22:3936 (ZJE-9-67)
pressure vessels for, fabrication of tube plates for, 22:10474(P)
pressure vessels for, fracture testing of steels for, 22:3935(R) (WCAP-3677-5)
pressure vessels for, heat treatment for improving material properties of thick-walled, 22:7917 (NUCLEX-66, Paper 2)
pressure vessels for, high temperature effects on strength of prestressed concrete, 22:44917(R) (BMI-X-10236)
pressure vessels for, high-stress low-cycle fatigue testing of nozzles for, 22:6174
pressure vessels for, instrumentation, construction and tensioning, and testing methods for structural behavior and safety of prestressed concrete, 22:22861 (TRG-Report-1204(Pt.3))
pressure vessels for, mechanical properties of heavy-section steel plates for, 22:10524(R) (ORNL-4176)
pressure vessels for, optimum shapes for maximum strength of large, 22:7916 (NUCLEX-66, Paper 1)
pressure vessels for, plastic fatigue embrittlement of steels for, 22:2609 (EURAEC-1892)
pressure vessels for, pressure testing of end slabs of prestressed cylindrical, 22:12485
pressure vessels for, properties of high-strength alloys as, 22:15181 (GEMP-1002, pp 108-22)
pressure vessels for, recurring inspection of, 22:30799
pressure vessels for, research on enlargement of, 22:3945
pressure vessels for, review of failure mechanisms in steel, 22:30802
pressure vessels for, safety analysis of prestressed concrete, (T), 22:20945
pressure vessels for, stress-wave analysis technique for

detection of incipient failure of, 22:16513 (CONF-671011-, pp 127-62)
pressure vessels for, tensile and Charpy V-notch data for A533 Grade B Class 1 steels for, 22:44926(R) (WCAP-3677-8)
pressure vessels for, tensile properties of carbon and nickel steels used in, 22:17147 (NRL-6649)
pressure vessels for, thermal conductivity measurements of support skirts of, 22:1829
pressure vessels of concrete, description of central column secured reactor core with peripheral expansion supports in, 22:37574(P)
pressure-tube, description of concentric independent expansion tubes for, 22:12066(P)
protection and safety systems for, assessment of sensing channels for, 22:53480
pulsed-neutron experiments with reflected, interpretation of, (E/T), 22:5753
radiation magnitudes and units, 22:17024
radiation monitoring in areas of, use of doorpost on exit monitors for, 22:43300 (AERE-PR/HPM-12)
radiation monitoring near, use of photoluminescent dosimeters for, 22:33674
radiation protection of personnel in vicinity of, code of practice for, 22:4628
radioactive debris from destruction of nuclear, effects of, on skin of mammals, β, 22:36249 (AD-661489)
radioactivity monitoring in environs of nuclear, 22:51570 (NP-17401)
radioisotope production in US, review of programs for, 22:8316
RDT standards for, listing of tentatively approved, 22:25098(R) (ORNL-TM-2164)
RDT Standards Program for, listing of standards for, 22:27416(R) (ORNL-4228)
reactivity calculations for, determined from single uranium and uranium--plutonium fuel element neutron flux perturbation, 22:1874
reactivity calibration by digital analysis of neutron flux transients in, (E/T), 22:35681
reactivity coefficients for, use of synthesis techniques for calculation of three-dimensional, 22:16328
reactivity coefficients for, use of transport perturbation theory in GAPER code for determination of, 22:44817 (GA-8667)
reactivity control of spectral shift, use of two-phase cocurrent flow in, 22:12530
reactivity distribution in, description of Gareiis-Russell, Gozani, and pulsed neutron methods for analysis of, (T), 22:35703
reactivity doubling time in, description of multiple digital circuits for measuring, 22:25199(P)
reactivity in, description of multi-region movable medium for pulsed, 22:10100(P)
reactivity insertions in, use of singular perturbation theory for determining excursion parameters from ramp, 22:42380
reactivity integral theorem for critical, 22:20933 (FEI-77)
reactivity measurement in, sigma reduction method for, 22:25026
reactivity meter for, detailed description of continuous on-line, 22:53486
reactivity of, description of fuel element surface-to-mass ratio control for changing, 22:42535(P)
reactivity of, effects of core configuration on effective multiplication coefficient analysis of, (T), 22:35690
reactivity of, GAPOTKIN computer program for calculation of, 22:39770 (GA-8204)
reactivity oscillations in pulsed neutron coupled-core, analysis of, (E/T), 22:25162
reactivity oscillations in, approximation methods for calculation of nonlinear, 22:25154
reactivity period measurements for low power, technique for large neutron source asymptotic, (T), 22:39934
reactivity transmission functions for, two-group diffusion approximation of, (T), 22:35689
reactivity variations in, analysis of gross power tilt allowance on, (T), 22:30366
reactivity worth determinations in, by method of statistical weights, (E/T), 22:27504
reactivity worth of materials in, integral relation for statistical weights of, 22:35719
reflector for, description of liquid-solid combination, 22:20962(P)
reflectors for, analysis of Wigner effect for credible operational failure in graphite, 22:3890 (CONF-670640-1)
refueling of, analysis of continuous bi-directional, (T), 22:22879
release of radioactivity from, computer program for calculation of dose from accidental, 22:19332 (ORNL-4086)
research at Israel AEC, Jan.--Dec. 1967, 22:48806(R) (IA-1168)
research in, 22:14416
research on, review of AEC, 22:21017
safety of, compilation of 1966 incidents involving, 22:22751
safety system for pulsed, description of self-screwing rotating disk, 22:14287(P)
safety system for rotating disc pulsed, description of shear pin-retained screw-drive, 22:48761(P)
safety system for, description of magnetic amplifier tripping circuit for, 22:12072(P)
safety systems for liquid-cooled and moderated, description of, 22:18627(P)
safety systems for, maintenance manual for gating circuits used in, 22:2454 (ORNL-TM-1638(Pt.12))
safing system for, design of tamper-indicating, 22:37910 (RL-REA-2228)
sample-cutting device for experimental facilities in, description of shielded rod-actuated ring-type, 22:48739(P)
shielding calculations for small, methods for, 22:20965
shielding calculations for, ENDF/B data files for, 22:13904 (LA-3801)
shielding design and fabrication for, 22:27450
shielding design for, book on, 22:33122
shielding for, measurement of neutron and gamma intensity distributions in, 22:14162
shielding for, optimum selection and arrangement of materials in design of, 22:14611
shielding for, summary of conference on, 22:53467
shielding of, bibliography on, 22:29533 (AED-C-33-04)
shielding of, effect of temperature coupling on radiation attenuation analysis of, (T), 22:30367
shielding of, efficiency of boron-containing concretes for, 22:25150
shutdown control under xenon poisoning of, direct and nonlinear programming analysis of optimal, (T), 22:30355
shutdown criteria for short time operation of, effects of xenon on optimum, (T), 22:3862
shutdown criteria for, procedures for determining trip set-points for, 22:44867
shutdown margin for, use of asymmetric source method for measuring, (T), 22:32811
shutdown of, use of Pontryagin's theory for determining xenon energy-optimal, 22:14308
shutdown system for liquid-moderated, description of floating spherical vacuum-supported neutron absorbers for, 22:30394(P)
site selection for, effect of ground surface faulting on, 22:8207 (TID-24124)
site selection for, effects of earthquake characteristics on, 22:6436 (ORNL-4168, pp 1-60)
siting in Netherlands of, analysis of economic and safety parameters for, 22:35683
siting of, analysis of British weight-factor procedure in, 22:22723
siting of, analysis of meteorological factors involved in, 22:5958
siting of, analysis of USAEC criteria for, 22:22723
siting of, evaluation of criteria for, 22:30195
stability criteria for space-dependent, formulation of algebraic and integral feedback effects on, 22:32889
stability criterion for spatially dependent nonlinear, formulation of asymptotic, 22:33160
stability for equilibrium state, one-group diffusion approximation analysis of, (T), 22:30359
stability of coupled-core, effects of xenon-induced spatial oscillations on, (T), 22:42399
stability of multiregional cylindrical and rectangular core, description of XKINEQ computer program for calculating effects of Xenon-135 on, 22:25131 (LA-DC-8100)
stability of spatially-dependent, analysis of optimum, (T), 22:25171
stability of, calculation methods for, (T), 22:44919 (EIR-119)
stability of, comparison function method for solution to nonlinear space-dependent kinetics determining, 22:14319
stability of, effects of positive feedback on, 22:5988
stability of, effects of xenon oscillations on, 22:5984
stability of, use of Liapunov's second method for determining, 22:47041 (EIR-125)
standards program at NSIC, description of, 22:1772(R) (ORNL-TM-1986)
start-up using computer signal for uniform withdrawal of control rods, 22:14339(P)
startup of, method and apparatus for controlling, 22:20870(P)
stochastic fluctuations in two-node coupled-core, fundamental properties of coherence function for, 22:42561
structural materials for, cyclotron irradiation of, 22:6015
structural materials for, fracture under static loading of, 22:4791
structural materials for, meeting on radiation effects on, 22:16109 (BNWL-609)
support structures for, description of multi-cylinder concentric blankets for seismic protection, 22:14343(P)
systems variations in, PERC code for calculating effects on neutron multiplication factor of, 22:7908 (ANL-7304)
technology of, progress review on, 22:22883
technology of, technical progress review on, 22:7983
temperature measurements in, use of liquid semiconductors for resistance, 22:28260

temperature monitoring in, design of microwave instruments for, 22:2446 (BNWL-399)
temperature transients in, use of Laplace transform method for determining space-time dependent, 22:12022 (EURFNR-415)
temperatures in, use of microwave cavity resonators for determining, 22:4509
testing of nuclear, measurement of fission products dose to thyroid and whole-body of offsite population, 22:23519
testing of pressure-components for, description of Huber-Hencky method of stress, 22:39907
theory for, non-Hermitian Hamiltonians in, 22:35403
theory of, calculations of P/sub L/ blackness theory for slab absorbers in, 22:6152
theory of, general introduction to, 22:44954 (NTO-T-0026)
thermal insulation for, 22:10496(P)
thermal insulation of core channels in, 22:18612(P)
thermocouple cable removal from, by severing from tension on cable loops, 22:44928(P)
thermocouples for, effects of gamma radiation on calibration of, 22:4561
transfer function determinations for, time frequency transformations for obtaining space-dependent, 22:44929
transfer function measurements in, effect of higher space mode excitations on, (E/T), 22:22845
transfer function of, few-pole expansion method calculation of space-dependent, (E/T), 22:35700
transfer functions for, use of Langevin technique for determining feedback, 22:42386 (BNWL-SA-2003)
transfer functions with feedback for, derivation of space-time expression for, 22:12143 (WCAP-2873)
transient calculations in, effects of fast group scaling factor on collapsed-group two-mode eigenvalues for, 22:32825
transient power distributions in, space-time analysis of, 22:25130 (KAPL-P-3425)
transients in adiabatic, space-time behavior of, 22:5989
transients in, calculations using feedback and non-feedback conditions for, 22:3938
transients in, formulation of multichannel space-time synthesis method for calculation of nonseparable, 22:30151 (KAPL-M-6742)
transients in, multichannel space-time synthesis model for calculation of nonseparable, 22:48799
transients in, variational multichannel space-time synthesis model for analysis of nonseparable, 22:32829
transport equations for, determination of heterogeneous resonance integrals in terms of lethargy for, 22:33088 (EIR-132)
tritium release from, permissible limits for, 22:12453
use as energy source for endothermic reactions, 22:8153
use for excitation of low-voltage arc lasers, 22:30907
use of low power, for calibration of neutron dosimeters, 22:4489
use of nuclear, in medicine, 22:25923
use of portable, for heat supply to retort petroleum from underground nuclear chimneys, 22:42937 (UCRL-50380)
uses of NRL 1-MW, nonnuclear, 22:37211 (AD-660658)
vessel linings, welding of stainless-steel, 22:2601
waste gases from, design of equipment for monitoring ground-level, 22:18947 (BNL-12154)
waste heat from, use for melting ice on St. Lawrence seaway, 22:37925 (AECL-3061)
xenon buildup in, use of soluble poisons for control of, 22:30176
xenon spatial oscillations in, lambda-mode analysis of, 22:3942
xenon transients in, optimal control of spatial, 22:5985
xenon-135 oscillations in, effects of core parameters on, (T), 22:50839 (DPST-68-372)
xenon-power spatial transients in, application of dynamic programming to the optimal control of, (T), 22:33090 (KAPL-M-6725)
REACTORS, AGR-TYPE
see also Windscale Advanced Gas-Cooled Reactor
coolant for, thermodynamic diagnosis of carbon dioxide, 22:39737 (CEA-N-831)
cooling system for, design of direct carbon dioxide, 22:39737 (CEA-N-831)
design characteristics of, 22:39827
design characteristics of, advantages for export, 22:3855
economic aspects of 600 MW(e), 22:6057
economic aspects of, comparison with light water reactors, 22:6059
economics of German, 22:53338
economics of Great Britain and United States, comparison of, 22:14223
fuel elements for, design and fabrication of, 22:46937
fuel elements for, design, development, and supply of, 22:6061
fuel elements for, fabrication of high-temperature, 22:36533(P)
fuels for, preparation of spherical carbide, 22:49788
operation of, description of design features for, 22:46906 (NP-17599, pp 1-6)
potential of German, for power--process steam plants, 22:53338
safety features of, description of, 22:46906 (NP-17599, pp 1-6)
safety of, ability of design to withstand earthquakes, 22:3854
simulator for, description of analog computer for, 22:7921
structural materials for, requirements for corrosion resistance of, 22:47660 (CONF-671007-2)
Reactors, Air-Cooled
see Reactors, Gas-Cooled
REACTORS, AIRCRAFT
configuration of dual-purpose atmosphere-fueled rocket and, evaluation of conceptual, (T), 22:50784
development program for gas-cooled, description of feasible, 22:35581
physics measurements for Aircraft Nuclear Propulsion, analysis of, (E/T), 22:50782 (APEX-918)
shielding calculations for Aircraft Nuclear Propulsion, analysis of, (E/T), 22:50782 (APEX-918)
Reactors, Army
see Army Reactors
Reactors, Auxiliary Power
see Nuclear Auxiliary Power Systems
REACTORS, BERYLLIUM-MODERATED
see also Beryllium Oxide Reactor Experiment
see also Salem Power Reactor, Unit 2
see also Submarine Intermediate Reactor
Reactors, Biphenyl-Moderated
see Reactors, Organic-Moderated
Reactors, Bismuth-Cooled
see Reactors, Liquid Metal-Cooled
REACTORS, BOILING
see also Army Reactors (SL-1)
see also Bell Power Reactor
see also Beloyarsk Power Reactor, Unit 1
see also Beloyarsk Power Reactor, Unit 2
see also Big Rock Point Power Reactor
see also Bilibiu Power Reactor
see also Boiling Reactor Experiments
see also Browns Ferry Power Reactor, Unit 1
see also Browns Ferry Power Reactor, Unit 2
see also Browns Ferry Reactor, Unit 3
see also Brunswick Power Reactor, Unit 1
see also Brunswick Power Reactor, Unit 2
see also Cooper Power Reactor
see also Dresden Power Reactor, Unit 1
see also Dresden Power Reactor, Unit 2
see also Dresden Power Reactor, Unit 3
see also Easton Power Reactor
see also Edwin I. Hatch Power Reactor, Unit 1
see also Elk River Power Reactor
see also Experimental Boiling Water Reactor
see also Fukushima Power Reactor, Unit 1
see also Garigliano Power Reactor
see also Gentilly Power Reactor
see also GKN Reactor
see also Gundremmingen Power Reactor
see also Halden Boiling Reactor
see also Humboldt Bay Power Reactor
see also La Crosse Boiling-Water Reactor
see also Lingen Power Reactor
see also Maritime Nuclear Steam Generator
see also Millstone Point Power Reactor, Unit 1
see also Muehleberg Power Reactor
see also Nine Mile Point Power Reactor
see also Oskarshamn Power Reactor
see also Oyster Creek Power Reactor, Unit 1
see also Peach Bottom Power Reactor, Unit 2
see also Peach Bottom Power Reactor, Unit 3
see also Puerto Rico Power Reactor
see also Quad Cities Power Reactor, Unit 1
see also Quad Cities Power Reactor, Unit 2
see also Reactors, Pressurized Water
see also Santa Maria de Garona Power Reactor
see also Shoreham Power Reactor, Unit 1
see also Sioux Falls Power Reactor
see also Steam-Generating Heavy-Water-Moderated Reactor
see also Supercritical Once-Thru Tube Reactor
see also Swedish Reactors (R-4)
see also Trino Power Reactor
see also Tsuruga Power Reactor
see also VAK Reactor
see also Vallecitos Boiling-Water Reactor
see also Wuergassen Power Reactor
bibliography on power, 22:44841 (WASH-1082)
blowdown analysis for, use of dimensional analysis technique for, 22:39808
blowdown parameter measurements for, tabular summary of CSE, 22:12008(R) (BNWL-537)
containment buildings for, evaluation of protective coatings for, 22:42191 (IN-1169)
containment cooling sprays for, efficiency of, 22:46912 (ORNL-NSIC-25)
containment structure for, description of accident safety, 22:30182
containment system for, estimated radiolytic hydrogen produced by spray and coolant decomposition in, 22:42160(R) (BMI-1844)
containment system for, iodine deposition on coatings of, 22:22657(R) (BMI-X-10222)
containment systems for power, evaluation of testing of, 22:46913 (ORNL-NSIC-26)

containment systems for, CONTEMPT-PS code for determining effects of coolant loss accidents on pressure suppression, 22:32881
containment systems for, description of fission product, 22:30203
containment systems for, summary of safety features of air-cleaning equipment for, 22:46912 (ORNL-NSIC-25)
containment systems for, systems approach to design of, 22:18440
containment vessels for, description of inside-outside separation valves in double-wall, 22:14212(P)
control rod drives for, description of double-sealed pressure equalizing cylinder for, 22:20871(P)
control rod drives for, development of, 22:25012
control system for, description of instrumentation and power supply for, 22:20835
control system for, description of liquid poison and coolant water separate flow channels for, 22:18537(P)
control systems for power, use of digital computers in, 22:48685
control systems for, analysis of safety flow-scheme for, 22:53314
control systems for, description of, 22:42220
coolant boiling in, bubble growth rate during transient, (E/T), 22:22873
coolant cycles for, 22:1788
coolant flow in core of, effects on heat transfer of turbulence in, 22:14202
coolant incipient boiling in liquid-cooled, (E/T), 22:22874
coolant leak detection in drywell of primary containment of, instrumentation for, 22:16127 (CONF-671011-, pp 228-37)
coolant loss accident simulation for 3300 MW(t), CHEMLOC-2 computer program for, 22:53260 (ANL-7425, pp 130-71)
coolant loss accidents in Zircaloy-clad uranium oxide (UO_2)-fueled, thermal and hydraulic reactions to, 22:27399(R) (BMI-1835)
coolant loss accidents in Zircaloy-clad uranium oxide (UO_2)-fueled, fission product behavior in, 22:27399(R) (BMI-1835)
coolant loss accidents in, analysis of effects of metal-water reactions during, 22:42202 (ORNL-NSIC-23)
coolant loss accidents in, analysis of radiolytic production of hydrogen during, 22:42160(R) (BMI-1844)
coolant loss accidents in, analytical description of, 22:16108(R) (BMI-1825)
coolant loss accidents in, CHEMLOC-II code calculations of metal-water reaction, core heating, and core motion following, 22:27397 (ANL-7375, pp 135-59)
coolant loss accidents in, description of Japanese blowdown test facility for simulating, 22:42267
coolant loss accidents in, evaluation of bottom flooding for core temperature transient control following, 22:32860
coolant loss accidents in, methods for reducing fission product concentration in containment vessel following, 22:46912 (ORNL-NSIC-25)
coolant loss in, computer programs for analysis of core heatup during, 22:35424 (BMI-1841)
coolant pipe rupture in, extent and initiation of primary, 22:646(R) (BMI-1817)
coolant pumps for, design of internal axial-mounted, 22:25014
coolant stability and boiling in, dynamic analysis of, 22:12028 (KR-121)
coolant systems of, efficiency of leak detection methods for on-line monitoring of primary, 22:6680 (SNE-36)
coolant two-phase flow in, design of electric void meter for studying, 22:28246
coolant void fractions in, design of void-meters for measuring, 22:12691
coolant water chemistry in hermetically sealed, 22:26029 (ORNL-4229, pp 71-83)
coolants for, calculational model for thermodynamics and hydrodynamics of, 22:25003
cooling system corrosion in, effects of water purification on, 22:3844 (ORNL-4173)
cooling system dynamic behavior in, hydrodynamic model analysis of, (E/T), 22:37441 (HPR-97)
cooling system for emergency shutdown of heavy water-moderated water-cooled, description of perforated central-tube lateral flow water, 22:42279(P)
cooling system for heavy water-cooled and -moderated, description of pressure control by steam-cooled moderator tank in, 22:39804(P)
cooling system for, description of feedwater dual-jet pump for, 22:37482(P)
cooling system for, ring-electrode meter for measuring void fraction in, 22:21390(T) (AEC-tr-6930)
cooling system internally-heated steam--water separators for, description of, 22:37489(P)
cooling system of, description of peak-pressure valve for steam bypass in, 22:37468(P)
cooling system of, VAPOTRON principle for, 22:1759 (EURAEC-1890)
cooling system parameters affecting power level at hydrodynamic instability in natural circulation two-phase flow in, (E), 22:35532
cooling systems for water-cooled power, performance following coolant-loss accidents of core standby, 22:50701 (APED-5458)
cooling systems for, critical flow measurements for, 22:1820
cooling systems for, description of entrance and exit nozzle for flow tubes for, 22:10039(P)
cooling systems for, heat transfer and stability characteristics of, (E/T), 22:22686 (EURAEC-1996)
cooling systems heat transfer in, effects of pressure drop in parallel flow channels on, (E/T), 22:35456(R) (EURAEC-1965)
core configuration of water-cooled heavy water-moderated superheating power, description of improved, 22:44837 (TRG-Report-1692)
core for, description of horizontal coolant-fuel channels with external vapor-liquid separator connection for, 22:10033(P)
core for, mathematical model for calculation of dynamics of, 22:25003
core lifetime for, effects of physics parameter uncertainties on, 22:44841 (WASH-1082)
core parameters for heavy water, three zonal calculation method for thermal and hydraulic, 22:10015
core performance of, computer analysis of three-dimensional power and void distributions for, 22:22763
core with upward-flow coolant and annular spaced downward-flow steam separators for, description of cylindrical, 22:30275(P)
critical heat flux simulation in Inconel-X nine-rod test channels, effects of flow rate and pressure on steam--water two phase flow, 22:53275 (GEAP-5616)
criticality measurements for uranium dioxide fueled water-cooled, effects of superheat regions on, 22:1855 (CEND-115)
cyclone steam separators for, design and testing of, 22:12475(R) (EURAEC-1945)
cylindrical coolant-flow-control natural circulation, description of, 22:42242(P)
description of 0.1 MW(e) water-cooled, 22:22787(R) (ORNL-4216)
description of 1.5 MW(e) water-cooled, 22:22787(R) (ORNL-4216)
description of dual- and single-purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of heterogeneous and homogeneous fast breeder, 22:16151 (INR-842/C)
design basis accidents in, containment conditions for, 22:30121(R) (BMI-X-10229)
design characteristics of, 22:3836 (NP-16983)
design data for low-powered terrestrial, 22:7814(R) (ORNL-4178)
design improvements for light and heavy water, 22:46946
design improvements in power, review of, 22:46944
design of 1000 MW(e), conceptual earthquake-resistant, 22:39786 (TID-24530)
design of 1000 MW(e), with prestressed concrete pressure vessel, 22:24999
design of, safety standards for, 22:30208
design parameters for 3300 MW(t), conceptual, 22:16265(R) (ANL-7403)
design parameters for heavy water moderated Yugoslav power, 22:25019
design parameters for nominal 515, 762, and 1075 MWe, 22:44841 (WASH-1082)
design parameters for plutonium-fueled heavy-water-moderated light water-cooled, 22:22702 (JAERI-1151)
development of heavy water-moderated, computer programs for optimum designs in, 22:30258
development of power, review of, 22:18493
development of power, technical and economic aspects of, 22:18500
development of Swedish heavy water-moderated, 22:1807
development program in Japan of water-cooled heavy water-moderated 200 MW(e) thermal, description of, 22:30243
dynamic behavior of natural circulation, use of digital input to analog system for simulation of, 22:35482
economic analysis of, tabulated, 22:3839 (NP-16986)
economic aspects in Argentina, 22:3840 (NP-16988)
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economics of 1000 MW(e) earthquake-resistant, 22:39786 (TID-24530)
economics of 600 MW(e) twisted tape, (T), 22:9996(R) (EUR-3651)
economics of Great Britain and United States, comparison of, 22:14223
economics of power production from, 22:18479
electricity from, production of commercial, 22:12038
fabrication in Japan of, problems associated with, 22:42280
fabrication of, description of safety aspects in, 22:30196
fabrication of, safety analysis and testing for, 22:30206
fuel assemblies for, description of enriched uranium flow tube with symmetric multi-rod, 22:25040(P)
fuel assemblies for, description of thermal-insulated multiple vertical-sheathed rod-type, 22:42258(P)
fuel assembly for, description of coolant deflecting grid with peripheral flow channels in, 22:20890(P)
fuel assembly for, description of square lattice helical twist support structure for, 22:20886(P)
fuel burnup in, methods for analysis of, 22:22737

fuel cycle costs for 880 MW(e), effects of plutonium price on, 22:53344
fuel cycle economics in Argentina, methods of calculation of, 22:3931 (NP-16987)
fuel cycle for, economics of re-use, 22:42162(R) (BNWL-254)
fuel cycle performance for heavy water-moderated, analysis of optimum, 22:30260
fuel element cladding for, design criteria for fission product retention by, 22:27492
fuel element clusters for 600 MW(e), fabrication and testing of twisted tape, 22:9996(R) (EUR-3651)
fuel element configuration for, description of flow tube spray and seal device in, 22:20889(P)
fuel element in, analysis of burnup of Zircaloy-clad uranium oxide (UO_2), 22:32894
fuel element performance in, tabular summary of, 22:44841 (WASH-1082)
fuel elements for Canadian, performance of zirconium-clad uranium oxide (UO_2), 22:42155 (AECL-3068)
fuel elements for Canadian, use of uranium oxides (UO_2) in, 22:3808 (AECL-2928)
fuel elements for, analysis of mechanical and physical properties of, 22:35461 (GEMP-482)
fuel elements for, description of, 22:20953(P)
fuel elements for, description of vortex-flow liquid-cooled helical-ribbed cylindrical, 22:25121(P)
fuel elements for, effects of geometry on thermodynamics for, 22:3825(R) (EURAEC-1899)
fuel elements for, fabrication of uranium silicide, 22:43642(P)
fuel elements for, k/sub infinity/ and local power distribution of, (E/T), 22:44839 (UNC-5195)
fuel elements for, Monte Carlo calculation of resonance escape probability in uranium and uranium oxide, 22:32989
fuel elements for, performance data for, 22:46938
fuel elements for, power density increase using twisted tapes inside, 22:12045
fuel elements for, reference design parameters for, 22:44841 (WASH-1082)
fuel elements for, use of plutonium in, 22:6021
fuel management for, calculation of optimum cycles for, (E/T), 22:22777
fuel rod fabrication costs for, RODCOST computer program for uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:44809 (BNWL-789)
fuel rods for, characteristics of zoned uranium dioxide--plutonium dioxide recycle, 22:6016
fuel temperature distribution in 3300 MW(t), measurement of axial, 22:37402 (ANL-7450, pp 75-89)
fuel utilization in, process computers for optimization of, 22:48680
fuels for, economics of plutonium, 22:6024
fuels for, proposed performance test code for, 22:28885
heat transfer coefficient calculations for, 22:1753(R) (BMI-1815)
heat transfer in two-phase gas-liquid, effects of two-phase gas-liquid flow in vertical pipes on, (T), 22:14299
heat transfer system for power, description of high- and low-pressure turbine circuits with external superheating, 22:37466(P)
heavy water-cooled and -moderated, description of, 22:30266
heavy water-moderated water-cooled plutonium self-sustaining, description of Japanese, 22:30238
instrumentation for, summary of in-core hydraulic and thermodynamic, 22:48662
legal aspects in Argentina, 22:3840 (NP-16988)
neutron flux calculations for, description of one-dimensional two-group code for, 22:50763
neutron flux profile analysis in, BOLERA code for, 22:18588 (RT/FI-(67)28)
neutron multiplication factors for, description of one-dimensional two-group code for determination of effective, 22:50763
off-gas system for, catalytic recombiner for, 22:42674
operation economics of 200 MW(e) dual-purpose desalination heavy water-moderated, design of, 22:12082
operation of AEG-type power, analysis of optimum economic and technical, 22:48696
operation of, reactivity oscillations analysis for stability, 22:35537
operator training for, description of GE-Dresden, 22:37499
performance of U. S., analysis to year 2000 of thermal, 22:37469
performance parameters for dual-purpose, effects of brine heater leakage on, 22:32955
performance parameters of 600 MW(e) twisted tape, (T), 22:9996(R) (EUR-3651)
physics measurements for heavy-water-moderated plutonium-enriched natural uranium-fueled superheating, 22:30239
physics measurements for non-uniform lattices of, review of, (E/T), 22:22768
physics parameters for, effects of use of plutonium fuel on, 22:22658 (BNWL-475)
pipes for, effects of environment on fatigue of type 304 stainless steel, 22:2610(R) (GEAP-5512)
piping for Japanese, design and fabrication of field, 22:32851
power excursion and blowdown analysis for, RELAP2 computer program for, 22:39773 (IDO-17263)
power output from, use of twisted-tape fuels for increased, 22:25001
power output of, analysis of optimum reactor response for varying, 22:35536
power peaking factors for, tabular summary of, 22:44841 (WASH-1082)
power production and desalination using, economics of, 22:48661
power supply system for, design for emergency, 22:18484
pressure suppression pools for, efficiency of, 22:46912 (ORNL-NSIC-25)
pressure vessel for conceptual 1000 MW(e), optimization of design of prestressed concrete, 22:25009
pressure vessels for, description thermal-insulated water-cooled concrete, 22:37495(P)
pressure vessels for, design of prestressed concrete, 22:19004 (EURAEC-1943)
pressure vessels for, elastic and plastic methods of crack analysis for, 22:39892 (AD-663882)
primary cooling system pipes of, fracture mechanisms of steel, 22:45763(R) (BMI-1847)
pumps for, description of replaceable movable nozzles for back flow-preventing jet, 22:44845(P)
reactivity excursions in, effects of fuel element rupture on analysis of, 22:5981
regression analysis for U.S, 22:16169
safety aspects of, 22:25017
safety of desalination, analysis of leakage in brine heater, operation, 22:30289 (ORNL-TM-2049)
safety of, summary of research and development May--June 1968 on, 22:22752
safety system for water-cooled, reliability of Dual Bus Reactor Protection System as, (T), 22:24931 (APED-5179)
safety systems for, analysis of engineered, 22:32859
safety systems for, analysis of failures in, 22:30207
separator for, description of multi-stage vapor and water vertical rotating guide blade, 22:7872(P)
shutdown safety system for heavy water-moderated, description of pipe-connected moderator tank for steam condensation, 22:30276(P)
shutdown system for, description of valve release water supply, 22:14213(P)
simulators for pressure-tube, description of analog iterative model of coolant density in channels for, 22:20820 (RT/ING-(67)16)
stability of water-cooled heavy water-moderated, analog simulation of hydraulic and nuclear, 22:20777 (BNWL-574)
stability of, analysis of thermohydraulic, (E/T), 22:30147 (EURAEC-1984)
stability of, effects of feedback on, 22:25018
stability of, measurement of stationary local steam bubble component and frequency response for testing of, (E/T), 22:7801 (EURAEC-1917)
stability testing of, effects of flow oscillations on, 22:20811(R) (EURAEC-1964)
steam separation in, development of gravity-type cyclones for, 22:3826(R) (EURAEC-1900)
steam separator for, design and testing of radial vane, 22:30150(R) (GEAP-5597)
steam separators for, description of variable speed centrifugal, 22:20875(P)
steam separators for, design data for, 22:25013
steam systems for, method of condensate treatment in, 22:24983
systems for, detailed descriptions of, 22:44841 (WASH-1082)
transfer function determination for, from noise analysis, (T), 22:14291 (CEA-R-3327)
transients from imposed time variations in core dynamics in, CIRE code for analysis of, 22:16314 (EUR-3665)
transients in, model for dynamic analysis of flow, 22:12028 (KR-121)
use of stainless steels in Japanese power, description of, 22:32850

REACTORS, BREEDER
see also BN-350 Reactor
see also BOR-60 Reactor
see also Cadarache Reactors (Rapsodie)
see also Dounreay Fast Reactor
see also Experimental Breeder Reactor
see also Fermi Fast Breeder Reactor
see also Hanford Dual-Purpose Reactor
see also Indian Point Power Reactor, Unit 1
see also Spectral Shift Control Reactor
see also ZEBRA
accidents in liquid sodium-cooled fast, plutonium oxide (PuO_2)--sodium--uranium oxide (UO_2) aerosol behavior simulation for, 22:53262 (BNL-12757)
blanket optimization of 1000 MW(e) steam-cooled fast, alteration of 26-group-ABN-set for few-energy-group, (T), 22:44864
breeding rates in cylindrical, effects of excess reactivity and depth of control rod insertion on, (T), 22:44815(T) (EURFNR-502)
burnup performance of fast power, analysis of fuel cycle management for optimum, 22:53291

conceptual design for 300 MW(e) liquid sodium-cooled fast Na-2, description of, 22:37439(T) (EURFNR-462)
containment for Karlsruhe prototype sodium cooled fast, safety analysis of, 22:18450
control rod location and management for 1000 MW(e) superheating fast D-1, calculation of optimum, (T), 22:53274 (EURFNR-544)
control rods for steam cooled fast, design criteria for, 22:53367
coolant cavitation in, mechanisms of liquid metal, 22:17114 (NP-17279)
coolant flow for, ETNA-code for analysis of two-phase transient sodium, 22:42205 (RT/ING-(68)10)
coolant pump for liquid-metal fast-, design testing for liquid sodium, 22:32870
coolant pump power failure in 3500 MW(t) sodium-cooled bare-metal fast, flywheel-augmented flow coastdown following, (T), 22:37449 (ORNL-TM-2132)
coolants for fast, use of helium as, 22:5938
cooling system for ceramic-fueled liquid sodium-cooled fast, analysis of overpower transients in boiling in, (T), 22:20832
cooling system for fast, use of heavy water steam in, 22:32857
cooling system for liquid sodium-cooled fast, analysis of two-dimensional velocity distribution for turbulent single-phase flow in, 22:24961 (GEAP-5411)
cooling system for sodium-cooled fast, fission product behavior in, (E/T), 22:39734 (AI-AEC-12687)
cooling system for steam-cooled fast, application of Loeffler cycle to, 22:53363
cooling system valves for LMFBR, analysis of design requirements and types of, 22:53333
cooling systems for 1000 MW(e) LMFBR, corrosion testing of four conceptual, 22:44819 (GEAP-4881)
cooling systems for fast, fission product deposition in, 22:6020
core configuration for fast, design of optimum, 22:35514
core configuration for fast, to reduce coolant void reactivity coefficient, 22:48669(P)
core for fast, design parameters of, 22:16205
core optimization methods for, survey of, 22:42204 (RT/ING-(68)7)
cores for steam-cooled fast, design parameters for, 22:6010
coupled-cores for, analytical methods for calculating kinetic behavior of, 22:53348
criticality calculation methods for cylindrical, with partially inserted control rods, (T), 22:44815(T) (EURFNR-502)
criticality control following water entry in GCFR core, simulation of, 22:12087 (BNWL-472, pp 5.1-16)
criticality of plutonium-239--uranium and thorium--uranium-233 metal, carbide, and oxide fast, calculation of, (T), 22:47052
description of 1000 MW(e) ceramic fuel LMFBR, 22:18517
description of 1000 MW(e) gas-cooled fast, 22:16221
description of 1000 MW(e) liquid metal-cooled fast, reference design plant, 22:9990(R) (BAW-1312)
description of 1000-MW low-pressure-steam-cooled, 22:5943
description of 300 MW(e) liquid metal-cooled fast, 22:6036
description of 300 MW(e) liquid sodium-cooled fast, 22:39826
description of boiling fast, 22:16151 (INR-842/C)
description of fast, 22:18531(P)
description of light water-cooled, using thorium-232 blanket and uranium-233 fuel, 22:1877(P)
description of liquid-sodium-cooled, with unclad metal fuel for desalination of seawater, 22:27455 (ORNL-4229, pp 188-90)
description of molten-salt-fueled, with multiple graphite fuel cells, 22:46973(P)
description of multi-region supercritical pressurized-water cooled fast, 22:20884(P)
description of Russian fast, 22:7827
description of UK and USA fast, 22:22717
description of US, 22:24990
design and evaluation studies of thermal molten-salt, summary, 22:24935 (CONF-660524-, pp 41-63)
design concept for 1000 MW(e) steam-cooled, with prestressed concrete vessel, 22:44816 (EURFNR-522)
design evaluation of unclad metal-fueled, for process heat or power, 22:27630 (ORNL-TM-2203)
design of fast, engineering for, 22:18501
design of fast, evaluation of nuclear data for, 22:6138(R) (LA-3820)
design of fast, review of technical and economic requirements in, 22:42272
design of Japan prototype, description of conceptual, 22:53332
design of sodium, description of computer program for treating coolant phase changes during transients for liquid, 22:53376
design of Swedish fast steam cooled, 22:16199
design parameters for 1000 MW(e) liquid sodium-cooled fast, description of optimum, 22:37504
design parameters for 1000 MW(e) steam-cooled uranium oxide (UO_2)--plutonium oxide (PuO_2) fueled fast, 22:18525
design parameters for 300 MWe conceptual liquid sodium cooled fast, safety, 22:53360
design parameters for low-pressure-steam-cooled, 22:5944
design parameters of fast, conceptual, 22:16186
design parameters of liquid sodium-cooled plutonium oxide (PuO_2)-uranium oxide (UO_2)-fueled 350 to 500 MW(e) fast GPU/AI, analysis of conceptual, 22:37463
design specifications for development of LMFBR, description of conceptual, 22:32906
development by EURATOM of, description of, 22:18529
development in U.S., summary of program for, 22:16214
development of, 22:40177 (KR-126, pp 385-93)
development of advanced converter, by Euratom, 22:16211
development of breeder, economics in Europe of, 22:3857
development of fast, analysis of joint manufacturer-utility-government efforts for optimum, 22:35506
development of fast, description of program for, 22:1823
development of fast, engineering aspects of, 22:16220
development of fast, in Germany, 22:6094 (EURFNR-403)
development of gas-cooled fast, component and material requirements for, 22:35466 (KFK-689)
development of high-gain liquid sodium-cooled 200 to 400 MW(e) fast, description of prototype, 22:35504
development of Japanese fast power, description of, 22:35485
development of Japanese fast, description of, 22:18526
development of liquid metal fuel, LMFBR, 22:10438(R) (NAA-SR-12585)
development of power, future prospects for, 22:20843
development of power, review of worldwide, 22:25034
development of power, technical and economic aspects of, 22:18500
development of U. S. fast, analysis of optimum, 22:35508
development of U.S.A. fast, description of proposed, 22:53298
development of United States fast, description of, 22:18527
development of, objectives and directions for, 22:16208
development program for European, analysis of, 22:35501
development program for European, discussion on, 22:35491
development program for fast, analysis of optimum, 22:37464
development program for German 300 MW(e) sodium-cooled, 22:53336
development program for German liquid sodium- and steam-cooled fast, description of optimum economic, 22:37461
development program for German liquid sodium- and steam-cooled fast, description of, 22:35539
development program for Germany power fast, description of, 22:48670
development program for Great Britain liquid sodium-cooled fast, description to 1985 of, 22:42231
development program for liquid metal-cooled fast, description of U.S, 22:30216
development program for U. S. 1000 MW(e) power, effects of fuel supply on optimum economic, 22:48703
development program for U. S. A. liquid metal-cooled fast, description of, 22:46951
development program for U.S. power fast, description of, 22:35541
development program for Yugoslavia fast power, analysis of optimum economic, 22:48667
development program in the United Kingdom, 22:6053
development program to year 2000 of, 22:12050
development programs for fast power, economics of world-wide, 22:37448 (NP-17521)
development programs for fast, description of, 22:35471 (STI/PUB-165(Vol.1))
development programs for heavy water-moderated carbon dioxide-cooled, description of Czechoslovakian, French, and German, 22:39832
development programs for, comparison of Europe and U.S.A, 22:53287
developmental program for German steam cooled fast, 22:16201
Doppler effect in fast, effects on design and safety characteristics of, (T), 22:20852
dynamic behavior of 1000 MW(t) sodium-cooled fast, analysis of, 22:6027
dynamic behavior of, effects of variation of neutronic characteristics during core lifetime on, 22:53385
economic factors of, method for calculating, 22:1815
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economics of, 22:16208
economics of 1000 MW liquid metal-cooled fast, effects of safety on, 22:5970
economics of 1000 MW(e) liquid sodium cooled fast, effects of parameter variation on, 22:16166(T) (EURFNR-384)
economics of epithermal power, neutron and monetary, 22:9991 (BNL-10809)
economics of fast power, 22:5936(T) (JPRS-43265)
economics of heavy water-moderated, 22:18482
economics of operation in nuclear power production, 22:12049
economics of operation of fast, for desalination, 22:18544 (STI/DOC-10/80)
economics of power, BAKO code for, 22:32764(T) (EURFNR-459)
economics of power, BAKO computer program for calculating, 22:16154 (KFK-644)

economics of power, in 1986--2005, 22:16219
economics of Russian fast, 22:7827
electricity from, prediction of future production of, 22:12040
feasibility study for Brazilian thorium, 22:3818 (DER-7(Rev.))
fission product release and transport control in sodium-cooled, review of methods for, 22:53396
fuel and breeder materials from, reprocessing of, 22:48909
fuel conversion ratio in, effects of neutron flux distribution on, 22:42284
fuel cycle economics for liquid metal-cooled power-desalination fast, analysis of optimum, 22:32910
fuel cycle economics for, comparison with light water reactor fuel cycle economics and, 22:48635 (BNWL-SA-2052)
fuel cycle for thermal, economic advantages for uranium-thorium, 22:42156 (AECL-3081)
fuel cycle for, analysis of optimum thorium, 22:35492
fuel cycle schedules to 1995 of, analysis of optimum, 22:35535
fuel cycles for, economics of nitride, (T), 22:22659 (BNWL-606)
fuel development and testing for, 22:720 (BMI-1809, Sect.A)
fuel development for, 22:8739 (ORNL-4170, pp 97-102)
fuel economics of, effects of power requirements on, 22:3832 (KFK-566)
fuel element cladding for, 22:4753
fuel element cladding for liquid metal-cooled fast, analysis of economics of type 316 stainless steel and vanadium alloys for, 22:32909
fuel element cladding for LMFBR, economics and performance testing of Type 316 stainless steel and VANSTAR-7 and -9, 22:46925 (WARD-3791-19)
fuel element cladding materials for liquid-metal-cooled fast, review of properties of, (E), 22:35425 (BMI-1900)
fuel element cladding materials for LMFBR, corrosive effects of liquid sodium on, 22:44821(R) (GEAP-5546)
fuel element configuration for 1000 MW(e) liquid metal-cooled fast, economic analysis of, 22:10005 (KFK-568)
fuel element development for, 22:725 (BMI-1809, Sect.E)
fuel element for liquid metal-cooled fast, description of radial-cooled conical annular, 22:35488(P)
fuel element processing for, design and cost estimate of facility for, 22:27954 (ORNL-TM-2050)
fuel elements for fast pebble-bed, description of liquid metal-cooled tube-and-shell heat exchanger, 22:35490(P)
fuel elements for fast power, design parameters for optimum, (E/T), 22:39810
fuel elements for fast, design criteria for type-304 and -316 austenitic stainless steel cladding for, 22:6019
fuel elements for fast, design parameters for, 22:33092 (KFK-700(Pt. I))
fuel elements for fast, design parameters for, 22:53273(T) (EURFNR-472)
fuel elements for fast, economics of plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:27423
fuel elements for fast, effect of internal geometry on radial temperature distribution in cylindrical low-density oxide, (T), 22:44825 (KFK-751)
fuel elements for fast, fabrication and testing of mixed-carbide, 22:53463(R) (UNC-5217)
fuel elements for liquid-metal fast-, analysis for optimum vibration stability in, (E/T), 22:32970(R) (GEAP-5584)
fuel elements for sodium cooled fast, design and safety optimizations of plutonium--uranium carbide, 22:53368
fuel elements for testing of cladding plutonium nitride (PuN)--uranium nitride (UN) at 700 to 1000°C for, 22:32816
fuel elements for, conference on development of, 22:32771 (KFK-700)
fuel elements for, fabrication for in-pile radiation testing, 22:732 (EURFNR-318)
fuel elements for, selection criteria for cladding for, 22:32772 (KFK-700(Pt. III))
fuel elements for, selection criteria for cladding for, 22:53273(T) (EURFNR-472)
fuel elements for, techniques for examination of irradiated, 22:53273(T) (EURFNR-472)
fuel elements for, techniques for examination of irradiated, 22:32778 (KFK-700(Pt. XII))
fuel for molten-salt, helium bubble mass transfer removal of xenon-135 from, 22:46916 (ORNL-TM-2245)
fuel for, preparation of plutonium phosphide--uranium carbide, 22:11037(P)
fuel pin design for, reliability margin analysis for, 22:32837
fuel processing for, 22:27863(R) (ORNL-4204)
fuel production of high-gain, performance by 1990, 22:35691
fuel reloading of 1000 MW(e) liquid metal-cooled fast, description of, 22:9990(R) (BAW-1312)
fuel reprocessing for, 22:27867 (ORNL-4204, pp 52-9)
fuel reprocessing for liquid metal-cooled, choice of solvent extractor for, 22:47205 (ORNL-TM-2290)
fuel reprocessing for, pyrochemical methods for, 22:51063
fuel requirements for fast, evaluation of plutonium, 22:7804 (EURFNR-422)
fuel-cycle costs for 1000 MW(e) gas-cooled, (T), 22:27413 (GA-8032)
fuels for fast, conceptual prochemical process for reprocessing, 22:51044 (ANL-7425, pp 19-41)
fuels for fast, corrosive effects of ceramic--sodium paste-type, on stainless steel, 22:2573
fuels for high-gain, use of unclad-metal, 22:5945
fuels for sodium-cooled fast, properties of ceramic, 22:30123 (BNWL-SA-1550)
fuels for, development of, 22:16265(R) (ANL-7403)
fuels for, economics of plutonium, 22:28729
fuels for, properties of thorium uranium carbide and thorium uranium nitride, 22:11072 (ORNL-TM-2015)
fuels for, reprocessing of, 22:40177 (KR-126, pp 385-93)
fuels for, salt transport method for reprocessing ceramic, 22:40184 (KR-126, pp 476-93)
fuels for, steady state time effects on isotopic composition of, 22:18476
fuels from, aqueous methods for reprocessing, 22:40179 (KR-126, pp 405-14)
fuels from, pyrometallurgical processes for reprocessing, 22:40182 (KR-126, pp 452-67)
materials for high-temperature, development of core and fuel, 22:16168
materials for, effects of high temperature sodium on, 22:8725(R) (MSAR-67-207)
moderators for high temperature thermal, radiation effects on beryllium oxide, 22:46901 (JUL-528-RW)
monthly progress report on fast liquid metal-cooled, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress report on LMFBR, Argonne National Laboratory, 22:35422(R) (ANL-7445)
monthly progress report on LMFBR, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress report on LMFBR, Argonne National Laboratory August 1968, 22:50699(R) (ANL-7487)
monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)
monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)
neutron energy and flux distributions in thorium blanket of plutonium-239-fueled, (E), 22:44580
neutron flux calculations for, effects of interfaces between resonance--scattering media on, 22:9988(R) (ANL-7391)
neutron physics of fast, research on theoretical, 22:15141 (BNL-50057, pp 79-100)
operation of fast, description of, 22:18501
operation of power fast, analysis of optimum fuel cycle, 22:37504
performance analysis methods for, survey of thermal and hydraulic, 22:42204 (RT/ING-(68)7)
performance of U. S., analysis to year 2000 of thermal, 22:37469
performance of, effects of plutonium-239 capture-to-fission ratio on, 22:32791
physics analysis of fast, FARED code development for static, 22:42159(R) (BAW-3867-3)
physics analysis of, evaluation of nuclear data for, 22:27487(R) (LA-3880)
physics calculations for fast, development of computer codes for static, 22:48634(R) (BAW-3867-4)
physics measurements for fast steam-cooled, effects of core shape and steam pressure and temperature on, 22:27401 (BNWL-713)
physics measurements for fast, computer programs for calculation of, 22:50841(R) (LA-3993)
physics parameters for fast steam-cooled, effects of steam pressure and core configuration on optimum, 22:53265 (BNWL-SA-2063)
physics parameters for fast, description of one-dimensional criticality and depletion computer code for calculating, 22:18356(R) (BAW-3867-2)
physics parameters for fast, description of optimum, 22:35505
physics parameters for plutonium oxide fueled fast, 22:32734 (ANL-7310, pp 137-248)
physics parameters for seed-blanket, determination in critical assemblies of, 22:6116
piping flexibility in liquid metal-cooled fast power, design and analysis of, 22:39812
plutonium fuels for, dose rate calculations for, 22:23247(T) (EURFNR-385)
power cycles of fast, analysis of optimum initial steam conditions for, 22:46949
power monitors for, development of all-solid in-core rhodium, 22:14128 (ANL-7380, pp 140-5)
power peaking in, effects of neutron flux distribution on, 22:42284
power supplies for, integration of auxiliary and emergency, (T), 22:35484
pressure sensors for, description of miniaturized, 22:14127 (ANL-7380, pp 63-4)
radiation detectors for use in LMFBR, design of self-powered, 22:12570 (ANL-7380, pp 139)
radiation dose rates from reprocessed fuels from, 22:10322 (KFK-603)
radiation effects on fuel element cladding of fast, 22:32776 (KFK-700(Pt. X))

radiation effects on fuel element cladding of fast, 22:53273(T) (EURFNR-472)
reactivity coefficients of steam-cooled fast, effect of design parameters on, (T), 22:35556
reactivity of ceramic-fuel fast, effects of core composition and configuration on, 22:1775 (RT/FI-(67)23)
reactivity of fast, analysis of Doppler effect on, 22:18514
relationship to gas-cooled reactors, 22:1812
response during liquid sodium boiling accidents in, physical models and equations for calculating, 22:53383
safety analysis for large fast, relationship of double containment and aerosol behavior to, 22:7805 (EURFNR-425)
safety analysis methods for, survey on, 22:42204 (RT/ING-(68)7)
safety of German 1000 MWe steam cooled fast, analysis of, 22:53365
safety program for sodium-cooled fast, 22:53356
shielding construction for sodium-cooled, 22:27435
shielding construction principles for, 22:27434
simulation of steam-cooled fast, use of analog computer for, (T), 22:32770 (KFK-657)
sodium expulsion due to boiling in, hydrodynamic calculations for, 22:1793
sodium fires in, studies on energy release and transport during, 22:53352
sodium void effects in single-zone fast, flux synthesis method for calculating, 22:32734 (ANL-7310, pp 137-248)
sodium void reactivity calculations for, effects of zone enrichment on, 22:32734 (ANL-7310, pp 137-248)
stability of steam-cooled fast, effects of coolant feedback during accidents on, 22:3829 (EURFNR-406)
stability of steam-cooled, effect of integrated cooling cycle on, (T), 22:20846
stability parameters for steam-cooled fast, measurement of, 22:5921 (EURFNR-398)
steam generator for fast, design of 527 MW(t) sodium-heated, 22:35465 (KFK-654)
strain gages for, testing of high-temperature electric resistance, 22:12673 (ANL-7380, pp 79-90)
structural materials for LMFBR, effects of liquid sodium on mechanical properties of, (E), 22:42194(R) (MSAR-68-77)
temperature measurements in LMFBR, development of ultrasonic systems for, 22:28209(R) (NYO-3906-2)
ultrasonic thermometry for LMFBR-type, testing of, 22:53281(R) (NYO-3906-3)
REACTORS, CANADA
see also CANDU Reactor
see also Gentilly Power Reactor
see also NPD Reactor
see also NRU Reactor
see also NRX Reactor
see also Pickering Power Reactor, Unit 1
see also Pickering Power Reactor, Unit 2
see also Reactors, CANDU-type
coolant economics for heavy water-moderated and -cooled power, analysis of, 22:30250
development program for power, analysis to 1978, 22:42226
development program for power, description of AECL participation in, 22:42148 (AECL-3067)
development program for power, description of AECL research in, 22:42151 (AECL-3067, pp 35-43)
development program for power, description of AECL research in, 22:42354 (AECL-3067, pp 21-8)
development program for, description of, 22:32902
development program of power, analysis of economics for, 22:42149 (AECL-3067, pp 1-19)
development programs for gas-cooled and water-cooled, description of, 22:42212 (TRG-Report-1695)
environs monitoring at, during 1967, 22:4606 (NP-17146)
environs monitoring of, during June, 1967, 22:2505 (NP-17042)
fuel assemblies of heavy water-moderated, analysis of performance of Zircaloy-2 uranium oxide (UO_2), 22:30263
fuel cycles for power, analysis of optimum economic, 22:42154 (AECL-3067, pp 61-4)
fuel elements in boiling and pressurized-water, analysis of burnup of Zircaloy-clad uranium oxide (UO_2), 22:32894
performance of heavy water-moderated, systems design for economic, 22:32903
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
physics measurements for dual-purpose heavy water-moderated natural uranium oxide (UO_2)-fueled power, description of, 22:30240
radiation dose to personnel of, during 1967, β and γ, 22:33806 (AECL-3063)
radiation monitoring in environment of, during 1967, 22:38258 (NP-17119)
siting of, requirements for, 22:18429
REACTORS, CANDU-TYPE
see also CANDU Reactor
see also RAPP Power Reactor
buildings and facilities for power, design economics of, 22:48710
description of BLW-250, 22:30233
development status of, 22:16212
economics of, 22:16106 (AECL-2795)
economics of, 22:16212
economics to year 2000 in Canadian power stations, 22:35416 (AECL-3083)
electricity from, production of commercial, 22:12038
fission energy release in, analysis of mass balance for, 22:37400 (AECL-3109)
fuel channels for, configuration of improved annular-space gas-insulated pressure vessel-penetrating pressurized and sealed, 22:42289(P)
fuel channels for, development of, 22:35419 (AECL-3126)
fuel cladding failure in, γ spectrometer coolant monitor for detecting, 22:9984 (AECL-2786)
moderator voids from coolant pressure tube failure in, reactivity effect of, (E/T), 22:20775 (AECL-3002)
plutonium fuels for, future requirements for, 22:42157 (AECL-3136)
Reactors, Circulating-Moderator
see Reactors, Homogeneous
Reactors, Converter
see Reactors, Breeder
Reactors, Coupled
see Reactors, Power
Reactors, Dust-Fueled
see Reactors, Fluid-Fueled
Reactors, Electric
see Electronic Equipment
REACTORS, ENRICHED
see also Argonne Research Reactor
see also Bulk Shielding Facility
see also Experimental Breeder Reactor
see also Los Alamos Power Reactor Experiment
see also NRL Research Reactor
development in Yugoslavia of, economics for, 22:24995
REACTORS, FAST
see also Aberdeen Fast Pulse Reactor Facility
see also Argonne Fast Reactor Experiment Test
see also BN-350 Reactor
see also BOR-60 Reactor
see also Cadarache Reactors (Rapsodie)
see also Dounreay Fast Reactor
see also Experimental Breeder Reactor
see also Experimental Breeder Reactor-II
see also Fast Ceramic Reactor
see also Fermi Fast Breeder Reactor
see also ORNL Fast Burst Reactor
see also PEC Fast Test Reactor
see also Phenix Fast Reactor
see also Prototype Fast Reactor
see also Southwest Experimental Fast Oxide Reactor
see also ZEBRA
accelerator-booster targets of pulsed research, neutron yields from, (E), 22:18557 (GA-8087)
accident simulation for, use of chemical explosives for rapid energy release, 22:22655 (AWRE-R-5/65)
accidents in large sodium cooled, effects of core configuration on explosive yield during, 22:53390
accidents in liquid sodium-cooled breeder, plutonium oxide (PuO_2)--sodium--uranium oxide (UO_2) aerosol behavior simulation for, 22:53262 (BNL-12757)
accidents in pulsed SORA-type, theoretical models for analysis of maximum hypothetical, 22:35644
availability of, effects of core instrumentation on, 22:32872
blanket optimization of 1000 MW(e) steam-cooled breeder, alteration of 26-group-ABN-set for few-energy-group, (T), 22:44864
breeding potential for thorium--uranium-233-fueled, analysis of, (E/T), 22:47051
burnup calculations for, use of computer program for, 22:16308 (BNWL-640)
conceptual design for 300 MW(e) liquid sodium-cooled Na-2, description of, 22:37439(T) (EURFNR-462)
configuration of 1080 MW(e) plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled superheating, description of optimum, 22:50757
configuration of liquid sodium-cooled, analysis of electrical and mechanical design problems in, 22:48712
configuration of rocket, 22:39865 (N-68-19830)
construction and design problems of sodium cooled, 22:16196
construction of liquid sodium-cooled, analysis of engineering and design problems in, 22:48711
construction of liquid sodium-cooled, description of quality control methods during, 22:30205
containment for Karlsruhe prototype sodium cooled breeder, safety analysis of, 22:18450
containment structure penetrations for sodium cooled, problems of design of, 22:16197
containment structures for sodium cooled, problems of analysis of complex, 22:16197
containment technology for, analysis of, 22:50812 (TID-24706)
control elements for liquid metal-cooled, description of overhead, 22:10052(P)
control elements for, description of improved neutron absorber- and moderator-type, 22:14224(P)
control rod calibration in, using multigroup diffusion

theory, 22:35469 (PNR/SETR-R.-022)
control rod installation in fuel element channel of, description of, 22:10028(P)
control rod location and management for 1000 MW(e) superheating breeder D-1, calculation of optimum, (T), 22:53274 (EURFNR-544)
control rods for steam cooled breeder, design criteria for, 22:53367
control systems for liquid sodium-cooled, use of variable lithium concentration for spectral shift, 22:16246(P)
control systems for multi-zone cylindrical rocket, description of yttrium hydride self-regulating, 22:46999 (N-68-24559)
control systems for, design of fluid, 22:1832
coolant activation in liquid metal-cooled, effect on shielding of lithium, potassium, and sodium, (T), 22:39782 (N-68-20355)
coolant boiling and flashing in, safety analysis of liquid sodium, 22:20834
coolant boiling in sodium-cooled, core conditions affecting, 22:37403(T) (ANL-Trans-625)
coolant channels in, solution to heat transfer equations for calculating temperature distribution across, 22:46959
coolant ejection from pulsed liquid metal cooled, effects of acoustic waves on, 22:12093 (EUR-3654)
coolant flow for, ETNA-code for analysis of two-phase transient sodium, 22:42205 (RT/ING-(68)10)
coolant flow in, mechanics of two-phase critical, 22:4347
coolant level in liquid metal-cooled, description of NaK-filled kerosene-insulated cylindrical ultrasonic gage for measurement of, 22:42292(P)
coolant loss accidents in, effects on fuel elements of liquid sodium, 22:53381
coolant mixing in fuel element bundles of liquid sodium-cooled, analytic methods for determining, (E/T), 22:35476 (WASH-1096)
coolant pump power failure in 3500 MW(t) sodium-cooled bare-metal breeder, flywheel-augmented flow coastdown following, (T), 22:37449 (ORNL-TM-2132)
coolant void reactivity effect in sodium-cooled power, methods for reduction of, (T), 22:35559
coolant void reactivity effects in, generalized perturbation method for analysis of, 22:6179
coolants for, thermo-physical properties of liquid metal, 22:27449
coolants for, use of helium as, 22:5938
cooling circuits for, incorporation into reactor vessel of primary sodium, 22:12020 (DRP/ML/CANd-1011)
cooling system corrosion mockup for liquid sodium-cooled, description of, 22:44819 (GEAP-4881)
cooling system for breeder, use of heavy water steam in, 22:32857
cooling system for ceramic-fueled liquid sodium-cooled breeder, analysis of overpower transients in boiling in, 22:20832
cooling system for lead-cooled, description of integral steam--water heat transfer system for, 22:25049(P)
cooling system for liquid sodium-cooled breeder, analysis of two-dimensional velocity distribution for turbulent single-phase flow in, 22:24961 (GEAP-5411)
cooling system for sodium-cooled breeder, fission product behavior in, (E/T), 22:39734 (AI-AEC-12687)
cooling system for steam cooled, safety considerations in design of components for, 22:53366
cooling system for steam-cooled breeder, application of Loeffler cycle to, 22:53363
cooling system of liquid sodium-cooled, maintenance equipment and procedures for, 22:46960
cooling systems for breeder, fission product deposition in, 22:6020
core configuration for breeder, design of optimum, 22:35514
core configuration for breeder, to reduce coolant void reactivity coefficient, 22:48669(P)
core configuration for liquid sodium-cooled, description of multiple concentric region, 22:39803(P)
core configuration for, description of moderator-reflector multiple concentric annular cylindrical, 22:48699(P)
core configuration, description of dual-region multiple, 22:48701(P)
core design for supercritical steam-cooled, with means for reactivity control on flooding, 22:16241(P)
core for breeder, design parameters of, 22:16205
core for dilute, critical mass calculations for, 22:50832
core for gas-cooled, synthesis method for uncertainty analysis of thermal design of, 22:18608
core for Na-1, coolant profiles for, 22:53278 (KFK-539/3)
core for Na-1, design parameters and material compositions for, 22:53278 (KFK-539/3)
core for PEC, static and dynamic characteristics of, 22:16207
core for steam cooled, design parameters of, 22:16200
core for, analysis of meltdown transients in, 22:32892
core for, temperature coefficient of thorium metal, 22:27396(R) (AI-AEC-12538)
core grid plate displacement in pulsed, design of displacement gages for, 22:30904
core kinetics of, effects of time-dependent coupling coefficients on, (T), 22:35544
core meltdown accidents in 1000 MW(e), modified Bethe-Tait method analysis of, (T), 22:20853
core meltdown in liquid metal-cooled, use of TREAT reactor for analysis of simulated, 22:39813
core meltdown in, analytical method for, 22:53391
core optimization methods for, survey of, 22:42204 (RT/ING-(68)7)
cores for steam-cooled breeder, design parameters for, 22:6010
cores for, two-dimensional parametric study on meltdown energy release for, 22:32871
coupled-cores for, analytical methods for calculating kinetic behavior of, 22:53348
critical size of, few-group microscopic cross section calculation for, (T), 22:48751 (IFA-FR-68)
criticality calculations for, 22:47021
criticality measurements for, use of computer program for, 22:16308 (BNWL-640)
criticality of plutonium-239--uranium and thorium--uranium-233 metal, carbide, and oxide breeder, calculation of, (T), 22:47052
criticality of, development of computer program for design measurements of, 22:9989(R) (BAW-3867-1)
criticality of, methods for physics measurements for, (T), 22:39875 (BNL-50082, pp 1-18)
criticality perturbation by flux tilting, method for calculating, 22:22527 (RPI-328-112, pp 62-103)
description of .1 MW(e) lithium-cooled enriched uranium carbide-fueled, 22:25063 (DLR-MITT-66-07, pp 87-99)
description of 1000 MW(e) gas-cooled breeder, 22:16221
description of 1000 MW(e) liquid metal-cooled breeder, reference design plant, 22:9990(R) (BAW-1312)
description of 250 MW(e) prototype, with 3 primary and 3 secondary liquid sodium coolant loops, 22:18519
description of 300 MW(e) liquid metal-cooled breeder, 22:6036
description of 300 MW(e) liquid sodium-cooled breeder, 22:39826
description of boiling breeder, 22:16151 (INR-842/C)
description of breeder, 22:18531(P)
description of double-window synchronized rotating pre- and excess-pulse screens for, 22:22853(P)
description of fluid-fueled, 22:18524
description of French, 22:18528
description of gas -cooled, 22:18524
description of heterogeneous, 22:18533(P)
description of liquid-sodium-cooled, with unclad metal fuel for desalination of seawater, 22:27455 (ORNL-4229, pp 188-90)
description of multi-region core, with proportional fuel density and coolant flow rate, 22:14219(P)
description of multi-region supercritical pressurized-water cooled breeder, 22:20884(P)
description of PEC, for fast fuel element testing, 22:1867(T) (ORNL-tr-1786)
description of Russian breeder, 22:7827
description of sodium-cooled, in France, 22:18503
description of steam-cooled, 22:18524
description of synchronized rotating pre- and excess-pulse screens, 22:22852(P)
description of zoned fuel liquid sodium-cooled, 22:18539(P)
description of, utilizing increasing fuel abundance from center to radius in core, 22:20873(P)
design calculations for power, Belgian computer codes for, 22:35558
design concept for 1000 MW(e) steam-cooled, with prestressed concrete vessel, 22:44816 (EURFNR-522)
design model for optimum liquid metal-cooled reflector-controlled rocket, description of, 22:39869
design of 1000 MW(e) uranium carbide (UC) fueled ordered pebble bed, economics of conceptual, 22:9992 (BNL-50027)
design of breeder, engineering for, 22:18501
design of breeder, evaluation of nuclear data for, 22:6138(R) (LA-3820)
design of breeder, review of technical and economic requirements in, 22:42272
design of gas-cooled, GAZELLE-5 computer code for, 22:12024 (GAMD-6754)
design of German 300 MW(e) sodium-cooled, conceptual, 22:16187
design of PEC, conceptual, 22:16207
design of sodium, description of computer program for treating coolant phase changes during transients for liquid, 22:53376
design of steam-cooled, comparison of EVESR with, 22:16184
design of Swedish steam cooled breeder, 22:16199
design parameters for 100 MW(t) Japan Fast Experimental Reactor, description of, 22:35538
design parameters for 1000 MW(e) liquid sodium-cooled breeder, description of optimum, 22:37504
design parameters for 1000 MW(e) steam-cooled uranium oxide (UO_2)--plutonium oxide (PuO_2) fueled breeder, 22:18525
design parameters for 300 MWe conceptual liquid sodium cooled breeder, safety, 22:53360
design parameters for 500 to 1000 MW(e) liquid sodium-

cooled, description of optimum, 22:32736(T) (ANL-Trans-588)
design parameters for European liquid sodium-cooled and steam-cooled, analysis of, 22:35498
design parameters for German sodium cooled, conceptual, 22:22703 (KFK-660)
design parameters of 300 MW gas-cooled ceramic, prototype reference, 22:16189
design parameters of breeder, conceptual, 22:16186
design parameters of liquid sodium-cooled plutonium oxide (PuO_2)-uranium oxide (UO_2)-fueled 350 to 500 MW(e) breeder GPU/AI, analysis of conceptual, 22:37463
design specifications for development of LMFBR, description of conceptual, 22:32906
development and operation of, conference on, 22:16180
development by EURATOM of, description of, 22:18529
development in Britain and France, review of fuels and materials technology from, 22:12088 (BNWL-569)
development in FORATOM countries of, survey of, 22:3861
development in United Kingdom, description of, 22:27440
development in various countries, review of problems in, 22:24994
development of, 22:40177 (KR-126, pp 385-93)
development of 500 to 1000 MW(e) liquid sodium-cooled, analysis of problems in, 22:32736(T) (ANL-Trans-588)
development of breeder, analysis of joint manufacturer-utility-government efforts for optimum, 22:35506
development of breeder, description of program for, 22:1823
development of breeder, economics in Europe of, 22:3857
development of breeder, engineering aspects of, 22:16220
development of breeder, in Germany, 22:6094 (EURFNR-403)
development of ceramic-fueled, 22:647(R) (BNL-50077)
development of European, program for, 22:1796
development of French, long term program for, 22:1803
development of gas-cooled breeder, component and material requirements for, 22:35466 (KFK-689)
development of German steam cooled breeder, program for, 22:16201
development of high-gain liquid sodium-cooled 200 to 400 MW(e) breeder, description of prototype, 22:35504
development of Japanese breeder power, description of, 22:35485
development of Japanese breeder, description of, 22:18526
development of liquid metal fuel breeder, 22:10438(R) (NAA-SR-12585)
development of liquid sodium-cooled, description of, 22:18524
development of power, European program for, 22:18497
development of power, in U.S.S.R, 22:39806
development of power, review of worldwide, 22:25034
development of power, technical and economic aspects of, 22:18500
development of U. S. breeder, analysis of optimum, 22:35508
development of U.S.A. breeder, description of proposed, 22:53298
development of United States breeder, description of, 22:18527
development of, objectives and directions for, 22:16208
development program for breeder, analysis of optimum, 22:37464
development program for ceramic fueled, description of United States, 22:18502
development program for European, analysis of, 22:35501
development program for European, discussion on, 22:35491
development program for European, economic analysis of, 22:35496
development program for French, 22:35479
development program for German 300 MW(e) sodium-cooled, 22:53336
development program for German liquid sodium- and steam-cooled breeder, description of optimum economic, 22:37461
development program for German liquid sodium- and steam-cooled breeder, description of, 22:35539
development program for Germany power breeder, description of, 22:48670
development program for Great Britain liquid sodium-cooled breeder, description to 1985 of, 22:42231
development program for Japanese liquid sodium-cooled, description of, 22:35538
development program for liquid metal-cooled breeder, description of United States, 22:30216
development program for liquid sodium-cooled power, analysis of uncertainties for physics parameters and fuel costs in, 22:50733 (GEAP-5635)
development program for U. K. liquid metal-cooled, description of, 22:46950
development program for U. S. A. liquid metal-cooled breeder, description of, 22:46951
development program for U.K. power, description of, 22:44859
development program for U.S. power breeder, description of, 22:35541
development program for UK, description of, 22:35540
development program for USSR, economics of, 22:35480
development program for Yugoslavia breeder power, analysis of optimum economic, 22:48667
development program in the United Kingdom, 22:6053
development program of French, description of, 22:35625
development programs for breeder power, economics of world-wide, 22:37448 (NP-17521)
development programs for breeder, description of, 22:35471 (STI/PUB-165(Vol.1))
development programs for Europe power, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
development programs for, description of, 22:46952
Doppler coefficient measurements in, effects of temperature and environment on thorium and uranium-238, 22:33038
Doppler coefficient of reactivity for plutonium-239 in, numerical evaluation of expression for, 22:46955
Doppler coefficients for, effects of unresolved resonance parameters on, 22:33086 (ANL-7310, pp 431-511)
Doppler effect calculations in, description of Monte Carlo code for, 22:35720
Doppler effect evaluation for homogeneous dilute oxide, effects of two-level formula on, 22:53377
Doppler effect in, effects on design and safety characteristics of, (T), 22:20852
Doppler reactivity effects in, generalized perturbation method for analysis of, 22:6179
dynamic behavior of 1000 MW(t) sodium-cooled breeder, analysis of, 22:6027
dynamic behavior of sodium-cooled power, analysis of, 22:46958
dynamic behavior of, effects of variation of neutronic characteristics during core lifetime on, 22:53385
dynamics calculations for, development of computer codes for, 22:12006(R) (ANL-7399)
dynamics of large, effects of isotopic content of fuel on, 22:14180
economic characteristics of 1000 MW(e) sodium-cooled, 22:20851
economic comparison with thermal reactors, 22:1797
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economics of, 22:16208
economics of 1000 MW liquid metal-cooled breeder, effects of safety on, 22:5970
economics of 1000 MW(e) liquid sodium cooled breeder, effects of parameter variation on, 22:16166(T) (EURFNR-384)
economics of fuel cycle in sodium cooled 1000 MW(e), effects of plutonium composition on, 22:5922 (EURFNR-399)
economics of operation of breeder, for desalination, 22:18544 (STI/DOC-10/80)
economics of power breeder, 22:5936(T) (JPRS-43265)
economics of Russian breeder, 22:7827
economics of, effects of use of plutonium fuels on, 22:1797
economics of, effects of variations in nuclear data on, 22:5997
efficiency criteria for power, 22:39785 (SRARI-P-4)
electrical power production from, prediction of, 22:1802
electricity from, prediction of future production of, 22:12040
excursion analysis in pulsed, DOPPELAS and SOREX 1 codes for, 22:32966 (EUR-3915)
excursion calculations for, mathematical model with feedback for, 22:53389
excursions in steam-cooled, mechanical damage from kinetic energy release in, (T), 22:18419 (FOA-2-2498-44)
excursions in, qualitative analysis of effects of shock wave-induced, 22:32735 (ANL-7310, pp 249-375)
fission density spiking in space, thin europium neutron filters for reduction of, 22:32939
fission product release and transport control in sodium-cooled, review of methods for, 22:53396
fission product release from sodium cooled, safety analyses of containment systems for prevention of, 22:53353
fuel assemblies for gas cooled, with water flooding safety system, 22:16244(P)
fuel assemblies for liquid metal-cooled, description of sleeve-enclosed upper fissile material pin and lower fertile material pin cluster-type, 22:42244(P)
fuel assemblies for liquid metal-cooled, description of multiple vertical and parallel elongated triple-region, 22:50775(P)
fuel assemblies for liquid-cooled, description of multiple vertical hexagonal-shaped, 22:42252(P)
fuel assemblies for, design requirements of shipping casks for irradiated, 22:42168 (BNWL-SA-2002)
fuel assemblies of, description of failure-disconnecting multi-section vertical-suspended, 22:39833(P)
fuel burnup and management for large, calculations for, 22:18508
fuel burnup in, determination of, 22:39976 (ANL-7450, pp 108-11)
fuel burnup performance in power breeder, analysis of fuel cycle management for optimum, 22:53291
fuel cycle costs for converter, 22:32734 (ANL-7310, pp 137-248)
fuel cycle economics for liquid metal-cooled power-desalination breeder, analysis of optimum, 22:32910
fuel cycle economics for, comparison with light water reactor fuel cycle economics and, 22:48635 (BNWL-SA-2052)

fuel cycle for, economics of re-use, 22:42162(R) (BNWL-254)
fuel cycle in U. K. of 1000 MW(e) power, analysis of performance for, 22:46909 (NP-17599, pp 30-40)
fuel cycle studies for, 22:33086 (ANL-7310, pp 431-511)
fuel cycles for European, description of optimum, 22:35496
fuel cycles for European, development program for optimum, 22:35500
fuel cycles for high temperature, evaluation of, 22:1811
fuel cycles for, description of optimum uranium-233, 22:35497
fuel cycles for, economics of nitride, (T), 22:22659 (BNWL-606)
fuel depletion rate in, development of computer program for design measurements of, 22:9989(R) (BAW-3867-1)
fuel development and testing for, 22:720 (BMI-1809, Sect.A)
fuel economics of, effects of power requirements on, 22:3832 (KFK-566)
fuel element assemblies for, two-dimensional multiregion analysis of temperature fields in clustered rod tube bundles, (T), 22:10022
fuel element cladding for, dimensional stability of, 22:3859
fuel element cladding materials for liquid-metal-cooled breeder, review of properties of, (E), 22:35425 (BMI-1900)
fuel element cladding of breeder, radiation effects in, 22:53273(T) (EURFNR-472)
fuel element configuration for 1000 MW(e) liquid metal-cooled breeder, economic analysis of, 22:10005 (KFK-568)
fuel element cycle testing, 22:3853
fuel element design for liquid metal-cooled breeder, (E), 22:8807(R) (WCAP-3791-10)
fuel element for liquid metal-cooled breeder, description of radial-cooled conical annular, 22:35488(P)
fuel element for, comparison of methods for isotopic analysis of, 22:16120 (CEND-308)
fuel element meltdown and dispersal effects in sodium-cooled, (E/T), 22:27397 (ANL-7375, pp 135-59)
fuel element melting in, calculation of reactivity variations associated with ceramic, 22:53382
fuel element radiation damage in gas-cooled, 22:26093 (ORNL-4229, pp 125-41)
fuel element support apparatus for, design of, 22:1839(P)
fuel element thermal behavior in, model of oxide, 22:4906
fuel elements for breeder pebble-bed, description of liquid metal-cooled tube-and-shell heat exchanger, 22:35490(P)
fuel elements for breeder power, design parameters for optimum, (E/T), 22:39810
fuel elements for breeder, design criteria for type-304 and -316 austenitic stainless steel cladding for, 22:6019
fuel elements for breeder, design parameters for, 22:33092 (KFK-700(Pt. I))
fuel elements for breeder, design parameters for, 22:53273(T) (EURFNR-472)
fuel elements for breeder, economics of plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:27423
fuel elements for breeder, effect of internal geometry on radial temperature distribution in cylindrical low-density oxide, (T), 22:44825 (KFK-751)
fuel elements for breeder, fabrication and testing of mixed-carbide, 22:53463(R) (UNC-5217)
fuel elements for gas-cooled, effects of surface roughening on performance of, 22:5939
fuel elements for liquid sodium-cooled, radiation effects on, 22:18511
fuel elements for Na-1, reactivity effects of deformation of, 22:53278 (KFK-539/3)
fuel elements for sodium cooled breeder, design and safety optimizations of plutonium--uranium carbide, 22:53368
fuel elements for sodium-cooled, neutron radiation effects on, 22:7808(R) (GEAP-5522)
fuel elements for, analysis of deformation of, 22:32735 (ANL-7310, pp 249-375)
fuel elements for, behavior during accidents of sodium-bonded metallic, 22:22747
fuel elements for, conference on development of, 22:32771 (KFK-700)
fuel elements for, description of high-temperature high-pressure, 22:42240(P)
fuel elements for, description of hook-connected longitudinal fin-cooled and -stabilized, 22:42263(P)
fuel elements for, description of multiple pellet ceramic-filled metal-clad cermet-cylinder, 22:39834(P)
fuel elements for, description of optimum sintered oxide cylindrical pellet-type, 22:32838
fuel elements for, development of analytical procedures for fission-product burnup monitors for, 22:7788(R) (ANL-7382)
fuel elements for, effects of reactor accidents on coolant boiling in clusters of, 22:53373
fuel elements for, effects on Doppler coefficient of diametral variations in, 22:14227
fuel elements for, fabrication for in-pile radiation testing, 22:732 (EURFNR-318)
fuel elements for, integral transport theory calculation of resonance absorption in, 22:33012
fuel elements for, selection criteria for cladding for, 22:32772 (KFK-700(Pt. III))
fuel elements for, selection criteria for cladding for, 22:53273(T) (EURFNR-472)
fuel elements for, techniques for examination of irradiated, 22:32778 (KFK-700(Pt. XII))
fuel elements for, techniques for examination of irradiated, 22:53273(T) (EURFNR-472)
fuel elements in, computer programs for determination of effects of swelling of, 22:53277 (KFK-539/2)
fuel fabrication for European, economics of, 22:35499
fuel for, effects of stoichiometry on thermal expansion of plutonium dioxide--uranium dioxide, 22:4878
fuel for, effects on safety of use of uranium-235 in place of plutonium as, 22:53384
fuel for, preparation of plutonium phosphide--uranium carbide, 22:11037(P)
fuel melting in, computer code for calculation of ceramic, 22:30202
fuel performance in, analysis of metal-clad plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:48657 (TID-24680)
fuel pin design for, reliability margin analysis for, 22:32837
fuel processing for, 22:27863(R) (ORNL-4204)
fuel reloading of 1000 MW(e) liquid metal-cooled breeder, description of, 22:9990(R) (BAW-1312)
fuel reprocessing for, 22:27867 (ORNL-4204, pp 52-9)
fuel reprocessing for European, economics of, 22:35499
fuel requirements for breeder, evaluation of plutonium, 22:7804 (EURFNR-422)
fuel supply for world-wide power, forecast of plutonium, 22:48693
fuel system for, calculation of optimum economic thorium oxide (ThO_2)--uranium-233, plutonium oxide (PuO_2)--uranium oxide (UO_2), and enriched uranium oxide (UO_2), (T), 22:46961
fuel transmutations in, effects of neutron radiation on plutonium-239, 22:32893
fuel-cycle costs for 1000 MW(e) gas-cooled, (T), 22:27413 (GA-8032)
fuels for breeder, corrosive effects of ceramic--sodium paste-type, on stainless steel, 22:2573
fuels for gas-cooled, performance analysis of coated particle, 22:42215
fuels for sodium-cooled breeder, properties of ceramic, 22:30123 (BNWL-SA-1550)
fuels for, aerosol properties of vaporized, 22:5950
fuels for, analysis of thermal performance of plutonium nitride (PuN)--uranium nitride (UN), 22:32818
fuels for, chemistry of, 22:52257 (ANL-7425, pp 94-129)
fuels for, density control of plutonium dioxide--uranium dioxide, 22:4860
fuels for, development of, 22:16265(R) (ANL-7403)
fuels for, effects of reactor transients on heat transfer characteristics of ceramic, 22:32735 (ANL-7310, pp 249-375)
fuels for, heat capacity of uranium oxide (UO_2), 22:53260 (ANL-7425, pp 130-71)
fuels for, low-mass atom production in fast-neutron fission of plutonium and uranium, 22:46859 (ANL-7434)
fuels for, method of fabricating plutonium dioxide--uranium dioxide, 22:7032(R) (NUMEC-3524-43)
fuels for, neutron irradiation effects on, 22:6138(R) (LA-3820)
fuels for, neutron irradiation effects on, 22:27487(R) (LA-3880)
fuels for, preparation and properties of ceramic, 22:6138(R) (LA-3820)
fuels for, preparation techniques for carbide, 22:12006(R) (ANL-7399)
fuels for, reprocessing of, 22:40177 (KR-126, pp 385-93)
fuels for, review of development and testing of, 22:16330
fuels for, safety aspects of use of recycle plutonium as, 22:53386
fuels for, salt transport method for reprocessing ceramic, 22:40184 (KR-126, pp 476-93)
fuels for, steady state time effects on isotopic composition of, 22:18476
fuels from, aqueous methods for reprocessing, 22:40179 (KR-126, pp 405-14)
fuels from, pyrometallurgical processes for reprocessing, 22:40182 (KR-126, pp 452-67)
heat transfer calculations for steam cooled, 22:16200
heat-release distribution in, effect of boron absorber rods for burnup compensation on, (E/T), 22:35551
heterogeneity effects in, computer program for calculation of, (E/T), 22:35470 (RT/FI-(68)11)
integral experiments in, model for correlation of fast neutron spectra with, 22:50833
kinetics calculations for, effects of flux shape-function time derivative on spatial, 22:33159
kinetics equations for power, multigroup two-dimensional synthesis calculations for, 22:6012
kinetics equations for TAPIRO research, approximate analytical solution for, (E/T), 22:30313
kinetics equations for, solution by indirect analogy

technique to, 22:1878 (ANL-7307)
kinetics equations for, space-energy synthesis techniques for solution to, 22:32826
kinetics model for, description of modified adiabatic spatial, 22:33086 (ANL-7310, pp 431-511)
kinetics of coupled thermal-, description of model for space-dependent, 22:33086 (ANL-7310, pp 431-511)
kinetics of, semidirect least squares variational methods for initial--value problems in, (T), 22:14296 (RPI-328-100, pp 140-87)
loading machine for liquid sodium-cooled, description of pressure vessel-penetrating externally-driven vertical axis-rotating turntable with extending arm and grippers, 22:39801(P)
loading machine for liquid sodium-cooled, description of pressure vessel-penetrating horizontal pivot and transverse member vertical-access, 22:39800(P)
malfunction detection in, design and standards for systems for, 22:53370
materials for high-temperature, development of core and fuel, 22:16168
materials for, effects of high temperature sodium on, 22:8725(R) (MSAR-67-207)
meltdown accident of 1000 MW(e) ceramic-fueled, Bethe-Tait analysis of parameters for, 22:1761 (GEAP-4809)
monthly progress report on liquid metal-cooled breeder, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)
monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)
neutron cross sections and resonance parameters for, tables of, 22:46695 (EURFNR-537)
neutron cross sections for, MC^2-THERMOS generation of thermal, 22:33086 (ANL-7310, pp 431-511)
neutron cross-section measurements for, effects on Doppler coefficient of temperature-dependent, (T), 22:35709
neutron decay constants in, comparison of Rossi-alpha and pulsed-neutron techniques for measuring prompt, (E/T), 22:5732
neutron diffusion equations for sodium- and steam-cooled, 26-group constants for, (T), 22:53066 (KFK-770)
neutron Doppler coefficient in, effects of varying fuel element diameter on, 22:1878 (ANL-7307)
neutron Doppler coefficients for, calculation of resonance-averaged multigroup cross sections for, 22:6008
neutron dosimetry procedure for, assessment of irradiation effects on materials by, (E/T), 22:30298 (BNWL-SA-1488)
neutron energy spectra measurements in zero-power, use of time-of-flight and proton-recoil methods for, 22:6101
neutron fluence and flux measurements in, evaluation of foil activation techniques for, 22:48746
neutron flux and importance spectra for, methods development for calculating, (T), 22:48426 (RPI-328-133, pp 60-100)
neutron flux calculations for, analytic representation for, 22:32884
neutron flux distribution in multiregion, use of analog computer for calculation of fast, 22:46956
neutron flux distributions in, re-entrant hole perturbation of, 22:22527 (RPI-328-112, pp 62-103)
neutron flux flattening in 1000 MW(e) two-zoned, effects of fuel enrichment and composition on radial, (E/T), 22:35468 (PNR/SETR-R.-010)
neutron flux spectra in, methods development for calculating, (T), 22:39551 (RPI-328-123, pp 39-52)
neutron flux with resonances effects in, computer program for B_1 equations solutions for, 22:35663 (GA-7542(Vol.1))
neutron fluxes and currents in, ultrafine multigroup methods for calculating real and adjoint, 22:16265(R) (ANL-7403)
neutron fluxes for, effects of unresolved resonance parameters on adjoint, 22:33086 (ANL-7310, pp 431-511)
neutron generation time in, description of discrete time and discrete state Markov process for, (E/T), 22:35545
neutron importance spectrum for large oxide fueled, analytic representation of, 22:32884
neutron physics for liquid sodium-cooled, analysis of, 22:39875 (BNL-50082, pp 1-18)
neutron physics of breeder-type, research on theoretical, 22:15141 (BNL-50057, pp 79-100)
neutron slowing down in, calculations as Markov process, (T), 22:50520
neutron slowing down processes in, stochastic formulation of multiple collision method for, 22:42533
neutron spectra distribution in, analysis of energy and spatial, (T), 22:30155(R) (NAA-SR-12296)
neutron spectra for large carbide and oxide cores in, evaluation of adjoint, (T), 22:14296 (RPI-328-100, pp 140-87)
neutron spectra for, effects of cross section errors on, 22:33086 (ANL-7310, pp 431-511)
neutron spectra for, method for calculating fundamental mode, 22:14166
neutron spectra in, analytic method for calculating, 22:22527 (RPI-328-112, pp 62-103)
neutron spectra in, description of computer programs for measurement of, 22:10077 (GA-7920)
neutron spectra in, small sample surface-to-mass and homogeneity effects in fast, 22:53378
neutron spectra measurements in, computer program for analyzing proton-recoil proportional detector data for, 22:25631 (AWRE-O-9/68)
neutron spectral calculations for, effects of iterating on elastic removal cross sections on, 22:6013
neutron spectrum formulation for, derivation of approximate form for, 22:42285
neutron spectrum in, effects of elastic and inelastic scattering on, 22:42285
neutronics equations for, matrix formulation of, 22:16309 (CEA-R-3351)
noise analyses for plutonium fueled, use of integrating sampler for, 22:32961 (ANL-7310, pp 377-430)
noise analysis for, probability distribution for p-method, (E/T), 22:35705
noise analysis for, use of polarity cross correlation technique for, 22:32961 (ANL-7310, pp 377-430)
nuclear data requirements for design and operation of, 22:18101
operation of 1000 MW(e) steam-cooled, systems analysis for optimum, 22:5924 (EURFNR-405)
operation of breeder, description of, 22:18501
operation of liquid sodium-cooled, description of optimum, 22:18516
operation of plutonium fueled, effects of time on power level, (T), 22:5934 (RT/EC-(67)1)
operation of power breeder, analysis of optimum fuel cycle, 22:37504
operation of, effects of absorber rod configuration on heat fluctuations for continuous, (E), 22:10014(T) (ANL-Trans-542)
optimum operation of French 1000 MW(e) prototype, 22:18518
performance analysis methods for, survey of thermal and hydraulic, 22:42204 (RT/ING-(68)7)
performance characteristics of high temperature gas cooled, 22:16198
performance evaluation of, accuracy of integral experiments for, 22:50830
performance of 1000 MW(e) helium-cooled, effect of artificially roughened fuel elements on, (T), 22:44863
performance of 1000 MW(e) steam-cooled, effect of core design parameter variations on, (T), 22:35554
performance of fuel elements in 1000 MW(e) gas-cooled, effects of partial surface roughening on optimum heat transfer, (T), 22:50728 (GA-8268)
performance of power, effect of plutonium recycling on long-time, (T), 22:35552
performance of, effects of plutonium-239 capture-to-fission ratio on, 22:32791
physics analyses of, effects of multigroup cross section refinement on, 22:33086 (ANL-7310, pp 431-511)
physics analysis of breeder, FARED code development for static, 22:42159(R) (BAW-3867-3)
physics analysis of, evaluation of nuclear data for, 22:27487(R) (LA-3880)
physics calculations for breeder, development of computer codes for static, 22:48634(R) (BAW-3867-4)
physics calculations for large, procedure for, 22:9997 (EURFNR-416)
physics calculations for, determination of effects of neutron cross section variations on, 22:50760
physics calculations for, preparation of multigroup neutron cross sections for, 22:13900 (IA-1144)
physics characteristics of uranium 235 and plutonium fueled, comparison of, 22:1803
physics characteristics of, conference on, 22:35472 (STI/PUB-165(Vol.2))
physics characteristics of, neutron cross section evaluation for, (E/T), 22:30155(R) (NAA-SR-12296)
physics measurements for 100 MW(e) steam-cooled, use of SNEAK 3A-1 reactor for, 22:6091 (EURFNR-396)
physics measurements for breeder, computer programs for calculation of, 22:50841(R) (LA-3993)
physics measurements for design of, 22:18515
physics measurements for liquid sodium-cooled, perturbation method of error analysis for, (T), 22:35708
physics measurements for power, effects of neutron data errors on, (E/T), 22:35542
physics measurements for steam-cooled breeder, effects of core shape and steam pressure and temperature on, 22:27401 (BNWL-713)
physics measurements for, 2DB two-dimensional multigroup diffusion analysis computer program for, 22:50838 (BNWL-831)
physics measurements for, use of computer programs for, 22:6028
physics measurements of, analysis of one- and two-dimensional method for, 22:18508
physics of, development activities for July to Sept. 1967, 22:27480(R) (BNWL-634)
physics parameter calculations for RB-3 thermal-, 22:50871
physics parameter calculations for, evaluation of neutron cross section systems for, 22:53379
physics parameters for 1000 MW(e) liquid sodium-cooled, analysis of, (T), 22:18601
physics parameters for breeder, description of one-

dimensional criticality and depletion computer code for calculating, 22:18356(R) (BAW-3867-2)
physics parameters for breeder, description of optimum, 22:35505
physics parameters for design of, (T), 22:18510
physics parameters for dilute uranium-233-plutonium and thorium-uranium-233, 22:50832
physics parameters for plutonium oxide fueled breeder, 22:32734 (ANL-7310, pp 137-248)
physics parameters for steam-cooled breeder, effects of steam pressure and core configuration on optimum, 22:53265 (BNWL-SA-2063)
physics parameters for uranium-235 oxide fueled converter, 22:32734 (ANL-7310, pp 137-248)
physics parameters for, analysis of, (E/T), 22:18513
physics parameters for, asymptotic diffusion theory method for analysis of, 22:33108
physics parameters in liquid metal-cooled, economic effects of uncertainties in, 22:22740
piping flexibility in liquid metal-cooled breeder power, design and analysis of, 22:39812
piping systems with large temperature differentials for sodium cooled, problems of design of, 22:16197
power cycles of breeder, analysis of optimum initial steam conditions for, 22:46949
power monitors for, development of all-solid in-core rhodium, 22:14128 (ANL-7380, pp 140-5)
power production from, experimental program for, 22:10010(R) (NP-17126)
power supplies for, integration of auxiliary and emergency, (T), 22:35484
power transients in liquid sodium-cooled, model simulation analysis of bulk boiling, 22:39811
pressure sensors for, description of miniaturized, 22:14127 (ANL-7380, pp 63-4)
pumps for liquid sodium-cooled, development of optimum 50,000 to 100,000 gpm, 22:46962
radiation detectors for use in LMFBR, design of self-powered, 22:12570 (ANL-7380, pp 139)
radiation effects in fuel element cladding of breeder, 22:32776 (KFK-700(Pt. X))
radiation testing in, criteria for fuel element, 22:32777 (KFK-700(Pt. XI))
radiation testing in, criteria for fuel element, 22:53273(T) (EURFNR-472)
reactivity and thermal shock in super-prompt-critical pulsed, (T), 22:15141 (BNL-50057, pp 79-100)
reactivity change in, from Doppler effect due to melting of uranium oxide (UO$_2$) fuel, (T), 22:27402 (BNWL-717)
reactivity coefficients for plutonium-fueled, analysis of sodium and Doppler, 22:53387
reactivity coefficients for power, synthesis method for determining, 22:32800
reactivity coefficients for, determination of feedback, 22:32735 (ANL-7310, pp 249-375)
reactivity coefficients of steam-cooled breeder, effect of design parameters on, (T), 22:35556
reactivity effect calculations for, effects of neutron cross section refinement on, 22:33086 (ANL-7310, pp 431-511)
reactivity excursions in, use of quasi static model for analysis of, 22:53347
reactivity in, analysis using diffusion and transport equations of, 22:18569
reactivity in, fuel burnup effects on, (T), 22:20966
reactivity insertions with feedback in, calculational method for analyzing effects of large step, 22:53388
reactivity meters for, design and use of analog, 22:7820 (TRG-Report-1526)
reactivity of breeder, analysis of Doppler effect on, 22:18514
reactivity of ceramic-fuel breeder, effects of core composition and configuration on, 22:1775 (RT/FI-(67)23)
reactivity of, effects of configuration on safety analysis of, (E/T), 22:53292
reactivity of, measurement using pulsed source technique, 22:35207
reactivity of, second order perturbation method for error estimation in measurement of, 22:37558 (IA-1156)
reactivity transients in DFR-type, calculation methods for, (T), 22:46954
reactivity variations in, Doppler measurements on, 22:30155(R) (NAA-SR-12296)
reactivity variations with coolant density in steam-cooled, (T), 22:35557
reflectors for liquid metal-cooled, description of overhead, 22:10052(P)
reflectors for, calculation of effects of carbon, beryllium oxide (BeO), and aluminum oxide (Al$_2$O$_3$),, 22:47021
relationship to gas-cooled reactors, 22:1812
resonance absorption in, description of RABBLE and RABZPR codes for calculating, 22:33086 (ANL-7310, pp 431-511)
response during liquid sodium boiling accidents in, physical models and equations for calculating, 22:53383
response during sodium boiling accidents in, theoretical analysis of, 22:5971
response to neutron source, equations for determining, 22:16309 (CEA-R-3351)
safety analysis for large breeder, relationship of double containment and aerosol behavior to, 22:7805 (EURFNR-425)
safety analysis methods for, survey on, 22:42204 (RT/ING-(68)7)
safety assessment of, use of method of numerical evaluation of risk for, 22:53357
safety assessment of, use of probabilistic techniques for, 22:53358
safety characteristics of 1000 MW(e) sodium-cooled, 22:20851
safety conference on, Aix-en-Provence, France, Sept. 19 to 22, 1967, 22:53380
safety estimate of, method for, 22:30193
safety experiments in TREAT, advanced heat-transfer analysis model for, 22:16265(R) (ANL-7403)
safety of German 1000 MWe steam cooled breeder, analysis of, 22:53365
safety of, conference at Aix-en-Provence, France, Sept. 19 to 22, 1967 on, 22:25172
safety of, discussion of papers at conference on, 22:22746
safety program for sodium cooled breeder, U. S, 22:53356
safety program for, summary of UKAEA, 22:42210 (TID-24564)
safety programs for, outline of, 22:44855
safety requirements for steam, 22:53364
safety requirements for, use of probability methods for analysis of, 22:35543
safety research and development projects for, summary of, 22:53395
safety studies for liquid sodium-cooled, analysis of high temperature physical properties, coolant energy transfer, reaction with air, and fuel migration, (E), 22:37402 (ANL-7450, pp 75-89)
safety studies for, summary of, 22:20861
safety studies on French, outline of, 22:14176
shielding calculations for, including effects of anisotropic neutron elastic scattering, (T), 22:50510
shielding construction for sodium-cooled, 22:27435
shielding construction principles for, 22:27434
shielding for, preparation of improved concrete, 22:52250(P)
shielding of liquid lithium-cooled space-power, design parameters for, 22:39860 (N-68-18197)
shielding studies for, neutron attenuation and propagation, 22:18510
simulation of steam-cooled breeder, use of analog computer for, (T), 22:32770 (KFK-657)
sites of European, trip report on visits to, 22:12009 (BNWL-602)
sodium boiling accidents in, theoretical analysis of response during, 22:32735 (ANL-7310, pp 249-375)
sodium boiling in, comparison of experimental and calculated data on liquid, 22:53392
sodium boiling in, hydrodynamic simulation of liquid, 22:53373
sodium boiling in, safety analysis of liquid, 22:53392
sodium coolant boiling in, analysis of coolant expulsion and pressure transients resulting from liquid, 22:53374
sodium coolant removal from, effects on flux and asymptotic power shape of, 22:33086 (ANL-7310, pp 431-511)
sodium coolants for, analysis of thermal and hydraulic behavior of liquid, 22:53381
sodium expulsion due to boiling in, hydrodynamic calculations for, 22:1793
sodium fires in sodium cooled, fission product behavior in atmosphere surrounding, 22:53351
sodium fires in, studies on energy release and transport during, 22:53352
sodium void effects in single-zone breeder, flux synthesis method for calculating, 22:32734 (ANL-7310, pp 137-248)
sodium void reactivity calculations for, effects of zone enrichment on, 22:32734 (ANL-7310, pp 137-248)
sodium void reactivity effects in, accuracy of standard sets of multigroup constants for, (T), 22:35517
sodium voiding in converter, effects on reactivity of, 22:32734 (ANL-7310, pp 137-248)
stability of 1000 MW(e) steam-cooled power, effects of design parameters and control systems on, (T), 22:37399 (AE-321)
stability of steam-cooled breeder, effects of coolant feedback during accidents on, 22:3829 (EURFNR-406)
stability of steam-cooled, effect of cooling cycle parameters on, (T), 22:35555
stability of steam-cooled, effect of integrated cooling cycle on, (T), 22:20846
stability of steam-cooled, effects of cooling cycle design on, 22:7803 (EURFNR-421)
stability of thermionic, effects of nonlinear feedbacks on, 22:33078
stability of thermionic, use of prompt-jump approximation with two-region lumped parameter system for analysis of linear, 22:33078
stability of, safety analysis of effects of reactivity feedback on, 22:32735 (ANL-7310, pp 249-375)
stability parameters for steam-cooled breeder, measurement of, 22:5921 (EURFNR-398)
startup of sodium-cooled, effects of core coolant flow

variations on, 22:45236(T) (BNL-tr-220)
steam generator for breeder, design of 527 MW(t) sodium-heated, 22:35465 (KFK-654)
steam generator for liquid sodium-cooled, thermal shock and corrosion analysis for austenite tubes, 22:39794
steam generators for liquid sodium-cooled, effects of sodium fires caused by leaks in, 22:53355
strain gages for, testing of high-temperature electric resistance, 22:12073 (ANL-7380, pp 79-90)
temperature calculations for TREAT, analog-digital computer program for transient, 22:14122 (ANL-7374)
temperature measurements in LMFBR, development of ultrasonic systems for, 22:28209(R) (NYO-3906-2)
ultrasonic thermometry system for liquid metal-cooled, description of, 22:14139(R) (NYO-3906-1)
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460
vibrations in pulsed, effects of repeated thermal shocks on amplification of, (T), 22:53413 (EUR-4060)

REACTORS, FLUID-FUELED
see also KEMA Suspension Test Reactor
see also Los Alamos Molten Plutonium Reactor Experiments
see also Molten Salt Breeder Reactor
see also Molten Salt Reactor Experiment
see also Reactors, Molten-Salt
description of fast, 22:18524
description of heterogeneous, 22:42245(P)
development of liquid metal breeder, LMFBR, 22:10438(R) (NAA-SR-12585)
development programs for Europe power, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
dynamics equations for, derivation of, 22:12042
fuel development for breeder type fast, 22:8847(R) (NUMEC-3524-37)
fuel element cladding for LMFBR, development of vanadium-base, 22:45757(R) (WARD-3791-20)
fuel reprocessing for, 22:8187
fuel suspension flow at 250°C in, analysis of optimum thorium oxide (ThO_2)--uranium oxide (UO_2), 22:35531
kinetics equations for power, description of steady-state, (T), 22:35509
liquid sodium-cooled rotating centrifugal force-controlled plutonium, description of, 22:25070(P)
liquid-fueled liquid-cooled and -reflected, description of, 22:37521(P)
performance criteria for 500 MW 10^{17} neutron flux, description of, 22:32936
use of stainless steel in, evaluation of types 304 and 316 for, 22:8694 (MSAR-67-216)

Reactors, Fluidized-Powder
see Reactors, Fluid-Fueled

Reactors, Fused Salt-Fueled
see Reactors, Molten-Salt

Reactors, Fog-Cooled
see Reactors, Water-Cooled

REACTORS, FRANCE
see also Brittany Power Reactor (EL-4)
see also Bugey Reactors (EDF-5)
see also Cadarache Reactors
see also Chinon Reactors
see also Saint Laurent-des-eaux Reactor (EDF-4)
see also ZOE Reactor
carbon dioxide-cooled heavy water-moderated 600 MW(e), description of, 22:30241
design parameters for 250 MW(e) liquid sodium-cooled plutonium oxide (PuO_2)—uranium oxide (UO_2)-fueled Phenix, analysis of, 22:35498
development program for fast, 22:35479
development program for fast, description of, 22:35625
development program for heavy water-moderated carbon dioxide-cooled breeder, description of, 22:39832
development program of fast breeder power, description of, 22:37448 (NP-17521)
development program of heavy water-cooled and -moderated, description of, 22:30251
fuel cycles for fast, development program for optimum plutonium oxide (PuO_2)—uranium oxide (UO_2), 22:35500
fuel fabrication for fast, economics of, 22:35499
fuel reprocessing for fast, economics of, 22:35499
instrumentation for, development of, 22:14156
operation of power, power-generating cost analysis for optimum, 22:39766 (EUR-3079(Rev.))
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
pressure vessels for power, design safety recommendations for prestressed concrete, 22:44832(T) (ORNL-tr-1966-e)
safety experimental program for, data from, 22:18464
shutdowns of power, analysis of unscheduled, 22:53286
siting of power, safety considerations in urban, 22:18444
survey of, general, 22:10017
water treatment for CEA research reactors, 22:27871

REACTORS, GAS-COOLED
see also Army Reactors (ML-1)
see also AVR Reactor
see also Belgian Reactor-1
see also BEPO
see also Berkeley Reactors
see also Beryllium Oxide Reactor Experiment
see also Bohunice Power Reactor, Unit 1
see also Bradwell Reactors
see also Brittany Power Reactor (EL-4)
see also Brookhaven Medical Reactor
see also Brookhaven Reactor
see also Bugey Reactors (EDF-5)
see also Calder Hall Reactors
see also Chapelcross Reactors
see also Chinon Reactors (EDF-1)
see also Chinon Reactors (EDF-2)
see also Chinon Reactors (EDF-3)
see also Dungeness A Reactors
see also Dungeness B Reactors
see also Experimental Gas-Cooled Reactor
see also Fort St. Vrain Power Reactor, Unit 1
see also Gas-Cooled Reactor Experiment
see also Gas-Cooled Reactor Experiment-II
see also Geesthacht Power Reactor
see also High-Temperature Gas-Cooled Reactor Experiment
see also Hinkeley Point 1 Reactors
see also Hinkeley Point 2 Reactors
see also Hunterston Reactors
see also Latina Power Reactor
see also Los Alamos Turret Reactor
see also Lucens Reactor
see also Marcoule Reactors (G-2)
see also Marcoule Reactors (G-3)
see also Maritime Gas-Cooled Reactor
see also Nieder Aichbach Power Reactor
see also Oldbury Reactors
see also Peach Bottom Power Reactor, Unit 1
see also Reactors, AGR-type
see also Reactors, Magnox
see also Reactors, Pebble-Bed
see also Saclay Reactors (EL-2)
see also Saint Laurent-des-eaux Reactor (EDF-4)
see also Sizewell Reactors
see also SLEEP Reactor
see also Tokai-Mura Power Reactor
see also Trawsfynydd Reactors
see also Windscale Advanced Gas-Cooled Reactor
see also Wylfa Reactors
boiler tubing for, fabrication of finned, 22:7858
carbon transport in high temperature, reaction kinetics and corrosion rates for, 22:30145 (EUR-3900)
configuration of concrete pressure vessel-enclosed graphite-moderated internal closed-loop-cooled, description of, 22:42293(P)
configuration of integral heat exchanger and multi-channel suspended core for, 22:39839(P)
configuration of multiple-zone spherical-fueled pneumatically-controlled, description of, 22:42290(P)
configuration of pressure vessel-enclosed graphite-supported and graphite-moderated multiple vertical fuel channel, description of, 22:50776(P)
configuration of pressure vessel-enclosed heat exchangers and shielded graphite-moderated core of, use of upward coolant flow in, 22:37491(P)
configuration of prestressed concrete-enclosed and -shielded power, with integral loading device and heat exchanger, 22:39844(P)
construction of graphite-moderated power, standards for steel pressure components in, 22:30183
containment for advanced, safety evaluation of design features of, 22:18453
containment structures for power heavy water-moderated, analyses of types of, 22:18449
containment vessel fabrication for, 22:12488
containment vessels for, evaluation of safety of, 22:30195
control elements for, description of electromagnetic driven boron steel chain, 22:20868(P)
control rod design without mechanical drive for natural uranium fueled heavy water-moderated, 22:1826
control systems for, design of fluid, 22:1832
coolant blowers for helium-cooled high-temperature, description of gas bearings for, 22:42223
coolant blowers for large, trends in design of, 22:7846
coolant blowers for, description of centrifugal, 22:7860
coolant blowers for, development of oil-fed hydrodynamic shaft seals for, 22:7849
coolant development for, review of, 22:7834
coolant flow in high temperature, effects of graphite contraction on, 22:42189 (GAMD-8423)
coolant flow regulating device for, use of sonic venturi throat for downward pressure in, 22:25041(P)
coolant for, method for removal of carbon dioxide and water from, 22:25053(P)
coolant loop for, description of double high-pressure vessel ducts for, 22:16235(P)
coolant moisture content measurement in, description of optical dewpoint detector for, 22:28244
coolant moisture detection systems for, evaluation of potential, 22:24958 (GAMD-5109)
coolant properties in, thermodynamic comparison of, 22:7835
coolant purification in, description of heat exchangers and activated charcoal filters for, 22:37497(P)
coolant purifying system for, design of, 22:30175
coolant radioactivity from helium-3 (n,p) tritium reactions in, (T), 22:42217
coolant transport property variations in, effects of turbulent thermal entry on, 22:5942

coolants for fast breeder, use of helium as, 22:5938
coolants for, gas-solids suspensions development as, 22:7836
cooling system cyclone separator for fission product removal in, description of, 22:42234(P)
cooling system failure in, counterflow brake for depressurization reduction following, 22:47056(P)
cooling system flow and temperature distribution in core of, analysis of, (T), 22:32874
cooling system for closed circuit gas-turbine, description of dual-stage turbine-drive, 22:39836(P)
cooling system for concrete pressure vessel-enclosed integral, description of controlled parallel flow paths with dome-sealed external secondary, 22:37492(P)
cooling system for desalination and power, description of compressor and turbine effluent brine heaters in, 22:37524(P)
cooling system for graphite-moderated, description of nickel catalyst for methane production in carbon dioxide, 22:48663(P)
cooling system for heterogeneous water- cooled, description of dual-medium superheating, 22:37481(P)
cooling system for integral, description of core-enclosing annular-arranged multiple-tube heat exchanger of upward-core-flow, 22:53312(P)
cooling system for integral, description of vertically-stacked multiple horizontal flat tube coil heat exchangers for downward-core-flow, 22:53311(P)
cooling system for liquid-moderated, description of dual heat exchanger, 22:10040(P)
cooling system for, description of pressurized carbon dioxide turbine drive, 22:10042(P)
cooling system for, description of radio-chemical processes in, 22:35679
cooling system for, description of steam generating heat exchangers in multiple ducts for circumferential-flow, 22:39845(P)
cooling system for, flow configuration for dual-temperature dual-stream, 22:48675(P)
cooling system for, performance of turbines for two-cycle helium--steam and one-cycle helium, 22:30219
cooling system for, thermodynamic performance at 700 to 1000°C of intermediate, 22:39796
cooling system insulation in, heat transfer performance of stainless steel foil for, 22:7839
cooling system of, description of hydrogen extracting membrane system for carbon dioxide, 22:25039(P)
cooling system pressure sensor for, use of hydrogenated terphenyl for transmitting fluid for, 22:22782(P)
cooling system thermal insulation in, properties of pumice concrete for, 22:7838
cooling system thermal insulation in, thermal conductivity of granular mineral, 22:7840
cooling system turboblowers for, description of containment vessel-mounted self-cooled, 22:25057(P)
cooling system turboblowers for, description of containment vessel-mounted self-cooled, 22:25055(P)
cooling systems for high temperature, calculations of efficiency of, 22:32807
cooling systems for integral prestressed concrete pressure vessel-contained carbon dioxide power, description of, 22:53323(P)
cooling systems for, acoustic stresses induced in, (T), 22:7843
cooling systems for, characteristics of cylindrical acoustic waves in, (E/T), 22:7845
cooling systems for, coolant flow control in fuel channels of, (E), 22:7844
cooling systems for, design of blower diffusers for, 22:1838(P)
cooling systems for, detection and measurement of acoustic and structural vibration in, 22:7842
cooling systems for, development of high pressure, 22:7833
cooling systems for, primary circuit design for, 22:7837
cooling systems for, sound propagation in high pressure, (T), 22:7841
core for fast, synthesis method for uncertainty analysis of thermal design of, 22:18608
core for high temperature, coolant flow and pressure distribution measurements in simulated, 22:42189 (GAMD-8423)
core lifetime for graphite-moderated, determination for natural and enriched uranium fuels of, 22:50762
core of heavy water-moderated, effects of lattice parameters on resonance absorption in, 22:10003 (ITEF-518)
core of, effects of fixed geometry--variable power and fixed power--variable geometry on economics of, 22:16740 (WB-KE-2004)
core performance for high temperature, effects of fixed fuel temperature on, 22:32807
core physics measurements for uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2) fueled, analysis of two- and three-ring cluster, (E/T), 22:22762
core seals for, description of multiple ring with overlapping graphite blocks for, 22:25058(P)
core structure for graphite-moderated, with multi-layered shield inside core vessel, 22:25054(P)
core structure for, with non-fissile support and pressure sensing member in stacked vertical fuel channels, 22:20892(P)
corrosion of graphite moderator in, inhibitors for, 22:17158(P)
corrosion of graphite moderator in, mass balance equations for steam, (T), 22:35548
description of 1000 MW(e) fast breeder, 22:16221
description of British dual-purpose desalination and power, 22:14239
description of fast, 22:18524
description of fuel tube supported liquid-moderated, 22:12067(P)
description of graphite moderated high temperature, 22:42439(P)
description of graphite-moderated dual purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of heavy water-moderated dual purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of integral 550 MW unit, 22:3852
description of liquid-moderated concrete pressure vessel enclosed, 22:12068(P)
description of multi-stage turbine carbon dioxide, 22:27419(T) (NP-tr-1655)
description of multiple cartridge-type fuel tube for, with moderator jacket and coolant ducts, 22:16239(P)
description of multiple fuel channel on-load refuelling pressurized, with minimum cross section access tubes at pressure vessel penetration, 22:16236(P)
description of pressure vessel enclosed graphite-moderated, 22:20874(P)
description of sectioned fuel, for minimum coolant flow variation during unloading, 22:3875(P)
description with core in upper portion of a prestressed concrete pressure vessel, 22:6049(P)
description with heat shield and multi-conduits for cooling for high-pressure, 22:10036(P)
description with inert gas system for prevention of moderator combustion during depressurization leakage, 22:6052(P)
design characteristics of, 22:3836 (NP-16983)
design characteristics of high-temperature power, 22:46943
design for 1200 MWe high temperature pebble bed, conceptual, 22:39779 (JUL-519-RG)
design of 528 MW(e) high temperature power, assessment of conceptual, 22:5932(R) (NP-17118)
design of advanced, economics of, 22:1786
design of Brayton cycle maritime, description of conceptual, 22:35563
design of fast, GAZELLE-5 computer code for, 22:12024 (GAMD-6754)
design parameters for fast breeder power, description of optimum, 22:37448 (NP-17521)
design parameters for heavy water-moderated, economic aspects of physical and thermodynamic, 22:1825
design parameters for U. S. power, 22:32912
design parameters of 300 MW fast ceramic, prototype reference, 22:16189
design studies on fast, description of United States, 22:18502
development and operation of British, during 1956 to 1967, 22:10018
development for commercial use, survey of Euratom, 22:1800
development history of, 22:20850
development in Czechoslovakia of heavy water-moderated, analysis of optimum design for, 22:30231
development in U. K. of power, description of, 22:46905 (NP-17599)
development in U. S. of high temperature, 22:1812
development in Yugoslavia of, economics for, 22:24995
development of British, survey of, 22:14200
development of fast breeder, component and material requirements for, 22:35466 (KFK-689)
development of power, economic potential of, 22:18498
development of power, in United Kingdom, 22:6060
development of power, review of, 22:18494
development of power, technical and economic aspects of, 22:18500
development of U.K. advanced power, description of, 22:48678
development potential of high-temperature, 22:39820
development program for aircraft, description of feasible, 22:35581
development program for Great Britain, description to 1985 of, 22:42231
development program for HTGR, analysis of ORNL April to September 1967, 22:42200(R) (ORNL-4200)
development program for U.K. power, description of, 22:44859
development program in the United Kingdom, 22:6053
development programs for carbon dioxide-cooled heavy water-moderated breeder, description of Czechoslovakian, French, and German, 22:39832
development programs for Europe power, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
development programs for high temperature power, description of, 22:48689

development programs for U.K., U.S.A., and Canada, description of, 22:42212 (TRG-Report-1695)
development trends in power, using carbon dioxide coolant, 22:6062
economic advantages of British advanced, evaluation of, 22:42211 (TRG-Report-1693)
economic analysis of, tabulated, 22:3839 (NP-16986)
economic aspects in Argentina, 22:3840 (NP-16988)
economic aspects of European high-temperature, 22:6041
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economics of dual-purpose advanced, 22:42350 (TRG-Report-1691)
economics of high temperature, in West German power grid, (T), 22:35526
economics of operation of desalination, 22:18544 (STI/DOC-10/80)
economics of operations of, effects of cross-section uncertainties on,, 22:24973 (ORNL-TM-2157)
economics of power, in Czechoslovakia, 22:50747 (ZJE-26)
efficiency of 500 MW(e) graphite-moderated, effect of steam-cycle characteristics on, (T), 22:30144 (EUR-3892)
Emergency Core Cooling System for high temperature, description of, 22:32853
environmental contamination from natural uranium-fuel graphite-moderated, 22:16112 (CEA-R-3311)
fabrication in Japan of advanced, problems associated with, 22:42280
failure of plate-type fuel elements in, dynamic pressure limits for, (E/T), 22:42389 (N-68-16227)
fission product buildup in, effects on core lifetime of, 22:50762
fission product release in high-temperature power, FIPER-1 computer program for, 22:50729 (GA-8564)
fission product transport and deposition in, calculational techniques for convective, 22:46915 (ORNL-TM-2218)
fuel assemblies for fast, water flooding safety system for, 22:16244(P)
fuel assemblies for graphite-moderated, description of suspended central control rod for bottom-supported vertical multiple, 22:53328(P)
fuel assemblies for high-temperature, description of hexagonal-shaped sleeve-covered columnar moderator block with multiple parallel symmetrically-arranged, 22:48671(P)
fuel assemblies for, description of grid-supported thermal-insulated multiple parallel clad rod-type, 22:42273(P)
fuel assemblies for, description of multiple parallel vertical-sheathed, 22:42257(P)
fuel assemblies for, description of sleeve-insulated, 22:35515(P)
fuel assemblies for, description of uranium oxide (UO_2) multi-rod, 22:25045(P)
fuel assemblies for, description of vertical-sheathed bottom-plugged reflected tubular, 22:42260(P)
fuel assembly of, Monte Carlo method for axial power distribution in cluster, 22:22872
fuel burnup in graphite-moderated power, analysis of fuel cycle management for optimum, 22:53291
fuel channels of, design of device to control gas flow in, 22:10466(P)
fuel cladding for heavy water-moderated power, tangential elongation testing of beryllium, 22:15218
fuel cycle economics for high temperature, 22:46911(R) (ORNL-4266)
fuel cycle economics in Argentina, methods of calculation of, 22:3931 (NP-16987)
fuel cycle economics of graphite moderated natural uranium, 22:24982
fuel cycle for, analysis of optimum thorium, 22:35492
fuel cycle in U. K. of 1000 MW(e) power thermal, analysis of performance for, 22:46909 (NP-17599, pp 30-40)
fuel cycles for, description of optimum uranium-233, 22:35497
fuel element assembly of, design of spacer fins for, 22:1836(P)
fuel element behavior in high-temperature, in accidents with steam entering core, 22:27490 (ORNL-4229, pp 149-55)
fuel element cans for, design of magnesium—zirconium alloy, 22:1840(P)
fuel element cans for, heat transfer and friction coefficients at 1000°C for walls of, (E/T), 22:7856
fuel element cans for, heat transfer and pressure drop along herringbone finned, (E), 22:7853
fuel element cans for, heat transfer and pressure drop along herringbone finned, (T), 22:7851
fuel element cans for, helium convective heat transfer correlations for, (E/T), 22:7855
fuel element cans for, high performance heat transfer surface development for, (E), 22:7852
fuel element cans for, performance of roughened heat transfer surfaces of, (E/T), 22:7854
fuel element cladding for carbon dioxide-cooled, fabrication of coated iron- or nickel-base alloy, 22:42281(P)
fuel element design for high temperature, clustered elongated pin-type, 22:12156(P)
fuel element development for, 22:725 (BMI-1809, Sect.E)
fuel element fabrication costs for low-enrichment high-temperature concept Dragon Project, 22:48654 (ORNL-TM-2241)
fuel element failure detector for, description of, 22:6050(P)
fuel element failure in carbon dioxide, detection of, 22:1885
fuel element for graphite-moderated, description of annular, 22:42264(P)
fuel element performance in 1000 MW(e) fast, effects of partial surface roughening on optimum heat transfer, (T), 22:50728 (GA-8268)
fuel element radiation damage in fast, 22:26093 (ORNL-4229, pp 125-41)
fuel element shipping costs for high-temperature, to 1000-mile distances, 22:2321 (GAMD-7979)
fuel elements for advanced, hazard ratings for fission products released from irradiated, 22:51572 (RD/B/N-1143)
fuel elements for advanced, performance data for, 22:46938
fuel elements for fast, effects of surface roughening on performance of, 22:5939
fuel elements for graphite moderated, analysis of heat transfer and pressure losses from, 22:1767 (JUL-486-RB)
fuel elements for graphite-moderated, description of flow-diverting multiple interlocking-sleeve on-load refueling, 22:53327(P)
fuel elements for heavy water-moderated, fabrication of silicon oxide (SiO_2)—uranium oxide (UO_2) cylindrical rod, 22:30262
fuel elements for helium-cooled, in-pile heat transfer measurements on roughened, 22:22725
fuel elements for high temperature, fission product release from, 22:1772(R) (ORNL-TM-1986)
fuel elements for high temperature, performance during irradiation of, 22:46911(R) (ORNL-4266)
fuel elements for high temperature, results of in-pile oxidation of, 22:27416(R) (ORNL-4228)
fuel elements for high-temperature, design of, 22:14659(P)
fuel elements for, basic factors in design of, 22:6044
fuel elements for, bonding of coated particles for, 22:46911(R) (ORNL-4266)
fuel elements for, description of, 22:18619(P)
fuel elements for, description of finned tubular uranium, 22:14217(P)
fuel elements for, description of multiple-fin dual-layer Magnox-sheathed uranium, 22:42545(P)
fuel elements for, design of ceramic, 22:12508(P)
fuel elements for, design of ceramic, 22:12509(P)
fuel elements for, fabrication of components for, 22:11040(P)
fuel elements for, fabrication of thin foil clad uranium, 22:20865(P)
fuel elements for, heat transfer characteristics and temperature distributions for vitreous-ceramic, 22:46899 (IFA-TR-55)
fuel elements for, in-pile heat-transfer studies on roughened, 22:5941
fuel elements for, method of failure detection for, 22:25052(P)
fuel elements for, optimal design of longitudinally finned, 22:16320 (UJV-1840)
fuel elements for, preparation of, 22:8718(P)
fuel elements for, thermal calculations for tubular, 22:16319 (UJV-1839)
fuel flow in, vortex breakdown in, 22:244
fuel for, burnup analysis at 1250 to 1400°C of small sphere, 22:22688 (GA-7549)
fuel inserts for, disintegration method for, 22:35888
fuel loading machine for heterogeneous, description of pressure vessel enclosed rotating arm, 22:20872(P)
fuel loadings and cycle times for high temperature, effects on materials balances of, 22:32810
fuel management for advanced, calculation of optimum cycles for, (E/T), 22:22778
fuel management system for advanced, calculation of optimum equilibrium cycle for, (E/T), 22:22779
fuel particles for advanced high temperature, steam oxidation of bonded pyrolytic carbon coated, 22:42201 (ORNL-4269)
fuel particles for, design and performance criteria for pyrolytic carbon-coated ceramic, 22:24957 (GA-7698)
fuel reprocessing for high-temperature, economics of, 22:42812 (GAMD-8458)
fuel reprocessing studies for, silicon carbide coatings depositions for, 22:46911(R) (ORNL-4266)
fuel reprocessing study for 10,000-MW(t) high-temperature, 22:23092 (CONF-660524-, pp 617-45)
fuel rods for power, fabrication of central-insulated molded molten metallic, 22:44848(P)
fuel-cycle costs for 1000 MW(e) fast breeder, (T), 22:27413 (GA-8032)
fuels and fuel cycles for high temperature, analysis of, 22:32810
fuels for fast, performance analysis of coated particle, 22:42215
graphite oxidation in high-temperature, computer analysis of, 22:13062 (BNWL-473, pp 5.19-23)
heat exchangers for, arrangement of, 22:18635(P)

heat exchangers for, description of helically coiled tubes in telescoping multi-section concentric cylinder, 22:37496(P)
heat exchangers for, description of multiple self-supporting ladder-type side-to-side flow tube bank, 22:39799(P)
heat exchangers for, description of prefabricated removable, 22:20885(P)
heat exchangers for, design of shell-and-tube, 22:1908(P)
heat transfer system for direct-cycle gas-turbine, with means for emergency cooling, 22:39817(P)
heat transfer system for graphite-moderated, description of secondary superheat steam producing, 22:22783(P)
heat transfer system for, description of closed-loop pressure vessel contained, 22:25043(P)
heavy water-moderated 600 MW(e) carbon dioxide, description of French, 22:30241
helium circulator for, design of shrouded step thrust bearings for, 22:8279
in-pile test loop for experimental, equations governing steady state and transients for fuel elements in, 22:16295 (UJV-1937)
kinetics-heat transfer code for, description and listing of BLOOST-6 combined, 22:22689 (GA-8416)
legal aspects in Argentina, 22:3840 (NP-16988)
loading device for, description of door-sealed lock-chamber with remote control, 22:14218(P)
loading facilities for, with secured fuel element access tubes penetrating concrete pressure vessel, 22:20893(P)
loading machine for, description of, 22:18628(P)
loading machine for, description of enclosed twin-arm, 22:18640(P)
loading machine for, description of gas-cushion bearing supported radial arm, 22:10041(P)
loading machine for, description of lock-chamber tunnel, 22:10035(P)
loading machine for, design of movable-arm, 22:12071(P)
loading machine for, design of overhead beam, 22:12070(P)
loading machine for, located in shielded gas-filled chamber above core, 22:10112(P)
loading machine for, testing of on-power, 22:46975
loading machine for, with magazine for rapid fuel element transfer, 22:10114(P)
loading machine for, with periscope for monitoring refueling, 22:10113(P)
loading machines for Yugoslav, fabrication of, 22:10087
materials for high-temperature, development of core and fuel, 22:16168
moderator corrosion by carbon dioxide in, effects of silicon hydrides (SiH$_4$ and Si$_2$H$_6$) and ethyl silicate (Si(OC$_2$H$_5$)$_4$) on graphite, 22:30400(P)
moderator corrosion in high temperature, mechanisms and reaction kinetics of graphite, 22:30175
moderator damage problems in, graphite, 22:6058
moderators for, radiation effects on graphite, 22:52298
neutron cross sections for high-temperature graphite-moderated, effects of uncertainties in, 22:5995
neutron flux flattening in power, use of, 22:50765
neutron flux flattening in, analysis of problems and effects of, 22:50765
neutron flux-shaped spatial modes in graphite-moderated Calder Hall-type, stability analysis of, (T), 22:35546
neutron multiplication factors for natural uranium, determination of, 22:50762
neutron resonance absorption in heavy water-moderated, effects of lattice pitch on, (T), 22:44806(T) (ANL-Trans-652)
operation and performance of European, improvements in, 22:20831
operation experience of European high-temperature, 22:6041
operation of power, review of, 22:18494
performance characteristics of high temperature fast, 22:16198
performance of 1000 MW(e) helium-cooled fast, effect of artificially roughened fuel elements on, (T), 22:44863
performance of U.K. power, 22:48678
physics measurements for conceptual heavy water-moderated power, analysis of optimum, 22:53330
plutonium buildup in graphite-moderated, effects on core lifetime of, 22:50762
power conversion systems for helium, temperature-entropy diagrams for, 22:46940
power generation in, by combining thermionic or thermoelectric process with magnetogasdynamic process, 22:39843(P)
pressure vessel for Czechoslovakia carbon dioxide-cooled heavy water-moderated, description of hydrostatic testing of cylindrical mild steel, 22:42230
pressure vessel for, description of coolant tube-lined prestressed concrete, 22:3877(P)
pressure vessel for, design of metal-lined concrete, 22:12511(P)
pressure vessel prestressing for, use of steel rings for concrete, 22:44829(T) (ORNL-tr-1966-b)
pressure vessels for France graphite-moderated, design safety recommendations for prestressed concrete, 22:44832(T) (ORNL-tr-1966-e)
pressure vessels for graphite-moderated, description of stainless steel pad--foil sandwich thermal insulation for prestressed concrete, 22:44830(T) (ORNL-tr-1966-c)
pressure vessels for high pressure, design of prestressed concrete, 22:12471 (AAEC/TM-390)
pressure vessels for, description of prestressed concrete, 22:18625(P)
pressure vessels for, designs of prestressed concrete, 22:1790
pressure vessels for, evaluation of safety of, 22:30195
pressure vessels for, inspection of materials for Japanese, 22:30805
reactor vessel for, design criteria and quality control for prestressed concrete, 22:22855 (GA-8511)
reactor vessels for, summary of model studies for prestressed concrete, 22:46911(R) (ORNL-4266)
refueling of, evaluation of on-line, 22:16146 (GA-8075)
relationship to fast breeder reactors, 22:1812
safety of advanced, analysis for urban siting of, 22:18443
safety of high temperature, analysis of conditions affecting, 22:12056
safety program for, summary of UKAEA, 22:42210 (TID-24564)
safety programs for, outline of, 22:44855
safety research and development projects for, summary of, 22:53395
safety studies for high-temperature, description of, 22:25098(R) (ORNL-TM-2164)
safety studies for, summary of, 22:20861
safety studies on French, outline of, 22:14176
shutdown safety system for, description of electromagnet-retained multiple boron steel spheres in, 22:53329(P)
standpipe closure for, description of sealing arrangement in, 22:48760(P)
steam systems for, method of condensate treatment in, 22:24983
temperature coefficient of reactivity for, description of methods for measuring, 22:50753
thermal characteristics of heavy water-moderated carbon dioxide, 22:3831 (JAERI-1145)
turbine for closed-cycle, description of optimum helium-drive, 22:46941
turbines for high-temperature, performance of closed-cycle gas, 22:39821
turbines for power, development of, 22:18488
turbines for, component sizes of argon and helium closed-cycle, 22:7850
turbo-compressor labyrinth gland and shaft bearing for power, description of, 22:42278(P)
uranium oxide (UO$_2$)-fueled direct Brayton cycle maritime, description of, 22:27451
use in MHD energy conversion, (E), 22:7204(P)
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460

REACTORS, GAS-FUELED
core of cavity, heat transfer in, 22:32940
core of, radiant heat transfer in, 22:6072
criticality calculations for cylindrical, reflected, finite, use of two-group diffusion theory for, (T), 22:6065
criticality measurements for light bulb and open-cycle rocket, analysis of uranium-233, 22:35571 (N-68-10931)
design of cavity-core rocket, 22:12078
fuel containment and vortex flow testing of open-cycle and light-bulb types of cavity-core rocket, analysis of optimum, 22:44877
fuel containment in rocket, description of magnetic field, 22:32948
heat transfer for particle-seeded rocket, analysis of radiant, 22:35570 (N-68-10561)
kinetics equations for design of, (T), 22:6032
neutron flux distribution in cylindrical, reflected, finite, use of two-group diffusion theory for, (T), 22:6065
operation dynamics of, description of oscillating and pulse, (T), 22:6032
performance studies on vortex-stabilized light bulb and open cycle cavity-core rocket, analysis of, 22:37515 (N-68-22038)
power production from, experimental program for, 22:10010(R) (NP-17126)
recirculation zone in cylindrical gas-core cavity, simulation of flow patterns in, (E), 22:32952
stability of cavity-core rocket, analysis of acoustic, (T), 22:32949
thermodynamic and optical properties of uranium plasma fuel for, (T), 22:18541 (GA-8244)

REACTORS, GERMANY
see also AVR Reactor
see also Lingen Power Reactor
see also MZFR (Siemens Reactor)
see also Nieder Aichbach Power Reactor
see also NWK Reactor
see also Obrigheim Power Reactor
see also Otto Hahn Reactor
see also Stade Power Reactor
see also VAK Reactor
see also Wuergassen Power Reactor
control of, review of instrumentation used in, 22:53485
description of AGR-type, 22:53338
description of high-temperature, 22:27426

description of light and heavy-water pressurized, 22:53339
design of 300 MW(e) fast sodium cooled, conceptual, 22:16187
design parameters for 300 MW(e) liquid sodium-cooled and steam-cooled plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled, analysis of, 22:35498
development for power production, 22:8536
development program for fast breeder power, description of, 22:48670
development program for heavy water-moderated carbon dioxide-cooled breeder, description of, 22:39832
development program for liquid sodium- and steam-cooled fast breeder, description of, 22:35539
development program for liquid sodium- and steam-cooled fast breeder, description of, 22:37461
development program for power, 22:46933
development program of fast breeder power, description of, 22:37448 (NP-17521)
development programs for, description of, 22:24981
developmental program for fast steam-cooled breeder, 22:16201
economics for dual-purpose multiflash desalination, analysis of optimum, 22:44879 (EUR-4034)
economics of thermal water-moderated power, 22:48709
fuel cycles for fast, development program for optimum plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:35500
fuel fabrication for fast, economics of, 22:35499
fuel processing requirements for, estimation to 2000 AD, 22:35985
fuel reprocessing for fast, economics of, 22:35499
fuels for power, economics of, 22:37502
licensing of power, discussion of policy reforms for, 22:37505
licensing procedures for power, proposed modifications to, 22:22724
operation of power, power-generating cost analysis for optimum, 22:39766 (EUR-3079(Rev.))
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
power production by, politico-economic effects of, 22:30154 (KFK-675)
power production from, comparison with petroleum-fired plants of economy of, 22:30169
siting of, environmental effects on, 22:18466
testing of, legal requirements and standards for, 22:48704

REACTORS, GRAPHITE-MODERATED
  see also AVR Reactor
  see also Belgian Reactor-1
  see also Beloyarsk Power Reactor, Unit 1
  see also Beloyarsk Power Reactor, Unit 2
  see also BEPO
  see also Berkeley Reactors
  see also Bradwell Reactors
  see also Brookhaven Reactor
  see also Bugey Reactors (EDF-5)
  see also Cadarache Reactors (Cesar)
  see also Calder Hall Reactors
  see also Chapelcross Reactors
  see also Chinon Reactors (EDF-1)
  see also Chinon Reactors (EDF-2)
  see also Chinon Reactors (EDF-3)
  see also Dungeness A Reactors
  see also Dungeness B Reactors
  see also Experimental Gas-Cooled Reactor
  see also Fort St. Vrain Power Reactor, Unit 1
  see also Hallam Power Reactor
  see also Hanford Dual-Purpose Reactor
  see also Hanford Production Reactors
  see also Hanford Production Reactors (N)
  see also High-Temperature Gas-Cooled Reactor Experiment
  see also Hinkeley Point 1 Reactors
  see also Hinkeley Point 2 Reactors
  see also Hunterston Reactors
  see also Latina Power Reactor
  see also Los Alamos Turret Reactor
  see also Marcoule Reactors (G-2)
  see also Marcoule Reactors (G-3)
  see also Oldbury Reactors
  see also Peach Bottom Power Reactor, Unit 1
  see also Physical Constants Testing Reactor
  see also Reactors, AGR-type
  see also Reactors, Magnox
  see also Saint Laurent-des-eaux Reactor (EDF-4)
  see also Sizewell Reactors
  see also Sodium Reactor Experiment
  see also Tokai-Mura Power Reactor
  see also Trawsfynydd Reactors
  see also Windscale Advanced Gas-Cooled Reactor
  see also Wylfa Reactors
configuration of concrete pressure vessel-enclosed internal closed-loop gas-cooled, description of, 22:42293(P)
configuration of pressure vessel-enclosed graphite-supported gas-cooled multiple vertical fuel channel, description of, 22:50776(P)
configuration of pressure vessel-enclosed heat exchangers and shielded gas-cooled core of, use of upward coolant flow in, 22:37491(P)
construction of gas-cooled power, standards for steel pressure components in, 22:30183
containment vessels for, evaluation of safety of, 22:30195
cooling system for gas-cooled, description of nickel catalyst for methane production in carbon dioxide, 22:48663(P)
core lifetime for graphite-moderated, determination for natural and enriched uranium fuels of, 22:50762
core structure for gas-cooled, with multi-layered shield inside core vessel, 22:25054(P)
corrosion of moderator in gas-cooled, inhibitors for, 22:17158(P)
description of gas-cooled dual purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of high temperature gas cooled, 22:42439(P)
description of pressure vessel enclosed gas-cooled, 22:20874(P)
design of graphite, structural components for, 22:23874(P)
development of power, economic potential of, 22:18498
development of power, review of, 22:18494
effects of empty channels on streaming in, pulsed neutron analysis of, (E/T), 22:25148
efficiency of 500 MW(e) gas-cooled, effect of steam-cycle characteristics on, (T), 22:30144 (EUR-3892)
fission distribution in high power density, effects of graphite crystalline binding on, 22:6071
fission product buildup in, effects on core lifetime of, 22:50762
fuel assemblies for gas-cooled, description of suspended central control rod for bottom-supported vertical multiple, 22:53328(P)
fuel assemblies for, description of multiple parallel rod-type, 22:42539(P)
fuel burnup in gas-cooled power, analysis of fuel cycle management for optimum, 22:53291
fuel burnup measurements for, analysis of, (E/T), 22:22772
fuel cycle economics of gas-cooled natural uranium, 22:24982
fuel element deflection in, effect of lateral restraint on creep-induced, 22:220
fuel element for gas-cooled, description of annular, 22:42264(P)
fuel elements for gas-cooled, analysis of heat transfer and pressure losses from, 22:1767 (JUL-486-RB)
fuel elements for gas-cooled, description of flow-diverting multiple interlocking-sleeve on-load refueling, 22:53327(P)
fuel elements for, description of, 22:18619(P)
heat transfer system for carbon dioxide-cooled, description of secondary superheat steam producing, 22:22783(P)
loading facilities for, with secured fuel element access tubes penetrating concrete pressure vessel, 22:20893(P)
loading machines for Yugoslav, fabrication of, 22:10087
moderator bricks for, description of juxtapose column-arranged multiple symmetric projection--recess-interconnected, 22:50773(P)
moderator corrosion by carbon dioxide in, effects of silicon hydrides (SiH_4 and Si_2H_6) and ethyl silicate ($Si(OC_2H_5)_4$) on, 22:30400(P)
moderator damage problems in gas-cooled, 22:6058
moderator rods for, with minimum transverse thermal expansion in reactor cold zone, 22:3948(P)
moderator thermal stability in, distribution of graphite with varying coefficients of expansion for, 22:39942(P)
moderators for, description of molding process for 4.5×10^{-6} per °C thermal expansion coefficient, 22:25177(P)
neutron cross sections for high-temperature gas-cooled, effects of uncertainties in, 22:5995
neutron flux flattening in, analysis of problems and effects of, 22:50765
neutron flux-shaped spatial modes in gas-cooled Calder Hall-type, stability analysis of, (T), 22:35546
neutron multiplication factors for natural uranium, determination of, 22:50762
operation of power, review of, 22:18494
performance as source for neutrons used in radiography, 22:4373
plutonium buildup in gas-cooled, effects on core lifetime of, 22:50762
pressure vessel design for, effects of gas coolant channels on, 22:1837(P)
pressure vessels for France gas-cooled, design safety recommendations for prestressed concrete, 22:44832(T) (ORNL-tr-1966-e)
pressure vessels for gas-cooled, description of stainless steel pad--foil sandwich thermal insulation for prestressed concrete, 22:44830(T) (ORNL-tr-1966-c)
pressure vessels for, evaluation of safety of, 22:30195
safety studies on French, outline of, 22:14176
use for desalination, applicability of, 22:39872
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460

REACTORS, GREAT BRITAIN
  see also BEPO
  see also Calder Hall Reactors
  see also DIDO Reactors

see also Dounreay Fast Reactor
see also Dungeness A Reactors
see also Dungeness B Reactors
see also High-Temperature Gas-Cooled Reactor Experiment
see also Reactors, AGR-type
see also Reactors, Magnox
see also Windscale Advanced Gas-Cooled Reactor
see also ZEBRA
construction of, national program for, 22:6042
containment systems for, description of, 22:18458
design parameters for 250 MW(e) liquid sodium-cooled plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled PFR, analysis of, 22:35498
development of advanced gas-cooled power, description of, 22:48678
development of gas-cooled power, 22:6060
development of gas-cooled power, description of, 22:46905 (NP-17599)
development of power, review of program for, 22:16213
development of power, review of program for, 22:6053
development of, Parliamentary committee report on, 22:35549
development program for fast liquid metal-cooled, description of, 22:46950
development program for fast, description of, 22:35540
development program for power, description of, 22:44859
development program of fast breeder power, description of, 22:37448 (NP-17521)
development program of power, analysis of economics for, 22:42149 (AECL-3067, pp 1-19)
development programs for gas-cooled and water-cooled, description of, 22:42212 (TRG-Report-1695)
development programs for power, description to 1985 of, 22:42231
development programs for power, effects of engineering on, 22:53258 (AERE-PGEC/L-194)
development status of, 22:6043
export of, economic factors affecting, 22:14153
filters for power, methods for testing, 22:18461
fuel cycles for fast, development program for optimum plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:35500
fuel element failure testing at 400°C for pulsed, 22:40331 (NP-17544)
fuel fabrication for fast, economics of, 22:35499
fuel reprocessing for fast, economics of, 22:35499
fuel services for, description of, 22:47045 (NP-17599, pp 41-4)
operation of power, analysis of economics for, 22:44843
performance of gas-cooled power, 22:48678
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
pressure vessels for, stress analysis of prestressed concrete, 22:40335
pressure vessels for, stress analysis of prestressed concrete, 22:40336
radiation protection in power, analysis of standards and procedures for, 22:53313
siting of, numerical evaluation of risk in, 22:18433
siting policy for, results of application of practical, 22:18434
turbine design for power, review of, 22:18487

REACTORS, HEAVY WATER-MODERATED
see also Ames Research Reactor
see also Argonne Research Reactor
see also Bohunice Power Reactor, Unit 1
see also Brittany Power Reactor (EL-4)
see also Brookhaven Beam Research Reactor
see also CANDU Reactor
see also Carolinas-Virginia Tube Reactor
see also DIDO Reactors
see also Gentilly Power Reactor
see also Halden Boiling Reactor
see also Heavy Water Organic-Cooled Reactor
see also Homogeneous Reactor Test
see also JEEP Reactor
see also Karachi Power Reactor
see also Lucens Reactor
see also MIT Research Reactor
see also MZFR (Siemens Reactor)
see also NBS Research Reactor
see also Nieder Aichbach Power Reactor
see also NPD Reactor
see also NRU Reactor
see also NRX Reactor
see also ORGEL Reactor
see also Pickering Power Reactor, Unit 1
see also Pickering Power Reactor, Unit 2
see also Plutonium Recycle Test Reactor
see also RAPP Power Reactor
see also Reactors, CANDU-type
see also Saclay Reactors (Aquilon)
see also Saclay Reactors (EL-2)
see also Saclay Reactors (EL-3)
see also Savannah River Components Test Reactor
see also Savannah River Power Reactor Experiment
see also Savannah River Production Reactors
see also Savannah River Reactor Mockup
see also SLEEP Reactor
see also Spanish Reactors (DON)
see also Steam-Generating Heavy-Water-Moderated Reactor
see also Swedish Reactors (R-0)
see also Swedish Reactors (R-3)
see also Swedish Reactors (R-4)
see also Vulcain Maritime Reactor
see also Whiteshell Reactor No. 1
see also ZOE Reactor
blowdown analysis for, use of dimensional analysis technique for, 22:39808
boiler dynamics of pressure-tube, (T), 22:6048
boiling water-cooled plutonium self-sustaining, description of Japanese, 22:30238
boiling, description of, 22:30266
carbon dioxide-cooled 600 MW(e), description of French, 22:30241
cell parameters for, description of mockup for measuring, 22:50818
characteristics of thorium-fueled ORGEL-type, 22:24937 (CONF-660524-, pp 119-28)
containment structures for power gas-cooled, analyses of types of, 22:18449
control method for, description of neutron spectral shift, 22:7906(P)
control of, effects of positive power coefficients on, 22:14174
control rod design without mechanical drive for natural uranium fueled gas-cooled, 22:1826
control rod drives for, description of pneumatic, 22:37470(P)
control system dynamics for TR-0, analysis of optimum hydraulic, (T), 22:44838 (UJV-1944)
control system for, use of heavy water variable-volume concentric cylinders for, 22:18534(P)
coolant economics in Canada of, analysis of heavy water, 22:30250
cooling system for emergency shutdown of water-cooled boiling, description of perforated central-tube lateral-flow water, 22:42279(P)
cooling system for heavy water-cooled boiling, description of pressure control by steam-cooled moderator tank in, 22:39804(P)
cooling system of closed-loop heavy water-cooled, description of, 22:37488(P)
cooling system of, description of ion exchanger for purification of, 22:20827 (ZFK-RN-31, pp 98-109)
core configuration of water-cooled superheating power, description of improved, 22:44837 (TRG-Report-1692)
core materials of, economic evaluation of, 22:35528
core of gas-cooled, effects of lattice parameters on resonance absorption in, 22:10003 (ITEF-518)
core parameters for boiling, three zonal calculation method for thermal and hydraulic, 22:10015
core parameters for natural uranium fueled, analysis of, (E), 22:22765
core physics measurements for superheating calculation of model, (E/T), 22:22840
costs for, evaluation of investment, 22:35528
description of dual- and single-purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of graphite insulated pressure tube type, 22:20877(P)
design characteristics of, 22:3836 (NP-16983)
design criteria for heavy water-cooled vertical pressure-tube, description of, 22:30235
design of organic cooled, with coolant collector compartment below the core, 22:1822(P)
design of water-cooled variable temperature moderator, 22:37485(P)
design of, review of, 22:14163
design parameters for boiling Yugoslav power, 22:25019
design parameters for gas-cooled, economic aspects of physical and thermodynamic, 22:1825
design parameters for plutonium-fueled boiling light-water-cooled, 22:22702 (JAERI-1151)
development in Brazil of thorium-converter, engineering and economics of, 22:30249
development in Czechoslovakia of gas-cooled, analysis of optimum design for, 22:30231
development in Yugoslavia of, economics for, 22:24995
development of boiling, computer programs for optimum designs in, 22:30258
development of French, 22:1805
development of German, 22:1806
development of heavy water-cooled thorium-converter, fuel cycle economics for, (E/T), 22:30248
development of heavy water-cooled uranium oxide (UO_2)-fueled 600 MW(e) prestressed concrete-contained, description of, 22:30234
development of power, economic potential of, 22:18498
development of power, economics of international, 22:25038
development of power, USAEC--AECL program for, 22:20808(R) (DPST-68-83-2)
development of steam-generating power, design parameters for economic, 22:35495
development of Swedish boiling, 22:1807
development of Western Europe, review of, 22:18496
development program for 1000 MW(e) organic-cooled, description of, 22:50741 (WASH-1083)
development program for India, description of, 22:30242
development program for South African liquid sodium-cooled natural uranium-fueled 1000 MW(e), description of, 22:27421

development program for U. S. 1000 MW(e) power, effects of fuel supply on optimum economic, 22:48703
development program for Yugoslavia power, analysis of optimum economic, 22:48667
development program in France of, description of, 22:30251
development program in Japan of boiling water-cooled 200 MW(e) thermal, description of, 22:30243
development program in U. S. of organic-cooled 1000 MW(e), 22:30244
development program in US of water-cooled, description of, 22:30245
development programs for carbon dioxide-cooled breeder, description of Czechoslovakian, French, and German, 22:39832
development programs for Europe power, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
economic analysis of, tabulated, 22:3839 (NP-16986)
economic aspects in Argentina, 22:3840 (NP-16988)
economic evaluations for reference 1000 MW(e) indirect cycle, capital and unit energy, 22:39736 (BNWL-802)
economics for, review of, 22:14163
economics of, 22:3811 (AECL-2946)
economics of breeder, 22:18482
economics of dual-purpose steam-generating and power, 22:42350 (TRG-Report-1691)
economics of power, in Czechoslovakia, 22:50747 (ZJE-26)
electricity production from, economics of, 22:48649 (NEB-SS-21)
fabrication of uniform parts for construction of, method for, 22:18472
feasibility study for Brazilian thorium, 22:3818 (DER-7(Rev.))
fuel assemblies for heterogeneous heavy water-cooled, description of multiple moderator-spaced, 22:42274(P)
fuel assemblies for, description of jacket-enclosed thermal-insulated multiple rod-type, 22:42253(P)
fuel assemblies for, performance analysis for optimum configuration of uranium oxide (UO_2), 22:30264
fuel assemblies in Canadian, analysis of performance of Zircaloy-2 clad uranium oxide (UO_2), 22:30263
fuel burnup in, effects of fuels and physics parameters on calculation of, (T), 22:44866
fuel burnup measurements for, analysis of, (E/T), 22:22772
fuel burnup performance of power, analysis of cycle management for optimum, 22:53291
fuel channels for heavy water-cooled, description of shielded tubular top-loading, 22:37608(P)
fuel cladding for gas-cooled power, testing beryllium, 22:15218
fuel cycle economics for, 22:3812 (AECL-2947)
fuel cycle economics in Argentina, methods of calculation of, 22:3931 (NP-16987)
fuel cycle for, analysis of optimum thorium, 22:35492
fuel cycle for, economics of re-use, 22:42162(R) (BNWL-254)
fuel cycle management for 1000 MW(e) Pickering-type, computer program analysis of optimum economic, 22:53264 (BNWL-833)
fuel cycle performance for 1000 MW(e), analysis of optimum economic, 22:30255
fuel cycle performance for boiling and pressurized, analysis of optimum, 22:30260
fuel cycle performance for water-cooled 500 MW, analysis of optimum economic, 22:30261
fuel cycle performance for, analysis of long-term optimum economic, 22:30254
fuel cycle performance for, analysis of optimum, 22:30252
fuel cycle performance in U. S., analysis of optimum economic, 22:30253
fuel cycle performance of organic-cooled 1000 MW(e), analysis of economic thorium oxide (ThO_2), (E/T), 22:30247
fuel cycle schedules to 1995 of, analysis of optimum, 22:35535
fuel cycles for power, effect of neptunium-237 and uranium-236 on value of feed uranium in, (T), 22:46903 (MIT-2073-7)
fuel cycles for, description of optimum uranium-233, 22:35497
fuel cycles in, economics of thorium, 22:37506
fuel element assemblies for SGHWR-type, design of, 22:14632(P)
fuel element assembly for, description of organic-cooled finned multi-rod, 22:20866(P)
fuel elements for boiling and pressurized, fabrication of uranium dioxide by vibratory compaction, 22:28891
fuel elements for gas-cooled, fabrication of silicon oxide (SiO_2)--uranium oxide (UO_2) cylindrical rod, 22:30262
fuel elements for use with pressure tubes in, design of, 22:1899(P)
fuel elements for, fabrication methods for, 22:12486
fuel elements for, high burnup to 10,000 Mwd/t of natural and enriched uranium, 22:1830
fuel elements for, optimal design of longitudinally finned, 22:16320 (UJV-1840)
fuel elements for, thermal calculations for tubular, 22:16319 (UJV-1839)
fuel for, economics and performance of metallic uranium, 22:8754
fuel management for steam-generating, analysis of optimum schemes of, 22:30259
fuel production in, economic aspects of plutonium, 22:5914 (AECL-2944)
fuel recycle cost studies for thorium-fueled HWOCR's, 22:23854 (CONF-660524-, pp 157-84)
fueling of, comparison with light water moderated reactors, 22:12004 (AECL-2790)
kinetics equations for enriched uranium fueled, analysis of Keepin and Cox, 22:24965 (IS-1808)
kinetics measurements of optimum performance, calculational models for, (E/T), 22:30257
lattice physics calculations in, PROCELLA code for, 22:37555 (EUR-3921)
lattice physics measurements in natural uranium-fueled, control and fuel requirements of critical assembly for, (T), 22:39873 (AAEC/TM-433)
legal aspects in Argentina, 22:3840 (NP-16988)
loading machines for Yugoslav, fabrication of, 22:10087
loading systems for 17, description and operation of, 22:46921 (TID-24679(Vol.2))
loading systems for 17, operation and performance of, 22:46920 (TID-24679(Vol.1))
moderator monitoring in, determination of radioactive impurities by, 22:25146
moderator purification for, description of aluminum removal using anionic and cationic ion exchangers for, 22:48673(P)
multiplication factor measurements for multi-fueled, use of Methuselah code for, 22:37477
neutron absorption in diphenyl-cooled natural-uranium, resonance, (E), 22:5818 (RT/FI-(67)13)
neutron absorption resonance escape probabilities for, method for calculating, 22:1578
neutron buckling measurements in superlattice in ZED-2, 22:33047
neutron density ratios in, comparison of calculated and experimental thermal, 22:10086
neutron resonance absorption in gas-cooled, effects of lattice pitch on, (T), 22:44806(T) (ANL-Trans-652)
operation and performance of, review of, 22:14163
operation economics for pressure-tube, 22:30235
operation economics of 200 MW(e) dual-purpose desalination boiling, 22:12082
performance of, design analysis for economic, 22:30158 (STI/PUB-163)
performance of, systems design for economic, 22:32903
physics calculations for, use of HWOCR-SAFE code for, 22:32886
physics measurements for boiling plutonium-enriched natural uranium-fueled superheating, 22:30239
physics measurements for conceptual gas-cooled power, analysis of optimum, 22:53330
physics measurements for dual-purpose natural uranium oxide (UO_2)-fueled, description of, 22:30240
physics measurements for uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2) fueled, 22:18471
physics measurements for, analysis of computer programs for calculating, 22:22766
physics measurements in, computer programs for, 22:24963 (IBK-241)
physics measurements in, use of progressive substitutions in perturbation method of, (T), 22:6171
physics measurements on core of, description of two group diffusion theory for, (T), 22:35659 (AEEW-R-594)
plutonium fuel for thermal, feasibility studies for use of, 22:39776 (JAERI-1154)
poisoning in, separation of boron and lithium, 22:1835(P)
power output of, analysis of optimum reactor response for varying, 22:35536
power perturbations in, use of computer for optimization of control rod-induced, 22:42183 (CEA-R-3499)
power production using, economics of, 22:1804
power production using, economics of, 22:14164
pressure tubes for organic cooled, optimum operating temperature for zirconium alloy, (E/T), 22:18483
pressure vessel for Czechoslovakia carbon dioxide-cooled, description of hydrostatic testing of cylindrical mild steel, 22:42230
pressure vessels for, designs of prestressed concrete, 22:1790
pumps for, description of hermetically sealed, 22:22784
reactivity control in, by bubbling helium through moderator, 22:39831(P)
reactivity control in, description of double burnable poison solution for, 22:25044(P)
reactivity measurements for, accuracy of zero-reactivity method for, (E/T), 22:30338
reactivity of, effects of positive coolant coefficient of, 22:14174
safety analysis of heavy water-cooled, description of probability methods for, 22:30267
safety studies on French, outline of, 22:14176
shutdown safety system for boiling, description of pipe-connected moderator tank for steam condensation, 22:30276(P)
stability of boiling water-cooled, analog simulation of hydraulic and nuclear, 22:20777 (BNWL-574)

target cans for, description of water-filled, 22:35616(P)
thermal characteristics of carbon dioxide-cooled, 22:3831 (JAERI-1145)
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460
Reactors, Helium-Cooled
see Reactors, Gas-Cooled
REACTORS, HETEROGENEOUS
configuration of variable opposing flow coolant channels for fuel arrangement in spherical pebble-bed, description of, 22:48700(P)
control elements for, description of multiple suspended rectangular plates in cross-shaped cross-section for, 22:48672(P)
control rods for concentric multi-region, description of vertical axial operation of T-shaped cross section, 22:37582(P)
cooling system for gas- and water-cooled, description of dual-medium superheating, 22:37481(P)
cooling system for, description of closed loop heat exchanger in, 22:20894(P)
criticality condition for reflected lattices, two group three-dimensional theory for, 22:10083 (RISO-M-645)
description of boiling mercury-cooled, 22:16151 (INR-842/C)
description of concentric spherical, using small spherical fuel, 22:20883(P)
description of fast, 22:18533(P)
description of liquid fueled, 22:42245(P)
description of liquid sphere fueled graphite moderated shell, 22:20882(P)
description of pressure vessel type, with supercritical water moderator and coolant, 22:48668(P)
Doppler coefficient determinations for, 22:32790
dynamics analysis of, derivation of equations for, 22:27500
excursion calculations for, eigenfunction expansion method for, 22:5999
fuel assemblies for heavy water-cooled and -moderated, description of multiple moderator-spaced, 22:42274(P)
fuel assemblies for, description of key-coupled longitudinal radially-directed straight fins for multiple parallel cluster-type, 22:42235(P)
fuel element spacer fins design for, 22:1836(P)
fuel elements for, description of, 22:18619(P)
fuel loading machine for gas-cooled, description of pressure vessel enclosed rotating arm, 22:20872(P)
fuel rod characterization parameter determination in, (E/T), 22:32976(R) (MIT-2344-12)
fuels for, molten salt-technique for reprocessing, 22:40183 (KR-126, pp 468-75)
heterogeneity effects in fast, computer program for calculation of, (E/T), 22:35470 (RT/FI-(68)11)
kinetics calculations for uranium--water, analysis of two-group diffusion, (T), 22:42493
kinetics calculations for uranium--water, analysis of two-group diffusion, (T), 22:42494
kinetics equations for, calculational techniques for solution to, 22:50861
kinetics of power, stochastic technique for analysis of, (T), 22:37459
lattice characteristics analysis in, unit cell simulation for, (T), 22:32976(R) (MIT-2344-12)
lattice parameter analysis in, determination of fuel rod interaction kernels for, (E/T), 22:32976(R) (MIT-2344-12)
moderator structure for, description of key-aligned solid, 22:3873(P)
moderator structure for, description of solid fuel-containing, 22:3874(P)
neutron density distributions in, method for calculating, 22:20413(T) (JPRS-43682, pp 1-42)
neutron diffusion equations for, iterative-variational techniques for solution to elliptical, 22:50863
neutron flux calculations using diffusion theory, computer program for, 22:18077 (EIR-126)
neutron flux distribution in multiblanket cylindrical, use of unreflected end P$_1$ approximation for, (T), 22:35678
neutron flux distribution in, derivation of time-energy dependent, 22:42492
neutron flux flattening calculations for, (T), 22:7909 (JINR-P4-3580)
neutron flux in, numerical solution using a linear differential equation for scalar, 22:37622
neutron resonance absorption in, calculation of materials constants for, 22:44901 (UJV-2010)
neutron spectra calculation in square water-moderated and hexagonal zirconium hydride-moderated lattices in, MEGMOC code for region-dependent, 22:37618
neutron spectra calculation in, use of integral form of transport equation for, 22:39906
neutron spectra calculations in, methods for space and energy dependent thermal, 22:44943
neutron spectra in, integral transport equation for measurement of thermal, (E/T), 22:35634
noise spectrum analysis for systems of homogeneous and, comparison of, 22:1783
operation stability of, calculation of, 22:20828
reaction parameters of, self-consistent criticality calculation method for, (T), 22:50865
reactivity effects of plutonium formation in fuel elements of, (T), 22:50848
Reactors, Heterogeneous Boiling
see Reactors, Boiling
Reactors, High-Temperature
see Reactors, Power
REACTORS, HOMOGENEOUS
see also Reactors, Fluid-Fueled
configuration of semi-, description of experimental facilities in, 22:53434(P)
description of boiling aluminum chloride (AlCl$_3$)-cooled, 22:16151 (INR-842/C)
design of uranium-aqueous, theory and methods for, (T), 22:1864(T) (JPRS-42322, pp 14-101)
Doppler effect evaluation for dilute fast oxide, effects of two level formula on, 22:53377
kinetics of two-dimensional circulating fuel, temperature dependent, 22:32888
neutron buckling determination in two-dimensional, one group method for critical, 22:35725
neutron fission rates in, equations describing temperature dependence of, 22:42382
neutron spectra in, thermal and epithermal, (T), 22:29853
power production from, experimental program for, 22:10010(R) (NP-17126)
reactivity coefficients for, energy-dependent kinetic equation analysis for volume related integral, (T), 22:42385(T) (ANL-Trans-645)
stability of, solution to Liapunov equations for determining asymptotic, 22:30363
Reactors, Homogeneous Boiling
see Reactors, Boiling
REACTORS, INDIA
see also RAPP Power Reactor
development program for heavy water-moderated power, description of, 22:30242
REACTORS, INTERMEDIATE
see also Submarine Intermediate Reactor
neutron cross sections and resonance parameters for, tables of, 22:46695 (EURFNR-537)
neutron spectra in small highly-enriched-fuel, variational and Bubnov-Galerkin synthesis of spatially dependent, 22:35722
REACTORS, JAPAN
see also Fukushima Power Reactor, Unit 1
see also Japanese Materials Testing Reactor
see also Japanese Power Demonstration Reactor
see also Mihama Power Reactor, Unit 1
see also Tsuruga Power Reactor
configuration of 36 MW(t) pressurized-water maritime, reference design, 22:46994
core fabrication for, description of domestic, 22:35486
description of, 22:22717
development of fast breeder power, description of, 22:35485
development program for liquid sodium-cooled fast, description of, 22:35538
development program for power, description of, 22:46972
development program of boiling water-cooled heavy water-moderated 200 MW(e) thermal power, description of, 22:30243
development program of fast breeder power, description of, 22:37448 (NP-17521)
development status and prospects for power, 22:46934
fuel cycles for boiling power, analysis of fuel sources and economics for, 22:32849
heavy water-moderated boiling water-cooled plutonium self-sustaining, description of Japanese, 22:30238
materials testing programs for, 22:30805
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
piping for boiling, design and fabrication of field, 22:32851
siting of, analysis of problems in, 22:18427
siting of, factors affecting, 22:18426
use of stainless steels in boiling-water and pressurized-water, description of, 22:32850
waste disposal from JAPC, instrumentation and operation of facilities for, 22:16794
Reactors, Liquid-Fueled
see Reactors, Fluid-Fueled
REACTORS, LIQUID METAL-COOLED
see also Argonne Fast Reactor Experiment Test
see also BN-350 Reactor
see also BOR-60 Reactor
see also Cadarache Reactors (Rapsodie)
see also Dounreay Fast Reactor
see also Experimental Breeder Reactor
see also Experimental Breeder Reactor-II
see also Fermi Fast Breeder Reactor
see also Hallam Power Reactor
see also KNK Power Reactor
see also Los Alamos Molten Plutonium Reactor Experiment
see also Phenix Fast Reactor
see also Sodium Reactor Experiment
see also Submarine Intermediate Reactor
accidents in fast breeder, plutonium oxide (PuO$_2$)--sodium--uranium oxide (UO$_2$) aerosol behavior simulation for, 22:53262 (BNL-12757)
accidents in large fast sodium, effects of core

configuration on explosive yield during, 22:53390
bearing development technology for, description of optimum design data and instrumentation for, 22:42199(R) (NYO-3930-1)
boilers for liquid sodium-cooled, construction characteristics of, 22:53294
component construction for sodium-cooled, 22:32804
component development for, operation of SCTI for, 22:48982(R) (LMEC-68-20)
component development for, operations history of Sodium Component Test Installation for, 22:16204
conceptual design for 300 MW(e) liquid sodium-cooled fast Na-2, description of, 22:37439(T) (EURFNR-462)
configuration of fast liquid sodium-cooled, analysis of electrical and mechanical design problems in, 22:48712
configuration of integral, description of, 22:53331(P)
configuration of liquid lead-cooled floating molten-salt and graphite core, 22:39841(P)
construction and design problems of fast sodium, 22:16196
construction of fast liquid sodium-cooled, analysis of engineering and design problems in, 22:48711
construction of fast, description of methods during, 22:30205
containment for Karlsruhe prototype fast breeder sodium, safety analysis of, 22:18450
containment structure penetrations for fast sodium, problems of design of, 22:16197
containment structures for fast sodium, problems of analysis of complex, 22:16197
control elements for fast, description of overhead, 22:10052(P)
control rod external access control mechanism for, design of, 22:3876(P)
control systems for fast sodium, use of variable lithium concentration for spectral shift, 22:16246(P)
coolant activation in fast, effect on shielding of liquid lithium, potassium, and sodium, (T), 22:39782 (N-68-20355)
coolant boiling from severe transients in, TRANSFUGUE-IIa code for analysis of, 22:22705 (NAA-SR-12503)
coolant cavitation in, review of, 22:17114 (NP-17279)
coolant channels in, heat transfer calculations for, 22:30118 (ANL-7438)
coolant cover gas for, analyzer development for, 22:43629(R) (LA-3933)
coolant cover gas for, purification by sorption of radioactive gases from, 22:21760 (TRG-Report-1578)
coolant cover gas impurities in sodium-cooled, bibliography on, 22:50702 (BNWL-849)
coolant ejection from pulsed fast, effects of acoustic waves on, 22:12093 (EUR-3654)
coolant fires in, energy and fission product release in sodium, (E/T), 22:30155(R) (NAA-SR-12296)
coolant flow for, ETNA-code for analysis of two-phase transient sodium, 22:42205 (RT/ING-(68)10)
coolant flow measurements in, calibration and stability of permanent magnet in-core flowmeter for, 22:28215
coolant flow measurements in, performance of eddy-current flowmeter for, (T), 22:28216
coolant for, development of instruments for measuring impurities in, 22:25691 (LMEC-Memo-68-3)
coolant for, oxygen gettering from liquid sodium, use of thorium and zirconium alloys for, 22:1749 (AD-648248)
coolant heat transfer in, measurement of axial-flow sodium, 22:45236(T) (BNL-tr-220)
coolant impurities in, design of plugging meter for monitoring, 22:21388 (TRG-Report-1640)
coolant level in fast, description of NaK-filled kerosene-insulated cylindrical ultrasonic gage for measurement of, 22:42292(P)
coolant loss in 1000 MW(e) LMFBR, effects of sodium fires on, 22:9990(R) (BAW-1312)
coolant losses in, sodium flashing measurements for calculation of effects of, 22:5969
coolant mixing in fuel element bundles of liquid sodium-cooled fast, analytic methods for determining, (E/T), 22:35476 (WASH-1096)
coolant quality and properties for, determination of sodium, (E), 22:47040(R) (APDA-228)
coolant safety for fast, analysis of liquid sodium combustion and aerosol release, 22:32783 (ORNL-TM-1937)
coolant sodium for, development of in-line carbon meter for monitoring, 22:14146(R) (UNC-5187)
coolant void reactivity effect in sodium-cooled power, methods for reduction of, (T), 22:35559
coolants for fast, thermo-physical properties of, 22:27449
coolants for, analysis of liquid sodium superheat values for, 22:35534
coolants for, development of on-line electrochemical meter for measuring oxygen impurities in sodium, 22:19194 (TID-24284)
coolants for, development of on-line plugging meter for detecting impurities in sodium, 22:19194 (TID-24284)
coolants for, methods for predicting two-phase flow in, 22:14138 (NAA-SR-Memo-12485)
coolants in, detection of pool and forced convection boiling in, 22:14138 (NAA-SR-Memo-12485)
cooling circuits for, incorporation into reactor vessel of primary sodium, 22:12020 (DRP/ML/CANd-1011)
cooling system components development for, mass transfer tests in sodium loops for, 22:44822(R) (GEAP-5582)
cooling system corrosion mockup for fast liquid sodium-cooled, description of, 22:44819 (GEAP-4881)
cooling system for ceramic-fueled fast breeder, analysis of overpower transients in boiling in, (T), 22:20832
cooling system for direct conversion type, description of heat pipe, 22:14216(P)
cooling system for fast breeder, analysis of two-dimensional velocity distribution for turbulent single-phase flow in, 22:24961 (GEAP-5411)
cooling system for fast, description of integral steam--water heat transfer system for, 22:25049(P)
cooling system for sodium, cleaning components of, 22:33143
cooling system for sodium, combustion rates for fires in, 22:1819
cooling system for sodium-cooled fast breeder, fission product behavior in, (E/T), 22:39734 (AI-AEC-12687)
cooling system for, description of forced-circulation external dual-flow heat exchanger closed-circuit, 22:50772(P)
cooling system for, description of liquid metal superheat, reheat, and evaporator, 22:37478(P)
cooling system for, description of liquid metal-heated shutdown-drain valve in, 22:18654(P)
cooling system of, behavior of fission products released in sodium, (E), 22:30155(R) (NAA-SR-12296)
cooling system of, measurement of superheat in boiling, 22:20833
cooling system of, of oxygen content on corrosive effects of liquid sodium in, 22:53315
cooling system plugging meters for, description of various configurations of, 22:53334
cooling system research for, 22:647(R) (BNL-50077)
cooling system valves for, performance comparison of operation of, 22:53333
cooling systems for, reactor environment effects on materials for, 22:37479
cooling systems of fast, maintenance equipment and procedures for liquid sodium, 22:46960
core components for, test loop for, 22:7788(R) (ANL-7382)
core configuration for liquid sodium-cooled fast, description of multiple concentric region, 22:39803(P)
core for fast breeder, design parameters of, 22:16205
core for PEC, static and dynamic characteristics of, 22:16207
core meltdown in fast, use of TREAT reactor for analysis of simulated, 22:35813
cores for, development of high flux heaters for simulation of, 22:14138 (NAA-SR-Memo-12485)
cover gases in, mass spectrometer for on-line analysis of, 22:33207 (LA-DC-8999)
criticality calculations for small high-temperature lithium-cooled, for space power systems, 22:37512 (N-68-15792)
description of .1 MW(e) fast enriched uranium carbide-fueled, 22:25063 (DLR-MITT-66-07, pp 87-99)
description of 1000 MW(e) fast breeder, reference design plant, 22:9990(R) (BAW-1312)
description of 300 MW(e) fast breeder, 22:6036
description of 300 MW(e) liquid sodium-cooled fast breeder, 22:39826
description of fast, 22:18524
description of fast breeder, with unclad metal fuel for desalination of seawater, 22:27455 (ORNL-4229, pp 188-90)
description of fast, heterogeneous, 22:18533(P)
description of fast, in France, 22:18503
description of PEC, for fast fuel element testing, 22:1867(T) (ORNL-tr-1786)
description of zoned fuel fast, 22:18539(P)
design model for optimum reflector-controlled fast rocket, description of, 22:39869
design of 10 MW(e) Rankine-cycle lithium-cooled uranium nitride (UN)-fueled, for space electric propulsion, 22:30282 (UCRL-50382)
design of German 300 MW(e) fast sodium, conceptual, 22:16187
design of PEC, conceptual, 22:16207
design of sodium, description of computer program for treating coolant phase changes during transients for liquid, 22:53376
design parameters for 1000 MW(e) liquid sodium-cooled fast breeder, description of optimum, 22:37504
design parameters for 300 MW(e) conceptual fast breeder liquid sodium, safety, 22:53360
design parameters for French, German, and United Kingdom fast, analysis of, 22:35498
design parameters for German fast sodium, conceptual, 22:22703 (KFK-660)
design parameters for liquid sodium-cooled fast breeder power, description of optimum, 22:37448 (NP-17521)
design parameters of plutonium oxide (PuO_2)-uranium oxide (UO_2)-fueled 350 to 500 MW(e) fast breeder GPU/AI, analysis of conceptual, 22:37463
design specifications for development of LMFBR, description of conceptual, 22:32906
development of fast breeder, engineering aspects of, 22:16220

development of high-gain 200 to 400 MW(e) sodium-cooled fast breeder, description of prototype, 22:35504
development program for fast breeder, description of United States, 22:30216
development program for fast power liquid sodium-cooled, analysis of uncertainties for physics parameters and fuel costs in, 22:50733 (GEAP-5635)
development program for German 300 MW(e) sodium-cooled, 22:53336
development program for Great Britain liquid sodium-cooled fast breeder, description to 1985 of, 22:42231
development program for South African heavy water-moderated natural uranium-fueled 1000 MW(e), description of, 22:27421
development program for U. K. fast, description of, 22:46950
development program for U. S. A. fast breeder, description of, 22:46951
dynamic behavior of 1000 MW(t) fast breeder, analysis of, 22:6027
dynamic behavior of fast power sodium, analysis of, 22:46958
dynamics of thermal sodium, use of analog computer for simulation of, 22:35481
economic characteristics of 1000 MW(e) fast, 22:20851
economics of 1000 MW fast breeder, effects of safety on, 22:5970
economics of 1000 MW(e) fast breeder sodium, effects of parameter variation on, 22:16166(T) (EURFNR-384)
equipment for determining carbon content in sodium in, 22:12676 (ANL-7380, pp 111-17)
fast burst, description of floating liquid salt-fueled, 22:25117(P)
fission product behavior in sodium loops in, PIRANA experiments on, 22:53350
fission product deposition in, containing failed fuel elements, 22:6020
fission product release and transport control in sodium-cooled fast breeder, review of methods for, 22:53396
fission product release from fast sodium, safety analyses of containment systems for prevention of, 22:53353
fission product venting system for, 22:16340(P)
flowmeter for, testing of a water-mockup for a liquid sodium ultrasonic, 22:22709(R) (NYO-3622-13)
fuel assemblies for fast, description of multiple vertical and parallel elongated triple-region, 22:50775(P)
fuel assemblies for fast, description of sleeve-enclosed upper fissile material pin and lower fertile material pin cluster-type, 22:42244(P)
fuel assemblies for upward-flow, description of groove-secured multiple vertical and parallel sheathed bar-type, 22:42243(P)
fuel assemblies for upward-flow, description of multiple parallel vertical-sheathed bar-type, 22:42254(P)
fuel assemblies for, calculation of temperature distribution in bundle-type cylindrical, (T), 22:44865
fuel cladding for, radiation effects on materials for, 22:711 (BMI-1809, Sect.B)
fuel cladding materials for, 22:647(R) (BNL-50077)
fuel cycle economics for fast breeder power-desalination, analysis of optimum, 22:32910
fuel cycles for 1000 MW(e) sodium--cooled fast breeder, economics of nitride, (T), 22:22659 (BNWL-606)
fuel cycles for, description of optimum liquid uranium fluoride, 22:35497
fuel economics of, effects of power requirements on, 22:3832 (KFK-566)
fuel element cladding for fast-breeder, development and testing of, 22:21699(R) (WARD-3791-13)
fuel element cladding materials for fast breeder, review of properties of, (E), 22:35425 (BMI-1900)
fuel element configuration for 1000 MW(e) fast breeder, economic analysis of, 22:10005 (KFK-568)
fuel element for pebble-bed fast breeder, description of tube-and-shell heat exchanger, 22:35490(P)
fuel element loading machine for, description of, 22:3872(P)
fuel element meltdown and dispersal effects in sodium-cooled, (E/T), 22:27397 (ANL-7375, pp 135-59)
fuel element processing for, design and cost estimate of facility for, 22:27954 (ORNL-TM-2050)
fuel elements for fast breeder sodium, design and safety optimizations of plutonium--uranium carbide, 22:53368
fuel elements for fast breeder, description of radial-cooled conical annular, 22:35488(P)
fuel elements for fast breeder, fabrication and testing of mixed-carbide, 22:53463(R) (UNC-5217)
fuel elements for fast breeder, preparation of plutonium nitride (PuN)--uranium nitride (UN) by carbothermic reduction process for, 22:32815
fuel elements for fast, neutron radiation effects on, 22:7808(R) (GEAP-5522)
fuel elements for fast, radiation effects on, 22:18511
fuel elements for high temperature, description of liquid metal-bonded metal-clad multiple wafer, 22:42246(P)
fuel elements for sodium, stress analyses of austenitic steel and nickel alloy claddings for, 22:53273(T) (EURFNR-472)
fuel elements for sodium, stress analyses of austenitic steel and nickel alloy claddings for, 22:32774 (KFK-700(Pt. VIII))
fuel elements for, behavior during accidents of sodium-bonded metallic, 22:22747
fuel elements for, description of granular, 22:33121(P)
fuel elements for, fuel-cladding interaction in metallic, 22:30118 (ANL-7438)
fuel elements for, stress rupture tests for cladding for, 22:27396(R) (AI-AEC-12638)
fuel handling and maintenance machine for, description of sodium-immersed ultrasonic transducer for, 22:22654 (APDA-220)
fuel pins for, development of cladding materials for, 22:16202
fuel reloading of 1000 MW(e) fast breeder, description of, 22:9990(R) (BAW-1312)
fuel rod vibration eigenfrequencies and damping in, analysis of transverse sodium flow-induced, (E/T), 22:44922 (KFK-731)
fuels for fast breeder, performance of ceramic, 22:30123 (BNWL-SA-1550)
fuels for, development of, 22:16265(R) (ANL-7403)
fuels for, radiation testing of, 22:22653(R) (ANL-7419)
heat exchanger and steam generator performance evaluation for sodium-cooled, 22:44840(R) (UNC-5221)
heat exchanger for sodium—cooled, thermal--hydraulic and structural performance of, 22:20823(R) (UNC-5200)
heat exchanger for, design of sodium, 22:12506(P)
heat exchanger for, development of sodium-heated, 22:51133(R) (BAW-1280-56)
heat exchanger performance in, 22:647(R) (BNL-50077)
heat exchangers for sodium-cooled, thermal-hydraulic and structural performance of, (E), 22:32788(R) (UNC-5213)
heat exchangers for, description of double-wall multiple ladder-shaped tubes with back-and-forth flow for, 22:53324(P)
heat transfer in multiple fuel rod bundle-type, analysis with longitudinal flow of, (T), 22:53481
heat transfer in, effect of variable wall heat flux on, 22:10492
liquid plutonium alloy-fueled rotating centrifugal force-controlled sodium, description of, 22:25070(P)
loading machine for fast liquid sodium-cooled, description of pressure vessel-penetrating horizontal pivot and transverse member vertical-access, 22:39800(P)
loading machine for fast liquid sodium-cooled, description of pressure vessel-penetrating externally-driven vertical axis-rotating turntable with extending arm and grippers, 22:39801(P)
loading machine for, description of gas pressure balanced liquid sodium-filled, 22:16237(P)
materials for sodium, review of, 22:34008 (BNL-12482)
materials for, effects of high temperature sodium on, 22:8725(R) (MSAR-67-207)
materials for, sodium effects on sliding and static wear of alloy and metallic, 22:657 (NAA-SR-12446)
monthly progress report on fast breeder, Argonne National Laboratory, 22:37401(R) (ANL-7457)
monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)
monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)
neutron fluxes in, detailed calculation of effects of interfaces between resonance--scattering media on, 22:9988(R) (ANL-7391)
neutron physics for fast, analysis of fast, 22:39875 (BNL-50082, pp 1-18)
neutron spectra in sodium coolant and in structural material of, (E), 22:30155(R) (NAA-SR-12296)
operation of fast, description of optimum, 22:18516
oxygen concentration indicator for cooling system of, use of sodium oxide (Na_2O) plugging meter for, 22:24967 (LA-DC-9423)
physics measurements for liquid sodium-cooled fast, perturbation method of error analysis for, (T), 22:35708
physics parameters for 1000 MW(e) fast sodium, analysis of, (T), 22:18601
physics parameters in fast, economic effects of uncertainties in, 22:22740
piping flexibility for fast breeder power, design and analysis of, 22:39812
piping systems with large temperature differentials for fast sodium, problems of design of, 22:16197
plutonium phosphide (PuP)-fueled lithium, description of, 22:25069(P)
power conversion system for, description and testing of liquid-metal magnetohydrodynamic, 22:7889
power monitors for, development of all-solid in-core rhodium, 22:14128 (ANL-7380, pp 140-5)
power supplies for sodium-cooled fast breeder, integration of auxiliary and emergency, (T), 22:35484
power system for lithium-cooled space, description of potassium Rankine cycle turboelectric, 22:30287
power transients in fast liquid sodium-cooled, model simulation analysis of bulk boiling, 22:39811
pressure loss accident calculations for sodium, comparison of results from BURP- and TRANSFUGUE IIa-code for, 22:27396(R) (AI-AEC-12638)
pressure sensors for, description of miniaturized, 22:14127 (ANL-7380, pp 63-4)
pumps for fast liquid sodium-cooled, development of

optimum 50,000 to 100,000 gpm, 22:46962
radiation detectors for use in LMFBR, design of self-powered, 22:12570 (ANL-7380, pp 139)
reactivity transients in, effects of sodium temperature coefficient on, 22:6011
reflectors for fast, description of overhead, 22:10052(P)
response during sodium boiling accidents in, theoretical analysis of, 22:5971
safety characteristics of 1000 MW(e) fast, 22:20851
safety program for fast breeder sodium, U. S, 22:53356
safety studies for liquid sodium-cooled fast, analysis of, (E), 22:37402 (ANL-7450, pp 75-89)
shielding construction for sodium-cooled fast breeders, 22:27435
shielding of fast space-power liquid lithium-cooled, design parameters for, 22:39860 (N-68-18197)
sodium boiling in, core conditions affecting, 22:37403(T) (ANL-Trans-625)
sodium coolant boiling in, analysis of coolant expulsion and pressure transients resulting from liquid, 22:53374
sodium coolant boiling in, analysis of effects of liquid, 22:53375
sodium coolant for, development of carbon meter for in-line impurity monitoring of, 22:14143(R) (UNC-5172)
sodium coolant for, development of carbon meter for in-line impurity monitoring of, 22:14145(R) (UNC-5181)
sodium coolant for, development of in-line carbon meter for monitoring impurities in, 22:14144(R) (UNC-5180)
sodium coolant for, oxygen meter for impurity determination in, 22:27396(R) (AI-AEC-12638)
sodium coolant for, oxygen meter for impurity measurements in, 22:14129(R) (APDA-212)
sodium coolant for, rhometers for impurity measurement in, 22:14129(R) (APDA-212)
sodium coolant for, time and temperature dependence of bubble formation in, 22:24988
sodium coolant pump power failure in 3500 MW(t) bare-metal fast breeder, flywheel-augmented flow coastdown following, (T), 22:37449 (ORNL-TM-2132)
sodium coolants for, analytical and in-line techniques for detection of impurities in, 22:9988(R) (ANL-7391)
sodium coolants for, bibliography on chemical aspects of, 22:24962 (HMI-B-68)
sodium coolants for, calculations of ejection of, 22:24988
sodium fires in fast, behavior of fission products in atmosphere surrounding, 22:53351
sodium fires in, characteristics of aerosols generated during, 22:5952
sodium fires in, energy distribution in simulation of, 22:27396(R) (AI-AEC-12638)
sodium fires in, studies on energy release and transport during, 22:53352
sodium void reactivity effects in, accuracy of standard sets of multigroup constants for, (T), 22:35517
stability of sodium-cooled, effect of boiling and two-phase flow on, (E/T), 22:30155(R) (NAA-SR-12296)
steam generator design for 1000 MW(e), boiler inlet header steady state and thermal transient stress analysis for sodium-heated, 22:42174 (BW-67-2(App.)(Vol.5))
steam generator design for 1000 MW(e), boiler outlet header steady state and thermal transient stress analysis for sodium-heated, 22:42175 (BW-67-2(App.)(Vol.6))
steam generator design for 1000 MW(e), functional engineering calculations for sodium-heated, 22:42182 (BW-67-2(App.)(Vol.13))
steam generator design for 1000 MW(e), reheater stress calculations for sodium-heated, 22:42173 (BW-67-2(App.)(Vol.4))
steam generator design for 1000 MW(e), sodium inlet nozzle fatigue analysis for sodium-heated, 22:42179 (BW-67-2(App.)(Vol.10))
steam generator design for 1000 MW(e), sodium inlet nozzle steady state stress analysis for sodium-heated, 22:42180 (BW-67-2(App.)(Vol.11))
steam generator design for 1000 MW(e), sodium inlet nozzle thermal transient stress analysis for sodium-heated, 22:42181 (BW-67-2(App.)(Vol.12))
steam generator design for 1000 MW(e), stress calculations for sodium-heated, 22:42171 (BW-67-2(App.)(Vol.2))
steam generator design for 1000 MW(e), stress calculations for sodium-heated, 22:42170 (BW-67-2(App.)(Vol.1))
steam generator design for 1000 MW(e), superheater inlet header steady state and thermal transient stress analysis for sodium-heated, 22:42176 (BW-67-2(App.)(Vol.7))
steam generator design for 1000 MW(e), superheater outlet header thermal transient stress analysis for sodium-heated, 22:42178 (BW-67-2(App.)(Vol.9))
steam generator design for 1000 MW(e), superheater outlet header steady state stress analysis for sodium-heated, 22:42177 (BW-67-2(App.)(Vol.8))
steam generator design for 1000 MW(e), TEMA calculations, nozzle loading calculations, and steady state calculations for tube sheets for sodium-heated, 22:42172 (BW-67-2(App.)(Vol.3))
steam generator for fast breeder, design of 527 MW(t) sodium-heated, 22:35465 (KFK-654)
steam generator for fast liquid sodium-cooled, thermal shock and corrosion analysis for austenite tubes, 22:39794
steam generator for, design and operation of sodium-heated modular, 22:2285
steam generator for, design of once through, 22:40299
steam generator for, development of large sodium-heated, 22:16735(R) (BAW-1280-48)
steam generator for, gas--water simulation studies of sodium--water reactions in, (E/T), 22:52158 (APDA-226)
steam generator for, redesign recommendations for sodium-heated, 22:27398(R) (BAW-1280-50)
steam generators for fast liquid sodium, effects of sodium--water reactions caused by leaks in, 22:53355
steam generators for power, design studies for, 22:37443 (ITN/RF-1.1.1)
steam generators for, effects of sodium-water reactions on, 22:5968
steam generators for, effects of sodium-water reactions in, 22:14129(R) (APDA-212)
steam generators for, operating characteristics of, 22:16206
steam generators for, safety studies on sodium--water, 22:53354
steam generators for, testing of, 22:10437 (NAA-SR-12534)
structural materials for LMFBR, mass transfer testing in liquid sodium corrosion loops of, 22:50735(R) (GEAP-5648)
structural materials for sodium, effects of sodium-induced corrosion on, 22:53273(T) (EURFNR-472)
structural materials for sodium, effects of sodium-induced corrosion on, 22:32775 (KFK-700(Pt. IX))
temperature measurement in LMFBR, development of ultrasonic system for, 22:28209(R) (NYO-3906-2)
transducers for, description of acoustic signal fuel element, 22:20876(P)
ultrasonic thermometry system for fast, description of, 22:14139(R) (NYO-3906-1)
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460
Reactors, Low-Power
see Reactors, Research
REACTORS, MAGNOX
see also Berkeley Reactors
see also Bradwell Reactors
see also Calder Hall Reactors
see also Chapelcross Reactors
see also Hinkeley Point 1 Reactors
see also Hunterston Reactors
see also Latina Power Reactor
see also Oldbury Reactors
see also Sizewell Reactors
see also Tokai-Mura Power Reactor
see also Trawsfynydd Reactors
see also Wylfa Reactors
development program for Great Britain, description to 1985 of, 22:42231
fuel burnup limits for, computer program analysis of, (E/T), 22:22773
fuel cladding for, creep in air and carbon dioxide at 350 to 450°C, 22:4786
fuel elements for, design and fabrication of, 22:46937
materials for, corrosion and radiation damage of structural, 22:47660 (CONF-671007-2)
operating experience of British, evaluation of, 22:42211 (TRG-Report-1693)
operation and performance of European, improvements in, 22:20831
performance in the United Kingdom, 22:6054
simulator for, description of analog computer for, 22:7921
REACTORS, MARITIME
see also Maritime Gas-Cooled Reactor
see also Maritime Nuclear Steam Generator
see also Maritime Pressurized-Water Reactor
see also Naval Reactors
see also Otto Hahn Reactor
see also Vulcain Maritime Reactor
accident heat-removal in, testing of submerged double-pipe secondary cooling water evaporation system for, 22:42378
bibliography on, 22:48714 (AED-C-22-10)
bibliography on ship propulsion using, 22:37507 (AED-C-22-09)
book: Basis of Thermal and Hydraulic Calculations of Marine Nuclear Reactors and Steam Generators, in Russian, 22:44872
book: Examination of the Control Drive of Maritime Nuclear Reactors, 22:3879
book: Layout and Design of Marine Nuclear Reactors, in Russian, 22:32932
book: Marine Nuclear Reactors, Theory and Computations, 22:14235
catalog of, 22:4303 (EUR-3568)
configuration of cylindrical closed-cycle, description of, 22:46995(P)
configuration of Japan 36 MW(t) pressurized-water, reference design, 22:46994

configuration of pressurized-water, description of optimum economic, 22:46992
configuration of ring-sealed multiple assembly-fueled triple-pass water-cooled and -moderated pressure vessel-contained, description of, 22:42337(P)
containment structures for, description of pipe-connected valve-operated shell and enclosed ship inner bottom, 22:48719(P)
control rod drives for, reliability testing procedures for, 22:14233(T) (JPRS-43834)
control rods for, performance testing of drives for, 22:3879
cooling system for, effect of ship motion on two phase flow behavior in, (T), 22:16249
cooling system of Lenin, description of improved mixed-layer ion exchangers for, 22:20826 (ZFK-RN-31, pp 69-76)
core lifetime studies for, summary of research on, 22:16356 (KR-116)
description of 24000 ton interchangeable cargo unit merchant vessel, 22:18540
description of transport ship, 22:46981(T) (JPRS-46321)
description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
description of US, 22:24990
design of Brayton cycle gas-cooled, description of conceptual, 22:35563
design parameters of, textbook on, 22:32932
design, construction, and performance of, for icebreakers, 22:6069
development in Japan, 22:18659
development of NERO, progress during 1966 on, 22:6067(R) (EUR-3647)
development of, outline of international, 22:3878 (TRG-Report-1500)
economics for nuclear merchant ship propulsion, 22:39848
feasibility of, 22:10444
fuel cycle economics in, evaluation of basic, 22:14230 (NUS-265-A)
fuel elements in, neutron radiation effects on niobium--zirconium clad uranium oxide (UO_2) rods, 22:22830
fuel fabrication for NERO, description of uranium oxide (UO_2) with uranium boride (UB_4), 22:42338
fuel for, feasibility of use of plutonium Phoenix, (T), 22:27459 (BNWL-634, pp 3.1-27)
fuel rod assemblies for water-cooled, model studies for lateral vibration effects on, (E/T), 22:48718
helium-cooled uranium oxide (UO_2)-fueled direct Brayton cycle, description of, 22:27451
indemnification programs for, evaluation of problems and advantages in development of, 22:42335
operating experience of Soviet icebreaker Lenin, 22:10053(T) (JPRS-43550)
Phoenix fuels for, reactivity and multiplication calculations using, 22:14289 (BNWL-635)
physics measurements for NERO, description of, 22:53399
physics measurements for water-moderated uranium oxide (UO_2) fueled, use of KRITO and PUK facilities for, 22:25109
physics parameters for, methods for calculating, 22:14235
pressure vessel for water level control in, description of interior convex-bottom, 22:50781(P)
pressure vessel mount for water-cooled and -moderated, description of multiple curved duct-connected dry and wet well, 22:48717(P)
pressure vessels for, description of dumbbell-shaped upright, 22:48716(P)
safety factors affecting maximum credible accident in 100 MW(t), (T), 22:39846
service facilities for Japanese, description of port, 22:35564
shielding for γ radiation in, effects of incident angle on leakage in double-bend two-dimensional slit in lead, 22:53398
shielding for, development of minimum requirements for, 22:42334(T) (NSJ-tr-105)
shielding for, optimization calculations for, 22:16356 (KR-116)
shielding mockup of Japanese, spatial distribution of gamma dose rate and thermal neutron flux around primary, (E/T), 22:30279
shielding of, using boron-containing concrete, 22:52305(P)
steam generator operation in, thermal and hydraulic analysis of, 22:44872
REACTORS, MOLTEN-SALT
see also Molten Salt Breeder Reactor
see also Molten Salt Reactor Experiment
configuration of liquid lead-cooled floating graphite core, 22:39841(P)
coolant mixtures for, physical and thermal properties of, 22:44827 (ORNL-TM-2316)
coolants of fused sodium fluoroborate ($NaBF_4$) for, corrosive effects on Hastelloy N of, 22:32828
decay heat generation rate in single-region, 22:47204 (ORNL-4254, pp 241-78)
description of breeder, with multiple graphite fuel cells, 22:46973(P)
description of two 1000 MW(t) concepts for, 22:24979(T) (ORNL-tr-1855)
design and evaluation studies of thermal breeder, summary, 22:24935 (CONF-660524-, pp 41-63)
development program for, progress during September 1967 to February 1968, 22:48650(R) (ORNL-4254)
fast burst, description of liquid metal-cooled, 22:25117(P)
flush salt mixtures for, physical and thermal properties of, 22:44827 (ORNL-TM-2316)
fuel for breeder, helium bubble mass transfer removal of xenon-135 from, 22:46916 (ORNL-TM-2245)
fuel for, chemical feasibility of plutonium fluoride (PuF_3), 22:53282 (ORNL-TM-2256)
fuel mixtures for, physical and thermal properties of, 22:44827 (ORNL-TM-2316)
fuel processing for, 22:27863(R) (ORNL-4204)
fuel reprocessing for, 22:12406 (ORNL-4094, pp 61-9)
fuel reprocessing for, 22:14565 (ORNL-4139, pp 48-72)
fuel reprocessing for, 22:27861 (ORNL-4204, pp 60-7)
fuel reprocessing for, distribution coefficients for salt-transport process for, 22:7788(R) (ANL-7382)
fuel reprocessing for, pyrochemical methods for, 22:51063
fuel reprocessing for, research progress on, 22:16484 (ORNL-4075, pp 62-6)
physics calculations for 2 to 3 x 16^{16} n/cm^2 fast flux burst, analysis of, (T), 22:39882 (ORNL-TM-2282)
safety studies for, 22:1772(R) (ORNL-TM-1986)
structural materials for MOSEL, survey of metal-base, 22:23770
thermal shield development for, use of computer program for, 22:2297 (ORNL-TM-2029)
Reactors, Naval
see Naval Reactors
REACTORS, ORGANIC-COOLED
see also ARBUS Power Reactor
see also Heavy Water Organic-Cooled Reactor
see also ORGEL Reactor
see also Piqua Power Reactor
see also Spanish Reactors (DON)
see also Whiteshell Reactor No. 1
boilers for, summary of operating experience with, 22:32842
characteristics of thorium-fueled ORGEL-type, 22:24937 (CONF-660524-, pp 119-28)
control of, effects of positive power coefficients on, 22:14174
coolant filter of graphite for, description of terphenyl, 22:39816(P)
coolant for, description petroleum hydrodealkylation produced liquid hydrocarbon, 22:35524(P)
coolant heating in, description of two-stage, 22:32956(P)
coolant performance in, review of experimental program on terphenyl, 22:44923 (MIT-334-55)
cooling system for power, description of liquid hydrocarbon coolant for, 22:35524(P)
cooling system of, corrosion inhibitors for magnesium alloy components of, 22:34015(P)
cooling system of, effects of surface boiling on deposition of gas oil decomposition products in, 22:42670
cooling systems for, description of overpressure release valves for, 22:20869(P)
design of heavy-water moderated, with coolant collector compartment below the core, 22:1822(P)
design of ROVI, economics for desalination, 22:1784
design parameters for 300 MW(th) ROVI-type, 22:44858
development program for 1000 MW(e) heavy water-moderated, description of, 22:50741 (WASH-1083)
development program in U. S. of heavy water-moderated 1000 MW(e), 22:30244
feasibility analysis of dual-stream power-desalination HWOCR concept, 22:30296
fission product venting system for, 22:16340(P)
fuel cycle performance of heavy-water-moderated 1000 MW(e), analysis of economic thorium oxide (ThO_2), (E/T), 22:30247
fuel element assembly for, description of heavy water-moderated finned multi-rod, 22:20866(P)
fuel elements for Canadian, use of uranium oxides (UO_2) in, 22:3808 (AECL-2928)
fuel elements of, electric connectors for instrumented, 22:2471
fuel for heavy water, production plant for SAP-coated uranium carbide, 22:13049
fuel recycle cost studies for thorium-fueled HWOCR's, 22:23854 (CONF-660524-, pp 157-84)
fuel rods of ORGEL-type power, model studies for parallel flow vibrations in, (E/T), 22:48688
instrumentation for, summary of in-core hydraulic and thermodynamic, 22:48662
loading machine for vertical pressure vessel, description of, 22:3860
neutron absorption in heavy water-moderated natural-uranium, resonance, (E), 22:5818 (RT/FI-(67)13)
operation economics of dual-purpose desalination and power organic-moderated, 22:12081
physics calculations for, use of HWOCR-SAFE code for, 22:32886
pressure tubes for heavy water moderated, optimum operating temperature for zirconium alloy, (E/T), 22:18483

pump sets for, description of high temperature electric motor, 22:44948(P)
reactivity of, effects of positive coolant coefficient of, 22:14174
steam generators for, tube-to-sheet welded joints for, 22:226(P)
temperature coefficients of reactivity for uranium oxide (UO$_2$) fuel assemblies in, measurement of, 22:16144(R) (DPST-68-83-1)
toxicity of terphenyl coolant from, to rainbow trout, 22:53490 (AECL-3116)
use for desalination, applicability of, 22:39872
zirconium hydridation in, reduction by use of vanadium coatings, 22:28818 (BARC-303)

REACTORS, ORGANIC-MODERATED
see also ARBUS Power Reactor
see also Organic Moderated Reactor Experiment
see also Piqua Power Reactors
control rod drives for, description of pneumatic, 22:37470(P)
design of ROVI, economics for desalination, 22:1784
design parameters for 300 MW(th) ROVI-type, 22:44858
fuel element substitution measurements in, description of, 22:50816
instrumentation for, summary of in-core hydraulic and thermodynamic, 22:48662
moderator corrosive effects in, inhibitors for magnesium alloy components, 22:34015(P)
moderators for, neutron diffusion parameter measurements in benzene, biphenyl, and Dowtherm A, 22:50846
neutron multiplication factors for, comparison of measured and calculated values for, 22:50815
operation economics of dual-purpose desalination and power organic-cooled, 22:12081
physics parameters for, effects of chemically bonded hydrogen on, 22:50819
production of industrial gases by, 22:3853
pump sets for, description of high temperature electric motor, 22:44948(P)
reactivity worths for, comparison of measured and calculated, 22:50815
steam generators for, tube-to-sheet welded joints for, 22:226(P)

REACTORS, PEBBLE-BED
see also AVR Reactor
see also Fluidized Beds
configuration of variable opposing flow coolant channels for fuel arrangement in spherical heterogeneous, description of, 22:48700(P)
coolant flow behavior in axisymmetric, mathematical model for describing, 22:16171
coolant flow in randomly packed beds for, 22:16753 (CONF-671211-1)
core elements in rhombohedral array, heat transfer over surface of spherical, (E/T), 22:10021
core vessel for, configuration of spherical particle-fueled multiple acute-angled guide surface containing, 22:42288(P)
design and economics of carbon dioxide-cooled beryllium oxide-moderated plutonium-thorium fueled, 22:22716
design for 1200 MWe high temperature gas cooled, conceptual, 22:39779 (JUL-519-RG)
design of 1000 MW(e) uranium carbide (UC) fueled ordered, economics of conceptual, 22:9992 (BNL-50027)
design of 1200 MW(e) high temperature, conceptual, 22:35494
fluidization dynamics in, review of liquid, 22:33084 (AECL-2788)
fuel dynamics in high-temperature, effects of coolant flow on, 22:6047
fuel element distribution calculation in, KUGEL program for statistical space, 22:37565
fuel elements for fast breeder, description of liquid metal-cooled tube-and-shell heat exchanger, 22:35490(P)
fuel elements for, fabrication process for spherical, 22:30403(P)
fuel flow in, analysis of core behavior during, (E), 22:30191
fuel spheres for, heat transfer from surfaces of, 22:14669
fuel spheres for, method for forming, 22:52252(P)
fuel temperature and thermoelastic stresses in, axisymmetric heat transfer solution for spherical, (T), 22:32803
fuel unloading device for, description of multiple jets for liquid injecting, 22:37578(P)
heat transfer at wall of, mathematical model to study radial, 22:230 (AAEC/TM-389)
neutron resonance absorption calculations in, with double heterogeneous fuel element assemblies, (T), 22:35721
plutonium buildup in, calculational procedures for determining, 22:46902 (JUL-542-RG)

Reactors, Pentalene-Moderated
see Reactors, Organic-Moderated

REACTORS, POWER
see also Army Reactors (PM-1)
see also Army Reactors (PM-2)
see also Army Reactors (PM-3)
see also Army Reactors (SM-2)
see also AVR Reactor
see also Bell Power Reactor
see also Beloyarsk Power Reactor, Unit 1
see also Beloyarsk Power Reactor, Unit 2
see also Berkeley Reactors
see also Beryllium Oxide Reactor Experiment
see also Beznau Power Reactor, Unit 1
see also Big Rock Point Power Reactor
see also Bilibiu Power Reactor
see also BN-350 Reactor
see also Bohunice Power Reactor, Unit 1
see also Boiling Reactor Experiments
see also Bolsa Island Power Reactor, Unit 1
see also BOR-60 Reactor
see also Bradwell Reactors
see also Brittany Power Reactor (EL-4)
see also Browns Ferry Power Reactor, Unit 1
see also Browns Ferry Power Reactor, Unit 2
see also Browns Ferry Reactor, Unit 3
see also Brunswick Power Reactor, Unit 1
see also Brunswick Power Reactor, Unit 2
see also Bugey Reactors (EDF-5)
see also Calder Hall Reactors
see also Calvert Cliffs Power Reactor, Unit 1
see also Calvert Cliffs Power Reactor, Unit 2
see also Candu Reactor
see also Carolinas-Virginia Tube Reactor
see also Chappelcross Reactors
see also Chinon Reactors (EDF-1)
see also Chinon Reactors (EDF-2)
see also Chinon Reactors (EDF-3)
see also Connecticut Yankee Power Reactor
see also Cooper Power Reactor
see also Crystal River Power Reactor, Unit 3
see also Crystal River Power Reactor, Unit 4
see also Diablo Canyon Power Reactor, Unit 1
see also Diablo Canyon Power Reactor, Unit 2
see also Dodewaard Power Reactor
see also Donald C. Cook Power Reactor, Unit 1
see also Donald C. Cook Power Reactor, Unit 2
see also Dounreay Fast Reactor
see also Dresden Power Reactor, Unit 1
see also Dresden Power Reactor, Unit 2
see also Dresden Power Reactor, Unit 3
see also Dungeness A Reactors
see also Dungeness B Reactors
see also Easton Power Reactor
see also Edwin I. Hatch Power Reactor, Unit 1
see also Elk River Power Reactor
see also Experimental Boiling Water Reactor
see also Experimental Breeder Reactor
see also Experimental Breeder Reactor-II
see also Experimental Gas Cooled Reactor
see also Fast Ceramic Reactor
see also Fermi Fast Breeder Reactor
see also Fort Calhoun Power Reactor, Unit 1
see also Fort St. Vrain Power Reactor, Unit 1
see also Fukushima Power Reactor, Unit 1
see also Garigliano Power Reactor
see also Geesthacht Power Reactor
see also Gentilly Power Reactor
see also GKN Reactor
see also Grosswelzheim Superheat Reactor
see also Gundremmingen Power Reactor
see also H.B. Robinson Power Reactor, Unit 2
see also Halden Boiling Reactor
see also Hallam Power Reactor
see also Hanford Dual-Purpose Reactor
see also Hanford Production Reactors (N)
see also Heavy Water Organic-Cooled Reactor
see also High-Temperature Gas-Cooled Reactor Experiment
see also Hinkeley Point 1 Reactors
see also Hinkeley Point 2 Reactors
see also Homogeneous Reactor Test
see also Humboldt Bay Power Reactor
see also Hunterston Reactors
see also Indian Point Power Reactor, Unit 1
see also Indian Point Power Reactor, Unit 2
see also Indian Point Power Reactor, Unit 3
see also Japanese Power Demonstration Reactor
see also Karachi Power Reactor
see also KNK Power Reactor
see also La Crosse Boiling-Water Reactor
see also Latina Power Reactor
see also Lingen Power Reactor
see also Los Alamos Molten Plutonium Reactor Experiments
see also Los Alamos Power Reactor Experiments
see also Los Alamos Turret Reactor
see also Lucens Reactor
see also Maine Yankee Power Reactor
see also Malibu Power Reactor
see also Marcoule Reactors (G-2)
see also Marcoule Reactors (G-3)
see also Maritime Gas Cooled Reactor
see also Maritime Nuclear Steam Generator
see also Maritime Pressurized Water Reactor
see also Mihama Power Reactor, Unit 1
see also Millstone Point Power Reactor, Unit 1
see also Molten Salt Breeder Reactor
see also Molten Salt Reactor Experiment
see also Muehleberg Power Reactor
see also MZFR (Siemens Reactor)

see also Naval Reactors
see also Nieder Aichbach Power Reactor
see also Nine Mile Point Power Reactor
see also Novo Voronezh Power Reactor, Unit 1
see also NPD Reactor
see also Nuclear Auxiliary Power Systems
see also NWK Reactor
see also Obrigheim Power Reactor (Germany)
see also Oldbury Reactors
see also Organic Moderated Reactor Experiment
see also ORGEL Reactor
see also Oskarshamn Power Reactor
see also Oyster Creek Power Reactor, Unit 1
see also Oyster Creek Power Reactor, Unit 2
see also Palisades Power Reactor
see also Peach Bottom Power Reactor, Unit 1
see also Peach Bottom Power Reactor, Unit 2
see also Peach Bottom Power Reactor, Unit 3
see also Pickering Power Reactor, Unit 1
see also Pickering Power Reactor, Unit 2
see also Piqua Power Reactor
see also Pluto Reactors (Tory)
see also Plutonium Recycle Test Reactor
see also Point Beach Power Reactor, Unit 2
see also Prairie Island Power Reactor, Unit 1
see also Prairie Island Power Reactor, Unit 2
see also Prototype Fast Reactor
see also Puerto Rico Power Reactor
see also Quad Cities Power Reactor, Unit 1
see also Quad Cities Power Reactor, Unit 2
see also RAPP Power Reactor
see also Reactors, AGR-type
see also Reactors, CANDU-type
see also Reactors, Magnox
see also Robert E. Ginna Power Reactor, Unit 1
see also Rocket Reactors (Kiwi)
see also Russellville Power Reactor
see also Saint Laurent-des-eaux Reactor (EDF-4)
see also Salem Power Reactor, Unit 1
see also San Onofre Power Reactor
see also Santa Maria de Garona Power Reactor
see also Savannah River Power Reactor Experiment
see also Saxton Power Reactor
see also SENA Power Reactor
see also Shippingport Pressurized Water Reactor
see also Shoreham Power Reactor, Unit 1
see also Sioux Falls Power Reactor
see also Sizewell Reactors
see also Sodium Reactor Experiment
see also Stade Power Reactor
see also Steam-Generating Heavy-Water-Moderated Reactor
see also Submarine Intermediate Reactor
see also Submarine Reactors (S1C)
see also Supercritical Once-Thru Tube Reactor
see also Surfside Reactor
see also Surry Power Reactor, Unit 2
see also Swedish Reactors (R-3)
see also Swedish Reactors (R-4)
see also Systems for Nuclear Auxiliary Power (SNAP)
see also Three Mile Island Power Reactor, Unit 1
see also Tokai-Mura Power Reactor
see also Trawsfynydd Reactors
see also Trino Power Reactor
see also Tsuruga Power Reactor
see also VAK Reactor
see also Vallecitos Boiling Water Reactor
see also Vallecitos Superheat Reactor
see also Vulcain Maritime Reactor
see also Windscale Advanced Gas Cooled Reactor
see also Wuergassen Power Reactor
see also Wylfa Reactors
see also Yankee Power Reactor
see also Zion Power Reactor, Unit 1
see also Zion Power Reactor, Unit 2
AEC regulatory action on various, 22:22754
air cleaning systems for, research on, 22:28037(R) (NYO-841-12)
antiseismic design of, research program for, 22:27416(R) (ORNL-4228)
auxiliaries for, safety requirements for, 22:42222
availability of world, statistical tabulation of, 22:39788 (TUBIK-7)
bibliography on designs for foreign and domestic, 22:27400 (BNWL-326(Rev.))
bibliography on light water, 22:44841 (WASH-1082)
boiler dynamics of pressure-tube, heavy-water-moderated, (T), 22:6048
boilers for, analysis of parameters for, 22:32833
boilers for, description of 400 MW vertical U-tube, 22:32836
boilers for, description of multiple vertical rows of straight suspended heat units in, 22:48677(P)
bolting materials design criteria for high-pressure high-temperature closures in, recommendations for codification of, 22:12034 (NYO-3660-1)
book: Collection of Works on Utilization of Nuclear Power Plants, Skoda, Plzen, 22:1824
book: Euratom Economic Handbook, 22:39766 (EUR-3079(Rev.))
buildings and facilities for CANDU-Type, design economics of, 22:48710
carbon dioxide-cooled heavy water-moderated 600 MW(e), description of French, 22:30241
characteristics of thorium-fueled ORGEL-type, 22:24937 (CONF-660524-, pp 119-28)
characteristics of underwater, description of general, 22:48715 (AERE-R-5500(Vol.2), pp 498-511)
components for sodium-cooled fast breeder, design of mechanical, 22:8269
components for, Argentina industrial capacity for production of electromechanical, 22:3837 (NP-16984)
conceptual design for 300 MW(e) liquid sodium-cooled fast Na-2, description of, 22:37439(T) (EURFNR-462)
condensers for seawater-cooled, corrosion mechanisms of, 22:47661 (CONF-671007-6)
configuration of 500 MW(e) thorium-fueled CIRENE-type, calculation of optimum economic, 22:44835 (RT/FI-(66)42-bis)
configuration of Austria 300 to 400 MW(e), conceptual design information for, 22:48708
configuration of dual-purpose 150 Mgd desalination and 1500 MW(e), evaluation of Southern California optimum, 22:50769
configuration of natural convection water-cooled and -moderated self-regulating non-boiling low pressure multi-zone thermoelectric, description of, 22:39870(P)
configuration of pressurized-water, review of economic and operational advantages in, 22:48692
configuration of prestressed concrete-enclosed and -shielded gas-cooled, with integral loading device and heat exchanger, 22:39844(P)
construction and fabrication of, development of standards and codes for, 22:44852
construction and operation costs for light water, tabular summary as of March 1, 1967, 22:44841 (WASH-1082)
construction and operation of, development of guidelines and standards for, 22:22722
construction in U. S. and Western Europe, predictions to 1980 of, 22:27439
construction of dual-purpose power-desalting, in Middle East, Senate hearings on, 22:42351
construction of first Dutch, 22:32804
construction of gas-cooled graphite-moderated, standards for steel pressure components in, 22:30183
construction of heavy water-moderated, method for fabrication of uniform parts for, 22:18472
construction of steel structures for, capability of Swiss industry for, 22:37456
construction of U.S.A., description of planned, 22:53298
construction of Yugoslavian, heat and mass transfer research for, 22:7821(T) (AD-821854)
construction of, use of concrete in, 22:48665
construction program for northwestern USA, description of, 22:14207
containment and siting for, summary of third IAEA symposium on, 22:20858
containment and siting of, conference on, 22:18423 (STI/PUB-154)
containment buildings for Yugoslavia, comparison of three types of, 22:48666
containment buildings for, evaluation of protective coatings for, 22:42191 (IN-1169)
containment buildings for, spray cooling of, 22:8257 (ORNL-TM-2002)
containment of coolant loss accident in water-cooled, description of MACACO analog program and PREST digital computer program for analysis of, 22:39896 (EUR-3927)
containment structures for heavy-water gas-cooled, analyses of types of, 22:18449
containment structures for pressurized-water 800 MW(e), analysis of U.S.A. design requirements for optimum prestressed concrete, 22:53317
containment structures for U.S., construction of concrete, 22:37472
containment structures for water-cooled, missile generation and protection criteria in design of, 22:50739 (ORNL-NSIC-22)
containment structures for, design criteria for, 22:3946
containment system for boiling water, description of fission product, 22:30203
containment system for pressure tube, description of equalizing-pressure gas release for, 22:3964(P)
containment system for, review of methods for control of radioactivity spread following hypothetical failure of, 22:46914 (ORNL-NSIC-27)
containment systems coatings for, criteria for performance of, 22:30121(R) (BMI-X-10229)
containment systems for British, description of, 22:18458
containment systems for French, program for development of, 22:18456
containment systems for light water cooled, evaluation of testing of, 22:46913 (ORNL-NSIC-26)
containment systems for, detailed analysis of earthquake resistant designs for, 22:37440 (HN-192)
containment systems for, evaluation of problems in construction of, 22:22719
containment systems for, evaluation of subatmospheric-type, 22:32864
containment systems for, systems approach to design of, 22:18440
containment vessels for, model for calculating pressure differentials across, 22:18446

control analysis for Terrestrial Low Power Reactor concept, 22:22858 (ORNL-4219, pp 87-109)
control elements for vertical fuel element configuration, effects on reactivity of horizontal, (T), 22:1827
control instrumentation for, analysis of boil-safe design requirements for, 22:53319
control instrumentation for, reliability analysis of, 22:53320
control of 300 MW(e) dual-purpose power-desalination, dynamic response model analysis of, (T), 22:22758
control of compact rocket, methods for, 22:6088
control of, method for transient digital, 22:18481
control of, use of noise measurements for continuous, 22:3909
control rod location and management for 1000 MW(e) superheating fast breeder D-1, calculation of optimum, (T), 22:53274 (EURFNR-544)
control rods for water-cooled, analysis of economics and efficiency of, 22:30190
control rods for, experience with boron-containing, 22:30199
control rods for, spatial neutron flux distribution effects on measured reactivity worths of, 22:18475
control system for, description of delayed coolant response for sudden load increase, 22:14215(P)
control system for, description of single time-constant transfer function from spectral power for on-line, (T), 22:18478
control system for, evaluation of two-detector cross-correlation 2DCT shutdown reactivity meter for, 22:50738 (ORNL-4255)
control system performance characteristics in, 22:35522
control systems for boiling water, use of digital computers in, 22:48685
control systems for, analysis of safety flow-scheme for, 22:53314
control systems for, analysis of safety requirements for optimum, (T), 22:53309
control systems for, description of, 22:42220
control systems for, description of automatic, 22:48686
control systems for, description of instrumentation for, 22:22756
control systems for, design of fluid, 22:1832
control systems for, economic effects of failures in optimum, (T), 22:1828
control systems for, use of analog computer for error analysis of neutron flux and period measurement in, 22:39819
control systems for, use of electronic equipment in, 22:48682
control systems using digital computers in, bibliography on, 22:32784 (RISO-M-725)
coolant cycles for steam-cooled, comparison of various, 22:1788
coolant development for gas-cooled, review of, 22:7834
coolant economics in Canada for heavy water-moderated, analysis of heavy water, 22:30250
coolant for, oxygen gettering from liquid sodium, use of thorium and zirconium alloys for, 22:1749 (AD-648248)
coolant heating in pressurized-water, effects of power plant parameters on, (T), 22:48698
coolant leak detection in drywell of primary containment of, instrumentation for, 22:16127 (CONF-671011-, pp 228-37)
coolant loop for pressurized water, description of dual, 22:18538(P)
coolant loss accident simulation for, use of Zircaloy-2 clad uranium dioxide pellets for out-of-pile, 22:30118 (ANL-7438)
coolant loss accidents in, analysis of effects of metal-water reactions during, 22:42202 (ORNL-NSIC-23)
coolant loss accidents in, description of Japanese blowdown test facility for simulating, 22:42267
coolant loss accidents in, heat transfer analysis model for, 22:30186
coolant piping for, rupture in 24-in.-OD, 22:16787(R) (BMI-1828)
coolant void reactivity effects in fast sodium-cooled, methods for reduction of, (T), 22:35559
coolants for, book on properties of, 22:32802
coolants for, fluid flow conditions for, 22:5940
coolants for, summary of research on boiling burnout applicable to, 22:44850
cooling system components for, analytical methods for calculating earthquake loadings and dynamic response of, 22:53283(T) (ORNL-tr-1940)
cooling system components for, methods of designing earthquake-resistance into, 22:53283(T) (ORNL-tr-1940)
cooling system equipment for water-cooled, description of, 22:42221
cooling system for chemical producing dual-purpose desalination, description of endothermic steam and hydrocarbon, 22:37523(P)
cooling system for closed circuit gas-turbine, description of dual-stage turbine-drive, 22:39836(P)
cooling system for direct conversion type, description of heat pipe, 22:14216(P)
cooling system for fast breeder, use of heavy water steam in, 22:32857
cooling system for gas-cooled desalination, description of compressor and turbine effluent brine heaters in, 22:37524(P)
cooling system for liquid hydrocarbon-cooled, description of, 22:35524(P)
cooling system for PRO, design of organic cooled, 22:3868
cooling system for, description of jet pumps for, 22:20956(P)
cooling system for, description of leak-detection system for water--gas, 22:35519(P)
cooling system for, performance of turbines for two-cycle helium--steam and one-cycle helium, 22:30219
cooling system of boiling, description of peak-pressure valve for steam bypass in, 22:37468(P)
cooling system valves for, engineering requirements of, 22:42224
cooling systems for boiling water, performance following coolant-loss accidents of core standby, 22:50701 (APED-5458)
cooling systems for dual-purpose, design of, 22:3813(R) (AI-CE-54)
cooling systems for integral prestressed concrete pressure vessel-contained carbon dioxide-cooled, description of, 22:53323(P)
cooling systems for pressure vessel-enclosed heat exchanger, description of, 22:48706(P)
cooling systems for, detailed failure effect analysis for, 22:37440 (HN-192)
cooling systems for, discussion of steam cycles in relation to, 22:3869
cooling systems for, economic and efficiency comparisons of, 22:42169 (BNWL-SA-2027)
cooling systems for, measurement of heat transfer and fluid flow characteristics of, 22:25004
cooling systems for, reactor environment effects on materials for, 22:37479
cooling systems, design and testing of valves for, 22:39825
core configuration of heavy water-moderated water-cooled superheating, description of improved, 22:44837 (TRG-Report-1692)
core cooling system for, analysis of failure of emergency, 22:12057
core fabrication for Japanese, description of domestic, 22:35486
core for high temperature gas cooled, coolant flow and pressure distribution measurements in simulated, 22:42189 (GAMD-8423)
core for, economic and technical aspects of fast sodium-cooled, 22:37460
core for, economic and technical aspects of gas-cooled graphite-moderated natural uranium, 22:37460
core for, economic and technical aspects of gas-cooled heavy water-moderated natural uranium, 22:37460
core for, economic and technical aspects of water-cooled and -moderated enriched uranium, 22:37460
core meltdown accidents in 1000 MW(e) fast, modified Bethe-Tait method analysis of, (T), 22:20853
core parameters for boiling heavy water, three zonal calculation method for thermal and hydraulic, 22:10015
core parameters for heavy water-moderated natural uranium fueled, analysis of, (E), 22:22765
core parameters for light water, effects on costs of, 22:44841 (WASH-1082)
core power distribution in, problems from, plutonium loadings on, (T), 22:20780 (BNWL-624, pp 4.1-16)
core spray cooling systems for, performance of emergency, (E), 22:24964 (IDO-17249)
cores for pressurized-water, improvements in thermal performance of, 22:12053
cores for, optimization for plutonium fuel use in, (T), 22:20780 (BNWL-624, pp 4.1-16)
costs for, description of CAPCOST computer program for determining escalated capital, 22:42167 (BNWL-822)
criticality calculations for small high-temperature lithium-cooled, for space power systems, 22:37512 (N-68-15792)
desalting equipment for, description of, 22:3864
description of 1000 MW(e) gas-cooled fast breeder, 22:16221
description of 1000 MW(e) liquid metal-cooled fast breeder, reference design plant, 22:9990(R) (BAW-1312)
description of 1000-MW low-pressure steam-cooled breeder, 22:5943
description of 300 MW(e) liquid sodium-cooled fast breeder, 22:39826
description of 300 MW(e) sodium-cooled fast breeder, 22:6036
description of 715 MW(e), with underwater containment, 22:30221
description of British dual-purpose desalination gas-cooled, 22:14239
description of CIRENE, 22:1810
description of CIRENE development program, 22:20837
description of Czechoslovak A-1, 22:3850 (ZJE-1-67)
description of European, 22:5931(R) (NP-17110)
description of gas-cooled, with prestressed concrete pressure vessel, 22:18625(P)
description of German AGR-type, 22:53338
description of heavy water-type, 22:30171
description of integral unit 550 MW gas cooled, 22:3852
description of Japanese heavy water-moderated boiling water-cooled plutonium fueled self-sustaining,

22:30238
description of planned Spanish, 22:25028
description of reflected underground, for treatment of liquid bitumens, 22:22785(P)
description of secondary coolant superheating, 22:14225(P)
description of U. S. facilities, 22:14142 (TID-8200(17th Rev.))
description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
description of US, 22:24990
design and economics of 200 MW(e) beryllium oxide-moderated pebble bed, 22:22716
design and evaluation studies of thermal molten-salt breeder, summary, 22:24935 (CONF-660524-, pp 41-63)
design calculations for fast, Belgian computer codes for, 22:35558
design characteristics of AGR-type, 22:39827
design characteristics of high temperature helium-cooled, 22:46943
design concept for 1000 MW(e) steam-cooled, with prestressed concrete vessel, 22:44816 (EURFNR-522)
design concept for space, with heat pipe-connected thermionic diodes, 22:39850 (N-68-12426)
design criteria for heavy water-cooled and -moderated vertical pressure-tube, description of, 22:30235
design evaluation of dual-purpose, in water desalination program, 22:27630 (ORNL-TM-2203)
design for earthquake-resistant floating, 22:39787 (TID-24558)
design improvements for light and heavy water boiling, 22:46946
design improvements in boiling water, review of, 22:46944
design improvements in pressurized-water, review of, 22:46945
design of 10 MW(e) Rankine-cycle lithium-cooled uranium nitride (UN)-fueled, for space electric propulsion, 22:30282 (UCRL-50382)
design of 1000 MW(e) uranium carbide (UC) fueled ordered pebble bed fast, economics of conceptual, 22:9992 (BNL-50027)
design of 1000 MW(e), with prestressed concrete pressure vessel, 22:24999
design of 1200 MW(e) high temperature pebble bed, conceptual, 22:35494
design of 528 MW(e) high temperature gas-cooled, assessment of conceptual, 22:5932(R) (NP-17118)
design of thermal, use of neutron data for, 22:5994
design parameters for 300 MW(th) ROVI-type, 22:44858
design parameters for 500 to 1000 MW(e) liquid sodium-cooled fast, description of optimum, 22:32736(T) (ANL-Trans-588)
design parameters for boiling heavy water moderated Yugoslav, 22:25019
design parameters for Bulgarian pressurized-water, analysis of optimum economic and safety, 22:32767(T) (JPRS-45161)
design parameters for gas-cooled U.S, 22:32912
design parameters for German fast sodium-cooled, conceptual, 22:22703 (KFK-660)
design parameters for heavy water-moderated gas-cooled, economic aspects of physical and thermodynamic, 22:1825
design parameters for in-core thermionic, for space electric propulsion, 22:37510 (GA-8390)
design parameters for low-power terrestrial boiling and pressurized water, 22:7814(R) (ORNL-4178)
design parameters for plutonium-fueled heavy-water-moderated boiling light water-cooled, 22:22702 (JAERI-1151)
design parameters for thermal, integrated physics analysis for optimum, (T), 22:32769 (KAPL-P-3423)
design parameters of liquid sodium-cooled plutonium oxide (PuO$_2$)-uranium oxide (UO$_2$)-fueled 350 to 500 MW(e) fast breeder GPU/AI, analysis of conceptual, 22:37463
design parameters of low-pressure-steam-cooled breeder, 22:5944
design parameters of Santa Maria La Garona, 22:22712 (STI/PUB-174)
design parameters of Zorita-1, 22:22712 (STI/PUB-174)
design with short pressure vessel and improved refueling method, 22:25047(P)
development activities of ENEA during 1967, 22:14382(R) (NP-17231)
development and economics in EURATOM community, 22:24953 (EUR-3561)
development and economics of world, summary of, 22:46932
development and operation of British, during 1956 to 1967, 22:10018
development aspects of, 22:18486
development by USAEC, JCAE hearings on, 22:10047
development for electric power generation, U.S. national policy on, 22:190
development for marine power sources, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
development for space systems, review of, 22:16259
development in Brazil of heavy water-cooled and -moderated thorium-converter, engineering and economics of, 22:30249
development in Czechoslovakia of heavy water-moderated gas-cooled, analysis of optimum design for, 22:30231
development in Japan, 22:18659
development in Latin America, 22:39965 (PRNC-112)
development in Soviet Union, survey of, 22:53502(T) (ORNL-tr-1990)
development in U. K. of gas-cooled, description of, 22:46905 (NP-17599)
development in U.K., Parliamentary committee report on, 22:35549
development in U.S.S.R., description of, 22:30210
development in U.S.S.R., review of, 22:20839
development in Yugoslavia of, economics for, 22:24995
development of 500 to 1000 MW(e) liquid sodium-cooled fast, analysis of problems in, 22:32736(T) (ANL-Trans-588)
development of advanced concepts, review of, 22:20849
development of British gas-cooled, survey of, 22:14200
development of British, review of program for, 22:16213
development of fast breeder, analysis of joint manufacturer-utility-government efforts for optimum, 22:35506
development of fast breeder, review of worldwide, 22:25034
development of fast, European program for, 22:18497
development of fast, in U.S.S.R, 22:39806
development of fast-breeder, economics in Europe of, 22:3857
development of free world, description for 1985, 22:27431
development of future, based on experience in the U. K, 22:18477
development of gas-cooled graphite-moderated, review of, 22:18494
development of gas-cooled, history of, 22:20850
development of gas-cooled, in United Kingdom, 22:6060
development of German, description of, 22:24981
development of heavy water moderated, economics of international, 22:25038
development of heavy water moderated, USAEC--AECL program for, 22:20808(R) (DPST-68-83-2)
development of heavy water-cooled and -moderated uranium oxide (UO$_2$)-fueled 600 MW(e) prestressed concrete-contained, description of, 22:30234
development of heavy-water, review of Western European, 22:18496
development of Japanese fast breeder, description of, 22:35485
development of large, economic and technological aspects of, 22:16209
development of light-water, review of, 22:18493
development of liquid sodium-cooled fast breeder, engineering aspects of, 22:16220
development of multiple-unit, economics of, 22:16218
development of pressurized water, review of, 22:24985
development of small, technical and economic aspects of, 22:18495
development of South Africa, analysis of criteria for economic, 22:53299
development of steam-generating heavy water-moderated, design parameters for economic, 22:35495
development of U. S., analysis of optimum, 22:35508
development of U. S., JCAE hearings on, 22:10048
development of U. S., JCAE hearings on, 22:10046
development of U. S., JCAE hearings on, 22:10045
development of U.K. advanced gas-cooled, description of, 22:48678
development of U.S., review of, 22:16214
development of VVER-type, in U.S.S.R, 22:39807
development of Western European, economic potential of, 22:18498
development of world, history of, 22:24984
development of world-wide, projections to the year 2010 of, 22:42271
development of Yugoslav, 22:16167(T) (JPRS-44180)
development of, analysis of world-wide, 22:42227
development of, chemical problems in, 22:42261
development of, discussions on, 22:18499
development of, economic analysis of, 22:42256
development of, future prospects for, 22:20843
development of, review of worldwide, 22:25032
development of, technical and economic aspects of, 22:18500
development of, technical and economic factors influencing worldwide, 22:46931
development of, technical, economic, and political aspects of future, 22:39822
development potential of high-temperature gas-cooled, 22:39820
development program for 1000 MW(e) heavy water-moderated organic-cooled, description of, 22:50741 (WASH-1083)
development program for Austria, description of optimum, 22:48691
development program for Canada, analysis to 1978, 22:42226
development program for Canada, description of AECL research in, 22:42151 (AECL-3067, pp 35-43)
development program for Canada, description of AECL participation in, 22:42148 (AECL-3067)
development program for Canada, description of AECL research in, 22:42354 (AECL-3067, pp 21-8)
development program for Canadian, description of, 22:32902

development program for CIRENE, 22:3853
development program for European fast, economic analysis of, 22:35496
development program for fast breeder, analysis of optimum, 22:37464
development program for fast liquid sodium-cooled, analysis of uncertainties for physics parameters and fuel costs in, 22:50733 (GEAP-5635)
development program for German 300 MW(e) sodium-cooled, 22:53336
development program for German liquid sodium- and steam-cooled fast breeder, description of optimum economic, 22:37461
development program for Germany fast breeder, description of, 22:48670
development program for Japan, description of, 22:46972
development program for single- and dual-purpose desalination--power, analysis of optimum, 22:35582
development program for South Africa, analysis of optimum, 22:44834 (PEL-175-E)
development program for South Africa, description of, 22:39837
development program for South African liquid sodium-cooled heavy water-moderated natural uranium-fueled 1000 MW(e), description of, 22:27421
development program for Sweden, description of, 22:48690
development program for U. S. 1000 MW(e), analysis of optimum economic, 22:48703
development program for U. S. Pacific Northwest, analysis of economics of, 22:39818
development program for U. S., analysis of, 22:48702
development program for U. S., JCAE hearings on 1969, 22:35521
development program for U.K. dual-purpose desalination, description of, 22:42352
development program for U.K., description of, 22:44859
development program for U.S. fast breeder, description of, 22:35541
development program for U.S., review of past and present, 22:39809
development program for USSR, description of, 22:35480
development program for Western Europe, discussion of, 22:48697
development program for Yugoslavia, analysis of optimum economic, 22:48667
development program for, description of AECL, 22:42400
development program in France of heavy water-cooled and -moderated, description of, 22:30251
development program in Germany, 22:46933
development program in India for heavy water-moderated, description of, 22:30242
development program in Japan of water-cooled heavy water-moderated 200 MW(e) thermal, description of, 22:30243
development program in Poland for, description of, 22:42227
development program in the United Kingdom, 22:6053
development program in U. S. of heavy water-moderated organic-cooled 1000 MW(e), 22:30244
development program in US of heavy water-moderated water-cooled, description of, 22:30245
development programs for American, survey of, 22:37474
development programs for Canada, U.K., and U.S.A., economics of, 22:42149 (AECL-3067, pp 1-19)
development programs for Europe, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
development programs for fast breeder, economics of world-wide, 22:37448 (NP-17521)
development programs for Great Britain, description to 1985 of, 22:42231
development programs for high temperature gas-cooled, description of, 22:48689
development programs for U. K., effects of engineering on, 22:53258 (AERE-PGEC/L-194)
development programs of East Europe, description of present and planned, 22:53301
development progress in Italy, 22:46935
development prospects of Western European, 22:46965
development status and prospects in Japan, 22:46934
development trends in carbon dioxide-cooled, 22:6062
Doppler effect in fast, effects on design and safety characteristics of, (T), 22:20852
dynamic behavior of fast sodium-cooled, analysis of, 22:46958
dynamic behavior of natural circulation boiling, use of digital input to analog system for simulation of, 22:35482
dynamics analysis of, computer program for calculation of frequency responses in, 22:16107 (AEEW-R-539)
earthquake-resistant concept for, description of floating breakwater, 22:32793
economic analysis of, (T), 22:1770 (ORNL-4172)
economic and technical status and potential of light water, summary of, 22:44841 (WASH-1082)
economic aspects in Argentina, 22:3840 (NP-16988)
economic aspects of 600 MW(e) AGR-type, 22:6057
economic aspects of CIRENE, 22:1810
economic aspects of European high-temperature gas-cooled, 22:6041
economic aspects of, effects of sale of fission products on, 22:119
economic characteristics of 1000 MW(e) fast sodium-cooled, 22:20851
economic comparison of AGR and light water, 22:6059
economic comparison of pressurized-water, with conventional power plants, 22:30185
economic considerations for Yugoslav, 22:16167(T) (JPRS-44180)
economic evaluation activities at BNL during 1967, 22:39893 (BNL-50082, pp 25-6)
economic evaluation for 300 MW(th) dual-purpose desalination and, 22:44858
economic evaluation of European, 22:25000
economic evaluations for 1000 MW(e) heavy water-moderated, capital and unit energy, 22:39736 (BNWL-802)
economic feasibility for Southern California dual-purpose, 22:10020
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economic trends in, 22:16210
economics analysis of, CLOTHO code for communicating burnup data to codes for, 22:46861 (BNWL-770)
economics for Europe dual-purpose multiflash desalination, analysis of optimum, 22:44879 (EUR-4034)
economics of, 22:5936(T) (JPRS-43265)
economics of, 22:3811 (AECL-2946)
economics of 1000 MW(e), analysis of ceramic fuel LMFBR, 22:18517
economics of 600 MW(e) twisted tape boiling water, (T), 22:9996(R) (EUR-3651)
economics of breeder, BAKO computer program for calculating, 22:16154 (KFK-644)
economics of breeder, in 1986--2005, 22:16219
economics of combination fossil-fuel-fired superheater and, 22:25035
economics of Czechoslovak A-1, 22:3850 (ZJE-1-67)
economics of different types of, method for calculation of, 22:1815
economics of dual purpose power-desalination, in Lima, Peru, area, 22:44880 (NP-17508)
economics of dual-purpose advanced steam-generating and power, 22:42350 (TRG-Report-1691)
economics of dual-purpose desalination,, 22:25030
economics of dual-purpose power-desalination, (T), 22:35580
economics of dual-purpose power-desalination, (T), 22:35586
economics of dual-purpose power-desalination, based on AGR and SGHWR systems, 22:30294
economics of dual-purpose power-desalination, effects of water-power ratios and dual desalination processes on, 22:30292
economics of dual-purpose power-desalination, for Fortaleza, Brazil, 22:22795 (NP-17406)
economics of dual-purpose power-desalination, for production of ammonium nitrate from electrolytic hydrogen, 22:47002 (ORNL-TM-2202)
economics of dual-purpose power-desalination, socio--economic method for estimation of, 22:22794 (NP-17405)
economics of dual-purpose power-desalination, with both flash evaporation and electrodialysis desalting plants, 22:22793 (NP-17404)
economics of dual-purpose process heat and, 22:16232
economics of dual-purpose process heat and, for metallurgical industries, 22:10054
economics of dual-purpose process-steam, 22:39738 (CONF-671103-6)
economics of epithermal breeder, neutron and monetary, 22:9991 (BNL-10809)
economics of European, 22:3866
economics of fast breeder, BAKO code for, 22:32764(T) (EURFNR-459)
economics of fuel cycle in 1000 MW(e) sodium cooled fast, effects of plutonium composition on, 22:5922 (EURFNR-399)
economics of future, DAEDALUS code for linear programming simulation of, 22:42165 (BNWL-796)
economics of gas-cooled heavy water-moderated, in Czechoslovakia, 22:50747 (ZJE-26)
economics of German water-moderated thermal, 22:48709
economics of Great Britain and United States, comparison of, 22:14223
economics of heavy water moderated-natural uranium fueled, 22:14164
economics of high temperature gas-cooled, in West German utility system, (T), 22:35526
economics of large dual-purpose, for industrial process plants, 22:22796
economics of operation of, analysis of, 22:14205
economics of operations of, effects of cross-section uncertainties on,, 22:24973 (ORNL-TM-2157)
economics of pressurized-water, in dual-purpose power-desalination plants, 22:50786
economics of proposed 300 MW(e) Austrian, 22:14204
economics of U. S., 1964 JCAE hearings on, 22:14220
economics of various type, comparison of, 22:24996
economics of water-cooled and water-moderated, review of, 22:12049
economics of, effects of desalination on, 22:6038
economics of, JCAE report on, 22:20878
economy of, DAEDALUS-code for determining linear programming simulation of, 22:42166 (BNWL-796(App.))
efficiency criteria for fast, 22:39785 (SRARI-P-4)
efficiency for electric power generation, predictions of

present and future, 22:10904
efficiency of 500 MW(e) graphite-gas, effect of steam cycle characteristics on, (T), 22:30144 (EUR-3892)
effluent heat recovery system for, description of low temperature Rankine cycle, 22:27403 (CONF-680204-2)
electrical output capacity of, survey of installed world, 22:25029
electrical power production from U. S., evolution of, 22:1801
electricity from, industrial aspects of usage of, 22:39738 (CONF-671103-6)
electricity from, production of commercial, 22:12038
electricity generation from underwater, economics of, 22:48715 (AERE-R-5500(Vol.2), pp 498-511)
electricity production from European, summary of 1967, 22:37451
electricity production from fast, prediction of, 22:1802
electricity production from SGHWR-type, economics of, 22:1809
electricity production from, economics of Euratom, 22:1800
electricity production from, effects of uranium supply on economics of, 22:51110
electricity production from, survey of world-wide needs for, 22:1813
Emergency Core Cooling Systems for, ACRS comments on Advisory Task Force report on, 22:32900
Emergency Core Cooling Systems for, complete analysis of, 22:32785 (TID-24226)
Emergency Core Cooling Systems for, evaluation of, 22:32861
engineered safeguards for, detailed failure effect analysis for, 22:37440 (HN-192)
engineered safeguards for, effects on siting of, 22:44841 (WASH-1082)
enriched uranium fueled, growth forecast during 1960 to 1973 of U.S, 22:24976 (WASH-1084)
environmental surveillance studies for, 22:1795
equations of motion for circulating fuel, application of Liapunov method to nonlinear models to derive, 22:25031
evaluation of various types, for Argentina, 22:3841 (NP-16989)
fabrication in Japan of, problems associated with, 22:42280
fabrication of boiling water, description of safety aspects in, 22:30196
feasibility analysis of dual-stream power-desalination HWOCR concept, 22:30296
filters for British, methods for testing of, 22:18461
fission product behavior in water-cooled, analytical model development for prediction of, 22:46910 (ORNL-4265)
fission product diffusion from, calculational procedures for, 22:18428
fission product iodine behavior in containment system atmosphere of, review of, 22:14150(T) (WAPD-Trans-84)
fission product release and transport control in sodium-cooled fast breeder, review of methods for, 22:53396
fission product release in high-temperature gas-cooled, FIPER-1 computer program for, 22:50729 (GA-8564)
fission product release in, dynamic method for determining in-pile gaseous, 22:32858
fuel assemblies for heavy water-moderated, performance analysis for optimum configuration of uranium oxide (UO_2), 22:30264
fuel assemblies for high-temperature gas-cooled, description of hexagonal-shaped sleeve-covered columnar moderator block with multiple parallel symmetrically-arranged, 22:48671(P)
fuel assemblies in Canadian heavy water-moderated, analysis of performance of Zircaloy-2 uranium oxide (UO_2), 22:30263
fuel burnup in boiling-water, methods for analysis of, 22:22737
fuel burnup in thermal, Czechoslovak methods for calculation of, 22:22731
fuel burnup in thermal, French studies on, (E/T), 22:22732
fuel burnup in thermal, review of Japanese studies on, 22:22735
fuel burnup in thermal, review of U.S. studies on, 22:22733
fuel burnup in thermal, Swedish calculational methods for, 22:22736
fuel burnup in, determination of plutonium-containing, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
fuel burnup performance of, analysis of cycle management for optimum, 22:53291
fuel consumption by 2000 of U. S. and EURATOM, analysis of, 22:35513
fuel cost calculations for dual-purpose, 22:3813(R) (AI-CE-54)
fuel cycle economics for liquid metal-cooled fast breeder dual-purpose desalination, analysis of optimum, 22:32910
fuel cycle economics in Argentina, methods of calculation of, 22:3931 (NP-16987)
fuel cycle economics of graphite gas natural uranium, 22:24982
fuel cycle for Czechoslovakian, economics of uranium, 22:50746 (ZJE-25)
fuel cycle for pressurized-water, analysis of economics of thorium, 22:32908
fuel cycle for pressurized-water, effect of uranium-236 and neptunium-237 on value of feed uranium in, 22:37447 (MIT-2073-6(Vol.2))
fuel cycle for pressurized-water, effect of uranium-236 and neptunium-237 on value of feed uranium in, 22:37446 (MIT-2073-6(Vol.1))
fuel cycle for pressurized-water, effects of neptunium-237 and uranium-236 on, 22:32907
fuel cycle in U. K. of 1000 MW(e) water-cooled thermal, gas-cooled thermal, and fast, performance comparisons for, 22:46909 (NP-17599, pp 30-40)
fuel cycle in water-cooled, financial aspects of, 22:16227
fuel cycle management for 1000 MW(e) Pickering-type heavy water-moderated, computer program analysis of optimum economic, 22:53264 (BNWL-833)
fuel cycle performance for 1000 MW(e) heavy water-moderated, analysis of optimum economic, 22:30255
fuel cycle performance for heavy water-cooled and -moderated, analysis of optimum, 22:30252
fuel cycle performance for heavy water-cooled and -moderated, analysis of long-term optimum economic, 22:30254
fuel cycle performance for heavy water-moderated boiling and pressurized, analysis of optimum, 22:30260
fuel cycle performance for heavy water-moderated water-cooled 500 MW, analysis of optimum economic, 22:30261
fuel cycle performance in U. S. of heavy water-cooled and -moderated, analysis of optimum economic, 22:30253
fuel cycle performance of heavy water-moderated organic-cooled 1000 MW(e), analysis of economic thorium oxide (ThO_2), (E/T), 22:30247
fuel cycle schedules to 1995 of, analysis of optimum, 22:35535
fuel cycle, 1966 conference on thorium, 22:24934 (CONF-660524)
fuel cycles for 1000 MW(e) sodium--cooled fast breeder, economics of nitride, (T), 22:22659 (BNWL-606)
fuel cycles for Canada, analysis of optimum economic, 22:42154 (AECL-3067, pp 61-4)
fuel cycles for future US, economics of, 22:23175
fuel cycles for high temperature, evaluation of, 22:1811
fuel cycles for high-temperature gas-cooled, description of optimum uranium-233, 22:35497
fuel cycles for Japanese boiling, analysis of fuel sources and economics for, 22:32849
fuel cycles for thermal, effects of neptunium-237 and uranium-236 on value of feed uranium in, (T), 22:46903 (MIT-2073-7)
fuel cycles for, development of plutonium, 22:20778(R) (BNWL-624)
fuel economics for, description of optimum control system for, (T), 22:42238
fuel element clusters for 600 MW(e), fabrication and testing of twisted tape, 22:9996(R) (EUR-3651)
fuel element configuration for 1000 MW(e) liquid metal-cooled fast breeder, economic analysis of, 22:10005 (KFK-568)
fuel element performance in 1000 MW(e) gas-cooled fast, effects of partial surface roughening on optimum heat transfer, (T), 22:50728 (GA-8268)
fuel element testing for thorium high-temperature, equipment and methods for, 22:51147
fuel elements for BWR and PWR, design parameters for, 22:44841 (WASH-1082)
fuel elements for Canadian, performance of zirconium-clad uranium oxide (UO_2), 22:42155 (AECL-3068)
fuel elements for CIRENE, research on zirconium-clad uranium oxide (UO_2), 22:7830
fuel elements for CIRENE-type, economics of thorium oxide, 22:22827 (RT/FI-(67)29)
fuel elements for dual-purpose, design of, 22:3813(R) (AI-CE-54)
fuel elements for fast breeder, design parameters for optimum, (E/T), 22:39810
fuel elements for gas-cooled graphite moderated, analysis of heat transfer and pressure losses from, 22:1767 (JUL-486-RB)
fuel elements for thermal, analysis of poisoning due to fission products in recycle, 22:6018
fuel elements for United Kingdom, economics of fabrication and quality control of, 22:27441
fuel elements for, effects of external parameters on lifetime of, 22:5993
fuel elements for, γ-attenuation method for detection of inhomogeneities in metal-clad oxide, 22:14739
fuel elements for, radioisotope buildup in plutonium, 22:6014
fuel elements of, estimates of radioisotopes recovery to 1990 from spent, 22:24933 (BNWL-SA-1529)
fuel loading machine for pressurized fluid-cooled, description of external-overhead-movable, 22:35523(P)
fuel management for steam-generating heavy water-moderated, analysis of optimum schemes of, 22:30259
fuel management for, calculational methods for optimum, (E/T), 22:22759
fuel management for, procedures used in, 22:53284
fuel management program for USA, computer simulation of, 22:25042

fuel performance for light water, summaries of, 22:44841 (WASH-1082)
fuel processing for, 22:27863(R) (ORNL-4204)
fuel production and reprocessing for, analysis of economics for, 22:48705
fuel reloading of 1000 MW(e) liquid metal-cooled fast breeder, description of, 22:9990(R) (BAW-1312)
fuel reprocessing for, 22:27865 (ORNL-4204, pp 46-51)
fuel reprocessing study for 10,000-MW(t) high-temperature gas-cooled, 22:23092 (CONF-660524-, pp 617-45)
fuel requirements for American, economic effects of, 22:37474
fuel requirements for fast breeder, evaluation of plutonium, 22:7804 (EURFNR-422)
fuel requirements for Western European, predicted, 22:46965
fuel rods for gas-cooled, fabrication of central-insulated molded molten metallic, 22:44848(P)
fuel rods of ORGEL-type organic-cooled, model studies for parallel flow vibrations in, (E/T), 22:48688
fuel supply for world-wide fast, forecast of plutonium, 22:48693
fuel utilization in boiling water, process computers for optimization of, 22:48680
fuel utilization in, economics of uranium, 22:39814
fuel-cycle costs for 1000 MW(e) gas-cooled fast breeder, (T), 22:27413 (GA-8032)
fuels for future, analysis of use of advanced thermal reactor fuel cycles for, 22:42198(T) (NSJ-tr-114)
fuels for German, economics of, 22:37502
fuels for high-gain breeder, use of unclad-metal, 22:5945
fuels for thorium, economics of using bred, 22:3851
fuels for water-cooled thermal, review of physics data for use of plutonium in, 22:37407 (BNWL-801)
fuels for, economics of, 22:48957
fuels for, exploration and processing of uranium ores for, 22:51108
fuels for, REPP code for optimum utilization of plutonium-containing, 22:20780 (BNWL-624, pp 4.1-16)
fuels from, economic value of fission products and transuranium isotopes recovered from spent, 22:49032
graphite for high-temperature, gas-cooled, oxidation of, 22:13062 (BNWL-473, pp 5.19-23)
heat transfer equipment for closed-cycle MHD, engineering problems of, 22:37503
heat transfer measurements for, use of heated metal spheres for forced-convection, 22:30118 (ANL-7438)
heat transfer system for boiling, description of high- and low-pressure turbine circuits with external superheating, 22:37466(P)
heat transfer system for direct-cycle gas-turbine, with means for emergency cooling, 22:39817(P)
heat transfer system for superheating, description of twin-turbine triple-core-circulation, 22:14365(P)
history of, summary of, 22:12043
indemnification of, discussion on amended Price-Anderson Act for, 22:44851
installation in Euratom nations of, complete survey of factors affecting, 22:12021 (EUR-3639)
isotope production by US, through 1990, 22:45245 (BNWL-716)
isotope production in, economic potential for, 22:8317
kinetics equations for fast, multigroup two-dimensional synthesis calculations for, 22:6012
kinetics equations for fluid-fueled, description of steady-state, (T), 22:35509
kinetics of heterogeneous, stochastic technique for analysis of, (T), 22:37459
kinetics of, description of computer programs for calculation of, (T), 22:32742 (BNWL-738)
kinetics of, drift correction of binary cross-correlation measurements for analyzing, 22:21369 (AEEW-R-583)
kinetics of, review of research in stability, (T), 22:27478 (BNL-12390)
legal aspects in Argentina, 22:3840 (NP-16988)
licensing of German, discussion of policy reforms for, 22:37505
licensing procedure for U. S., review of, 22:39815
licensing procedures for German, proposed modifications to, 22:22724
licensing process for, explanation of, 22:39774 (IDO-17272)
listing of world-wide,, 22:48656 (RT/EC-(68)1)
load control system for, with two secondary heat transfer circuits, 22:42287(P)
loading machine for vertical pressure vessel for organic-cooled, description of, 22:3860
loading machines for Yugoslav, fabrication of, 22:10087
loading system for CIRENE, description of on-power, 22:46921 (TID-24679(Vol.2))
loading system for CIRENE, operation and performance of, 22:46920 (TID-24679(Vol.1))
meltdown accident of 1000 MW(e) ceramic-fueled fast, Bethe-Tait analysis of parameters for, 22:1761 (GEAP-4809)
moderator damage problems in gas-cooled graphite-moderated, 22:6058
neutron flux flattening in gas-cooled graphite, use of, 22:50765
neutron spectra in, review of calculational methods for, 22:14175
neutron spectrum and effective cross sections in plutonium-containing cores in, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
nuclear engineering of, bibliography on, 22:50740 (TRG-Inf. Ser.-678)
nuclear technology for industry, 22:3853
operation by small electrical utilities, JCAE hearings on, 22:35516
operation economics for heavy water-cooled and -moderated vertical pressure-tube, 22:30235
operation experience of European high-temperature gas-cooled, 22:6041
operation in Europe of, power-generating cost analysis for optimum, 22:39766 (EUR-3079(Rev.))
operation in France of, economics and safety of, 22:12051
operation of AEG-type boiling, analysis of optimum economic and technical, 22:48696
operation of British, description of engineering improvements in, 22:14206
operation of gas-cooled graphite-moderated, review of, 22:18494
operation of proposed, personnel training requirements for, 22:12052
operation of U.K., analysis of economics for, 22:44843
operation of water-cooled fast breeder, analysis of optimum fuel cycle, 22:37504
operation of, analysis of regulations on government and private, 22:27422
operation of, applicability of digital computer systems to, 22:12058
operation of, effects of safety requirements on optimum, (T), 22:22687 (EURFNR-458)
operation of, personnel for, 22:3836 (NP-16983)
operation of, reliability for on-line, 22:32897
operation stability of heterogeneous reactors, calculation of, 22:20828
operations experience with world, summary of, 22:53304
operations histories of U.S., summary of, 22:1821
operator training for, description of GE-Dresden, 22:37499
operators and senior operators for, guide for licensing of, 22:46919 (TID-24662)
parameter variations in, sensitivity analysis of linear and nonlinear, 22:16233
performance of 1000 MW(e) helium-cooled, effect of artificially roughened fuel elements on, (T), 22:44863
performance of 1000 MW(e) steam-cooled fast, effect of core design parameter variations on, (T), 22:35554
performance of combined-process pressurized-water and superheating, analysis of optimum economic and technical, 22:42282
performance of dual-purpose desalination, analysis of optimum economic and thermodynamic, 22:39871
performance of fast, effect of plutonium recycling on long-time, (T), 22:35552
performance of heavy water-moderated, design analysis for economic, 22:30158 (STI/PUB-163)
performance of magnox-type, in the United Kingdom, 22:6054
performance of multi-purpose agro-industrial complexes, analysis of optimum, 22:44881 (ORNL-4291)
performance of pressurized-water, economic advances in, 22:27443
performance of pressurized-water, review of improvements in, 22:46942
performance of U. S., analysis to year 2000 of thermal, 22:37469
performance of U. S., France, and U. K., analysis of, 22:50749
performance of U.K. gas-cooled, 22:48678
performance of world-wide, comparison of,, 22:48656 (RT/EC-(68)1)
performance of, systems design for economic, 22:32903
performance parameters for dual-purpose, effects of brine heater leakage on, 22:32955
performance parameters of 600 MW(e) twisted tape boiling water, (T), 22:9996(R) (EUR-3651)
physics calculations for large fast, procedure for, 22:9997 (EURFNR-416)
physics characteristics of plutonium-containing cores in, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
physics characteristics of uranium 235 and plutonium fueled, comparison of, 22:1803
physics characteristics of, development of mathematical model for analysis of, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
physics measurements for boiling heavy water-moderated plutonium-enriched natural uranium-fueled superheating, 22:30239
physics measurements for conceptual gas-cooled heavy water-moderated, analysis of optimum, 22:53330
physics measurements for dual-purpose heavy water-moderated natural uranium oxide (UO_2)-fueled, description of, 22:30240
physics measurements for fast, effects of neutron data errors on, (E/T), 22:35542
physics measurements for, calculational methods for, (E/T), 22:22759
physics measurements for, general analysis of, 22:53300
physics measurements in 300 MW(e) steam-cooled fast,

description of, 22:32905
physics measurements in heavy water-moderated, computer programs for, 22:24963 (IBK-241)
physics parameters for fast breeder, description of optimum, 22:35505
physics parameters in fast sodium-cooled, economic effects of uncertainties in, 22:22740
physics parameters of lithium-cooled uranium nitride fueled space, effects of cross-section uncertainties on, 22:20899 (UCRL-70797)
physics parameters of, effects of plutonium buildup on, (T), 22:14179
pipes for, design criteria for, 22:27416(R) (ORNL-4228)
pipes for, production and properties of, 22:32805
piping flexibility in liquid metal-cooled fast breeder, design and analysis of, 22:39812
piping for, computer program for determination of stresses in elbows for, 22:27521(R) (ORNL-4236)
poisoning control in shutdown, use of maximum principle for xenon, (T), 22:6031
power conversion systems for helium-cooled, temperature-entropy diagrams for, 22:46940
power conversion systems for space, conceptual design for liquid metal Rankine cycle, 22:42345 (UCRL-70863)
power conversion systems for space, design parameters of heat-pipe out-of-core thermionic, 22:42346 (UCRL-70984)
power excursion and blowdown analysis for, RELAP2 computer program for, 22:39773 (IDO-17263)
power generation in gas-cooled, by combining thermoelectric or thermionic process with magnetogasdynamic process, 22:39843(P)
power output from, use of twisted-tape fuels for increased, 22:25001
power perturbations in, use of computer for optimization of control rod-induced, 22:42183 (CEA-R-3499)
power production and desalination using, economics of, 22:48661
power production by German, politico-economic effects of, 22:30154 (KFK-675)
power production from European, calculation of fuel cycle costs during, 22:27438
power production from U.S., effects of fossil fuel power plants on economic, 22:39809
power production from, comparison with petroleum-fired plants of economy of German, 22:30169
power production from, effects of fuel costs on, 22:46938
power production from, effects on international economics and trade policies of, 22:30204
power production using combination conventional power plant and, economics of, 22:25020
power supplies for, integration of auxiliary and emergency, (T), 22:35484
power system electrical components for 0.25 to 10 MW(e) space, conceptual design analysis for high-temperature potassium Rankine cycle, 22:42342 (SAN-679-8)
power system for lithium-cooled space, description of potassium Rankine cycle turboelectric, 22:30287
power tilting in large, Greens function modal analysis technique for space-time dependent, 22:32824
power transients in large thermal, numerical characteristics of, 22:32882
power transmission from, use of spark gaps to limit surges in, 22:14610
pressure suppression system of, description of lower suppression chambers and upper spray ejectors for, 22:50755(P)
pressure systems of, design criteria for in-service inspection of, 22:16126 (CONF-671011-, pp 220-7)
pressure vessel and pressure piping for, flaw detection using acoustic emission analysis of, 22:16247 (CONF-671011-, pp 107-126)
pressure vessel for conceptual 1000 MW(e), optimization of design of prestressed concrete, 22:25009
pressure vessel for first Czechoslovakian, welding procedures for, 22:7812 (NUCLEX-66, Paper 4)
pressure vessel for, first Czechoslovakian, fabrication of, 22:7811 (NUCLEX-66, Paper 3)
pressure vessel steel development for, 22:2620
pressure vessels for France, design safety recommendations for prestressed concrete, 22:44832(T) (ORNL-tr-1966-e)
pressure vessels for large, shop fabrication and quality control techniques for steel, 22:16228
pressure vessels for light water, effects on total cost of, 22:44841 (WASH-1082)
pressure vessels for water-cooled, design and fabrication of prestressed concrete, 22:27436
pressure vessels for, description of Scandinavian prestressed concrete, 22:22718
pressure vessels for, design of prestressed concrete, 22:19007(T) (ORNL-tr-1877)
pressure vessels for, development of thermal insulation of prestressed concrete, 22:53303
pressure vessels for, fabrication criteria for prestressed concrete, 22:37455
pressure vessels for, fabrication of prestressed concrete, 22:27437
pressure vessels for, specifications for design, fabrication, and testing of, 22:37920
pressure vessels for, use of welding in fabrication of, 22:633
pressure vessels of prestressed concrete for, comparison of Europe and U. S, 22:48775
pressurizer in primary circuit of water-cooled, use of heat exchanger for steam pressure regulation in, 22:42265(P)
protection systems for, use of automatic electronic, 22:37438 (DUN-SA-65)
protective instrumentation systems for commercial, description of, 22:18485
pumps for, design criteria for, 22:27416(R) (ORNL-4228)
radiation protection in U. K., analysis of standards and procedures for, 22:53313
radiation protection in, health physics criteria for, 22:53321
radioactive material releases from, radiation dose calculations for, 22:45196 (TID-24190, pp 301-77)
radioactive wastes from, economics of nuclear transformation system for disposal of long-lived, 22:51199 (BNL-11915)
radioisotope production in, feasibility of, 22:8313
reactivity coefficient calculation for steady state operation of, 22:1756 (EUR-3013)
reactivity coefficients for fast, synthesis method for determining, 22:32800
reactivity coefficients of steam-cooled fast breeder, effect of design parameters on, (T), 22:35556
reactivity control in, description of multi-tube varying-level boric acid-filled zirconium alloy tube system for, 22:35518(P)
reactivity control of, radiometric device for determining boric acid concentration for, 22:25685
reactivity of ceramic-fuel fast breeder, effects of core composition and configuration on, 22:1775 (RT/FI-(67)23)
reactivity of thermal, sensitivity to fission neutron and prompt gamma spectra of, (T), 22:30161 (WAPD-T-1950)
refueling of, evaluation of on-line, 22:16146 (GA-8075)
regulatory action on U. S., summary of, 22:53394
regulatory actions on, summary of AEC, 22:32899
reliability of, experience data on, 22:32897
requirements for desalination-, 22:25030
requirements for future, electrical system planning to meet, 22:25037
research progress on Japanese, 22:30420
response during liquid sodium boiling accidents in, physical models and equations for calculating, 22:53383
safeguards and inspection for, description of IAEA system for, 22:42262
safety analysis for large fast breeder, relationship of double containment and aerosol behavior to, 22:7805 (EURFNR-425)
safety analysis for, effects on standards of, 22:24993
safety analysis of heavy water-cooled and -moderated, description of probability methods for, 22:30267
safety analysis reports for, guide to preparation of, 22:44836 (TID-24631)
safety aspects of Argentine, 22:3835 (NP-16982)
safety characteristics of 1000 MW(e) fast sodium-cooled, 22:20851
safety control systems for, description of, 22:22743
safety control systems for, description of, 22:22741
safety engineering concepts for, discussion of, 22:25022
safety hazards of, analysis of personnel, 22:42150 (AECL-3067, pp 29-33)
safety instrumentation for, reliability analysis for, 22:16111 (CEA-R-3292)
safety of advanced gas-cooled, analysis for urban siting of, 22:18443
safety of water-cooled, engineered safeguards used for, 22:27444
safety of, emphasis on better core design and construction rather than consequence-limiting devices for, 22:18448
safety of, incipient failure diagnosis for assuring, 22:16123 (CONF-671011)
safety programs for, outline of, 22:44855
safety requirements for operation of, analysis of, 22:48707
safety system testing for, design provisions for, 22:5919 (CONF-671011-2)
safety systems for boiling, analysis of engineered, 22:32859
safety systems for, description of scram portion of, 22:25024
shielding configurations for, design requirements of primary and secondary, 22:53322
shielding for 60 MW(e), weight optimization for layered water--lead--polyethylene--water, (T), 22:26160
shielding for marine, development of minimum requirements for, 22:42334(T) (NSJ-tr-105)
shielding for, summary of conference on, 22:53467
shielding of fast liquid lithium-cooled space, design parameters for, 22:39860 (N-68-18197)
shielding requirements for space applications, 22:27454
shutdown of, economic effects of unintentional, 22:39788 (TUBIK-7)
shutdown poison transients in coupled, control using ING source, (T), 22:46729(R) (AECL-3157)
shutdown safety system for boiling heavy water,

description of pipe-connected moderator tank for steam condensation, 22:30276(P)
shutdowns of world-wide, analysis of unscheduled, 22:53286
site criteria for, proposal for international acceptance of uniform, 22:18432
site for, evaluation of concept of standard, 22:18438
sites for first Spanish, description of, 22:18430
siting criteria for first Argentine, 22:18431
siting criteria for United Kingdom, 22:6056
siting in metropolitan areas, method for fission product dispersion calculations for, 22:18465
siting of British, numerical evaluation of risk in, 22:18433
siting of Canadian, policy for, 22:32904
siting of Canadian, requirements for, 22:18429
siting of French, safety considerations in urban, 22:18444
siting of Japanese, analysis of problems in, 22:18427
siting of Japanese, factors affecting, 22:18426
siting of Mexican, problems in, 22:18437
siting of U. S., requirements forecast to 1987, 22:48695
siting of U.S., effects of reactor design and engineered safeguards on, 22:18428
siting of US, policy for, 22:32904
siting of Yugoslav, factors affecting, 22:18435
siting of, effects of containment and engineered safeguards on, 22:18447
siting of, effects of containment on safety factors in, 22:18439
siting of, engineering safety evaluation of characteristics of, 22:18445
siting of, environmental effects on, 22:18466
siting of, evaluation of factors affecting, 22:12055
siting of, factors affecting U.S, 22:18425
siting of, federal and state legal aspects of, 22:27430
siting of, modifications in British policy toward metropolitan, 22:44853
siting of, proposed quantitative criterion for, 22:18436
siting of, radioecological factors in, 22:18442
siting of, summary of general AEC practices for, 22:44841 (WASH-1082)
siting of, summary of general trends toward metropolitan, 22:44841 (WASH-1082)
siting policy for British, results of application of practical, 22:18434
stability characteristics of, effect of coolant pass arrangement on, (T), 22:30152 (KAPL-P-3180)
stability in, analysis of space-independent, (T), 22:27478 (BNL-12390)
stability of 1000 MW(e) steam-cooled fast, effects of design parameters and control systems on, (T), 22:37399 (AE-321)
stability of spatially dependent nonlinear, criterion for asymptotic, 22:33160
stability of, Liapunov method for calculation of steady-state, 22:35502
standardization effects on bid evaluation by utilities, 22:35489
status of world, tabular summary by country of, 22:22714
steam cycles for steam-cooled, using the Loeffler principle, 22:16231
steam cycles for, description of saturated, 22:16230
steam generating system for, description of compact, 22:46974(P)
steam generation economics for, 22:4309 (TID-24102)
steam generator design for 1000 MW(e), boiler inlet header steady state and thermal transient stress analysis for sodium-heated, 22:42174 (BW-67-2(App.)(Vol.5))
steam generator design for 1000 MW(e), boiler outlet header steady state and thermal transient stress analysis for sodium-heated, 22:42175 (BW-67-2(App.)(Vol.6))
steam generator design for 1000 MW(e), functional engineering calculations for sodium-heated, 22:42182 (BW-67-2(App.)(Vol.13))
steam generator design for 1000 MW(e), reheater stress calculations for sodium-heated, 22:42173 (BW-67-2(App.)(Vol.4))
steam generator design for 1000 MW(e), sodium inlet nozzle fatigue analysis for sodium-heated, 22:42179 (BW-67-2(App.)(Vol.10))
steam generator design for 1000 MW(e), sodium inlet nozzle steady state stress analysis for sodium-heated, 22:42180 (BW-67-2(App.)(Vol.11))
steam generator design for 1000 MW(e), sodium inlet nozzle thermal transient stress analysis for sodium-heated, 22:42181 (BW-67-2(App.)(Vol.12))
steam generator design for 1000 MW(e), stress calculations for sodium-heated, 22:42170 (BW-67-2(App.)(Vol.1))
steam generator design for 1000 MW(e), stress calculations for sodium-heated, 22:42171 (BW-67-2(App.)(Vol.2))
steam generator design for 1000 MW(e), superheater outlet header steady state stress analysis for sodium-heated, 22:42177 (BW-67-2(App.)(Vol.8))
steam generator design for 1000 MW(e), superheater inlet header steady state and thermal transient stress analysis for sodium-heated, 22:42176 (BW-67-2(App.)(Vol.7))
steam generator design for 1000 MW(e), superheater outlet header thermal transient stress analysis for sodium-heated, 22:42178 (BW-67-2(App.)(Vol.9))
steam generator design for 1000 MW(e), TEMA calculations, nozzle loading calculations, and steady state calculations for tube sheets for sodium-heated, 22:42172 (BW-67-2(App.)(Vol.3))
steam generator for fast breeder, design of 527 MW(t) sodium-heated, 22:35465 (KFK-654)
steam generator for, redesign recommendations for sodium-heated, 22:27398(R) (BAW-1280-50)
steam generator types for, description of indirect cycle, 22:37454
steam generators for liquid metal-cooled, design studies for, 22:37443 (ITN/RF-1.1.1)
steam generators for pressurized-water, technical and economic comparison of, 22:42270
steam line for, configuration of turbine flow valve and quick-acting valves in dual by-pass, 22:48664(P)
steam separation in 600 MW(e) boiling water, development of gravity-type cyclones for, 22:3826(R) (EURAEC-1900)
steam separators for BWR, design parameters for, 22:25013
steam separators for, design and testing of radial vane, 22:48980(R) (GEAP-5567)
steam separators for, design and testing of radial vane, 22:48981(R) (GEAP-5655)
steam systems for, method of condensate treatment in, 22:24983
structures for, analytical methods for calculating earthquake loadings and dynamic response of, 22:53283(T) (ORNL-tr-1940)
structures for, methods of designing earthquake-resistance into, 22:53283(T) (ORNL-tr-1940)
superheaters for, valve for regulation of steam pressure to fossil fuel-fired, 22:53325(P)
surveillance program for, description of proposed pressure vessel and component, 22:53341
survey of dual-purpose desalination and, 22:10056
survey of French, general, 22:10017
tables of operating and planned, in IAEA member countries, 22:35550
technological and economic aspects of, 22:1799
technology of water-cooled and water-moderated, review of, 22:12049
temperature effects on surface waters, discussion of hearings of policy-forming committee for analysis of, 22:48687
testing of German, legal requirements and standards for, 22:48704
testing of, discussion of methods for on-line, 22:22748
thermal design of, effects of limiting hot channels on failure probability in, 22:12046
thermal pollution from, computer program for calculating effects on rivers of, 22:18467
thermionic cell, description of uranium-233-fueled molybdenum-reflected 0.14 MW(e) heat pipe, 22:32945
turbine design for British, review of, 22:18487
turbine design for water-cooled, 22:16230
turbine design for, basic parameters of, 22:18490
turbine for water-cooled, design of saturated steam, 22:18492
turbine plant studies for dual-purpose, 22:3813(R) (AI-CE-54)
turbine-generator cycles for large, method for performance prediction of, 22:16229
turbines for gas-cooled, development of, 22:18488
turbines for high-temperature gas-cooled, performance of closed-cycle gas, 22:39821
turbines for, description of saturated-vapor, 22:35511
turbines for, design of saturated steam, 22:18489
turbines for, design of saturated steam, 22:18491
turbo-compressor labyrinth gland and shaft bearing for gas-cooled, description of, 22:42278(P)
turbomachinery for closed-cycle MHD, engineering problems of, 22:37503
use for electricity production, summary and economics of future, 22:48649 (NEB-SS-21)
use in space applications of thermionic, 22:3882
utility commitments for light water, tabular summary as of October 1967, 22:44841 (WASH-1082)
valves for, design criteria for, 22:27416(R) (ORNL-4228)
xenon oscillations in heavy water gas cooled natural uranium, difference equations for describing, 22:16162 (UJV-1860)
xenon transients in large thermal, numerical characteristics of, 22:32882
xenon-power spatial transients in thermal, use of three-dimensional model for optimum control sequence of, (E/T), 22:39931

REACTORS, PRESSURIZED-WATER
  see also Army Reactors (MH-1)
  see also Army Reactors (PM-1)
  see also Army Reactors (PM-2)
  see also Army Reactors (PM-3)
  see also Army Reactors (SM-1)
  see also Belgian Reactor-3
  see also Beznau Power Reactor, Unit 1
  see also Calvert Cliffs Power Reactor, Unit 1
  see also Calvert Cliffs Power Reactor, Unit 2
  see also Carolinas-Virginia Tube Reactor

see also Connecticut Yankee Power Reactor
see also Crystal River Power Reactor, Unit 3
see also Crystal River Power Reactor, Unit 4
see also Diablo Canyon Power Reactor, Unit 2
see also Donald C. Cook Power Reactor, Unit 1
see also Donald C. Cook Power Reactor, Unit 2
see also Fort Calhoun Power Reactor, Unit 1
see also H.B. Robinson Power Reactor, Unit 2
see also Indian Point Power Reactor, Unit 1
see also Indian Point Power Reactor, Unit 2
see also Indian Point Power Reactor, Unit 3
see also Maine Yankee Power Reactor
see also Malibu Power Reactor
see also Maritime Pressurized-Water Reactor
see also Mihama Power Reactor, Unit 1
see also Naval Reactors
see also Novo Voronezh Power Reactor, Unit 1
see also NWK Reactor
see also Obrigheim Power Reactor
see also Otto Hahn Reactor
see also Oyster Creek Power Reactor, Unit 2
see also Palisades Power Reactor
see also Point Beach Power Reactor, Unit 2
see also Prairie Island Power Reactor, Unit 1
see also Prairie Island Power Reactor, Unit 2
see also Reactors, Boiling
see also Robert E. Ginna Power Reactor, Unit 1
see also Salem Power Reactor, Unit 1
see also Salem Power Reactor, Unit 2
see also San Onofre Power Reactor
see also Savannah River Components Test Reactor
see also Savannah River Power Reactor Experiment
see also Saxton Power Reactor
see also SENA Power Reactor
see also Shippingport Pressurized-Water Reactor
see also Spectral-Shift Control Reactor
see also Stade Power Reactor
see also Submarine Reactors (S1C)
see also Surfside Reactor
see also Surry Power Reactor, Unit 2
see also Three Mile Island Power Reactor, Unit 1
see also Vulcain Maritime Reactor
see also Yankee Power Reactor
see also Zion Power Reactor, Unit 1
see also Zion Power Reactor, Unit 2
bibliography on power, 22:44841 (WASH-1082)
boiler for, description of fabrication and facility control of, 22:53310
boiler materials for, corrosion testing of, 22:32835
boilers for, summary of operations experience with, 22:32839
configuration of Japan 36 MW(t) maritime, reference design, 22:46994
configuration of marine, description of optimum economic, 22:46992
configuration of power, review of economic and operational advantages in, 22:48692
containment buildings for, evaluation of protective coatings for, 22:42191 (IN-1169)
containment cooling sprays for, efficiency of, 22:46912 (ORNL-NSIC-25)
containment structures for 800 MW(e), analysis of U.S.A. design requirements for optimum prestressed concrete, 22:53317
containment structures for, description of double-vessel non-return pressure-vented, 22:16335(P)
containment system for, description of pressure chamber and melting ice pressure suppression, 22:48674(P)
containment system for, estimated radiolytic hydrogen produced by spray and coolant decomposition in, 22:42160(R) (BMI-1844)
containment system for, iodine deposition on coatings for, 22:22657(R) (BMI-X-10222)
containment systems for power, evaluation of testing of, 22:46913 (ORNL-NSIC-26)
containment systems for, detailed analysis of earthquake resistant designs for, 22:37440 (HN-192)
containment systems for, summary of safety features of air-cleaning equipment for, 22:46912 (ORNL-NSIC-25)
containment vessels for, description of concrete-shield steel-shell, 22:32868
containment vessels for, description of water-cooled non-return vented double-vessel, 22:16234(P)
containment vessels for, evaluation of safety of, 22:30195
control of, development of boron concentration meters for chemical shim, 22:16939(R) (WCAP-3690-3)
control rod drive for, description of internal and external pressurized-water hydraulic, 22:35503(P)
control rod drive mechanism for hermetically-sealed, description of dual-sealed rod and coaxial tube, 22:25050(P)
control rod drives for, description of double-sealed pressure equalizing cylinder for, 22:20871(P)
control rod performance in, examination of silver--indium--cadmium, 22:30198
control rods for, design of position indicator for, 22:12512(P)
control system for, evaluation of optimum, (T), 22:50771
control systems for, description of, 22:42220
coolant flow in parallel-flow rod bundles in, two-dimensional turbulent-flow mixing model for, 22:22875
coolant flow in, computer program for analysis of pump failure effects on transient, 22:33101 (WAPD-TM-428)
coolant heating in, effects of power plant parameters on (T), 22:48698
coolant leakage in, hazards evaluation of primary-to-secondary, 22:32794
coolant loop for, description of dual, 22:18538(P)
coolant loss accidents in Zircaloy-clad uranium oxide (UO_2)-fueled, fission product behavior in, 22:27399(R (BMI-1835)
coolant loss accidents in Zircaloy-clad uranium oxide (UO_2)-fueled, thermal and hydraulic reactions to, 22:27399(R) (BMI-1835)
coolant loss accidents in, analysis of effects of metal-water reactions during, 22:42202 (ORNL-NSIC-23)
coolant loss accidents in, analysis of radiolytic production of hydrogen during, 22:42160(R) (BMI-1844)
coolant loss accidents in, analytical description of, 22:16108(R) (BMI-1825)
coolant loss accidents in, BURST program for hydrodynamics calculation of acoustic phenomena during, 22:10001 (IDO-17254)
coolant loss accidents in, CHEMLOC-II code calculations of metal-water reaction, core heating, and core motion following, 22:27397 (ANL-7375, pp 135-59)
coolant loss accidents in, description of Japanese blowdown test facility for simulating, 22:42267
coolant loss accidents in, methods for reducing fission product concentration in containment vessel following, 22:46912 (ORNL-NSIC-25)
coolant losses in, evaluation of containment systems performance during, 22:5978
coolant losses in, space-dependent analysis of, 22:5977
coolant pipe rupture in, extent and initiation of primary, 22:646(R) (BMI-1817)
coolant systems of, efficiency of leak detection methods for on-line monitoring of primary, 22:6680 (SNE-36)
coolant water chemistry in hermetically sealed, 22:26029 (ORNL-4229, pp 71-83)
coolants for, development and evaluation of boron concentration meters for analyzing, 22:16939(R) (WCAP-3690-3)
cooling loop failures in, subcooled pressure gradient calculations following primary, 22:5975
cooling system burnout in, Freon loop for simulation of fluid mechanics and thermodynamics of, 22:39733 (AAEC/TM-441)
cooling system corrosion in, effects of water purification on, 22:3844 (ORNL-4173)
cooling system failures in, analysis of subcooled pressure gradients from, (T), 22:32766 (IDO-17243)
cooling system for dual-pressure vessel, description of U-shaped tube bank for integral vapor-generating, 22:39842(P)
cooling system for steam- and water-cooled, description of multi-zone core two phase, 22:37493(P)
cooling system for, description of 140 atm test loop for, (E/T), 22:24956(R) (EURAEC-1997)
cooling system for, description of core-encircling closed-loop, 22:20887(P)
cooling system for, description of integrated pressure and temperature controlled, 22:20888(P)
cooling system for, description of two-cycle, 22:53310
cooling system of, use of nozzle for water jet circulation in, 22:37494(P)
cooling system transients for self-pressurized, analog and digital computer model analysis of, 22:53290
cooling systems for, critical flow measurements for, 22:1820
cooling systems for, detailed failure effect analysis for, 22:37440 (HN-192)
core configuration for, description of gas pressure-vacating moderator-filled fuel-free zones in, 22:48676(P)
core configuration for, design analysis for optimum, 22:30164(R) (WCAP-3703)
core for, design for maritime use of burnable-poison, 22:3878 (TRG-Report-1500)
core lifetime for, computer program for burnup analysis of, 22:30165(R) (WCAP-3706)
core lifetime for, effects of physics parameter uncertainties on, 22:44841 (WASH-1082)
core supports for, fabrication of stainless steel, 22:39797
core supports in, analysis of stress testing of stainless steel, 22:30164(R) (WCAP-3703)
cores for, improvements in thermal performance of, 22:12053
criticality equations for, analysis of, 22:30166(R) (WCAP-3707)
description of dual- and single-purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of German light and heavy-water, 22:53339
description of integral pressurizer-supported fuel elements, 22:25048(P)
description of multi-element fueled and multi-channel cooled, operating at 2800 to 3200 lb/in.^{2}, 22:14228(P)
description of multi-region fast-breeder supercritical, 22:20884(P)
description with thermal barrier for maintaining

overpressure in coolant system, 22:6051(P)
design basis accidents in, containment conditions for, 22:30121(R) (BMI-X-10229)
design characteristics of, 22:3836 (NP-16983)
design data for low-powered terrestrial, 22:7814(R) (ORNL-4178)
design evaluation of metallic uranium-fueled, for process heat or power, 22:27630 (ORNL-TM-2203)
design improvements in power, review of, 22:46945
design parameters for 500, 750, and 1000 MWe, 22:44841 (WASH-1082)
design parameters for Bulgarian, analysis of optimum economic and safety, 22:32767(T) (JPRS-45161)
development during December 1960 to May 1961, description of, 22:30164(R) (WCAP-3703)
development during December 1961 to February 1962, description of, 22:30167(R) (WCAP-3708)
development during June to August 1961, description of, 22:30165(R) (WCAP-3706)
development during March to June 1962, description of, 22:30168(R) (WCAP-3710)
development during September to November 1961, description of, 22:30166(R) (WCAP-3707)
development of power, review of, 22:18493
development of power, review of, 22:24985
development of power, technical and economic aspects of, 22:18500
dynamics equations for, comparison of space-time synthesis calculations with exact two-group two-dimensional transient solutions for, 22:32830
economic analysis of, tabulated, 22:3839 (NP-16986)
economic aspects in Argentina, 22:3840 (NP-16988)
economic comparison of power, with conventional power plants, 22:30185
economic studies for Norwegian 500-MW, 22:16356 (KR-116)
economics of dual-purpose power-desalination, 22:50786
economics of Great Britain and United States, comparison of, 22:14223
economics of power production from, 22:18479
economics optimization in design of, 22:14195
electricity from, production of commercial, 22:12038
emergency cooling system for, description of B and W, 22:32862
engineered safeguards for, detailed failure effect analysis for, 22:37440 (HN-192)
excursions in, measurement and analysis of effects of cold-startup and hot-standby conditions short-period, 22:48648(R) (IDO-17271)
fabrication in Japan of, problems associated with, 22:42280
fuel assemblies for, computer analysis for optimum burnup in, 22:30168(R) (WCAP-3710)
fuel cycle costs for 880 MW(e), effects of plutonium price on, 22:53344
fuel cycle economics in Argentina, methods of calculation of, 22:3931 (NP-16987)
fuel cycle economics in, evaluation of basic, 22:14230 (NUS-265-A)
fuel cycle for, analysis of economics of thorium, 22:32908
fuel cycle for, economics of re-use, 22:42162(R) (BNWL-254)
fuel cycle for, effect of uranium-236 and neptunium-237 on value of feed uranium in, 22:37446 (MIT-2073-6(Vol.1))
fuel cycle for, effect of uranium-236 and neptunium-237 on value of feed uranium in, 22:37447 (MIT-2073-6(Vol.2))
fuel cycle for, effects of neptunium-237 and uranium-236 on, 22:32907
fuel cycle performance for heavy water-moderated, analysis of optimum, 22:30260
fuel cycles for power, effect of neptunium-237 and uranium-236 on value of feed uranium in, (T), 22:46903 (MIT-2073-7)
fuel element cladding for, design criteria for fission product retention by, 22:27492
fuel element for, description of Vapotron-type, 22:6190(P)
fuel element fouling by magnetite deposition, effects of ferrous hydroxide transformation into magnetite on, 22:619 (EURAEC-1896)
fuel element in, analysis of burnup of Zircaloy-clad uranium oxide (UO_2), 22:32894
fuel element performance in, tabular summary of, 22:44841 (WASH-1082)
fuel elements for Canadian, performance of zirconium-clad uranium oxide (UO_2), 22:42155 (AECL-3068)
fuel elements for Canadian, use of uranium oxides (UO_2) in, 22:3808 (AECL-2928)
fuel elements for, analysis of mechanical and physical properties of, 22:35461 (GEMP-482)
fuel elements for, calculations of stresses on claddings of, 22:1753(R) (BMI-1815)
fuel elements for, fabrication methods for, 22:12486
fuel elements for, fabrication of type 304 stainless steel-clad enriched uranium oxide (UO_2) pellet-type, 22:30164(R) (WCAP-3703)
fuel elements for, performance data for, 22:46938
fuel elements for, reference design parameters for, 22:44841 (WASH-1082)
fuel elements for, use of plutonium in, 22:6022
fuel elements in, neutron radiation effects on niobium--zirconium clad uranium oxide (UO_2) rods, 22:22830
fuel elements of, analysis of temperature effects on power density in type 304 stainless steel-clad uranium oxide (UO_2) pellet-type, 22:30167(R) (WCAP-3708)
fuel rod fabrication costs for, RODCOST computer program for uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2), 22:44809 (BNWL-789)
fuel rods for conceptual 1000 MWe, determination of cladding hot spot temperature transients for, 22:42160(R) (BMI-1844)
fuels for, development of enriched uranium oxide (UO_2) ceramic, 22:14147(R) (WAPD-MRP-122)
fuels for, proposed performance test code for, 22:28885
heat exchanger tubing for, corrosion by water at 316°C, 22:49683 (CONF-671007-4)
heaters for, description of star-connected three-phase transformer straight metal-sheathed wire immersion, 22:50774(P)
instrumentation for, description of nuclear, 22:42480
kinetics equations for large, use of modal expansion technique for obtaining exact solutions to space-time dependent, 22:30163 (WCAP-3680-20)
legal aspects in Argentina, 22:3840 (NP-16988)
moderator efficiency of, effects of boron concentration, water density, and temperature on, 22:30164(R) (WCAP-3703)
moderator efficiency of, effects of boron concentration, water density, and temperature on, 22:30165(R) (WCAP-3706)
moderator tank for pressure tube type, description of, 22:25192(P)
neutron flux distribution in large, two-group neutron diffusion equations for describing, 22:30163 (WCAP-3680-20)
neutron flux in large, effects of stability characteristics on thermal, 22:30163 (WCAP-3680-20)
neutron flux profile analysis in, BOLERA code for, 22:18588 (RT/FI-(67)28)
operation of, description of computer programs for monitoring optimum, 22:53318
operator training program for, detailed curriculum and schedule for, 22:37450 (WCAP-7170)
performance of power, economic advances in, 22:27443
performance of power, review of improvements in, 22:46942
performance of, analysis of optimum economic and technical, 22:42282
performance parameters for dual-purpose, effects of brine heater leakage on, 22:32955
physics characteristics of plutonium-containing cores in, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
physics measurements for uniform and non-uniform plutonium fueled lattices of, comparisons of, 22:22769
physics measurements in uranium metal-fueled desalination 4300 MW(t), description of, 22:32954
physics parameters for, effects of use of plutonium fuel on, 22:22658 (BNWL-475)
power defect in large, effects of non-linear feedback on, 22:30163 (WCAP-3680-20)
power density in large, effects of stability characteristics on, 22:30163 (WCAP-3680-20)
power distribution in, description of part length control rods for, 22:22867 (WCAP-7072)
power distribution of, analysis of external detector measurements of, (T), 22:27478 (BNL-12390)
power excursion and blowdown analysis for, RELAP2 computer program for, 22:39773 (IDO-17263)
power output of, analysis of optimum reactor response for varying, 22:35536
power peaking factors for, tabular summary of, 22:44841 (WASH-1082)
power production and desalination using, economics of, 22:48661
power supply system for, design for emergency, 22:18484
power transients in, effects of step-reactivity insertions on, 22:48648(R) (IDO-17271)
pressure suppression pools for, efficiency of, 22:46912 (ORNL-NSIC-25)
pressure vessel configuration for, description of vertical cylindrical sleeve separator for submerged core and surrounding boiler in, 22:37476(P)
pressure vessels for, description of multiple with paired rows of pressure tubes in, 22:16242(P)
pressure vessels for, description with two-region thermal barrier-separated and upper surge tank, 22:22887(P)
pressure vessels for, elastic and plastic methods of crack analysis for, 22:39892 (AD-663882)
pressure vessels for, evaluation of safety of, 22:30195
pressure vessels for, fabrication of stainless steel, 22:39797
pressurizer dynamics for, 22:32804
pressurizers for, equilibria models of, 22:4348
primary cooling system pipes of, fracture mechanisms of steel, 22:45763(R) (BMI-1847)
reactivity excursions in, effects of fuel element rupture on analysis of, 22:5981
regression analysis for U.S, 22:16169
safety of operation of desalination, analysis of leakage in brine heater, 22:30289 (ORNL-TM-2049)
safety of, summary of research and development May--June

- 1968 on, 22:22752
- stability determinations for large, effects of finite flux convergence criteria on spatial, 22:30163 (WCAP-3680-20)
- startup of, analysis of coolant loop, 22:30166(R) (WCAP-3707)
- steam generators for, technical and economic comparison of, 22:42270
- superheaters for, valve for regulation of steam pressure to fossil fuel-fired, 22:53325(P)
- systems for, detailed description of, 22:44841 (WASH-1082)
- transfer functions for large, comparison of fast and thermal, 22:30163 (WCAP-3680-20)
- use for desalination, applicability of, 22:39872
- use for dual-purpose power desalination, 22:25030
- use of stainless steels in Japanese power, description of, 22:32850
- xenon instabilities in large, effects of xenon feedback error on three-dimensional diffusion theory analysis of, (T), 22:44842(R) (WCAP-3680-7)
- xenon instabilities in large, two-dimensional half-core analysis of, (T), 22:44842(R) (WCAP-3680-7)
- xenon instabilities in, transient analyses of, 22:30162(R) (WCAP-3680-6)
- xenon oscillation control in description of part length control rods for, 22:22867 (WCAP-7072)
- xenon oscillations in large, feedback effects on space-time dependent, 22:30163 (WCAP-3680-20)
- xenon oscillations in, effects of core dimensions on, 22:30163 (WCAP-3680-20)
- xenon oscillations in, effects of core parameters on, 22:1776(R) (WCAP-3680-5)
- xenon stability analysis of, application of spatial stability criteria to, 22:32883
- xenon stability characteristics of large, effects of finite time-steps on spatial, 22:5983
- xenon-induced spatial oscillations in large, detailed analysis of, 22:30163 (WCAP-3680-20)

REACTORS, PROCESS HEAT

- see also BN-350 Reactor
- see also Bolsa Island Power Reactor, Unit 1
- see also Halden Boiling Reactor
- see also Hanford Production Reactors (N)
- see also Surfside Reactor
- availability of desalting, method for determining, 22:35578
- bibliography on desalination, 22:53409 (ORNL-NDIC-4)
- conceptual design for two 3000 MW(t) dual-purpose desalination water-cooled and -moderated, description of, 22:42353
- configuration of dual-purpose 1500 MW(e) and 150 Mgd desalination, evaluation of Southern California optimum, 22:50769
- configuration of natural convection water-cooled and -moderated self-regulating non-boiling low pressure multi-zone thermoelectric, description of, 22:39870(P)
- construction of dual-purpose power-desalting, in Middle East, Senate hearings on, 22:42351
- control of 300 MW(e) dual-purpose power-desalination, dynamic response model analysis of, (T), 22:22758
- cooling system for chemical producing dual-purpose desalination and power, description of endothermic steam and hydrocarbon, 22:37523(P)
- cooling system for gas-cooled desalination and power, description of compressor and turbine effluent brine heaters in, 22:37524(P)
- cooling systems for, design of, 22:3813(R) (AI-CE-54)
- description of desalination, bibliography on, 22:20902 (ORNL-NDIC-3)
- description of dual- and single-purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
- description of liquid-sodium-cooled fast breeder, 22:27455 (ORNL-4229, pp 188-90)
- description of reflected underground, for treatment of liquid bitumens, 22:22785(P)
- description of steam-producing, for water gas manufacture, 22:22792 (BNL-12319)
- description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
- description of US, 22:24990
- description of water-cooled desalination, submerged in a deep coolant-filled reservoir, 22:25072(P)
- design evaluation for water desalination applications, 22:27630 (ORNL-TM-2203)
- design of ROVI, economics for desalination, 22:1784
- development of desalination, activities summary for Nov. 1, 1966, to Oct. 31, 1967, 22:30288(R) (ORNL-4239)
- development of desalination, review of ORNL program for, 22:35585
- development of dual-purpose 1300 MW(e) steam-producing power, description of, 22:35512
- development of, review, 22:4309 (TID-24102)
- development program for single- and dual-purpose desalination--power, analysis of optimum, 22:35582
- development program for South African dual-purpose power--desalination, analysis of optimum, 22:44834 (PEL-175-E)
- development program for U.K. dual-purpose desalination and power, description of, 22:42352
- economic evaluation of 300 MW(th) dual-purpose power and, 22:44858
- economic feasibility for Southern California dual-purpose, 22:10020
- economics for Europe dual-purpose multiflash desalination, analysis of optimum, 22:44879 (EUR-4034)
- economics of back-pressure desalination and power, comparison of fossil-fuel plants with, 22:35584
- economics of desalination, analysis of, 22:35583
- economics of desalination, effects of steam leakage on, 22:30289 (ORNL-TM-2049)
- economics of desalination, using multi-stage flash evaporation, 22:30294
- economics of desalting, tabular summary of, 22:35579
- economics of dual purpose power and, for metallurgical industries, 22:10054
- economics of dual purpose power-desalination, in Lima, Peru, area, 22:44880 (NP-17508)
- economics of dual-purpose power and, 22:16232
- economics of dual-purpose power-, 22:39738 (CONF-671103-6)
- economics of dual-purpose power-desalination, 22:48661
- economics of dual-purpose power-desalination, 22:25030
- economics of dual-purpose power-desalination, (T), 22:35586
- economics of dual-purpose power-desalination, (T), 22:35580
- economics of dual-purpose power-desalination, based on AGR and SGHWR systems, 22:30294
- economics of dual-purpose power-desalination, effects of water-power ratios and dual desalination processes on, 22:30292
- economics of dual-purpose power-desalination, for production of ammonium nitrate from electrolytic hydrogen, 22:47002 (ORNL-TM-2202)
- economics of dual-purpose power-desalination, for Fortaleza, Brazil, 22:22795 (NP-17406)
- economics of dual-purpose power-desalination, socio-economic method for estimation of, 22:22794 (NP-17405)
- economics of dual-purpose power-desalination, with both flash evaporation and electrodialysis desalting plants, 22:22793 (NP-17404)
- economics of dual-purpose steam-generating and power, 22:42350 (TRG-Report-1691)
- economics of electricity production by, 22:16361 (ORNL-TM-1629)
- economics of large dual-purpose, for industrial process plants, 22:22796
- economics of multi-stage flash distillation dual-purpose, analysis of, 22:42353
- economics of operation of desalination, 22:18544 (STI/DOC-10/80)
- economics of pressurized-water, in dual-purpose power-desalination plants, 22:50786
- feasibility analysis of dual-stream power-desalination HWOCR concept, 22:30296
- fuel cost calculations for, 22:3813(R) (AI-CE-54)
- fuel cycle economics for liquid metal-cooled fast breeder dual-purpose desalination, analysis of optimum, 22:32910
- fuel elements for, design of, 22:3813(R) (AI-CE-54)
- fuel fabrication cost estimates for desalination, 22:8255 (ORNL-4170, pp 158-9)
- industrial usage of, 22:39738 (CONF-671103-6)
- operation economics of 100 to 400 MW(t) organic-cooled and organic-moderated, 22:12081
- operation economics of 200 MW(e) dual-purpose desalination, design of, 22:12082
- operation of desalination, description of optimum, 22:35583
- performance of dual-purpose desalination and power, analysis of optimum economic and thermodynamic, 22:39871
- performance of multi-purpose agro-industrial complexes, analysis of optimum, 22:44881 (ORNL-4291)
- performance parameters for dual-purpose, effects of brine heater leakage on, 22:32955
- physics measurements in uranium metal-fueled pressurized-water 4300 MW(t), description of, 22:32954
- production of industrial gases by, 22:3853
- requirements for power-desalination, 22:25030
- safety of operation of desalination, analysis of leakage in brine heater, 22:30289 (ORNL-TM-2049)
- survey of dual-purpose power and desalination, 22:10056
- turbine plant studies for, 22:3813(R) (AI-CE-54)
- use for desalination of water, complete cost analysis of, 22:30291
- use for desalination of water, summary of requirements for, 22:30293
- use for iron ore reduction, 22:25073(P)
- use for water desalination, discussion on, 22:30290

REACTORS, PRODUCTION

- see also Calder Hall Reactors
- see also Chinon Reactors (EDF-1)
- see also Chinon Reactors (EDF-2)
- see also Grosswelzheim Superheat Reactor
- see also Hanford Production Reactors
- see also Hanford Production Reactors (N)
- see also Marcoule Reactors (G-2)
- see also Marcoule Reactors (G-3)
- see also Plutonium Recycle Test Reactor
- see also Savannah River Production Reactors

  bowing of process tubes in, displacement gage for measurement of, 22:39890(P)
  description of U. S. facilities, 22:14142 (TID-8200(17th Rev.))
  description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
  development of, review, 22:4309 (TID-24102)
  economics for radioisotope production in Pontryagin's principle for calculating, 22:20929
  economics for radioisotope production in, Pontryagin's principle for calculating, 22:20928
  fuel cores for, fabrication of uranium, 22:2588 (NLCO-991)
  zinc-65 in effluent of Hanford, uptake of, by mallards, 22:4602(R) (COO-1514-3)
Reactors, Ramjet (Tory)
  see Pluto Reactors (Tory)
REACTORS, RESEARCH
  see also Advanced Test Reactor
  see also Air Force Engineering Test Reactor
  see also Ames Research Reactor
  see also Argonne Advanced Research Reactor
  see also Argonne High-Flux Research Reactor
  see also Argonne Research Reactor
  see also Argonne Thermal Source Reactor
  see also Belgian Reactor-1
  see also Belgian Reactor-2
  see also Belgian Reactor-3
  see also BEPO
  see also Brookhaven Beam Research Reactor
  see also Brookhaven Medical Reactor
  see also Brookhaven Reactor
  see also Cadarache Reactors (Cesar)
  see also Cadarache Reactors (Rapsodie)
  see also DIDO Reactors
  see also Engineering Test Reactor
  see also Fontenay-aux-Roses Reactors (Triton)
  see also General Electric Test Reactor
  see also Grenoble Reactors (Melusine)
  see also Grenoble Reactors (Siloe)
  see also Irradiation Facilities
  see also Japanese Materials Testing Reactor
  see also JEEP Reactor
  see also Materials Testing Reactor
  see also Michigan Research Reactor
  see also MIT Research Reactor
  see also NASA Research Reactor
  see also NBS Research Reactor
  see also NRL Research Reactor
  see also NRU Reactor
  see also NRX Reactor
  see also ORNL Fast Burst Reactor
  see also ORNL High-Flux Isotope Reactor
  see also ORNL Research Reactor
  see also Physical Constants Testing Reactor
  see also Power Burst Facility
  see also Reactor Safety Experiments
  see also Reactors, Swimming-Pool
  see also Saclay Reactors (Aquilon)
  see also Saclay Reactors (EL-2)
  see also Saclay Reactors (EL-3)
  see also Sandia Pulsed Reactor
  see also Sandia Pulsed Reactor-II
  see also Savannah River Components Test Reactor
  see also Savannah River Reactor Mockup
  see also Savannah River Thermal Test Reactor
  see also SLEEP Reactor
  see also South African Research Reactor
  see also Spanish Reactors (JEN-2)
  see also Swedish Reactors (R-0)
  see also Swedish Reactors (R-2)
  see also Walter Reed Research Reactor
  see also Whiteshell Reactor No. 1
  see also ZEBRA
  see also ZOE Reactor
  accelerator-booster targets of fast pulsed, neutron yields from, (E), 22:18557 (GA-8087)
  accident analysis of TAPIRO, use of analog simulators for reactivity insertion, 22:39883
  accidents in pulsed fast, theoretical models for analysis of maximum hypothetical, 22:35644
  beam hole configuration for ASTRA, description of 751 eV proton energy spectra measurement at 10^{-5} to 10^{-9} torr in, 22:44898 (SGAE-PH-67/1968)
  beam holes of VVR-S, construction description of multi-range spectrum biological, 22:22849
  beam tubes in Pakistan Research Reactor, reactivity worth measurements on, 22:22825 (PINSTECH/R.O.-4).
  book: Protection Against Neutron Radiation up to 30 Million Electron Volts, 22:45570
  bypass channel for TRIGA, construction of tangential, 22:10064 (RT/ING-(66)26)
  coherence measurements in coupled-core KFZ Argonaut, use of two detector method for two-node, 22:42379
  configuration of cylinder-enclosed, with vertical core-penetrating in-pile loop, 22:50821(P)
  configuration of JRR-3, description of, 22:48733 (JAERI-6004)
  construction and commissioning of Mainz TRIGA, delays in, 22:22847
  construction of HTR, description of, 22:47031
  construction of TR-1, description of, 22:35592 (CNAEM-47)
  construction of TRIGA, 22:20975(R) (BMwF-FBK-67-89)
  containment systems for Israel IRR-1, description of, 22:20921
  contamination of water circuits of WWR-C, by microorganisms, 22:2557
  control data recording in CABRI, use of CAE 330 computer for, 22:18566
  control of ISPRA-1, use of an analog method to optimize, 22:16278 (EUR-3735)
  control of pulse-type, effects on safety of, 22:44909
  control rod calibration in Pakistan Research Reactor, 22:22825 (PINSTECH/R.O.-4).
  control rod calibration of Queen Mary College Reactor, description of pulsed neutron method for, 22:27474
  control rod worth measurements for ESSOR and ISPRA-1, procedure for, 22:20923
  control rods for Netherlands, use of off-line computer for calculating reactivity worth of, 22:20922
  control rods for, description of multi-layer concentric cylinder, 22:14283(P)
  control rods for, dynamic testing of electromagnetic release for DR-3, 22:3897 (RISO-M-627)
  control rods for, reactivity worth of, 22:50828
  control system for DR-2, PDP-8 computer-based, 22:51279(R) (RISO-M-729)
  control system for Hitachi Training Reactor, description of digital computer, 22:30317
  control system for JRR-1, description of computer startup, 22:16286 (JAERI-1152)
  control system for Manchester and Liverpool Universities', description of on-off servomechanism, 22:12104
  control system for RB-1, calibration of, 22:50831
  control system for VVR-S, construction description of, 22:22849
  control system for ZR-4, description of, 22:42367
  control system for ZR-4, description of self-checking safety and interlock, 22:47020
  control system in, description of sample handling scram-prevention, 22:14278(P)
  coolant flow in PLUTO, measurement of pressure drops due to forced convective, 22:10068
  coolant level control system for swimming-pool, design of servo-operated displacement float, 22:14282(P)
  coolant water circuits of WWR-S Budapest, identification of radioresistant microorganisms in, 22:48748
  coolant water of IRT-1000 (Sofia), content of irradiation-produced fluorine-18 in, (E/T), 22:53424
  coolant-flow instabilities in University of Virginia, effects of boiling on, 22:51174
  coolants of Studsvik R2, large area proportional detectors for beta activity measurements in, 22:37970 (AE-319)
  cooling system efficiency in, review of, 22:35619
  cooling system for Illinois advanced TRIGA, thermal analysis of forced, 22:33017
  cooling system for WWR-M, effects of power level on radiolytic hydrogen concentration in, 22:35609
  cooling system for, description of core-enclosing gas chamber with water forced circulation, 22:48738(P)
  cooling system of BOR, analysis of accident shutdown safety for, 22:20903
  cooling system of BOR, safety evaluation of, 22:53359
  cooling system of RFT, description of improved mixed-layer ion exchangers for, 22:20826 (ZFK-RN-31, pp 69-76)
  cooling system of UTR-100, analysis of, (T), 22:25099 (SRRC-24/68)
  cooling system of VVR-M, decontamination procedure for, 22:20917(T) (JPRS-44332)
  cooling system of VVR-S, description of 5MW(t) capacity, 22:22849
  cooling system of WWR-M, efficiency of electrophoresis filter for, 22:20915 (ZFK-RN-31, pp 110-21)
  cooling system of WWR-S, fission product analysis of water in, 22:30306 (IFA-FR-59)
  cooling system of, description of mobile ion exchangers for, 22:20912 (ZFK-RN-31, pp 28-44)
  cooling water for IRT-1000, Sofia, gamma spectrometric methods for radioisotope control in, 22:18572
  cooling water for WWR-S, determination of metal ions in, 22:12258
  cooling water of VVR-S, separation of fission products from, 22:6132
  core and support rods for swimming-pool, description of bridge-suspended float-elevated movable, 22:39888(P)
  core design for high-pulse TRIGA, description of annular, 22:33020
  core for Apsara, description of, 22:42361 (NP-17538)
  core for EVA, properties of PAR-1 alloy used in construction of, 22:7895 (INR-779/XIV/PS)
  core for FR-2, loading diagrams for, 22:22820(R) (KFK-688)
  core for IAN-R1, neutron flux and reactivity measurements in, 22:32971 (IAN-R-1-2)
  core for STARK, description of second, 22:16296(T) (EURFNR-352)
  core for TAPIRO, critical mass for, 22:50829
  core for UAR-I, measurement of thermal neutron flux distribution in, 22:25100

core loadings 3 and 4 for STARK, fast--fission zone reactivity and power fraction of, (E/T), 22:22829(T) (EURFNR-424)
core loadings for fast-thermal, description of third and fourth, 22:16287 (KFK-668)
core parameters for Annular Core Pulse, measurement of, 22:33008
core physics calculations for, comparisons of solutions to transport theory equations for, 22:1861(R) (TID-24098)
cores for fast pulsed, calculation of dynamic stresses in elements of, (T), 22:20918
cores for UTR-10, cross-spectral density technique for reactivity determination in coupled-, 22:14271
corrosion of aluminum in Herald, 22:28743
critical characteristics of JRR-4, accuracy of calculation methods for, (E/T), 22:18560(T) (WAPD-Trans-85)
critical parameters of various core configurations and compositions in, (E/T), 22:50813
criticality determinations for STARK, 22:16296(T) (EURFNR-352)
criticality measurements for enriched uranium fluoride (UF_6) fueled beryllium moderated graphite reflected, 22:14267
criticality measurements in, bibliography of data from, 22:22799 (AHSB(S)Handbook-5(Pt.1))
criticality of high-leakage thermal, core and reflector temperature parametric effects on, (E/T), 22:5745
description of 1 MW(t) JRR-4, 22:1858 (JAERI-1141)
description of 5 MW(t) PARR, 22:6098 (PINSTECH/R.O.-1)
description of 60 MW fast BOR, 22:18520
description of copper reflected, fast source, for low level irradiation experiments, 22:12134
description of Dutch and U. S., for use in physics parameter measurements, 22:25106
description of FRAN Prompt Burst Machine, 22:22817 (IDO-17231)
description of German Physical-Technical Federal Institute, 22:35610
description of graphite- and water-moderated enriched uranium fueled LFR, 22:25112
description of HFR, 22:22811 (EUR-3650)
description of high flux pulsed and steady-state, 22:16302
description of Indian Apsara and CIR, 22:3910
description of liquid excursion pulsed, 22:6134(P)
description of PEC, for fast fuel element testing, 22:1867(T) (ORNL-tr-1786)
description of Polish R-2, 22:35617
description of RTS-1 Galileo, 22:50825
description of SEFOR, 22:6094 (EURFNR-403)
description of Soviet BR-5, 22:39806
description of Subcritical Time-of-Flight Spectrum Facility fast, 22:7894(R) (GA-8191)
description of SUR 100, 22:30335
description of U. S. facilities, 22:14142 (TID-8200(17th Rev.))
description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
description of underground, for bitumen irradiation, 22:18578(P)
description of VIPER, 22:35643
description of VIPER pulsed, 22:6106
description of water-moderated enriched uranium fueled HFR, 22:25114
description of water-moderated enriched uranium fueled BARN, 22:25110
design of pulsed, 22:37900 (BNL-50082, pp 153-80)
design parameters for Hungarian WWR-type, summary of, 22:42376
design parameters for TAPIRO, tabulation of, 22:50829
design proposal for Repetitively Pulsed Test Facility, 22:16284 (IN-1149)
Doppler effect in uranium-238 in uranium oxide (UO_2) blanket of Russian BR-1, (E/T), 22:35640
dosimetry methods used in RA and RB, description of in-pile, 22:12110
dynamics of pulsed fast SORA, stress wave production in, 22:12093 (EUR-3654)
economics for HFR, 22:22811 (EUR-3650)
effluent from stack of IRT-1000, concentration of argon-41 in, (E), 22:44911
environmental monitoring at University of Virginia, 22:25080 (DOCKET-5062-2)
experimental cryogenic facility for producing intense low-energy neutron beams, 22:47037
experimental facilities at TRIGA, design and performance of double-reflection neutron monochromator, 22:16940
experimental facilities at WWR-S, operation of neutron diffractometer, 22:28206 (IFA-FN-33)
experimental facilities for chemical research in, review of, 22:12123
experimental facilities for FR-2, description of cryogenic, 22:12122
experimental facilities for SORA fast pulse, description of, 22:39874(T) (ANL-Trans-616)
experimental facilities for swimming-pool, description of, 22:3914
experimental facilities for testing rhodium-type activation detectors, description of LPR high-temperature tank, 22:37528(R) (BAW-3647-8)
experimental facilities for Triga Mark II, design of total-reflecting conical thermal neutron collimator, 22:30324
experimental facilities for TRIGA, construction of tangential through channel, 22:3900 (RT/ING-(67)10)
experimental facilities for USSR, description of equipment for, 22:12129
experimental facilities for, description of 180° rotation, 22:1876(P)
experimental facilities for, description of horizontal liquid-cooled hydraulic rabbit, 22:53435(P)
experimental facilities for, description of liquid-drive vane-rotated cylinder-shaped sample holder, 22:53439(P)
experimental facilities for, description of shield-penetrating multiple-sample pneumatic rabbit, 22:53436(P)
experimental facilities in, conference on use of, 22:12107
experimental facilities in, use of beam hole, 22:12125
experimental facilities of BR-5 Reactor (USSR), description of epithermal neutron converter in, 22:18565
experimental facilities of VVR-SZ, description of, 22:12119
experimental facilities operation in, safety procedures for, 22:12135
experimental facilities sample container for, description of gas-insulated and electric-heated, 22:47033(P)
experimental facility for IEAR-1, for producing monoenergetic gamma rays by neutron capture, 22:25085 (IEA-133)
experimental hole cooling system design for, 22:10070(P)
fabrication of SORA mockup, description of, 22:35605 (ORNL-4263)
fast burst, description of liquid metal-cooled floating fused salt-fueled, 22:25117(P)
filters for 10 MW WWR-S, description of ion exchanger, 22:20914 (ZFK-RN-31, pp 55-68)
fission product buildup in Portuguese RPI, measurement of xenon and samarium, 22:37533 (LFEN-NI.-34-a)
fission products in shutdown environment of L54M, analysis of iodine-131, 22:25102
fission ratio for uranium carbide (UC)-fueled heavy water-moderated ECO, measurement of fast, (E/T), 22:37551
fission ratio measurements in RB-1, use of depleted uranium foils for fast, 22:27473
fission ratio measurements in uranium-238/uranium-235 foils in heavy water moderated, 22:33006
fission-product monitor system for pool-type, design and performance of, 22:30826
flowmeter performance in WWR-S, analysis of, 22:35676
flux and fission rate measurements in fast-thermal STARK, neutron, 22:16287 (KFK-668)
frequency response measurements of JRR-3, use of pseudo random binary signals for, 22:20927
fuel assemblies for ZED-2, effects of configuration and coolant on neutron flux peaking in 18-element uranium oxide (UO_2) CANDU-BLW rod-type, 22:44883 (AECL-3143)
fuel burnup in BR-5, analysis of plutonium oxide (PuO_2), 22:27470(T) (JPRS-45100)
fuel burnup in RS-1, analysis of uranium, (E/T), 22:44887 (EURAEC-2003)
fuel element assemblies of BR-5, radiation effects on plutonium oxide (PuO_2), (E), 22:35615
fuel element assembly for, description of joined multi-plate coaxial tube, 22:14275(P)
fuel element cladding for EWA Core 2, measurement of temperature transients in EK-10 type, 22:35598 (INR-879/XI/R)
fuel element fabrication procedure for JRR-2, 22:6127
fuel element failure testing at 400°C for pulsed, 22:40331 (NP-17544)
fuel element performance in BR-5, postirradiation examination of plutonium oxide (PuO_2), 22:37527(T) (ANL-Trans-609)
fuel element radial power distributions during TRIGA excursions, (E), 22:30339
fuel elements for pulsed, analysis of thermoelastic stresses in bolted assembly of, 22:3912
fuel elements for, design of casks for transport of, 22:290
fuel elements for, measurement of fission and absorption rates in, 22:48732 (INR-919)
fuel fabrication for Kyoto University, description of, 22:14272
fuel plates for Russian SM-2, radiation stability of, (E), 22:37544
fuel rod cooling in VVR-S, electrohydrodynamic method for, 22:51162 (IFA-FR-60)
fuel storage facility at JRR-2, design of, 22:16738 (JAERI-1153)
fuels and materials for Brookhaven Pulsed Fast Reactor, 22:4728 (BMI-X-455(Pt.1))
fuels for, procurement by ORNL, 22:10060 (ORNL-4170, pp 162)
gamma spectra from IRT-1000 (Sofia), at 3 to 11 MeV, scintillation detector for measuring, 22:25101
gamma-heating map of thermionic diode in Plum Brook low-power mockup, use of lithium fluoride dosimetry for,

(E/T), 22:37539 (N-68-22022)
gaseous effluent from University of Virginia, change of limits on activity of,, 22:25081 (DOCKET-5062-3)
heat release into Columbia River by, effects of, on growth of salmon, 22:17000 (BNWL-SA-1682)
heat transfer coefficients for University of Virginia, determination of lumped, (E/T), 22:30384
in-pile corrosion loop for Avogadro, description of, 22:12098
in-pile experiments at ORNL, instrumentation activities for, 22:22824 (ORNL-4219, pp 121-4)
in-pile experiments at ORNL, instrumentation support for, 22:22823 (ORNL-4219, pp 119-20)
in-pile loop for ESSOR, design of CIRENE Assembly Reactor Tests (CART), 22:42369
in-pile loop for fuel pin irradiation in FR-2, design and operation of helium, 22:42374
in-pile loop performance in TRIGA MARK II, description of liquid hydrogen, 22:12126
in-pile loops at JRR-2, description of, 22:12120
in-pile loops at JRR-3, description of, 22:12120
in-pile loops in, review of uses of, 22:53427
instrumentation for Apsara, description of, 22:42361 (NP-17538)
irradiation facility for biological materials in ASTRA, description of fast neutron, 22:30308 (SGAE-R-2/1967)
irradiation facility of Japanese, performance of, 22:13079
kinetics calculations for RB-2, description of, 22:50828
kinetics equations for TAPIRO fast, approximate analytical solution for , (E/T), 22:30313
kinetics parameters for heavy water zero power RB, pulsed neutron method for measuring, 22:12116
lattice parameter measurements on heavy water moderated 19-rod clusters of enriched-uranium oxide (UO_2)--thorium oxide in ZED-2, 22:7890 (AECL-2778)
leak detectors for WWR-S, description of color-indicator, 22:20913 (ZFK-RN-31, pp 45-8)
lethargy measurements with fast spectrum for Stanford Pool, 22:3903 (TID-24121)
liquid-jet-fueled super high neutron flux, conceptual description of, 22:25091 (LA-DC-9413)
materials for gas-cooled, radiation effects on, 22:35679
moderator voids in CANDU modkup in ZED-2, reactivity effect of, (E/T), 22:20775 (AECL-3002)
modernization of IRT, construction and fabrication operations during, 22:30304 (IAE-1401)
modifications to Soviet IRT-2000, 22:16297(T) (JPRS-43924)
multiplication factor in RB-1, measurement of infinite, 22:12112
multiplication factor measurement in natural uranium--graphite lattice in RB-1, null reactivity method for infinite, 22:42368
neutron age-diffusion measurements in RA reactor thermal column, verification of multigroup program by, 22:12113
neutron beam experiments in, description of techniques for, 22:39874(T) (ANL-Trans-616)
neutron buckling determinations for reflected, use of neutron importance-shape method for geometric, 22:6110
neutron buckling measurements in heavy water moderated superlattice in ZED-2, 22:33047
neutron buckling measurements in simulated burned-up natural uranium oxide (UO_2) clusters in ZED-2, substitution, 22:33046
neutron choppers for thermal and resonance neutrons at the VVR-S, description of mechanical, 22:12127
neutron cross section measurements in Ispra-2, use of oscillator techniques for average, 22:50817
neutron data recording in CABRI, use of CAE-330 computer for fast, 22:18566
neutron decay constants in semi-homogeneous experiment, measurement of prompt, 22:1869
neutron densities in SUR-100-BE, use of stochastic signals for measuring, 22:6099 (TUBIK-5)
neutron detection system for CP-5, description of manganese bath, 22:32961 (ANL-7310, pp 377-430)
neutron detector modifications in Texas A and M University, minimization of γ compensation problems by, 22:53452
neutron dose equivalent measurements for Hungarian WWR-S, fast, epithermal, and thermal, 22:6130
neutron dosimetry near TRIGA Mark II, activation dosimeter for, 22:19163
neutron energy-loss scattering experiments using time-of-flight method, cold, (T), 22:44594
neutron fissions in uranium-235 in heavy water moderated, ratio of epicadmium to subcadmium, 22:33006
neutron fluence determinations in WWR-S, foil activation techniques for, 22:16294 (UJV-1905)
neutron fluence measurements in ZED-2, effects of various moderators on, 22:12083 (AECL-2772)
neutron fluence variations in Netherlands, use of computer for evaluating autocorrelation function of, 22:20922
neutron flux determinations in Harwell, thermal and epithermal, 22:16264 (AERE-M-1870)
neutron flux distributions in RRR, measurements of thermal, 22:14274
neutron flux for FRO, computer program for time-dependent S/sub N/-calculations of, (E/T), 22:35632
neutron flux measurements in, 22:50828
neutron flux measurements in 5 MW(t) PARR, 22:6097 (PINSTECH/PHY-7)
neutron flux measurements in beam holes of WWR-S, residual, 22:3911
neutron flux measurements in PULSTAR and TRIGA, design and performance of detector using boron-10 (n,α) lithium-7 reaction for, 22:43048
neutron flux measurements in RB-1, analysis of thermal, 22:48741
neutron flux measurements in Siloette, design and performance of semiconductor detectors using converters for thermal, 22:40357 (CEA-R-3304)
neutron flux measurements in TRIGA-II, use of activation detectors for, 22:40376
neutron flux measurements in WWR-S, electronic calculator for, 22:51284
neutron flux measurements in, use of activation detectors for, 22:50831
neutron flux monitoring in TRIGA, development of aluminum--copper alloy activation detector for thermal and fast, 22:4437
neutron flux noise analysis for L-54, use of measurement of power spectral density for, (E/T), 22:50827
neutron flux tilting measurements in two-zone, 22:16301
neutron flux trap for RA, reactivity experiments for installation of, 22:12111
neutron fundamental-mode decay constant for NASA zero-power, prompt, 22:6112
neutron multiplication factor measurements in, 22:50831
neutron pulse buildup tests in ACPR, 22:48737 (SC-DR-68-501)
neutron radiative capture in uranium-238 foils in heavy water moderated, ratio of epicadmium to subcadmium, 22:33006
neutron radiative capture in uranium-238 to fissions in uranium-235 in heavy water moderated, measurement of ratio of, 22:33006
neutron spectra across Triga fuel element in cadmium-bearing heavy water, 22:39541(R) (GA-8626)
neutron spectra and emission times in, measurement techniques and equipment for, 22:14258(R) (GA-8304)
neutron spectra for WWR-S, measurement of thermal, (E/T), 22:35634
neutron spectra in beam port of Triga Mark-II, measurement of fast, 22:30332
neutron spectra in coupled-core RBI, use for analysis of reactivity in multi-charge core, 22:47015(T) (N-68-24522)
neutron spectra in graphite thermal column of WWR-S Bucharest, determination of analytical form of thermal, 22:44891 (IFA-FR-61)
neutron spectra measurements in 2MW(t) UA-RR-1, use of activation detectors for fast, 22:42370
neutron spectra measurements in beam from IRT (Sofia) reactor, 22:24821
neutron spectra measurements in central cell of triangular pitch uranium rod lattice Lattice Experiment Facility, description of thermal, 22:53414 (GA-8805)
neutron spectra measurements in Rossendorf RRR, 22:14268
neutron spectra variation determination in WWR-SM Warsaw by lutetium foil-dysprosium foil spectrum index measurements, 22:47012 (INR-895)
neutron spectral index measurement of k/sub infinity/ in RB-1, detector system for, 22:20911 (RT/FI-(67)30)
neutron spectral measurements in RRR, use of activation foils for integral, 22:18564
neutron spectral-index measurements using activation methods, survey of, 22:29873
neutron spectrometer for ISPRA-1, fabrication of rotating crystal, 22:28162
neutron spectrometers at VVR-S, optical characteristics of crystal and time of flight, 22:12128
neutron spectrometry at ISPRA-1, review of equipment and techniques for, 22:12130
neutron spectrometry measurements in VIPER 1, accuracy of time-of-flight, 22:35653
neutron spectrum in WWR-S, comparison of methods for determining fast, 22:47011 (IFA-FR-65)
neutron spectrum measurements at UTR-100, using a slow neutron chopper, 22:14821 (NP-17261)
neutron spectrum measurements in WWR-S Bucharest, resonance, 22:44894 (IFA-FR-69)
neutron streaming from void tubes in NASA-ZPR-II, multigroup method analysis of, (E/T), 22:16288 (NASA-TN-D-4270)
neutron temperature in graphite and internal thermal columns of WWR-S Bucharest, measurement of effective thermal, 22:44892 (IFA-FR-62)
neutron wave measurements in, description of experimental techniques for, 22:32996
operation of ASTRA, review of economics and programs for, 22:35614
operation of BOR fast, definition of emergency conditions in, 22:53349
operation of BR-5 (USSR) Reactor during 1964, 22:18571
operation of BR-5, description of fuel cladding rupture during, 22:30331
operation of BR-5, problems in safe, 22:53441
operation of Canada, power reactor research and development by AECL, 22:42354 (AECL-3067, pp 21-8)

operation of Canada-India, radiation hazards control during, 22:16299
operation of Cornell University TRIGA, for short-lived isomer research, 22:33022
operation of FRAN Prompt Burst Machine, kinetic calculations for oversized burst, 22:22818 (IDO-17231(Add.))
operation of High-Flux Reactor, description of, 22:44906
operation of IRR-1, description of nuclear physics experiments in, 22:12133
operation of MARK-1 TRIGA, history of, 22:33025
operation of MARK-3 TRIGA, history of, 22:33018
operation of University of Pavia Lena, history of, 22:33023
operation of University of Texas TRIGA, for activation analysis service, 22:33021
operation of University of Virginia, history of, 22:33024
operation of UTR-100, at Scottish Research Reactor Centre, 22:6131
operation of water-moderated enriched uranium fueled HOR, description of safety of, 22:25111
operational techniques for WWR-S, discussion of, 22:12096
operations experience with Hungarian WWR-type, summary of, 22:42376
operations history of FR-2, 1966, 22:22820(R) (KFK-688)
operations of HTR, description of irradiation, 22:47031
operations of Otaniemi TRIGA, during 1962 to 1967, 22:35620
operations of WWR-S at Rez, description of, 22:44900 (UJV-1906)
operations review from 1960 of ECO, 22:20810 (EUR-3898)
operations review from 1960 of ESSOR, 22:20810 (EUR-3898)
oscillator experiments in Ispra-2, description of, 22:50817
oscillator for RB-2, description of, 22:25103
performance characteristics of Annular Core Pulsed, measurement of, 22:33008
performance of TRIGA, 22:20975(R) (BMwF-FBK-67-89)
photon-energy flux fields in WWR-S, use of spectrocalorimetric probes for, 22:30333
physics characteristics of Soviet IRT-2000, 22:16297(T) (JPRS-43924)
physics characteristics of VIPER, measurement of, 22:35642
physics measurement in type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fuel water-moderated THETIS, effects of core configuration on, (E/T), 22:35593 (EURAEC-1882)
physics measurements for British Harwell, 22:12109
physics measurements for ECO, comparison with Ispra heterogeneous methods for, (E/T), 22:22841
physics measurements for ERMINE thermal-fast assembly in Minerve, description of, (E/T), 22:35631
physics measurements for heavy water-moderated Ispra, analysis of, (E/T), 22:22839
physics measurements for HOR, description of, 22:25108
physics measurements for JRR-4, description of, 22:16285 (JAERI-1139)
physics measurements for MARYLA-2 WWR-SM, calculation methods for micro- and macroscopic, 22:35597 (INR-878/XXI/PR)
physics measurements in STARK, use of neutron noise analysis for, 22:12095(T) (EURFNR-285)
physics measurements in type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled water-moderated THETIS, effects of core configuration on, (E/T), 22:35594 (EURAEC-1882(Annex))
physics measurements in uranium-fueled water-moderated, analysis of rho^{28}, (E/T), 22:35592 (CNAEM-47)
physics measurements of WWR-M, description of, 22:20917(T) (JPRS-44332)
physics measurements on SORA mockup, effects of beryllium and iron reflectors on, 22:35605 (ORNL-4263)
physics parameter calculations for RB-3 fast-thermal, 22:50871
physics parameter measurements in WWR-SM, 22:48732 (INR-919)
poisoning of Bucharest WWR-S, effects of operation schedule and power level on thermal fission product, 22:48731 (IFA-FR-41)
power distribution measurements in STARK, 22:16296(T) (EURFNR-352)
power disturbances in TRIGA, use of external gamma detectors for, 22:33048
power increase of RC-1, description of modifications for, 22:3905
power output of Otaniemi TRIGA, alterations for .25 MW, 22:35620
power spectral density for L-54, calculation of, (T), 22:50827
rabbit system for experimental facilities in, description of bobbin-wound lead measuring wire for hydraulic, 22:48740(P)
rabbit system for STARK, description of pneumatic, 22:12106
rabbit systems for experimental facilities in, description of thread-drive rod-type, 22:47034(P)
rabbit systems for, description of cylindrical-coupling variable-selector for multi-tube hydraulic, 22:47035(P)
radiation dose to man in environs of, at Hanford, 22:16998 (BNWL-SA-1449)
radiation monitoring equipment at Kyoto Univ., performance of, 22:6586
radiation testing in FR-2, fuel element, 22:32777 (KFK-700(Pt. XI))
radiation testing in FR-2, fuel element, 22:53273(T) (EURFNR-472)
radioactive contamination of environment of, effects of, on personnel, 22:6818
radioisotope production in IAN-R1, 22:40321 (IAN-Q-6)
reactivity calculations of HECTOR, analysis of substitution measurements for, 22:1874
reactivity fluctuations in RB-2, use of reactor oscillator for measuring electrolytic cell-induced, 22:12097
reactivity in RB-1, effects of neutron spectra on zero reactivity method for calculating, (E), 22:10074 (EUR-3637)
reactivity measurements for ESSOR, analysis of zero-power, (E/T), 22:30330
reactivity measurements in Annular Core Pulsed, use of individual fuel element contributions to determine excess, 22:33007
reactivity measurements in ECO and RB-1, accuracy of zero-reactivity method for, (E/T), 22:30338
reactivity measurements in RB-1, use of supercritical period method for, 22:50831
reactivity measurements in RTS-1 Galileo, 22:50825
reactivity measurements in Siloette, use of continuous current ion chamber for on-line, 22:37545
reactivity measurements in, methods for, 22:12108
reactivity meter for Otaniemi TRIGA, description of, 22:35621
reactivity meter for, description of, 22:38043
reactivity of NASA zero-power, shutdown, 22:6112
reactivity of RB, oscillator method for measurement of low, 22:44910
reactivity of Russian SM-2, effect of moderator density on, (E), 22:35639
reactivity temperature coefficients for University of Virginia, (E/T), 22:30384
reactivity transfer function measurements in, design of digital analyzer for, 22:32967 (EUR-3916)
reactivity variations with coolant density for a steam-cooled plutonium-fueled fast lattice in DIMPLE, (E/T), 22:35641
reflector for IAN-R1, neutron flux and reactivity measurements in, 22:32971 (IAN-R-1-2)
reflector for TAPIRO, activation calculations for, 22:50829
research progress on Japanese, 22:30420
safety analysis for 2 MW(t) operation of University of Virginia, 22:25079 (DOCKET-5062-1)
safety analysis for FRAN Prompt Burst Machine, 22:22817 (IDO-17231)
safety analysis for SORA, description of, 22:50812 (TID-24706)
safety analysis of TAPIRO, 22:50829
safety analysis reports for, guide to preparation of, 22:44836 (TID-24631)
safety instrumentation for, reliability analysis for, 22:16111 (CEA-R-3292)
safety report on RB-1, 22:3899 (RT/ING-(66)27)
safety systems for JRR-3, description of, 22:48733 (JAERI-6004)
shielding calculations for 1 kW uranium fluoride (UF_6) fueled, γ, 22:14266
shielding mockup experiment in FRG, design of, 22:3904(T) (ORNL-tr-1522)
shielding mockup experiment in FRG, neutron and gamma flux measurements in, 22:3904(T) (ORNL-tr-1522)
shielding of VVR-S, construction description of concrete, 22:22849
shielding test facility in JRR-4, measurement of γ leakage in, 22:7924
shutdown margin determination in subcritical, by transfer function measurement, 22:30322
siphon breaker for swimming-pool, description of coolant flow regulated, 22:14284(P)
sodium loop for CABRI, design for RAPSODIE fuel pin testing liquid, 22:53451
source transport in pool-type, description of hydraulic-actuated rabbit system for neutron, 22:53429(P)
spectrometer for DR-3, description of 0.020 to 1.3 MeV γ, 22:12132
spectrometer for FRM, description of conversion-electron, 22:12132
stability of RTS-1 Galileo, determination of, 22:50825
startup experiments on CABRI, blind, 22:16114 (CEA-R-3341)
startup of 5 MW(t) PARR, 22:6098 (PINSTECH/R.O.-1)
startup of HTR with a digital control system, automatic, 22:22848
startup procedures for, review of, 22:35619
test facilities for IAN-R1, neutron flux and reactivity measurements in, 22:32971 (IAN-R-1-2)
test facilities for PTB, neutron flux profiles and reactivity worths of, 22:35611
test facilities for UAR-I, measurement of thermal neutron

flux distribution in, 22:25100
test facilities in WWR-M, description of large vertical biological, 22:12100
test facility for ISPRA-1, neutron flux profile of 6 in. through, 22:16292 (RT/ING-(67)14)
testing and calibration of RTS-1 Galileo, description of initial, 22:50825
thermal column in FiR-1, neutron rethermalization in water and zirconium hydride in, 22:30383
thermal column in Pakistan Research Reactor, reactivity worth measurements on graphite, 22:22825 (PINSTECH/R.O.-4).
thermal column in Pakistan, measurement of γ dose rate and γ spectrum in, 22:53421 (PINSTECH/HP-5)
thermocouple calibration in Washington State University TRIGA, effects of pulsing on, 22:33162
training manual for AGN--201, 22:30341
transfer function analysis of L-54, use of spectral power density and neutron flux noise for, (E/T), 22:50827
transfer function determination in Kansas State University TRIGA Mark 2, use of computer codes and linear motion pile oscillator for zero power, (E/T), 22:44899 (TID-24579)
transfer function measurements in Iowa UTR-10, shutdown margin determination from, 22:14285
transfer function measurements in UTR-100, use of reactivity oscillator for, 22:3901 (SRRC-19/67)
transfer function of Milan L-54, use of pile oscillator for measurement of zero power, 22:50834
transfer functions of Northern Universities Reactor, temperature coefficients of reactivity for fuel and moderator, (E/T), 22:30337
transients for pulsed, calculation of prompt critical power and temperature, (T), 22:48744
TRIGA, argon-41 production in exposure rooms of, possible control of, 22:51625
tritium hazards at, protection of personnel from, 22:19345
use for basic physics research, description of, 22:3910
use for materials analysis by kinetic techniques, 22:12115
use in medicine, review of, 22:43364
use of Geesthacht Reactor, for physics measurement for Otto Hahn Reactor, 22:46997
use of IRR-1, on-line with mass spectrometer for isotope separation, 22:28029
use of JRR-1 and JRR-2 for sample irradiations, review of, 22:12124
use of PLATR, to determine k/sub infinity/ and local power distribution of BWR fuel elements, 22:44839 (UNC-5195)
use of the University of Pavia TRIGA, summary of, 22:50822
use of thermal neutron beams from WWR-2, for measurement of space-energy distribution in graphite--water system, 22:22828(T) (AERE-Trans-1085)
use of TRIGA-2 Pavia, review of, 22:50835
uses of Apsara, summary over ten year period of, 22:42361 (NP-17538)
void coefficient of reactivity in Hitachi Training Reactor, measurement of, 22:20925
water treatment in Herald, 22:28743
wind direction and velocity at Ispra, anemometer measurement of, 22:10379
xenon poisoning peak lowering with single power pulses in WWR-S, Bucharest, (E/T), 22:44893 (IFA-FR-64)

Reactors, Resonance
  see Reactors, Intermediate

Reactors, Saturable
  see Electronic Equipment

REACTORS, ROCKET
  see also Rocket Reactors (Kiwi)
  see also Rocket Reactors (NERVA)
  see also Rocket Reactors (Phoebus)
applications of small, to space missions, 22:16256
assembly of, equipment for remote, 22:4319
bibliography on, 22:44875 (TID-3586)
components for gas-core, tests on, 22:12078
configuration of dual-purpose atmosphere-fueled aircraft and, evaluation of conceptual, (T), 22:50784
configuration of open-cycle gas-core, analysis of optimum conceptual design, 22:53405
configurations of gas-fueled, description of advanced-design, 22:53408
control by hydrogen propellant flow regulation and system temperature measurement, (E/T), 22:30286
control element in, analysis of heat transfer of vane-type, 22:32941
control of compact power, methods for, 22:6088
control of, analysis of indirect schemes for, (T), 22:32953
control optimization using models with distributed parameters, (T), 22:12079
control problems with complicated constraints in, linear programming calculation of optimal, (T), 22:30285
control system for water-moderated, performance of helium-3, 22:35575
control systems for multi-zone cylindrical fast, description of yttrium hydride self-regulating, 22:46999 (N-68-24559)
control systems for, analysis of quasi-linear programming for calculating optimum, (T), 22:53406
coolants for, fluid flow conditions for, 22:5940
cooling requirements for tungsten water-moderated, analysis of postshutdown, 22:39866 (N-68-21111)
core configuration for, description of multi-plate tungsten-clad uranium oxide (UO_2)--tungsten fuel, 22:35574(P)
core destruct concepts for re-entry of, comparison of nuclear and explosive, (E/T), 22:30280 (NUS-277)
core for, failures from coolant flow induced vibrations in, 22:32950
core mockup of cavity, critical loading measurements in, 22:44874 (NASA-CR-72329)
core of, heat transfer in gaseous-fueled cavity-, (T), 22:32940
core of, radiant heat transfer in gaseous, 22:6072
cores for, critical experiments on cavity-type gaseous, 22:6086
critical mass determination in cavity-type, 22:3881(R) (NASA-CR-72234(Vol.1))
criticality in coaxial flow and vortex flow cavity-core, analysis of, 22:37520
criticality measurements for gas-fueled light bulb and open-cycle, analysis of uranium-233, 22:35571 (N-68-10931)
description of fast- and thermal-type, 22:16256
description of metal hydride-moderated fast and thermal optimum performance, 22:25062 (DLR-MITT-66-07, pp 11-27)
description of optimum performance lithium-cooled enriched uranium carbide-fueled .1 MW(e), 22:25063 (DLR-MITT-66-07, pp 87-99)
description of U.S.A., tables as of 30 June 1968, 22:46918 (TID-8200(18th Rev.))
description of USSR aircraft, 22:32951
design characteristics of gas-core, 22:12078
design model for optimum liquid metal-cooled reflector-controlled fast, description of, 22:39869
design parameters for cavity-type, 22:3881(R) (NASA-CR-72234(Vol.1))
design parameters for in-core thermionic, for space electric propulsion, 22:37510 (GA-8390)
development for European space program, evaluation of, 22:16253
development for manned space missions, requirements of future, 22:16254
development of multimegawatt thermionic, review of, 22:32933 (CONF-680508-2)
development of, lecture series on, 22:16252
development of, review, 22:4309 (TID-24102)
development of, review of U. S, 22:25205 (CONF-670445)
development programs for liquid- and solid-fueled hybrid and electric, review of, 22:53407
disassembly of, equipment for post-test, 22:4321
dynamic characteristics of, use of optimal control analyses for determination of, 22:25066
dynamics of, optimum control of, (T), 22:20952
economics of interplanetary flight by, mathematical model for, (T), 22:39868
effluent aerosol trapping from, effects of up to 148 db sound pressure on efficiency of HEPTA filters for, 22:44873 (LA-DC-9484)
engine systems development for, 22:22925
exhaust fission product containment in, description of water scrubbing system for, 22:35567 (LA-DC-9555)
fission density spiking in fast, thin europium neutron filters for reduction of, 22:32939
fuel containment and vortex flow testing of open-cycle and light-bulb types of cavity-core analysis of optimum gas, 22:44877
fuel containment characteristics of gaseous-core, with confined radial outflow and superimposed axial flow, (E/T), 22:37514 (N-68-17131)
fuel containment characteristics of gaseous-core, effect of buffer layer velocity and chamber length-to-diameter ratio on, (E), 22:37513(R) (N-68-16664)
fuel containment in gas-fueled, description of magnetic field, 22:32948
fuel containment simulation for vortex-stabilized open-cycle gaseous, analysis of radial-outflow vortex heavy-gas, (E), 22:39861 (N-68-18243)
fuel element for, description of multiple plate tungsten-clad uranium oxide (UO_2)--tungsten-184, 22:50785(P)
fuel element for, description of tungsten-clad uranium oxide (UO_2)--tungsten-184, 22:42349(P)
fuel element incorporating moderator for high-temperature, composition and fabrication of, 22:23885(P)
fuel elements for, description of clad cylindrical multiple uranium carbide (UC)--based pellets for, 22:25067(P)
fuel elements for, distributed parameter thermal and stress model for determination of coolant flow transients in solid, 22:25066
fuel opacity in gaseous-core, equipment for measurement of uranium gas, 22:37513(R) (N-68-16664)
fuel utilization in, space trajectories for optimal, 22:1845
fundamental principles of, for space propulsion, 22:16255
gaseous core, vortex breakdown in, 22:244
generators for, description of gas-filled tube direct

current, 22:25068(P)
heat transfer for particle-seeded gas-fueled, analysis of radiant, 22:35570 (N-68-10561)
heat transfer system dynamics for tungsten water-moderated, control analysis of, 22:39862 (N-68-18252)
liquid plutonium alloy-fueled liquid sodium-cooled rotating centrifugal force-controlled, description of, 22:25070(P)
liquid-fueled liquid-cooled and -reflected, description of, 22:37521(P)
nozzles for, efficiency analysis of multiple exhaust, 22:22788 (CONF-661204-(Vol.2), pp 78.1-11)
performance comparison of gas-core, with solid core and pulse propulsion concepts, (T), 22:35577
performance criteria for 500 MW liquid-fueled 10^{17} neutron flux, description of, 22:32936
performance of gas-fueled, analysis of conceptual advanced-design, 22:53408
performance of thermionic converter heat pipe, from 0.01 to 10 MW(e) at 1400 to 2200°K, 22:30283 (UCRL-70816)
performance of, analysis of economic and operational, 22:25071
performance of, comparison of shutdown consumption rates of after-cooling propellant, (T), 22:18542 (HW-84412)
performance of, design parameters for optimum, 22:39865 (N-68-19830)
performance of, thermodynamic limits for optimum, (T), 22:20901
performance on interplanetary flight of, digital computer simulation of, 22:35569 (N-68-10429)
performance studies on vortex-stabilized light bulb and open cycle cavity-core, analysis of, 22:37515 (N-68-22038)
physics measurements for colloidal hydrogen suspended uranium carbide (UC)--zirconium carbide (ZrC) 2000 MW arcs, analysis of optimum, 22:32943
physics measurements on cavity-type mockup with hydrogen propellant, analysis of, 22:32947
plutonium phosphide (PuP)-fueled lithium-cooled, description of, 22:25069(P)
power distribution at core temperature of 5000°R, radial, (T), 22:22535
power requirements for electric, as primary propulsion for space vehicles, 22:7876
power supplies for, use of thermionics for, 22:3882
propellant discharge region in gaseous-core, vortex flow effects on radius of, (E), 22:37513(R) (N-68-16664)
propellant flow and temperature in, non-linear stability of steady-state, (T), 22:32953
propellant tanks of, TIC-TOC-TOE code for radiation heating rate distributions in liquid hydrogen, 22:39855(R) (N-68-13505)
radiation effects on NERVA, analysis of neutron, 22:35576
reactivity of uranium oxide (UO_2)-fueled compact-core, effects of fuel movement on, (T), 22:46998 (N-68-23894)
recirculation zone in cylindrical gas-core cavity, simulation of flow patterns in, (E), 22:32952
safety analysis procedures for, 22:16258
shielding calculations for graphite-moderated, computer code for neutron and gamma radiation cross sections in, 22:39852(R) (N-68-13502)
shielding calculations for, computer code for neutron and photon spatial and energy distribution in, 22:39856(R) (N-68-13506)
shielding calculations for, computer code for neutron diffusion and S/sub N/ transport analysis in, 22:39853(R) (N-68-13503)
shielding calculations for, computer program for fast neutron and gamma radiation point kernel attenuation in, 22:39854(R) (N-68-13504)
shielding calculations for, computer program for neutron and gamma radiation distributions in, 22:39857(R) (N-68-13507)
shielding calculations for, computer program for radiation distributions in, 22:39858(R) (N-68-13508)
shielding calculations for, computer program for radiation flux distributions in complex geometry, 22:39859(R) (N-68-13509)
shielding calculations for, measurement of proton-induced prompt secondary gamma doses for use in, 22:6074
shielding calculations for, methods for neutron and photon transport in, 22:39851(R) (N-68-13501)
shielding of SNAP, evaluation of lead, lithium hydride, and uranium for, 22:2613 (NAA-SR-Memo-12440)
stability of gas-fueled cavity-core, analysis of acoustic, (T), 22:32949
testing of, description of on-line process analog computer for, 22:35566 (LA-DC-9460)
testing of, Nuclear Rocket Development Station safety programs for, 22:25059 (CONF-670445-, pp 18.25-32)
thermionic converter for, power flattening in advanced in-core, 22:6073
thermionic, review of, 22:30284
turbopump for, testing of optimum configuration of, 22:22789 (CONF-661204-(Vol.2), pp 80.1-11)
use for space propulsion systems, general summary of, 22:44878
use in space propulsion systems, 22:27527
use of advanced, with unmanned electric propelled spacecraft, 22:7875

Reactors, Settled-Bed
  see Reactors, Pebble-Bed

REACTORS, SODIUM-GRAPHITE
  see also Hallam Power Reactor
  see also Sodium Reactor Experiment

Reactors, Steam-Cooled
  see Reactors, Water-Cooled

REACTORS, SUPERHEATING
  (Including those reactors with integral superheat only; for conventional superheaters, see Superheaters.)
  see also Beloyarsk Power Reactor, Unit 1
  see also Beloyarsk Power Reactor, Unit 2
  see also Grosswelzheim Superheat Reactor
  see also Gundremmingen Power Reactor
  see also Puerto Rico Power Reactor
  see also Sioux Falls Power Reactor
  see also Steam-Generating Heavy-Water-Moderated Reactor
  see also Supercritical Once-Thru Tube Reactor
  see also VAK Power Reactor
  see also Vallecitos Superheat Reactor
blanket optimization of 1000 MW(e) fast breeder, alteration of 26-group-ABN-set for few-energy-group, (T), 22:44864
configuration for single-pass upward-flow cooling system of, description of submerged multiple bar-type fuel element, 22:42248(P)
configuration of 1080 MW(e) plutonium oxide (PuO_2)--uranium oxide (UO_2)-fueled fast, description of optimum, 22:50757
configuration of cylinder-enclosed shielded flood-free superheat region for, description of, 22:50756(P)
configuration of multi-loop integral, description of, 22:44847(P)
control rod location and management for 1000 MW(e) fast breeder D-1, calculation of optimum, (T), 22:53274 (EURFNR-544)
control system for, description of external-core gas pressure regulated fluid for core enclosing, 22:37487(P)
control system for, description of hydraulically actuated and recorded, 22:46897(T) (EURFNR-497)
control system for, use of superheated turbine water for reactor core feedback, 22:18535(P)
control system for, use of turbine superheat steam for reactor core feedback, 22:18536(P)
coolant loop for, description of saturated steam, 22:16243(P)
cooling system for dual-cycle, analysis of optimum mean temperature performance of, (T), 22:42192 (INR-903)
cooling system for fast breeder, use of heavy water steam in, 22:32857
cooling system for gas- and water-cooled, description of, 22:37481(P)
cooling system for pressurized-water- and steam-cooled, description of multi-zone core two phase, 22:37493(P)
cooling system for shutdown of, supercritical pressure, 22:37480(P)
cooling system for, description of parallel multi-stage heat exchanger and turbine circuit, 22:25056(P)
cooling system for, description of spiral extended-length pipe, 22:10032(P)
core configuration for efficient burnup in, description of water-cooled fuel shelves in, 22:10027(P)
core configuration for, description of horizontal coolant and steam channels with overhead superheat chamber, 22:10034(P)
core configuration of water-cooled heavy water-moderated power, description of improved, 22:44837 (TRG-Report-1692)
core physics measurements for heavy water-moderated, calculation of model, (E/T), 22:22840
core structural materials for, properties of carbon-base, 22:49815 (AECL-3069)
description of, 22:10031(P)
description of secondary coolant superheating, 22:14225(P)
description with steam superheating and water boiling in a single core, 22:14211(P)
design concept for 1000 MW(e) steam-cooled fast, with prestressed concrete vessel, 22:44816 (EURFNR-522)
design parameters for 300 MW(e) German fast, analysis of, 22:35498
design parameters for steam-cooled fast breeder power, description of optimum, 22:37448 (NP-17521)
fuel assemblies for, description of multiple concentric cylinder-enclosed internally-cooled annular-shaped, 22:42255(P)
fuel assemblies for, description of tubular metal-clad ceramic, 22:42259(P)
fuel elements for, description of, 22:20953(P)
fuel elements for, description of variable volume gas-filled recesses for heat flux control in, 22:39830(P)
fuel elements for, description of vertical-sheathed dual coaxial cylindrical varying-material, 22:42275(P)
fuel elements for, design of improved, 22:12516(P)
fuel elements for, stress measurements in simulated, 22:6046
fuel elements for, with prestressed coolant-pass tubes for improved fatigue life, 22:53483(P)
fuel rods for, description of water-cooled, multi-concentric tubes of enriched uranium for, 22:14226(P)

heat transfer system for graphite-moderated carbon dioxide-cooled, description of, 22:22783(P)
heat transfer system for, description of twin-turbine triple-core-circulation, 22:14365(P)
integral-type boiling outer region, description of, 22:37484(P)
performance of 1000 MW(e) steam-cooled fast, effect of core design parameter variations on, (T), 22:35554
performance of, analysis of optimum economic and technical, 22:42282
physics measurements for boiling heavy water-moderated plutonium-enriched natural uranium-fueled, 22:30239
physics measurements for uranium oxide(UO_2)--water lattices in, analysis of, (E), 22:22760
physics measurements in 300 MW(e) fast, description of, 22:32905
physics parameters for fast breeder steam-cooled, effects of steam pressure and core configuration on optimum, 22:53265 (BNWL-SA-2063)
pressure vessel for, description of reactor core and steam generator contained in, 22:33118(P)
pressure vessel for, description of tube and header arrangement for inclusion in, 22:33114(P)
pressure vessels for, description of tube and header arrangement for inclusion in, 22:33116(P)
pressure vessels for, description of tube and header arrangement for inclusion in, 22:33115(P)
pressure vessels for, tube and header arrangement for inclusion in, 22:33117(P)
pressure-relief valve for coolant loss accident in, description of boiling region, 22:37490(P)
reactivity coefficients of steam-cooled fast breeder, effect of design parameters on, (T), 22:35556
reactivity variations with coolant density in steam-cooled fast, (T), 22:35557
safety cooling system for, description of superheat steam line rupture, 22:50759(P)
stability limits of steam-cooled, calculational models for determining, 22:39780 (KFK-656)
stability of steam-cooled fast, effect of cooling cycle parameters on, (T), 22:35555
stability of steam-cooled fast, effects of cooling cycle design on, 22:7803 (EURFNR-421)
steam flow equalizer design for, 22:1834(P)
structural materials for, corrosive effects of superheated steam in, 22:32775 (KFK-700(Pt. IX))
structural materials for, corrosive effects of superheated steam in, 22:53273(T) (EURFNR-472)
superheaters for, description of method for regulating steam entry pressure to secondary, independent, 22:42441(P)
tubes for, description of variable composition metal, 22:33113(P)

REACTORS, SWEDEN
  see also Oskarshamn Power Reactor
  see also SLEEP Reactor
  see also Swedish Reactors (R-0)
  see also Swedish Reactors (R-2)
  see also Swedish Reactors (R-3)
  see also Swedish Reactors (R-4)
descriptions of, tabular, 22:14198
design of fast steam cooled breeder, 22:16199
development program during 1970 to 1980 of, description of, 22:30172
development program for power, description of, 22:48690
safety liability of, description of legal aspects for, 22:44946

REACTORS, SWIMMING-POOL
  see also Air Force Engineering Test Reactor
  see also Bulk Shielding Facility
  see also Fontenay-aux-Roses Reactors (Triton)
  see also Grenoble Reactors (Melusine)
  see also Grenoble Reactors (Siloe)
  see also Michigan Research Reactor
  see also NRL Research Reactor
  see also ORNL Research Reactor
  see also South African Research Reactor
  see also Spanish Reactors (JEN-2)
boiling in, analysis of, (T), 22:16272 (CEA-R-3326)
control plates for, description of fuel element double-plate vertical-motion, 22:12137(P)
coolant flow in, description of forced downward, 22:3923(P)
coolant leakage from, effects of accidents on, 22:42365(T) (ORNL-tr-1904)
coolant level control system for, description of plate-plug valve hole in core container for, 22:14280(P)
coolant level control system for, design of servo-operated displacement float, 22:14282(P)
coolant loop for, description of downward flow continuous, 22:3915(P)
coolant loop for, description of downward flow with shutter guides, 22:3921(P)
coolant loop for, description of upward flow with shutter guides, 22:3920(P)
coolant loop for, design of separated two-system, 22:3922(P)
cooling system for, description of rotating core, forced flow, 22:18579(P)
cooling system for, description of warm water stabilizing multi-layer, 22:14276(P)
cooling system safety valve for, description of coolant loss-actuated water pressure-closed and gravity-opened, 22:53437(P)
cooling systems for, description of siphon breaker for, 22:7905(P)
core and support rods for, description of bridge-suspended float-elevated movable, 22:39888(P)
core configuration for coolant flow control in, description of, 22:3918(P)
cores for, heating and cooling effects on partially submerged, 22:42365(T) (ORNL-tr-1904)
criticality calculations for, core and reflector temperature effects on, (T), 22:39885
description of 1 MW(t) JRR-4, 22:1858 (JAERI-1141)
experimental cryogenic facility for producing intense low-energy neutron beams, 22:47037
experimental facilities for high flux, description of pressure vessel enclosed core center access, 22:14279(P)
experimental facilities for, description of core-enclosing vertically-rising spiral pipe, 22:37548(P)
experimental facilities for, description of fluid-tight rotating joint for multiple conduits in cryogenic, 22:25118(P)
experimental facilities for, description of stopper-sealed tube-access, 22:25120(P)
fuel element inspection in, description of a watertight radiological transmitter and receiver for underwater, 22:25119(P)
fuel element positioning device for, design of, 22:1905(P)
fuel elements for, fabrication methods for, 22:12486
history of Project Aquarium (SAPHIR) for 1955 Geneva Conference, 22:42363 (ORNL-TM-2254)
irradiation facilities for, description of, 22:3914
irradiation facility drive mechanism trolley for, design of two-directional, 22:3916(P)
monitoring at environs of 2-MW, use of packaged film for, 22:45548
neutron leakage spectrum from, (E), 22:5828
neutron measurement channels in, method for testing ionization chamber response in, 22:42383
pool liner for, installation and testing of stainless-steel, 22:24991
power burst analysis with loss of core coolant flow in, reactivity feedback model for, 22:14256 (CEA-R-3202)
rabbit system for, description of hydraulic, 22:47036(P)
radiation target for use at 20°K, design of in-core, 22:39003
remote-handling tool for, description of level-actuated gripper with extension rod, 22:37547(P)
safety studies for, CABRIOLE heat transfer loop for thermal transient, 22:12136
shielding water reservoirs for, description of sealed vertical sliding gate for level control in, 22:30342(P)
siphon breaker for, description of coolant flow regulated, 22:14284(P)
source transport in, description of hydraulic-actuated rabbit system for neutron, 22:53429(P)
startup procedure for, description of warm water level increase in, 22:14277(P)
use as γ irradiation facility during shutdown, description of system for, 22:39889(P)
vessel for core of, description of caisson with vertical coolant channels for, 22:3919(P)

REACTORS, TEST
  see also Aberdeen Fast Pulse Reactor Facility
  see also Advanced Test Reactor
  see also Air Force Engineering Test Reactor
  see also Engineering Test Reactor
  see also General Electric Test Reactor
  see also Irradiation Facilities
  see also Japanese Materials Testing Reactor
  see also Low Intensity Test Reactor
  see also Materials Testing Reactor
  see also NBS Research Reactor
  see also PEC Fast Test Reactor
  see also Petten Test Reactor
  see also Saclay Reactors (Osiris)
  see also Savannah River Components Test Reactor
control rod drive for MTR-type, description of surge tank pressure valve release sequence for, 22:10071(P)
design of PEC, conceptual, 22:16207
fuel elements for MTR-type, description of fabrication of, 22:18568
kinetics of DIORIT, calculation methods for, (T), 22:44919 (EIR-119)
neutron spectrum-hardening in thermal, description of filter for, 22:44907
summary of European, 22:20920

REACTORS, THERMAL
  see also Argonne Research Reactor
  see also BEPO
  see also Brookhaven Reactor
  see also Bulk Shielding Facility
  see also Los Alamos Power Reactor Experiments
  see also NPD Reactor
  see also NRX Reactor
  see also Whiteshell Reactor No. 1
  see also ZOE Reactor
beryllium reflected minimum critical mass, description

of, 22:32998
configuration of rocket, 22:39865 (N-68-19830)
control elements for, description of variable reflector area, 22:7871(P)
control elements for, description of vertical axis rotating external plates for, 22:20867(P)
control of, using two-phase flow control rods, 22:12530
control system for, description of gravity--coolant flow vertically driven absorber spheres for, 22:20880(P)
core neutron spectra measurements in, design and performance of proton-recoil proportional detector with pulse shape discrimination for, 22:33659 (IN-1054)
core structure for, computer analysis of fuel burnup in optimum, (E/T), 22:22868
criticality calculations for low-enriched, Monte Carlo, 22:5992
criticality calculations for, use of 05R Monte Carlo neutron transport code for, 22:33005
criticality calculations for, use of Monte Carlo codes for, 22:39902 (KAPL-P-3432)
design of power, use of neutron data for, 22:5994
design parameters for, integrated physics analysis for optimum, (T), 22:32769 (KAPL-P-3423)
development of French, long term program for, 22:1803
development program in Japan of heavy water-moderated boiling water-cooled 200 MW(e), description of, 22:30243
dynamics of sodium-cooled, use of analog computer for simulation of, 22:35481
economic comparison with fast reactors, 22:1797
economics of German water-moderated power, 22:48709
economics of mixed fast-thermal and, comparison of, 22:18482
fast fission factor for, Monte Carlo method and multigroup procedure for calculation of, (T), 22:42402
fission product buildup in, determination of characteristic parameters of, 22:16105 (AECL-2497)
fission product removal by pulse method for, description of, 22:20966
fuel assemblies for, description of thorium oxide (ThO_2)-blanket and uranium oxide (UO_2)-seed, 22:42269(P)
fuel burnup in uranium-fueled water-moderated, computer program for measurement of, 22:25134 (PRNC-117)
fuel burnup in, analysis of optimum calculations for, (T), 22:35533
fuel burnup in, computer program for analysis of uranium, 22:30346 (RISO-M-684)
fuel burnup in, Czechoslovak methods for calculation of, 22:22731
fuel burnup in, French studies on, (E/T), 22:22732
fuel burnup in, review of European American Committee on Reactor Physics studies on, 22:22880
fuel burnup in, review of Japanese studies on, 22:22735
fuel burnup in, review of studies on, (E/T), 22:22711 (STI/PUB-172)
fuel burnup in, review of U.S. studies on, 22:22733
fuel burnup in, Swedish methods for calculation of, 22:22736
fuel burnup simulation for, description of computer program for, 22:50764
fuel cycle for breeder, economic advantages for uranium-thorium, 22:42156 (AECL-3081)
fuel cycle in U. K. of 1000 MW(e) water-cooled and gas-cooled power, analysis of performance for, 22:46909 (NP-17599, pp 30-40)
fuel cycles for advanced, economic analysis of use of, 22:42198(T) (NSJ-tr-114)
fuel elements for power, analysis of poisoning due to fission products in recycle, 22:6018
fuel elements for pressure tube heavy water-moderated, feasibility studies for use of plutonium, 22:39776 (JAERI-1154)
fuel management for, calculational methods for optimum, (E/T), 22:22759
fuel recycling in, development and testing for plutonium, 22:19649(R) (NUMEC-3505-30)
fuels and moderators for high-temperature, performance of ceramic, 22:4880
fuels for water-cooled power, review of physics data for use of plutonium in, 22:37407 (BNWL-801)
fuels for, safety aspects of use of recycle plutonium as, 22:53386
kinetics of coupled fast-, description of model for space-dependent, 22:33086 (ANL-7310, pp 431-511)
moderator voids in, measurement of effects of, 22:39778 (JUL-518-RG)
moderators for high temperature breeder, radiation effects on beryllium oxide, 22:46901 (JUL-528-RW)
neutron absorption cross sections for fission products in, computer program for calculating, 22:20404 (CONF-680307-16)
neutron fluctuations in large, use of auto-spectral density technique for determination of, 22:32878
neutron flux synthesis in, use of Green's function in two-dimensional group diffusion equations for, 22:14318
neutron group constants for plutonium recycle, 22:24955 (EUR-3891)
neutron spectra in water-moderated, computer codes for calculation of, 22:46904(T) (N-68-24779)
neutron spectra in, review of methods for calculating, 22:29865
neutron spectrum-hardening in test, description of filter for, 22:44907
nuclear data requirements for design and operation of, 22:18100
physics characteristics of plutonium fueled, summary of, 22:32960 (ANL-7310, pp 31-135)
physics measurements for, calculational methods for, (E/T), 22:22759
physics measurements for, comparison of heterogeneous methods with ECO facility, (E/T), 22:22841
physics of, development activities for July to Sept. 1967, 22:27480(R) (BNWL-634)
physics parameter calculations for RB-3 fast-, 22:50871
plutonium production for fast reactor fuel in, 22:12040
power flattening classification for single-channel and N-channel analysis in, description of, 22:35713
power flattening effects on total power output of, classification of, 22:35712
power reduction in, direct numerical method for optimization of, 22:50873
power transients in large power, numerical characteristics of, 22:32882
radiation testing in, criteria for fuel element, 22:32777 (KFK-700(Pt. XI))
radiation testing in, criteria for fuel element, 22:53273(T) (EURFNR-472)
reactivity characteristics of plutonium-fueled, effects of cross section uncertainties on, 22:20782 (BNWL-SA-1501)
reactivity effects of plutonium formation in fuel elements of, (T), 22:50848
reactivity of, effects of neutron absorption by fission products on, (E/T), 22:18289
resonance absorption in, description of RABBLE and RABZPR codes for calculating, 22:33086 (ANL-7310, pp 431-511)
safety studies for water-cooled, analysis of coolant loss and coolant energy transfer, (E), 22:37402 (ANL-7450, pp 75-89)
stability of, Lyapunov analysis of xenon effects on, (T), 22:35510
temperature coefficient of reactivity for, calculational techniques for, 22:50754
xenon transients in large power, numerical characteristics of, 22:32882
xenon-power spatial transients in power, use of three-dimensional model for optimum control sequence of, (E/T), 22:39931

REACTORS, U.S.S.R.
see also ARBUS Power Reactor
see also Beloyarsk Power Reactor, Unit 1
see also Beloyarsk Power Reactor, Unit 2
see also Bilibiu Power Reactor
see also BN-350 Reactor
see also BOR-60 Reactor
see also Novo Voronezh Power Reactor, Unit 1
design parameters for Arbus, 22:22712 (STI/PUB-174)
development of power, review of, 22:39805
development of VVER-type, power, 22:39807
development of, review of, 22:18682
development of, review of, 22:35729(T) (JPRS-45331)
development program, 22:35480
development program for, description of, 22:30210
development program of fast breeder power, description of, 22:37448 (NP-17521)
fuel fabrication for fast, economics of, 22:35499
fuel reprocessing for fast, economics of, 22:35499
neutron spectrometer for pulsed, design and performance of thermal, 22:341 (KFKI-8/1967)
performance of power, comparison of, 22:48656 (RT/EC-(68)1)
power engineering developments in, review of, 22:20839

Reactors, Vapor-Slurry
see Reactors, Fluid-Fueled

REACTORS, WATER-COOLED
see also Advanced Test Reactor
see also Hanford Production Reactors (N)
see also Japanese Materials Testing Reactor
see also Oskarshamn Power Reactor
see also Petten Test Reactor
see also Reactors, Boiling
see also Reactors, Pressurized-Water
see also Reactors, Swimming-Pool
see also San Onofre Power Reactor
see also VAK Reactor
see also Wuergassen Power Reactor
bibliography on power, 22:44841 (WASH-1082)
blowdown calculations for, development of pressure-coupled core-cooling model for, 22:42160(R) (BMI-1844)
component construction for, 22:32804
configuration of agro-industrial complex, conceptual design, 22:50749
configuration of ring-sealed multiple assembly-fueled triple-pass water-moderated pressure vessel-contained maritime, description of, 22:42337(P)
construction and operation costs for power, tabular summary as of March 1, 1967, 22:44841 (WASH-1082)
containment blowdown accident in, PTHISTRY computer program for pressure-temperature history of secondary, 22:50837 (ANL-7455)
containment buildings for, evaluation of protective coatings for, 22:42191 (IN-1169)

containment of coolant loss accident in power, description of MACACO analog program and PREST digital computer program for analysis of, 22:39896 (EUR-3927)
containment of, model analysis of safety spray cooling for coolant-loss, (E/T), 22:48777
containment structures for power, missile generation and protection criteria in design of, 22:50739 (ORNL-NSIC-22)
containment systems for, CONTEMPT-PS code for determining effects of coolant loss accidents on pressure suppression, 22:32881
containment systems for, description of baffle controlled flow with blow-off valve in primary and secondary, 22:30277(P)
containment systems for, effects of coolant loss accidents on, 22:48660
containment systems for, effects of coolant loss on response of, 22:12063
containment vessel for, experimental determination of iodine removal rate from, 22:18459
containment vessel leakage under simulated maximum credible accident conditions, 22:30272
control elements for, description of spring-separated roller-supported plate-type fuel-and-control, 22:50857(P)
control rod drives for, development of, 22:25012
control rod performance in, experience with boron-containing, 22:30199
control rods for fast breeder steam, design criteria for, 22:53367
control rods for power, analysis of economics and efficiency of, 22:30190
control rods for, development of hydraulic drives for, 22:37444 (KFK-665)
control system for double-wall square-lattice, description of variable neutron absorber fluid, 22:39802(P)
control system for, description of hydraulically actuated and recorded, 22:46897(T) (EURFNR-497)
coolant chemistry for, 22:7814(R) (ORNL-4178)
coolant cycles for, comparison of various, 22:1788
coolant flow in pressure tubes of, description of rings to impart turbulent, 22:22786(P)
coolant flow in, hydrodynamics of swirling two-phase discharge, (E/T), 22:25005
coolant flow rate in, effects of oscillations on, 22:39829
coolant for 1000 MW(e), effects of fission product iodine energy on decomposition of, 22:42160(R) (BMI-1844)
coolant heating in, description of two-stage, 22:32956(P)
coolant leak detection in drywell of primary containment of, instrumentation for, 22:16127 (CONF-671011-, pp 228-37)
coolant loss accident in, computer program for hydraulic and thermal analysis of reactor core channels in, 22:22656 (BMI-1832)
coolant loss accident simulation for, use of Zircaloy-2 clad uranium dioxide pellets for out-of-pile, 22:30118 (ANL-7438)
coolant loss accidents in boiling, evaluation of bottom flooding for control of core temperature transients after, 22:32860
coolant loss accidents in, aerosol particle transport and deposition during, 22:51160 (BNWL-848)
coolant loss accidents in, analysis of effects of metal-water reactions during, 22:42202 (ORNL-NSIC-23)
coolant loss accidents in, analysis of radiolytic production of hydrogen during, 22:42160(R) (BMI-1844)
coolant loss accidents in, boundary-layer model of fission product release in, 22:48792
coolant loss accidents in, CHEMLOC-II code calculations of metal-water reaction, core heating, and core motion following, 22:27397 (ANL-7375, pp 135-59)
coolant loss accidents in, core heatup during, 22:39774 (IDO-17272)
coolant loss accidents in, determination of fuel rod temperature change following, 22:42197(T) (NSJ-tr-112)
coolant loss accidents in, effects of subcooled and saturated blowdown on, 22:39774 (IDO-17272)
coolant loss accidents in, fission-product iodine transport and deposition following, (E/T), 22:42161(R) (BMI-X-10237)
coolant loss accidents in, heat transfer analysis model for, 22:30186
coolant loss accidents in, model for prediction of performance during, 22:39774 (IDO-17272)
coolant loss accidents in, pressure-time transient response of high enthalpy water during, 22:32799
coolant loss accidents in, safeguards against fuel meltdown during, 22:5980
coolant loss accidents in, systems engineering approach to, 22:39774 (IDO-17272)
coolant loss accidents in, thermal transient behavior following, (T), 22:37532(R) (IDO-17242)
coolant losses caused by restricted flow in, decompression effects during, 22:5951
coolant losses in, calculation of metal-water reactions and core heating during, 22:5979
coolant monitoring in, device for flow delay during, 22:10106(P)
coolant pump design for, 22:30771
coolant pumps for, description of multi-nozzle removable jet, 22:39927(P)
coolant pumps for, design of internal axial-mounted, 22:25014
coolant-loss accidents in, failure behavior of Zircaloy-clad fuel rods during, 22:48655 (ORNL-TM-2347)
coolants for, Institute of Atomic Energy (USSR) standards for chemical analysis of water, 22:20942 (ZFK-RN-31, pp 284-98)
cooling system dynamic behavior in boiling, hydrodynamic model analysis of, (E/T), 22:37441 (HPR-97)
cooling system equipment for power, description of, 22:42221
cooling system for emergency shutdown of heavy water-moderated boiling, description of perforated central-tube lateral-flow water, 22:42279(P)
cooling system for fast breeder steam, application of Loeffler cycle to, 22:53363
cooling system for heterogeneous gas-cooled, description of dual-medium superheating, 22:37481(P)
cooling system for pressurized-water- and steam-cooled, description of multi-zone core two phase, 22:37493(P)
cooling system for, coolant loss accidents resulting from rupture of primary, 22:39774 (IDO-17272)
cooling system for, description of water decontamination methods for, 22:20936 (Zfk-RN-31)
cooling system for, safety considerations in design of components for, 22:53366
cooling system of, corrosion measurement on steel, 22:12978
cooling systems for power boiling, performance following coolant-loss accidents of core standby, 22:50701 (APED-5458)
cooling systems for, boiling flow regimes and critical heat flux in, (E/T), 22:24971(R) (NYO-3304-11)
cooling systems for, description of steam-recirculating nozzle-controlled upward-flow spray, 22:47060(P)
cooling systems for, discussion of steam cycles in relation to, 22:3869
cooling systems for, fission product release and behavior in, 22:32957 (AAEC/TM-418)
cooling systems for, heat transfer and stability characteristics of, (E/T), 22:22686 (EURAEC-1996)
cooling systems for, heat transfer properties of boiling additive-containing water emergency, 22:42206(R) (SNE-40)
cooling systems for, integrity of primary, 22:12063
cooling systems for, measurement of heat transfer and fluid flow characteristics of, 22:25004
cooling systems for, reactor environment effects on materials for, 22:37479
core configuration of heavy water-moderated superheating power, description of improved, 22:44837 (TRG-Report-1692)
core cooling system for, analysis of failure of emergency, 22:12057
core design for supercritical steam-cooled fast, with means for reactivity control on flooding, 22:16241(P)
core failure in, model analysis of coolant heat transfer for, (E), 22:32873
core for fast steam, design parameters of, 22:16200
core parameters for power, effects on costs of, 22:44841 (WASH-1082)
core spray cooling systems for, performance of emergency, (E), 22:24964 (IDO-17249)
core thermal performance for, evaluation of, 22:14155
cores for fast breeder, design parameters for, 22:6010
cores for, cooling during blowdown of, 22:39774 (IDO-17272)
cores for, heat transfer models for, 22:39774 (IDO-17272)
cores for, thermal-hydraulic analysis methods for, 22:39774 (IDO-17272)
corrosion products in, analysis of activation and dispersion of, (T), 22:35426 (BNWL-676)
critical heat flux in, effects of coolant flow reduction in hot core channels on, 22:3856
description of 1000-MW low-pressure-steam breeder, 22:5943
description of desalination, submerged in a deep coolant-filled reservoir, 22:25072(P)
description of liquid-moderated multi-tube calandria, 22:10038(P)
description of pressure vessel type, with supercritical water moderator and coolant, 22:48668(P)
description of water-moderated, 22:18532(P)
design concept for two 3000 MW(t) dual-purpose desalination water-moderated power, description of, 22:42353
design for earthquake-resistant floating, 22:39787 (TID-24558)
design improvements in power, review of, 22:46944
design of 1000 MW(e), conceptual earthquake-resistant, 22:39786 (TID-24530)
design of 1000 MW(e), with prestressed concrete pressure vessel, 22:24999
design of fast steam, comparison of EVESR with, 22:16184
design of heavy water-reflected, enriched uranium, kinetic parameters measurements for, 22:12010 (CEA-R-3318)
design of Swedish fast breeder steam, 22:16199

design of variable temperature moderator heavy water-moderated, 22:37485(P)
design of, safety standards for, 22:30208
design parameters for low-pressure-steam breeder, 22:5944
design parameters for plutonium-fueled heavy-water-moderated boiling, 22:22702 (JAERI-1151)
development of dual-purpose 1300 MW(e) steam-producing power, description of, 22:35512
development of German fast breeder steam, program for, 22:16201
development of power, economic potential of, 22:18498
development of VVER-type, in U.S.S.R, 22:39807
development program for U. S. 1000 MW(e) power, effects of fuel supply on optimum economic, 22:48703
development program for Yugoslavia power, analysis of optimum economic, 22:48667
development program in US of heavy water-moderated, description of, 22:30245
development programs for Europe power, effects of uranium supply and demand on 40 year, 22:44833 (NP-17556)
development programs for U.K., U.S.A., and Canada, description of, 22:42212 (TRG-Report-1695)
economic and technical status and potential of light water, summary of, 22:44841 (WASH-1082)
economic aspects of, comparison with AGR-type reactors, 22:6059
economics of 1000 MW(e) earthquake-resistant, 22:39786 (TID-24530)
economics of German thermal power, 22:48709
economics of operation of desalination, 22:18544 (STI/DOC-10/80)
electricity from, production of commercial, 22:12038
electricity production from, economics of, 22:48649 (NEB-SS-21)
emergency core cooling for, effects on coolant loss accidents of, 22:39774 (IDO-17272)
excursion accidents in, metal-water reaction, fuel heating, and fuel failure during, (E/T), 22:27397 (ANL-7375, pp 135-59)
excursions in fast steam-cooled, mechanical damage from kinetic energy release in, (T), 22:18419 (FOA-2-2498-44)
fission product monitoring in, use of thallium-activated sodium iodide scintillation detectors for, 22:19120
fission product release, transport, and behavior in, analytical model development for prediction of, 22:46910 (ORNL-4265)
fission product venting system for, 22:16340(P)
fuel assemblies for water-moderated, description of concentric cooling and insulating cylinder-enclosed multiple rod annular-shaped, 22:42233(P)
fuel assemblies for water-moderated, description of center-positioned burnable poison rod in equally spaced multiple rod annular, 22:42232(P)
fuel assemblies for, description of multiple parallel tube-enclosed coolant-deflecting rod-type, 22:42565(P)
fuel assemblies for, effects of temperature and pressure on flow instability in simulated 19-element bundle-type rod-shaped, (E/T), 22:53257 (AECL-2716)
fuel assembly burnout in, comparison of correlations for annuli- and bundle-type, 22:25122 (AEEW-R-558)
fuel assembly for, description of coolant deflecting grid with peripheral flow channels in, 22:20890(P)
fuel burnup calculations for water moderated, two- and three-dimensional programs for, 22:5935(T) (JPRS-42542)
fuel burnup in, computer program for calculation of uranium, (T), 22:44887 (EURAEC-2003)
fuel burnup in, methods for analysis of, 22:22737
fuel cycle economics for, comparison of fast breeder reactor fuel cycle economics and, 22:48635 (BNWL-SA-2052)
fuel cycle for, economics of re-use, 22:42162(R) (BNWL-254)
fuel cycle in power, financial aspects of, 22:16227
fuel cycle in U. K. of 1000 MW(e) power thermal, analysis of performance for, 22:46909 (NP-17599, pp 30-40)
fuel cycle performance for heavy water-moderated 500 MW, analysis of optimum economic, 22:30261
fuel element cladding, effects of metallurgical properties on use of zircaloy, 22:35493
fuel element development for, 22:16356 (KR-116)
fuel element testing in, 22:2662 (BNWL-479)
fuel elements for Canadian, performance of zirconium-clad uranium oxide (UO_2), 22:42155 (AECL-3068)
fuel elements for steam, stress analyses for austenitic steel and nickel alloy claddings for, 22:32774 (KFK-700(Pt. VIII))
fuel elements for steam, stress analyses for austenitic steel and nickel alloy claddings for, 22:53273(T) (EURFNR-472)
fuel elements for, design of doubly canned, 22:12513(P)
fuel elements for, design of two-zone uranium-base, 22:38605(P)
fuel elements for, design parameters for, 22:44841 (WASH-1082)
fuel elements for, economics of use of recycle plutonium, 22:25008
fuel elements for, fabrication of metallic, 22:41024(P)
fuel elements for, performance of aluminum cladding on, 22:17162
fuel rod assemblies for marine, model studies for latera vibration effects on, (E/T), 22:48718
fuels for thermal power, review of physics data for use of plutonium in, 22:37407 (BNWL-801)
fuels for, fluoride volatility techniques for reprocessing of, 22:40175 (KR-126, pp 342-60)
heat exchangers for, description of steam-generating closed-loop triple concentric annular-chambered heat pipe for, 22:42277(P)
heat transfer calculations for fast steam, 22:16200
heat transfer in, evaluation of, 22:14155
heat transfer measurements for, use of heated metal spheres for forced-convection, 22:30118 (ANL-7438)
heavy water-moderated boiling plutonium fueled self-sustaining, description of Japanese, 22:30238
instrumentation for, summary of in-core hydraulic and thermodynamic, 22:48662
kinetics of, summary of safety studies on, 22:12063
licensing process for, explanation of, 22:39774 (IDO-17272)
neutron physics calculations for, techniques for solutio to transport equation describing, 22:14172
operation of 1000 MW(e) fast, systems analysis for optimum, 22:5924 (EURFNR-405)
operation of power, analysis of optimum fuel cycle, 22:37504
physics characteristics of water-moderated, with burnabl poison rods, (E/T), 22:20812 (FEI-88)
physics measurements for 100 MW(e) fast, use of SNEAK 3A-1 reactor for, 22:6091 (EURFNR-396)
physics measurements for fast breeder, effects of core shape and steam pressure and temperature on, 22:27401 (BNWL-713)
piping for, characteristics of hot leg of primary, 22:25010
plugging tool for, description of top-inserted double-walled pipe control rod replacement, 22:48759(P)
poison rods in, effects on reactivity of burnable, 22:42355(T) (ANL-Trans-637)
power excursion and blowdown analysis for, RELAP2 computer program for, 22:39773 (IDO-17263)
power output from, use of twisted-tape fuels for increased, 22:25001
power variation following loss-of-coolant accident in, digital and analog analysis of, 22:25027
pressure equalizer for vertical fuel channel downward-flow, description of valve-regulated cooling system, 22:46977(P)
pressure vessel for, description of water-sealed gas-insulated inner wall, 22:20891(P)
pressure vessel mount for water-moderated maritime, description of multiple curved duct-connected dry and wet well, 22:48717(P)
pressure vessel prestressing for, use of steel rings for concrete, 22:44829(T) (ORNL-tr-1966-b)
pressure vessels for power, effects on total cost of, 22:44841 (WASH-1082)
pressure vessels for, availability of data on radiation effects on, 22:35658(R) (AD-663879)
pressure vessels for, description of concrete hot-liner, 22:44831(T) (ORNL-tr-1966-d)
pressure vessels for, design and fabrication of prestressed concrete, 22:27436
pressure vessels for, design and fabrication of steel, 22:10082 (ORNL-NSIC-21)
pressure vessels for, design criteria of materials for, 22:19600
pressure vessels for, effects of power rating on design parameters for, 22:25010
pressure vessels for, inspection of materials for Japanese, 22:30805
pressure vessels for, requirements for prestressed concrete, 22:25011
pressurizer in primary circuit of, use of heat exchanger for steam pressure regulation in, 22:42265(P)
pumps for, description of hermetically sealed, 22:22784
radiation chemistry of ammonia and nitrogen in, 22:27768
reactivity control of, radiometric device for determining boric acid concentration for, 22:25685
reactivity excursions in, shock generation in pressure vessel from, 22:3870
safety aspects of, 22:25017
safety of German 1000 MWe fast breeder steam, analysis of, 22:53365
safety of power, engineered safeguards used for, 22:27444
safety of, emphasis on better core design and construction rather than consequence-limiting devices for, 22:18448
safety of, summary of research and development May--June 1968 on, 22:22752
safety program for, summary of UKAEA, 22:42210 (TID-24564)
safety programs for, outline of, 22:44855
safety requirements for, outline of, 22:53364
safety studies for thermal, analysis of coolant loss and coolant energy transfer, (E), 22:37402 (ANL-7450, pp 75-89)
safety system for boiling, reliability of Dual Bus Reactor Protection System as, (T), 22:24931 (APED-5179)

safety system for, description of shutdown flooding, 22:10030(P)
shielding during loading of, use of hot-water layer and water spray for, 22:44938(P)
shutdown system for, description of water pressure-supported gravity-driven cylindrical rod, 22:39840(P)
simulation of fast breeder, use of analog computer for, (T), 22:32770 (KFK-657)
spray cooling systems efficiency for, relation between containment system pressure and, 22:42197(T) (NSJ-tr-112)
stability characteristics of, effect of coolant pass arrangement on, (T), 22:30152 (KAPL-P-3180)
stability of 1000 MW(e) steam-cooled fast power, effects of design parameters and control systems on, (T), 22:37399 (AE-321)
stability of fast breeder, effects of coolant feedback during accidents on, 22:3829 (EURFNR-406)
stability of heavy water-moderated boiling, analog simulation of hydraulic and nuclear, 22:20777 (BNWL-574)
stability of steam-cooled fast breeder, effect of integrated cooling cycle on, (T), 22:20846
stability of, analysis of thermohydraulic, (E/T), 22:30147 (EURAEC-1984)
stability of, effects of feedback on, 22:25018
stability parameters for fast breeder, measurement of, 22:5921 (EURFNR-398)
steam cycles for steam-cooled, using the Loeffler principle, 22:16231
steam generator for, design of improved, 22:19022(P)
steam generators for, design parameters for, 22:25010
steam separator for, design and testing of radial vane, 22:30150(R) (GEAP-5597)
steam separators for, design data for, 22:25013
structural materials for steam, corrosive effects of superheated steam on, 22:32775 (KFK-700(Pt. IX))
structural materials for steam, corrosive effects of superheated steam on, 22:53273(T) (EURFNR-472)
transfer function determination for, from noise analysis, (T), 22:14291 (CEA-R-3327)
turbine design for, 22:16230
turbines for power, design of saturated steam, 22:18492
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460
utility commitments for light water, tabular summary as of October 1967, 22:44841 (WASH-1082)
water pH control at 8.5 to 10.0 in, use of mixed-bed ion-exchange resin for, 22:14470 (AERE-M-1829)

REACTORS, WATER-MODERATED
see also Air Force Engineering Test Reactor
see also Argonne High-Flux Research Reactor
see also Army Reactors (SM-1)
see also Belgian Reactor-3
see also Boiling Reactor Experiments
see also Brookhaven Medical Reactor
see also Bulk Shielding Facility
see also Dresden Power Reactor, Unit 1
see also Dresden Power Reactor, Unit 2
see also Dresden Power Reactor, Unit 3
see also Elk River Power Reactor
see also Engineering Test Reactor
see also Experimental Boiling-Water Reactor
see also Fontenay-aux-Roses Reactors (Triton)
see also General Electric Test Reactor
see also Grenoble Reactors (Melusine)
see also Grenoble Reactors (Siloe)
see also Indian Point Power Reactor, Unit 1
see also Japanese Materials Testing Reactor
see also Los Alamos Power Reactor Experiments
see also Materials Testing Reactor
see also Michigan Research Reactor
see also Mihama Power Reactor, Unit 1
see also NASA Research Reactor
see also NRL Research Reactor
see also Obrigheim Power Reactor
see also ORNL High-Flux Isotope Reactor
see also ORNL Research Reactor
see also Oskarshamn Power Reactor
see also San Onofre Power Reactor
see also Shippingport Pressurized-Water Reactor
see also Sioux Falls Power Reactor
see also Swedish Reactors (R-2)
see also VAK Reactor
see also Vallecitos Superheat Reactor
see also Yankee Power Reactor
configuration of ring-sealed multiple assembly-fueled triple-pass water-cooled pressure vessel-contained marine, 22:42337(P)
control rod drives for, description of pneumatic, 22:37470(P)
control systems for rocket, performance of helium-3, 22:35575
coolant thermodynamics for, effects of pressure and temperature on density and enthalpy, (T), 22:32768 (KAPL-M-6734)
coolant void fractions in, design of void-meters for measuring, 22:12691
cooling requirements for tungsten rocket reactor, analysis of postshutdown, 22:39866 (N-68-21111)
cooling systems for, iodine deposition in primary, 22:14132(R) (BMI-X-10213)
core configuration of, description of positive power coefficient for center-region, 22:37486(P)
core neutron spectra measurements in, design and performance of proton-recoil proportional detector with pulse shape discrimination for, 22:33659 (IN-1054)
core reactivity measurements in PR-10, effects of control elements on, 22:1757 (EUR-3615(Vol. 1))
core structure of, effects of aluminum fast scattering in, 22:5916 (AEEW-R-551)
core support construction for, 22:32804
criticality measurements for 3 to 5 percent enriched uranium oxide (UO_2) fueled, calculational methods for, (E/T), 22:22761
criticality measurements in, computer program for, 22:24932 (BNWL-735)
description of dual- and single-purpose desalination, with multi-stage single-effect flash evaporator for optimum economic operation, (T), 22:27456
description of multi-element fueled and multi-channel cooled, operating at 2800 to 3200 lb/in.^{2}, 22:14228(P)
description of pressure vessel type, with supercritical water moderator and coolant, 22:48668(P)
description of water-cooled, 22:18532(P)
design concept for two 3000 MW(t) dual-purpose desalination water-cooled power, description of, 22:42353
development in Yugoslavia of, economics for, 22:24995
development of power, economic potential of, 22:18498
economics of German thermal power, 22:48709
fuel assemblies for water-cooled, description of center-positioned burnable poison rod in equally spaced multiple rod annular, 22:42232(P)
fuel assemblies for water-cooled, description of concentric cooling and insulating cylinder-enclosed multiple rod annular-shaped, 22:42233(P)
fuel burnup calculations for water-cooled, two- and three-dimensional programs for, 22:5935(T) (JPRS-42542)
fuel burnup in plutonium fueled, computer program for analysis of, (E/T), 22:22775
fuel burnup in uranium-fueled, computer program for measurement of, 22:25134 (PRNC-117)
fuel burnup performance of power, analysis of cycle management for optimum, 22:53291
fuel cycle performance of, CELL computer program for, 22:39781 (MIT-2073-8)
fuel cycle schedules to 1995 of, analysis of optimum, 22:35535
fuel economics of, effects of power requirements on, 22:3832 (KFK-566)
fuel elements for, fuel cycle economics evaluation for stainless steel- and Zircaloy-clad dioxide, 22:6017
fuels for, REPP code for optimum utilization of plutonium-containing, 22:20780 (BNWL-624, pp 4.1-16)
heat transfer system dynamics for tungsten rocket, control analysis of, 22:39862 (N-68-18252)
neutron diffusion coefficients in plutonium-fueled, Battelle Revised Thermos code for, 22:27481 (BNWL-634, pp 2.1-8)
neutron spectra determinations for, use of time-of-flight technique for thermal, 22:33049
neutron spectra in thermal, computer codes for calculation of, 22:46904(T) (N-68-24779)
operation of pressurized, 22:18530(P)
physics characteristics of water-cooled, with burnable poison rods, (E/T), 22:20812 (FEI-88)
physics measurements on plutonium oxide (PuO_2)--uranium oxide (UO_2) fueled, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
physics parameters for seed-blanket, determination in critical assemblies of, 22:6116
physics parameters of, effects of central water gaps on, 22:39884
poison rods in, effects on reactivity of burnable, 22:42355(T) (ANL-Trans-637)
power distribution in plutonium-fueled, computer program for analysis of, (E/T), 22:22775
power fluctuations in, theory of, (T), 22:6102
power production from, experimental program for, 22:10010(R) (NP-17126)
power production using, economics of, 22:14164
pressure vessel construction for, 22:32804
pressure vessel mount for water-cooled maritime, description of multiple curved duct-connected dry and wet well, 22:48717(P)
pumps for, description of hermetically sealed, 22:22784
reactivity in, control rod measurement of, 22:30352
reactivity of, effects of thermal neutron flux depressions in irradiation-loops on, 22:18582 (CEA-R-3173)
safety of, engineered safeguards development for, 22:1772(R) (ORNL-TM-1986)
safety studies on French, outline of, 22:14176
use in nuclear power stations, evaluation of economic and technical aspects of, 22:37460

Reactors, Zero-Power
see Critical Assemblies

Reagents
see Chemicals and Reagents

Rebatron
see Microwave Oscillators

RECOIL IONS
  (See also specific ions.)
  charge-state distributions of, research progress on, (E/T), 22:18122(R) (NYO-2771-25)
  chemical reactions of, role of kinetic energy and charge in determining, 22:10264(R) (ORO-3602-1)
  radioinduced in deuterated and normal ethyl iodides and tetramethyllead, recoil energy spectra and relative abundance of x, 22:37798
  ranges in solids and gases, 22:30588(R) (HMI-B-66)
  reactions of, computer simulation of, 22:42723 (COO-1618-7)
  reactions of, method for studying charged and neutral species separately, 22:10264(R) (ORO-3602-1)
  reactions of, review of, 22:27741 (BNL-12361)
  reactions of, review of, 22:33470
  reactions of, use of ion implantation to study mechanisms of, 22:33462
  research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
  separation from ion exchanger loaded with target ion during neutron irradiation, 22:40141
  use in activation analysis, 22:14433 (ORNL-4196, pp 66-89)
RECTIFIERS
  design and use of superconducting, for flux pumping, 22:39000
  design of superconducting bridge, 22:13386
  design parameters for 0.25 to 10.0 MW Nuclear Auxiliary Power Systems, analysis of optimum, 22:35572 (SAN-679-4)
  development for 0.25 to 10 MW(e) potassium Rankine cycle nuclear space power systems, 22:37552 (CONF-680802-1)
  plasma theory for mercury vapor, 22:1942(T) (SC-T-67-0951)
  radioinduced switching of semiconductor-controlled, 22:12727
Rectum
  see Intestines
REDUCED NAD DEHYDROGENASE
  radiation effects on activity of, in mitochondria of mice, effects of fasting on x, 22:31009
  radiation effects on activity of, in tumor cells from rats, x, 22:28377
  radiation effects on content of, in adrenal glands of rats, x, 22:14957
  radiation effects on content of, in erythrocytes of rabbit, x, 22:45428
  radiation effects on reaction rates of, x, 22:47186
  reactions with atomic hydrogen, 22:35733 (NYO-3242-26)
REDUCTION
  radioinduced, in foods, 22:40990
REFLECTION
  see also Mirrors
REFRACTION
  measurement in ultrahigh vacuum of index of, ellipsometric technique for, 22:15569 (ORNL-TM-2114)
Refractive Index
  see Refraction
REFRACTOMETRY
  see also Refraction
Refractories and Crucibles
  see Crucibles
REFRACTORY COATINGS
  adhesion and flame-spray deposition on metals, 22:15165
  deposition by chemical vapor, statistical analysis of, (E), 22:8709 (ORNL-TM-2066)
REFRACTORY MATERIALS
  (See also specific materials.)
  see also Ceramic Materials
  adhesion between heated pairs of boride and carbide, 22:23781
  analysis of solutions of, for metals, spectrographic, 22:21032
  book: Evaporation of Refractory Compounds, 22:34060
  book: Fundamentals of Refractory Compounds, 22:36472
  book: High Temperature Materials, 22:31360
  book: Modern Composite Materials, 22:34007
  book: The Characterization of High-Temperature Vapors, 22:30553
  book: The New Materials, 22:12959
  casting of, equipment for continuous, 22:28903(P)
  coatings for, development of high-temperature, 22:7030
  crack detection in, high-temperature eddy current method for, 22:51191 (LA-DC-9382)
  crystal growth mechanisms of, parameters affecting, 22:19668
  design of ceramic, for structural uses, 22:36540
  electric conductivity of carbides, borides, nitrides, and silicides, temperature coefficients of, (E), 22:28932
  erosion by high temperature gases, mechanisms of, 22:11060
  fabrication and testing of crucibles of, for molten beryllium and nickel, 22:28888 (RFP-882)
  fabrication by chemical vapor deposition, statistical analysis of, (E), 22:8709 (ORNL-TM-2066)
  fabrication of fuel elements of laminated sheets of actinide containing unitary sintered metals, description of, 22:37598(P)
  fabrication of nonfuel boride, carbide, and nitride, 22:773
  failure mechanisms of carbon, 22:275
  friction and wear properties of, for use in journal bearings in liquid potassium and high vacuum, 22:8826
  graphitization of carbon, use of microscope in determining, 22:275
  mechanical properties of carbide, at high temperature, 22:31484
  melting of, arc furnace for, 22:35978(P)
  performance of cobalt-bonded, in structures, 22:36468
  phase studies on, 22:6288(R) (COO-1140-167)
  preparation by chemical vapor deposition, 22:6956
  preparation using chemical vapor deposition, development, 22:6957
  properties and uses of, reference data on, 22:10907
  properties at high temperatures, bibliography on, 22:5418 (NP-17141)
  properties for use as crucibles in casting uranium and uranium alloys, 22:45756 (UJV-1994)
  properties for use as reactor moderators, 22:30155(R) (NAA-SR-12296)
  properties for use in rocket reactors, 22:16256
  properties for use in tundish nozzles for continuous casting of steel, 22:23892
  properties of brittle, for use in panels and structures, 22:52260 (CONF-670927)
  properties of nonfuel, review of, 22:12957
  properties of sintered, for high-temperature metal-melting crucibles, 22:19610 (RFP-900)
  radiation effects on, 22:35837
  sampling by laser--microscope system, 22:47104
  separation of uranium from, method for, 22:37843(P)
  sintering and compacting powdered, under inert gas atmospheres, 22:742(P)
  sintering of, method for fabrication of high-temperature metal-melting crucibles, 22:19610 (RFP-900)
  stability of oxide, effects of apparent density on, 22:45819
  tensile properties of, effects of annealing temperature and time on, 22:30388
  use in machining of metals, review of factors and variables in, 22:36441 (NP-17469)
  vaporization of, mass spectrometric studies of thermodynamics of, 22:4117
REFRIGERANTS
  (Working fluids in refrigeration cycles)
  analysis for gaseous impurities, gas chromatographic, 22:33258
REFRIGERATION
  see also Cryostats
  see also Traps
  conference on low-noise microwave amplifiers and low-temperature, 22:15501
  coolant flow optimization for helium system in superconducting power cable, 22:48068
  description and performance of 4.0°K single-engine modified Claude-cycle helium refrigerator, 22:46090
  design and testing of continuous helium II refrigerator, 22:46091
  design of helium-3--helium-4, for Moessbauer studies, 22:41515
  equipment design for absorber and target, for Moessbauer effect detection, closed-cycle helium, 22:39201
  helium consumption in superconducting magnet operation, reduction of liquid, 22:48069
  helium isotope, development of, 22:24215
  helium isotope, principle of, 22:52691
  helium-3--helium-4 system for, design of, 22:17562
  helium-3--helium-4 system for, principle of operation of, (T), 22:50093 (JINR-P13-4014)
  safety for storage of tritium-labeled compounds, 22:31102
  startup of helium-3--helium-4 dilution refrigerator, rapid, (E), 22:19902
  study of helium, systems for superconducting magnets in 200-GeV accelerator, 22:48037 (UCRL-18188)
  use of closed-cycle helium refrigerator for cooling absorber and target in Moessbauer studies, 22:7212 (NYO-2028-2, pp 139-49)
REGENERATION
  see also Growth
  age effects on, of γ-irradiated bone marrow and testes in monkeys, 22:21609
  bone marrow, following x irradiation, effects of dose on, 22:43399
  capacity in man following irradiation, methods for increasing, 22:21634
  comparison for bremsstrahlung- and x-irradiated Vicia root tip cells, 22:49642
  effects of AET on, of γ-radioinduced injuries in mice, 22:23567
  incidence in odontoblasts of rats, formation of incisor following, 22:52012
  kinetics in fission neutron-irradiated epithelium of cornea and intestine in mice, effects of dose fractionation on, 22:21594
  radiation effects on cell proliferation during liver, in mice, chronic γ, 22:23636
  radiation effects on kinase activity during liver, in rats, protective effects of AET against x, 22:4589
  radiation effects on tissue, in salamanders, effects of transplants on x, 22:45688
  radiation effects on, in planaria off spring, x,

22:40928
radiation effects on, of bone marrow of dogs, effects of partial and whole-body exposure on x, 22:45661
radiation effects on, of cells in intestine of rats, fast neutron, 22:40918
radiation effects on, of cells in pea roots, γ, 22:40962
radiation effects on, of dissociated ribosomes, γ, 22:33993
radiation effects on, of epithelial cells in skin of mice, effects of dose fractionation on x, 22:6902
radiation effects on, of hypoglossal nerves of rabbits, x, 22:43455
radiation effects on, of limbs of axolotl, effects of, on grafts, x, 22:52010
radiation effects on, of limbs of Triturus viridescens, effects of skin grafts on x, 22:43451
radiation effects on, of muscles in rats, effects of coamides on x, 22:8438
radiation effects on, of peripheral nerves in rats, fractionated x, 22:45714
radiation effects on, of rat brain and nerves from wound trauma, x, 22:51941
radiation effects on, of tissues by planaria, x, 22:40842
radiation effects on, of yeast cells, effects of dose on γ and x, 22:21475

REGGE POLE THEORY
algebraic classification of Regge poles in, 22:15832
amplitude for backward unequal-mass scattering, analyticity requirement for, 22:35144
amplitude for γ + N → vector meson + N interactions, factorization and conspiracy relations for, 22:34922
amplitude for p + p interactions, proton form factor from model for, 22:50410
amplitude for π + N → rho + N interactions in, 22:37158
amplitude for π + p interactions at high energies, review of, (E/T), 22:17957
amplitude for π production in γ + N interactions, gauge-invariance constraints on, 22:22365
amplitude from s-channel resonances in, t-channel, 22:41869
amplitude of B^- in π + N interactions at large momentum transfer in, structure of, 22:46447
amplitude of inelastic scattering in, graph contribution to three-body production, 22:32216
amplitude of K^- + p → anti K^0 + n interactions in, 22:20258
amplitudes for baryon--antibaryon scattering in, 22:7499
amplitudes for K + N and π + N interactions in, 22:46450
amplitudes for n-particle production processes in, crossing relations for, 22:41873
amplitudes for processes with many-body final states, multi-Regge model for generalization of crossing relations for helicity, 22:22464 (LPTHE-TH-235)
amplitudes for π + N and rho + N interactions, Reggeization of invariant, 22:24659
amplitudes for π + N interactions in, partial-wave, 22:24666
amplitudes for π^- + p and π^+ + p forward interactions at high energies in, 22:3413 (UCRL-17873)
amplitudes in, analytic continuation for, 22:50364
amplitudes in, natural zeros of residues in Reggeization of invariant, 22:44512
amplitudes of meson--baryon interactions in, saturation of superconvergence relations for, 22:32153
amplitudes of π + π interactions in bootstrap scheme in, 22:39378
amplitudes of π^- + p → π^0 + n interactions, Argand analysis for resonances in, 22:39399 (IC-68/51)
analysis of backward π^- + p and π^+ + p interactions, coupling zeros in, 22:3418
analysis of charge-exchange and hypercharge-exchange pseudoscalar-meson-baryon interactions, 22:46433
analysis of π + N → ω + Δ interaction, 22:9598
analysis of π^+ + p → π^0 + N^{*++} interactions at 2.75, 3.54, and 8.0 GeV/c, 22:29714
baryon electromagnetic mass differences in Reggeized tadpole model, 22:9544
baryon exchange model predictions for π^- + p → π^0 + n interactions at 2 to 5 GeV/c, 22:44429
baryon interactions with mesons and baryons in, U(6) x U(6) symmetry for, 22:39456 (IC-68/43)
baryon interactions with pseudoscalar mesons at high energies in, 22:39412
baryon isomultiplets in, sequences of, 22:39415
baryon resonances from π^- + p and π^+ + p scattering, Y = 1, 22:1438
bootstrap of K* in Kπ channel in, 22:5670
bootstrap of rho trajectory in ω + π → π + π interactions, 22:3381
branch point contribution to amplitudes for π^- + p → K^+ + Σ^- and K^- + p → π^+ + Σ^- interactions, 22:20263
branching effect in p and p' poles in π^- + p and π^+ + p interactions at high energies, 22:44437
conspiracies in forward π + N → rho + N interactions, 22:9603
conspiracies in rho + rho → π + π interactions, Feynman-diagram model of, 22:46406
conspiracy and classification of Regge-pole families in, 22:46561
conspiracy and evasion in A_1 and rho production in anti N + N charge exchange and N + N interactions at high energies, 22:13744 (IPNO/TH-108)
conspiracy and evasion in π^+ and K^+ photoproduction, 22:37113
conspiracy and residue from finite-energy photoproduction sum rule, π, 22:44365
conspiracy equations for π + rho → N + anti N and π + N → rho + N interactions, 22:20222 (INP-555/PH, pp 107-14)
conspiracy in amplitude of two-body interactions of arbitrary-mass and -spin particles in, group theoretical approach for, 22:34869 (NP-17483)
conspiracy in anti N + N and N + N forward charge-exchange interactions at high energies, rho', 22:20277
conspiracy in arbitrary-mass and -spin particle interactions, group theory for, 22:39361 (CERN-68-7(Vol.2), pp 45-54)
conspiracy in K + N → K*(890) + N interactions, C = -1 exchange contribution and B-exchange, 22:26650 (NP-17430)
conspiracy in π + N → rho + Δ, K + N → K* + Δ, and π + N → f^0 + Δ interactions, π, 22:5594
conspiracy in π^- and π^+ production in γ + N interactions, 22:20197
conspiracy in π^+ photoproduction, β and π, 22:34928
conspiracy in, class of Lorentz group theoretical solutions for general, 22:48295
conspiracy of π pole in particle interactions, 22:39369
conspiracy of π Regge pole in π^+ photoproduction, 22:20183
conspiracy of π trajectory in photoproduction interactions, 22:46360
conspiracy of singularities in j plane for interactions of arbitrary-spin particles, 22:35023
conspiracy relation for anti N + N → Y + anti Y interactions, 22:29686
conspiracy relations as limits of unequal-mass relations in, equal-mass, 22:50383
conspiracy relations for direct-channel amplitudes, 22:32222
conspiracy relations for unequal-mass scattering, 22:44406
conspiracy residues and trajectories in π^+ production in γ + N → π^+ + N interactions at high energies, 22:37100 (IC-68/40)
conspirators and daughters in unequal-mass nonzero-spin scattering, 22:46546
coupling of Regge poles to nucleons, field-theoretic model for, 22:20252
coupling of Regge trajectory to baryons, comparison of density matrices for vector-meson production with, 22:5589
couplings of π trajectory in production processes, 22:11681
cross-section relations for π, eta, and K production in γ + N interactions, 22:17905
crossing in, four-mass kinematics for, 22:5675
current amplitudes in perturbation theory model, non-Regge terms in single, 22:3541
cut contributions to forward amplitudes for π + π interactions, 22:32137
cut contributions to inelastic scattering, absorption model for, 22:48323
cuts and poles in, perturbation theory for mixing of, 22:29771
cuts for pseudoscalar meson--baryon forward interactions in, superconvergence relations in presence of, 22:5576
cuts for vanishing total cross sections and constant diffraction peaks, 22:9710
cuts in angular momentum plane and asymptotic behavior for strong interactions, 22:17935
cuts in angular momentum plane, γ + N → π^0 + N and γ + N → N* + π^0 interactions as tests for, 22:22354
cuts in complex angular momentum plane, Cabibbo--Horwitz--Ne'eman angebra for, 22:17936
cuts in complex angular momentum theory, 22:41875
cuts in high-energy elastic scattering, absorptive corrections for, 22:20342
cuts in N + N interactions, tests for, 22:5608
cuts in N + N scattering amplitude from spin dependence in p + d and p + α interactions at 1.67 and 18 GeV/c, 22:44456
cuts in π^- + p → K^+ + Σ^- interactions from exchange of rho and K*, 22:3426
daughter pole hypothesis of N(1400) for phase-shift analysis of P_{11} π + N interactions, 22:52988
daughter trajectories for Bethe--Salpeter equation, slopes of, 22:46548
daughter trajectories from sum rules and partial-wave analysis of π + π → π + ω interactions, 22:44412
decay widths of N* resonance in broken SL(2,C) model, elastic, (T), 22:50389 (KFKI-21/1968)
density matrix elements in single-particle production, double Regge model for, 22:35138
developments in, review of, 22:5679
dispersion relations from Regge pions in π → μ + ν decay and μ + ν production from antibaryon interactions with baryons, unsubtracted, 22:17922
dispersion sum rules in, 22:1426 (JINR-E2-3511)
effects of Regge cuts on forward dispersion relations, 22:50474
elementary particle interactions at high energies in, book on, 22:11745

exchange amplitudes for K + N interactions, 22:26659
exchange amplitudes for πN bound state and resonance spectra, 22:17953
exchange contributions to electromagnetic mass differences of hadrons, 22:46370
exchange models in, formulation in terms of s-channel amplitude of high-energy, 22:35141
exchange of K* and K** trajectories in K + p and π + p interactions, SU(3) symmetry breaking in, 22:17969
exchange of ω and β in $\gamma + p \to \pi^0 + p$ interactions, vector dominance hypothesis for, 22:48273
exchange of Reggeons in p + p → p + p, p + K → p + K*, γ + p, and $\pi + p \to p + A_2$ interactions, 22:3455
exchange of rho' trajectory in $K^+ + n \to K^0 + p$ interactions at 2.3 GeV/c, 22:3445
fermion exchange in $\pi^- + p \to \Lambda + K^0$ interactions in, 22:46453
fermion trajectory from spin-1/2 fermion interactions with vector mesons in field theory, 22:5579
Feynman rules for Reggeons, formulation of, 22:26707
formalism for high-energy scattering, review of, (T), 22:50357 (CERN-68-31)
formalism for p + p interactions at high energies and large momentum transfers, π trajectory in, 22:46472
formalism for polarization in pseudoscalar meson--nucleon interactions at very high energies, 22:34988
formulas for differential cross sections for π + N and N + N interactions, 22:3448
hadron interactions and classification in, 22:20210 (CERN-67-24(Vol.2))
hadron interactions and production in, review of research, 22:44403(R) (UCR-34-P-107-73)
hadron interactions at high energies in, 22:32120
hadron interactions at high energies in, phenomenological theories for two-body, 22:39356 (CERN-68-7(Vol.1), pp 218-51)
hadron interactions at high energies near forward direction in model in, 22:39360 (CERN-68-7(Vol.1), pp 478-93)
hadron interactions in, model for elastic, 22:39298 (CERN-68-7(Vol.2), pp 1-23)
hadron interactions in, model for total cross sections of, 22:39396 (CERN-68-7(Vol.2), pp 110-13)
hadron interactions in, review of models for total cross section near forward direction of elastic, 22:39355 (CERN-68-7(Vol.1), pp 3-59)
hadron multiple production at high energies in multi-Regge model in, review of, 22:39357 (CERN-68-7(Vol.1), pp 380-412)
helicity amplitudes in, 22:11741
helicity amplitudes in, existence of non-Regge singularities in, 22:32229
interactions $\gamma + \Lambda^0 \to \Lambda^0 + \pi^0$ in, superconvergent sum rule for, 22:39325
interactions $\gamma + p \to n + \pi^+$ at high energies in, mechanism without conspiracy for, 22:22362
interactions γ + p → p + rho^0 and $\gamma + p \to p + \omega^0$(phi^0) at high energies in, 22:24594
interactions in, kinematics of strong, 22:17933
interactions in, Reggeon diagram method for arbitrary number of particles in inelastic, 22:39364
interactions in, review of forward peak in inelastic, 22:39265 (CERN-68-7(Vol.1), pp 60-110)
interactions K + N and π + N in, 22:39409
interactions $K^- + p \to \Sigma^+ + \pi^-$ at 4.1 and 5.5 GeV/c in hydrogen bubble chamber, differential cross sections for, (E), 22:20137 (COO-1195-116)
interactions N + N in, O(4) symmetry for, 22:39464
interactions of mesons in, review of parameters for strong, 22:32156
interactions of nucleons with particles in, kinematic constraints, factorization, and kinematic zeros in, 22:34981 (LNF-68/5)
interactions p + n → n + p and anti p + p → n + anti n at high energies in models with branching in j-plane in, for differential cross sections of, 22:39377
interactions $p + p \to p + n + \pi^+$ at 28.5 GeV/c in double pole model in, π exchange and N(1400) production in, 22:46328
interactions π + N → rho + N* in, model for differential cross sections and decay angular correlations in, 22:24658
interactions π + N at high energies in model in, resonance production in backward, 22:39391 (CERN-68-7(Vol.1), pp 460-70)
interactions π + N in model in, phase contours for, 22:39395 (CERN-68-7(Vol.2), pp 55-73)
interactions π + N in, sum rule for decoupling of second rho in forward, 22:26665
interactions π + p → $\Lambda(\Sigma)$ + rho (A_2) + K and $\pi^+ + p \to n + \pi^+ + \pi^+ + \pi^0$ at high energies in, Reggion graphs for asymptotic behavior of amplitude of, 22:22403
interactions π + p → N + nπ in, multi-exchange model for, 22:22392 (INR-P-880/VI/PH)
interactions $\pi^+ + d \to p + p$ in, Regge pole formalism for, 22:37160 (UCRL-18252)
interactions $\pi^- + p \to \pi^0 + n$ at 5.9 to 18.2 GeV in, 22:20135 (CEA-R-3209)
interactions $\pi^- + p \to \pi^0 + n$ at high energies in, 13/2- N(2530) production in, 22:39412
interactions π^- + p and π^+ + p at high energies in, 22:46445
interactions π^- + p and π^+ + p at high energies in Regge model in, sum rule for cross sections of, 22:37159
interactions π^+ + p at 8 GeV/c, multi-Regge-exchange model for, (T), 22:37146 (INR-P-889/VI/PH)
kinematic constraints on Regge-pole residues, 22:11683
kinematic singularities and zeros of γ + N → vector mesons + N interactions in, 22:44356
lecture on, 22:7489 (UCSD-10-P-10-29)
Mandelstam cuts in, properties of, 22:44504
mass formula for M = 0 and 1 Toller hadron families in, method using analyticity for, 22:47813
meson (K) electromagnetic mass difference in, finite-energy sum rules for virtual Compton-effect amplitude for, 22:39316 (JINR-E2-3853)
meson (π) conspiracy in, dynamical model for, 22:26646
meson (π) interactions in, rho exchange in, 22:9711
meson (π) trajectory in, experimental evidence against conspiracy of, 22:37086
meson (rho) and (A_2) trajectory exchange in π + eta → π + rho interactions from superconvergence sum rules, 22:7509
meson (rho) trajectory exchange in $\pi + \pi \to \pi + \omega$ interactions from superconvergence sum rules, 22:7509
meson production in γ + N interactions in, 22:48347
model for amplitude of $\pi^- + p \to \pi^0 + n$ interactions, momentum dependence in, 22:17869
model for analysis of high-energy interactions, 22:3417
model for associated production interactions with K*(890) and K*(1420) exchange, 22:15797
model for bounds for coupling constants in multiple production processes, 22:46545
model for charge-exchange π^- + p interactions, relation between composite model and, 22:41816
model for double charge-exchange interactions, 22:46400
model for eta production in γ + N interactions, 22:24607
model for hadron interactions at very high energies, 22:11645
model for high-energy elastic and charge-exchange scattering with absorbing hard core, 22:50396
model for high-energy interactions, crossover and polarization phenomena in, (T), 22:3310
model for inelastic π + p and K + p interactions at 5 to 16 GeV/c, multipheral, 22:46427
model for K + N interactions, superconvergence sum rules for, 22:13761
model for K*(890) and K*(1420) production in K^- + p interactions at 10 GeV/c, (E/T), 22:29630
model for K^- + p → anti K^0 + n interactions, rho + R, 22:9594
model for $K^+ + p \to K^+ + \omega + p$ and K^+ + p → K^+ + phi + p interactions at 9 GeV/c, multiperipheral, 22:50295 (UCRL-18321)
model for n-particle production, high-energy behavior of cross section in, 22:15859
model for nucleon electromagnetic form factors, 22:13695
model for $p + p \to \Delta^{++} + p + \pi^-$ interactions at 6.6 GeV/c, use of double, (E), 22:24539
model for pion-exchange interactions, 22:7494
model for polarization in π^- + p → eta + n interactions, 22:9602
model for proton scattering by carbon-12 at 0.9 to 21.5 GeV/c, cross sections for, 22:48327
model for π + N → π + rho + N interactions, πrho mass distributions in, 22:20266
model for π + N charge-exchange polarization, absorptive corrections in, 22:35004
model for π + N interactions, phase contours in, 22:17970
model for π + p → π + N* and K + p → K + N* interactions, 22:32165
model for π + p interactions at high energies in, 22:7513
model for π^+ + p interactions, shadow elastic scattering from multi-Regge-exchange, 22:35012
model for π-exchange trajectories in $\Delta(1238)$ production interactions, 22:26657
model for πp, pp, and anti pp scattering, 22:15779
model for resonances in K + N and π + N interactions at high energies, 22:39407(T) (UCRL-Trans-1364)
model for rho and N* decay angular correlations from π + N → rho + N* interactions, 22:24661
model for secondary contributions to forward $\pi^- + p \to \pi^0 + n$ interactions, 22:39421
model for two-particle interactions, 22:48373
model for vector meson production in γ + p interactions, 22:37109
model for vector meson production in pseudoscalar meson interactions with baryons, SU(6)/sub W/ in double-pole, 22:3436
model of double Regge poles for $p + p \to p + p + \omega^0$ interactions, 22:15814
model of infinite Regge recurrences for high-momentum transfer inelastic π + p interactions, 22:24650
model of multiple, for analysis of π + N and K + N interactions at 6 to 18 GeV/c, 22:50399
model of rho + rho' trajectories for π + N charge-exchange interactions and polarization, 22:37157
model of single rho exchange for $\pi^- + p \to \pi^0 + n$ interactions at high energies, 22:50393
model of U(6) x U(6) symmetry for particle classification, 22:46395

model of vector meson production, unequal-mass kinematics for, 22:5566
model with absorptive corrections for $\pi^- + p \to \pi^0 + n$ and $\pi^+ + p \to \pi^0 + \Delta^{++}(1236)$ interactions, 22:44443
model with direct-channel resonances for $\pi + N$ interactions, 22:20232
model with L--S coupling for pseudoscalar-meson--nucleon interactions, 22:20253
model with L--S coupling for $\pi + N$ interactions, 22:20264
models for amplitudes and cross sections for forward scattering, asymptotic projections of, 22:29767
models of Regge and multi-Regge couplings, Feynman-diagram, 22:26726
N* resonances from rho Regge exchange in charge-exchange $\pi + N$ interactions, 22:20256
ω-exchange contribution to $\pi + p$ interactions, 22:7515
parameters for high-energy scattering amplitude, lower bound from, 22:50477
parameters for K + N interactions, use of continuous moment sum rules for analysis of, 22:48321
parameters for $\pi + N$ interactions, determination of, 22:32132
parameters for $\pi + N$ interactions, use of continuous sum rules for determination of, 22:34998
partial-wave projection of cross-channel amplitudes in, use in bootstrap theory, 22:44430
particle production in, total cross sections for multiple, 22:41798
phase contours for $\pi + N$ interactions in model in, 22:7506 (UCRL-17921)
photoproduction of π^+ and K^+ in, high-energy, 22:17904
pole amplitudes in, circles in Argand diagrams from partial-wave projections of, 22:32147
pole contributions to Lorentz pole for scattering amplitude expansion at vanishing four-momentum transfer, 22:15794
pole degeneracy in total cross sections of hadron interactions, 22:24624
pole dominance model for superconvergence sum rule for $\pi + N$ interactions, 22:41815
pole exchange for branch points in angular momentum plane, 22:3552
pole exchange in model with absorptive corrections for $\pi^+ + p \to \pi^0 + \Delta^{++}$ and $\pi^- + p \to \pi^0 + N$ interactions, 22:15787 (DESY-68/1)
pole exchange in $\pi + p$ and $K + p$ inelastic interactions, 22:17956
pole expansion at mass zero, Pomeranchuk singularity in, 22:13863 (LPTHE-TH-228)
pole families in equal-mass Wick--Cutkosky model, general properties of, 22:48294
pole parameters for forward $\pi + N$ interactions at high energies, P and P', 22:32163
pole parameters for $\pi + N$ interactions at high energies, determination of P and P', 22:35002
pole parameters for $\pi + p$ scattering from superconvergent form of inverse dispersion relations, P and P', 22:34989
pole parameters from sum rules for $\pi + N$ elastic interactions, P and P', 22:41811
poles and residues for scattering amplitudes in, zero-energy behavior of, 22:37200 (IC-68/31)
poles arising from analytic continuation in spin of S-matrix elements, theories of arbitrary-spin particles for, 22:5527
poles in model for, experimental data for, 22:13864
poles in $\omega + \pi \to \pi + \pi$ scattering amplitudes, third double-spectral function effects in, 22:24644
poles in particle scattering by Coulomb field, 22:41772 (JINR-P2-3866)
poles in $\pi + N$ backward interactions at high energies, 22:24675
poles in $\pi + \pi$ interactions, bootstrap with finite-energy sum rules for, 22:20237
poles in $\pi^- + p \to \pi^0 + n$, $\pi^- + p \to \pi^- + p$ and $\pi^+ + p \to \pi^+ + p$ interactions at high energies, 22:13750 (CALT-68-145)
poles in, factorization of Regge and Toller, 22:5671
poles in, unitary representation of O(3,1) for daughter, 22:17998
Pomeranchon for structure of angular momentum singularities, 22:22465
Pomeranchon slope for $\pi + \pi$ elastic amplitude, 22:1515
Pomeranchon SU(3) assignment for K + N and $\pi + N$ interaction total cross sections, (T), 22:24653
Pomeranchon trajectory in, model for, 22:44402 (SLAC-PUB-463)
Pomeranchuk exchange in multi-Reggeon model for contributions to cross sections for two-particle scattering, 22:44522
Pomeranchuk exchange in, unitarity violation in, 22:26589
Pomeranchuk intercept in $\pi + \pi$ interactions in, shift due to electromagnetism in, 22:32134
Pomeranchuk pole for differential cross section for elastic $p + p$ interactions at 90°, 22:35024
Pomeranchuk trajectory in low-energy scattering amplitudes, 22:35151
Pomeranchukon exchange in high-energy elastic scattering, multiple-scattering corrections to, 22:46397
predictions for π production in $\pi + N \to \pi + \pi + N$ interactions at 1.25 and 1.59 GeV/c near rho region, 22:17971
predictions for $\pi^+ + p \to \eta + \Delta^{++}(1236)$ interactions, 22:7519
predictions of double Regge pole model for quasi-three-body production in $\pi^- + p \to 2\pi^- + \pi^+ + p$ interactions at 11 GeV/c, for, 22:39393 (CERN-68-7(Vol.1), pp 611-47)
proton electromagnetic form factor in, formula for, 22:32087
recurrences for N* resonances, 22:3406 (INP-555/PL/PH, pp 51-63)
relations for pole conspiracy in $\gamma + N \to \pi + N$ interactions using O(4) symmetry, 22:3336
representation for backward elastic $\pi^- + p$ interactions, 22:3433
representation for spinless particles in backward direction, 22:44511
representations for scattering amplitude, 22:11740
research on, review of, 22:15696 (NP-17252)
residue functions for $\gamma + N \to \pi + N$ interactions, 22:34898 (NP-17489)
residue in $\pi^+ + p \to \pi^0 + \Delta^{++}$ interactions, exponential-type, 22:46425
residues and trajectories in π^+ photoproduction, use of continuous moment sum rules for pion and conspirator, 22:44355
residues in O(3,1) symmetry expansion of forward scattering amplitude, zeros of, 22:39461
residues in three-body vertices in amplitudes of four-body particle interactions in, review of experimental tests of SU(3) symmetry for, 22:37172 (CONF-670725-, pp 105-42)
residues of vector trajectories, relation with universal coupling of ω, 22:5563 (TID-24135)
resonance parameters from interference model in, 22:50471
resonance production in K + N and $\pi + N$ interactions in, 22:20244
S-matrix elements for large argument values for $\pi + N$ interactions and photon Compton interactions with spinless targets in, 22:20351
scattering amplitude additivity in, quark, 22:13732 (ITF-67-33)
scattering amplitude for N + N interactions, contribution of two-rho cuts to partial-wave, 22:13776
scattering amplitude in impact parameter model, Regge-like poles in, 22:9709
scattering amplitude in, angular-momentum branch points in two-body, 22:3549
scattering amplitude in, asymptotic behavior of meson--nucleon, 22:11675
scattering amplitude in, group-theoretic analysis of multiparticle, 22:5673
scattering amplitude with small transverse momentum in, diagram method for asymptotics of inelastic, 22:35132
scattering amplitudes at fixed angles in, phase contours for crossing-symmetric model for, 22:46542
scattering amplitudes at high energies in, nonoscillating behavior of, 22:35153
scattering amplitudes for Yukawa potentials, Regge-type representations for, 22:35146
scattering amplitudes in, absorption and rescattering corrections to, 22:41871
scattering amplitudes in, Lorentz poles from factorization and analyticity in equal-mass, 22:44523
scattering amplitudes in, phase contours for analyticity in crossing symmetric model with rising trajectories for zeros and poles of, 22:37201 (UCRL-18243)
scattering amplitudes in, resonances from Argand-diagram analysis of, 22:50472
scattering amplitudes in, use of finite-energy sum rules for asymptotic behavior of, 22:35149
scattering amplitudes, Gribov--Pomeranchuk phenomenon in N/D method for, 22:20220
scattering at high energies in, extended particle model for elastic, 22:5668
scattering at high energies in, quark coupling in model for, 22:37202 (UCRL-18251)
scattering in, Reggeon diagram technique for high-energy, 22:22463 (ITEF-511)
singularities at particle-mass zero in model, 22:26635
singularities in forward $\pi + N$ charge exchange, use of sum rules for analysis of, 22:29708
sum rules and Horn--Schmid duality, finite-energy, 22:39498
sum rules for π^0 photoproduction in, ω residue function and finite-energy, 22:34921
sum rules for Regge parameters for K + N interactions, superconvergence, 22:3425
sum rules in, bootstrap calculation of crossing-symmetric finite-energy, 22:53034
sum-rule analysis of K + N interactions in, 22:7517
superconvergence sum rule for Reggeized rho-exchange parameters in $\pi + N$ interactions, 22:44433
test from cross section relations for $K^+ + n \to K^0 + p$ interactions, 22:24655
testing in π^0 production from $\gamma + N \to \pi^0 + N$ interactions at high energies, 22:1414
theory for $K^+ + p \to K^0 + \Delta^{++}(1236)$ interactions, 22:3428
theory for N(2650) production from $\pi^- + p \to \eta + n$

interactions at 3.20 to 5.00 GeV/c, 22:20258
theory for particle--nucleus reactions at high energies, 22:1450 (AD-648017)
theory for pion in $\pi \to \mu + \nu$ decay and antibaryon + baryon $\mu + \nu$ interactions, 22:7478 (OULNS-67-9)
theory for $\pi^- + p \to \pi^0 + n$ interactions, review of, 22:7489 (UCSD-10-P-10-29)
trajectories and daughter pole relation with two-dimensional expansions of binary scattering amplitudes, 22:39492 (JINR-E2-3841)
trajectories and falling residues for $\pi + N$ interaction in, experimental test of rising, 22:7510
trajectories and residues of rho and rho' poles in $\pi^- + p \to \pi^0 + n$ interactions, 22:48325
trajectories and SU(2)/sub W/ symmetry for anti N + N interactions in, confluence of, 22:9660
trajectories at nonvanishing energy in, families of, 22:26579 (KFKI-4/1968)
trajectories at nonvanishing energy, Bethe--Salpeter equation for families of, 22:39494
trajectories exchange for π and K^+ production in $\gamma + p$ interactions, 22:3324
trajectories for baryons, symmetry properties of, 22:46418
trajectories for bosons and fermions, threshold cusps in, 22:32223
trajectories for families of N*, superconductivity in quark model for, 22:39401 (JINR-P2-3802)
trajectories for families of resonances at high energies, infinitely rising nonlinear, 22:44521
trajectories for fermions in, reflection symmetry of conspiring fermions, 22:53036
trajectories for harmonic oscillator and Gaussian potentials, 22:3540
trajectories for high-energy forward scattering, O(3,1) symmetry of, 22:22470
trajectories for higher baryon resonance production in e + N interactions, SU(6)/sub W/ summetry for, 22:35058
trajectories for $I = 1$, heavy mesons, relativistic model with linear spectrum for ratios of parameters for slopes of, 22:41804 (JINR-P2-3859)
trajectories for isospin-one mesons, 22:26645
trajectories for meson and baryon supermultiplets in U(6) x U(6), 22:37183
trajectories for N and Δ in, Regge families in broken SL(2,C) for classification of, 22:39392 (CERN-68-7(Vol.1), pp 494-522)
trajectories for N and Δ masses in, formula in broken SL(2,C) for, 22:29737 (KFKI-5/1968)
trajectories for parity doublets of baryon resonances, 22:13759
trajectories for potential scattering in classical and nonrelativistic quantum mechanics, 22:26729
trajectories for $\pi + N$ charge-exchange interactions at high energies, conspiracy between rho and rho', 22:3421
trajectories for $\pi + N$ interactions at high energies, continuous-parameter sum rules for rho and rho', 22:39398 (IC-68/48)
trajectories for $\pi^- + p \to$ eta + n interactions, A_2, 22:7516
trajectories for R, S, T, and U bosons in, compatibility of bootstrap hypothesis with linear, 22:20238
trajectories for recurring minima in hadron elastic interactions at high energies and large momentum transfers, 22:20221
trajectories for Schroedinger equation with Yukawa potentials, Schwinger variational method for, 22:11737
trajectories for spinless particles at nonvanishing energy in Bethe--Salpeter equation, families of, 22:24569 (KFKI-3/1968)
trajectories for strong interaction dynamics, infinitely rising Regge, 22:17934
trajectories for vector and pseudoscalar meson interactions, superconvergent bootstrap of vector and tensor, 22:34966
trajectories for vector and tensor mesons from superconvergence in pseudoscalar meson interactions, reciprocal bootstrap of, 22:34969
trajectories from backward $\pi^- + p$ and $\pi^+ + p$ elastic interactions, N/sub α/ and Δ/sub delta/, 22:41817
trajectories from $\pi + N$ and $K + N$ elastic scattering amplitudes, properties of P and P', 22:41818
trajectories in Bethe--Salpeter equation, daughter, 22:3517
trajectories in Bethe--Salpeter equation, operator formalism for daughter, 22:3516
trajectories in $\gamma + p \to n + \pi^+$ interactions at high energies, 22:17899
trajectories in pseudoscalar meson--pseudoscalar meson interactions, restrictions on SU(3) mixing from exchanged, 22:48311
trajectories in $\pi + N$ interactions, fermion, 22:20270
trajectories in SL(2,C) symmetry for mass formula, 22:17996 (KFKI-1/1968)
trajectories in Van Hove model, daughter, 22:20355
trajectories in Wick--Cutkosky model of Bethe--Salpeter equation, daughter, 22:26705
trajectories in, asymptotic behavior of infinitely rising, 22:48384
trajectories in, bootstrap models for, 22:46413
trajectories in, calculation of daughter, 22:5677
trajectories in, dynamical scheme based on rising, 22:20354
trajectories in, generalized current algebra interpretation of, 22:5561
trajectories in, Green functions for, 22:1513
trajectories in, kinematic constraint on energy dependence of infinitely rising, 22:11651
trajectories in, ladder approximation for parent and daughter, 22:46560
trajectories in, model with daughter and granddaughter, 22:35139
trajectories in, review of little groups and analyticity for families of, 22:44401 (KFKI-13/1968)
trajectories in, use for Feynman diagram relation with asymptotic contribution from two-body amplitudes, 22:7559(T) (CERN-Trans-67-5)
trajectories of A_2 for $\pi^- + p \to$ eta + n interactions, 22:50398
trajectories of baryon resonances, 22:50402
trajectories of baryons, sum-rule constraint on, 22:46438
trajectories of bosons, use of $M = 1$ propagators for parity doubling of, 22:46409
trajectories of N and Δ in $\pi^+ + p$ and $\pi^- + p$ interactions, exchange of, 22:20249
trajectories of N and Δ resonances, superconvergence sum rules from parametrization of, 22:20267
trajectories of nonstrange mesons, contribution to total cross section, 22:44424
trajectories with approximate parity degeneracy for N* resonances from $\pi + N$ interactions, 22:13765
trajectories with three-particle and multi-particle intermediate states in, 22:3538
trajectory and residue function of A_2 in $\gamma + N \to \pi + N$ interactions, 22:44381
trajectory and residue functions for scattering, relation between, 22:20353
trajectory conspiracy for unequal-mass scattering in, group-theoretic formulation for, 22:48379
trajectory conspiracy from renormalizable perturbation expansion for electron and photon scattering, test of, 22:37104
trajectory exchange in baryon--meson inelastic interactions, 22:1439
trajectory exchange in $\pi^- + p$ interactions at 3.25 GeV/c in hydrogen bubble chamber, (E), 22:48241
trajectory families of octets of pseudoscalar and axial-vector mesons, classification of conspirator, 22:29680
trajectory for $I = 1$, $Y = 0$ meson resonances, daughter, 22:5567
trajectory for I/sup G/ = 0, J/sup P/ = 2^+ F(1085) resonance, assignment of P'', 22:32136
trajectory for $K^+ + n \to K^0 + p$ interactions above 2.3 GeV/c, rho', 22:39413
trajectory for $K^- + p \to K^0 + n$ and $\pi^- + p \to \pi^0(\text{eta}^0) + n$ interactions below 20 GeV/c, rho', 22:39413
trajectory for π, current--algebra requirements for Toller quantum number, 22:50377
trajectory in field theory model, daughter, 22:20316
trajectory in field-theory model, daughter, 22:44493
trajectory in s-channel contribution to $\pi^+ + p$ interactions through 90°, Δ/sub delta/, 22:9590
trajectory in scattering amplitudes at very high energies, leading, 22:41868
trajectory in, existence and implications of class III π conspiracy, 22:50372
trajectory intercept in $\pi + N$ interactions in, consistency conditions from P, 22:24672
trajectory of external particles from bootstrap constraints on, 22:37133
trajectory of rho, phenomenological model of, 22:15780
trajectory parameter for A_2, ghost-eliminating mechanism and photoproduction sum rule for, 22:24631
trajectory parameters for f^0 from superconvergence dispersion sum rules for $\pi + N$ interactions, 22:26654
trajectory parameters from sum rules for $\pi + p$ interactions, P and P', 22:34996
trajectory parameters of ω from $K^0_2 + p \to K^0_1 + p$ interactions at high energies, 22:44426
trajectory slopes for two-particle elastic scattering, 22:15855
trajectory slopes in, universality of, 22:3550
trajectory-exchange model for $\gamma + p \to \text{rho}^+ + n$, $\text{rho}^+ \to \pi^+ + \pi^0$ interactions, 22:44360
use for amplitudes of electromagnetic interactions, 22:9553
use for analysis of $\pi + N$ charge-exchange interactions, finite-energy sum rules in, 22:20254
use for dynamics of strong interactions, 22:24623 (LPTHE-TH-222)
use for general treatment of current algebra, 22:3298
use for high-energy scattering with relatively large momentum transfer, 22:15816
use for hyperon nonleptonic decays, 22:34999
use for $\pi^- + p \to \pi^0 + n$ and $\pi^- + p \to \pi^- + p$ interactions at high energies, 22:15796
use for rho^- production from $\pi^- + p \to p + \text{rho}^-$ interactions at 4.0 and 8.0 GeV/c, model for, 22:9588 (RLO-2041-1)
use for rho^+ production from $\pi^+ + p \to \text{rho}^+ + p$ interactions at 4.0 and 8.0 GeV/c, model for, 22:9588

(RLO-2041-1)
  use in analyzing $\gamma + N \to \pi + N$ and $N + N \to N + N$ interactions, Lorentz invariance in, (T), 22:50321 (UCRL-18377)
  use in enhancement theory of SU(3) symmetry breakings, 22:44464
  use of multi-Regge model for uncorrelated particle production from p + p interactions at high energies, 22:13772 (UCRL-17980)
  use with current algebra for isovector anomalous magnetic moment of nucleons, 22:3332
  vacuum pole exchange in $\pi + N$ interactions, use of continuous moment sum rule for P'', 22:48317
  vacuum Regge poles and cuts, determination of, 22:46437
Registers
    see Counting Devices
Regulators, Current
    see Current Regulators
Regulators, Frequency
    see Frequency Regulators
Regulators, Level
    see Level Regulators
Regulators, Voltage
    see Voltage Regulators
Reindeer
    see Deer
RELATIVE BIOLOGICAL EFFECTIVENESS
  alpha particle, in primates, 22:12928
  calculation for effects of fast neutrons of different energies on cultured human kidney cells, 22:49211
  calculation for effects of γ rays and neutrons on rabbits, 22:582
  calculation for effects on hair follicles of rat skin, α and electron, 22:47633
  calculation for effects on mice, fast neutron, γ, and x, 22:40891
  calculation for high-energy electrons in biological dosimetry of high-energy materials, model for, 22:31084
  calculation using hit theory and microdosimetry, 22:31203 (BNWL-SA-1753)
  charged particle, effects of LET on, 22:6870(T) (NP-tr-1561)
  charged particle, in cultured mammalian cells, effects of LET on, 22:38317
  comparison for 20-MeV electrons and 21-MeV photons in relation to survival of mice, 22:38277
  comparison for 20-MeV electrons, γ, and 20-MeV photons in relation to effects on survival of bacteria and yeasts, 22:38503
  comparison for α particles and high-energy electron beams, 22:31274
  comparison for β from tritium-labeled water with cobalt-60 and radium γ in HeLa cells and Vicia faba root cells, 22:40874
  comparison for β, fast neutron, and x radiation effects on hematopoietic system of rabbits and rats, 22:40822(T) (JPRS-44070, pp 1-9)
  comparison for conventional and low-energy x radiation in relation to survival of Escherichia coli, 22:38502
  comparison for effects of charged particles on bacteria, 22:23683 (UCRL-17481, pp 138-44)
  comparison for effects of monoenergetic neutrons on lens tissues of mice, 22:49284 (NYO-2740-5, pp 201-66)
  comparison for effects of monoenergetic neutrons on chromosomes of Drosophila melanogaster, 22:49284 (NYO-2740-5, pp 201-66)
  comparison for electrons and γ rays, 22:38348
  comparison for electrons and x rays in relation to effects on survival of bacterial cells and cultured mammalian cells, 22:45729 (UCSF-10-P-2-52)
  comparison for external and internal radioisotope emitters, 22:23651
  comparison for fast neutron, proton, and x radiation in relation to genetic effect on Crepis capillaris, 22:21488
  comparison for fast neutron- and gamma-radiation in peas, 22:21628
  comparison for fast neutron-, γ-, proton-, and x-radiation in relation to genetic effect on bone marrow and testes of mice, 22:21478
  comparison for fast neutrons produced by ^{9}Be(^{3}H,n)^{11}C reaction, γ radiation, and high-energy x radiation, 22:19370
  comparison for fast neutrons produced by ^{9}Be(^{3}He,n)^{11}C reaction and by T(d,n)^{4}He reaction, 22:19370
  comparison for fission neutron and x ray effects on weight of testes of mice, 22:28274 (ANL-7278, pp 250-82)
  comparison for fission neutrons and γ effects on intestine of mice, 22:49551
  comparison for fractionated doses of fast neutron- and x radiation for effects on morphology and survival of cells in normal tissues and sarcomas in rats, 22:49419
  comparison for γ, high-energy proton, and x radiation in relation to dose distribution, 22:38476
  comparison for high-energy bremsstrahlung and x, 22:49642
  comparison for high-energy electrons and x rays in relation to effects on neoplastic and normal tissues of man, 22:38276
  comparison for induction of cataracts in rats, γ and x, 22:40854
  comparison in HeLa cells, effects of age and dose on γ and x, 22:6878
  comparison of 14 MeV monoenergetic neutron and x, for HeLa and lymphoma cells, 22:45430
  comparison of accelerated particle and x, in Neurospora crassa, 22:12835
  comparison of α, proton, and x, in mice, 22:12929
  comparison of β, γ, and x, for mortality response in HeLa cells, 22:10794
  comparison of cobalt-60 γ and x rays in relation to use for radiotherapy, 22:15024
  comparison of electron and x-ray, in mice, use of spleen weight for, 22:15090
  comparison of electron, γ, and x, on rate of mitosis in tumor cells, 22:12763
  comparison of fast neutron and γ, in barley seeds, 22:31279
  comparison of fast neutron and x rays for effects on rabbit lens, 22:51966
  comparison of fast neutron and x, on mutagenesis of spermatogonia of mice, 22:12839
  comparison of γ and meson (π^-), for effects on proliferation of lymphoma cells in mice, 22:33903 (ORO-3343-1, Paper 4)
  comparison of γ and supervoltage x, for effects on HeLa cells, 22:45596
  comparison of γ and thermal neutron, for chromosome aberrations in Nigella damascena, 22:45484
  comparison of γ and x radiation in relation to therapy of breast neoplasms in man, 22:15029
  comparison of γ and x, on survival of rats, 22:51951
  comparison of γ, proton, and x radiation, in dogs, 22:23652
  comparison of heavy particle and x, in human kidney T1 cells, 22:12825
  comparison of heavy particle and x, in yeasts, 22:12836
  comparison of meson, muon, neutron, and proton, in corn, 22:12838
  comparison of neutron and x-ray, in mice, use of chromosome aberrations for, 22:25817
  cosmic radiation, in man and materials during space flight, 22:8627
  dependence on quality factors, 22:38316
  determination for 15 MeV electrons, effects of skin reactions of man on, 22:51897
  determination for 5 MeV fast electrons, effects of type of tissue on, 22:51884
  determination for 90-MeV mesons (π^-) on lymphoma ascites tumor cells in mice, 22:31220
  determination for biological materials, effects of dose rate and LET on, 22:8523 (CONF-670305-, pp 280-8)
  determination for delta-electrons in deep tissue, 22:51589
  determination for effect of neutrons on intestines of mice, 22:49557
  determination for effects on thymus of rats, fast neutron, γ, and x, 22:40844
  determination for electron, γ, and x radiation effects on mitotic activity in regenerating liver cells of rats, 22:8463
  determination for electrons, effects of dose and dose rate on, 22:51695
  determination for fast electrons, factors affecting, 22:51883
  determination for fast neutrons in cultured human lymphocytes, 22:28431
  determination for fast neutrons, review of, 22:40822(T) (JPRS-44070, pp 1-9)
  determination for galactic cosmic rays in tissue, 22:4598 (AD-648299)
  determination for γ and x radiation effects on chromosomes in pollen of Tradescantia bracteata, 22:12832
  determination for heavy ions at 5 to 100 keV, 22:29271
  determination for ionizing radiations in relation to distribution of local energy densities, 22:38318
  determination for monoenergetic neutron effects on Tradescantia occidentales, 22:43300 (AERE-PR/HPM-12)
  determination for radiations in E-1 hole of Kyoto Univ Reactor, 22:47501 (NP-17136)
  determination for x radiation effects on bone marrow of mice, 15 MeV betatron and 200 kV, 22:40925
  determination in barley seeds, fast neutron and γ, 22:31279
  determination in man under battlefield conditions, 22:25861(T) (JPRS-39391)
  determination in rats, electron and x, 22:33943
  determination of 120 MeV proton, in rats, 22:23668
  determination of 14.1 MeV neutron, for induction of dominant lethal mutations in mice, 22:47501 (NP-17136)
  determination of cobalt-60 γ, proton, and x radiation effects on testes of mice, 22:51908
  determination of fast electron, in sperm of Drosophila, effects of oxygen on, 22:40615(R) (EUR-3889)
  determination of fast neutron and x radiation, for loss of reproductive integrity of bone marrow CF cells, 22:49583
  determination of γ and x-ray, for chromosome aberrations in human leukocytes, 22:51596
  determination of mesons (π^-), for polyploidy induction in

mammalian cells, 22:31051
determination of negative pion, for effects on tumor cells, 22:33905 (ORO-3343-1, Paper 5)
determination of photon and x-ray, in seeds of Vicia faba, 22:40960
determination of pion-beam, 22:8599 (CONF-670305-, pp 346-8)
determination of proton, in dogs, mice, and rats, 22:23670
determination of proton, in plants, 22:36273
determination of thermal neutron, in HeLa cells, 22:51673(R) (NYO-3267-5)
determinations in cultured cells, normal tissues, and tumors of mammals, 22:40869
electron-beam, in HeLa cells, 22:8436(R) (NYO-910-58)
estimation for fast neutrons in mice, methods for, 22:36375
estimation in human cells, use of stopping power theory for, 22:8637
evaluation for ionizing radiations on cultured human cells, effects of LET and OER on, 22:8593 (CONF-670305-, pp 51-62)
fast neutron, for mitotic activity of corneal epithelium, 22:17044
fast neutron, in spermatogonia of mice, effects of dose rate and quality factors on, 22:40912
fission neutron, for plants, 22:19456
fission neutron, on growth of black-eyed peas, 22:21638
gamma, for plants, 22:19456
interpretation of, relation of collision theory to, 22:12845 (ORNL-4215)
measurement for 20-MeV electrons in bacteria and yeasts, 22:38278
measurement for radiations with energies above 10 GeV, 22:12857
measurement in Escherichia coli and mice, effects of absorbed dose and LET on proton, 22:8519 (CONF-670305-, pp 155-73)
measurement in pea seeds, γ and proton, 22:481
measurement in skin of mice, pigs, and rats, α, deuterons, fast neutrons, and x, 22:8596 (CONF-670305-, pp 128-42)
measurement in x rays in relation to mitotic activity of corneal epithelium, 22:17044
nomenclature for expressing, 22:38288
physical aspects of, of radiation, review of, 22:23530
pion-beam, in tissues, effects of trajectory on, 22:8600 (CONF-670305-, pp 368-81)
proton, in animals, review of high energy, 22:12893
proton, in primates, 22:12927
proton, in primates, 22:12928
radiation dose rate effects on, in mice, whole-body fast neutron and γ, 22:36374
radiation for HeLa cells, electron, 22:375(R) (NYO-3510-3)
relation of chromosome aberrations, LET, OER, and cell death to, of protons and soft x-rays, 22:25818
tritium-labeled water, in relation to ICRP recommendations on quality factor, review of, 22:51632
use for evaluation of radiation response of space personnel, 22:6847
RELATIVITY THEORY
see also Gravitation
angular momentum in general, Kerr metric for, 22:44494
behavior of moving clock in centrally symmetric gravitational field, (T), 22:29064
book: Elements and Formulae of Special Relativity, 22:11714
book: Introduction to Special Relativity, 22:32196
book: Introduction to Special Relativity, 22:53016
book: New Methods in the General Theory of Relativity, 22:32212
book: Physics Pocket Book, 22:1374
book: Relativistic Hydrodynamics and Magnetohydrodynamics, 22:1040
book: Relativity Theory and Astrophysics. 1. Relativity and Cosmology, 22:11192
book: Relativity Theory and Astrophysics. 2. Galactic Structure, 22:11191
book: Relativity Theory and Astrophysics. 3. Stellar Structure, 22:11190
book: Special and General Theory of Relativity, 22:44497
book: Special Relativity, 22:15847
book: Special Relativity and Quantum Mechanics, 22:50267
book: The Logic of Special Relativity, 22:24715
Cauchy problem of Boltzmann equation in, (T), 22:26536
causality and removable singularities in general, 22:29762
charged dust distributions in rigid rotation in general, cylindrically symmetric, 22:24732
charged dust static distribution in general, 22:18021
charged particle external field in general, radiating, 22:46517
chronometric invariants in general, 22:1504
conformal tensor discontinuities in general, 22:53025
conservation laws in geometrical theory, covariant formulation of differential, 22:53022 (IFVE-STF-67-54-K)
cosmological constant in general, elementary particle theory for, 22:18027
cosmological implications of, 22:5025
cosmological models in general, self-consistent homogeneous isotropic, 22:50461
cosmological models using, 22:52427
Curzon metric for positive gravitational mass in general, structure of, 22:29764
cylinder with multipole moments in general, infinitely long, 22:29759
daytime astrometry to measure the gravitational deflection of light, 22:41190
Dicke effect in Einstein theory of general, multitemporal theory of relativity for, 22:41860
Dirac Hamiltonian as member of hierarchy of matrices, 22:7553
dust metrics with isometries in general, 22:20332
dust motion in general, interstellar, 22:1493
dust stationary distributions in electromagnetic field in general, charged, 22:26716
dynamics of relativistic polarized systems, 22:52897 (AD-662640)
effects on planetary orbits, (T), 22:8897
effects on stellar dynamics, (T), 22:43787
Ehrenfest paradox in special, kinematics for, 22:48356
Einstein equation in general, spherically symmetric nonstatic solutions for, 22:9694
Einstein equations in general, approximate gravitational wave solutions to vacuum, 22:20334
Einstein equations in general, approximate radiative solutions to, 22:26720
Einstein equations in general, axi-symmetric stationary solutions for, 22:20335
Einstein field equations in general, global uniqueness theorem for solutions of, 22:26718
Einstein field equations in general, static antisymmetric interior solution to, 22:5657
Einstein field equations in, isometry groups with surface-orthogonal trajectories for, 22:5659
Einstein spaces in general, new family of, 22:22459
Einstein spaces in general, with one group of motion, 22:35120
Einstein tensor in general, 22:35111
Einstein--Liouville equations in general, isotropic solutions of, 22:50458
Einstein--Maxwell field equations in general, construction from Einstein vacuum solutions, 22:5663
energy radiation by arbitrary axially summetric system in general, solution of Einstein field equations for, 22:39488
energy--momentum tensor for stellar radiation field, (T), 22:49928
energy-momentum density and superpotentials in general, reference frames for, 22:11730
equations for general relativistic fluid sphere, 22:1474
equations for gravitational fields of rotating bodies, (T), 22:34133(R) (AD-661645)
equations for nonsymmetric problems in, complete system, 22:17269
equilibrium configurations of slowly rotating stars in, (T), 22:11147
equivalence principle for massive bodies in general, 22:35114
equivalence principle for massive bodies in general, 22:35115
evolution of perfect fluid in general, (T), 22:17195(T) (UCRL-Trans-10206)
field equations in, formulation of axially symmetric gravitational, 22:26714
field theory in Friedman space in, 22:22448
fields in general, multipole expansions for stationary, 22:18023
fluid spheres in general, solutions for spherically symmetric matter distributions in, 22:37197
Fock interpretation of spatial metric in general, 22:3528
formulation for faster-than-light particles, Lorentz invariance in, 22:50450
formulation of effective potential for nongravitational central potential in general, 22:5656
formulation of three-dimensional, for axisymmetric stationary space-times, 22:53023 (KFKI-23/1968)
Friedmann interval transformation in general, 22:1505
generation of gravitational waves in crystals, 22:2764
global connectivity by timelike geodesics in general, 22:5662
gravitation and electromagnetism from quaternion representation of general, symmetric tensor--antisymmetric tensor theory of, 22:29765
gravitational collapse in general, application of static results to, (T), 22:52346
gravitational collapse of charged shells in general, 22:24733
gravitational constant in, Brans--Dicke theory for, 22:37199
gravitational energy conservation laws in general, 22:5654
gravitational energy in general, sign of, 22:29763
gravitational field of uniformly rotating axially symmetric source in, equations for, 22:22454
gravitational field quantization in revised theory of general, 22:20329
gravitational radiation calculation in, solar, 22:39486
gravitational radiation damping, (T), 22:41205
gravitational radiation in, high-frequency, 22:20333

gravitational wave space--time embedding in general, plane-fronted, 22:35121
group theory for, finite geometry for rotation and Lorentz, 22:1481 (RT/FI-(67)18)
group-theoretical treatment of hydrogen atom, 22:17830
groups in finite geometry in, Lorentz, Poincare, and rotation, 22:46524
guiding formula in general, geometric and physical interpretation of, 22:35109
hypersurface in general, gravitation effect of electromagnetic field in charged model for, 22:7558
Jean's criterion in relativistic cosmology, (T), 22:47729
Kerr metric in general, 22:53030
Klein--Gordon equation in, 22:43759
light deflection in general, graviton mass effects on, 22:39482
Lorentz group in special, generalization of, 22:44501
Lorentz transformations in inhomogeneous regions in general, 22:1483
Lorentz transformations in n greater than or equal to 2 spacelike dimensions, unimodular matrices homomorphic to, 22:5647
Mach principle in general, boundary conditions for enforcing, 22:5664
Mach principle in general, Green function in expanding universe for, 22:50459
magnetic field in presence of freely moving particles in general, solution of Einstein--Maxwell equations for cylindrically symmetric, 22:26717
mass determination in general, Minkowski metrics for doubled, 22:3524
mass in general, formula for relative, 22:32213
mass in general, nonpositive-definiteness of electromagnetic coupling and Mach principle for positive-definiteness of inertial, 22:18029
mass shell as source of Kerr metric in general, properties of spinning, 22:37194
masses of elementary particles in multitemporal, 22:41758
matter and magnetic energy in equilibrium in general, cylindrical symmetrical distributions of, 22:48371
measurement in general, geodesic clock for, 22:22457
measurements in macro- and microphysics, analysis of, 22:24495
Mercury perihelion advance in general, multitemporal theory and Dicke effect for, 22:26711 (JINR-P2-3590, pp 201-10)
metrics of four-dimensional symmetrical Lorentz spaces, 22:41716
model for dense massive stars in general, exact internal solutions in, 22:46521
model of special, from fundamental axioms, 22:24714
motion in general, conversion of velocity and acceleration for hyperbolic, 22:22462
motion of objects in special, review of apparent shape during rapid, 22:20309
optics in general, transitions from wave to geometrical, 22:5660
oscillating spheres in, exact solutions for, 22:17292
oscillations of singular sphere in, (T), 22:43714
particle acceleration in general, Einstein vacuum equations for gravitational radiation from, 22:9686
particle calculations in special, formulation for Monte Carlo treatment of systems of, 22:18017 (LA-3839)
particle energy in Mollers tetrad theory, (T), 22:7557
perihelion advance of Mercury, (T), 22:41258
perturbations of dense star clusters, stability for radial, (T), 22:52404
photon propagation in static and solar gravitational field in general, formula for frequency shift in, 22:39480
physical foundations of, 22:927
planetary precession in general, 22:22456
prediction of perihelion precession of Icarus, (T), 22:34185
properties of massive spheres in general, extremal, (T), 22:52382
quantization in general, 22:11731
quantum theory of gravitation, Hamilton--Jacobi formalism of, 22:37195
radar determination of astronomical unit of length in, (T), 22:43749
radiation fields in general, pure, 22:53031
radiative transfer in relativistic medium, (T), 22:13610
regularity and boundary conditions for fluid spheres in, (T), 22:43822
review of cosmology, 22:2739
review of present state of general and special, 22:13854
Riemmanian metrics in general, matching of, 22:53028
rotating bodies in general, Machian effects of, 22:37191 (N-68-10738)
rotating bodies in general, Machian effects of, 22:41861
Schwarzschild coordinates in, operational definition of, 22:9696
Schwarzschild interior solution for field of fluid sphere of constant gravitational mass density in general, 22:44500
Schwarzschild interior solution in, embedding in flat five-space for relation with symmetry-preserving transformations for, 22:29766
Schwarzschild solutions for Kerr metric in general, 22:22452
singularities in general, 22:26112
singularities in general, definition of, 22:50457
singularities in general, local characterization of, 22:35122
singularities in space time of general, definition, existence, and local characterization of, 22:53026
singularities in special, multitemporal theory of relativity for removal of, 22:41841
singularities in Universe, existence of space--time, (T), 22:26119
singularity in general, Tolman solution for physical, 22:9691
solar rotation and the perihelion advance of Mercury, (T), 22:36602
solution of generalized gravitational equations, 22:26150
sound waves in ultradense matter in, existence of superluminal, 22:37196
space X_1 in general, Lagrangian functions in, 22:39487
space--time and inertia in general, Mach principle for origins of, 22:9687
space--time in general, regular null networks in flat, 22:35119
space--time of class one in general, spherically symmetric, 22:41865
space--time pairs with corresponding geodesics in, 22:41712
space--times in general, total invariants of asymptotically flat, 22:44495
spheres in scalar--tensor theory in general, radiating, 22:46526
spherically symmetric systems in general, equations for, 22:22460
stellar structure and dynamics in, (T), 22:15320
stellar structure and dynamics of, 22:922
symmetry of four-dimensional space in general, $SU(3)/Z_3$, 22:1458 (NP-17076)
test of Brans--Dicke scalar--tensor theory of general proposed Schiff gyroscope experiment for, 22:9689
test of Einstein theory of general, preliminary results of experimental, 22:32211
test of general, minor planet Icarus approach to earth as, 22:39483
test of general, rapidly pulsating radio sources and Earth's orbit for, (T), 22:31556
test of general, using laser ranging to moon, 22:3529
test of general, using laser ranging to moon, 22:37193
test of general, using operationally defined coordinates, 22:9696
test of special, at small distances from velocity dependence of charged meson (π) lifetime, 22:35084
test of special, μ^- lifetime measurements for, (E), 22:9669
test of special, precision experiments for, 22:39472
testing of general, using Moessbauer effect, 22:20074
tests of general, review of astronomical, 22:13859
tetrad formulation of junction conditions in general, 22:18020
theory for general, observed values in, 22:1504
theory for general, two- and three-body motion in, 22:9695
theory for special, 22:5639
theory for special, 22:5638
theory for special, event description in, 22:7549 (JINR-P2-3482)
theory for special, solution of Ehrenfest paradox for rotating disk in, 22:17999
theory for, development of laws and perspectives in, 22:22333
theory for, Moessbauer technique for elementary length in, 22:20156 (INP-555/PH, pp 93-8)
theory for, paradoxes in, 22:3525
time reversal invariance using Moessbauer transmission of 73-keV transition in iridium-193, 22:34805 (AD-662675)
time-dependent internal solutions for spherically symmetrical bodies in, 22:38675
twistor quantization and curved space-time, 22:45878
uniqueness of general, derivability of equations of motion from gravitational field equations for, 22:39484
use of general, for motion of rotating spheroidal bodies, 22:19703
use of pulsars to test general, (T), 22:52351
vacuum solutions in general, null-type, 22:46525
validity at small distances of special, from velocity dependence of μ lifetime, 22:3363
validity of special, 22:46506
validity of special, in quantum theory, 22:44498
variation of Newton's constant, test for possible, (T), 22:41249
vector and tensor techniques in special, in Minkowski space, 22:35110
velocity of cosmic objects, Hubble relation for, 22:43814
verification by radar returns from Mercury, (E), 22:41188

RELAYS
  defects in hermetically sealed, use of radiographic method to locate, 22:12558 (N-67-23261)
  performance of radiometric, using G--M counter, method

for improving, 22:23355
stability of radiometric, calculation of, 22:33677
REMOTE-CONTROL EQUIPMENT
see also Laboratory Equipment
see also Servomechanisms
calibration and installation of Charpy-V impact machine, 22:38589(R) (AD-663888)
design and operation for drilling and milling, of reactor pressure vessel steels, 22:19577 (BNWL-455, Paper 9.1-34)
design and operation for repair of hot cells, 22:37831 (CEA-N-856, pp 434-44)
design and performance of Mascot III, 22:33588
design for analysis of Eurochemic reprocessing solutions, 22:40030
design for changing needles for handling radioactive liquids, 22:12565(P)
design for examination of high-burnup plutonium, 22:42994 (ANL-7299, pp 173-97)
design for fuel reprocessing pilot plant, 22:6420
design for handling equipment, 22:30763(P)
design for measuring internal friction in radioactive materials at -196 to 700°C, 22:25577
design for mixing radioactive materials, 22:2475(P)
design for pipetting radioactive liquids, 22:37915
design for polarography, 22:4059(P)
design for positioning crane in hot cell, 22:49063(P)
design for sampling radioactive liquids, 22:4061(P)
design of balance for use in high-radiation environment, 22:2468
design of control rod position indicator, for maritime pressurized-water reactor, 22:12512(P)
design of master-slave manipulator, 22:25595(P)
performance and uses in nuclear industry, 22:19009
performance of, in analysis of irradiated carbide fuels, 22:43629(R) (LA-3933)
position indicator for, design of electric, 22:19026(P)
position indicator for, design of electrically operated, 22:12502(P)
sampling device for graphite channel walls, description of television monitored, 22:12151(P)
REMOTE HANDLING
method for removing contaminated material from glove boxes, 22:2338(P)
REMOTE-HANDLING EQUIPMENT
see also Reactor Loading Machines
calibration of fuel element gripper and holddown force-limit, 22:30118 (ANL-7438)
configuration of Fermi Fast Breeder Reactor core inlet plenum tools, description of, 22:50700 (APDA-CFE-22)
configuration of in-pile O-ring-connected concentric cylinder rotating pneumatic extension-arm, description of, 22:50860(P)
configuration of reactor in-pile loop fast neutron cryogenic, description of, 22:53430
control rod, description of common external drive unit for, 22:3947(P)
control rod, description of common external drive unit for, 22:3949(P)
control system for, design of, 22:30763(P)
description for disassembly of SNAP-10 test facility, 22:3880 (NAA-SR-12504)
description of EBOR, 22:18555(R) (GA-7485)
description of Fermi Fast Breeder Reactor in-core, 22:32885
description of heated mockup SEFOR fuel assembly, 22:22814(R) (GEAP-5498)
description of independent fuel element, for multi-assembly reactor core, 22:14357(P)
description of light- and medium-duty power manipulators, 22:42940
description of liquid-sealed pressure vessel cover lifting device, 22:14329(P)
description of master-slave manipulator, with counterbalanced pivotally connected telescoping multi-tube extension arms, 22:27981(P)
description of master-slave manipulator, with multi-tube telescoping and rotatable slave arm, 22:27986(P)
description of master-slave manipulator, with variable resistor electric transducers for fluid pressure drive motor response, 22:27980(P)
description of master-slave manipulator, with variable magnitude movement extensions for pivotally connected arms, 22:27989(P)
description of microsampling, for preparation of radioactive materials for analysis, 22:27957 (WAPD-TM-685)
description of NASA Research Reactor experimental facilities, 22:33067
design and fabrication of multimotion, for use in ultrahigh vacuum systems, 22:33591
design and operation for TRU intercell transfer, 22:8329 (ORNL-TM-2022)
design and operation of, 22:8252 (EUR-3629)
design and operation of grip-slide-type, for radioactive material, 22:49056(P)
design and operation of reactor fuel element disassembly, 22:45220(T) (ORNL-tr-1976)
design and performance of Mascot III, 22:33588
design for assembly of nuclear rocket engines, 22:4319
design for closing lid to radioactive material shipping container, 22:48991(P)
design for closure for shielded container, 22:49058(P)
design for decontamination of hot cells, 22:12510(P)
design for disassembly of nuclear engines, 22:4321
design for examination of irradiated plutonium, 22:4377
design for fabrication of Kilorod Facility fuel elements, 22:49798
design for fuel reprocessing pilot plant, 22:6420
design for hanging shielded container in storage holes, 22:49057(P)
design for liquid transfer system, 22:37922(P)
design for Livermore neutron-shielded chemistry cells, 22:4405
design for loading a filter for radioactive gases, 22:10464(P)
design for maintenance and repairs in radioactive zones of CERN synchrotron, 22:13878(T) (BNL-tr-180)
design for mechanical testing of irradiated materials, 22:4378
design for NRU reactor cleanup, 22:4409
design for object removal from core inlet plenum of Fermi Fast Breeder Reactor, 22:32738 (APDA-CFE-19)
design for opening sealed capsules in hot cells, 22:49052(P)
design for opening sealed capsules in hot cells, 22:49051(P)
design for packing radioactive pellets in tubes, 22:19025(P)
design for passing manipulator through shielding wall, 22:49054(P)
design for radioactive liquid sampling, 22:25581(P)
design for radioactive materials, 22:37964(P)
design for remotely sampling graphite in a nuclear reactor, 22:6525(P)
design for removal of irradiated fuel elements, 22:37964(P)
design for removal of lid on radioisotope container, 22:47272(P)
design for removing or replacing equipment in hot cells, 22:51212(P)
design for sample irradiation in neutron beams, 22:35979
design for sample transfer between hot cell and conveyor vessel, 22:19021(P)
design for sample transporting in activation analysis, 22:37691(P)
design for servicing equipment inside shielded housing, 22:4334(P)
design for transfer of small plutonium samples, engineering drawings for, 22:45227
design for ultrasonic inspection of radioinduced embrittlement in steel, engineering drawings for, 22:40493
design for uranium-233, 22:4406
design for use during preparation of high-level radioactive aerosols, 22:23406 (LF-38, pp 88-91)
design of, 22:4335(P)
design of adjustable rest position selector for, 22:35980(P)
design of automatic sample handling system for scintillation counting, 22:49064(P)
design of balance for weighing radioactive materials in air and liquid medium, 22:8426(P)
design of counterbalanced, 22:37916(P)
design of electromagnetically operated, for lifting and lowering objects, 22:51215(P)
design of force-reflected manipulator for radioisotopes, 22:10472(P)
design of grab-manipulator for, 22:49053(P)
design of gripping tongs for, 22:14660(P)
design of manipulator glove for glove box, 22:4332(P)
design of manipulator with balanced slave arm, 22:10468(P)
design of master slave manipulator, with improved articulation, 22:8286(P)
design of master--slave, for hot cells, 22:2337(P)
design of master-slave manipulator, 22:25595(P)
design of master-slave manipulator for use in hot cells, 22:51216(P)
design of motor-driven manipulators for, 22:35988(P)
design of pneumatic, for automatically transferring samples between irradiation and detection positions, 22:35973 (LA-3862)
design of pressurized glove port for dry boxes, 22:4331(P)
design of radioactive-source transfer system, 22:43019(P)
design of rotating-claw tongs for, 22:49055(P)
design of sample elevator, for liquid scintillation analysis, 22:14901(P)
design of shielded hovercraft-type, for operators in radiation environments, 22:47275(P)
design of specimen polisher for use in hot cells, 22:12518(P)
design of thermal manipulators for use in ultrahigh vacuum, 22:19089
design of, for welding under gas pressure, 22:47667(T) (RFP-Trans-37)
design requirements for reactor, analysis of, 22:42222
development for postirradiation inspection of plutonium fuel elements, 22:6512 (EUR-3619)
development for samples exposed to prompt radiation from nuclear explosions, 22:30749 (UCID-15307)

development for use with radiation shields, 22:45574
effectiveness for radiation protection of personnel in radiochemistry laboratories, 22:45587
experimental facilities sampler-enricher, description of MSRE, 22:12035(R) (ORNL-4191)
fabrication of APDA Reactor core access, description of, 22:30119 (APDA-CFE-18)
fabrication of device for removal of core inlet plenum object from Fermi Fast Breeder Reactor, description of, 22:37405 (APDA-CFE-20)
force-reflecting servomechanism with signal delay for, description of, 22:33180
fuel transport, description of water-submerged transfer container for reactor spent, 22:50859(P)
handling arm for power-operated, design of precision, 22:27979(P)
level-actuated gripper with extension arm, description of swimming-pool reactor, 22:37547(P)
monthly progress report on master-slave manipulator, Argonne National Laboratory, 22:35422(R) (ANL-7445)
monthly progress report on master-slave manipulator, Argonne National Laboratory, 22:37401(R) (ANL-7457)
operation of device for removal of core inlet plenum object, from Fermi Fast Breeder Reactor, 22:37405 (APDA-CFE-20)
operation of Molten Salt Reactor Experiment maintenance, description of, 22:32782 (ORNL-TM-910)
operation of water-cooled power reactor fuel elements, description of, 22:42221
performance and uses of manipulators in nuclear industry, 22:19009
performance in disassembly of PM-2A reactor vessel, 22:4410
performance in glove box plutonium metallographic facility, 22:8249 (CONF-670533-9)
performance of transuranium plant maintenance, 22:4324
performance testing under operations conditions of manipulators, 22:30118 (ANL-7438)
plugging tool for water-cooled reactors, description of top-inserted double-walled pipe control rod replacement, 22:48759(P)
rabbit system for neutron source transport in swimming-pool reactors, description of hydraulic, 22:53429(P)
rabbit system for research reactors, description of shield-penetrating multiple-sample pneumatic, 22:53436(P)
rabbit system for research reactors, description of horizontal liquid-cooled hydraulic, 22:53435(P)
rabbit system for swimming pool reactor, description of hydraulic, 22:47036(P)
shielded irradiated sample-removal, description of, 22:37573(P)
slave unit for tape driven, design of adjusting device for, 22:10465(P)
tongs for power driven, design of auxiliary, 22:51213(P)
use for maintenance of liquid metal-cooled fast reactor liquid sodium cooling system, description of, 22:46960
use for unidentified object removal in Fermi Fast Breeder Reactor, 22:20776 (APDA-CFE-16)
wire feeler design for tongs for, used in spent-fuel storage tanks, 22:37912(P)

REMOTE-VIEWING EQUIPMENT
see also Television Equipment
configuration of light-activated transducer system for reactor fuel element loading and positioning machine, description of, 22:48763(P)
description of Fermi Fast Breeder Reactor in-core, 22:32915
description of SNAP-10 test facility, 22:3880 (NAA-SR-12504)
design and testing of, for observation of radioactive materials in reactor hot cells, 22:33582 (INR-870/XIV/PS)
development for use with radiation shields, 22:45574
effectiveness for radiation protection of personnel in radiochemistry laboratories, 22:45587
fabrication of Fermi Fast Breeder Reactor core access PRDC borescope, description of, 22:30119 (APDA-CFE-18)
inspection of Peach Bottom Power Reactor Unit 1 core with, description of ISO equivalent full-power day maintenance, 22:39771 (GA-8679)
operation of device for viewing core inlet plenum object, in Fermi Fast Breeder Reactor, 22:37405 (APDA-CFE-20)
television monitor, description of remote-control graphite sampling device, 22:12151(P)
use of sapphire windows in, 22:51141

RENE-41
forging of, for large equipment components, 22:23789

Replicas
see Biological Models

Report Lists
see Bibliographies

REPRODUCTION
see also Breeding (Biological)
see also Diapause
see also Fecundity
see also Fertility
see also Gametes
see also Meiosis
see also Mitosis
see also Regeneration
see also Reproductive System
see also Sterility
see also Zygotes
capacity of mutant cells, effects of, on stabilization of radioinduced mutants in seed cultivation, 22:40621
kinetics of lymph tissue, in relation to secondary antibody response, 22:14906 (BNL-50057, pp 123-37)
occurrence in Escherichia coli, effects of, on x-radiosensitivity, 22:26009
phosphorus-32 loss and transfer during, in yellow-fever mosquitoes following treatment of larvae and pupae, 22:36165
radiation effects on capacity for, in codling moths, field and laboratory evaluation of γ, 22:10899
radiation effects on capacity for, in European chafer, milkweed bug, and plum curculio, γ, 22:23699
radiation effects on cellular, in Tradescantia, γ, 22:43289
radiation effects on DNA synthesis during lambda phage, uv, 22:51426
radiation effects on mechanisms of, of Escherichia coli, recovery from α, 22:25873
radiation effects on physiology of, in durum wheat, effects of seed exposure on thermal neutrons, 22:8655
radiation effects on rate of, in Drosophila melanogaster, protective effects of shielding against, 22:17045
radiation effects on, in Aedes aegypti, review of genetic control in, 22:52108
radiation effects on, in dogs following space flight, cosmic, 22:21588
radiation effects on, in male May cockchafers, ionizing, 22:12949
radiation effects on, in mice and rats, microwave, 22:40895
radiation effects on, in mice, cesium-137 and strontium-90 β, 22:12912
radiation effects on, in populations of mice, dynamics of mutagenic x, 22:45492
radiation effects on, in synchronous cultures of Chinese hamster cells, relation of, to protein metabolism, ionizing, 22:25713 (COO-78-163, pp 64-125)
radiation effects on, of adult tobacco budworms, γ, 22:36427
radiation effects on, of algae, effects of DNA content and photoperiod on x, 22:31280
radiation effects on, of Azotobacter, γ, 22:21428
radiation effects on, of bacteriophage DNA, ionizing and uv, 22:40615(R) (EUR-3889)
radiation effects on, of cabbage flies, effects of developmental stage and sex on γ, 22:40981
radiation effects on, of cells, 22:30966
radiation effects on, of cells in intestine of rats, fast neutron, 22:40918
radiation effects on, of cells of Oedogonium, effects of cell stage and dose on x, 22:17055
radiation effects on, of cells of Saccharomyces vini, γ, 22:47640
radiation effects on, of codling moth following phosphorus-32 labeling of spermatophores, β, 22:52114
radiation effects on, of cultured fibroblasts and lymphoblasts from mice, effects of dose, drugs, and metabolism on x, 22:25711 (COO-78-163, pp 1-38)
radiation effects on, of cultured liver cells, internal cesium-137 γ, 22:33758
radiation effects on, of cultured mammalian cells, minimum clone size for estimating x, 22:43402
radiation effects on, of Drosophila melanogaster, nuclear explosion, 22:36335
radiation effects on, of female beagle dogs, fractionated whole-body x, 22:49475 (CONF-680410-, pp 11.1-14)
radiation effects on, of fruit flies, effects of shielding on natural background, 22:47591
radiation effects on, of guinea pigs, rabbits, and rats following ingestion of irradiated diet, γ, 22:17069
radiation effects on, of holyhock seed moth, x, 22:52122
radiation effects on, of insects, research on, in Thailand, γ, 22:40979 (THAI.-AEC-8)
radiation effects on, of insects, review of γ, 22:43510
radiation effects on, of insects, use of, in population control, 22:10881
radiation effects on, of living systems, amelioration of, with nucleic acids, 22:40766
radiation effects on, of lysogenic bacteriophages, effects of weightlessness on γ, 22:47645
radiation effects on, of mice following ingestion of cesium-137 and strontium-90, β and γ, 22:45457
radiation effects on, of mice, effects of diet and temperature on, 22:19300(R) (ORO-2975-5)
radiation effects on, of mice, effects of genotypes on x, 22:40616(R) (NYO-1979-26)
radiation effects on, of Mycoplasma pneumoniae, uv and x, 22:52046
radiation effects on, of Netrium, light and uv, 22:52023
radiation effects on, of Rhodnius prolixus, laboratory evaluation of γ and x, 22:47653
radiation effects on, of rice stem borer irradiated as pupae, effects of dose on γ, 22:36397
radiation effects on, of rice weevils, cobalt-60 γ, 22:10822 (AECD/AG-22)
radiation effects on, of salamanders, x, 22:6771(R) (NYO-3554-6)
radiation effects on, of SCH cells, protective effects of

chemicals and drugs against γ, 22:25892
radiation effects on, of simian adenovirus 7 in BSC-1 cells, uv, 22:52040
radiation effects on, of Spanish goats, chronic low level γ, 22:45719
radiation effects on, of termites feeding on radiation processed, wood-plastic combinations, γ, 22:36428
radiation effects on, of yeast, protective effects of aqueous solutions of sodium chloride against γ, 22:25891
radioinduced death during, of mammalian cells in relation to incidence of chromosome aberrations, 22:43285
radioinduced increase in, of measles viruses in cultured human amniotic FL cells, uv, 22:45736
radioinduced murine sarcoma virus, following transplantation as mixed cultures with fibroblasts and hamster tumor cells, 22:31299
radioinduced, of lysogenic lambda phage of Escherichia coli, direct and indirect uv, 22:10894
radiosensitivity of capacity for, in female mice, effects of dose and paternal exposure on x, 22:15073
rate in mammalian cell cultures, effects of, on radiosensitivity, 22:25991
rate of jackrabbit, in Utah, 22:1918(R) (COO-1329-6)
role of population-dependent factors in, of rabbits in Ohio, in relation to adrenal physiology, 22:25208(R) (COO-1446-2)

REPRODUCTIVE SYSTEM
see also Gonads
see also Prostate Gland
see also Uterus
see also Vagina
alpha emission by polonium-210 in, of man, measurement of, 22:2517
iodine-125 content of, in pregnant cows, 22:14967
iodine-131 content of, in pregnant cows, 22:14967
radiation effects on maturation of female, of rats, effects of hypothalamic lesions on x, 22:49634
radiation effects on, in rabbits, iodine-131 β and γ, 22:8625
radiation effects on, of albino rats, combined effects of heat treatment on ionizing, 22:10883
radiotherapy of acute myeloblastic leukopenic leukemia in vulva of, in man, 22:47568
radiotherapy of tumors of, of man, development of necroses following fast electron, 22:36400

REPTILIA
Chelodonia longicollas, contraction of cardiac muscle of, effects of caffeine, nitrates, and uranyl ions on, 22:10713
Cnemidophonus tigris, radiation dose sustained by, in natural enclosure, continuous γ, 22:45470
Crotaphytus wislizeni, radiation dose sustained by, in natural enclosure, continuous γ, 22:45470
Emys blandingii, radiation effects on bioelectric activity of nerve fibers of ganglia in, strontium-90 β, 22:10714
infestation by parasites at National Reactor Testing Station, 22:4588(R) (COO-1559-2)
lizards, activity ranges of, analysis of variation in, 22:25800 (UCLA-12-668, pp 37-58)
radiation effects on ecology of, at Nevada Test Site, 22:19306
snakes, labeling with cobalt-60, methods of, 22:19432
turtles, radiation effects on testes of, effects of dose on x, 22:4697
Uta stansburiana, determination of energy metabolism in populations of, use of mathematical models for, 22:25800 (UCLA-12-668, pp 37-58)
Uta stansburiana, radiation effects on natural populations of, γ, 22:25800 (UCLA-12-668, pp 37-58)
Uta stansburiana, radiation effects on reproduction of, effects of ecological conditions on low-level γ, 22:33778 (UCLA-12-640, pp 45-60)

REPUBLIC OF CHINA
see also China

REPUBLIC OF KOREA
radiation monitoring of agricultural products, atmosphere, and soil of, during 1961 to 1966, 22:36287

REPUBLIC OF SOUTH AFRICA
(formerly Union of South Africa)
book: Report on the Investigation into the Possible Introduction of Nuclear Power in the Republic of South Africa, 22:44834 (PEL-175-E)
production of nuclear fuels in, investigations of, 22:52228
reactor development programs in, analysis of optimum power and dual-purpose power--desalination, 22:44834 (PEL-175-E)
uranium production and reserves in, 22:51111
uranium production in, 22:51110
uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)

Research and Isotopes Reactor
see Reactors, Production

Research Development Reactor
see Materials Testing Reactor

Research Reactors
see Reactors, Research

RESERPINE
effects on intestinal motility in rabbits, 22:49550
effects on liberation of free fatty acids from epididymus of x-irradiated rats, 22:12789
radioprotective effects of, on rats, combined effects of ascorbic acid on x, 22:49436

Resin Ion Exchange
see Ion Exchange

RESINS
see also Adhesives
see also Amberlites
see also Epoxy Resins
see also Ion Exchange Materials
see also Plastics
charge-exchange of high-energy heavy ion beams with formvar, 22:9724(T) (ANL-Trans-535)
coatings of phenolic, penetration of iodine into protective, 22:2713 (IN-1095)
fission-fragment scattering in Formvar, multiple, (E/T), 22:18170
foaming of polyurethane, pressure generation during, 22:3979 (R-67-ND-8)
mixes of glass microballoons-diethanolamine and, equipment evaluation for producing, 22:10126 (GEPP-2)
phosphorus-32 sorption on cationic microspheres of, 22:28609
polystyrene, effects of, on strontium sorption by gastrointestinal tract of rats, 22:8484
preparation of beads of, for iodine-125 photon source, 22:45246 (COO-1422-36)
production by polymerization of furfuryl alcohol, 22:4869(R) (LA-3821)
properties of macroporous, for ion exchange chromatography, 22:37856
properties of polycarbonate, as adhesive, 22:36555 (LA-3890)
radiation effects on, effects of green pigment on ruby laser, 22:47465
radioinduced adhesion of foamed, to plates and sheets, electron, 22:45119(P)
radioinduced crosslinking of foamed, 22:45117(P)
radioinduced polymerization of thermoplastic, electron, 22:45122(P)
radioinduced production of thermoplastic, from mixture of copolymer of vinyl and acrylic compounds, isobutylene polymer, and vinyl and acrylic monomers, 22:45118(P)
sorptive properties for uranium, effects of permanganate ions on, 22:47124
uptake of iodine-131-labeled triiodothyronine by, use of, for diagnosis of thyroid dysfunction in dogs, 22:28538 (NYO-2147-13, pp 78-86)
use for strontium-90 decontamination of milk, effects of, on nutrient content, 22:15008
use in preparation of cement and plaster shielding materials, 22:28905(P)
use in preparation of shielding materials containing boron compounds, 22:15549(P)
use in production of laminated radiation-resistant panels, 22:9417(P)
use in resin--glass composites for encapsulation of magnet coils, 22:10456
use of complexing, for separation of indium-113m from tin-113, 22:37846
use of pine rosin as binder during graphite extrusion, 22:4865(P)

Resistance
see Electric Conductivity

Resistance Furnaces
see Furnaces

Resistance Heaters
see Heaters

RESISTANCE THERMOMETERS
design and performance for temperature measurements in liquid sodium, 22:36453 (LMEC-Memo-68-10)
drift rates of SNAP high temperature platinum, measurements of, 22:14237 (ANL-7380, pp 47-51)
radiation effects on, review of, 22:30926
use of liquid semiconductor, for temperature measurements in reactors, 22:28260

Resistivity Meters
see Rhometers

RESISTORS
fabrication of calcium oxide--zirconium oxide, for furnaces, 22:8812(P)
production of cermet, by sputtering, 22:722(R) (AD-648018)
radiation effects on circuit, x, 22:13043
radiation effects on thermistors, review of, 22:30926
radiation effects on thin film nichrome and tantalum, fast neutron, 22:33704
testing of Halden Boiling Reactor fuel element burnout detector fuel canning and cable insulation, analysis of in-pile, 22:44823 (HPR-77)
use of thermistors for temperature control of neutron scattering targets, 22:2473

Resistors, Fluidic
see Fluidic Devices

Resonance Baryons
see Baryons, Resonance

Resonators
see Cavity Resonators

RESORCINOL
radiation effects on detoxication of, in rats, role of coenzyme A in x, 22:23474

radiation effects on sorption of, by lithium, potassium, and sodium forms of KU-2 ion exchanger, γ, 22:27814

RESORCINOL, 4-(2-PYRIDYLAZO)-
use in spectrophotometric determination of niobium in steel, 22:25283
use in spectrophotometric determination of niobium in zirconium, 22:16440
use in spectrophotometric determination of trace amounts of niobium in metals, 22:25268

α-RESORCYLIC ACID
complexes with uranyl ions, preparation of, 22:37723

β-RESORCYLIC ACID
complexes with uranyl ions, preparation of, 22:37723

RESPIRATION
see also Breath
see also Respiratory System
effects on x-radiosensitivity of nuclei in thymocytes of rats, 22:21437
inhibition in cultured Chinese hamster cells, effects of glucose-induced, on x-radiosensitivity, 22:25714 (COO-78-163, pp 126-36)
leukocytes, in man, effects of phagocytosis on, 22:36180
measurement of cycles of, in dogs, development of equipment for, 22:47397 (BNWL-715(Pt.1), pp 38-41)
measurement of rate of, in fish, tracer method for, 22:10728
polonium-210, in rats, effects of, on incidence of neoplasms in lungs, 22:2537
radiation effects on capacity for, of rat leukocytes, β and x, 22:23607
radiation effects on in vitro, of guinea pig skin, microwave, 22:51982
radiation effects on porphyrin complexes of, in tissues, mechanism of recovery from, 22:23425
radiation effects on rate of, in fruits and vegetables, γ, 22:8671
radiation effects on rate of, in nectarines and peaches, cobalt-60 γ, 22:15132
radiation effects on rate of, in rats, tritium β, 22:19412
radiation effects on rate of, in tomatoes during ripening, γ, 22:43518
radiation effects on sensitivity of, in cats to cystamine, x, 22:31245
radiation effects on, in Azotobacter, γ, 22:21428
radiation effects on, in brine shrimp, effects of dose and salinity on γ, 22:43400
radiation effects on, in cultured brain cells from rats, laser, 22:43444
radiation effects on, in erythrocytes of rabbits, effects of chemicals on x, 22:45428
radiation effects on, in human leukocytes during phagocytosis, x, 22:36180
radiation effects on, in human tumor cell cultures, x, 22:43211
radiation effects on, in kidneys of rats, internal β and γ, 22:49334
radiation effects on, in liver mitochondria, effects of galascorbin on, 22:51385
radiation effects on, in pea plant germinants, 22:15116
radiation effects on, in rat tissues, neutron and x, 22:16981
radiation effects on, in ripening pear fruits, γ, 22:49637
radiation effects on, in soils, γ, 22:23450
radiation effects on, in thymocytes of rats, x, 22:21437
radiation effects on, in tissues of rat brain, in vitro x, 22:49495
radiation effects on, of dogs, proton, 22:23670
radiation effects on, of Escherichia coli, uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on, of germinating barley seeds, 22:49187
radiation effects on, of mice following uptake of carbon-14-labeled serine, x, 22:28630 (ORNL-4100, pp 118-26)
radiation effects on, of spores of Bacillus cereus, effects of temperature on γ, 22:49235
radiation effects on, of Streptococcus lactis, γ, 22:40567
radiation effects on, of Tetrahymena pyriformis, effects of pH on γ, 22:25988
radiation effects on, of yeast cells, cytophysiological study of recovery from, 22:31290
radiation effects on, of yeast cells, uv, 22:31024
radiation effects on, of yeast, effects of dose on, 22:26001
radiation effects on, response of rats to morphine, 22:21615
radiation sickness effects on, of rabbits, combined effects of blood loss on, 22:33911
radiography of lungs during, use of impedance pneumography x-ray actuator for, 22:49400
radioinduced deficiency of, in yeast, uv, 22:40638
rate in cotton rats, cesium-134 tracer study of, 22:14914 (ORNL-TM-2069)
rate in Escherichia coli, effects of growth on γ-irradiated media on, 22:51472
rate in man, effects of, on uptake of iodine-132 vapors, 22:51342
reaction mechanisms for, in plant mitochondria, 22:1927(R) (NYO-3729-1)

RESPIRATORS
see also Gas Masks
design for protection against radioactive aerosols, 22:40662(T) (JPRS-43578)
design of voice amplifier for use with full-face, 22:51567(R) (IN-1205)
effects on inhalation of tritium-labeled water vapor at Chalk River, 22:14999 (AECL-2699)
efficiency for removal of tritium oxides, 22:2502 (AECL-2665)
performance of open-circuit self-contained, at -25°F, 22:16349 (BM-RI-7077)
protective effects of filter-type, against radon decay products in uranium mines, 22:19328(R) (COO-1500-5)
radioprotective effects of, against tritium inhalation by man, 22:8527 (SC-DC-67-2191)
testing of self-contained compressed-air, 22:36252 (HOHF-5)
use for radiation protection of personnel against atmospheric contamination in laboratories, 22:45575
use for radiation protection of respiratory tracts of personnel, 22:28481

Respiratory Cycles
see Respiration

RESPIRATORY SYSTEM
see also Lungs
see also Pharynx
absorption of radioisotopes by, of personnel in contaminated areas, 22:38298
alpha activity in samples from human, at AERE, 22:38249 (BLG-371)
evaluation of patency of bronchi in, of dogs and man using inhalation of radioactive aerosols, 22:38399
iodine-131 metabolism in, of guinea pigs and rats, effects of drugs on, 22:431
plutonium-239 content of human, during 1964 and 1965, 22:40678
plutonium-239 deposition in human, estimates at Hanford facilities of, (E), 22:12473 (BNWL-495)
protection against radioactive aerosols, research studies on, 22:23508 (SC-M-67-2973)
radiation dose to human, effects of polonium-210 content of tobacco smokes on α and γ, 22:38275
radiation dose to human, from fallout, development of graded filtration sampler for determining, 22:33821
radiation dose to organs of, from inhalation of radioactive dusts, 22:4601 (CEA-R-3234)
radiation dose to, following inhalation of surface contaminants, determination of, 22:23544
radiation dose to, of man, following inhalation of radon decay products, 22:31082
radiation effects on epithelium of trachea of, in rabbits, effects of dose fractionation on x, 22:31257
radiation effects on human, following inhalation of radioactive aerosols, 22:23508 (SC-M-67-2973)
radiation effects on incidence of viruses in tissues of, in dogs following inhalation of cerium-144 and strontium-90 aerosols, 22:19236 (LF-36)
radiation effects on, design of respirators for protection against radioactive aerosol, 22:40662(T) (JPRS-43578)
radiation effects on, of animals and man, histopathology of, 22:36377
radiation protection methods for human, in Soviet Union, 22:40731
radiation protection of, in personnel, use of gas masks and respirators for, 22:28481
radioisotope uptake by human, effects of particle size and properties on, 22:33715 (SZS-15/67)
radioisotope uptake by human, survey of americium, curium, neptunium, and plutonium, 22:30935 (SZS-16/67)
radiotherapy of carcinoma of, of man, bronchographic study of x, 22:15053
radon decay products in, of uranium mining personnel, 22:19328(R) (COO-1500-5)

RETICULO-ENDOTHELIAL SYSTEM
see also Bone Marrow
see also Hematopoietic System
see also Immunity
see also Liver
see also Phagocytosis
see also Spleen
phagocytic activity of cultured cells from, of rats, effects of environmental factors on, 22:25229 (UR-49-919)
phagocytic activity of rat, effects of, on response to traumatic shock, 22:40846
radiation effects on cells and fibers in, whole-body γ, electron microscope studies, 22:15109
radiation effects on digestive and phagocytic functions of, of rats, tracer study of ionizing, 22:23610
radiation effects on hematopoiesis in tissues of, in mice, effects of limb shielding on x, 22:12903
radiation effects on morphology and phagocytic activity of macrophages in, of mice, x, 22:36195
radiation effects on phagocytic activity of, in mice, x, 22:43438
radiation effects on phagocytic function of, in rats, γ, 22:45706
radiation effects on, of animals and man, histopathology of, 22:36377
radiation effects on, of man following therapeutic

exposures, beta, γ and x, 22:36363
  radiation effects on, of mice, effects of adult or neonatal thymectomy on γ, 22:51927
  radiation effects on, of mice, effects of glucan and puromycin on γ, 22:45641
  uptake of intravenously injected gold-198 colloids by, effects of gelatin coating and particle size on, 22:51346
Retina
  see Eyes
RG-1 Reactor
  see Reactors, Swimming-Pool
RHAMNOSE
  radiolysis of glassy aqueous solutions of, at 77°K, EPR studies of, 22:23052
RHENATES
  see also Lanthanum Rhenates
  see also Perrhenates
  analysis for technetium by inverse polarography, 22:40039
Rhenides
  see Rhenium Alloys and Systems
RHENIUM
  analysis for carbon, 22:30436(R) (UCRL-50006-68-1)
  analysis for fluoride, 22:30436(R) (UCRL-50006-68-1)
  analysis for impurities, thermochemical separation and spectrographic, 22:30436(R) (UCRL-50006-68-1)
  analysis of surfaces of, using helium field-ion microscopy, 22:10995
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  book: High Temperature Materials, 22:31360
  book: Uncommon Metals, 22:10981
  compatibility with hafnium carbide at 2500°C, 22:49825
  compatibility with niobium carbide at 2500°C, 22:49825
  compatibility with tantalum carbide at 2500°C, 22:49825
  compatibility with zirconium carbide at 2500°C, 22:49825
  complexes of, bonding and structure in, 22:4138
  complexes of, nuclear quadrupole resonance studies on electron distribution in, 22:45029 (UCRL-18043, pp 7-105)
  complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  complexes with cyanides, preparation of, 22:12203(R) (USC-113-P-4-9)
  complexes with thiourea in hydrochloric and nitric acid solutions, chemistry of, 22:50954
  compounds with 2,2'-dipydryl and 1,10-phenanthroline, preparation and properties of, 22:45032
  content in rhenium--tungsten alloys, identification using field-ion microscopes, 22:668
  content in thermal neutron irradiated tungsten, 22:19578 (BNWL-455, Paper 10.1-40)
  creep and stress-rupture at 1600, 2200, and 2600°C, 22:612(R) (GEMP-69)
  crystal structure of sputtered films of, 22:8777
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  deposition on single crystals of copper, cracking and strength of films from, 22:17116(R) (ORO-3401-3)
  detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
  determination as impurity in gallium arsenide, activation, 22:1969
  determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
  determination by mass spectrometry using negative surface ionization method, 22:6265
  determination by neutron activation method, substoichiometric, 22:27618
  determination by neutron activation methods, 22:4031
  determination in chondritic meteorites, activation, 22:15
  determination in copper ores and molybdenites, activation, 22:1996
  determination in cyanide complexes, 22:12203(R) (USC-113-P-4-9)
  determination in electrolytic zinc sulfate solutions by neutron activation methods, 22:25289
  determination in meteorites by chemical and neutron activation methods, 22:10199
  determination in molybdenites by neutron activation methods, 22:14440
  determination in molybdenum by complexing with ferricyanide ions, spectrophotometric, 22:50905
  determination in molybdenum by neutron activation, 22:37680
  determination in molybdenum by neutron activation methods, 22:21038
  determination in molybdenum--rhenium--tungsten alloys, 22:30436(R) (UCRL-50006-68-1)
  determination in organic layer after extraction from copper, molybdenum, nickel, and tungsten using tetraphenylarsonium chloride, photometric, 22:47087
  determination in rhenium--tungsten alloys, spectrophotometric, 22:1972
  determination in zone-refined tungsten, mass spectrographic, 22:25316
  determination of extractable complexes of, with amines by paper chromatography, 22:14569
  determination of ratio of, to chlorine in complex compounds by neutron activation, 22:50916
  determination using 2,3-butanedione oxime in presence of stannous chloride, spectrophotometric, 22:16463
  determination using neutron-neutron method with resonance neutrons, 22:30447
  diffusion from fuel materials through tungsten cladding, 22:7008
  diffusion in tungsten at 1400 to 2000°C, 22:17135
  distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  effects as additive on tungsten corrosion at high temperatures, 22:43537
  effects on mechanical properties of tungsten, 22:4794
  effects on properties of niobium alloys, 22:23706 (BM-RI-7116)
  electric and thermal conductivity of single-crystal, at 2 to 20°K, 22:38561
  enthalpy, 22:28780 (TID-24314(PT.1))
  fabrication by reduction of gaseous hexafluorides of, using hydrogen, 22:10976
  fabrication of pure sheet, by annealing and cold working, 22:28757(R) (UCRL-13341)
  hardness of pure, effects of annealing and cold working on Rockwell, 22:28757(R) (UCRL-13341)
  isotopic analysis of natural, by thermal ionization source technique, 22:12231
  neutron absorption resonance integral, (E), 22:3689(R) (GA-7820)
  neutron capture at 10 to 150 keV, cross section for, (E), 22:35346
  neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron capture cross section at 10 to 150 keV, (E), 22:3687 (EURFNR-404)
  neutron differential elastic and inelastic scattering cross sections for, angular distributions for fast, (E), 22:20578 (WASH-1079)
  neutron differential elastic and inelastic scattering cross sections at 0.3 to 1.5 MeV, angular distributions for, (E/T), 22:5810 (ANL-7363)
  neutron elastic and inelastic scattering at 0.3 to 1.5 MeV, angular distributions for, (E), 22:27109
  neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
  neutron resonance parameters for, (E), 22:20578 (WASH-1079)
  neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron total cross section at 0.5 to 1.5 MeV, (E), 22:5810 (ANL-7363)
  neutron total cross section at 30 to 650 keV, analysis for strength functions, (E/T), 22:30015
  neutron total cross sections for, measurement of fast, 22:32959 (ANL-7310, pp 1-30)
  optical constants at 537 to 5770 A, measurement by reflectance vs angle of incidence method, 22:13556
  oxidation at low pressures between 1400 and 2500°K, (E), 22:28740
  oxidation by oxygen at 1 to 10 torr and at 800 to 1400°C, 22:12977
  oxidation in air, effects of humidity variations at 20°C on, 22:49686
  oxidation of, analytical methods for measurements of electrochemical, 22:28795
  perturbations in BN-350 type critical assembly from, analysis of, 22:18570
  photofission at 300 to 1600 MeV, cross sections and fragment yields for, (E/T), 22:5856
  photofission cross section at 0.1 to 1.2 GeV, (E), 22:22586 (NP-17325)
  production of ductile, by chemical vapor deposition, 22:6966
  properties and uses of, survey, 22:26023
  properties for use in modern technology, 22:2563
  properties for use in vacuum systems, 22:16828
  proton reactions at 10 MeV, production of short-lived isomer by, (E), 22:24874
  radiation effects on crystal structure of, in-pile, 22:31414 (BNWL-532, pp 12.1-88)
  radiation effects on dimensional stability of monocrystals of, fast neutron, 22:28850
  radioinduced defect clusters in, stereo-electron microscopy study of neutron, 22:34790
  rare earth diffusion out of, 22:29795
  reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
  separation by precipitation with metal hydroxides, 22:23104
  separation from alkali solutions by ion exchange, 22:27566
  separation from copper, molybdenum, nickel, and tungsten by solvent extraction using tetraphenylarsonium chloride, 22:47087

separation from hydrochloric acid--tartaric acid solutions by solvent extraction using amyl acetate, amyl alcohol, methyl isobutyl ketone, and TBP, chromatographic, 22:4246
separation from iron or molybdenum in hydrochloric acid solution, ion exchange, 22:40192
separation from molybdenum and tungsten in hydrochloric acid--tartaric acid solutions, distribution-chromatographic method for, 22:4246
separation from processing solutions containing molybdenum by solvent extraction using trioctylamine, 22:37840
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from tungsten by ion exchange, 22:47207
separation of complexes of, with amines by paper chromatography, effects of halide ion concentration on, 22:14569
sorption by manganese dioxide from nitric acid, 22:157
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorptive properties for oxygen on polycrystalline, thermionic emission study, 22:46286
spectra of, effects of adsorbed carbon monoxide, hydrogen, nitrogen, oxygen, and xenon on emission, 22:41046
stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
superconducting transition temperature of, pressure effects on, 22:11342
superconducting transition, isotope shift in, (E), 22:17601
surface characteristics and work functions of single crystals of, 22:50068(R) (NP-17604)
surface migration of atoms of, determination by field emission, 22:28824
tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
thermal capacity, 22:28780 (TID-24314(PT.1))
thermal conductivity of, below 1°K, 22:1122
thermionic emission by polycrystalline, effects of sorbed oxygen on, 22:46286
thermionic work function of, effects of adsorbed carbon monoxide, hydrogen, nitrogen, oxygen, and xenon on, 22:41046
thermodynamics of surface alloying of, with boron--hafnium and boron--zirconium, 22:30575
use in heat pipes with indium and silver working fluids, (E), 22:33595(R) (LA-3941)
work functions of single-crystal faces of, effects of sodium adsorption on, (E), 22:13560

RHENIUM ALLOY COUPLES
  Os--Re/Re--W, radiation effects on electric properties of, 22:612(R) (GEMP-69)
  Re/W--W, thermocouple performance in SPERT-4 of, 22:6095(R) (IDO-17245)
  Re--W/Re--W, performance at 2600°C, 22:40295
  Re--W/Re--W, performance for DFR fuel pin center temperature measurement, 22:44811 (CONF-660521-6)
  Re--W/Re--W, performance of thermocouples of, in reactors, 22:45347(T) (AERE-Trans-1095)
  Re--W/W, calibration and performance at high temperatures, 22:612(R) (GEMP-69)
  Re--W/W, design and performance of, 22:36453 (LMEC-Memo-68-10)
  Re--W/W, electric insulation for, performance at 2000°R of beryllium oxide, 22:28916 (WANL-TME-1549)
  Re--W/W, performance at high temperatures, 22:15144 (GEMP-1002, pp 137-42)
  Re--W/W, performance of thermocouples of, in reactors, 22:45347(T) (AERE-Trans-1095)

RHENIUM ALLOYS AND SYSTEMS
  analysis for molybdenum using phosphoric acid, titrimetric, 22:22948
  compatibility with liquid metal--fused chloride system for fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
  production of ductile, by chemical vapor deposition, 22:6966
  Re--Tc, phase studies of, 22:4807
  B--Re, phase diagram, 22:28949
  B--Re--W, phase studies of cast, 22:45789
  B--Re--Zr, phase studies of cast, 22:45789
  Be--Re, magnetization of superconducting intermetallic $Be_{22}Re$, 22:11354
  C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38523(R) (N-68-13630)
  C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38522(R) (N-68-13625)
  C--Hf--Re--Ta-base--W, creep of ASTAR 811C, at high temperatures, 22:41057
  C--Hf--Re--Ta-base--W, creep properties of dispersion strengthened, effect of grain size on, 22:38524(R) (N-68-18131)
  C--Hf--Re--Ta-base--W, creep properties of, effect of grain size and annealing temperatures on, 22:38523(R) (N-68-13630)
  C--Re--W, superconducting transition temperature of, 22:19922
  C--Re--W-base, tensile properties of, effect of electronic structure on, 22:687 (AD-645762)
  Co--Re, preparation of hcp alloys, 22:40993(R) (COO-1198-534)
  Co--Re, thermal capacity at low temperatures, 22:40993(R) (COO-1198-534)
  Cu-base--Re, strain-stress curves, 22:17116(R) (ORO-3401-3)
  Dy--Re, crystal structure of intermetallic $DyRe_2$, (E), 22:22254
  Dy--Re-base, work function for, (E), 22:34761
  Er--Re, crystal structure of intermetallic $ErRe_2$, (E), 22:22254
  Er--Re-base, work function for, (E), 22:34761
  Fe--Re, magnetic properties at 0°K, 22:43594 (ANL-7299, pp 251-64)
  Gd--Re, crystal structure of intermetallic $GdRe_2$, (E), 22:22254
  Gd--Re-base, work function for, (E), 22:34761
  Hf--Mo--Re--W, surface hardness of, effects of hafnium content on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
  Hf--Re, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
  Hf--Re--Ta-base--W, creep of dispersion strengthened, effects of grain size on, 22:38524(R) (N-68-18131)
  Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38522(R) (N-68-13625)
  Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38523(R) (N-68-13630)
  HfC--Mo--Re, preparation and properties of cermets of, 22:49824
  Ho--Re-base, work function for, 22:34761
  Ir--Re, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
  Ir--Re, superconductivity, susceptibility, and thermal capacity, correlation between, (E), 22:11383
  La--Pd--Re--Ta--Ti-base, production and tensile properties at -196 to +800°C, 22:4789
  Lu--Re, crystal structure of intermetallic $LuRe_2$, (E), 22:22254
  Lu--Re-base, work function for, (E), 22:34761
  Mo--Re, corrosion by liquid zinc and molten chlorides, 22:33528
  Mo--Re, enthalpy, 22:28780 (TID-24314(PT.1))
  Mo--Re, magnetization of superconducting, effect of microstructure on, 22:22077
  Mo--Re, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
  Mo--Re, oxidation of, analytical methods for measurement of electrochemical, 22:28795
  Mo--Re, production of ductile, by chemical vapor deposition, 22:6966
  Mo--Re, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  Mo--Re, stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
  Mo--Re, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
  Mo--Re, thermoelectron emission properties of, 22:4782
  Mo--Re--W, analysis for components, 22:30436(R) (UCRL-50006-68-1)
  Mo--Re--W, analysis for metallic impurities, spectrographic, 22:30436(R) (UCRL-50006-68-1)
  Mo--Re--W, creep-rupture behavior at high temperatures, 22:8723 (GEMP-570)
  Mo--Re--W, crystal structure and emission properties of, 22:34068
  Mo--Re--W, diffusion of oxygen in, at 2000 to 2800°C, 22:45815 (GEMP-439)
  Mo--Re--W, effects on space power reactor reactivity of uncertainties in cross sections of, 22:20899 (UCRL-70797)
  Mo--Re--W, fabrication by powder metallurgy, 22:8723 (GEMP-570)
  Mo--Re--W, hardness at 25 to 1200°C, 22:15225 (GEMP-1002, pp 38-64)
  Mo--Re--W, mechanical properties at high temperatures, 22:49680(R) (USBM-RC-1347)
  Mo--Re--W, microstructure of vapor deposited, effects of temperature on, 22:7007
  Mo--Re--W, preparation by arc melting and powder metallurgy, 22:49680(R) (USBM-RC-1347)
  Mo--Re--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
  Mo--Re--W, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  Mo--Re--W, stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
  Mo--Re--W, welding methods for, testing of, 22:44876(R) (UCRL-50004-68-1(Pt.1))
  Mo--Re--W-base, creep and stress-rupture at 1600 and 2200°C, 22:612(R) (GEMP-69)
  Mo--Re--W-base, crystal structure of, effects of annealing and recrystallization on, 22:612(R) (GEMP-69)
  Mo--Re--W-base, ductility of cold-rolled, effects of isochronal anneals in hydrogen on, 22:15178 (GEMP-1002, pp 77-82)
  Mo--Re--W-base, fabrication of tubes of, development of drawing and extrusion methods for, 22:42994 (ANL-7299, pp 173-97)
  Mo--Re--W-base, hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
  Mo--Re--W-base, porosity of electron-beam weld seams on

samples of extruded, 22:612(R) (GEMP-69)
Mo--Re--ZrC, preparation and properties of cermets of, 22:49824
Mo--Rh--W, analysis for molybdenum by controlled-potential coulometry, 22:44993
Mo-base--Re, compatibility with hafnium carbide at 2450°C, 22:49825
Mo-base--Re, compatibility with niobium carbide at 2450°C, 22:49825
Mo-base--Re, compatibility with tantalum carbide at 2450°C, 22:49825
Mo-base--Re, compatibility with zirconium carbide at 2450°C, 22:49825
Mo-base--Re, creep rupture of powder metallurgy prepared, in hydrogen at 1600 and 2200°C, 22:15176 (GEMP-1002, pp 11-37)
Nb--Re-base, sorptive properties for water vapor of electron emitters of, determination of, 22:28803
Ni--Re, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Ni--Re, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Ni-base--Re, neutron magnetic scattering by, 22:24809
Os--Re, superconducting transition temperature, pressure effects on, 22:11342
Os--Re--W, phase studies of sintered, 22:7023
Os--Re--W, tensile properties of sintered, 22:7023
Pu--Re, phase studies of, 22:2655
Re--Mo--W-base, microstructure of cold-rolled, effects of aging on, 22:15178 (GEMP-1002, pp 77-82)
Re--ReO_2, vaporization of, mass spectrometric studies on, 22:25321 (ANL-7375, pp 95-134)
Re--Ru--W, brazing alloys of, for tantalum and tungsten, 22:19545(P)
Re--Ta, deformation of monocrystals of, at 77 to 623°K, 22:28811
Re--Ta, deformation of single crystals of, at low temperatures, 22:31408
Re--Ta, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Re--Ta, phase studies at 2500°C, 22:4809
Re--Ta, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Re--Ta, thermoelectron emission properties of, 22:4782
Re--Ta--W, phase studies at 2500°C, 22:4809
Re--Ta-base--W, creep of Astar 811C, in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
Re--Ta-base--W, creep testing of Astar 811C, at high temperatures, 22:43568 (N-68-13631)
Re--Tb, crystal structure of intermetallic $TbRe_2$, (E), 22:22254
Re--ThO_2--W, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Re--ThO_2--W, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
Re--ThO_2--W, mechanical properties of sheets of, at 1928°C, 22:643(R) (AD-645143)
Re--Ti-base, oxidation by oxygen at 1 to 10 torr and at 800 to 1400°C, 22:12977
Re--Tm, crystalline electric field splitting in intermetallic $TmRe_2$ from thulium-169 Moessbauer effect, (E), 22:17806
Re--W, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Re--W, analysis for rhenium, spectrophotometric, 22:1972
Re--W, analysis for tungsten, 22:14428 (ORNL-4196, pp 33-44)
Re--W, analysis for tungsten, method for, 22:27530 (CEA-N-816, pp 9-65)
Re--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Re--W, corrosion by liquid zinc and molten chlorides, 22:33528
Re--W, creep behavior of, effects of composition and heat treatments on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
Re--W, deposition on spherical reactor fuels as coating, 22:45811(P)
Re--W, deposition on uranium dioxide spheroids from fluoride vapors, 22:7044
Re--W, ductile-to-brittle transition-temperatures for, comparison of, 22:48787
Re--W, ductility of chemical-vapor-deposited, grain stabilization for, 22:6966
Re--W, electric conductivity at 300 to 2300°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W, emissivity measurements on, 22:2665(R) (N-67-16572)
Re--W, fabrication of foils of, for use in thermal insulation, 22:8301(R) (ALO-3634-7)
Re--W, feed materials for chemical vapor deposition of, economic analysis of direct fluorination of scrap materials for, 22:6967
Re--W, identification of rhenium in, using field-ion microscopes, 22:668
Re--W, impact testing as heat source capsule material, 22:36536 (SC-DR-68-295)
Re--W, joining to tungsten by chemical vapor deposition, 22:6966
Re--W, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Re--W, mechanical properties of arc melted and sintered, 22:49680(R) (USBM-RC-1347)
Re--W, mechanical properties of tubes of chemical-vapor-deposited, 22:7011
Re--W, mechanical properties of vacuum arc-melted, 22:47676 (N-68-24477)
Re--W, microstructure of chemical vapor deposited, factors affecting, 22:6962
Re--W, oxidation of, analytical methods for measurements of electrochemical, 22:28795
Re--W, phase studies at 2500°C, 22:4809
Re--W, preparation by chemical vapor deposition of, 22:6962
Re--W, preparation by reduction from oxides, 22:28757(R) (UCRL-13341)
Re--W, preparation of porous solid solution, 22:21681(P)
Re--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
Re--W, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Re--W, recovery from scrap by direct fluorination and flame reduction, economic analysis of, 22:6967
Re--W, stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
Re--W, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Re--W, thermal capacity at 1600 to 2900°K, (E), 22:37031
Re--W, thermoelectron emission properties of, 22:4782
Re--W, tube fabrication of, use of chemical vapor deposition for, 22:44876(R) (UCRL-50004-68-1(Pt.1))
Re--W-base, analysis of arc-melted and powder metallurgy processed, 22:23731 (USBM-RC-1274)
Re--W-base, bend yield stress of sheet, effects of grain size and temperature on, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, creep at 1650 and 2200°C, 22:23731 (USBM-RC-1274)
Re--W-base, creep rate of arc-cast sheet, in hydrogen at 1600 to 2600°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, creep rupture of, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, crystal structure and thermal emf of, effects of carbon on, 22:52173
Re--W-base, development of wires of, for incandescent bulbs, 22:8761
Re--W-base, dislocation structures in polycrystalline, 22:38586
Re--W-base, ductility of, field ion microscopy studies of, 22:13006
Re--W-base, electric conductivity at 300 to 2200°C, 22:4767 (GEMP-562)
Re--W-base, extrusion into tubing, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, extrusion of tubes of, floating-mandrel methods for, 22:15185 (ORNL-4210)
Re--W-base, fabrication of tubes of, development of drawing and extrusion methods for, 22:42994 (ANL-7299, pp 173-97)
Re--W-base, porosity of electron-beam weld seams on samples of extruded, 22:612(R) (GEMP-69)
Re--W-base, preparation of, incorporating reactive metal additive for high temperature strength and reduced ductile-brittle transition temperature, 22:47681(P)
Re--W-base, radiation effects on creep-rupture properties of, fast neutron, 22:19603
Re--W-base, radiation effects on electric conductivity of recrystallized, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)
Re--W-base, reactions with plutonium oxide--thorium oxide and thorium oxide ceramics at 2215 to 2290°C of, 22:645 (AECL-2768)
Re--W-base, stress rupture of arc-cast sheet, in hydrogen at 1600 to 2600°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, tensile properties of arc melted, at 25 to 2500°C, 22:23731 (USBM-RC-1274)
Re--W-base, tensile properties of unworked, effects of grain size on, 22:41039
Re--W-base, thermal conductivity as function of temperature, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, thermal conductivity at 300 to 2200°C, 22:4767 (GEMP-562)
Re--W-base, thermal diffusivity at 300 to 1000°C in argon, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, welding of sheet, plate, and tubing, 22:8738 (ORNL-4170, pp 80-92)
Re-base--Tb, work function for, (E), 22:34761
Re-base--Tm, work function for, (E), 22:34761
Re-base--Y, work function for, (E), 22:34761
Rh--W, development, properties, and uses of, 22:52179

RHENIUM BORIDES
crystal structure and lattice constants of, 22:45789

RHENIUM CHLORIDE OXIDES
$ReOCl_4$--$WOCl_4$, phase studies of, 22:4899

RHENIUM CHLORIDES
amine complexes, carbon-14 exchange between amine and, 22:33357
amine complexes, chlorine-36 exchange between hydrochloric acid and, 22:33357
amine complexes, deuterium exchange between heavy water and, 22:33357
amine complexes, nitrogen isotopic exchange between potassium cyanide and, 22:33357
amine complexes, oxygen-18 exchange between water and,

22:33357
- complexes containing butyrates, preparation and structure of, 22:27517(R) (MIT-1965-63)

RHENIUM COUPLES
- thermoelectric properties of, analysis for ultrasonic thermometry from 2000 to 5000ºF of, 22:14139(R) (NYO-3906-1)
- Re/W, fabrication of SEFOR hexagonal channel plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuel element, description of, 22:44889(R) (GEAP-5629)
- Re/W, stability of VR5/20, in vacuum at high temperatures, 22:52176
- Re/W--W, calibration of, description of static, 22:35596(R) (IDO-17260)

RHENIUM FLUORIDES
- reduction by hydrogen for rhenium deposition and fabrication, 22:10976
- reduction by hydrogen in mixtures with tungsten fluoride for deposition on uranium dioxide spheres, 22:7044

RHENIUM HALIDES
- complexes containing benzoates, preparation and structure of, 22:27517(R) (MIT-1965-63)
- spectra of cluster, infrared, 22:27517(R) (MIT-1965-63)

RHENIUM IONS
- chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
- chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675

RHENIUM ISOTOPES
- energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:27109
- production of carrier-free, by deuteron irradiation of tungsten, 22:47207
- separation from tantalum and tungsten isotopes by coprecipitation with iron hydroxide, effects of pH on, 22:45168

RHENIUM ISOTOPES Re-175
- half-life, (E), 22:9880
- production by holmium-165(O-16,6n) and terbium-159(Ne-22,6n) reactions, (E), 22:9880

RHENIUM ISOTOPES Re-176
- half-life, (E), 22:9880
- half-life, (E), 22:27182
- production by holmium-165(O-16,5n) and terbium-159(Ne-22,5n) reactions, (E), 22:9880

RHENIUM ISOTOPES Re-177
- half-life, (E), 22:27182

RHENIUM ISOTOPES Re-178
- beta and electron-capture decay of, γ spectra for, (E), 22:27182
- electron-capture decay of, conversion-electron spectra for, (E), 22:35356

RHENIUM ISOTOPES Re-179
- electron-capture decay of, half-life and γ spectra, (E), 22:30041

RHENIUM ISOTOPES Re-180
- beta and electron decay of, β and γ spectra and log-ft values for, (E), 22:27181
- beta and electron-capture decay of, (E), 22:3725
- beta and electron-capture decay of, β and γ spectra for, (E), 22:27182
- beta and electron-capture decay of, conversion-electron spectra from, (E), 22:35356
- beta and electron-capture decay of, γ spectra from, (E), 22:30041
- energy-level spins and transitions from osmium-180 decay, (E), 22:42054
- energy-level transitions from osmium-180 decay, conversion coefficient for, (E), 22:35356

RHENIUM ISOTOPES Re-181
- energy levels in rotational bands, from tantalum-181 (α,4n) reactions, (E), 22:27164
- energy-level transitions from osmium-181 decay, conversion coefficients and multipolarities of, (E), 22:35356
- energy-level transitions from osmium-181 decay, conversion coefficients and multipolarities of, (E), 22:27182

RHENIUM ISOTOPES Re-182
- beta and electron-capture decay of, γ spectra from, (E), 22:30041
- energy levels from osmium-182 decay, spin-parity assignments and multiple mixing ratios for, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels in rotational bands, from tantalum-181 (α,3n) reactions, (E), 22:27164

RHENIUM ISOTOPES Re-183
- energy level at 496 keV, g-factor and half-life for, (E), 22:46785
- energy level at 496 keV, lifetime of, (E), 22:48202(R) (BMwF-FBK-68-01)
- energy levels from tantalum-181 (α,2nγ) reactions at 19.8 to 38 MeV, (E), 22:16036
- energy levels in rotational bands, from tantalum-181 (α,2n) reactions, (E), 22:27164
- energy levels of, K = 1/2 rotational, (T), 22:20664
- nuclear properties in shell and unified models, (E/T), 22:1624

RHENIUM ISOTOPES Re-184
- deuteron reactions (d,t) at 12 MeV, angular distributions for, (E), 22:42066

RHENIUM ISOTOPES Re-185
- abundance ratios to rhenium-187 in natural rhenium, determination of, by thermal ionization source technique, 22:12231
- alpha fission at 35 and 41 MeV, cross sections and mass distributions for, (E), 22:44706
- beta transitions in, β-γ directional correlations for anomalous first-forbidden, (E), 22:3740
- deuteron reactions (d,p) at 12 MeV, angular distributions for, (E), 22:42066
- energy levels from inelastic scattering of alpha particles and deuterons at 16.6 and 12.1 MeV respectively, collective, (E), 22:1694
- energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:5810 (ANL-7363)
- energy levels of, K = 1/2 rotational, (T), 22:20664
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- helium-3 reactions (He-3,xnyp) at 10 to 33 MeV, cross sections for, (E), 22:53179
- hyperfine structure, measurement with double Fabry--Perot spectrometer, 22:9101
- neutron capture and total cross sections at 0.01 to 10 eV, (E), 22:3689(R) (GA-7820)
- neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
- neutron capture cross section at 0.1 to 30 keV, (E), 22:3689(R) (GA-7820)
- neutron capture cross sections and resonance parameters at 0.01 eV to 30 keV, (E), 22:30014
- neutron cross sections and resonance parameters for, data evaluation for ENDF/B library, 22:20568 (GEMP-587)
- neutron resonance parameters at 0 to 100 eV, (E), 22:20578 (WASH-1079)
- neutron resonance parameters at 1 to 100 eV, (E), 22:3689(R) (GA-7820)
- neutron total cross section at 0.01 to 100 eV, (E), 22:30014

RHENIUM ISOTOPES Re-186
- beta transition rates for, testing Davydov-Filippov and Bohr-Mottelson models for, (E), 22:42059
- beta transitions in, CVC theory with Woods--Saxon superfluid corrections for first-forbidden, (T), 22:53178
- beta transitions in, matrix-element calculations using Nilsson model for first-forbidden, (T), 22:3781
- beta transitions in, spectra for $1^- \to 2^+$, (E), 22:46812
- beta-gamma directional correlation measurements on, (E), 22:35309
- energy levels from rhenium-184 (d,t) and rhenium-185 (d,p) reactions, (E), 22:42066
- use as tracer for measurement of density of steam--water mixtures flowing in boiler tubes, 22:14725
- yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

RHENIUM ISOTOPES Re-187
- abundance ratio to rhenium-185 in natural rhenium, determination of, by thermal ionization source technique, 22:12231
- alpha fission at 35 and 41 MeV, cross sections and mass distributions for, (E), 22:44706
- beta decay of, spectrographic determination of osmium from, 22:16458
- content in sulfidic ore deposits, use in age estimation, 22:6475
- detection in drugs, use of neutron activation analysis for, 22:12230
- deuteron reactions (d,p) at 12 MeV, angular distributions for, (E), 22:42066
- energy levels from inelastic scattering of alpha particles and deuterons at 16.6 and 12.1 MeV respectively, collective, (E), 22:1694
- energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:5810 (ANL-7363)
- energy levels from tungsten-187 decay, (E), 22:24835(R) (BARC-305)
- energy levels of, K = 1/2 rotational, (T), 22:20664
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- helium-3 reactions (He-3,xnyp) at 10 to 33 MeV, cross sections for, (E), 22:53179
- hyperfine structure, measurement with double Fabry--Perot spectrometer, 22:9101
- neutron capture and total cross sections at 0.01 to 10 eV, (E), 22:3689(R) (GA-7820)
- neutron capture by, conversion-electron spectra from thermal, (E), 22:9895
- neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
- neutron capture cross section at 0.1 to 30 keV, (E), 22:3689(R) (GA-7820)
- neutron capture cross sections and resonance parameters at 0.01 eV to 30 keV, (E), 22:30014
- neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
- neutron cross sections and resonance parameters for, data evaluation for ENDF/B library, 22:20568 (GEMP-587)
- neutron resonance parameters at 0 to 100 eV, (E), 22:20578 (WASH-1079)

- neutron resonance parameters at 1 to 100 eV, (E), 22:3689(R) (GA-7820)
- neutron total cross section at 0.01 to 100 eV, (E), 22:30014
- nuclear properties in shell and unified models, (E/T), 22:1624
- nuclear quadrupole moment, (E/T), 22:11957
- proton reactions (p,2n) at 14.3 MeV, angular anisotropy of conversion electrons in, (E), 22:20645

RHENIUM ISOTOPES Re-188
- beta decay of isomeric, (E), 22:27125
- beta decay of, γ spectra for, (E), 22:18241
- beta transition rates for, testing Davydov-Filippov and Bohr-Mottelson models for, (E), 22:42059
- beta transitions in, CVC theory with Woods--Saxon superfluid corrections for first-forbidden, (T), 22:53178
- beta transitions in, spectra for $1^- \to 2^+$, (E), 22:46812
- energy levels from rhenium-187 (d,p) reactions, (E), 22:42066
- energy levels from thermal neutron capture in rhenium-187, (E), 22:9895
- energy levels in K = 1 rotational band, lifetimes, (E), 22:27125
- use as tracer for measurement of density of steam--water mixtures flowing in boiler tubes, 22:14725

RHENIUM ISOTOPES Re-189
- beta transitions in, matrix-element calculations using Nilsson model for first-forbidden, (T), 22:3781

RHENIUM OXIDES
- book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
- crystal structure of, determination of by x-ray, 22:2560(R) (IS-RD-11)
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- formation of volatile Re_2O_7, during oxidation, 22:12977
- metallic properties of, relation to proposed band models, 22:11518
- optical properties at 0.1 to 22 eV, (E), 22:11518
- Re_2O_3--TiO_2--ZrO_2, crystal structure and phases of, 22:23901
- Re--ReO_2, vaporization of, mass spectrometric studies on, 22:25321 (ANL-7375, pp 95-134)
- ReO_2--ReO_3, vaporization of, mass spectrometric studies on, 22:25321 (ANL-7375, pp 95-134)

RHENIUM SILICIDES
- production by auxiliary metal bath procedure, 22:38614

RHENIUM TELLURIDES
- preparation and structure of $ReTe_2$, 22:31518

RHENIUM TUNGSTEN CARBIDES
- superconducting properties of new interstitial compound, 22:26347

RHODAMINE B
- performance in air-drop experiments to measure ocean turbulence, 22:42907 (CU-2663-9, App.Q)
- use as tracer in model river dispersion studies, 22:10356 (ORO-490-12)
- use as tracer to determine oceanic diffusion, 22:51120 (NYO-3109-35)
- use as tracer to study distribution of heat discharged from marine nuclear power plants, 22:18995 (NYO-3109-26)

RHODAMINE C
- solvent properties for uranyl ions in presence of nitrate ions, 22:33237

Rhodanates
- see Thiocyanates

RHODE ISLAND
- aeroradioactivity survey and areal geology of, 22:169 (CEX-58.4.6)

RHODIUM
- abundance in photosphere, (E), 22:23934
- analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
- atomic weight of, based on carbon-12 = 12, 22:42698
- book: Uncommon Metals, 22:10981
- chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
- complexes of, spectra in sulfuric acid, PMR, 22:45029 (UCRL-18043, pp 7-105)
- complexes with β-ketoenols, preparation and properties of, review of, 22:2061
- corrosion of plate, by fused sodium fluoride--uranium tetrafluoride eutectic, 22:15139 (AWRE-R-3/63)
- crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
- Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
- deposition on single crystals of copper, cracking and strength of films from, 22:17116(R) (ORO-3401-3)
- determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
- determination by photon activation methods, 22:27589
- determination in binary alloys with nickel, x-ray spectrographic, 22:4 (AERE-R-5452)
- determination in irradiated uranium dioxide fuel pins, electron probe, 22:25321 (ANL-7375, pp 95-134)
- determination in plutonium and uranium waste solutions after liquid-liquid extraction using Aliquat-336 by flame photometry, 22:8024
- determination in presence of ruthenium, spectrophotometric, 22:1978
- determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
- determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
- determination of, titrimetric micro-, 22:27577
- deuteron reactions (d,pn) at 8 to 15 MeV, (E), 22:9794
- effects of film coatings of, oxidation of zirconium, 22:21667
- effects on deuterium exchange reactions with organic compounds, 22:35819
- effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
- effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
- effects on superconducting transition temperature of cerium--cobalt alloys, (E), 22:7237
- effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
- effects on titrimetric determination of uranium, 22:22972
- photoionization of, central-potential model for soft x-ray, 22:9052
- production in power reactors, economic aspects of, 22:119
- properties of, effects of spin fluctuations on, (T), 22:3220
- radioactivity standards of, users' guide for, 22:33474 (NP-17502)
- separation from other fission products by precipitation, 22:16667
- separation from palladium by ion exchange, 22:33392
- separation from plutonium and uranium waste solutions by liquid-liquid extraction using Aliquat-336, 22:8024
- separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
- sorptive properties for deuterium and hydrogen, infrared spectral studies of, 22:10237
- sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
- superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
- surface friction of riders of, sliding on rhodium, 22:52177
- surface migration of atoms of, determination by field emission, 22:28824
- use as carrier metal for rare earth addition to uranium, 22:28754 (LA-3911)
- use for neutron flux measurement, description of, 22:32740(R) (BAW-3647-7)
- wires of, calibration of in-core power reactor neutron detector using, 22:12084(R) (BAW-3647-6)

RHODIUM ALLOY COUPLES
- Pt/Pt--Rh, design and performance of, 22:36453 (LMEC-Memo-68-10)

RHODIUM ALLOYS AND SYSTEMS
- Ce--Co--Rh, crystal lattice spacings of, 22:23821
- Co--Rh, enhanced NMR relaxation rates and susceptibilities in, (E/T), 22:17762
- Cu-base--Rh, strain-stress curves for, 22:17116(R) (ORO-3401-3)
- Eu--Rh, Moessbauer and magnetic properties of intermetallic, 22:22246
- Gd--Rh, gadolinium ion ESR in intermetallic compounds of, relation between g shift and hyperfine field in, (E), 22:29579
- Hf--Rh, properties, 22:31321
- Ir--Rh, superconductivity, susceptibility, and thermal capacity of, correlation between, (E), 22:11383
- Ir--Rh, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
- Mo--Pd--Rh--Ru--Tc, fission-induced inclusions of, in plutonium dioxide--uranium dioxide fuels, 22:17152
- Ni--Rh, analysis for rhodium, x-ray spectrographic, 22:4 (AERE-R-5452)
- Ni--Rh, thermal capacity of, at 0.05 to 5°K, 22:45029 (UCRL-18043, pp 7-105)
- Pd--Pu--Rh--Ru--U, formation in irradiated plutonium dioxide--uranium dioxide fuels, 22:17152
- Pt--Rh, coating with iron titanate, methods for, 22:4355(R) (NAA-SR-12578)
- Pt--Rh, fabrication for large radioisotope heat source capsule barrier caps and shells, 22:47290(R) (AI-AEC-12713)
- Pt--Rh, photoelectric cross sections for, (E), 22:47818
- Pt--Rh, testing for fuel capsule liner cladding, 22:4355(R) (NAA-SR-12578)
- Pt-base--Rh, compatibility testing of, for oxidation barrier for large radioisotope heat source capsules, 22:51175 (AI-AEC-12739)
- Pt-base--Rh, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
- Pt-base--Rh, testing for large radioisotope heat source capsule coating, 22:23216(R) (AI-AEC-12642)
- Pu--Rh, phase studies of, 22:2655
- Rh--Ru, separation from nitric acid by solvent extraction using tridodecylamine, effects of plutonium on, 22:37862

- Rh--Tc, phase studies of, 22:4807
- Rh--Ti, superconducting transition temperature as function of rhodium concentration, (E), 22:7231
- Rh--Ti, thermal capacity at 0.9 to 8°K, (E), 22:7231
- Rh--U, phase diagrams, 22:19562
- Rh--U, phase diagrams, illustration of 500 to 2100°C, 22:48790
- Rh--Y, phase diagram of, statistical prediction of, 22:31396

RHODIUM CHLORIDES
- effects on γ-induced emulsion polymerization of butadiene and isoprene, 22:23036(R) (TID-24281)
- effects on radioinduced polymerization of butadiene, 22:33387
- tris(triphenylphosphine), use in hydration of steroids, effects of deuterium on catalytic, 22:33302

RHODIUM COUPLES
- Pt/Rh, design and performance of, 22:36453 (LMEC-Memo-68-10)

RHODIUM IONS
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- effects on fluorescence of uranium-activated compounds with rocksalt lattice, 22:37768

RHODIUM ISOTOPES
- energy levels of odd-A, from proton inelastic scattering, (E), 22:32651

RHODIUM ISOTOPES Rh-100
- beta and electron-capture decay of, log-ft values for, (E), 22:27169
- beta decay of, branching ratios and γ spectra for, (E), 22:18244
- gamma-gamma angular correlations in type-II superconducting niobium, perturbed, (E), 22:46062
- nuclear magnetic resonance in iron and nickel, resonance destruction of angular correlations in, (E/T), 22:46234

RHODIUM ISOTOPES Rh-101
- energy levels of, description with quasiparticle coupling to quadrupole moment of 2^+ phonon, (T), 22:18240
- half-life of isomeric, (E), 22:50642

RHODIUM ISOTOPES Rh-102
- beta and electron-capture decay of, γ spectra from, (E), 22:27167
- content in monthly precipitation in US cities, 1960 to 1965, 22:25530 (HASL-193, pp II.1-30)
- content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
- electron-capture decay of, log-ft values for, (E), 22:27169
- electron-capture decay scheme of, conversion-electron and γ spectra for, (E), 22:14005

RHODIUM ISOTOPES Rh-103
- deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
- deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
- electron energy levels, magnetic hyperfine interaction constants and electronic g factors for low-lying, (E), 22:41366
- energy level at 538 keV, lifetime and transition probabilities for, (E), 22:27116
- energy level at 538 keV, lifetime of, (E), 22:24835(R) (BARC-305)
- energy levels from proton inelastic scattering, (E), 22:32513(R) (ANU-P-400)
- energy levels from proton inelastic scattering, (E), 22:32651
- energy levels from proton inelastic scattering, (E), 22:27152
- energy levels from ruthenium-103 decay, spin-parity assignments and transition multipolarities for, (E), 22:30044
- energy-level spins and transitions from ruthenium-103 beta decay, (E), 22:14047
- energy-level transitions from ruthenium-103 decay, multipolarities of, (E), 22:27170
- hyperfine magnetic field in iron at 305.5°K, NMR measurements on, (E), 22:46731(R) (COO-1746-8)
- magnetic hyperfine field in iron, (E), 22:26929(R) (COO-1420-139)
- near magnetic resonance in shift in cobalt--rhodium alloys, negative, (E), 22:17762
- neutron capture at 24 keV, isomeric cross-section ratio for, (T), 22:32537
- neutron capture by, activation resonance integrals for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron capture by, isomeric cross-section ratio and spin-cutoff parameter for, (T), 22:46498
- neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
- neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- neutron inelastic scattering at 0.18 to 14.8 MeV with isomeric excitation, activation cross sections for, (E), 22:24851 (AECL-3043)
- neutron inelastic scattering with isomeric excitation, cross section for fast, (E), 22:7705
- neutron reactions (n,3n) at 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
- neutron reactions (n,α) at 14 MeV, energy and angular distribution of alpha particles from, (E), 22:20617
- neutron reactions (n,p) in fission spectrum, average cross section for, (E), 22:35300
- neutron scattering cross section and resonance parameters at 40 to 700 eV, measurement using time-of-flight method, (E), 22:16000 (CEA-R-3360)
- neutron scattering resonance parameters at 125 to 450 eV, (E), 22:20578 (WASH-1079)
- neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
- nitrogen-14 reactions (N-14,C-11), (N-14,F-18), and (N-14,N-13) at 140 MeV, effective interaction in, (T), 22:27339
- photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
- production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
- production of 57-min isomer of, 22:33392
- proton inelastic scattering at 10 MeV, γ and proton spectra from, (E), 22:32513(R) (ANU-P-400)
- proton inelastic scattering at 3.5, 4.0, and 4.5 MeV, γ spectra from, (E), 22:27152
- proton reactions (p,2n) at 14.3 MeV, angular anisotropy of conversion electrons in, (E), 22:20645
- separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
- use as activation detector for measuring epithermal neutron spectra, 22:8348
- use for fast neutron dosimetry, 22:6652 (ORNL-4168, pp 183-230)

RHODIUM ISOTOPES Rh-104
- gamma spectra of, 22:14525
- nuclear level density parameter for, calculation from isomeric cross-section ratio for neutron capture, (T), 22:32537

RHODIUM ISOTOPES Rh-105
- yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)

RHODIUM ISOTOPES Rh-106
- beta decay of, palladium-106 energy-level spins and transitions from, (E), 22:1700
- beta decay of, palladium-106 energy-level transitions from, (E), 22:9869
- beta decay of, time-reversal testing by β-γ-γ angular correlations in, (E), 22:53195
- beta decay scheme of isomeric, γ spectra and γ--γ directional correlations for, (E), 22:35328
- content in Bucharest atmosphere, 1964 to 1966, 22:51103
- content in ground waters at Hanford, 22:19085(R) (BNWL-687)
- content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
- content of air, milk, rainwater, and vegetables in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
- determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
- effects on gastrointestinal tract of rats, pathological, 22:49331
- inhalation by rats, dynamics of, 22:8538
- separation from water by slurrying with Yazoo and Zilpha clays, 22:25482
- separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
- separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
- separation of plutonium from, by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
- use as source in beta backscatter method for measurement of egg shell strength, 22:21296

RHODIUM OXIDES
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704

RHODIUM SULFATES
- decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

Rhodizonic Acid
- see 5-Cyclohexene-1,2,3,4-tetrone, 5,6-Dihydroxy-

RHODOPHYTA
- calcium content of marine, during 1964 and 1965, 22:10772
- Gelidiella acerosa, radiation effects on strength of gel from dried, cobalt-60 γ, 22:10885
- Gelidium micropterum, radiation effects on strength of gel from, cobalt-60 γ, 22:10885
- Gracilaria milardetii, radiation monitoring of, from coast of India, natural background, 22:28463
- Gracilaria miliardetii, radiation effects on strength of gel from, cobalt-60 γ, 22:10885
- Haematococcus pluvialis, radiation effects on reproduction of, effects of DNA content and photoperiod

on x, 22:31280
radioisotope uptake by, phosphorus-32 and zinc-65, (E), 22:12455(R) (EUR-3635)
strontium-88 content of marine, during 1964 and 1965, 22:10772
strontium-90 content of marine, during 1964 and 1965, 22:10772

RHOMETERS
development of simultaneous two-sample, for measurements at high pressures, 22:43151 (FOA-4-4361-23)
performance for detecting impurities in sodium, 22:12953
performance of, effects of liquid sodium oxide (Na_2O) on, (E), 22:35423(R) (APDA-224)
response of sodium impurity monitoring, to sodium monoxide injections, (E), 22:47040(R) (APDA-228)
response to sodium impurities, 22:14129(R) (APDA-212)

Riboflavin
see Vitamin B Group--riboflavin

RIBONUCLEASE
effects on growth of chick embryos, 22:28402 (ORNL-4100, pp 62-9)
effects on radiosensitivity of sperm of Drosophila, 22:40615(R) (EUR-3889)
inactivation by light, effects of, on molecular structure, 22:14907 (COO-875-80)
luminescence in relation to tryosine components, 22:28289 (ORNL-4100, pp 178-201)
metabolism of iodine-labeled, in kidneys of mice, 22:38195(R) (NYO-3515-3)
molecular weight determination of, using ultracentrifugation, 22:16974(R) (ORO-2832-56)
proton collisions with, measurement of inactivation cross sections for elastic, 22:45508(R) (PG-Report-826)
radiation effects on activity of, in corn seedlings, effects of seed exposure on x, 22:38499(T) (JPRS-44845)
radiation effects on activity of, in cotyledons of peanut seeds, 22:31014
radiation effects on activity of, in shoots of corn and radishes, effects of dose on x, 22:33977
radiation effects on activity of, in tissues of rats, protective effects of cysteine and vitamin K_7 against whole-body γ, 22:10738
radiation effects on amino acid content of, effects of dose on γ, 22:28378
radiation effects on composition and structure of, in aqueous solution, x, 22:33753
radiation effects on content of alkaline, in mucosa of rat intestine, role of neuroendocrine reactions in acute x, 22:49272
radiation effects on content of, in blood plasma of guinea pigs and rats in relation to content of tissues, whole-body x, 22:40538
radiation effects on content of, in human urine following radium and supervoltage therapy of cervical carcinomas, γ and x, 22:28325
radiation effects on content of, in rat liver, internal gold-198 β and γ, 22:33957
radiation effects on degradation of DNA by, effects of carbon-14 and tritium labeling on, 22:2485
radiation effects on frozen aqueous solution of, electron spin resonance study of uv, 22:45409
radiation effects on molecular weight of components of protein molecules in, γ, 22:23408(R) (NYO-2735-8)
radiation effects on physicochemical properties of crystalline, γ, 22:36223
radiation effects on structure of crystalline, γ, 22:30990
radiation effects on structure of, gel filtration analysis of γ, 22:33738
radiation effects on, effects of copper ions, hydrogen sulphide, oxygen and vacuum on γ, 22:25767
radiation effects on, ESR analysis of fast neutron, γ, and proton, 22:12820
radiation effects on, ESR spectra of x, 22:49261
radiation effects on, in ethylene glycol and water, effects of dose and temperature on uv, 22:51352
radioinduced dimer formation in, effects of dose, oxygen, and temperature on γ, 22:45423
radioinduced inactivation of bovine pancreatic, mechanism for γ, 22:4574
radioinduced inactivation of, effects of dose and temperature on γ and proton, 22:45424
radioinduced inactivation of, effects of energy level of charged particle on proton, 22:25781
radioinduced inactivation of, effects of oxygen deficiency and pH on charged particle and x, 22:25915
radioinduced inactivation of, effects of water content on x, 22:30972
radioinduced inactivation of, in oxygen-free solution, protective effects of cysteine, ethanol, glycerol, and histidine against charged particle and x, 22:25915
radioinduced inactivation of, low energy electron, 22:43300 (AERE-PR/HPM-12)
radioinduced inactivation of, mechanism for γ, 22:6763
radioinduced inactivation of, slow proton, 22:12818
radioinduced luminescence of, x, 22:12365
radiolysis of, use of tritiated hydrogen sulfide in determination of free radicals from γ, 22:8144
radiosensitivity of, effects of copper ions on, 22:23398 (IA-1128, pp 147-55)
reactions with atomic hydrogen, 22:35733 (NYO-3242-26)
reactions with hydrated electrons, effects of conformation of molecules on reaction rate for, 22:30996
reactions with hydrogen atoms in aqueous solutions, yields of sulfur-containing amino acids in, 22:48878(R) (NYO-3242-29)
separation from mixed tRNA feed by column extraction using diethylaminoethyl cellulose, 22:27864 (ORNL-4204, pp 16-21)
structure of side chain of bovine, 22:14905 (BNL-50057, pp 111-22)
tyrosines of, interacting with ATP, 22:28289 (ORNL-4100, pp 178-201)

Ribonuclease, Deoxy-
see Deoxyribonuclease

Ribonucleic Acid
see Nucleic Acid, Ribo-

Ribonucleic Acid, Deoxyribo-
see Nucleic Acid, Deoxyribo-

Ribonucleosides
see Nucleosides

RIBOSE
effects on x-radiosensitivity of carbon dioxide production by yeasts, 22:8657
radiolysis of, yield of deoxy compounds from electron or γ, 22:42750

RIBOSE, 2'-DEOXY-
radiolysis of aqueous solutions of, γ, 22:30984

RIBOSOMES
analysis of proteins in, isolated from tissues of mammals, 22:38193(R) (EUR-3912)
complexes with messenger RNA during synthesis of proteins, 22:51302(R) (HUX-2643-42)
content of Escherichia coli, isolation and determination of properties of, 22:38193(R) (EUR-3912)
content of immature, in Escherichia coli, effects of, on RNA synthesis, 22:12158 (BNWL-480, pp 107-26)
content of RNA in, of lens cells, 22:28283 (ORNL-4100, pp 75-96)
content of spleen in rats, isolation of, for determination of immune reactions, 22:28286 (ORNL-4100, pp 153-9)
dissociation of rat liver, effects of ethanol, formamide, temperature, and urea on, 22:7953(R) (NYO-910-61)
isolation by zonal centrifugation, method for, 22:48809 (UCRL-50414)
isolation of, from mycelia of fungi, methods for, 22:25206(R) (COO-1301-5)
phagocytosis in liver and spleen of mice, 22:19235(R) (COO-1282-1)
poly-, content of liver in fetal rats, properties of, 22:28287 (ORNL-4100, pp 160-4)
production of poly-, by Escherichia coli mutants, effects of actidione on, 22:28286 (ORNL-4100, pp 153-9)
properties in chloroplasts of Chlamydomonas, 22:7953(R) (NYO-910-61)
radiation effects on abundance of, in neoplastic cells of mouth, γ, 22:36196
radiation effects on content of, in mammary tumor cells of mice, x, 22:36360
radiation effects on structure of, electron microscopy of x, 22:45388
radiation effects on synthesis of proteins by, from Escherichia coli, γ, 22:33993
radiation effects on synthesis of RNA by, in Pisum, cesium-137 β and γ, 22:47469
radiation effects on uptake of amino acids by, in cotyledons of peanut seeds, x, 22:31014
radiation effects on, in Azotobacter, x, 22:19259
radiation effects on, in cells of thyroid gland transplants of rats, effects of dose on x, 22:12813
radiation effects on, in regenerating rat liver, whole-body x, 22:45388
radioinduced dissociation of, from Escherichia coli, protective effects of magnesium and β-mercaptoethanol against γ, 22:33993
radioinduced inhibition of polyphenylalanine synthesis in, of Escherichia coli, uv, 22:4568
ribonucleic acid from liver, function and structure of, 22:14906 (BNL-50057, pp 123-37)
staining of poly-, of cultured mammalian cells and sea urchin eggs, evaluation of methods for, 22:25712 (COO-78-163, pp 39-63)
synthesis in bacteria, control of,' 22:28273 (ANL-7278, pp 219-49)
use of iodine-125-labeled, to study synthesis of antibodies in rats, 22:28286 (ORNL-4100, pp 153-9)

Rice (Oryza)
see Oryza under Angiospermidae

RICHLAND AREA (WASH.)
basalt bedrock formations in, refraction seismic method for location of, 22:25494 (BNWL-481-3, pp 5-10)
contamination of atmosphere at, by chemicals, 22:6793 (BNWL-564)
distribution of ground-dwelling beetles on Hanford Reservation, effects of elevation on, 22:10739 (BNWL-480, pp 127-51)
environmental radiation exposures in, 22:18964 (BNWL-SA-1606)
environs monitoring at, dose estimates from, 22:16705 (BNWL-SA-1452-A)

  environs monitoring during January to July 1967, 22:19326 (BNWL-665)
  geologic formations in, study of earthquake incidence from, 22:25493 (BNWL-481-3, pp 3-5)
  gravity field measurements in, relation to basalt formations, 22:25495 (BNWL-481-3, pp 10-14)
  ground water contamination at, surveillance of, 22:40208 (BNWL-835)
  ground water flow in, field evaluation of methods for prediction of, 22:21179 (BNWL-SA-1596)
  ground water table level in, STEADY computer program for predicting effects of irrigation on, 22:25497 (BNWL-481-3, pp 18-23)
  iodine-131 content of water supplies of, in relation to thyroid dose of human children, 22:19326 (BNWL-665)
  plant facilities in, plutonium-239 content and particle size distribution in air of, 22:25568 (BNWL-481-3, pp 97-101)
  radiation dose to population in vicinity of, use of dietary habits for estimating, 22:51560 (BNWL-706)
  radiation monitoring in environs of, during 1966, 22:10755(R) (BNWL-439(App.))
  radioactivity in ground-level atmosphere at, measurements of, 1962 to 1968, 22:25523 (BNWL-SA-1739)

RICKETTSIA
  Coxiella burnetii, radiation effects on antigenicity of, in guinea pigs, x, 22:51469
  mouse typhus, radiation effects on cultures of, solar uv, 22:33984(T) (JPRS-41315, pp 44-50)

RIPPLE (Radioactive Isotope Powered Pulsed Light Equipment-United Kingdom)
    see Nuclear Auxiliary Power Systems

RIR (Research and Isotope Reactor)
    see Reactors, Production

RISA (Radioiodinated Human Serum Albumin)
    see Albumins

RISE
    see Radioisotope Submersible Engine

RITMO Reactor
    see Critical Assemblies

Rivers
    see Surface Waters

RNA
    see Nucleic Acid, Ribo-

RNA METHYLTRANSFERASE
  activity in uv-induced lysogenic Escherichia coli, 22:38214

RNA NUCLEOTIDYLTRANSFERASE
  activity in hepatic nuclei of rats, inhibition of, by nickel carbonyl, 22:6216(R) (ORO-3461-9)
  activity in intestine of rats, effects of chlorambucil and myleran on, 22:36399
  binding to polynucleotides in Escherichia coli, 22:28286 (ORNL-4100, pp 153-9)
  biochemistry and catalytic activity of, 22:51304 (LA-3848, pp 21-61)
  radiation effects on activity of, in intestine of rats, whole-body x, 22:36399
  radiation effects on content of, in adrenal glands of rats, x, 22:14957
  replication errors in nucleic acids, 22:25716(R) (NYO-3538-7)

RNA Polymerase
    see RNA Nucleotidyltransferase

tRNA PYROPHOSPHORYLASE
  purification of, methods for, 22:28289 (ORNL-4100, pp 178-201)

ROBERT E. GINNA POWER REACTOR, UNIT 1
  auxiliary and emergency systems for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  blowdown analyses for, final, 22:18361 (DOCKET-50244-2)
  containment spray system for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  containment system for, final safety analysis of, 22:18360 (DOCKET-50244-1)
  containment ventilation system for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  containment vessel for, design analysis of large openings in, 22:53266 (DOCKET-50244-6)
  containment vessel for, design of concrete, 22:18469
  containment vessel for, detailed analysis of design of large opening reinforcements in, 22:50706 (DOCKET-50244-4)
  control systems and instrumentation for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  cooling system for, final safety analysis of, 22:18360 (DOCKET-50244-1)
  design of, final safety analysis of, 22:18360 (DOCKET-50244-1)
  design parameters for, 22:22712 (STI/PUB-174)
  electrical system for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  operation of, procedures for, 22:18361 (DOCKET-50244-2)
  radiation protection and radioactive waste handling at, 22:18361 (DOCKET-50244-2)
  safety analysis for, revised information for final, 22:24944 (DOCKET-50244-3)
  safety injection system for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  site for, preliminary safety analysis of, 22:50707 (DOCKET-50244-5)
  siting of, final safety analysis of, 22:18360 (DOCKET-50244-1)
  steam and power conversion system for, final safety analysis of, 22:18361 (DOCKET-50244-2)
  turbine generator units for, final safety analysis of failures of, 22:18361 (DOCKET-50244-2)

Rochelle Salt
    see Potassium Sodium Tartrates

ROCK DRILLING
  air-assisted, reverse-circulation system development for, large diameter holes to 6000 ft, 22:10136 (NVO-38-12)
  borehole case filter location in, using gamma probe, 22:48927
  core logging for Pre-Schooner underground chemical explosion, 22:14601 (PNE-509)
  developments in nuclear logging methods for industrial uses, 22:23136
  equipment for, design of high-temperature, 22:6251(P)

Rock Salt
    see Sodium Chlorides

ROCK WOOL
  production of, radiometric method for filling measurements in fusion chambers for, 22:43144

Rocket Fuels
    see Propellants

ROCKET MOTOR NOZZLES
  description of multiple exhaust, for rocket reactors, 22:22788 (CONF-661204-(Vol.2), pp 78.1-11)
  description of NERVA, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
  fabrication of silicon oxide--tungsten, by hot pressing, 22:721(R) (AD-646616)
  graphite inserts for, alcohol penetrant testing of, 22:43008

ROCKET MOTORS
    see also Aircraft Engines
    see also Reactors, Rocket
    see also Rockets
  dynamics of, optimum control of, (T), 22:20952
  failures of, effects of flow induced vibrations on, 22:32950
  testing of promethium-147-powered, for space vehicles, 22:19044 (MLM-1437)

Rocket Reactors
    see Reactors, Rocket

ROCKET REACTORS (KIWI)
  energy yield from transient nuclear tests (KIWI-TNT), use of Bethe-Tait method for calculation of, 22:32735 (ANL-7310, pp 249-375)
  environmental effects of effluent from Transient Nuclear Test, analysis of, 22:39849 (LA-3449)
  radioactivity content of atmosphere following destructive testing of, γ, 22:28525
  startup transients of clustered, analog simulation of, 22:20900 (WANL-TME-1154)

ROCKET REACTORS (NERVA)
  control circuits for, development of limiter circuits for spurious-signal overriding, 22:1844
  control system for, performance of gamma-compensated neutron flux detector in, 22:28085
  control systems for, description of, 22:1843
  description of components for, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
  development of, design, performance, and applications summary of, 22:16257
  development of, engineering aspects of, 22:39867 (N-68-21402)
  development program for, description of, 22:35576
  development program for, review of, 22:53407
  development status of, review of, 22:25060 (CONF-670445-, pp 18.55-63)
  effluent cloud diffusion from NRX, calculation and measurement of, 22:182 (UCRL-50299)
  effluent from EP IIIA of, radiation measurements of, 22:51569 (LA-3895)
  exhaust duct for, description of, 22:35567 (LA-DC-9555)
  exhaust ducts for, effects of scale build-up on heat transfer in water-cooled hydrogen, 22:21267 (BNWL-632)
  exhaust plumes from operation of, lidar equipment and method for tracking of, 22:47241 (UCRL-13358)
  fuel elements for, reactivity measurements for determining composition of, 22:6083
  instrumentation for, description of, 22:1843
  ionization chambers for, development of compensated, 22:12679 (ANL-7380, pp 161-3)
  materials for, fast neutron radiation effects at -423°F on, 22:32938
  neutron decay rates for, comparison of calculated and measured delayed- and photo-, 22:6081
  power distribution calculations for, effects of graphite crystalline binding on, 22:6071
  pressure transducer for, design and performance of radiation resistance, 22:30925
  radiation protection standards for personnel of, manual of, 22:36255 (NTO-T-0022)
  reactivity feedback in, (E/T), 22:6082
  shielding calculations for, methods for neutron and photon transport in, 22:39851(R) (N-68-13501)
  shielding measurements for, analysis of fast neutron and γ, 22:32942
  shields and structures for, reactivity worth determination using Monte Carlo coupled transport

calculations for external, 22:32937
stability of, comparison between theoretical and experimental determinations of, 22:6085
startup transients of clustered, analog simulation of, 22:20900 (WANL-TME-1154)
structural materials for, radiation effects on mechanical and tensile properties of, 22:4813 (TID-24148)
structures of, radiation effects on, 22:19604
testing and disassembly of, off-site radiation monitoring from, 22:30715 (SWRHL-30-r)
thermocouples for, development of high temperature, 22:14238 (ANL-7380, pp 52-62)
transport system for, development of railroad, 22:4323
transport system for, development of railroad, 22:4322
turbopumps for, effects of radiation on bearings of liquid hydrogen, (E), 22:8789

ROCKET REACTORS (PHOEBUS)
development program for 5000 MW 2A, description of, 22:35568 (LA-DC-9589)
effluent cloud from full power test of, radiation measurements of, (E), 22:12442 (LA-3787)
effluent particle release from 1B, collection and evaluation of large, 22:37511 (LA-3796)
effluent particles from 1B EP-IV test run, beta dose rates from, (E/T), 22:35565 (AD-661221)
fission product distributions in 2A, techniques for measurement of, 22:25065 (LA-DC-9412)
gamma doses in 1B, effects of 360° open-well shield on, 22:48722 (LA-3746)
neutron dose and flux measurements in 1B, effects of 360° open-well shield on fast and thermal, 22:48722 (LA-3746)
shield for, fission neutron flux distributions in, 22:6084
shields and structures for, reactivity worth determination using Monte Carlo coupled transport calculations for external, 22:32937
structural materials for, brazing and welding Inconel-718, 22:23741
test operation effluent cloud from, concentration and size measurements of, 22:35944 (UCRL-50418)

Rocket Reactors (Tory)
see Pluto Reactors (Tory)

ROCKETS
see also Guided Missiles
see also Nose Cones
see also Rocket Motors
design and testing of monorail sled, for simulation of supersonic flight to Mach 6.53, 22:21003 (SC-DC-66-1967)
design modifications for cleansweep III B, for atmosphere sampling, 22:6234 (UCRL-13321)
design of subminiature telemetry module for sampling, 22:47431
development of valves for nuclear, friction evaluation of materials for, 22:8752
equipment for detection and measurement of low-energy x radiation, design of high-resolution proportional spectrometer, 22:28146
exhaust system for nuclear, welding of stainless steel for, 22:26033
instrumentation for Apache, superconducting coil system for use in, 22:10649
neutron detection aboard sounding, design of directional scintillation detector for, 22:36032(R) (N-68-16913)
solar observations from sounding, (T), 22:26195
testing of nuclear, measurement of atmospheric radioactivity from ground, 22:18967 (LA-DC-9093)
use of instrumented, for auroral measurements, 22:17463

ROCKS
see also Carbonaceous Rocks
see also Concretions
see also Igneous Rocks
see also Lava
see also Metamorphic Rocks
see also Phosphate Rocks
see also Sandstone
see also Silicate Rocks
age of Baltic Shield, argon-40/potassium-40 method for estimation of, 22:6474
age of Canadian, rubidium/strontium and strontium-86/-87 methods for estimation of, 22:6435 (MIT-1381-15)
age of Caucasus neovolcanic, geochemical method for estimation of, 22:18919
age of hydrogenous, differential equations for estimation by neutron slowing down, 22:33563
age of Liberian metamorphic, rubidium/strontium method for estimation of, 22:6435 (MIT-1381-15)
age of, argon/potassium method for estimation of, 22:27902
age of, argon/potassium method for estimation of, 22:40215
age of, radiometric methods for estimation of, 22:25518
age of, strontium isotope method for estimation of, 22:30699
age of, uranium-238 fission track method for estimation of, 22:51085
analysis for aluminum, magnesium, and vanadium by neutron activation methods, 22:44975 (MIT-905-125)
analysis for antimony, neutron activation method for, 22:30464
analysis for barium and rare earths in, from Bosumtwi Crater area, Ghana, by isotope dilution, 22:18
analysis for cesium by atomic absorption or x-ray fluorescence, 22:27549
analysis for copper by neutron activation methods, 22:35764
analysis for dysprosium by neutron activation method, 22:44986
analysis for gallium in argillaceous, by single addition method, spectrochemical, 22:23003 (IA-1128, pp 97-146)
analysis for gold by neutron activation using fire-assay preconcentration, 22:30465
analysis for hafnium and tantalum by neutron activation methods, 22:44985
analysis for indium by neutron activation methods, 22:4036
analysis for iodine, activation, 22:42887
analysis for iron and scandium by neutron activation methods, 22:10193
analysis for iron, molybdenum, and titanium using portable radioisotope x-ray fluorescence analyzer, 22:48829
analysis for lead, thorium, and uranium by ion exchange chromatography and colorimetry or isotope dilution, 22:30461
analysis for manganese, neutron activation, 22:4010
analysis for metals, photoneutron and x-radiometric, 22:50948
analysis for phosphorus, by neutron activation methods, 22:16442
analysis for potassium, thorium, and uranium by high-resolution gamma spectroscopy, 22:44980 (NYO-3756-2, Sect. G)
analysis for rare earths by mass-spectrometric isotope-dilution technique, 22:4044
analysis for rare earths by neutron activation, 22:40003
analysis for rare earths by neutron activation methods after chemical group-separation, 22:25286
analysis for rare earths by neutron activation techniques, 22:47079
analysis for silicon by neutron activation methods, 22:25260
analysis for silicon, high-precision activation, 22:4032
analysis for tantalum by cation exchange and neutron activation, 22:50922
analysis for tellurium by atomic absorption spectrophotometry, 22:27550
analysis for thorium isotopes, reference standard for, 22:23137
analysis for thorium, gravimetric and photometric, 22:22946
analysis for thorium-228, radiometric, 22:2376
analysis for traces of antimony, activation, 22:12241
analysis for traces of thorium and uranium by delayed neutron counting, 22:6272
analysis for uranium by carbonate precipitation, 22:42626
analysis for uranium-234 and -238 by alpha spectroscopy, 22:16455
analysis for various elements by spectrographic method, 22:48810 (AERE-R-5799)
analysis of basic and ultrabasic, for rare earths by neutron activation methods, 22:4064
analysis of hydrochloric acid solutions of, for trace amounts of lead, thorium, and uranium, 22:25287
analysis of lunar, use of α-excited x-ray spectrograph for, 22:262 (ORNL-IIC-10(Vol.2), pp 929-43)
analysis of marine, for aluminum by neutron activation methods, 22:21025 (PRNC-104, pp 91-5)
analysis of metamorphic, for mercury, 22:12338(R) (COO-1167-3)
analysis of mountain, for gold, substoichiometric extraction method for neutron activation, 22:30499
analysis of phosphate, for rare earths by atomic-absorption flame photometry, 22:2001
analysis of standard and terrestrial, for antimony, activation, 22:17
analysis of standard, for cerium and europium by neutron activation methods, 22:33259
analysis of ultrabasic, for heavy elements, 22:12338(R) (COO-1167-3)
analysis of ultrabasic, for potassium by neutron activation, 22:48842
analysis of, for thorium and uranium by alpha scintillation counting and gamma spectrometry, 22:33209(T) (NSJ-tr-103)
analysis of, radioactivity methods for, 22:30709
analysis on lunar surface, design of thallium-activated sodium iodide gamma spectrometer for, 22:43083
antimony content in standard and terrestrial, 22:17
beta activity of Bulgarian, measurement of natural, 22:40211
blasting for Abakan--Taishet railway, using massive high explosions, 22:44966(T) (UCRL-Trans-10255)
boron determination in, radiometric methods for, 22:27898
colloid movement through, radioactive tracer method for measurement of, 22:23154
composition of lunar, and gamma radiation from moon, 22:5156
contamination of permeable and impermeable, mechanism of radioactive waste, 22:16802

crater formation in hard dry, use of nitromethane explosive for, 22:4296 (PNE-516)
cratering experiments in hard dry rhyolite, using nitromethanol single charges, 22:42924 (PNE-512-F)
density logging of, filters for gamma--gamma, 22:48919
density of, design and performance of double-beam gamma--gamma densimeter for well logging, 22:2440
density of, gamma absorption method for measuring, 22:25513
density of, gamma densimeter for determination of, 22:30700
density of, relations to gamma absorption, 22:21190
description and global occurrence of carbonatite, 22:18993
distribution of trace elements in common types of, factors affecting, 22:30692 (PNE-5008)
drilling large diameter holes into, using air-assisted, reverse-circulation system, 22:10136 (NVO-38-12)
effects of large-yield underground explosions on, 22:35971
element determination in, use of beta-backscattering method for, 22:28194
equation of state for, Ester data summary of Hugoniot dynamic, 22:47256 (UCID-5034)
equations of state for, analysis of shock wave data to determine Hugoniot, 22:174
excavations in, comparison of conventional and nuclear, 22:6508 (PNE-5010)
faults and fissures in, radon tracer method for determination of, 22:14693
fissures in, autoradiographic determination of, 22:14691
fracturing of underground, use of nuclear explosions for, 22:48972
gamma absorption by, measurement using cesium-137 source, 22:21190
gamma attenuation in, coefficients for, 22:28193
gamma emission from lunar surface, (E), 22:8930
geology of southeastern New York and southern New England, correlation with γ aeroradioactivity, 22:169 (CEX-58.4.6)
ion movement through, radioactive tracer method for measurement of, 22:23154
leaching of uranium from, underground, 22:18899
lead isotope contents in, use of concordia plots to determine, 22:18921
luminescence under proton bombardment, (E), 22:35285(R) (AERE-PR/NP-13)
magnesium isotopic composition in, 22:21031
minor element content in Japanese, 22:4290
moisture content of, gamma absorption method for measurement of, 22:25513
oxygen isotopic compositions in, variations in, 22:30714
physical properties of dry subsurface, at Palanquin Event test site, 22:51124 (PNE-905)
plutonium-239 abundance in, 22:25516
porosity of ground-water-bearing, use of radioactive tracers for measurement of, 22:25508
potassium content in Australian granitic, 22:25521
potassium content in earth mantle basic, 22:2201
processing of phosphate, uranium recovery in, 22:18900
production and supply of serpentine, for Fast Test Reactor shielding, 22:15171 (BNWL-641)
proton reactions with, luminescence from, (E), 22:11113
radiation monitoring of northern New England, 22:2220
radioactive dusts from, effects of, on incidence of pneumoconiosis in animals following inhalation, 22:45683
radioactive elements in, effects of volcanogenic processes on heavy, 22:25506
radioactive waste disposal in water-saturated sedimentary and unsaturated, gaseous, 22:16822
radioactive waste disposal in, by hydraulic fracturing, 22:6436 (ORNL-4168, pp 1-60)
radioactive waste disposal into deep permeable, feasibility studies of, 22:16823
radioactivity in underground granitic, near Salt Lake City, Utah, measurement of, 22:45181
radioactivity of Japanese, radiometric method for measuring, 22:8216
radioactivity of middle Volga region soil-forming, measurement of natural, 22:25520
radioactivity of natural, from Southern Bulgaria, 22:27906
radioactivity of ultramafic, measurement of low-level, 22:14583
radioactivity of, on Pacific Island of Niue, 22:2215
radioisotope distribution in Florida, 22:2204
radionuclides in, methods of determining γ-emitting, 22:2213
radium content and radon release from, effect of earthquakes on, 22:8211
radium content in, effect on radon content of mineral waters, 22:8211
radon diffusion coefficients for, instantaneous source method for measuring, 22:40220
reductive properties of, use for estimation of occurrence of uranium deposits, 22:51112
separation from potatoes, gamma absorption coefficient for use in, 22:37941
separation of cerium and europium from, by ion-exchange chromatography, 22:33259
stresses in underground, from earthquakes and underground explosions, elastic vibration method for calculation of, 22:25557 (SA-6)
strontium-86/-87 ratio in pyroxene granulite, 22:6435 (MIT-1381-15)
thorium and uranium content in, use of lithium-drifted germanium gamma spectrometers for determining, 22:326
thorium content in Australian granitic, 22:25521
thorium content in earth mantle basic, 22:2201
thorium content in granitic, of western Aldan shelf, 22:27935
thorium distribution in Italian volcanic, effect of volcanic processes on, 22:30729
thorium distribution in potassic alkalic, 22:10394
thorium-230 abundance ratios to thorium-228 and uranium-234 in, 22:23137
trace element content of sedimentary, effects on neutron-induced radioactivity, 22:21187
uranium content in Australian granitic, 22:25521
uranium content in earth mantle basic, 22:2201
uranium content in granitic, of western Aldan shelf, 22:27935
uranium content in, fission fragment method for determination of, 22:18915
uranium content of Carpathian, petrographic relations of, 22:42860
uranium distribution in Aldan Shield metamorphic, 22:10403
uranium distribution in carbonate, in Orenburg Province, USSR, 22:10390
uranium distribution in Italian volcanic, effect of volcanic processes on, 22:30729
uranium distribution in potassic alkalic, 22:10394
uranium-234/-238 anomalies in near-surface, in arid regions, 22:18914(T) (AWRE-Trans-55)
use of volcanic, in fixation of radioactive concentrate in glass, 22:23102
waste disposal in hydraulically fractured, 22:2323(R) (ORNL-TM-1887)

Rodents
see common names for specific animals, or Mammalia for general references

RODS
channels formed by closely packed, turbulence scale determination in, 22:21281
diffusion in metallic, tables for deriving coefficients of, 22:6932 (DP-1111)
extrusion using dissimilar metals, methods for, 22:49693 (NP-17605)
flow of steam--water through bundles of, film thickness measurements for spray annular, 22:42958 (CONF-680903-1)
heat transfer from crossed, with normal flow of Freon-113 coolant, 22:240
support system for long, design of, 22:12514(P)

Roentgen Units
see Radiation Standards and Units

Roller Bearings
see Bearings

ROMANIA
fallout monitoring of atmosphere of Bucharest, 1964 to 1966, 22:51103
radiation protection of workers in, standards for, 22:33832
radioactivity of chernozem soils from, as function of titanium and zirconium oxide contents, 22:30690 (IFA-IS-49)

Romashka (U.S.S.R.)
see Nuclear Auxiliary Power Systems

Rongalite
see Formaldehyde Sodium Sulfoxylate

ROOTS
absorption of calcium and strontium from soil by, of lettuce, soybeans, tomatoes, and wheat, 22:23396(R) (COO-1495-6)
calcium-45 uptake and distribution in, of nonleguminous plants, 22:6764
cell phase in excised pea, effects of carbohydrate supply on, 22:28390
chromosome aberrations induced in, of Tradescantia and Vicia following treatment with γ-irradiated glucose solutions, 22:51378
development in relation to uptake of water by plants, 22:23352
development of plant, use of tracer techniques to study, 22:6449
diffusion of water in corn, tritium tracer study of, 22:40597
distribution of phosphorus-32-labeled phosphates in barley, effects of microorganisms on, 22:21414
growth in dormant woody plants, effects of temperature on, 22:33812(R) (NYO-2598-36)
growth in relation to transport of cesium-137 in soil, 22:10739 (BNWL-480, pp 127-51)
growth of artichoke, in vitro, effects of sugars γ-irradiated in aqueous state on, 22:40519
growth of corn, effects of calcium on, 22:33586 (UCLA-12-640, pp 31-44)
growth of plant, physiological mechanisms of, 22:12782
ion uptake by, effects of carbon dioxide on, 22:21011(R) (UCB-34-P-5-47)
ion uptake from soil by, mechanisms for, 22:27526

lead-210 distribution in, of kidney bean plants, effects of citrate ions, 2,4-D, and salts on, 22:6728
membranes of cells of corn, permeability of, to tritium-labeled water, 22:25729
metabolism of nitrates in, of wheat following nitrogen depletion, effects of ammonium and nitrate availability on, 22:25718(R) (ORO-2410-9)
phosphorus-32 uptake by, of Coleus and Tradescantia, 22:40952 (ORO-657, pp 93-120)
polonium-210 distribution in, of kidney bean plants, effects of citrate ions, 2,4-D, and salts on, 22:6728
radiation dose to, following exposure to fast neutrons, effects of soil activation products on, 22:31080
radiation effects on carbon-14 metabolism in, of cotton, effects of seed exposure on cobalt-60 γ, 22:23468
radiation effects on catalase and cytochrome oxidase activities in, of beans and clover, effects of seed exposure on γ, 22:33773
radiation effects on cell cycle and DNA synthesis in excised, of pea plants, effects of carbohydrate supply on x, 22:28390
radiation effects on cellular metabolism and chromosomes of barley, effects of seed exposure to monazite sand on α, β, and γ, 22:8504
radiation effects on flux of calcium, potassium, and water in excised, of onion, micropotometric determination of x, 22:28705
radiation effects on formation of, in tomato plants, effects of boron-10 content on thermal neutron, 22:8651
radiation effects on growth of alfalfa, effects of auxin on x, 22:4704
radiation effects on growth of lateral, in corn, tritium β, 22:23674(R) (NYO-3561-4)
radiation effects on growth of pea, combined effects of growth-inhibitor drugs on x, 22:31284
radiation effects on growth of poplar, effects of light on x, 22:4700(R) (TID-24146)
radiation effects on growth of wheat, γ, 22:28285 (ORNL-4100, pp 135-40)
radiation effects on growth of, in corn seedlings, effects of chemicals on x, 22:31283
radiation effects on growth of, in maize, combined effects of chloramphenicol on x, 22:31278
radiation effects on growth of, in rice plants, effects of seed exposure on cesium-137 γ, 22:28711
radiation effects on growth rate of cells in Vicia faba, RBE for tritium β and cobalt-60 and radium γ, 22:40874
radiation effects on length of, in Yucca plants, effects of seed exposure on γ, 22:8649
radiation effects on mitosis in cells of, of Vicia faba, comparison of proton and x, 22:40960
radiation effects on mitosis in Vicia, bremsstrahlung, 22:49642
radiation effects on, of slash pine seedlings, effects on growth following γ, 22:28710
radiation effects on, of Vicia faba, combined effects of hypoxia and indanetrione on x, 22:49635
radioinduced aberrations of chromosomes in, of beans, effects of oxygen on x, 22:25810
radioinduced aberrations of chromosomes in, of Crepis capillaris, RBE of fast neutron, proton, and x, 22:21488
radioinduced aberrations of chromosomes in, of Crepis capillaris, 22:21487
radioinduced aberrations of chromosomes in, of peas, effects of humidity on frequency of, 22:25806
radioinduced aberrations of chromosomes in, of Vica faba, combined effects of inhibitors of DNA synthesis on x, 22:47505
radioinduced chromosome aberrations in cells of Vicia faba, effects of sulfaguanidine on γ, 22:51543
radioinduced chromosome aberrations in cells of, of peas, γ, 22:25807
radioinduced chromosome aberrations in cells of, of wheat, effects of endosperm exposure on x, 22:14983
radioisotope sorption by, of water-cultured rice plants, effects of low temperature on, 22:40551
radioisotope uptake from soils by, of plants, 22:43233
radium-266 content of, of aquatic plants, 22:47498
response to gravity, effects of starch depletion on, 22:12205(T) (ANL-Trans-545)
rubidium-86 uptake and distribution in, of barley, 22:23471
rubidium-86 uptake by segments of, of corn, effects of potassium chloride on, 22:33775
sorption of biologically-important ions by, effects of uranyl ions on, 22:8494
strontium metabolism by, of wheat, following nitrogen depletion, effects of ammonium and nitrate availability on, 22:25718(R) (ORO-2410-9)
strontium uptake by, of wheat seedlings, effects of ammonium and nitrate availability on, 22:25719(R) (ORO-2410-10)
strontium-89 distribution in, of kidney beam plants, effects of citrate ions, 2,4-D, and salts on, 22:6728

ROSE BENGAL
distribution in human tissue, 22:537
effects on uv- and x-radiosensitivity of mutagenesis in Euglena gracilis, 22:25823
labeling with iodine-131, method for, 22:23399 (IA-1128, pp 213-19)
metabolism of iodine-131-labeled, during abdominal scanning, effects of bile duct obstruction on, 22:51807
preparation of iodine-125- or iodine-131-labeled, 22:40099
use of iodine-131-incorporated, for scanning of liver in human children and infants, 22:31164
use of iodine-131-labeled, for liver scanning, 22:51808
use of iodine-131-labeled, for liver scanning in children, 22:6857
use of iodine-131-labeled, for liver scanning, review of, 22:6858
use of iodine-131-labeled, for scanning liver in man, 22:51793

ROSPO (Italian zero-power reactor assembly)
see Critical Assemblies

Rotary Pumps
see Vacuum Pumps

Rotary Seals
see Seals and Glands

ROTIFERA
Bdelloides sp., radiation effects on survival of, effects of dose on γ, 22:31205 (TID-23280)
periphyton, phosphorus-32 uptake by, in Columbia River, effects of radioisotope content of river on, 22:21591
periphyton, zinc-65 uptake by, in Columbia River, effects of radioisotope content of river on, 22:21591

ROTORS
see also Stators
design and development of alternator, for potassium Rankine nuclear space power system, 22:37903 (CONF-680802-3)
design and performance of alternator, for space power systems, 22:25575 (SAN-679-7)
design for use in Martz collecting centrifuge, 22:28272 (ANL-7278, pp 185-218)
design for use in zonal centrifuges, 22:7984
design of KII zonal centrifuge, engineering drawings for, 22:14650
evaluation of titanium, for centrifuges, 22:12748(R) (ORNL-4171)
magnetic unbalance force on alternator, effects of eccentricity and misalignment on, 22:37902 (CONF-680802-2)

ROVER REACTORS
see also Rocket Reactors (Kiwi)
see also Rocket Reactors (NERVA)
see also Rocket Reactors (Phoebus)
control and safety systems for, instrumentation for, 22:2448 (CONF-671102-30)
fission product distribution in, techniques for measurement of, 22:25065 (LA-DC-9412)
fission product release to atmosphere from, evaluation of safety hazards from, 22:18968 (LA-DC-9094)
fuel elements for, critical measurements for simulated, 22:33058
fuel reprocessing for, pilot plant for headend, 22:33486 (IN-1181)
instruments for, design of, 22:4510
radiation monitoring of iodine-131 content of milk in environs of, 22:17001 (CONF-680108-1)
turbopump vibrations in, testing at 530 to 114ºR for 2000 g, 22:42341 (LA-DC-9331)

Rowboat Project
see Plowshare Project

Rowe Reactor
see Yankee Power Reactor

RSIC (Radiation Shielding Information Center)
see Information Centers

RTM Reactor
see Reactors, Research

RUBBER
see also Neoprene
see also Plastics
see also Silicone Rubbers
analysis of vulcanized, for copper, nickel, and zinc by bremsstrahlung activation, 22:12260
coatings of chlorinated, penetration of iodine into protective, 22:2713 (IN-1095)
elastic properties of, effects of chemical crosslinking on, 22:25396
heat transfer from isomerized hydrocarbon surfaces of, improved liquid wetting angle effects on, 22:10495(P)
production by gamma-induced polymerization of acrylonitrile and NR and SBR latex, effects of emulsifying procedures on, 22:14521
properties of, tabulations of electrical, mechanical, and physical, 22:4731
radiation effects on, 22:4213
radiation effects on BR and SBR vulcanizates, anti-radiation efficiency of organic rubber chemicals on γ, 22:8139
radiation effects on curing of, role of various vulcanizing agents in γ, 22:6326
radiation effects on deterioration of natural and butyl, 22:45113
radiation effects on IIR vulcanizates, γ, 22:8138
radiation effects on structural transformations in, effects of sulfur on γ, 22:47160
radiation effects on structure of, at low temperature, spectral studies on primary and secondary processes in

electron, 22:21098
radiation effects on sulfur-vulcanized, antiradiation efficiency of some organic chemicals in, 22:6325
radiation effects on, protective effects of chemicals on, 22:6322
radioinduced crosslinking of, effects of halogenated alkanes on, 22:33457
radioinduced crosslinking of, elastic properties of polymers from, 22:25396
radioinduced foaming of mixtures of natural or synthetic, with ethylene polymers and a foaming agent, 22:47188(P)
radioinduced modification of properties of, γ, 22:4214
radioinduced oxidation of, at room temperature, kinetics of γ, 22:33417
radioinduced polymerization of acrylonitrile with, physical properties of vulcanizates from γ, 22:6321
radioinduced polymerization of, with acrylonitrile and NR and SBR latex, effects of emulsifying procedures on properties of rubber produced by γ, 22:14521
radioinduced vulcanization of natural latex, industrial, 22:40290 (CEA-R-3345)
radioinduced vulcanization of tire, using spent fuel elements, 22:2283
radioinduced vulcanization of, fast-electron, 22:21101
radiolysis of halogenated, at low temperatures, photosensitivity of paramagnetic species from, 22:23062
radiolysis of, oxidation and unsaturation in γ, 22:47160
wear measurements in tire, use of radioactive tracer techniques for, 22:10518
wear of tires of, use of thallium-204 beta source to measure, 22:45251
wear of, use of γ-x-ray fluorescence to measure, 22:4353 (EUR-3627)

RUBIDIUM
see also Alkali Metals
abundance in solar photosphere, (E), 22:43832
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
atomic weight of, based on carbon-12 = 12, 22:42698
book: Alkali Metal Handling and Systems Operating Techniques, 22:15206
book: Uncommon Metals, 22:10981
chromatographic behavior on cerium phosphate paper, 22:153
circulation and distribution in natural waters around Casaccia, Italy, 22:16811
compounds with uranyl bromides and/or chlorides, infrared spectra of, 22:2042
compounds, analysis for cesium by radioisotope distribution method, extraction chromatography in, 22:40031
condensation in meteorites, (T), 22:5023
content and distribution in earth, method for determination of, 22:23146
content in French rocks, use in age estimation, 22:48928
content in rocks of Central Alps, use in age estimation, 22:6476
content of aquatic plants, 22:19301
content of diet, effects of, on cesium-134 retention in rats, 22:28341
content of erythrocytes, plasma, and urine of diseased, normal, or pregnant man, 22:51297 (COO-119-238)
content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
critical temperatures and vapor density of, 22:19521 (UCID-15269)
crystal stacking fault energies at 170°K, 22:38570
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
density of liquid and vapor, to critical point, method for estimation of, 22:51173
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in glass fragments, activation and mass spectrometric methods for, 22:33205 (AWRE-O-3/68)
determination as trace impurity in silicon oxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by isotope dilution method, mass spectrometric, 22:30463
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in blood by neutron activation methods, 22:12259
determination in clays and kaolins, x-ray fluorescence, 22:22968
determination in G-2 granite samples, isotopic-dilution technique for, 22:22957
determination in geologic materials by isotope dilution for use in age estimation, 22:30698
determination in geologic materials, x-ray-fluorescence method for, 22:48914(R) (COO-689-100)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in GSP-1 sample of granodiorites by isotope dilution, 22:22956
determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
determination in human saliva by neutron activation methods, 22:14464
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in mineral salts by activation methods, 22:4049
determination in nutrient broth by neutron activation analysis, 22:51408
determination in ocean water at two Atlantic stations, atomic absorption method for, 22:27563
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in salmon tissues by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination of a visual complexometric, 22:33273
determination of, using atomic absorption spectrophotometer, 22:30459
diffusion in sodium at 0 to 98°C, tracer studies of, 22:17121
diffusion in zirconium, effects of temperature on, 22:41016
distribution between fused salts and liquid metals in fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on hydrogen peroxide yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 78-96)
effects on potassium metabolism in chicks, 22:21460(R) (COO-1171-82)
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
elastic properties of, 22:21696(R) (ORO-2861-5)
electric conductivity of liquid, experimental and theoretical, 22:43565(R) (COO-841-15)
electron reactions at 250 to 2200 eV with, energy dependence of single- and double-ionization cross sections for, (E), 22:17407
electron reactions with atomic, ionization cross sections for, (T), 22:17362
electron reactions with, ionization by slow, 22:43885
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
excretion by beagle dogs, effects of cesium, lithium, or rubidium chlorides on, 22:30936 (UCRL-50405)
fixation in vermiculite and hydrobiotite, 22:42850
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
ion exchange by chromium, titanium, and zirconium phosphates, 22:12291
ionization coefficients of atoms of, on tungsten and platinum surfaces, (E), 22:52496
oxidation by dry oxygen as a function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
phase properties of, determination of, 22:32735 (ANL-7310, pp 249-375)
photo-ionization absorption continua for vapors of, 22:29201
plasma of, thermodynamic functions at 2,000 to 25,000°K and 10^{-*} to 100 atm, (T), 22:26411
polarizability measurements of atoms of, 22:34242 (CCO-1112-164)
polarographic behavior in cyclic propylene ester of carbonic acid, 22:30547
Prandtl number of gaseous, 22:36451(R) (AGN-8284)
properties of, data tabulations on thermophysical, 22:31343 (AGN-8195(Vol.1))
proton reactions at 2 to 30 keV with, energy dependence of H(2s) production in (E), 22:1011
proton reactions at 2 to 50 keV with, cross sections for charge exchange in, (E), 22:21845 (NYO-2962-6, pp 63-9)
radioisotopes produced by cosmic radiation during space flight, 22:19400(R) (BNWL-531-1)
reactions of atomic, with helium, hydrogen, and neon, cross sections for fine-structure transitions in, (E/T), 22:2800

- reactions of, spin-exchange cross sections for atomic, (E/T), 22:26264
- reactions with inert gases, cross sections for 5^2P/sub 1/2/ in equilibrium 5^2P/sub 3/2/ excitation transfer for adiabatic, (E), 22:38758
- reactions with molecular chlorine, kinetics of crossed beam, (E), 22:41314
- reactions with rare gas atoms, mixing in ^2P state in inelastic, (T), 22:29264
- reactions with rubidium ions at 10 to 500 eV, total cross sections for resonant charge exchange in, (E), 22:47826
- scattering by argon, krypton, and xenon, total cross sections for, (E/T), 22:11235
- scattering by krypton, total cross section for, (E), 22:15341
- separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
- separation from aqueous acid solutions by solvent extraction using nitrobenzene and nitromethane, comparison of, 22:6415
- separation from arsenic by paper chromatography, 22:25257
- separation from cesium by extraction chromatography, 22:40031
- separation from metals simultaneously with other alkali metals, ion exchange, 22:37866
- separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
- separation from other alkali metals by solvent extraction using bis(2-ethylhexyl) phosphate, effects of 4-sec-butyl-2(α-methylbenzyl)phenol on, 22:16691
- separation from other alkali metals, chromatographic, 22:45173
- separation from other alkali metals, ion exchange, 22:37867
- separation from other metals and other alkali metals by ion-exchange paper chromatography, 22:18881
- separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
- separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
- separation from titanium by paper chromatography, 22:25257
- separation from tungsten by paper chromatography, 22:25257
- solvent properties of liquid, for transition metals, 22:15187 (UCRL-50315)
- sorption by manganese dioxide from nitric acid, 22:157
- sorption by silicates, effects of pressure on, 22:31503
- sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
- surface tension of liquid, in ultrahigh vacuum, (E), 22:17459
- thermal conductivity of vapors of, at 500 to 3000°K, (E/T), 22:13002 (CU-2660-37)
- uptake by roots of barley, effects of uranyl ion on, 22:422 (RLO-1547-4)
- use in New Zealand atomic clock, 22:8423
- vapor pressure and surface tension of, data tabulations on, 22:10945 (EUR-3653)
- vaporization of liquid, to critical point, method for calculation of, 22:51173
- viscosity at 900 to 1500°K, method for prediction of, 22:8753
- viscosity of vapors of, 22:14478 (CU-2660-39)
- viscosity of vapors of, to 1000°C and 0.4 to 5 atm, 22:38554

RUBIDIUM ACID PHOSPHATES
- radiation effects on thermoluminescence of, x, 22:30635
- radiation effects on, oxidation states and recoils formed by thermal-neutron, 22:42724 (COO-1618-8)

RUBIDIUM ALLOYS AND SYSTEMS
- graphite--Rb, phase equilibria and thermodynamic properties of, 22:4898
- Na--Rb, thermodynamic properties of, at 384°K, 22:25321 (ANL-7375, pp 95-134)
- O--Rb--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
- Pu--Rb, phase studies of, 22:2655

RUBIDIUM AMERICIUM FLUORIDES
- crystal structure, 22:85

RUBIDIUM ASTATIDES
- thermal properties at 0 to 300°K, 22:45078

RUBIDIUM BROMATES
- radiolysis of, yields in electron, 22:16589

RUBIDIUM BROMIDES
- neutron total cross section at 30 to 650 keV, (E), 22:20578 (WASH-1079)
- neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
- radiation effects on single crystals of, temperature dependence of diffusion of krypton from, (E), 22:34792
- radioinduced F centers at 78°K in crystals of, effects of bromine K edge energy on x, (E), 22:44206 (CONF-680902-3)
- radioinduced F centers in, at 78 and 300°K and 13.4 or 14.1 keV, x-, (E), 22:31945 (TID-24503)
- radioinduced F centers in, energy required for x, (E), 22:5421 (PRNC-106)

RUBIDIUM CHLORATES
- radiolysis of, yields in electron, 22:16589

RUBIDIUM CHLORIDES
- analysis for chloride, coulometric, 22:9(R) (NBS-TN-425)
- defects in crystals of, Stark effect on F-center emission band, (E/T), 22:15567 (NYO-3564-9)
- effects on temperature of maximum density of normal and heavy water, 22:42684
- effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
- electric dipole moments of, from radio-frequency Stark spectra, 22:5045 (UCRL-17909)
- phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
- photoeffect quantum yields from, (E), 22:38799
- properties of compressed forms of, x-ray analysis of, 22:13036 (BNWL-473, pp 7.1-71)
- radiation effects on single crystals of, temperature dependence of diffusion of krypton from, (E), 22:34792
- radioinduced color centers in, Stark effect in x-, 22:22199 (COO-1105-128)
- reactions with uranium oxides UO_3 and U_3O_8, properties of diuranates from, 22:40089
- spectra at 80°K on thin films of, Cl^- L_{23} absorption, (E), 22:46228
- CsCl--RbCl, radiation effects on, oxidation states of recoil radioiodine from proton, 22:25389

RUBIDIUM CHLOROURANATES
- preparation of $RbUCl_6$, 22:27651
- spectra of $RbUCl_6$, ESR and ir, 22:27651

RUBIDIUM CURIUM FLUORIDES
- crystal structure, 22:85

RUBIDIUM FLUORIDES
  - see also Rubidium Manganese Fluorides
  - see also Rubidium Protactinium Fluorides
  - see also Rubidium Thorium Fluorides
  - see also Rubidium Uranium Fluorides
- color centers, in electron-irradiated, optical studies of, 22:13568
- electric dipole moments of, from radio-frequency Stark spectra, 22:5045 (UCRL-17909)
- radiation effects on single crystals of, temperature dependence of diffusion of krypton from, (E), 22:34792
- reactions with uranyl fluorides in aqueous solutions, chemical, ir, and x-ray spectrographic study of compounds from, 22:45086
- H_2O--MoO_3--RbF, phase studies and compound formation in, 22:45080
- H_2O--RbF--WO_3, phase studies and compound formation in, 22:45080
- NpF_5--RbF, preparation and structure of, 22:30555
- PaF_4--RbF, preparation and structure of, 22:30555
- PuF_5--RbF, preparation and structure of, 22:30555

RUBIDIUM HALIDES
- color centers in, empirical relationships for emission energies and lifetimes of F, 22:13537 (ORNL-TM-2054)

RUBIDIUM HYDRIDES
- thermodynamics of, 22:12958

RUBIDIUM IODIDES
- iodine-127 nuclear acoustic quadrupole resonance in, 22:11530
- luminescence of, photon- and γ-induced, 22:29560
- radiation effects on single crystals of, temperature dependence of diffusion of krypton and xenon from, (E), 22:34792
- rubidium-85 and rubidium-87 nuclear acoustic quadrupole resonance in, 22:11530

RUBIDIUM IONS
- chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
- chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- detection system for fuel can release of, description of, 22:10110(P)
- effects on cesium emission intensity in hydrogen flames with various mixtures of nitrogen--oxygen, 22:27573
- implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
- reactions with rubidium atoms at 10 to 500 eV, total cross sections for resonant charge exchange in, (E), 22:47826
- scattering by molybdenum monocrystals at 0.3 to 4 keV, coefficients for, 22:5128
- sorption by roots of plants, effects of uranyl ions on, 22:8494
- uptake by barley roots, mechanism of, 22:31004
- uptake by Chlorella pyrenoidosa, 22:21011(R) (UCB-34-P-5-47)

RUBIDIUM IRON FLUORIDES
- magnetization near Neel point, measurements using iron-57 Moessbauer effect, (E), 22:46253

RUBIDIUM IRON SULFATES
- crystal field splitting in Tutton salt, from Moessbauer studies, (E), 22:26459

RUBIDIUM ISOTOPES
- diffusion of fission product, from uranium dioxide fuel elements, 22:2709 (RT/FIMA-(67)2)
- production by proton reactions with strontium and yttrium

at 660 MeV, (E), 22:35283
production in proton fission of uranium, cross sections for, (E), 22:27168
production of $A \doteq 83$ to 98, in proton fission of uranium-238 at 150 MeV, (E), 22:30033
separation of, 22:37938 (ORNL-4271)
yields in plutonium-239 thermal neutron fission, (E), 22:44680(R) (IN-1189)

RUBIDIUM ISOTOPES Rb-78
gamma spectra of, line intensities in, (E), 22:42002
production by proton spallation of tantalum at 10.5 GeV, (E), 22:24879

RUBIDIUM ISOTOPES Rb-79
gamma spectra of, line intensities in, (E), 22:42002
production by proton spallation of tantalum at 10.5 GeV, (E), 22:24879

RUBIDIUM ISOTOPES Rb-81
gamma spectra, (E), 22:35283

RUBIDIUM ISOTOPES Rb-82
beta and electron-capture decay scheme of isomeric, γ spectra and log-ft values for, (E), 22:35283

RUBIDIUM ISOTOPES Rb-83
energy levels from beta decay of strontium-83, (E), 22:18200
energy levels from strontium-83 decay, conversion coefficients and spin-parity assignments for, (E), 22:26960
energy levels from strontium-83 decay, spin-parity assignments for, (E), 22:39623
energy-level transitions from strontium-83 decay, conversion coefficients and multipolarities of, (E), 22:27001
gamma spectra, (E), 22:35283
isomeric transition in, M2, (E), 22:26960

RUBIDIUM ISOTOPES Rb-84
beta transitions in, β-γ directional correlations for anomalous first-forbidden, (E), 22:3740
clearance from heart muscle, coincidence counting technique for measurement of, 22:12881
content of heart muscle, in relation to coronary disease, 22:12881
electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
energy level at 250 keV, half-life of, (E), 22:18237
energy levels of, lifetime measurements using delayed coincidence method, (E), 22:32643
gamma spectra, (E), 22:35283
yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

RUBIDIUM ISOTOPES Rb-85
atomic g-factor measurement in, 22:38784
energy levels from electron-capture decay of strontium-85, (E), 22:7674
energy levels of, electronic g factors for, 22:9056
energy levels of, g/sub I//g/sub J/ ratios for atomic, (E), 22:956
energy-level transition probabilities for, l-forbidden M1, (T), 22:39708
hyperfine structure and lifetime of 7 ^2P/sub 3/2/ state of, (E), 22:34284
hyperfine structure of 7 $^2P(^1/_2)$ state of, 22:9066
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture at 0.1 to 2 MeV, cross section for, (E), 22:37312 (ANL-7450, pp 105-7)
neutron capture by, Q-value for, (E), 22:45093 (COO-1618-9)
neutron capture cross section and resonance integral for, thermal, (E), 22:9815
neutron capture cross section at 0.005 to 3 MeV, (E), 22:32596
neutron reactions (n,2n) at 12.6 to 19.6 MeV, excitation function and isomeric cross-section ratios for, (E), 22:42006
neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
neutron reactions (n,α) at 14.8 MeV, cross sections for, (E), 22:48499
nuclear acoustic quadrupole resonance in rubidium iodides, 22:11530
nuclear magnetic moment of ground state of, (T), 22:39708
nuclear magnetic moment of, measurement using atomic-beam magnetic-resonance technique, (E), 22:18177
nuclear quadrupole moment, (E), 22:34284
proton reactions (p,n) at 2.3 to 5.6 MeV, excitation functions for, (E), 22:18159
reactions with rubidium-85 atoms, spin-exchange cross sections for, (E), 22:45963
reactions with rubidium-85, EPR measurements of spin-exchange cross sections for, 22:31594 (COO-1112-159)
spectra of, atomic beam study of isotope shift relative to rubidium-87, 22:52506
yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
yields in thermal fission of uranium-233 and -235, absolute, (E), 22:24855(R) (IN-1157(Rev.))

RUBIDIUM ISOTOPES Rb-86
beta and gamma decay energies from rubidium-85 neutron capture, total, (E), 22:45093 (COO-1618-9)
beta decay of, β shape factor for, (E), 22:53105
beta transitions in, β-γ directional correlations for anomalous first-forbidden, (E), 22:3740
determination in biological materials, development of γ-spectrometer assembly for, 22:50934
diffusion through capillary membranes in dogs, 22:25733
electron-capture decay of, branching ratio for, (E), 22:13982
gamma spectra, (E), 22:35283
metabolism by dogs, guinea pigs, mice, and rats, 22:12760(T) (UCRL-Trans-10175)
metabolism by guinea pigs, 22:12761(T) (UCRL-Trans-10179)
metabolism in man, determination of, by double tracer technique, 22:36164
metabolism in rats following oral administration, 22:25762
radiation effects on metabolism of, in rats, x, 22:51483
separation from cesium-134, focusing ion exchange, 22:45169
sorption by roots of rice plants, effects of low temperature on, 22:40551
uptake by bush bean plants, 22:25800 (UCLA-12-668, pp 37-58)
uptake by corn root segments, effects of potassium chloride on, 22:33775
uptake by erythrocytes of man with benign and malignant lung diseases, 22:40546
use as tracer to determine distribution and performance of barley root systems in soil, 22:23471
use for measurement of blood circulation in muscle capillaries of dogs, 22:25733
use for scanning blood circulation in heart, 22:25952

RUBIDIUM ISOTOPES Rb-87
abundance in Norton County achondrite, (E), 22:13166
atomic g-factor measurement in, 22:38784
concentration by countercurrent electromigration of fused rubidium nitrate, 22:33532
content in processed milk in US, 22:10378
content ratio to strontium-86 in plutonic igneous rocks in Antartica, 22:175
content ratio to strontium-86 in sulfide ores, 22:50935
determination in iron meteorites, (E), 22:21797
energy level lifetime of, first excited atomic, 22:5073
energy levels from krypton-87 beta decay, (E), 22:13988
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, electronic g factors for, 22:9056
energy levels of, g/sub I//g/sub J/ ratios for atomic, (E), 22:956
energy-level transition probabilities for, l-forbidden M1, (T), 22:39708
hyperfine structure and lifetime of 7 ^2P/sub 3/2/ state of, (E), 22:34284
hyperfine structure of, atomic beam study of, 22:52506
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture by, Q-value for, (E), 22:45093 (COO-1618-9)
neutron capture cross section for, fast, (E), 22:27086 (ANL-7375, pp 176-7)
neutron capture cross sections at 0.15 to 1.4 MeV, (E/T), 22:3648
neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
neutron reactions (n,α) at 14.8 MeV, cross sections for, (E), 22:48499
nuclear acoustic quadrupole resonance in rubidium iodides, 22:11530
nuclear g-factors and magnetic moments from NMR measurements, (E), 22:5779
nuclear magnetic dipole moment of, measurement using atomic-beam magnetic-resonance technique, (E), 22:16054 (BMwF-FBK-67-80)
nuclear magnetic moment of ground state of, (T), 22:39708
nuclear magnetic resonance and spin density of, in rubidium trifluorocobaltate, (E), 22:26517
nuclear magnetic resonance in rubidium trifluorocobaltates, (E), 22:34774
nuclear quadrupole moment, (E), 22:34284
proton reactions (p,n) at 2.3 to 5.6 MeV, excitation functions for, (E), 22:18159
proton reactions (p,n) at 4.6 to 6.2 MeV, isobaric analog resonances in, (E), 22:15978
reactions with rubidium-87 atoms, spin-exchange cross sections for, (E), 22:45963
reactions with rubidium-87, EPR measurements of spin-exchange cross sections for, 22:31594 (COO-1112-159)
spectra of, atomic beam study of isotope shift relative to rubidium-85, 22:52506
yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)

- yields in thermal fission of uranium-233 and -235, absolute, (E), 22:24855(R) (IN-1157(Rev.))

RUBIDIUM ISOTOPES Rb-88
- beta and gamma decay energies from rubidium-87 neutron capture, total, (E), 22:45093 (COO-1618-9)
- beta decay of, strontium-88 energy levels from, (E), 22:29983 (MIT-905-108, pp 1-32)
- beta decay scheme of, branching ratios and log-ft values for, (E), 22:26942
- beta transitions in, β-γ correlation study of first-forbidden, (E), 22:15973
- nuclear magnetic moment and hyperfine structure constants for, (E), 22:27233
- nuclear spin, hyperfine-structure separation, and magnetic moment of, (E), 22:15971

RUBIDIUM ISOTOPES Rb-89
- production by 15-MeV alpha reaction (α,n) with krypton-86, 22:4207

RUBIDIUM ISOTOPES Rb-90
- beta decay of normal and isomeric, β and γ spectra for, (E), 22:27168
- half-life, (E), 22:27168
- nuclear spin of normal and isomeric, 22:27168

RUBIDIUM ISOTOPES Rb-91
- beta decay of, β and γ spectra for, (E), 22:22601
- decay studies of fission-product, (E), 22:30030
- half-life, (E), 22:27168

RUBIDIUM ISOTOPES Rb-92
- half-life, (E), 22:27168
- neutron emission probability for, (E/T), 22:29994
- separation from fission product decay chains using moving tape collector, 22:49023 (IS-1893)

RUBIDIUM ISOTOPES Rb-93
- gamma spectra, (T), 22:7706
- half-life, (E), 22:27168
- neutron emission probability for, (E/T), 22:29994

RUBIDIUM ISOTOPES Rb-94
- gamma spectra, (T), 22:7706
- half-life, (E), 22:27168
- neutron emission probability for, (E/T), 22:29994

RUBIDIUM ISOTOPES Rb-95
- half-life, (E), 22:27168

RUBIDIUM ISOTOPES Rb-96
- half-life, (E), 22:27168

RUBIDIUM MANGANESE FLUORIDES
- electron resonance studies of critical fluctuations in, (E/T), 22:24412 (UCRL-18119)
- fluorine-19 nuclear acoustic resonance in antiferromagnetic, detection of, (E), 22:17749
- neutron inelastic magnetic scattering near the Neel point, (E), 22:24818
- nuclear magnetic resonance in, measurement of, (E), 22:17749
- spin waves in, excitation by parallel pumping of nuclear and electronic, (E), 22:17759
- spin waves in, parallel pumping of electronic and nuclear, (T), 22:11556
- spin-wave relaxation rates in, between 2.4 and 10.5°K, electronic and nuclear, (E), 22:48149(R) (COO-1488-13)

RUBIDIUM NEPTUNIUM FLUORIDES
- crystal structure, 22:85
- crystal structure of $Rb_7Np_6F_{31}$, 22:2080

RUBIDIUM NICKEL FLUORIDES
- fluorine-19 NMR line shift in, temperature dependence of, (E), 22:1321

RUBIDIUM NITRATES
- see also Rubidium Uranyl Nitrates
- radiolysis of, yields in electron, 22:16589
- rubidium-87 concentration in fused, by countercurrent electromigration, 22:33532
- $AgNO_3$--$RbNO_3$, electric conductivity of, at 180 to 340°C, 22:27619 (CEA-N-816, pp 90-101)

RUBIDIUM OXIDES
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- Rb_2O--U_2O_5, compound formation and structure in, 22:12316
- Rb_2O--U_2O_5, magnetic properties of, 22:12318

RUBIDIUM PHOSPHATES
- polymers, radiation effects on polymerization of glasses of, ESR studies on, 22:4180

RUBIDIUM PLUTONIUM FLUORIDES
- crystal structure, 22:85
- crystal structure of $Rb_7Pu_6F_{31}$, 22:2080

RUBIDIUM PROTACTINIUM FLUORIDES
- crystal structure of $Rb_7Pa_6F_{31}$, 22:2080

RUBIDIUM SULFATES
- decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
- effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)

RUBIDIUM THORIUM FLUORIDES
- crystal structure of $Rb_7Th_6F_{31}$, 22:2080

RUBIDIUM THORIUM FORMATES
- preparation and properties of, 22:33322
- spectra of, ir, 22:37764

RUBIDIUM THORIUM NITRATES
- structure of crystalline hydrates of, ir spectral studies on, 22:12300

RUBIDIUM TRIFLUOROCOBALTATES
- hyperfine interactions and spin-density space oscillations in cubic, (E), 22:26517
- spin density at cobalt, fluorine, and rubidium nuclei, determination using NMR, 22:34774

RUBIDIUM URANIUM FLUORIDES
- crystal structure, 22:85
- crystal structure of $Rb_7U_6F_{31}$, 22:2080
- paramagnetic resonance spectra of $RbUF_6$, 22:18769

RUBIDIUM URANYL BROMIDES
- spectra of, ir, 22:2042

RUBIDIUM URANYL CHLORIDES
- bonding and interactions in, ir spectral studies on, 22:12299
- spectra of, ir, 22:2042

RUBIDIUM URANYL FLUORIDES
- structures of $RbUO_2(OH)_2F.1.5H_2O$ and $Rb_5(UO_2)_2(OH)_4F_5.1.5H_2O$, 22:45083

RUBIDIUM URANYL NITRATES
- crystal structure of, x-ray diffraction studies of, 22:18738(R) (MLM-1417)
- luminescence spectra of, fine structure in, 22:16549
- preparation of single crystals of, 22:25440(R) (MLM-1443)
- uranium-233 deposition of surface of single crystal of, 22:25440(R) (MLM-1443)

RUBIES
- crystal growth and purity of single-crystal, prepared by electron-beam float-zone technique, 22:52289
- radiation effects on, alpha and gamma, 22:20095
- radioinduced electric conductivity in, gamma, (E), 22:13553
- radioinduced luminescence in, x-ray, (E), 22:11507
- spectra of, far-infrared, 22:39970 (UCRL-18229)
- use in fluorescence dosimetry, 22:43112

Rubrene
- see Naphthacene, 5,6,11,12-Tetraphenyl-

Rufigallic Acid
- see Anthraquinone, 1,2,3,5,6,7-Hexahydroxy-

Rulison Project
- see Plowshare Project

RUPTURE
- see also Thermal Rupture
- analysis of creep and stress, least squares method for, 22:270 (GEMP-555)
- book: Fracture of Structural Materials, 22:4791
- crack initiation mechanisms of ductile carbon steel pipe, 22:646(R) (BMI-1817)
- fatigue fracture, analysis, 22:23765 (TRG-Report-1294)
- mechanics of fracture-type, relations with flaw growth in structural materials, 22:52170
- mechanics of structural material, principles of, 22:4791
- mechanisms of creep and stress, review of parameters of, 22:270 (GEMP-555)
- mechanisms of crystalline solid, 22:28728
- mechanisms of ductile pipe, analysis of, 22:26036(R) (BMI-1836)
- mechanisms of metal, model of, 22:49719 (TRG-Report-1293)

Rural Cooperative Power Association Reactor
- see Elk River Power Reactor

RUSSELLVILLE POWER REACTOR
- auxiliary and emergency systems for, preliminary safety analysis of, 22:22678 (DOCKET-50313-3)
- buildings for, prestressing tendon design for Class I, 22:44813 (DOCKET-50313-10)
- buildings for, wind-loading and tornado criteria for, 22:46892 (DOCKET-50313-11)
- containment building for, analytical method for calculating shear stress limits and shear reinforcing in, 22:42187 (DOCKET-50313-8)
- containment building for, description of prestressing system for, 22:42187 (DOCKET-50313-8)
- containment structure and liner for, preliminary safety analysis of design of, 22:39757 (DOCKET-50313-7)
- containment structure for, design of anchor plate liners for, 22:44813 (DOCKET-50313-10)
- containment system for, design criteria for penetrations for, 22:42187 (DOCKET-50313-8)
- containment system for, preliminary safety analysis of, 22:22678 (DOCKET-50313-3)
- containment system for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
- containment systems for, preliminary safety analysis of design of, 22:39757 (DOCKET-50313-7)
- containment systems for, quality control program for, 22:46892 (DOCKET-50313-11)
- control systems and instrumentation for, preliminary safety analysis of, 22:22678 (DOCKET-50313-3)
- control systems and instrumentation for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
- cooling system for, preliminary safety analysis of, 22:22678 (DOCKET-50313-3)
- cooling system for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
- core for, preliminary safety analysis of design of, 22:22678 (DOCKET-50313-3)
- core for, preliminary safety analysis of design of, 22:42186 (DOCKET-50313-5)
- design of, comparison of General Design Criteria and, 22:18412 (DOCKET-50313-1)
- electrical systems for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
- emergency and auxiliary systems for, preliminary safety

analysis of, 22:42186 (DOCKET-50313-5)
Emergency Core Cooling System for, effects on core and internals of operation of, 22:39756 (DOCKET-50313-6)
engineered safeguards for, analysis of operation under accident conditions of, 22:39756 (DOCKET-50313-6)
engineered safeguards for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
fuel storage pool at, analysis of effects of design basis tornado on spent, 22:39758 (DOCKET-50313-9)
license for, application to AEC for, 22:22677 (DOCKET-50313-2)
operation of, preliminary safety analysis of proposed, 22:22679 (DOCKET-50313-4)
owners of, financial and personnel information on, 22:50725 (DOCKET-50313-12)
piping for, design standards for NDT for, 22:46892 (DOCKET-50313-11)
power systems for, description of guaranteed, 22:39756 (DOCKET-50313-6)
radiation protection and waste disposal at, preliminary safety analysis of, 22:22679 (DOCKET-50313-4)
safety and control systems for, description of logic for, 22:39756 (DOCKET-50313-6)
site for, environmental effects of hypothetical accidents at, 22:39756 (DOCKET-50313-6)
site for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
site for, safety investigation of Dardanelle lock and dam near, 22:42186 (DOCKET-50313-5)
site for, seismologic and hydrologic factors for, 22:39757 (DOCKET-50313-7)
siting of, preliminary safety analysis of, 22:22678 (DOCKET-50313-3)
steam and power conversion system for, preliminary safety analysis of, 22:42186 (DOCKET-50313-5)
technical specifications for, 22:22679 (DOCKET-50313-4)
testing of, preliminary safety analysis of proposed initial, 22:22679 (DOCKET-50313-4)

Russia
see Soviet Union

Russian Reactors
see Reactors, U.S.S.R.

RUTHENATES
see also Chlororuthenates
see also Sodium Ruthenates

RUTHENIUM
abundance in photosphere, (E), 22:23934
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
analysis of surfaces of, using helium field-ion microscopy, 22:10995
atomic weight of, based on carbon-12 = 12, 22:42698
book: Uncommon Metals, 22:10981
chemical properties of, 22:12181(R) (ORO-3542-2)
chemistry of, analysis by fluoride volatility technique, 22:9988(R) (ANL-7391)
chemistry of, as related to TBP extraction process, 22:40052 (KR-126, pp 101-19)
chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
complexes of, chemistry of, research progress on, 22:12181(R) (ORO-3542-2)
complexes with 1,1,1,5,5,5-hexafluoro-2,4-pentanedione, separation of, from cobalt hexafluoroacetylacetonates, gas chromatographic, 22:51075
complexes with 2,2'-bipyridine, structure of, 22:42641
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with EDTA, preparation and spectra of, 22:35810
content in plutonium from spent fuels, 22:27856(R) (K-1738)
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
decontamination in first contactor in TBP fuel reprocessing, 22:16678
decontamination in TBP extraction systems for fuel reprocessing, 22:16677
deposition on single crystals of copper, cracking and strength of films from, 22:17116(R) (ORO-3401-3)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
determination in binary alloys with nickel, x-ray spectrographic, 22:4 (AERE-R-5452)
determination in carbonaceous and enstatite chondrites, activation, 22:22
determination in fuel reprocessing plant streams, 22:16356 (KR-116)
determination in irradiated uranium dioxide fuel pins, electron probe, 22:25321 (ANL-7375, pp 95-134)
determination in platinum by neutron activation methods, 22:27570
determination in presence of rhodium, spectrophotometric, 22:1978
determination in solutions from processing of irradiated plutonium, 22:37640(T) (ANL-Trans-628, pp 2-50)
determination in uranium dioxide--ruthenium and plutonium dioxide--uranium dioxide--ruthenium cermets, spectrophotometric, 22:7986 (AERE-R-5617)
determination in uranyl nitrate solutions, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
determination of, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination of trace amounts of, in presence of noble metals using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, spectrophotometric, 22:22975
determination of, chelate formation for, 22:42641
determination of, titrimetric micro-, 22:27577
determination simultaneously with osmium, neutron activation method for, 22:27842
determination using 2,4,6-tri-2-pyridyl-s-triazine, spectrophotometric, 22:40015
deuteron elastic scattering at 13.6 MeV, diffraction structure in angular distributions for, (E), 22:48501
diffusion from neutron-irradiated graphite--uranium carbide--uranium dioxide systems, 22:45140 (BMwF-FBK-68-08)
distribution in irradiated PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuel elements, analysis of, 22:32743(R) (BNWL-739)
distribution in products from fuel reprocessing by fluidized-bed fluoride volatility process, 22:30664
distribution on ion exchanger of Napolitan yellow tufa, 22:35883 (EUR-3922)
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on deuterium exchange reactions with organic compounds, 22:35819
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on superconducting transition temperature of monoclinic $Al_{13}Os_4$, 22:52687
effects on thermal conductivity of niobium, 22:45774
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
physico-chemical characteristics and radioecology of, in aquatic systems, bibliography on, 22:51486 (CEA-BIB-123)
purification by solvent extraction using carbon tetrachloride, 22:18884
radiation effects on retention of, in TBP, 22:16683
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
reactions with halogens, 22:51045 (ANL-7425, pp 42-93)
ruthenium-99 Moessbauer effect in, γ-decay symmetry tests with, 22:3160 (BNL-11696)
separation from actinides, methods for, 22:25455 (CEA-N-616, pp 295-368)
separation from alkaline waste solutions by contact with hydrated titanium oxide, 22:4265(P)
separation from aqueous radioactive waste by volatilization, 22:51064
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from electrolyte by oxidation with ozone, 22:4295(R) (ORNL-TM-2062)
separation from feed solutions in fuel reprocessing prior to solvent extraction, 22:40166 (KR-126, pp 87-100)
separation from fission products by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33271
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from gaseous effluents using fluidized bed, method for, 22:25454 (CEA-N-616, pp 246-94)
separation from irradiated fuels by fluidized-bed volatility process, 22:8181
separation from low-level waste by ion exchange, 22:47206(T) (ORNL-tr-1771)
separation from neutron-irradiated uranium dioxide by volatilization, 22:25476
separation from nitric acid solutions of plutonium and uranium by solvent extraction using trioctylamine, 22:21166
separation from osmium by distillation from peroxide--sulfuric acid solution, 22:44990
separation from other fission products by electrophoretic focusing of ions, 22:35912
separation from other materials by ion exchange using tin phosphate, 22:33552
separation from plutonium, 22:37837(R) (K-1744)
separation from plutonium, 22:23099(R) (K-L-1780(Pt.23)
separation from plutonium by solvent extraction using nitromethane, 22:33521
separation from plutonium in fluoride volatility process, evaluation of procedures for, 22:35881 (ANL-7450, pp 21-38)
separation from plutonium using fluoride chemistry, 22:12006(R) (ANL-7399)

separation from plutonium, use of transpiration technique for, 22:30118 (ANL-7438)
separation from reactor fuel effluents and solutions, precipitation method for, 22:37842(P)
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from sulfuric acid solutions by solvent extraction using amines, 22:27869
separation from TBP by adsorption, materials for, 22:25452 (CEA-N-616, pp 154-214)
separation from uranium by solvent extraction, 22:16356 (KR-116)
separation from uranium by solvent extraction using phosphonates, phosphinates, and phosphine oxides, 22:42816 (UJV-1921)
separation from uranium hexafluoride by selective sorption techniques, 22:4240
separation from various elements by solvent extraction using carbon tetrachloride, 22:18884
sorption by ferric hydroxide, ion-exchange materials, and porphyran, 22:12456 (PG-Report-819)
sorption by manganese dioxide from nitric acid, 22:157
sorption of radioactive, on ferrous hydroxide, effects of colloidal and ionic states on, 22:27720
structure of cluster, 22:27517(R) (MIT-1965-63)
superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
surface friction of riders of, sliding on ruthenium, 22:52177
transport of radioactive, through simulated aquifers, effects of ground water on, 22:23142
volatility during pot and spray calcination of radioactive waste, 22:47306(R) (BNWL-771)
volatility of fission-product, in fixation of radioactive wastes in glass, 22:23094(R) (IAEA-3431-4)

RUTHENIUM ALLOYS AND SYSTEMS
Ce--Ru, thermal capacity of Laves phase CeRu$_2$ at low temperatures, 22:48151 (IS-T-228)
Cu-base--Ru, strain-stress curves for, 22:17116(R) (ORO-3401-3)
Fe--Mo--Ni--Ru--W-base, preparation method for improved, 22:6976(P)
Fe--Ru, nuclear magnetic resonance in, spin--echo technique for, 22:9438
Fe--Ru, ruthenium-99 Moessbauer effect for transitions with multipole mixing, (E), 22:53143
Fe--Ru, thermal capacity of, effect of composition on, 22:40993(R) (COO-1198-534)
Ir--Ru, superconductivity, susceptibility, and thermal capacity of, correlation between, (E), 22:11383
Ir--Ru, superconductivity, susceptibility, and thermal capacity of, (E/T), 22:11384
La--Ru, magnetic susceptibility and EPR of LaRu$_2$ with Gd^{3+} impurities, (T), 22:26515
La--Ru, thermal capacity of Laves phase LaRu$_2$ at low temperatures, 22:48151 (IS-T-228)
La--Ru--Th, lanthanum-139 NMR in intermetallic, g shift and Knight shift relation in, (E), 22:9439
Mo--Pd--Rh--Ru--Tc, fission-induced inclusions of, in plutonium dioxide--uranium dioxide fuels, 22:17152
Nb--Ru, thermal conductivity at 50 to 350°C, effects of ruthenium content on, 22:45774
Ni--Ru, analysis for ruthenium, x-ray spectrographic, 22:4 (AERE-R-5452)
Ni-base--Ru, neutron magnetic scattering by, (E), 22:24809
Pd--Pu--Rh--Ru--U, formation in irradiated plutonium dioxide--uranium dioxide fuels, 22:17152
Pu--Ru, phase studies of, 22:2655
Pu--Ru, thermodynamic properties of intermetallic PuRu$_2$, 22:31463
PuC--Ru--UC, analysis for ruthenium, 22:7986 (AERE-R-5617)
Re--Ru--W, brazing alloys of, for tantalum and tungsten, 22:19545(P)
Rh--Ru, separation from nitric acid by solvent extraction using tridodecylamine, effects of plutonium on, 22:37862
Ru--Tc, phase studies of, 22:4807
Ru--Tm, crystalline electric field splitting in intermetallic TmRu$_2$ from thulium-169 Moessbauer effect, (E), 22:17806
Ru--U, phase diagrams, 22:19561
Ru--U, phase diagrams, illustration of 600 to 2600°C, 22:48790
Ru--U, preparation and properties of intermetallic U$_2$Ru$_3$, 22:23739
Ru--UC, analysis for carbon, ruthenium, and uranium, 22:7986 (AERE-R-5617)
Ru--Y, phase diagram of, statistical prediction of, 22:31396

RUTHENIUM CHLORIDES
complexes containing butyrates, preparation and structure of, 22:27517(R) (MIT-1965-63)
effects on radioinduced polymerization of butadiene, 22:33387
separation from molten lithium chloride--potassium chloride eutectic by column crystallization and zone melting, 22:16670
structure of cluster, 22:27517(R) (MIT-1965-63)
uptake of ruthenium-106-labeled, by clams, 22:28324

RUTHENIUM FLUORIDES
determination of volatile radioactive, method for, 22:25454 (CEA-N-616, pp 246-94)
distribution in process stream during reprocessing of irradiated uranium dioxide fuels using bromine pentafluoride, 22:25443 (ANL-7375, pp 46-94)
distribution in process stream during reprocessing of irradiated Zircaloy-clad plutonium dioxide--uranium dioxide fuels, 22:25443 (ANL-7375, pp 46-94)
separation from plutonium fluoride by volatilization, 22:25443 (ANL-7375, pp 46-94)
separation from plutonium tetrafluoride by pyrohydrolysis and oxidation, 22:25443 (ANL-7375, pp 46-94)
separation from uranium hexafluoride, 22:23106
separation of plutonium hexafluoride from, by sublimation, 22:25443 (ANL-7375, pp 46-94)
sorption by barium, calcium, or magnesium fluorides at 150°C, 22:25443 (ANL-7375, pp 46-94)

RUTHENIUM HYDRIDES
complexes with cyclopentadiene, Szilard--Chalmers reactions in, 22:25376(R) (PRNC-114)

RUTHENIUM IODIDES
structure of, 22:27517(R) (MIT-1965-63)

RUTHENIUM IONS
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
reactions of, thermodynamics of, 22:12181(R) (ORO-3542-2)

RUTHENIUM ISOTOPES
determination of fallout, in water by sequential separation and β counting, 22:12248
distribution in tissues of rats, 22:8474
excitation of even, oxygen-16 ions in ferromagnetic media, (E), 22:29241
production of foils of, for nuclear research, 22:263
production of stable, by US power reactors through 1990, 22:45245 (BNWL-716)
separation of, 22:16420
separation of radioactive, from aqueous wastes by sorption, 22:36018
yields in uranium-238 neutron fission at 14 MeV, cumulative, (E), 22:35325

RUTHENIUM ISOTOPES Ru-94
electron-capture decay of, half-life and γ spectra for, (E), 22:44707
energy levels from molybdenum-92 (α,2n) reactions, (E), 22:46729(R) (AECL-3157)

RUTHENIUM ISOTOPES Ru-95
beta and electron-capture decay scheme of, β^+ and γ spectra for, (E), 22:35307

RUTHENIUM ISOTOPES Ru-96
energy levels from molybdenum-94 (α,2n) reactions, (E), 22:46729(R) (AECL-3157)

RUTHENIUM ISOTOPES Ru-98
alpha inelastic scattering at 10 MeV, Coulomb excitation of states in, (E), 22:32615
energy levels from Coulomb excitation by alpha particles and oxygen-16 ions, M1 and E2 branching ratios and gamma transitions of, (E), 22:32615
energy levels from molybdenum-96 (α,2n) reactions, (E), 22:46729(R) (AECL-3157)
energy levels of, magnetic moment of first 2$^+$ collective, (E), 22:13994 (JINR-P4-3611)
nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
oxygen-16 inelastic scattering at 42 to 49 MeV, Coulomb excitation of states in, (E), 22:32615

RUTHENIUM ISOTOPES Ru-99
gamma decay, Moessbauer study of 90-keV M1--E2 mixed transition in, 22:3160 (BNL-11696)
hyperfine magnetic fields at nuclei in nickel, measurements using time-dependent perturbed angular correlation, (E), 22:46263
Moessbauer effect for 90-keV M1/E2 transition in, testing time-reversal invariance by, (E/T), 22:46846
Moessbauer effect in ruthenium metal, γ-decay symmetry tests with, 22:3160 (BNL-11696)
Moessbauer effect in solid solution with iron, observation of nonconservation of time parity by, (E), 22:53143
neutron capture at 24 to 560 eV, cross section and resonance spin assignments for, (E), 22:48554
neutron resonances at 25 to 538 eV, spin assignments for, (E), 22:37340(R) (EANDC(E)-89(U))

RUTHENIUM ISOTOPES Ru-100
alpha inelastic scattering at 10 MeV, Coulomb exciation of states in, (E), 22:32615
energy level at 540 keV, g-factor for, (E), 22:48202(R) (BMwF-FBK-68-01)
energy levels from Coulomb excitation by alpha particles and oxygen-16 ions, M1 and E2 branching ratios and gamma transitions of, (E), 22:32615
energy levels from molybdenum-98 (α,2n) reactions, (E), 22:46729(R) (AECL-3157)
energy levels from rhodium-100 decay, spins and parities of, (E), 22:18244
energy levels of, magnetic moment of first 2$^+$ collective,

(E), 22:13994 (JINR-P4-3611)
energy-level spins and transition multipolarities from rhodium-100 decay, (E), 22:27169
nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
oxygen-16 inelastic scattering at 42 to 49 MeV, Coulomb excitation of states in, (E), 22:32615

RUTHENIUM ISOTOPES Ru-101
energy level at 127 keV, g-factor for, (E), 22:48202(R) (BMwF-FBK-68-01)
energy level at 127 keV, lifetime of, (E), 22:48202(R) (BMwF-FBK-68-01)
isomeric transition in, half-life for, (E), 22:32610
neutron capture at 24 to 560 eV, cross section and resonance spin assignments for, (E), 22:48554
neutron resonances at 25 to 538 eV, spin assignments for, (E), 22:37340(R) (EANDC(E)-89(U))
yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

RUTHENIUM ISOTOPES Ru-102
alpha inelastic scattering at 10 MeV, Coulomb exciation of states in, (E), 22:32615
energy levels from Coulomb excitation by alpha particles and oxygen-16 ions, M1 and E2 branching ratios and gamma transitions of, (E), 22:32615
energy levels from molybdenum-100 $(\alpha,2n)$ reactions, (E), 22:46729(R) (AECL-3157)
energy levels of, magnetic moment of first 2^+ collective, (E), 22:13994 (JINR-P4-3611)
energy-level spins and transition multipolarities from rhodium-102 decay, (E), 22:27169
energy-level spins and transitions from rhodium-102 decay, (E), 22:14005
energy-level spins and transitions from rhodium-102 decay, (E), 22:27167
nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
oxygen-16 inelastic scattering at 42 to 49 MeV, Coulomb excitation of states in, (E), 22:32615
yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

RUTHENIUM ISOTOPES Ru-103
beta decay of, conversion-electron and γ spectra for, (E), 22:14047
beta decay of, γ-γ angular correlations in, (E), 22:27170
beta decay of, γ-γ angular correlations in, (E), 22:30044
content and distribution in fallout from third and fifth Chinese nuclear explosions, 22:51131
content in fallout, lithium-drifted silicon beta spectrometers for determining, 22:45331
content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
content in monthly precipitation in US cities, 1961 to 1964, 22:25530 (HASL-193, pp II.1-30)
content in Moscow atmosphere and food products, 1965 to 1966, 22:23163 (A-AC-82/G/L-1192)
content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
detection and measurement in fallout at Pinstech, Pakistan after May 9, 1966 Chinese nuclear explosion, 22:51097 (PINSTECH/HP-3)
determination in environmental samples, 22:16420
determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
determination in seawater, 22:10170 (CEA-R-3284)
diffusion coefficient measurements in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
evaluation for use as ground water tracer, 22:49038
fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
fission product release from silicon carbide (SiC)-coated uranium carbide (UC_2) and uranium oxide (UO_2) at 1700 and 2000°C, analysis of, 22:42200(R) (ORNL-4200)
isomeric transition in, half-life for, (E), 22:32610
measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
production by US power reactors through 1990, 22:45245 (BNWL-716)
removal from PRTR heavy water primary system, measurement of, 22:22816 (HW-75557(Rev.)(Del.))
separation from plutonium dioxide--uranium dioxide fuels, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
uptake by man following inhalation, 22:33715 (SZS-15/67)
yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

RUTHENIUM ISOTOPES Ru-104
alpha inelastic scattering at 10 MeV, Coulomb exciation of states in, (E), 22:32615
determination in seawater, 22:10170 (CEA-R-3284)
energy levels from Coulomb excitation by alpha particles and oxygen-16 ions, M1 and E2 branching ratios and gamma transitions of, (E), 22:32615
energy levels of, magnetic moment of first 2^+ collective, (E), 22:13994 (JINR-P4-3611)
hyperfine magnetic fields at nuclei in cobalt, iron, and nickel, measurements using ion implantation with perturbed angular correlation method, (E), 22:46267
hyperfine magnetic fields at nuclei in magnetized gadolinium below Curie point, measurements using ion implantation with perturbed anbular correlation technique, (E), 22:46267
nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
oxygen-16 inelastic scattering at 42 to 49 MeV, Coulomb excitation of states in, (E), 22:32615
yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

RUTHENIUM ISOTOPES Ru-105
determination in seawater, 22:10170 (CEA-R-3284)
yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)

RUTHENIUM ISOTOPES Ru-106
accumulation by dragonfly larvae, effects of instar on, 22:28393
content in air samples from Purex process building, 22:12474 (BNWL-643)
content in Bucharest atmosphere, 1964 to 1966, 22:51103
content in fallout, lithium-drifted silicon beta spectrometers for determining, 22:45331
content in ground water beneath Hanford Project, surveillance of, 22:40208 (BNWL-835)
content in ground waters at Hanford, 22:19085(R) (BNWL-687)
content in Japanese coastal silts, 1964 and 1965, 22:40217
content in monthly precipitation in US cities, 1960 to 1964, 22:25530 (HASL-193, pp II.1-30)
content in Moscow atmosphere and food products, 1965 to 1966, 22:23163 (A-AC-82/G/L-1192)
content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
content in soils of northeast and east-central Georgia, 22:48939
content of algae in White Oak Lake, 22:6772 (ORNL-4168, pp 61-118)
content of aquatic invertebrates, removal by EDTA, 22:12847(T) (CEA-tr-R-1906)
content of atmosphere in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
content of dairy feeds in Colorado during 1967, 22:21460(R) (COO-1171-82)
content of food samples in India during 1963 to 1965, 22:40656 (AEET-273)
content of liver and rumen in mule deer in Colorado during 1963 and 1964, 22:21459(R) (COO-1156-28)
content of poplar, effects of chemical, climatic, and physiological factors on, 22:19304
content of surface air in Colorado during 1962 to 1967, 22:21460(R) (COO-1171-82)
deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
determination in environmental samples, 22:16420
determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
determination in presence of niobium-95 and zirconium-95 using coincidence detectors, 22:25455 (CEA-N-616, pp 295-368)
determination in seawater, 22:10170 (CEA-R-3284)
diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
distribution among dissolved and suspended particles in

  White Oak Lake at ORNL, 22:48915 (K-1758)
  distribution in arthropod food chains on White Oak Lake bed, 22:6772 (ORNL-4168, pp 61-118)
  distribution in seawater from Windscale Works, 22:12456 (PG-Report-819)
  distribution in tissues of dogs, guinea pigs, rabbits and rats, 22:8473
  distribution of inhaled, by beagle dogs, 22:10825 (BNWL-480, pp 55-83)
  effects on determination of plutonium in aqueous solutions by liquid scintillation, 22:40018
  effects on gastrointestinal tract of rats, pathological, 22:49331
  fallout at Leningrad from 1954 to 1965, 22:12453
  gamma spectra of, for estimating burnup and production of plutonium in nuclear fuel elements, 22:14525
  inhalation by rats, dynamics of, 22:8538
  inhalation by rats, kinetics of, 22:8476
  leaching from cements and clay grouts in geologic formations, 22:16824
  leaching from copper ores fractured by underground nuclear explosions, effect of leach solution acidity on, 22:45208(R) (ORNL-TM-2298)
  measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
  metabolism in aquatic and marine algae, 22:47461
  production by US power reactors through 1990, 22:45245 (BNWL-716)
  production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
  production in power reactors, economic aspects of, 22:119
  properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
  removal from aluminum, chemical and electrolytic methods for, 22:12422
  separation by solvent extraction using naphthenic acid, 22:35904
  separation from plutonium dioxide--uranium dioxide fuels, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
  separation from water by slurrying with Yazoo and Zilpha clays, 22:25482
  separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
  separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
  separation of plutonium from, by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
  sorption by intestines of rats, effects of age and particle size on, 22:10676 (BNWL-480, pp 85-97)
  sorption by zeolites, 22:45151
  spectra of bomb fallout, in old rain samples, 22:42878
  uptake by man following inhalation, 22:33715 (SZS-15/67)
  uptake by mussels, effects of physico-chemical form on, 22:28324
  use as source in beta backscatter method for measurement of egg shell strength, 22:21296
  yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
RUTHENIUM NITRATES
  see also Ruthenium Nitrosyl Nitrates
RUTHENIUM NITROSYL NITRATES
  uptake of ruthenium-106-labeled, by clams, 22:28324
RUTHENIUM OXIDES
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  volatilization of RuO_4, from radioactive waste calciners, 22:15251 (IN-1013)
  O--RuO_2--RuO_4, pressure equilibria at 453 to 723°C, 22:15251 (IN-1013)
RUTHENIUM OXYFLUORIDES
  distribution in process stream during reprocessing of irradiated uranium dioxide fuels using bromine pentafluoride, 22:25443 (ANL-7375, pp 46-94)
RUTHENIUM SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
Rutherford Synchrotron--Nimrod
  see Harwell Synchrotron
RUTILES
  see also Ilmenorutile
  see also Titanium Oxides
  content in neogene sediments of Niigata Prefecture, Japan, 22:51118
  electron paramagnetic resonance studies of titanium interstitials in n-type, 22:9421 (COO-1284-6)
  molecular structures of oxides related to, 22:47710
  radiation effects on flotation behavior of, beta, 22:42796
  spectra of deuterons or protons trapped near impurity centers in, infrared, (E), 22:3163 (COO-1434-04)
RUTIN
  complexes with beryllium, titanium, and uranium, infrared study of structure of, 22:16493
  complexes with scandium, spectrophotometric studies on, 22:16503
  effects on oxygen content of sarcomas, effects of, on radiosensitivity, 22:33878
  radioprotective effects of, on skin, uv, 22:49393
  radioprotective effects of, on survival of mice, γ, 22:38415
RUTIN, TRIS(HYDROXYETHYL)-
  radioprotective effects of, on bladder, rectum, and skin of man, during therapy of carcinomas of ovaries and uterus, radium γ and x, 22:31163
  radioprotective effects of, on blood vessels in rabbit ears, electron, 22:40797
  radioprotective effects of, on capillaries of rabbits, fast electron, 22:40738
Rye (Secale)
  see Secale under Angiospermidae

S

S-1 Machine (Soviet)
  see Stellarators
S1C
  see Submarine Reactors (S1C)
S1G
  see Submarine Intermediate Reactor
S2G
  see Submarine Intermediate Reactor
S-MATRIX
  analytic properties as function of complex angular momentum for Gaussian potential, 22:50468
  analytic properties of multichannel, 22:50467
  analyticity and causality for on-mass-shell, relations between, 22:15866
  analyticity and unitarity for $\pi\pi N \to \pi\pi N$ amplitude in extended one-pion-exchange model of, 22:24669
  analyticity of, causality conditions for, 22:20346
  bootstrap conditions for soluble models in theory for, 22:32218
  Born approximation for elastic, unitarization of, 22:46543
  calculation for resonance scattering, 22:1427 (JINR-E2-3454)
  calculations in quantum electrodynamics, comparison of perturbation and, 22:22444
  causality for elastic scattering in, macroscopic, 22:26722 (JINR-P2-3590, pp 18-21)
  causality in functional formulation of, macroscopic, 22:20337 (INP-555/PH, pp 171-81)
  causality in, definition of macroscopic, 22:26723 (JINR-P2-3590, pp 22-30)
  causality of, group theory for, 22:35161
  charged-particle forward elastic scattering by electromagnetic plane wave in exact value of, 22:24583 (JINR-P2-3753)
  compositeness criteria for particles in, review of, 22:18041
  construction of unitary physical, without macrocausality violation, 22:32202
  decomposition of, space-similitude properties of, 22:9702
  definition of generalized, for amplitudes of stable and unstable states, 22:44519
  derivation, phase shifts, and residues for Yukawa potentials, 22:35136
  eigenphases and generalized Breit--Wigner approximation, relation between, 22:11735
  element as function of potential strength with analyticity for partial wave, 22:18036
  elements of axiomatic, freedom in definition of reduced M-functions in, 22:11739
  elements of, definition and properties of reduced, 22:7566
  elements of, parametrization in nonorthogonal basis for, 22:32215
  elements of, Regge pole phenomenology for large argument values of, 22:20351
  elements of, resonance position, width, and scattering length from, 22:9704
  elements of, theories of arbitrary-spin particles for analytic continuation in spin of, 22:5527
  elements on mass shell, relation between singularities of nonrelativistic field matrix elements and, 22:39469
  energy--momentum conservation for, translation invariance from, 22:13868
  equations for, derivation of Pugh, 22:29754
  expansion for Schroedinger equation with spherically symmetric potentials, low-energy, 22:32230
  formalism for exchange interactions between neutral atoms, retarded Hamiltonian for, 22:35164
  formalism for many-nucleon system, 22:35363 (AD-665366)
  formalism for vector field with mass, generalization of functional, 22:41872
  formulation for breaking of internal symmetries, 22:50427
  formulation for interaction-with-derivatives model, unitarity and normal form of solution in, 22:15694 (ITF-67-26)
  formulation for multichannel scattering, generalization of determinant method to continuous channels in, 22:20348
  formulation for πN resonant S_{31} wave, 22:24660
  formulation from single function for many-channel potential scattering, 22:20347

formulation in time-dependent collision theory, 22:15863
formulation in two-dimensional space for nonlinear Born--Infeld field, method for, 22:18032 (JINR-P2-3662)
formulation of quantum electrodynamics, gauge invariance in, 22:20324
formulation of theory of, quasi-local terms in functional, 22:41870
Green function in axiomatic field theory in, extension for renormalized and nonrenormalized, 22:32201
invariance for self-interaction, standard, 22:13839
invariance properties in semiclassical approximation to quantum field theory, 22:26709
Low equations in theory of fixed-point theorem for solutions of, 22:37203
operator theory of weak interactions, 22:34946
operators in axiomatic quantum field theory, model for dressing, 22:24729 (ITF-67-41)
parametrization of, specific properties of diffraction scattering cross section from method of, 22:39499
partial-wave expansion in U(6) x U(6) symmetry, generalized, 22:37183
perturbation in asymptotic field theory for, 22:44517
perturbation theory for, interaction representation in covariant, 22:9672
perturbation theory for, unitarity in, 22:15858
photon interactions in theory for, 22:20178
poles in multisheeted complex energy plane for meson--baryon interactions, 22:1434 (AD-646614)
poles of, correspondence between unstable particles and, 22:35142
production amplitudes in theory of, necessity of N-particle, 22:44509
properties for one-dimensional many-body problem with delta-function interaction, 22:26731
properties for velocity-dependent potentials, 22:48382
properties of nonrelativistic, timelike cluster, 22:35135
quantum electrodynamics results in theory for, 22:20179
quantum field theory for, nonlocal scalar, 22:26693 (JINR-P2-3590, pp 59-68)
singular structure and space--time behavior for multiple scattering, 22:32231
singularities in multiparticle amplitudes, sheet structure of, 22:22478
sum rule for resonance reactions, 22:1720
symmetries in theory of, internal, 22:46480
symmetries of, Lie groups for, 22:52995 (BMwF-FBK-68-14)
symmetry for unitary, relativistic SU(6), 22:9703
theory for acausal and unitary, 22:1509 (JINR-P2-3506)
theory for high-isospin scattering, symmetries in first-approximation, 22:5557
theory for high-rank scattering, symmetries in first-approximation, 22:5631
theory for partial-wave, asymptotic behavior in left half lambda-plane, 22:3536
theory for photon interactions, generalized unitarity and low-energy theorems in, 22:34930
theory for single-channel nonrelativistic scattering, Mandelstam symmetry in, 22:32227
theory for two-particle scattering, necessity of production amplitudes in, 22:29772
theory for two-particle scattering, necessity of production amplitudes in, 22:29773
theory for unitary, peripheral interactions in model in, 22:15853
theory for unitary, resonance production from $K^+ + p$ interactions at 3 GeV/c from model in, 22:15853
theory for, analytical continuation in, 22:7568
theory for, quantization of relativistic action-at-a-distance, 22:29650
theory for, reduction formula, currents, and current-like operators in, 22:9705
theory for, relation between Marchenko formalism and N/D equations for regular, 22:17955
theory for, review of general quantum, 22:9701(T) (AERE-Trans-1066)
theory for, stationary and nonstationary quantum problems soluble by contour integral technique in, 22:11743
theory for, wave packets in relativistic, 22:18039
theory in classical mechanics, 22:39496
theory of classical and quantum, in Born--Infeld two-dimensional field model, 22:46557
theory of scattering, complex inhomogeneous Lorentz group for, 22:22474
theory of, correspondence between unstable particles and poles in, 22:20356
theory of, singularity properties of bubble diagrams in, 22:24743
unitarity in field theory with derivatives, 22:48367
unitarity of physical, quantum electrodynamics in general covariant gauge for, 22:9671
unitarity of, for $\gamma + p \to$ eta $+ p$ interactions at low energies, 22:3338
unitarity of, relation between spin and statistics from, 22:20319
use for dynamics of strong interactions, 22:24623 (LPTHE-TH-222)
use for $\Delta(1236)$ electromagnetic mass difference calculations, 22:15735
use for existence theorem with Euclidean Green functions for summation of Feynman-diagram contributions, 22:22331 (ITF-67-48)
use for obtaining low-energy theorems for photon processes, 22:20192
vertex functions in theory of, bound states from, 22:48378

S PARTICLES
see also Mesons
S-Process
see Dual-Temperature Process
Saccharides
see Carbohydrates
SACCHARIN
aversion in rats, effects of endoxan on, 22:38426(R) (NYO-3698-1)
avoidance by rats, effects of RNA from brains of trained rats on, 22:20977 (COO-825-35)
effects on lick rates in γ-irradiated rats, 22:49609
radioinduced aversion to, in mice, effects of dose rate on γ, 22:51891
radioinduced aversion to, in mice, x, 22:23613
radioinduced aversion to, in parabiont rats, x, 22:4665 (USNRDL-TR-67-95)
radioinduced aversion to, in rats combined effects of proferrin on, x, 22:19455
radioinduced aversion to, in rats, effects of age and dose on x, 22:36346
radioinduced aversion to, in rats, effects of anesthesia on x, 22:36345
radioinduced aversion to, in rats, effects of anosmia on x, 22:8646
radioinduced aversion to, in rats, effects of circadian rhythm on, 22:49488(R) (ORO-2903-43)
radioinduced aversion to, in rats, effects of time of exposure on γ, 22:49607
radioinduced aversion to, in rats, effects of time of exposure on x, 22:49606
radioinduced aversion to, in rats, γ, 22:51888
radioinduced aversion to, in rats, γ, 22:28627 (NYO-2147-13, pp 196-225)
radioinduced aversion to, in rats, γ and x, 22:49488(R) (ORO-2903-43)
radioinduced aversion to, in rats, x, 22:10858
radioinduced aversion to, in rats, x, 22:49486(R) (NYO-3359-4)
Saccharomyces
see Eumycota
Saccharose
see Sucrose
SACLAY PROTON SYNCHROTRON
beam depolarization effects in, 22:15883(T) (ANL-Trans-570)
beam injector for, ion sources and particle bunching in 20-MeV linear accelerator, 22:32313 (CEAL-2000, pp A8-16)
SACLAY REACTORS (AQUILON)
critical experiments on uranium--plutonium assemblies in, 22:22844
physics measurements for cadmium skirted sub-critical, analysis of, 22:18546 (CEA-R-3336)
SACLAY REACTORS (EL-2)
heavy water purification for, 22:27871
SACLAY REACTORS (EL-3)
heavy water purification for, 22:27871
SACLAY REACTORS (OSIRIS)
fuel element cladding in, design and calibration of system for detection of failure of, 22:22809 (CEA-R-3328)
SAFARI
see South African Research Reactor
Safeguarding Special Nuclear Materials
see Nuclear Materials Management
SAFETY
see also Accidents
see also Health Physics
see also Industrial Hygiene
see also Radiation Protection
see also Reactor Safety
see also Remote-Control Equipment
see also Remote-Handling Equipment
see also Remote-Viewing Equipment
analysis and testing of SNAP-21, 22:36000(R) (MMM-3691-30)
analysis for SNAP-23A thermoelectric generator, 22:33605(R) (WANL-3800-12)
analysis for SNAP-23A thermoelectric generator, 22:14679(R) (WANL-3800-9)
analysis of aerospace nuclear, for promethium oxide-fueled radioisojet thruster, 22:37950
analysis of aerospace nuclear, for SNAP-19, 22:40325 (MND-3607-239-1)
analysis of MSRE fuel processing plant, 22:25463 (ORNL-TM-907(Rev.))
analysis of radioactive material shipping container, 22:45262 (EUR-3485(Vol.5))
analysis of shielded shipping container, use of Laguerre's function for, 22:47264 (CEA-R-3373)
analysis of SNAP-23A system, 22:12536(R) (WANL-3800-4)
analysis of SNAP-27 fuel capsules, 22:37937(R) (GEMS-400)
analysis of SNAP-3 thermoelectric generator, in space flight environments, 22:47293 (MND-P-2368)
basic principles for fissionable material processing,

22:1863(T) (JPRS-42322, pp 1-13)
book: Laboratory Handbook of Toxic Agents, 22:36289
book: Protection Against Neutron Radiation up to 30 Million Electron Volts, 22:45570
book: Safety With Cryogenic Fluids, 22:13419
considerations in isotopic power generation, 22:8307
control of air contamination in plutonium facility, 22:27970
criteria for isolated and interacting systems of fissile materials, 22:1866(T) (JPRS-42322, pp 158-73)
criteria for radioactive tracer, in ground water recharge studies, 22:19067
critical arrays of fissionable materials, parameter prediction using surface density method, 22:13913
criticality control in processing of uranium--zirconium alloy fuel, 22:21155 (IN-1173)
criticality in plutonium fabrication and processing plants, 22:8202
criticality of interacting subcritical assemblies of fissile material, (E/T), 22:1865(T) (JPRS-42322, pp 102-57)
criticality of plutonium oxide--uranium dioxide during fabrication, control of, 22:748 (BNWL-SA-1388, pp 11.1-26)
detection and identification of fissionable materials, 22:6206 (LA-3741)
development of radiation, in Japan, 22:18659
disposal of radioactive waste in Federal Republic of Germany, 22:8332
effects of Sterling Event on gas and oil facilities, 22:25559 (VUF-1041)
estimation of iodine exposures from maximum credible nuclear accidents, 22:16707 (KFK-646)
evaluation of aerospace nuclear, of reentering space vehicles, computer program for, 22:12478 (SC-RR-67-858)
evaluation of molybdenum-99 and tellurium-132 generator, 22:40720
evaluation of radioactive waste disposal in salt formations, 22:16816
evaluation of SNAP-21A nuclear, 22:23222(R) (MND-3322-25(Vol.1))
evaluation of SNAP-27 capsule, soil burial tests for, 22:8303 (SC-DR-67-716)
experience in hot cell operation, at Harwell, 22:4398
exposures of personnel during fabrication of plutonium reactivity-coefficient fuel specimens, 22:43526 (ANL-7299, pp 114-19)
factors on nuclear-powered submarines, analysis of, 22:31056(R) (AD-648505)
failure evaluation for cladding materials used to contain liquid uranium-base fuel alloys, 22:43526 (ANL-7299, pp 114-19)
fire prevention and protection in glove boxes, 22:35976 (TID-24236)
fire protection in hot cells using Halon-1301, 22:4397
fire protection practice recommendations and national codes for reactors, 22:18610
fission product release from transportation accidents, 22:1879 (EUR-3623)
fission product sampling, use of May packs for, 22:14608 (ORNL-TM-2044)
guide for LRL personnel, 22:43316 (UCRL-17933)
guidelines for high-energy accelerator facilities, 22:19333 (TID-23992)
handling and storage of spent fuels, 22:43015 (DPSPU-67-30-8)
handling precautions for beryllium, 22:45754 (CONF-671063-2)
hazard control methods for handling uranium-233, 22:4406
hazards from radiation in space, prediction of, 22:201 (AD-646555)
hazards in handling radioactive materials, 22:51217
hazards of packaging and transport of radioactive materials, 22:287
hazards using nuclear explosives for excavations, 22:10421
instruments for Rover reactors, 22:2448 (CONF-671102-30)
limits for aqueous solutions of uranium, calculation of, 22:6118
method for contaminated filters, 22:19020(P)
methods for alkali metals systems, review of, 22:17100 (BNL-50089)
methods for packaging radioactive materials, 22:288
methods for tritium, at Nuclear Fuel Services processing plant, 22:25444 (ANL-7375, pp 180-9)
methods for, at Kjeller Research Center, Norway, 22:16356 (KR-116)
operation of experiments in DIDO and PLUTO reactors, procedure for, 22:12135
packaging of enriched uranium hexafluoride for, during shipment, 22:282 (CONF-661011, pp 120-31)
procedure for handling radioactive materials, 22:19086 (IN-1150)
procedures and regulations for deep-sea disposal of solid radioactive wastes, 22:51121
procedures at accelerator--target neutron sources, 22:50487 (CONF-680411)
procedures at Eurochemic Company plant for, 22:45146 (NP-17588)
procedures for beryllium machining, 22:8750(T) (AD-658385)
procedures for handling cryogenic fluids, influence of accidents in development of, 22:24195 (LA-DC-9200)
procedures for handling plutonium, 22:14209
procedures for inspection of gas and oil pipelines, 22:40340
procedures for machining pyrophoric, radioactive, and toxic nuclear materials, 22:26032
procedures for ORNL hot cells and radiochemical processing facilities, 22:4400
procedures for plutonium handling at Rocky Flats Nuclear Safety Facility, 22:2273 (RFP-977)
procedures for plutonium processing, 22:25158
procedures for processing fuel elements for Windscale AGR, 22:50750
procedures for processing plutonium, 22:10449
procedures for processing Zircaloy-2 clad fuel, studies of, 22:283 (ORNL-4061)
program for countermeasures following nuclear attack, 22:2258 (AD-646627)
program for radiation protection in Washington state, 22:45553
program for use of lasers, 22:492 (LA-3731)
programs for nuclear industry, effectiveness of, 22:19335
protection for equipment and personnel in buildings exposed to nuclear explosion shock, 22:51196
protection from high explosive blast and high-velocity fragments, shield for, 22:3972 (LA-3769)
radiation exposure records for legal aspects of, 22:10767
radioactive waste classification standards for, 22:51083
radioactive waste concentration method for, 22:40347 (DP-1135)
regulations for handling radioactive materials and use of irradiation facilities in Scotland, 22:8328 (NP-17195)
regulations for radioactive material containers, 22:299
reliability analysis of reactor electronic systems, 22:37904 (DUN-SA-66)
requirements for FFTF, design aspects of, 22:4401
requirements for nuclear, in fuel fabrication process design, 22:10081 (NYO-9714)
requirements for radioactive waste disposal, IAEA review of, 22:12562 (STI/PUB-170)
shipping of radioactive materials in the USA, developments for control of, 22:281 (CONF-661011, pp 11-28)
shipping of radioactive materials, design of system for, 22:37964(P)
SRE Core-3 fuel element storage, calculations for, 22:12032 (NAA-SR-Memo-12472)
standards for fissionable materials handling, handbook on, 22:33123
standards for laser personnel at Sandia laboratory, 22:51573 (SC-TM-68-436)
standards for man during space flight, criteria for formulation of, 22:36273
standards for operation of lasers, 22:38252 (CONF-660573-, pp 97-109)
standards for personnel, during use of chemical missile-propellants, high-frequency currents, and radiations, 22:40719
standards for processing, shipping, and storage of radioactive materials, 22:21303
standards for SNAP-21A, analysis of, 22:28014(R) (MND-3322-7)
stress-relief annealing of reactor pressure vessels, 22:10430 (EURAEC-1762)
stress-relief annealing of reactor pressure vessels, 22:51140(T) (WAPD-Trans-95)
system for removal of beryllium machining dusts, 22:21239
testing of model shipping containers for radioactive materials, impact, 22:40350 (NYO-2539-8)

SAFETY HAZARDS
see also Contamination
see also Fires
see also Industrial Hygiene
see also Radiation
see also Reactor Safety
analysis for plutonium-238-powered cardiac pacemaker, 22:36002(R) (NUMEC-3731-13)
analysis of environmental, near nuclear energy installations, effects of meteorological conditions on, 22:45197 (TID-24190, pp 379-99)
analysis of fire, caused by nuclear explosions, 22:47305 (CONF-680527-1)
detection at Idaho Nuclear Corporation, safeguard committee for, 22:19329 (IN-1041)
determination for molybdenum-99-technetium-99 column, 22:49389
determination in children in relation to incidence of cancer following prenatal exposure to x radiation, 22:43369
determination in children in relation to incidence of cancer following prenatal exposure to x radiation, 22:43368
estimation of, to astronauts during flight, 22:12899(T) (N-67-29205, pp 77-82)
estimation to man from industrial and medical use of radioactive materials, nuclear war, and weapons testing, 22:51639

- estimation to skin of mammals from beta particles in reactor debris, 22:36249 (AD-661489)
- evaluation and prediction of radioactive, in atmosphere, probabilistic method for, 22:18968 (LA-DC-9094)
- evaluation for medical use of radiation in relation to human cytogenetics, 22:38245
- evaluation for radioisotopes used in medicine, 22:12879
- evaluation in nuclear industry, methods for, 22:31268
- evaluation of body organs following intraarticular administration of gold-198, 22:14958
- evaluation of environmental, of pesticides and radioactive materials, 22:27916 (BNL-12401)
- evaluation of flooring and walkway surface, 22:2278 (UCRL-70720)
- evaluation of high-power CO_2 laser, 22:15106
- evaluation of laser, to eyes and skin of man, 22:38262 (SC-RR-68-174)
- evaluation of nuclear explosion, to operation of ports and ships, 22:47262
- evaluation of nuclear installation, meteorological instruments used in, 22:45356 (TID-24190, pp 257-300)
- evaluation of personnel, during fabrication of FFTF fuel, 22:280 (BNWL-SA-1388, pp 12.1-15)
- evaluation of public health, from civilian applications of underground nuclear explosions, 22:2261 (CONF-671029-1)
- evaluation of radiation, from maximum credible reactor accident, 22:40225 (AECL-2787, pp 77-86)
- evaluation of radiation, from radium, thorium, and uranium in phosphate rocks, 22:21193
- evaluation of radiological, from burnup of strontium-90 heat source in space, 22:12535 (SC-CR-67-2792)
- evaluation of radiological, from disposal of radioactive wastes to surface waters, 22:23250
- evaluation of radiological, from underwater nuclear explosions used for sea bed mining, 22:47258 (AERE-R-5500(Vol.2), pp 371-86)
- evaluation of soil disposal of radioactive liquid wastes, 22:2328(T) (JPRS-42565, pp 12-22)
- evaluation of underground storage of liquid radioactive wastes in deep formations, 22:2332(T) (JPRS-42565, pp 67-81)
- internal contamination, to laboratory and industrial personnel, 22:23527
- legislation for control of, from use of Thorotrast under authorized conditions, 22:12780
- methods of preventing, in uv research, 22:23672
- microwave, to man from food vending ovens, 22:40706
- niobium-95 inhalation, in relation to metabolism by rats, 22:40583
- plutonium ignition parameters, 22:19470
- plutonium, during loading of ZPR III, methods and standards for protection against, 22:23553
- polonium-210, from accidental release from electrical generators used in space flight, 22:33811 (COO-1733-2)
- protection of patients and personnel against, in radiotherapy departments, 22:51641
- protection of patients and personnel against, in radiodiagnosis and radiotherapy departments, 22:51640
- protective measures against, in handling irradiated ceramic materials, 22:767 (GEMP-557)
- radiation exposure, from commercial, industrial, and medical sources, x, 22:49335
- radiation inhalation, for personnel in Japan, monitoring methods for, 22:36272
- radiation, during radiodiagnosis and radiotherapy, 22:23573
- radiation, from contaminated surfaces, 22:23544
- radiation, to man from inspired plutonium-239, 22:40721
- radiation, to personnel, determination of γ, 22:45526
- radioinduced, in foods, 22:45738
- reduction of pesticide drift, operational techniques for, 22:6194 (BNWL-SA-1480)
- review of industrial, resulting in human cataracts, 22:31089
- standards for protection against, in uranium mines, 22:33824

SAINT LAURENT-DES-EAUX REACTOR (EDF-4)
- accident analyses for, 22:18441
- blowers for, aerodynamic and strength testing for 16 MW gas, 22:18473
- boilers for, description of fabrication of monotubular, 22:25025
- control system for, use of digital computer for automatic, 22:48681
- coolant blower design and performance for, 22:7847
- coolant circulators for, testing of, 22:16175
- cooling system for, description of prestressed-concrete pressure vessel-contained integrated carbon dioxide primary, 22:44828(T) (ORNL-tr-1966-a)
- cooling systems for, description of gas blowers for, 22:16175
- design parameters and layout for, 22:16146 (GA-8075)
- design parameters for, 22:22712 (STI/PUB-174)
- steam generator for, description of, 22:16176
- turbines for, description of 250 MW, 22:42228

Sakata Model
- see Elementary Particle Models (Triplet)

Salamanders
- see specific names under Amphibia

SALEM POWER REACTOR, UNIT 1
(1050 Mw(e) net)
- auxiliary and emergency systems for, safety analysis of, 22:18364 (DOCKET-50272-2)
- blowdown analysis for, 22:18365 (DOCKET-50272-3)
- blowdown analysis for, 22:18366 (DOCKET-50272-4)
- construction of, quality control program for, 22:18367 (DOCKET-50272-5)
- containment isolation system for, 22:18364 (DOCKET-50272-2)
- containment spray and ventilation systems for, performance under accident conditions of, 22:18365 (DOCKET-50272-3)
- containment spray system for, 22:18364 (DOCKET-50272-2)
- containment structure for, heat removal from superheated atmosphere of, 22:18366 (DOCKET-50272-4)
- containment structure for, liner and penetrations designs for, 22:24945 (DOCKET-50272-7)
- containment structure for, testing and in-service surveillance program for, 22:30139 (DOCKET-50272-8)
- containment structures and systems for, effects of seismic loadings on, 22:24945 (DOCKET-50272-7)
- containment system for, loading combination criteria and stress intensity limits for, 22:18366 (DOCKET-50272-4)
- containment system for, safety analysis of, 22:18363 (DOCKET-50272-1)
- containment systems for, effects of tornado and earthquake loadings on, 22:30139 (DOCKET-50272-8)
- containment ventilation system for, 22:18364 (DOCKET-50272-2)
- control systems and instrumentation for, safety analysis of, 22:18364 (DOCKET-50272-2)
- cooling system for, fission product inventory in primary, 22:18366 (DOCKET-50272-4)
- cooling system for, safety analysis of, 22:18363 (DOCKET-50272-1)
- core for, coolant loss accident effects on, 22:24945 (DOCKET-50272-7)
- design of, compliance with General Design Criteria of, 22:20793 (DOCKET-50272-6)
- design of, safety analysis of, 22:18363 (DOCKET-50272-1)
- electrical system for, safety analysis of, 22:18364 (DOCKET-50272-2)
- Emergency Core Cooling System for, 22:18364 (DOCKET-50272-2)
- engineered safeguards for, design and function of, 22:24945 (DOCKET-50272-7)
- fuel elements for, safety analysis of, 22:18366 (DOCKET-50272-4)
- power level increase for, AEC regulatory action on, 22:20863
- power supply for, performance under emergency conditions of guaranteed, 22:18365 (DOCKET-50272-3)
- pressure vessel for, NDIT calculations for, 22:18365 (DOCKET-50272-3)
- radiation protection and waste handling at, 22:18364 (DOCKET-50272-2)
- safety systems for, schematics and description of trip channel, 22:18365 (DOCKET-50272-3)
- site for, effects of water level on safety of, 22:24945 (DOCKET-50272-7)
- site for, meteorology and environmental studies of, 22:18365 (DOCKET-50272-3)
- site for, safety analysis of, 22:18363 (DOCKET-50272-1)
- site for, soil density and soil liquefaction studies for, 22:30139 (DOCKET-50272-8)
- site for, soil preparation and liquefaction analysis of, 22:24945 (DOCKET-50272-7)
- steam and power conversion system for, safety analysis of, 22:18364 (DOCKET-50272-2)
- xenon oscillations in, safety analysis of, 22:18366 (DOCKET-50272-4)

SALEM POWER REACTOR, UNIT 2
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- auxiliary and emergency systems for, safety analysis of, 22:18364 (DOCKET-50272-2)
- blowdown analysis for, 22:18365 (DOCKET-50272-3)
- blowdown analysis for, 22:18366 (DOCKET-50272-4)
- construction of, AEC opinion on, 22:20863
- construction of, quality control program for, 22:18367 (DOCKET-50272-5)
- containment isolation system for, 22:18364 (DOCKET-50272-2)
- containment spray and ventilation systems for, performance under accident conditions of, 22:18365 (DOCKET-50272-3)
- containment spray system for, 22:18364 (DOCKET-50272-2)
- containment structure for, heat removal from superheated atmosphere of, 22:18366 (DOCKET-50272-4)
- containment structure for, liner and penetrations designs for, 22:24945 (DOCKET-50272-7)
- containment structure for, testing and in-service surveillance program for, 22:30139 (DOCKET-50272-8)
- containment structures and systems for, effects of seismic loadings on, 22:24945 (DOCKET-50272-7)
- containment system for, loading combination criteria and stress intensity limits for, 22:18366 (DOCKET-50272-4)
- containment system for, safety analysis of, 22:18363 (DOCKET-50272-1)
- containment systems for, effects of tornado and earthquake loadings on, 22:30139 (DOCKET-50272-8)
- containment ventilation system for, 22:18364 (DOCKET-50272-2)

control systems and instrumentation for, safety analysis of, 22:18364 (DOCKET-50272-2)
cooling system for, fission product inventory in primary, 22:18366 (DOCKET-50272-4)
cooling system for, safety analysis of, 22:18363 (DOCKET-50272-1)
core for, coolant loss accident effects on, 22:24945 (DOCKET-50272-7)
design of, compliance with General Design Criteria of, 22:20793 (DOCKET-50272-6)
design of, safety analysis of, 22:18363 (DOCKET-50272-1)
electrical system for, safety analysis of, 22:18364 (DOCKET-50272-2)
Emergency Core Cooling System for, 22:18364 (DOCKET-50272-2)
engineered safeguards for, design and function of, 22:24945 (DOCKET-50272-7)
fuel elements for, safety analysis of, 22:18366 (DOCKET-50272-4)
power supply for, performance under emergency conditions of guaranteed, 22:18365 (DOCKET-50272-3)
pressure vessel for, NDIT calculations for, 22:18365 (DOCKET-50272-3)
radiation protection and waste handling at, 22:18364 (DOCKET-50272-2)
safety systems for, schematics and description of trip channel, 22:18365 (DOCKET-50272-3)
site for, effects of water level on safety of, 22:24945 (DOCKET-50272-7)
site for, meteorology and environmental studies of, 22:18365 (DOCKET-50272-3)
site for, safety analysis of, 22:18363 (DOCKET-50272-1)
site for, soil density and soil liquefaction studies for, 22:30139 (DOCKET-50272-8)
site for, soil preparation and liquefaction analysis of, 22:24945 (DOCKET-50272-7)
steam and power conversion system for, safety analysis of, 22:18364 (DOCKET-50272-2)
xenon oscillations in, safety analysis of, 22:18366 (DOCKET-50272-4)

Salicyl Sulfate
see Salicylic Acid, Sulfo-

SALICYLALDEHYDE, OXIME
precipitation of nickel and palladium from aqueous sulfuric acid solutions, 22:33359

SALICYLANILIDE
brominated, effects of, on uv-radiosensitivity of skin, 22:40770
effects on uv-radiosensitivity of human skin, 22:49598
halogenated, effects on skin of man, combined effects of uv radiation on, 22:43426
halogenated, effects on uv-photoallergic reactions of skin of man, 22:19361
halogenated, effects on uv-radiosensitivity of skin of man, 22:15035

SALICYLANILIDE, TETRACHLORO-
radioinduced allergic reactions to, in skin of man, uv, 22:38213

SALICYLANILIDE, 3,4',5-TRIBROMO-
radiation effects on sensitivity of human skins to, uv, 22:43443
radioinduced allergic reactions to, in skin of man, uv, 22:38213

SALICYLATES
see also Sodium Salicylates

SALICYLIC ACID
(Simple salts are entered at their own names, e.g., Uranyl Salicylates.)
complexes with neptunium and plutonium, kinetic studies of, 22:27893

SALICYLIC ACID, ACETYL-, POTASSIUM SALT
hydrogen bonds in, 22:6193 (BNL-11836)

SALICYLIC ACID, ISOPENTYL ESTER
radiation effects on perfume of, γ, 22:10311(P)

SALICYLIC ACID, SULFO-
complexes with neptunium, kinetic studies of, 22:27893
reactions with uranyl ions, spectrophotometric studies of, 22:21033
use in spectrophotometric determination of titanium, effects of uranium on, 22:16443
use in spectrophotometric determination of uranium, 22:21033

SALICYLOHYDROXAMIC ACID
solvent properties for molybdenum, niobium, and titanium, 22:45172

SALIVA
see also α-Amylase
see also Salivary Glands
analysis of human, for bromine and iodine by neutron activation, 22:25250
analysis of human, for various elements by neutron activation methods, 22:14464
clearance of radioiodide and technetium-99-labeled pertechnetate from human, 22:25736
radiation effects on activity of parotin-A of, in rabbits, x, 22:51437
radiation effects on excretion of chlorides, rubidium-86, and sodium-22 in, of rats, x, 22:51483
radioisotope content of, in relation to content of plasma, bromine-82, iodine-132, technetium-99, 22:40600

SALIVARY GLANDS
content of tritium-labeled anesthesia in, of guinea pigs following injection, 22:31006
iodine-131 uptake by, of hamsters, autoradiography of, 22:12770
iodine-131 uptake by, of hamsters, mice, and rats, effects of adrenalectomy, hormones, sex, and thyroidectomy on, 22:12768
morphology of mammalian, effects of adrenal, sex, and thyroid hormones on, 22:12768
radiation effects on development of embryonic, of mice, in vitro x, 22:38425 (NYO-3355-31)
radiation effects on development of, in embryos of mice, x, 22:19401(R) (EUR-3885)
radiation effects on physiology of, in man, 22:51942
radiation effects on secretory function of, in man, tracer studies of γ, 22:51796
radiation effects on tumors of, of mice, histochemical and histological study of, 22:23459
radiation effects on weight of, in rats, protective effects of cystamine against γ, 22:33925
radiodiagnosis of diseases of human, dosimetry and performance of technetium-99-labeled pertechnetates for, 22:51778
radiodiagnosis of stones of, comparison of plain radiograms and sialograms for, 22:23584
radioinduced chromosome aberrations in, of fruit flies, γ, 22:49292
radioisotope localization in cells of, in guinea pigs, iodine-131 and sulfur-35, 22:12777
radioisotope scanning of human, use of pilocarpine nitrate prior to quantitative, 22:36332
scanning of, use of technetium-99 for, 22:25941
scintiscanning of human, using technetium-99-labeled pertechnetates, 22:31183
use of tracer techniques and x radiation for study of function and morphology of, 22:36292

Salmine
see Protamines

Salmon (Onchorhynchus, Salmo)
see Onchorhynchus or Salmo under Osteichthyes

SALSOLINE
radioprotective effects of, on mice and rats, 22:25863

SALT DEPOSITS
(This heading may be modified by location in the form Salt Deposits (Tex.).)
cavity construction in Tatum, geologic studies for, 22:42922 (CONF-680908-3)
cavity construction in, method for unsupported spherical, 22:42921 (CONF-680908-2)
cavity construction in, solution mining method for, 22:42925 (TID-24625)
cavity production in, for radioactive waste disposal, solution method for, 22:16817
cavity stability in, effects of shape and dimensions on, 22:42920 (CONF-680908-1)
geology of Tatum, Lamar County, Mississippi, 22:42922 (CONF-680908-3)
nuclear explosion in Tatum, decoupling of seismic waves in Salmon, 22:4300
nuclear explosions in, calculation of radionuclides from, 22:21225 (HNS-1229-54)
radiation effects on natural formations, 22:2323(R) (ORNL-TM-1887)
radioactive waste disposal and storage in French, optimum cavity shape and size for, 22:16818
radioactive waste disposal and storage in West German, mechanical testing of rock salt for use in, 22:16819
radioactive waste disposal and storage in West German, method for, 22:16820
radioactive waste disposal in, 22:6436 (ORNL-4168, pp 1-60)
radioactive waste disposal in, 22:14426 (ORNL-4196, pp 12-15)
radioactive waste disposal in East German, feasibility study, 22:36017 (SZS-5/68)
radioactive waste disposal in German, development of processes for, 22:23248
radioactive waste disposal in West German, 22:25629(R) (KFK-663)
radioactive waste disposal in West German, economics of, 22:16817
radioactive waste disposal in West German, research on permanent, 22:16816
radioactive waste disposal in, economic evaluation of, 22:28038 (ORNL-3358)
radioactive waste disposal in, effects on physical properties of rock salt, (E), 22:30812
radioactive waste disposal in, rock salt deformation testing for, 22:16792 (ORNL-TM-2102)
radioactive waste storage in, effects of heat, radiation, and stratigraphy on, 22:51064
waste disposal in natural formations, 22:2323(R) (ORNL-TM-1887)

SALT DEPOSITS (MISS.)
nuclear explosions in, thermal effects of, 22:33580

Salting-out Agents
see Solvent Extraction Processes

SALTS
see also Fused Salts
see also Paramagnetic Salts
analysis for cadmium, polarographic, 22:9(R) (NBS-TN-

425)

- analysis of aqueous solutions of, for sulfates by automatic radiometric method, 22:18687 (EUR-3738)
- content of water, effects of, on mineral content of calcarcous skeletons, 22:30421
- corrosive effects of aqueous solutions of, on molybdenum and titanium alloys at less than or equal to 220ºC, 22:41010
- corrosive effects of aqueous solutions of, on titanium at less than or equal to 220ºC, 22:41010
- dissolution of uranium (IV), potentiometric determination of acids or bases formed by, 22:40101
- distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
- distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
- distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
- distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
- distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
- effect on deuterium content of seawater, 22:16730
- effects on enzymes, effects of photodynamic inactivation on, 22:14907 (COO-875-80)
- effects on metabolism of lead-210, polonium-210, and strontium-89 in kidney bean plants, 22:6728
- effects on properties of graft polymers of acrylic acid and polypropene fibers produced by gamma irradiation, 22:21094
- melting points and phases of, determination by hot-stage microscopy, 22:31448
- movement through soils of complex, radioactive tracer methods for measurement of, 22:23156
- physical properties of molten, reference data on, 22:10906
- potassium oxide determination in, radiometric method for, 22:25683
- reactions in stationary droplets of solutions on, tracer studies of, 22:2060
- separation of, having inverted solubility curves above 260ºF, 22:30652(P)

SAMARIUM

- see also Rare Earths
- abundance of, solar, (T), 22:23982
- atomic weight of, based on carbon-12 = 12, 22:42698
- buildup in Sena Power Reactor, determination of equilibrium concentration for, 22:16164 (WCAP-2785)
- cathodoluminescent properties in yttrium oxide, 22:22996 (CONF-670502-, pp 271-82)
- complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
- complexes with [ethylenebis[[(carboxymethyl)imino]ethylenenitrilo]] tetraacetic acid, stability constants for nonprotonated, 22:45038
- complexes with 2,4-pentanedione, preparation of, 22:25459 (KFK-672)
- complexes with 8-quinolinol, mass spectra of, 22:25344
- complexes with acetates, spectrophotometric studies of, 22:42605
- complexes with aluminon, structure and stability of, 22:14501
- complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
- complexes with o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]benzenearsonic acid, spectrophotometric studies on, 22:1993
- compounds with 2,2,6,6-tetramethyl-3,5-heptanedione, spectra of, vapor-phase, 22:30530
- content in rocks, effects on neutron-induced radioactivity, 22:21167
- content of marine environment and organisms, measurement of, 22:43311(R) (PRNC-85)
- content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
- crystal structure of, comparison of layer stacking sequence with samarium trialuminide, 22:2650
- Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
- detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
- determination as orthovanadate, conductometric method for, 22:47099
- determination as oxide by fast neutron activation, 22:6282
- determination as trace impurity in glass fragments, activation and mass spectrometric methods for, 22:33205 (AWRE-O-3/68)
- determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
- determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
- determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
- determination by neutron activation methods, methods of separation in, 22:4034
- determination by neutron activation techniques, 22:47079
- determination by photoactivation, 22:37637 (AD-664347)
- determination by photon activation methods, 22:27591
- determination by titration, theoretical-slope method of end point detection for, 22:37685
- determination by titrimetry using sodium rhodizonate, 22:33292
- determination in alkali medium in presence of cetylpyridinium bromide by spectrophotometry using Xylenol Orange, 22:40000
- determination in apatites by neutron activation methods, 22:18692 (KR-120)
- determination in ash of plants and soils, activation, 22:22969
- determination in basalt by isotope dilution method, 22:42617
- determination in biological materials by irradiation, ion-exchange separation, and counting, 22:21028 (PRNC-104, pp 102-6)
- determination in biological materials, automatic separation system for, 22:8020
- determination in cast iron and stainless steel by neutron activation methods, 22:14451
- determination in cerium nitrate by electrophoretic focusing of ions, activation, 22:4008
- determination in gadolinium oxide by neutron activation methods, 22:33241
- determination in hot spring waters by neutron activation methods, 22:8013
- determination in irradiated thorium dioxide--uranium dioxide fuel, separation procedures in, 22:37641(R) (BAW-3809-2)
- determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
- determination in nuclear pure uranium, spectrochemical, 22:30440
- determination in other rare earths by oscillopolarography, 22:18719
- determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
- determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
- determination in phosphate rocks by atomic-absorption flame photometry, 22:2001
- determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
- determination in presence of mercury and alkaline earth elements, chelatotitration methods for, 22:4046
- determination in rare earth mixtures by aerosol-spark method, 22:6281
- determination in rock samples by neutron activation methods after chemical group-separation, 22:25286
- determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
- determination in volcanic rocks by neutron activation methods, 22:27565
- determination in yttrium oxide by neutron activation methods, 22:40032
- determination in yttrium oxide by spectrophotoluminescence, 22:8025
- determination in yttrium oxide matrix by cathode-ray-excited emission spectroscopy, 22:25270
- determination in zinc sulfide matrix by cathode-ray-excited emission spectroscopy, 22:25270
- determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
- determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
- determination of trace amounts of, in hot spring water by neutron activation methods, 22:6277
- determination of traces of, in yttrium oxides, spectrographic, 22:22950
- determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
- determination using neutron-neutron method with resonance neutrons, 22:30447
- determination using o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]-benzenearsonic acid, spectrophotometric, 22:1993
- determination using octamethylpyrophosphoramide, spectrochemical, 22:30468
- determination using sodium orthovanadate, potentiometric, 22:30477
- diffusion of fission-product, in dense sintered aluminum oxide, 22:2693
- distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
- effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
- electric and optical properties of thin films of, effects of aging on, 22:14550
- europium-155 gamma angular distribution in, anisotropy of, (E), 22:22609
- gamma scattering at 1002 keV by K-shell electrons of, incoherent, (E), 22:43901
- hyperfine field measurements on recoil-implanted, in ferromagnets, (E), 22:11535
- ionization potential of, surface ionization comparison measurement of first, 22:24458
- ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
- isotope shifts in hfs, 22:9101

magnetic hyperfine fields at nuclei of, 22:24025 (CONF-670502-, pp 495-505)
magnetic ordering of, 22:44220
magnetic properties of single-crystal, (E), 22:15617
neutron total cross section at 14 MeV, (E), 22:35338
neutron total cross section at 30 to 650 keV, (E), 22:20578 (WASH-1079)
neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
neutron total cross sections and resonance parameters at 0.06 to 1 eV, (E), 22:46762 (CNAEM-52)
nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104
oscillopolarographic behavior of, 22:18719
partitioning in benthic infaunal communities in relation to stable element analysis, 22:43311(R) (PRNC-85)
polarographic behavior in dimethyl sulfoxide, 22:47084
polarographic properties of, effects of acidity on, 22:2078
properties for laser action, 22:24391 (CONF-670502-, pp 228-38)
radiation effects on optical and electric properties of thin films of, x, 22:14550
reactions with nitrate ions and water, spectral studies on effects of solvents on, 22:45010
safety during fabrication of uranium-235 fuel elements containing, 22:22886(P)
separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:33542
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:48904
separation from aqueous solutions of chlorides, nitrates, and perchlorates by solvent extraction using bis(2-ethylhexyl) esters of phosphoric acid, 22:21163
separation from carboxylic acids and mixtures with aminopolyacetic acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from europium by electrolysis and ion exchange, 22:37778 (CEA-R-3384)
separation from europium by ion-exchange chromatography using EDTA, 22:22928 (CONF-670502-, pp 343-54)
separation from irradiated thorium dioxide--uranium dioxide fuel by chromatography and ion exchange, 22:17185(R) (BAW-3809-1)
separation from mineral acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from neodymium and promethium by ion exchange, 22:2188
separation from neodymium and promethium by ion exchange, 22:33488(T) (WAPD-Trans-89)
separation from neodymium by solvent extraction using primary amine with diethylenetriaminepentaacetic acid, 22:10319 (BM-RI-7100)
separation from nitric acid by solvent extraction using trialkylphosphine oxide, 22:18876
separation from other rare earths, 22:23090 (CONF-670502-, pp 692-700)
separation from other rare earths by ion exchange, 22:6277
separation from other rare earths by ion-exchange chromatography, 22:18888
separation from rare earths by solvent extraction using naphthenic acids, 22:27868
separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
separation from scandium and thorium by thin-layer chromatography in dioxane--nitric acid, 22:45176
separation from scandium and thorium by thin-layer chromatography in dioxane--hydrochloric acid, 22:45176
separation from scandium and yttrium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
separation from thorium or uranium in hydrochloric acid solution, ion exchange, 22:40192
separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
separation of europium-155 from neutron-irradiated, by electrophoresis, 22:42826
separation of europium-155 from, electrolytic, 22:23043
separation of lutetium from, using chloromandelic acid, method for, 22:16554
separation of thorium and uranium from trivalent, by ion exchange, 22:142
separation of trace amounts of, from uranium by ion exchange, effects of fluorides on, 22:47215
separation of traces of, from yttrium by chromatography, 22:40032
solvation number of, in solution, equations for calculating, 22:23003 (IA-1128, pp 97-146)
sorption on hot polycrystalline tungsten, lifetime of, 22:27709
surface friction in vacuum, 22:52177
thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
use as additive to improve shielding properties of Portland cement, 22:43671
vapor pressure of liquid and solid, at 1033 to 1302°K and 1623 to 1784°K, 22:10924(R) (DRI-2437)
x-ray absorption spectra for, soft, 22:3209
x-ray emission spectra of, self-absorption effects in soft, 22:7149
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640
x-ray spectra of, isotope shifts in K, (E), 22:24887

SAMARIUM ALLOYS AND SYSTEMS
Ag--Sm, crystal structure of intermetallic compound Ag_3Sm in, 22:28819
Al--Sm, crystal structure of intermetallic $SmAl_3$, 22:2650
Al--Sm--U, phase studies, 22:695
Au-base--Sm, phase studies of, 22:23818
Bi--Sm, magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
Ce--Sm, crystal structure and magnetic susceptibility of, 22:36491
Co--Cu--Sm, coercive force as function of composition of solid solutions in, (E), 22:31990
Co--Sm, crystal structure and lattice constants of intermetallic compounds of, 22:23820
Co--Sm, magnetic and crystallographic properties of $SmCo_5$, (E), 22:26511
Co--Sm, magnetic properties of intermetallic $SmCo_2$, $SmCo_3$, and $SmCo_5$, 22:13001 (CONF-661216-2)
Fe--Sm, iron-57 Moessbauer effect in cubic Laves intermetallic compounds, (E), 22:52873
Ga--Ni--Sm, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Sm, crystal structure of intermetallic Sm_5Ga_3, 22:2649
Gd--Sm, crystal structure of, effects on alloying behavior, 22:10924(R) (DRI-2437)
Gd--Sm, crystal structure, phase diagrams, and thermodynamic properties of, 22:10924(R) (DRI-2437)
Gd--Sm, phase studies of, 22:23811 (CONF-670502-, pp 458-68)
Ni--Sm, magnetic properties of intermetallic Sm_2Ni_{17}, (E), 22:46201
Pt--Sm, phase studies of, 22:19566
Sb--Sm, crystal structure of intermetallic compounds in, 22:24388 (CONF-670502-, pp 145-54)
Sb--Sm, magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
Sm--Sn, analysis by arc spectrographic, chemical, or x-ray fluorescence methods, 22:44984
Sm--Sn, heats of solution and formation of intermetallics $SmSn_3$, Sm_2Sn_3, and Sm_5Sn_3, (E), 22:28784
Sm--Y, crystal and electronic structures of, effects on alloying behavior, 22:10924(R) (DRI-2437)
Sm--Y, crystal structure, phase diagrams, and thermodynamic properties of, 22:10924(R) (DRI-2437)

SAMARIUM ARSENIDES
magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)

SAMARIUM BORIDES
electronic properties of SmB_6, (E/T), 22:44268
magnetic properties of SmB_6, 22:5434
preparation of SmB_6, 22:23024

SAMARIUM CARBIDES
electronic structure of, 22:24404 (CONF-670502-, pp 635-52)
preparation and thermodynamic properties of SmC_2, 22:18796

SAMARIUM CHLORIDES
preparation by reactions between samarium oxides and carbon tetrachloride at 350 to 700°C, 22:6274

SAMARIUM FERRATES
iron-57 Moessbauer effect in, (E), 22:24424
samarium-ion magnetic moment and hyperfine field in, temperature dependence of, 22:24425

SAMARIUM FLUORIDES
solubility in molten beryllium fluoride--lithium fluoride systems, 22:25374 (ORNL-4229, pp 22-49)
volatility compared to lithium fluoride, 22:12406 (ORNL-4094, pp 61-9)
volatility in molten beryllium fluoride--lithium fluoride systems, 22:10324 (ORNL-TM-2058)
volatility in molten-salt fuel reprocessing, 22:27861 (ORNL-4204, pp 60-7)
SmF_3--UF_4, phase studies of, 22:2018(R) (BMwF-FBK-67-76)

SAMARIUM IODATES
precipitation from homogeneous solutions by double complexation and replacement, logarithmic distribution coefficients of fractional, 22:8054

SAMARIUM IONS
abundance in carbon stars of singly ionized, (E), 22:23975
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
hyperfine fields and magnetic moment in samarium ferrates, temperature dependence of, 22:24425
radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622
reduction by alkali metal amalgams, 22:50983

SAMARIUM ISOTOPES
energy-level transitions from deuteron inelastic scattering, collective, (E), 22:27149
masses of stable, measurements of, (E), 22:48570
nuclear charge radii of, measurements using K x-ray spectra, (E), 22:24887

nuclear charge radii variations from isotope shifts of K x rays, (E), 22:18238
nuclear shapes and deformation parameters for, research using alpha elastic and inelastic scattering, (E/T), 22:22593
preparation of thin film targets of, by metallothermal reduction of samarium oxides using lanthanum, 22:37271
quadrupole moments of, (E/T), 22:11957
separation of, 22:37938 (ORNL-4271)
x-ray spectra of, isotope shifts of K, (E), 22:27190
SAMARIUM ISOTOPES Sm-140
beta and electron-capture decay of, β and γ spectra for, (E), 22:16007 (JINR-P6-3540)
SAMARIUM ISOTOPES Sm-141
beta and electron-capture decay of, γ spectra for, (E), 22:16007 (JINR-P6-3540)
decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)
isomeric transition in, (E), 22:16007 (JINR-P6-3540)
SAMARIUM ISOTOPES Sm-142
decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
SAMARIUM ISOTOPES Sm-143
beta and electron-capture decay of, γ spectra from, (E), 22:1667
beta and electron-capture decay of, promethium-143 energy levels from, (E), 22:20582
decay scheme of, half-life and γ spectra for, (E), 22:3697 (KFK-534)
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
isomeric transition in, half-life for, (E), 22:1667
production by samarium-144 (n,2n) reactions, isomeric cross-section ratios for, (E), 22:24872
SAMARIUM ISOTOPES Sm-144
energy levels and transitions from beta decay of europium-144, (E), 22:30029
energy-level scheme of, evaluated data compilation on, (E), 22:3735
helium-3 reactions (He-3,d) at 40 MeV, angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
neon-20 reactions at 130 to 210 MeV, production of neutron-deficient nuclei by, (E), 22:30026
neutron reactions (n,2n) at 12.6 to 19.6 MeV, excitation function for, (E), 22:42006
neutron reactions (n,2n) at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,2n) at 14 MeV, isomeric cross-section ratio for, (E), 22:42006
neutron reactions (n,2n) at 15 MeV, isomeric cross-section ratios for, (E), 22:24872
neutron reactions (n,2n) with, isomeric cross-section ratios for fast, (E), 22:37340(R) (EANDC(E)-89(U))
proton elastic scattering at 10.0 to 10.3 MeV, proton polarization in, (E), 22:20629
proton elastic scattering by, isobaric analog resonance in, (E), 22:39653
triton reactions (t,α) at 12.9 MeV, α angular distributions and spectra from, (E), 22:32657
SAMARIUM ISOTOPES Sm-145
electron-capture decay of, gamma spectra from, (E), 22:14018
energy levels from decay of europium-145, (E), 22:18219
energy levels of, spin-parity assignments for, (E), 22:39653
energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
use as gamma source for production of x rays of particular wavelength, 22:388(P)
SAMARIUM ISOTOPES Sm-146
energy levels from unified-model in intermediate coupling calculations, (T), 22:1684
energy levels of, evaluated data on, (E), 22:22596
SAMARIUM ISOTOPES Sm-147
alpha decay of, α energies and half-life for, (E), 22:48566
deuteron reactions (d,2n) at 7.6 to 12 MeV, excitation functions for, (E), 22:9856 (UCRL-50332)
energy levels at 121 and 198 keV, g-factor measurements using perturbed γ-γ angular correlations in internal magnetic fields, (E), 22:46779
energy levels of, evaluated data on, (E), 22:22596
neutron capture cross section for, thermal, (E), 22:3742
neutron reactions (n,α) with, α spectra and widths for, (E), 22:9853 (JINR-P6-3605)
neutron reactions (n,α) with, α spectra from resonance, (E), 22:32659
neutron reactions (n,α) with, α widths for, (E), 22:27204
proton reactions (p,2n) with, production of isomeric europium-146 in, (E), 22:25664
thermal diffusivity in promethium oxide--samarium oxide solide solutions, 22:17166 (BNWL-680, pp 19-20)
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
SAMARIUM ISOTOPES Sm-148
alpha decay from excited states of, (E), 22:27204
alpha decay from highly excited states, (E), 22:9853 (JINR-P6-3605)
alpha decay of, α energies and half-life for, (E), 22:48566
alpha inelastic scattering cross sections at 15.1 MeV, (E), 22:20588
alpha transitions from excited states in samarium-147 (n,α) reactions, (E), 22:32659
deuteron inelastic scattering cross sections at 12.1 MeV, (E), 22:20588
energy levels and transitions from beta decay of promethium-148, (E), 22:1650 (JINR-P6-3471)
energy levels from β decay of promethium-148, gamma transitions in, (E), 22:50647
energy levels from oxygen-16 inelastic scattering, (E), 22:32614
energy levels from samarium-150 (p,t) reactions, (E), 22:48518 (JAERI-1158, pp 47-55)
energy levels from samarium-150 (p,t) reactions, (E), 22:27147
energy levels of, evaluated data on, (E), 22:22596
neutron capture cross section of, thermal, (E), 22:44677 (AAEC/TM-443)
nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
nuclear shape and deformation of, effects on collective states, (T), 22:27323
nuclear shape and deformation parameters for, research using alpha elastic and inelastic scattering, (E/T), 22:22593
oxygen-16 inelastic scattering at 40 to 49 MeV, gamma spectra from, (E), 22:32614
proton elastic and inelastic scattering, (E), 22:11952
proton inelastic scattering at 10, 10.5, and 12 MeV, proton spin-flip probability in, (E), 22:42077
SAMARIUM ISOTOPES Sm-149
alpha decay of, α energies and half-life for, (E), 22:48566
buildup in Portuguese RPI, measurement of, 22:37533 (LFEN-NI.-34-a)
carbon-12 inelastic scattering with Coulomb excitation, γ spectra from, (E), 22:39665
concentration with time in AVR and THTR reactors, methods for analysis of, (T), 22:20845
energy-level spins and transitions from europium-149 decay, (E), 22:5838
energy-level transitions from carbon-12 inelastic scattering with Coulomb excitation, E2, (E), 22:39665
neutron absorption and scatter cross sections of burnable poisons of, measurement of, 22:37509 (AI-AEC-Memo-12673)
neutron capture by aligned, anisotropy of γ angular distributions from pile, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture by, conversion-electron and γ spectra from thermal, (E), 22:30011
neutron capture by, γ spectra from thermal, (E), 22:28148
neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
neutron capture by, internal conversion electron spectra from, (E), 22:50604
neutron capture by, samarium-150 energy levels from, (E), 22:11955
neutron reactions (n,α) with, α widths for, (E), 22:27204
neutron resonance parameters at 0.8715 eV, resolution corrections to, (E/T), 22:41917 (CNAEM-51)
neutron resonances at 0.0973 and 0.872 eV, parameters for, (E), 22:46762 (CNAEM-52)
nuclear radius of, isomer shift from Moessbauer measurements, (E), 22:53095 (BMwF-FBK-68-11)
poisoning effects on reactivity in Peach Bottom Power Reactor, Unit 1 of, computer analysis of, 22:24959 (GAMD-7910)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
SAMARIUM ISOTOPES Sm-150
alpha inelastic scattering cross sections at 15.1 MeV, (E), 22:20588
alpha reactions (α,xn) at 36 and 40 MeV, (E), 22:27162
analysis for impurities, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
deuteron inelastic scattering cross sections at 12.1 MeV, (E), 22:20588
energy levels from europium-150 decay, spin-parity assignments and transition probabilities for, (E), 22:42082
energy levels from neutron capture in samarium-149, (E), 22:11955
energy levels from oxygen-16 inelastic scattering, (E), 22:32614
energy levels from samarium-152 (p,t) reactions, (E), 22:48518 (JAERI-1158, pp 47-55)
energy levels from samarium-152 (p,t) reactions, (E), 22:27147
energy-level spins and transitions from samarium-149 thermal neutron capture, (E), 22:30011
gamma angular correlation in lattices, Coulomb-excitation ion-implantation perturbed, (E), 22:9108
gyromagnetic ratio of 334-keV level in, (E), 22:1354
hyperfine magnetic fields at nuclei in cobalt, iron, and

nickel, measurements using ion implantation with perturbed angular correlation method, (E), 22:46267

hyperfine magnetic fields at nuclei in magnetized gadolinium below Curie point, measurements using ion implantation with perturbed anbular correlation technique, (E), 22:46267

hyperfine magnetic fields in ferromagnetic lattices, (E), 22:1354

neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)

nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830

nuclear shape and deformation of, effects on collective states, (T), 22:27323

nuclear shape and deformation parameters for, research using alpha elastic and inelastic scattering, (E/T), 22:22593

oxygen-16 inelastic scattering at 40 to 49 MeV, gamma spectra from, (E), 22:32614

oxygen-16 inelastic scattering by, reorientation effect in Coulomb excitation in, (T), 22:7759

proton reactions (p,t) at 55 MeV, angular distributions and spectra for, (E), 22:27147

proton reactions (p,t) at 55 MeV, angular distributions for, (E), 22:48518 (JAERI-1158, pp 47-55)

SAMARIUM ISOTOPES Sm-151

energy levels from beta decay of promethium-151, (E), 22:11976

half-life of, 22:14433 (ORNL-4196, pp 66-89)

half-life of, (E), 22:24845

yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

SAMARIUM ISOTOPES Sm-152

alpha differential inelastic scattering cross section at 50 MeV, angular distribution for, (E), 22:3700 (UCRL-17547(Exp.))

alpha inelastic scattering at 11 to 15 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)

alpha inelastic scattering by, angular distributions for, (E), 22:27205

alpha inelastic scattering cross sections at 16.1 MeV, (E), 22:20588

alpha reactions (α,2n) at 40 MeV, conversion-electron spectra from, (E), 22:48514 (JAERI-1158, pp 14-16)

alpha reactions (α,xn) at 36 and 40 MeV, conversion-electron spectra from, (E), 22:27162

boron-11 reactions at 64 MeV, proton transfer in, (E), 22:24880

charged-particle inelastic scattering with multiple Coulomb excitation, effect of electric hexadecapole moment on, (T), 22:46740

charged-particle scattering by, effects of excited states on Coulomb, (T), 22:27342

detection in drugs, use of neutron activation analysis for, 22:12230

deuteron inelastic scattering cross sections at 12.1 MeV, (E), 22:20588

energy and transition probabilities of 0^+ and 2^+ levels in, (T), 22:30096

energy level at 0.96 MeV, radiation effects on nuclear resonance fluorescence yield in samarium oxide, (E), 22:11967

energy level at 122 keV, g-factor measurement using perturbed angular correlations, (E), 22:24835(R) (BARC-305)

energy level at 122 keV, half-life of, (E), 22:46773

energy level at 963 keV, use of resonance fluorescence analysis by Compton-scattered gamma rays for measuring lifetime of, 22:18198

energy level transition, hyperfine center-of-gravity shift for E2, (T), 22:43897

energy levels from europium-152 decay, band mixing parameters and transition probabilities for, (E), 22:5859

energy levels from oxygen-16 inelastic scattering, (E), 22:32614

energy levels from samarium-154 (p,t) reactions, (E), 22:48518 (JAERI-1158, pp 47-55)

energy levels from samarium-154 (p,t) reactions, (E), 22:27147

energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)

energy levels in rotational and vibrational bands from Coulomb excitation, multiple mixing ratios and transition probabilities for, (E), 22:48523 (ORNL-TM-2211)

energy levels of, description using number-projected wave functions for collective, (T), 22:27318

energy levels of, g-factor and lifetime of first excited rotational, (E), 22:9913

energy levels of, g-factor measurements using precession in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)

energy levels of, lifetimes of 2^+ rotational, (E), 22:53095 (BMwF-FBK-68-11)

energy levels of, lifetimes of rotational, (E), 22:14045

energy levels of, magnetic moment of first-excited, (E), 22:14014

energy-level transition probabilities in, ratios of E2, (T), 22:16043

energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043

energy-level transitions from β-vibrational band, branching ratios for, (E), 22:11944(R) (AECL-2780)

energy-level transitions from europium-152 decay, multipole mixing ratios for, (E), 22:26929(R) (COO-1420-139)

energy-level transitions from europium-152 decay, internal conversion electron particle parameters for, (E), 22:42067

energy-level transitions in β-vibrational bands, branching ratios for, (E), 22:27188

energy-level transitions in β-vibrational bands, monopole matrix elements for E0, (E), 22:27186

energy-level transitions in rotational and vibrational bands, E0 admixture in $\Delta I = 0$, (E), 22:20651

energy-level transitions in, conversion-electron particle parameters for E2, (E), 22:42055

energy-level transitions in, internal conversion electron particle parameters for E2, (E), 22:27185

energy-level transitions in, K/L and K/L_3 internal conversion ratios for E2, (E), 22:53187

gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621

gyromagnetic ratio of, calculation of collective, (T), 22:20684

internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730

neutron absorption and scatter cross sections of burnable poisons of, measurement of, 22:37509 (AI-AEC-Memo-12673)

neutron capture by, conversion-electron and γ spectra for, (E), 22:20578 (WASH-1079)

neutron capture by, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)

neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)

nitrogen-14 reactions at 104 MeV, proton transfer in, (E), 22:24880

nuclear charge distribution and transition quadrupole moments from x-ray spectra of μ-mesic, (E/T), 22:37281(R) (NYO-72-191)

nuclear charge radius of, effects of collective excitations on, (E), 22:27192

nuclear deformation energies of, (T), 22:30081

nuclear deformation of, measurement using α inelastic scattering at 50 MeV, (E), 22:3700 (UCRL-17547(Exp.))

nuclear deformation parameters from α inelastic scattering, (E), 22:27205

nuclear dynamics from muonic x-ray spectra of, (T), 22:20700

nuclear electric quadrupole moment of 2^+ first excited state of, calculation using projected deformed state wave functions, (T), 22:27276

nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830

nuclear radius of, measurement using Moessbauer effect, (E), 22:48202(R) (BMwF-FBK-68-01)

nuclear shape and deformation of, effects on collective states, (T), 22:27323

nuclear shape and deformation parameters for, research using alpha elastic and inelastic scattering, (E/T), 22:22593

nuclear shape in ground-state rotational band, Y_{40} and Y_{60} components of, (E), 22:14007

oxygen-16 inelastic scattering at 40 to 49 MeV, gamma spectra from, (E), 22:32614

oxygen-16 inelastic scattering at 42 to 52 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)

oxygen-16 inelastic scattering by, reorientation effect in Coulomb excitation in, (T), 22:7759

proton inelastic scattering at 12 MeV, proton spin-flip probability in, (E), 22:42077

proton reactions (p,t) at 55 MeV, angular distributions and spectra for, (E), 22:27147

proton reactions (p,t) at 55 MeV, angular distributions for, (E), 22:48518 (JAERI-1158, pp 47-55)

use for radiography source, 22:4634

x-ray spectra of μ-mesic, electric quadrupole effects in, (E), 22:5817(R) (NYO-GEN-72-28)

yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)

SAMARIUM ISOTOPES Sm-153

beta decay of, β−-γ angular correlation measurements of cascades in, (E), 22:16042

beta decay of, β−-γ angular correlations in, (E), 22:24835(R) (BARC-305)

energy level at 35 keV, spin and parity of, (E), 22:5809(R) (ANL-7354)

energy levels from samarium-152 neutron capture, (E), 22:20578 (WASH-1079)

energy levels of, K = 1/2 rotational, (T), 22:20664

energy-level transitions from promethium-153 decay, (E), 22:53095 (BMwF-FBK-68-11)

half-life of, (E), 22:24845

SAMARIUM ISOTOPES Sm-154

alpha differential inelastic scattering cross section at 50 MeV, angular distribution for, (E), 22:3700 (UCRL-

17547(Exp.))
- alpha inelastic scattering by, angular distributions for, (E), 22:27205
- alpha inelastic scattering cross sections at 16.1 MeV, (E), 22:20588
- alpha reactions (α,xn) at 36 and 40 MeV, conversion-electron spectra from, (E), 22:27162
- deuteron inelastic scattering cross sections at 12.1 MeV, (E), 22:20588
- energy and transition probabilities of 0^+ and 2^+ levels in, (T), 22:30096
- energy level at 82 keV, g-factor measurement using Moessbauer effect following Coulomb excitation, (E/T), 22:7698 (NYO-2028-2, pp 37-44)
- energy level at 82 keV, half-life of, (E), 22:46773
- energy levels from europium-154 decay, (E), 22:37354
- energy levels from oxygen-16 inelastic scattering, (E), 22:32614
- energy levels of, g-factor and lifetime of first excited rotational, (E), 22:9913
- energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- Moessbauer effect following proton scattering with Coulomb excitation, (E), 22:7698 (NYO-2028-2, pp 37-44)
- nuclear deformation of, measurement using α inelastic scattering at 50 MeV, (E), 22:3700 (UCRL-17547(Exp.))
- nuclear deformation parameters from α inelastic scattering, (E), 22:27205
- nuclear shape and deformation of, effects on collective states, (T), 22:27323
- nuclear shape and deformation parameters for, research using alpha elastic and inelastic scattering, (E/T), 22:22593
- nuclear shape in ground-state rotational band, Y_{40} and Y_{60} components of, (E), 22:14007
- oxygen-16 inelastic scattering at 40 to 49 MeV, gamma spectra from, (E), 22:32614
- proton elastic and inelastic scattering, (E), 22:11952
- proton reactions (p,t) at 55 MeV, angular distributions and spectra for, (E), 22:27147
- proton reactions (p,t) at 55 MeV, angular distributions for, (E), 22:48518 (JAERI-1158, pp 47-55)
- yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
- yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)

SAMARIUM ISOTOPES Sm-155
- beta decay of, conversion coefficients and γ spectra for, (E), 22:16005 (IS-1730)
- beta decay of, conversion-electron spectra for, (E), 22:14000 (NP-17225)
- beta decay of, europium-155 energy levels from, (E), 22:5844
- beta decay of, γ spectra for, (E), 22:42068
- beta decay scheme of, conversion-electron and γ spectra from, (E), 22:44723
- energy levels of, K = 1/2 rotational, (T), 22:20664
- nuclear spin of, determination using atomic-beam magnetic-resonance technique, (E), 22:20596

SAMARIUM ISOTOPES Sm-156
- beta decay of, β—γ and γ—γ coincidence spectra for, (E), 22:50615
- energy levels at 88 and 291 keV from samarium-156 decay, lifetimes of, (E), 22:50615

SAMARIUM NITRATES
- complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
- separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
- separation by solvent extraction using TBP, thermochemical studies on, 22:18907

SAMARIUM OXALATES
- crystal structure of decahydrates of, 22:2018(R) (BMwF-FBK-67-76)
- crystal structure of hydrated, 22:14476 (BMwF-FBK-67-87)

SAMARIUM OXIDES
- chlorination by carbon tetrachloride at 350 to 700°C, 22:6274
- determination in drugs by neutron activation, 22:37701
- diffusion of oxygen in Sm_2O_3, 22:52266
- diffusion of oxygen in, at 100°C, coefficient for self-, 22:35824
- effects on electric conductivity of zirconium oxides, (E), 22:31483
- effects on oxidation of hydrogen, effects of oxygen mobility on catalytic, 22:6304
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- emittance at 1400 to 3000°K, hemispherical spectral, (E), 22:28929
- enthalpy at 298.15 to 1600°K, 22:34114
- precipitation from molten alkali metal nitrate—rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
- preparation of microspheres of, by sol-gel process, 22:4859
- radiation effects on nuclear resonance fluorescence yield of the 0.96-MeV level of samarium-152 in, (E), 22:11967
- reactions with boron, preparation of SmB_6 by thermal, 22:23024
- reactions with heat-resisting metal fuel capsules, 22:4356
- reactions with uranium oxides, phases formed in, 22:4108
- reduction using lanthanum for preparation of thin film targets of samarium isotopes, 22:37271
- solubility in boron oxide—strontium oxide systems at 1100°C, 22:41123
- solubility in sodium metaborate, 22:17078
- spectra of, widths of forbidden zones in reflected, 22:4107
- stability of sintered pellets of Sm_2O_3, in water, 22:17156 (BNWL-680, pp 20-4)
- testing of encapsulated hot-pressed Sm_2O_3, impact, 22:36536 (SC-DR-68-295)
- thermal capacity of, 22:34114
- thermal diffusivity of, 22:17166 (BNWL-680, pp 19-20)
- B_2O_3—Sm_2O_3—SrO, phase studies at 1100°C, 22:41123
- Cr_2O_3—Sm_2O_3, phase studies, 22:31524
- Gd_2O_3—Sm_2O_3, sintered density of, 22:28883
- HfO_2—Sm_2O_3, phase studies of, 22:28946
- La_2O_3—Sm_2O_3, phase studies, 22:19656
- PdO—Sm_2O_3, phase relations of, in air, 22:19664
- Pm_2O_3—Sm_2O_3, electric and thermal properties of, 22:33604 (BNWL-SA-1796)
- Pm_2O_3—Sm_2O_3, stability of compacts of, in water, 22:17156 (BNWL-680, pp 20-4)
- SiO_2—SmO, phase studies of, 22:11081
- Sm_2O_3—U_2O_5, phase studies of, 22:12317
- Sm_2O_3—UO_3, molecular structure of hydrated, 22:34119
- Sm_2O_3—W, impact testing of rhenium—tungsten encapsulated cermets of, 22:42977(R) (SC-PR-68-451)
- Sm_2O_3—W, testing of encapsulated cermet, impact, 22:36536 (SC-DR-68-295)
- Sm_2O_3—W, thermoemission of, 22:754
- Sm_2O_3—WO_3, crystal structure of, 22:34103
- SmO_2—UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)

SAMARIUM PHOSPHIDES
- magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
- preparation and physicochemical properties of, 22:14487(T) (UCRL-Trans-10222)

SAMARIUM SELENIDES
- crystal structure of, 22:24388 (CONF-670502-, pp 145-54)

SAMARIUM SILICIDES
- crystal structure of Sm_3Si_5, 22:2647

SAMARIUM SULFATES
- decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

SAMARIUM TELLURIDES
- crystal structure of, 22:24388 (CONF-670502-, pp 145-54)

SAMARIUM TUNGSTATES
- crystal structure and preparation of stable, 22:41090
- electric conductivity of single-crystal, 22:4872
- preparation of Sm_2WO_6, by reaction of erbium oxide and tungsten trioxide, 22:34103
- preparation of Sm_6WO_{12}, by reaction of samarium oxide and tungsten oxide, 22:34103

SAMARIUM TUNGSTEN BRONZES
- effects on electrochemical oxidation of hydrogen, catalytic, 22:33298

SAMARIUM URANATES
- crystal structure of, 22:30523
- preparation of, 22:30523
- stability of, thermal, 22:30523

SAMARIUM VANADATES
- crystal structure and preparation, (E), 22:49812

SAMPLING
- automatic counter for air, 22:43300 (AERE-PR/HPM-12)
- correlation of air and fecal, for measurement of personnel exposure, 22:38264 (UCRL-18140, pp 37-55)
- curved probe for aerosol, in laminar and turbulent gas flows, (E), 22:25607 (BNWL-481-3, pp 90-3)
- design of recycling automatic device for gas, from constant-flow respirometer, 22:28701 (ANL-7278, pp 297-303)
- development of low mineral content paper diaper for collection of feces and urine from human infants for, 22:40732
- development of method for remote micro-, of radioactive materials, 22:27957 (WAPD-TM-685)
- device for liquid sodium, description of test loop Type 304 stainless steel, 22:44820(R) (GEAP-5508)
- equipment and method for real time, of airborne tracers using aircraft, 22:18955 (BNWL-481-1, pp 53-68)
- equipment and methods for ocean water, for studying distribution of bomb-produced carbon-14 and tritium, 22:6505
- equipment and methods for sodium, 22:4314
- equipment and methods for strontium-90 fallout, comparison of, 22:25525 (HASL-193, pp I.2-16)
- equipment and methods for Swedish atmospheric, for carbon-14 measurements, 22:6494
- equipment and methods for, in lower stratosphere, 22:25527 (HASL-193, pp I.33-207)
- equipment and procedures for air, to determine radioisotope levels in Purex process building, 22:12474 (BNWL-643)

equipment for, 22:14425 (ORNL-4196, pp 1-12)
equipment for air radioactivity, design of, 22:2476(P)
equipment for air, design of portable boom-type, 22:18962 (BNWL-481-1, pp 87-92)
equipment for atmosphere, design of subminiature telemetry module for, 22:47431
equipment for atmospheric, development of portable, 22:28224
equipment for coastal sediment, design of, 22:40217
equipment for fallout, for strontium-90 determination, quality control of methods for radiochemical, 22:21020 (HASL-184, pp I.224-45)
equipment for Fermi Fast Breeder Reactor liquid sodium, description and operation of, 22:24927 (APDA-306)
equipment for iodine characterization, for use in humid environments, 22:37909 (ORNL-TM-2071)
equipment for laboratory air, design of low noise, 22:4329
equipment for prompt, of material exposed to nuclear explosions, design and operation of recovery, 22:30749 (UCID-15307)
equipment for radioactive liquid, automatic remote-handling, 22:25581(P)
equipment for radioactive liquid, design of bench, 22:35989(P)
equipment for radioactive-liquid, 22:4061(P)
equipment for reactor graphite, design of remotely operated, 22:6525(P)
equipment for surface microbiological, design and operation of vacuum probe, 22:1932 (SC-RR-67-688)
equipment for uranium hexafluoride, in sampling and transfer facility, 22:14639
low-background radiation, design of sample changer for, 22:222
method for atmospheric precipitation and drinking water, for radioisotope analysis, 22:45199
methods and criteria for routine surveillance of radioactivity around nuclear facilities, 22:25858
methods for airborne radioactivity, 22:2232
methods for fission product, using May packs, 22:14608 (ORNL-TM-2044)
methods for natural environment, α determinations in, 22:2211
methods for particle, in turbulent gas flow through vertical tubes, errors in isokinetic, (E), 22:25606 (BNWL-481-3, pp 81-9)
methods for radioactive aerosol, to determine particle size distribution in laboratory facilities air, 22:28446 (AERE-R-5688)
methods for radioactive contamination in environment of nuclear facilities, 22:19348
methods for radon and tritium, in Illinois atmosphere and rainwater, 22:8220(R) (COO-1199-14)
methods for sulfur isotopes in atmosphere, 22:177 (BNL-11848)
procedure for inventorying nuclear material by U.S. Atomic Energy Commission, 22:605 (CONF-661011, pp 1-7)
program for global soils, to determine strontium-90 deposition, review of, 22:27917 (TID-24341)
smear, of metal surfaces following tritium absorption, efficiency of, 22:43300 (AERE-PR/HPM-12)
techniques for debris from Anacostia and Kennebec thermonuclear events in Plowshare project, 22:37657 (UCRL-50441)
tracer techniques in, review of, 22:10508

SAN FRANCISCO BAY AREA (CALIF.)
sediment behavior in, use of fallout as tracer to study, 22:4272 (TID-24140)
strontium-90 content in diets in, comparison of predicted and measured values for, 1967, 22:25529 (HASL-193, pp I.217-22)
strontium-90 content of food in, during May to June 1967, 22:40697
strontium-90 content of human diet in, during 1965, 22:23522
strontium-90 content of human diet in, during 1966, 22:23518
strontium-90 content of human diet in, during Aug. to Dec. 1966, 22:23515
uranium content of biological materials in, 22:28501
uranium content of human diet in, 22:28501

SAN ONOFRE POWER REACTOR
containment system for, flow diagrams and list of valves for isolation of, 22:20784 (DOCKET-50206-2)
containment system for, isolation valves for, 22:20783 (DOCKET-50206-1)
containment vessel for, seals for electrical penetrations for, 22:10051
control system for, description of instrumentation for, 22:22757
coolant loss accidents in, effects of safety injection failure during, 22:20783 (DOCKET-50206-1)
core for, peak heat flux and power distribution in, 22:20783 (DOCKET-50206-1)
description of, 22:16216
description of 450 MW pressurized-water reactor, 22:20848
design features of, description of special, 22:46945
design parameters for, 22:22712 (STI/PUB-174)
development of, review of technology and economics for, 22:53298
electrical cable failures in, simulation and investigation of, 22:39743 (DOCKET-50206-3)
emergency power system for, detailed description of, 22:20783 (DOCKET-50206-1)
fission product release from, evaluation of consequences of, 22:20783 (DOCKET-50206-1)
licensing of, 22:16216
pressure vessel for, detailed description of surveillance program for, 22:20784 (DOCKET-50206-2)
safety features of, description of, 22:20856
specifications for, philosophy behind development of technical, 22:20856
startup of, description of, 22:20848
startup procedures for, description of problems in, 22:25023
transients in, effects of double ended pipe failure on pressure, 22:20783 (DOCKET-50206-1)
volume control system for, effects of boric acid additions to, 22:20783 (DOCKET-50206-1)

Sand Dollars
see Echinodermata

SANDIA PULSED REACTOR
kinetic behavior of, effects of neutron reflectors on, 22:10065 (SC-RR-67-802)

SANDIA PULSED REACTOR II
mechanical characteristics of, analysis of dynamic, 22:33034
operations history of, review of early, 22:27469 (SC-DR-67-801)
pulse characteristics of, analysis of, 22:33033
reactivity measurements in glory hole of, analysis of, 22:33073
use for reactivity coefficients measurements on materials, 22:42366 (SC-CR-68-3571)

SANDS
see also Beaches
see also Monazites
see also Quartz
see also Silicon Oxides
analysis for iron by γ and x scattering and transmission, 22:12247
analysis for iron by x-ray-absorption methods, 22:33211
analysis for strontium-90 by solvent extraction of yttrium-90 daughter using bis(2-ethylhexyl) phosphate, 22:30425 (AAEC/TM-421)
analysis for strontium-90, solvent-extraction procedure for improving results in, 22:18685 (AAEC/TM-395)
analysis for zirconium by x-ray fluorescence, method for, 22:4040
analysis for zirconium, x-ray fluorescence, 22:16436
content of sediments in coastal western Puerto Rico, 22:21217 (PRNC-104, pp 121-46)
crater formation in, laboratory-scale studies on, 22:8241 (PNE-5011)
filtration efficiency of, for removal of manganese from water supplies, (E), 22:25580
flow through rotary kilns, use of radioactive tracers for measurement of, 22:14715
labeling of, using gold-198 and silver-110, 22:28018(R) (PAEC/CHEM-1)
labeling with chromium-51 and gold-198, methods for surface, 22:19063
labeling with chromium-51, method for surface, 22:19062
migration on sea floor, use of gold-198 as tracer to measure, 22:23220 (IA-1128, pp 160-8)
mineral content of Nettuno, Rome, 22:37891
moisture content of, neutron moisture meter for determining, 22:43145
movement in coastal waters, use of chromium-56 and scandium-46 as tracers to measure, 22:10511
movement in hydraulic channels, use of radioactive tracers to determine, 22:28018(R) (PAEC/CHEM-1)
movement in littoral system, computer plotting using xenon-133 tracer for determining, 22:38146 (ORNL-TM-2212)
movement in Seine estuary, use of gold-198 and iridium-192 as tracers to measure, 22:48942
movement of coastal, radioisotope method for measuring, 22:51123
movement of river, kinetic characteristics of, (E/T), 22:18996
neutron production rates in, from natural radioactivity, 22:30705
neutron transport in, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
porosity of, measurement by bromine-82 tracer method, (E), 22:30697
radioactive tracer dispersion in, (E/T), 22:19073
radioactive waste disposal in Mol, effect of chemical barriers on, 22:16804
radioactivity in Arve Valley, France, measurement of natural, 22:48962
radioactivity of middle Volga region, measurement of natural, 22:25520
separation of ilemite, zircon, and monazite from Westport Beach, 22:12425
SNAP-27 fuel capsule burial in, temperature measurement during, 22:8303 (SC-DR-67-716)
strontium-89 dispersion in white, coefficients for, 22:16804
use in production of laminated radiation-resistant panels, 22:9417(P)

  use with iron additive in portable radiation shield, 22:48988(P)
  water content in, use of neutron-backscattering moisture gages for determining, 22:25684
SANDSTONE
    see also Quartzites
  analysis of Oak Ridge area, for disposal of radioactive waste by fracturing, 22:48916 (ORNL-4259)
  density and moisture of, gamma and neutron methods for measurement of, 22:48920
  equation of state for Gasbuggy Site, measurement of Hugoniot, 22:47257 (UCRL-13357)
  leaching uranium from, 22:8179
  strength in triaxial compression, equipment and method for measurement of, 22:14402 (UCRL-13334)
SANITARY ENGINEERING
    see also Industrial Hygiene
SANTA MARIA DE GARONA POWER REACTOR
  reactor building for, description of, 22:53288
  shielding for, description of, 22:53288
Santowax OM
    see Terphenyl
Santowax OMP
    see Polyphenyl Systems
Santowax R
    see Polyphenyl Systems
Santowax WR
    see Polyphenyl Systems
SAP (SINTERED ALUMINUM POWDERS)
  bonding with stainless steel of, description of pressure, 22:30389
  brazing using Alpax brazing agent, 22:11028(T) (UCRL-Trans-10144)
  characteristics of, 22:45760
  cladding for 1000 MW(e) heavy water-moderated organic-cooled power reactors fuel elements, performance analysis of, 22:50741 (WASH-1083)
  cladding for uranium carbide (UC) fuel assemblies, radiation effects in NRU Reactor on, 22:47003 (AI-CE-75)
  compacting processes for, 22:4858
  compatability with uranium monocarbide at 450 to 625°C, 22:10913 (ORNL-TM-2010)
  compatibility with hyperstoichiometric uranium carbide (UC) in HWOCR fuel elements, (E), 22:46857 (AI-CE-77)
  compatibility with uranium monocarbide at 450 to 625°C, 22:8687 (ORNL-4170, pp 128-37)
  corrosion of SAP-895, by flowing water at 190°C, 22:23714 (IN-1131, pp 91-100)
  creep of, effects of dispersion, extrusion, and heat treatments on, 22:750 (EUR-3566)
  development and testing for ORGEL reactor, 22:43647 (EUR-4035)
  dissolution in sodium hydroxide solutions, 22:23108
  ductility of Microxal, fabrication for improved, 22:41041
  fabrication into fuel rod bellows and end closures, by magnetic forming, 22:28913(P)
  fabrication of large pipes of, 22:45760
  fabrication of, flow sheet for, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  fabrication, machining, and welding of tubes of, 22:19493
  fuel element cladding of, configuration of, 22:42488(P)
  hardness of, effects of cold work on, 22:12957
  joints with different materials, metallography of, 22:43553
  joints with steel and stainless steel, tensile testing of rolled, 22:3813(R) (AI-CE-54)
  mechanical properties and preparation of, 22:750 (EUR-3566)
  mechanical properties at 20 to 600°C, 22:49740
  mechanical properties at 40 to 480°C, analysis of, 22:30388
  mechanical properties at high temperatures, 22:43647 (EUR-4035)
  mechanical properties evaluation of, 22:8687 (ORNL-4170, pp 128-37)
  mechanical properties of, 22:7058
  mechanical properties of, relations with ball-milled and blended aluminum--aluminum oxide sinters, 22:19631
  performance as cladding for uranium carbide fuels, 22:11087 (AI-CE-76)
  performance as fuel cladding for organic cooled and moderated reactors, 22:49822
  pressure tube transition joints between stainless steel and, performance and testing of HWOCR, 22:14604 (AI-CE-46(Add.))
  production for nuclear use, 22:41014
  production processes for, 22:8687 (ORNL-4170, pp 128-37)
  properties for use in nuclear technology, 22:7058
  radiation effects on mechanical properties of, program for determination of neutron, 22:19580 (BNWL-455, Paper 12.1-100)
  radiation effects on tensile properties of, 22:19520(R) (RISO-151)
  stress measurements on, 22:3813(R) (AI-CE-54)
  tensile properties of extruded rods of, effects of process variables and powder shapes on, 22:34017 (ORNL-TM-2215)
  tensile properties of, testing of, 22:3813(R) (AI-CE-54)
  testing for HWOCR fuel cladding, 22:627 (AI-CE-72)
  testing tubes of, for reactors, 22:43566 (EUR-3929)
  thermal conductivity at 100 to 500°C, 22:4867 (EUR-3644)
  thermal fatigue testing of, 22:23758 (EUR-3899)
  welding of fuel element sheath and end-plug of, description of circumferential hammering method for, 22:42473(P)
  welding of, methods for fuel cladding, 22:10933
  welding to alloys, cermets, or metals, methods for, 22:23747(P)
  Al_2O_3--SAP, radiation effects on, neutron, 22:19673
SAPHIR (Switzerland)
    see Reactors, Swimming Pool
SAPONINS
  effects on blood of man and rats, production of leukocyte concentrates by hemolytic, 22:40525
SAPPHIRES
  crystal growth and purity of, prepared by electron-beam float-zone technique, 22:52289
  enthalpy at 1200 to 2170°K, 22:15256
  enthalpy of synthetic, at 1200 to 2170°K, 22:15176 (GEMP-1002, pp 11-37)
  incorporation into composite materials as whiskers, use of scanning electron microscopy for examining, 22:49838 (AWRE-O-43/68)
  luminescence at 4 and 77°K in uv region, induced by x rays, 22:46216
  radiation effects on color of vessels of synthetic, for use in radiolysis studies, 22:37786
  radiation effects on electric conductivity of, electrons and x, 22:12721
  radioinduced deformation loops in, neutron, 22:4905
  use of artificially produced, for viewing objects at high temperatures, 22:51141
  whiskers of, diameter and length of monocrystalline, 22:52258 (AWRE-O-71/68)
Sarcolysin (Antineoplastic)
    see Melphalan
Sarcomas
    see Diseases, Neoplastic--sarcomas
Sarcosine, N-Amidino-
    see Creatine
Sarcosine, N-(Phosphonoamidino)-
    see Creatinephosphoric Acid
SATELLITES
    (A body, usually man-made intended for orbiting, e.g., Explorer I.)
    see also Moon
    see also Space Vehicles
  book: Propagation Factors in Space Communications, 22:46038
  components in, motion of internal, (T), 22:3996(T) (SC-T-67-0954)
  development for nuclear explosion detection, 22:27948
  effect of first three Galilean, on Jovian decametric emission, (T), 22:36605
  effect of Io on Jovian decametric emission, (E), 22:8953
  effect of Io on Jupiter decametric emission, (E), 22:17198
  effects of first two Galilean, on decametric emission from Jupiter, (T), 22:871
  effects of Jupiter's Galilean, on decametric radio emission, (T), 22:17324
  effects of lunar--solar perturbations on 24-hour period, 22:31693(T) (RSIC-740)
  effects on ionization in upper atmosphere, (T), 22:48012
  electron densities around ionospheric, (E), 22:17502
  equipment for detection and measurement of 0.1- to 1.0-MeV charged particles, design of magnetic spectrometer, 22:28149
  equipment for detection and measurement of 1- to 100-keV charged particles, design of electrostatic analyzer, 22:28094
  equipment for detection and measurement of 6- to 100-MeV protons, design of silicon surface-barrier range energy proton spectrometer, 22:28151
  equipment for detection and measurement of relativistic electrons, design of anthracene scintillation and silicon semiconductor detector, 22:28099
  equipment for OGO-F, design of cosmic-ray telescope, 22:28987
  equipment for, design of silicon surface-barrier proton spectrometer, 22:28150
  heat pipe performance in, effects of space environment on, 22:23210 (LA-DC-9028)
  instrumentation for, multiple ionospheric probe for measuring electron densities in E-region, 22:4526
  interactions of primary cosmic particles with materials of Kosmos-53, secondary emission from, (E), 22:21966
  micrometeoroid detectors for Pegasus, electron radiation effects on Mylar, 22:40509 (N-68-13147)
  motion in ionosphere, collision effects on charged particle densities around, 22:26300
  OGO I and III, radiation detection aboard, ionization chamber for, 22:43041
  OGO-F, design of solid-state detector for electron measurements on, 22:36033 (N-68-22703)
  OGO-F, semiconductor detectors for electron detection aboard, 22:40411
  operation and structure of Ariel III, (E), 22:13375
  orbital mechanics of, book: Introduction to Space Science, 22:19898

- particle detection and measurement aboard OGO-F, 18- to 160-MeV alpha and 5- to 80-MeV proton, 22:29306
- power supplies for, discussion of types of, 22:17438
- propulsion of, aerospace nuclear safety analysis of promethium oxide-fueled thruster for, 22:37950
- propulsion of, using Alfven waves, 22:13299
- proton distributions from data taken by Telstar I, (E/T), 22:11320
- radiation damage to silicon solar cells on D1-A, from particles trapped in magnetic field, 22:12719
- radiation dose rates for Black Arrow, (T), 22:26268 (RAE-TR-67206)
- radiation effects on thermal-coating aging of FR-1, ultraviolet, 22:12719
- radiation source for biological, preparation of γ, 22:6864 (BNWL-SA-1344)
- radioactive contamination from unplanned re-entry of, model for predicting human injuries induced by, 22:43429
- reception of ground-based Loran transmissions by Explorer 20, (E), 22:9197
- scattering of plasma streams in bi-thermal ionosphere, double, (T), 22:43994
- solar observations from, (T), 22:26195
- spectrometer designed for Proton, for high-energy cosmic-ray particles, 22:2417
- study of vlf radio waves with Ariel, (E), 22:17487
- temperature cycle for FR-1 and D1-A, 22:12719
- testing in, radiation sources for biological, 22:4359
- testing on, radiographic and ultrasonic methods for, 22:43000
- testing on, radiographic method for, 22:43001
- triggering of pulsar pulses by small orbiting, (T), 22:38667

Saturable Reactors
  - see Electronic Equipment

SATURN (PLANET)
  - effects on rings on exosphere and magnetic field, (T), 22:8969
  - exosphere of, temperature of, (T), 22:52330
  - microwave emission from, (E), 22:36654
  - radio brightness temperature at 3.4 mm, (E), 22:19691

Saturn Burst
  - see Plumbob Operation

Saturne Accelerator
  - see Saclay Proton Synchrotron

Sausage Instability
  - see Pinch Effect

Savannah Merchant Ship Reactor
  - see Maritime Pressurized-Water Reactor

SAVANNAH RIVER
  - ecology of animals and plants in, 22:6775
  - radioactive waste disposal in, guides for, 22:43321
  - radioactivity monitoring in water of, January through June 1968, 22:45178(R) (DPST-68-30-2)
  - radioisotope sorption by blue-green algae of, effects of temperature on, 22:38191 (DP-MS-66-88)

Savannah River Area (S.C.)
  - see Aiken Area (S.C.)

SAVANNAH RIVER COMPONENTS TEST REACTOR
  - bolt failure in, factors affecting 17-4 PH stainless steel, 22:8693 (DP-1102)
  - fuel element irradiation in, analysis of tubular uranium oxide (UO_2), 22:22810 (DP-995)
  - fuel elements for, fabrication of Zircaloy-2-clad uranium--zirconium driver, 22:44896 (NMI-4379)
  - operations history of, total, 22:1821

SAVANNAH RIVER POWER REACTOR EXPERIMENT
  - radioisotope uptake by organisms in environs of, 22:38253 (DP-MS-67-99)

SAVANNAH RIVER PRODUCTION REACTORS
  - antineutrino flux near, 22:15738 (SRO-142)
  - control system for, description of on-line digital computer, 22:44914 (DPSPU-68-30-1)
  - rabbit systems for experimental isotope irradiations in, description of mechanical and pneumatic, 22:44915
  - radioactivity content of environment at site of, during 1965, 22:25850
  - tritium buildup in, safety analysis for, 22:35455 (DPSPU-66-30-13)
  - waste disposal from, geologic aspects of underground, 22:28036 (DP-MS-67-108)

SAVANNAH RIVER REACTOR MOCKUP
  - control rod drives for, description of malfunctions in, 22:50811 (TID-24698)
  - fuel assembly burnup in, analysis of heavy water-moderated uranium oxide (UO_2), 22:25082 (DP-1122)
  - physics measurements on HWOCR enriched uranium--thorium oxide (ThO_2) and --thorium metal lattices in, (E/T), 22:20807 (DP-1125)

SAVANNAH RIVER THERMAL TEST REACTOR
  - reactivity in, effects of boron concentration in water on, (E/T), 22:32743(R) (BNWL-739)

Saws
  - see Cutting Tools

SAXTON POWER REACTOR
  - coolant pH effects on reactivity of, 22:16165(R) (WCAP-3696-6)
  - fuel assembly for, design and fabrication of 97- and 78-per cent density uranium oxide (UO_2) 2 x 2, 22:39793 (WCAP-3269-64)
  - fuel element burnup in, calculation of plutonium oxide (PuO_2)--uranium oxide (UO_2), (E/T), 22:27417(R) (WCAP-3385-14)
  - fuel element subassembly for, fabrication of, 22:1777(R) (WCAP-3696-5)
  - fuel elements for, over power testing of, 22:50743(R) (WCAP-3385-16)
  - fuel elements for, performance evaluation of plutonium, 22:7802(R) (EURAEC-1923)
  - fuel elements for, utilization of zone loaded plutonium, 22:6023
  - fuel elements in, comparison of experimental and calculated performance values for plutonium, 22:50743(R) (WCAP-3385-16)
  - fuel elements in, development program for plutonium, 22:25007
  - fuel elements of, effects of pH on reactivity of, 22:16165(R) (WCAP-3696-6)
  - fuel recycle program for, description of optimum plutonium, 22:32896
  - heat transfer in fuel assemblies of, effects of crud chemistry on 3 x 3, (E), 22:35477(R) (WCAP-3696-7)
  - in-pile loop for, fabrication of supercritical water-cooled, 22:42213 (WCAP-3374-5)
  - operations during 1963 to 1965, graph representation of, 22:39793 (WCAP-3269-64)
  - operations history of, total, 22:1821
  - oscillator for dynamic measurements in, description of, 22:1777(R) (WCAP-3696-5)
  - physics characteristics of plutonium-containing cores in, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
  - physics measurements for plutonium fueled, power operation, 22:22769
  - power distributions in, comparison of calculated and measured values for, 22:50743(R) (WCAP-3385-16)
  - power operation during December 1967 and February 1968, description of, 22:35477(R) (WCAP-3696-7)
  - Supercritical Loop design, construction, and testing in, 22:46926 (WARD-3843-1)

Scabbing
  - see Rupture

SCALERS
  - data from, computer program for processing paper-tape, 22:49139 (AERE-M-2077)
  - design and construction of portable transistorized, 22:28066 (NP-17360)
  - design and performance for health physics applications, 22:16924 (AECL-2796)
  - design and performance of tunnel diode, 22:14877(T) (AD-660763)
  - design of 600 MHz decade, computer-aided, 22:36129 (ORNL-TM-2214)
  - design of decade, with 500-Mc resolution, 22:2464
  - design of portable, for G-M detector, 22:45277 (CNEA-204)
  - design of tunnel diode binary, 22:43182
  - performance of paired, for measurement of isotope dilution following injection of iodine-131-labeled serum albumin in man, 22:38342
  - properties of combination rate meters-, statistical, 22:43184
  - readout device for, design of, 22:12712(P)
  - use of binary, in design of thirty-two channel time analyzers, 22:38153
  - uses in association with medical applications of radioisotopes, 22:19216

SCANDIUM
  - abundance in early A stars, (T), 22:29016
  - abundance in γ Capricorni, (E), 22:38692
  - abundance in HD 122563, (E), 22:869
  - abundance in HR 4072, (E), 22:11172
  - abundance in HR 774, (E), 22:23983
  - abundance in zeta Lyr A, (E), 22:29147
  - analysis for impurities, spectroscopic, 22:18727
  - analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
  - analysis of, 22:27694
  - atomic weight of, based on carbon-12 = 12, 22:42698
  - book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  - complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
  - complexes with 3-[[cyano[(2-hydroxy-5-sulfophenyl)-azo]methylene]hydrazino]-4-hydroxybenzenesulfonic acid, spectrophotometric studies on, 22:1992
  - complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
  - complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  - complexes with polyaminocarboxylate ions, potentiometric studies on, 22:16537
  - complexes with polyhydroxyflavones, spectrophotometric studies on, 22:16503
  - content of aquatic plants, 22:19301
  - content of marine algae, crustaceans, fish, and mollusks, 22:22903 (PRNC-104, pp 57-67)
  - content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
  - crystal structure, 22:34070
  - Curie levels and Roentgen rates for neutron-irradiated,

at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in glass fragments by activation methods, 22:33205 (AWRE-O-3/68)
determination as trace impurity in iron oxide and thorium nitrate, by solvent extraction and activation, 22:12240
determination as trace impurity in petroleum by neutron activation methods, 22:1989
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic absorption, 22:45023
determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
determination by neutron activation method, substoichiometric, 22:27618
determination by spectrophotometry using high-frequency excitation tubes without electrodes, 22:30494
determination in airborne particulates by neutron activation methods, 22:30501
determination in aluminum, activation method for, 22:21036
determination in biogenic carbonates by neutron activation methods, 22:21026 (PRNC-104, pp 96-8)
determination in biological materials by automated neutron-activation methods, 22:16450
determination in biological materials by irradiation, ion-exchange separation, and counting, 22:21028 (PRNC-104, pp 102-6)
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in gallium by neutron activation methods, 22:42614
determination in glass by neutron activation and photonuclear activation methods, 22:16400 (GA-8171, pp 147-60)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in high-purity aluminum by neutron activation methods, 22:7992(R) (NBS-TN-428)
determination in hot spring waters by neutron activation methods, 22:8013
determination in igneous and sedimentary rocks, by neutron activation methods, 22:10193
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in marine organisms by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in meteorites by chemical and neutron activation methods, 22:10199
determination in mixtures of light elements, electromagnetic isotope separation in activation methods for, 22:47090
determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in Predazzo granites, activation, 22:27607
determination in presence of rare earths and yttrium using 3-[[cyano[(2-hydroxy-5-sulfophenyl)azo]methylene]-hydrazino]-4-hydroxybenzenesulfonic acid, spectrophotometric, 22:1992
determination in presence of yttrium and other rare earths by spectrophotometry using 3,4',5,7-tetrahydroxyflavone, 22:35757
determination in raw opium by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
determination in seawater by atomic absorption spectroscopy, 22:45022
determination in seawater by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in single-crystal magnesium oxide by neutron activation method including radiochemical separations, 22:27571
determination in single-crystal slices of silicon by neutron activation, 22:37703
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of trace amounts of, by atomic absorption spectroscopy, 22:27604
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, in germanium by neutron activation methods, 22:14441
determination of traces of, in yttrium oxides, spectrographic, 22:22950
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using 1-(2-pyridylazo)-2-naphthol as indicator, complexometric, 22:50946
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on determination of fluorine in organic and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on photometric determination of indium, 22:2007
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
electric conductivity at 2 to 300°K, 22:31375
electron band structure of, from x-ray bremsstrahlung isochromats, 22:34783
electron energy bands and electronic specific heat of, calculation using augmented-plane-wave method, 22:46209
electron structure of metallic, 22:48172
Fermi surface of, calculation using augmented-plane-wave method, 22:46209
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
hydrolysis constant of, solvent extraction studies on, 22:6391
ionization by electron impact, calculations of cross sections and rate coefficients of, 22:43856 (IPP-1/76)
organic compound of, neutron irradiation of plexiglass containing, production of radioactive particles by, 22:18855
partitioning in benthic infaunal communities in relation to stable element analysis, 22:43311(R) (PRNC-85)
polarographic properties of, effects of acidity on, 22:2078
preparation by reduction of scandium chloride using potassium and sodium, 22:34021
preparation of, procedures and equipment for, 22:27694
proton reactions (p,n) and (p,2n) at 8 to 14 MeV, cross sections for, (E), 22:5843
reactions with hydrogen, properties of compounds formed by, 22:27703
reactions with phosphonazo III, spectral studies on, 22:48867
separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
separation from aqueous solutions by solvent extraction using 2,4-pentanedione, synergistic effects of TBP and TOPO on, 22:51068
separation from aqueous solutions by solvent extraction using 1-phenyl-3-methyl-4-capryl-2-pyrazolin-5-one, 22:33495
separation from calcium, 22:21026 (PRNC-104, pp 96-8)
separation from calcium by ion exchange using zirconium phosphate, 22:12291
separation from calcium by sorption on magnesium dioxide, 22:157
separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
separation from hydrochloric acid, effects of water-miscible organic solvents on ion exchange, 22:21153 (ANL-7415)
separation from lanthanum and yttrium by precipitation using diphenic acid, 22:35887
separation from lanthanum, lutetium, samarium, thorium, and yttrium by thin-layer chromatography in dioxane--hydrochloric acid, 22:45176
separation from lanthanum, samarium, thorium, uranium, and yttrium by thin-layer chromatography in dioxane--nitric acid, 22:45176
separation from metal systems in production of tin and tungsten, 22:45175
separation from nitrate solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from oxalic acid by ion exchange, distribution coefficients in, 22:33520
separation from rare earths by precipitation using cinnamic acid, 22:37855
separation from rare earths, thorium, and uranium by thin-layer chromatography, 22:51069
separation from samarium and yttrium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from sulfuric acid systems with hydrobromic

- acid or potassium iodide by solvent extraction using benzene, 22:16658
- separation from thorium or uranium in hydrochloric acid solution, ion exchange, 22:40192
- separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
- separation of trace amounts of, from uranium by ion exchange, effects of fluorides on, 22:47215
- solvent distribution between di-n-butyl thiophosphate in carbon tetrachloride and hydrochloride acid solutions, 22:1969
- sorption by manganese dioxide from nitric acid, 22:157
- sorption from acetic acid by Dowex 1-X8, 22:35914
- sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
- sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
- sorption on (110) face of tungsten, (E), 22:50246
- Stark effect constants for, quadratic, 22:7136
- thermal capacity at 0.9 to 23°K, 22:23755 (CONF-670502-, pp 534-45)
- thermal expansion at room temperature to 660°C, 22:34070
- thermodynamic properties at 5 to 298.15°K, 22:23755 (CONF-670502-, pp 534-45)
- thermoelectron emission by, measurement at 1150 to 1500°K, 22:4783
- uptake by marine mollusks, 22:51329
- use as neutron filter for measuring 1- to 100-keV neutron cross sections, 22:26766
- use of tritium-impregnated films of, for neutron production, lattice parameters for, 22:26762(R) (NP-17412)
- valency-band structure of, 22:21721
- washout coefficient for, in rainwater and snow, 22:18960 (BNWL-481-1, pp 82-5)
- washout coefficient for, in rainwater and snow, 22:18954 (BNWL-481-1, pp 43-52)

SCANDIUM ALLOYS AND SYSTEMS
- Al--Sc, crystal structure of intermetallic compound $ScAl_3$ in, 22:6299
- Al--Sc, magnetic properties of, effects of temperature on, (E), 22:3212
- Al--Sc, magnetic susceptibility of $ScAl_2$ and $ScAl_3$, 22:48172
- Al--Sc, phase studies of, 22:705
- Ce--Sc, magnetic properties of, effects of temperature on, (E), 22:3212
- Ce--Sc, phase studies of, 22:705
- Er--Sc, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
- Er--Sc, magnetic properties of, effects of temperature on, (E), 22:3212
- Er--Sc, magnetic structure of, oscillatory-ferromagnetic transition in, 22:48185
- Er--Sc, phase studies of, 22:705
- Ho--Sc, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
- Ho--Sc, magnetic structure of, oscillatory-ferromagnetic transition in, 22:48185
- In--Sc, magnetic properties of intermetallic Sc_3In, (E), 22:17791
- Pu--Sc, phase studies of, 22:2655
- Sc--Tb, magnetic structure of, oscillatory-ferromagnetic transition in, 22:48185
- Sc--Ti, reactions with hydrogen, properties of compounds formed by, 22:27703
- Sc--Y, magnetic properties of, effects of temperature on, (E), 22:3212
- Sc--Zr, specific heat at 1.1 to 4.2°K, 22:8730 (ORNL-4170, pp 27-31)
- Se--Zr, Debye temperature and specific heat at 1.1 to 4.2°K, (E), 22:24203

SCANDIUM CARBIDES
- analysis of, x-ray diffraction, 22:733(T) (LA-tr-67-78)
- crystal structure of, 22:733(T) (LA-tr-67-78)
- phase diagrams for, 22:47709
- preparation of, by sintering scandium metal powder and graphite, 22:733(T) (LA-tr-67-78)

SCANDIUM CHLORIDES
- reduction for preparation of scandium metal using potassium and sodium, 22:34021

SCANDIUM FLUORIDES
- electron partition function of, molecular-beam studies on, 22:45029 (UCRL-18043, pp 7-105)
- formation of, enthalpy of, 22:52257 (ANL-7425, pp 94-129)
- ground state of ScF, molecular beam study of, 22:21056 (UCRL-17961)

SCANDIUM HYDROXIDES
- precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6380

SCANDIUM IONS
- chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
- chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- electrophoretic mobility in acetate buffers, 22:27567
- spectral line intensities in 73 Draconis, (E), 22:11158
- substitution in calcium ferrate, Moessbauer study of sites of, 22:3173 (ORNL-IIC-10(Vol.1), pp 101-29)

SCANDIUM ISOTOPES
- energy levels of, Coulomb displacement energies for isobaric analog, (E), 22:5809(R) (ANL-7354)
- energy-level parameters for, data compilation for, (E), 22:9819

SCANDIUM ISOTOPES Sc-40
- beta decay scheme of, half-life and β and γ spectra for, (E), 22:13971
- decay scheme, (E), 22:32520
- mass of ground state of, (E), 22:13971
- nuclear mass excess from reaction Q-value measurements, (E), 22:9845

SCANDIUM ISOTOPES Sc-41
- energy levels from calcium-40 (p,γ) reactions, spin-parity assignments and transition parameters for, (E), 22:29967
- energy levels from calcium-40 proton elastic scattering, (E), 22:27063
- energy levels from shell-model calculations, (T), 22:7770
- energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631

SCANDIUM ISOTOPES Sc-42
- beta decay of, coupling constants and ft values for, (T), 22:32698
- beta decay of, Fermi function for superallowed, (T), 22:5891
- beta decay of, isospin mixing in, (E), 22:13955(R) (COO-1468-2)
- beta transitions in, ft values for superallowed 0-0, (T), 22:5887
- beta transitions in, research on Fermi, (E), 22:35285(R) (AERE-PR/NP-13)
- energy levels from calcium-40 (α,d) reactions, $(f_{7/2})^2$, (E), 22:9800(R) (COO-535-571)
- energy levels from calcium-40 (He-3,p) reactions at 18 MeV, spin-parity assignments for, (E/T), 22:46738
- energy levels from calcium-40 (He-3,p) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels from calcium-40 (He-3,p) reactions, (E), 22:13955(R) (COO-1468-2)
- energy levels from calcium-42 (He-3,t) reactions, f(7/2), (E), 22:7664
- energy levels from shell-model calculations, (T), 22:7770
- energy levels of, calculation of matrix elements and structure of, (T), 22:37378
- energy levels of, description using modelistic and realistic interactions, (T), 22:35362 (AD-662219)
- energy levels of, spin-parity assignments for, (E), 22:30048(R) (PUC-937-307)
- energy levels, beta-decay ft values, electromagnetic moments, and transition rates from simple interaction model, (T), 22:7754

SCANDIUM ISOTOPES Sc-43
- beta decay of, γ branching ratios and spectra for, (E), 22:29965
- energy level at 472 keV, lifetime of, (E), 22:42028
- energy levels from calcium-42 (d,n) reactions at 5.15 MeV, (E), 22:26964
- energy levels from calcium-42 (He-3,d) reactions, (E), 22:29953
- energy levels from calcium-42 proton elastic scattering, isobaric analog, (E), 22:22560(R) (ORO-1067-2)
- energy levels from Coriolis coupling model, (T), 22:16096
- energy levels from potassium-39 alpha elastic scattering, (E), 22:20499 (INP-577/PL)
- energy levels from shell-model calculations, (T), 22:7770
- energy levels of, calculations using deformed core model with Coriolis coupling, (T), 22:20542
- energy levels of, Hartree--Fock calculations of even-parity, (T), 22:20506
- energy-level spins and transitions from calcium-40 (α,p) reactions, (E), 22:5809(R) (ANL-7354)

SCANDIUM ISOTOPES Sc-44
- beta and electron-capture decay of isomeric, γ spectra from, (E), 22:50589
- beta and electron-capture decay scheme of, γ spectra and γ-γ angular correlations for, (E), 22:39611
- determination of, radiometric, 22:44973 (JINR-P7-3855)
- energy level at 68 keV from titanium-44 decay, spin of, (E), 22:41981
- energy-level transitions from titanium-44 decay, relative intensities of, (E), 22:14831
- gamma spectra for, line energies and intensities in, (E), 22:53095 (BMwF-FBK-68-11)
- neutron reactions (n,p) at 0.1 to 1.0 MeV, cross-section calculations using statistical theory, 22:20677 (UCRL-50359)

SCANDIUM ISOTOPES Sc-45
- content in meteorites, use of neutron activation gamma spectroscopy for determining, 22:6270
- deuteron elastic and inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:50593
- deuteron reactions (d,p) at 3.2 MeV, γ spectra from, (E), 22:26954
- electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496

energy levels from calcium-44 (He-3,d) reactions, spectroscopic factors for, (E), 22:39603 (CONF-670970-, pp 147-59)
energy levels from calcium-44 (p,γ) reactions, spin and parity of low-lying, (E), 22:18186
energy levels from calcium-44 proton elastic scattering, isobaric analog, (E), 22:22560(R) (ORO-1067-2)
energy levels from calcium-44 proton elastic scattering, spin--parity assignments and widths of isobaric analog, (E), 22:53139
energy levels from chlorine-35 inelastic scattering with Coulomb excitation, low-lying, (E/T), 22:5809(R) (ANL-7354)
energy levels from deuteron scattering at 7.5 MeV, deformation parameters and spin--parity assignments for, (E), 22:50593
energy levels from proton inelastic scattering, spin assignments and deformation parameters for, (E), 22:44651
energy-level transitions from proton inelastic scattering, branching ratio for, (E), 22:50569
helium-3 elastic scattering at 37.7 MeV, angular distribution from, (E), 22:29968
helium-3 reactions (He-3,d) at 15 MeV, titanium-46 energy levels from, (E), 22:20530
helium-3 reactions (He-3,d) at 37.7 MeV, deuteron energy spectra and angular distribution from, (E), 22:29968
helium-3 reactions (He-3,d) with, angular distributions for, (E), 22:9800(R) (COO-535-571)
helium-3 reactions (He-3,d) with, angular distributions for, (E), 22:39628 (CONF-670970-, pp 117-38)
helium-3 reactions (He-3,γ) at 2 to 33 MeV, excitation function for, (E), 22:41999
helium-3 reactions (He-3,γ) at 5 to 33 MeV, excitation function for, (E), 22:27075
neutron capture by, γ spectra from thermal, (E), 22:26952
neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
neutron capture by, γ spectra from thermal, (E), 22:20578 (WASH-1079)
neutron capture by, scandium-46 gamma spectrum for, 22:14827
neutron reactions (n,2n) at 14.8 MeV, isomeric cross-section ratios for, (E), 22:32539
neutron reactions (n,α) and (n,p) at 14.8 MeV, cross sections for, (E), 22:48499
neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
nuclear radii of, from optical model analysis of proton elastic scattering, (T), 22:50662
photon reactions (γ,n), $(\gamma,2n)$, and $(\gamma,2p)$ at 48 MeV bremsstrahlung endpoint energy, (E), 22:27077
proton differential inelastic scattering cross sections at 17.5 MeV, angular distributions for, (E), 22:44651
proton inelastic scattering at 2.8, 3.2, and 3.6 MeV, γ spectra from, (E), 22:50569
proton reactions (p,γ) at 1377 and 1660 keV, resonances in, (E), 22:44670
proton reactions (p,n) at 2.9 to 5.3 MeV, fluctuations in integrated cross section for, (E), 22:32531
proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
proton scattering by, zero-range exchange potential for, (T), 22:32725
use in neutron fluence measurements in fast reactors, 22:48746

SCANDIUM ISOTOPES Sc-46
beta decay of, electron longitudinal polarization in, (E), 22:9849 (INR-798/I/PL)
beta decay of, γ--γ angular correlations from, (E), 22:35266
beta decay scheme of, measurements using γ-γ coincidence method, (E), 22:5867 (CEA-R-3260)
cosmogenic activity in stone meteorites, (E), 22:2742
decay rate of carrier-containing, 4π β-γ coincidence techniques for determining, 22:45137
determination in Saint Severin meteorite, (E), 22:7080
distribution in tissues of mice, 22:23481(R) (PRNC-102)
energy levels from scandium-45 (d,p) reactions, lifetimes and transition probabilities for, (E), 22:26954
energy levels from scandium-45 thermal neutron capture, low-lying, (E), 22:20578 (WASH-1079)
energy levels from scandium-45 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
energy levels from scandium-45 thermal neutron capture, spin-parity assignments for, (E), 22:26952
energy levels from titanium-47 (d,He-3) reactions, (E), 22:5809(R) (ANL-7354)
gamma spectra of isomeric, (E), 22:28148
neutron capture by, effective cross section for, (E), 22:44674
neutron capture in reactor spectrum, cross section for, (E), 22:20501 (SGAE-PH-61/1967)
neutron capture in reactor spectrum, cross section for, (E), 22:41990
neutron reactions (n,p) at 0.1 to 1.0 MeV, cross-section calculations using statistical theory, 22:20677 (UCRL-50359)
production by neutron irradiation of organic scandium compound in plexiglass pearls, 22:18855
radiation dose to laboratory animals and man following ingestion of ceramic microsphere-incorporated, effects of gastrointestinal retention time on, 22:49228
radioactivity in Granes meteorite, cosmic-ray-induced, (E), 22:47743
use as tracer for measurement of soil erosion by rain in western Congo, 22:19065
use as tracer for measurement of stream flow through reservoirs, 22:18940
use as tracer for studying silt movement in Firth of Forth, 22:8300 (AERE-R-5523)
use as tracer to measure estuary silt movement in Firth of Forth, 22:19059
use as tracer to measure movement of sand in coastal waters, 22:10511
use of ground-glass-incorporated, as tracer in silt movement studies, 22:47288 (AERE-R-5500(Vol.3), pp 594-607)

SCANDIUM ISOTOPES Sc-47
beta decay of, branching ratio for, (E), 22:41990
beta decay of, branching ratio for, (E), 22:20501 (SGAE-PH-61/1967)
determination in feces as test of calcium-47 uptake by intestine in man, 22:25773
energy level at 760 keV, lifetime and magnetic moment of, (E), 22:26957
energy levels at 767 and 808 keV from β decay of calcium-47, (E), 22:50568
energy levels from Coriolis coupling model, (T), 22:16096
energy levels from titanium-48 (d,He-3) reactions at 34.4 MeV, (E), 22:20505
energy levels from titanium-48 (d,He-3) reactions, (E), 22:48509(R) (BMwF-FBK-68-22)
half-life, (E), 22:20512
production by β decay of calcium-47, use of, to study calcium absorption in intestines of man, 22:25773
use for measurement of calcium-47 sorption by human intestines, 22:51326

SCANDIUM ISOTOPES Sc-48
energy levels from calcium-48 (He-3,t) reactions, low-lying, (E), 22:5809(R) (ANL-7354)
energy levels from calcium-48 (He-3,t) reactions, (E), 22:26983
energy levels from calcium-48 (He-3,t) reactions, (E), 22:11945(R) (ANL-7384)
energy levels from calcium-48 (p,n) reactions, (E), 22:26997
energy levels from calcium-48 (p,n) reactions, (E), 22:41984
energy levels from calcium-48 (p,n) reactions, (E), 22:5817(R) (NYO-GEN-72-28)
energy levels from calcium-48 (p,n) reactions, (E), 22:11948(R) (NP-17216)
energy levels from titanium-49 (d,He-3) reactions, (E), 22:5809(R) (ANL-7354)
energy levels from titanium-50 (d,α) reactions, (E), 22:1598(R) (COO-1265-49)
energy levels of, possibility of ($f^{-\bar{1}}$/sub 7/2/f/sub 7/2/2^+, (T), 22:32527
energy-level transitions from calcium-48 (p,n) reactions, (E), 22:26996
energy-level transitions from calcium-48 $(p,n\gamma)$ reactions, 22:14831

SCANDIUM ISOTOPES Sc-49
energy levels at 2.23 and 2.37 MeV, spin-parity assignments and lifetimes for, (E), 22:35267
energy levels from calcium-48 (d,n) reactions, (E), 22:29971
energy levels from calcium-48 (p,γ) and $(p,n\gamma)$ reactions and proton elastic scattering, isobaric analog, (E), 22:27042
energy levels from calcium-48 (p,n) reactions, (E), 22:26996
energy levels from calcium-48$(p,n\gamma)$ reactions at 1.92 to 2.02 MeV, isobaric analog, (E), 22:11920
energy levels from titanium-50 (d,He-3) reactions at 34.4 MeV, (E), 22:20505
energy levels from titanium-50 (d,He-3) reactions, (E), 22:48509(R) (BMwF-FBK-68-22)
energy levels of, calculation of proton single-particle, (T), 22:37378
energy levels of, calculations using independent quasi particle model, (T), 22:1734

SCANDIUM ISOTOPES Sc-50
beta decay of, log-ft calculations using shell model, (T), 22:44641
energy levels and transitions from calcium-50 beta decay, (E), 22:37336
energy levels and wave functions of, calculations using shell model, (T), 22:44641
energy levels from calcium-48 (He-3,p) reactions, (E), 22:5809(R) (ANL-7354)
energy levels of, calculation of matrix elements and structure of, (T), 22:37378
energy levels of, calculations using central two-body interaction with configuration mixing, (T), 22:26974
energy levels of, calculations using shell model, (T), 22:7661(R) (NYO-3525-26)

SCANDIUM OXIDES
analysis for oxygen by neutron activation, 22:30457
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals,

22:8763
dissociation energies of gaseous, 22:4117
effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
effects on electric conductivity of zirconium oxides, (E), 22:31483
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
enthalpy and thermal capacity of Sc_2O_3 at 298 to 1600ºK, 22:38633
erbium-ion spectra in, absorption and emission, (E), 22:5426
neodymium-ion spectra in single crystal, 22:17802
radiation effects on photometric properties of, proton, (E), 22:34800
thermal expansion of Sc_2O_3, at 25 to 1100ºC, 22:15183 (IS-T-212)
Cr_2O_3--Sc_2O_3, phase studies, 22:31524
Mo--Sc_2O_3, compatibility at 500 to 2000ºK, 22:23717
Mo--Sc_2O_3--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Nb_2O_5--Sc_2O_3, phase studies of, 22:38638
Nb--Sc_2O_3--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Sc_2O_3--Ta, compatibility at 500 to 2000ºK, 22:23717
Sc_2O_3--Ta--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Sc_2O_3--ThO_2, phase diagrams, 22:2703 (KFK-597)
Sc_2O_3--ThO_2, phase studies, 22:4890 (KFK-521)
Sc_2O_3--U_2O_5, magnetic properties of, 22:12318
Sc_2O_3--U_2O_5, phase studies of, 22:12317
Sc_2O_3--UO_3, molecular structure of hydrated, 22:34119
Sc_2O_3--UO/sub 2+x/, phase studies on, 22:21057
Sc_2O_3--V--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Sc_2O_3--W, compatibility at 500 to 2000ºK, 22:23717
Sc_2O_3--W--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
SCANDIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
SCANDIUM SULFIDES
dissociation energies of gaseous, 22:4117
SCANDIUM URANATES
crystal structure of, 22:30523
preparation of, 22:30523
stability of, thermal, 22:30523
SCANDIUM VANADATES
fluorescence of rare earth-doped, 22:22997 (CONF-670502-, pp 283-94)
preparation and properties of, 22:22997 (CONF-670502-, pp 283-94)
Scanning, Radioisotope
see Radioisotope Scanning
SCARS
radiation effects on proliferation of cell types during formation of, in spinal cord of rats, x, 22:40926
radiosensitivity of tissues of human, in relation to oxygen content, γ, 22:28678
radiotherapy of cheloid, of man following surgery, iridium-192 β and γ, 22:43376
SCATTERING
(Limited to theoretical studies of scattering processes of particles in general composite systems.)
see also Dispersion Relations
see also Regge Pole Theory
see also S-Matrix
amplitude analyticity in primitive domain as consequence of microcausality, 22:26732
amplitude and bound-state energy for three-body, effect of perturbing potential on, 22:37205
amplitude and wave function of spin-1/2 particles, relativistic quasi-potential equations for, 22:32221
amplitude at fixed momentum transfer, lower bound for elastic, 22:41878
amplitude at high energy, lower bounds for absorptive part of, 22:11738
amplitude at high energy, properties of, 22:11734
amplitude at large momentum transfers, asymptotic behavior of, 22:50468
amplitude at U = 0 in relativistic harmonic-oscillator model, nonanalyticity of, 22:34997
amplitude for backward unequal-mass, analyticity requirement for Regge, 22:35144
amplitude for central potentials, bounds in, 22:46555
amplitude for elastic forward, in representations of SO(3,1), 22:11736
amplitude for high-energy, impact-parameter representation for, 22:53240
amplitude for higher-spin particles, invariant decomposition of, 22:18035
amplitude for linearly rising trajectories, construction of crossing-symmetric Reggeized, 22:46401
amplitude for many-body system of nonrelativistic particles, dispersion theory for, 22:7563
amplitude for multiple production processes, peripheral mechanism, 22:44520
amplitude for re-arrangement collision, Faddeev three-body formulation of, 22:5666
amplitude for relativistic three-particle, extension of contour-distortion method in, 22:44516
amplitude for singular potentials in, analyticity properties of, 22:46553
amplitude for three strongly interacting particles in final state, Watson theorem on, 22:50363
amplitude for three-body system, continuation in complex angular momentum of, 22:22466
amplitude for three-body, partial-wave expansion for, 22:48630
amplitude for three-body, variational approach to Faddeev equations for, 22:26728
amplitude for two-particle elastic, analyticity in momentum transfer of, 22:20359
amplitude for two-particle elastic, cluster property for bounds on partial-wave, 22:20360
amplitude for two-particle unequal-mass, singularities of Bethe--Salpeter, 22:44505
amplitude for Yukawa potentials for large imaginary angular momentum, 22:32225
amplitude for, background integral for representations of total, 22:3535
amplitude for, nonrelativistic square diagram for, 22:13866
amplitude for, tests of approximate, 22:11740
amplitude in high-energy collisions, generalization of Moliere approximation of, 22:22479
amplitude in impact parameter model, Regge-like poles in, 22:9709
amplitude in S-matrix theory, necessity of N-particle production, 22:44509
amplitude of Compton, sum rules for, 22:34925
amplitude of Coulomb, algebraic calculation of nonrelativistic phase shifts for, 22:13870
amplitude of elastic at fixed momentum transfer, axiomatic analyticity for lower bound for, 22:44503 (JINR-E2-3933)
amplitude of elastic, lower bound of cross section at fixed momentum transfer for, 22:20339 (JINR-E2-3728)
amplitude of high-energy bound-state at fixed energy, analyticity in momentum transfer for, 22:20352
amplitude of high-energy, Bethe--Salpeter equation in scalar field theories for, 22:3521
amplitude of high-energy, phase contours for analyticity in crossing symmetric Regge model with rising trajectories for zeros and poles of, 22:37201 (UCRL-18243)
amplitude of inelastic, Reggeon graph contribution to three-body production, 22:32216
amplitude of many-channel, construction of separable Hamiltonian for, 22:24742
amplitude of relativistic three-body, uniqueness of solution of equations for partial, 22:20341 (JINR-P2-3694)
amplitude of spherically symmetric elastic, uniform semiclassical approximation for, 22:29285
amplitude of three-body, convergence of Born series for, 22:44514
amplitude of three-body, daughter Regge trajectory in field theory model for, 22:20316
amplitude of three-particle, Faddeev-equation and Feynman diagrams for, 22:48383
amplitude of two-body, decompositions of discrete most degenerate representations of $SO_0(p,q)$ group for, 22:13800
amplitude of two-body, dispersion and unitarity relations for, 22:46541
amplitude of two-body, Wigner coefficients of three-dimensional Lorentz group for, 22:32186
amplitude of two-particle, covariant angular momentum analysis and analytic continuation of, 22:26725
amplitude of two-way, relativistic extension of LeCouteur--Newton formalism for single function for, 22:24739
amplitude of unequal-mass particles, Bethe-Salpeter equation stereographic projection method for, 22:29774
amplitude of, Adler--Fubini sum rule for, 22:48263
amplitude of, axiomatic proof of superconvergence relations for forward, 22:39497
amplitude of, channel-coupling effect on two-channel, 22:32219
amplitude of, covariant version of Bjorken limit for asymptotic behavior of, 22:46544
amplitude of, criterion for nonoscillating high-energy behavior of, 22:22467
amplitude of, diffraction-like behavior for superconvergent, 22:35137
amplitude of, double N/D method for partial-wave, 22:5667
amplitude of, dynamic separation of resonance term from background term in multichannel, 22:50469
amplitude of, existence of multipoles in scattering Green function from Bethe--Salpeter, 22:46537
amplitude of, Gribov--Pomeranchuk singularity and inelastic N/D equations for, 22:24744
amplitude of, invariant imbedding as generalization of resolvent equation for, 22:20345
amplitude of, lack of crossing symmetry in Bethe--Salpeter equation for, 22:18040
amplitude of, Lorentz group expansion of two-particle, 22:3546
amplitude of, Meier--Dirichlet integral for integral concept for, 22:5669
amplitude of, method for construction of elastic,

22:48301 (JINR-E2-3989)
amplitude of, one-particle-exchange model for low-energy many-channel, 22:29776
amplitude of, one-particle-exchange model for single-channel low-energy, 22:29775
amplitude of, Poincare and Lorentz invariant expansions of relativistic, 22:7529 (JINR-E2-3553)
amplitude of, properties of Hankel transforms of, 22:44508
amplitude of, quasipotential type equation for relativistic, 22:39495
amplitude of, solution of Bethe--Salpeter equation for, 22:15867
amplitude of, spectral function of potential from S-wave, 22:35160
amplitude of, Tamm--Dancoff method in 2V sector of Lee model for, 22:46554
amplitude of, threshold behavior of partial-wave, 22:13872
amplitude of, unitarity and Mandelstam representation for large-angular-momentum partial-wave, 22:50478
amplitude of, unitarity of, 22:46508
amplitude of, zeros of Regge residues in O(3,1) symmetry expansion of forward amplitude of, 22:39461
amplitude of, zeros, subtractions, and sign of scattering lengths for partial-wave, 22:1510 (NYO-2262-TA-163)
amplitude with small transverse momentum of inelastic, Regge diagram method for asymptotics of, 22:35132
amplitudes and cross sections at 50 to 1000 GeV/c, asymptotic projections, 22:29767
amplitudes and cross sections for high-energy, power potentials for, 22:53033
amplitudes and differential cross sections for, Dirac equation with optical potential for, 22:48268
amplitudes at fixed angles, phase contours for crossing-symmetric Regge model for, 22:46542
amplitudes at fixed momentum transfer, lower bound from power behavior of, 22:3551
amplitudes at high energies for, algebraic structure of quantum electrodynamics perturbation, 22:3511
amplitudes at high energies, nonoscillating behavior of, 22:35153
amplitudes at high energies, upper bounds for forward and fixed-momentum-transfer, 22:48380
amplitudes at very high energies, leading Regge trajectory in, 22:41868
amplitudes for arbitrary mass and spin, high-energy bounds for helicity, 22:32226
amplitudes for composite-particle, generalized Lovelace equation in relativistic Faddeev formalism for, 22:46536
amplitudes for covariant and local unstable particle, generalized, 22:44519
amplitudes for elastic nuclear collisions, Euclidean expansion of, (T), 22:35407
amplitudes for forward elastic, effects of cuts in angular-momentum plane on behavior, 22:29718
amplitudes for forward elastic, superconvergence conditions and crossed-channel helicity, 22:22472
amplitudes for forward elastic, superconvergence relations for, 22:5672
amplitudes for high-energy potential, asymptotic behavior of, (T), 22:7637(R) (COO-1573-33)
amplitudes for interactions involving massless particles, analyticity properties of two-body helicity, 22:39341
amplitudes for low-energy, limitations on dispersion method for resonance position, width, and scattering length for, 22:9704
amplitudes for multiparticle production processes, high-energy bounds on, 22:22468
amplitudes for n-particle production processes, crossing relations for helicity, 22:41873
amplitudes for neutral scalar field without pairing symmetry, existence of production, 22:20320
amplitudes for particles with spin, Froissart bound on, 22:46539
amplitudes for particles with spin, relativistic invariant, 22:48375
amplitudes for potential, momentum transfer dispersion relations for three-particle, 22:35152
amplitudes for processes with many-body final states, multi-Regge model for generalization of crossing relations for helicity, 22:22464 (LPTHE-TH-235)
amplitudes for spin-1/2 particles on spinless nuclei in presence of three-particle channel, (T), 22:35409
amplitudes for spinless particles in O(4) symmetry, Freedman--Wang, 22:5676
amplitudes for three-body collision, approximation method for, 22:15865
amplitudes for two-body, Regge trajectory technique for Feynman diagram relation with asymptotic contribution from, 22:7559(T) (CERN-Trans-67-5)
amplitudes for unequal mass particles in backward direction, asymptotic behavior of, 22:3558
amplitudes for Yukawa potentials, Regge-type representations for partial-wave, 22:35146
amplitudes for, angular momentum dependence of off-shell, (T), 22:3760
amplitudes for, factorization of Regge and Toller poles in, 22:5671
amplitudes for, Fourier integral representation of, (T). 22:53037
amplitudes for, general treatment for current algebra from Khuri representations for, 22:3298
amplitudes for, meson mass corrections for spectral function sum rules for, 22:3299
amplitudes from field theory and unitarity, analytic properties of, 22:18034
amplitudes from low-energy sum rules, threshold corrections for partial wave, 22:37209
amplitudes in equal-mass scattering, Lorentz poles from analyticity and factorization in, 22:44523
amplitudes in helicity formalism, conspiracy and superconvergence properties of, 22:11742
amplitudes in high-energy limit, majorization method for Feynman, 22:7567
amplitudes in many-body Schroedinger theory, overlap function for, 22:41879
amplitudes in perturbation theory model, non-Regge terms in single current, 22:3541
amplitudes in perturbation theory, summation of asymptotics of, 22:46531 (JINR-E2-3917)
amplitudes in S-matrix theory, necessity of production, 22:29773
amplitudes in S-matrix theory, necessity of production, 22:29772
amplitudes of arbitrary-spin particle, method for constructing phenomenological, 22:22330 (ITEF-538)
amplitudes of many-body, analyticity in perturbation theory for, 22:20344
amplitudes of many-body, continuous spectrum for transition, (T), 22:32077
amplitudes of massless spin-2 particles, O(4) symmetry in Feynman, 22:50426
amplitudes of resonance, effects on high-energy hadron interactions, 22:52979
amplitudes of three-body and n-body, review of relativistic calculations of, 22:41867 (LPTHE-TH-68/10)
amplitudes of three-body, Khuri--Treiman-type equations for production and decay, 22:37206
amplitudes of two-body, arbitrary-mass and -spin, group theoretical approach to conspiracy in, 22:34869 (NP-17483)
amplitudes of two-body, method of solving dispersion relations and unitarity relations for, 22:50475
amplitudes of two-particle, kinematic t-singularities of Reggeized helicity, 22:48373
amplitudes of weak, vector and spinor current algebra and N/D method for, 22:15775
amplitudes of, 2V sector of Lee model for, 22:35077
amplitudes of, absorption and rescattering corrections to Regge, 22:41871
amplitudes of, analyticity properties and asymptotic behavior of, 22:5678
amplitudes of, Argand diagrams for partial-wave Regge-pole, 22:32147
amplitudes of, asymptotic behavior of weak, (T), 22:22372
amplitudes of, branch points in angular momentum plane for, 22:3552
amplitudes of, calculation of S-wave, three-body, bound-state elastic, 22:44507
amplitudes of, chiral symmetry for superconvergent sum rules for, 22:22434
amplitudes of, complex angular momentum and helicity sums for, 22:44506
amplitudes of, crossing relations of double Breit system helicity, 22:48377
amplitudes of, crossing symmetry and partial-wave expansion of, 22:46549
amplitudes of, crossing-symmetric phase contours for, 22:37208
amplitudes of, current algebra and additivity hypothesis for, 22:13732 (ITF-67-33)
amplitudes of, current algebra for sum rules for, 22:7535
amplitudes of, determination of potentials from dynamic singularities of partial-wave, 22:9708
amplitudes of, dispersion relations for three-particle, 22:3547
amplitudes of, dispersion sum rules for nondecreasing, 22:24741
amplitudes of, dynamical scheme based on rising trajectories for, 22:20354
amplitudes of, E(2) group for partial-wave expansion of, 22:41830
amplitudes of, elimination of t-channel threshold singularities from transverse, 22:35163
amplitudes of, existence of non-Regge singularities in helicity, 22:32229
amplitudes of, experimental restrictions in determination of invariant, 22:37098
amplitudes of, fixed J-plane singularities from current algebra sum rules for helicity, 22:46538
amplitudes of, homology theory for two-particle unitary integral for, 22:13837
amplitudes of, impact parameter representation for, 22:29769
amplitudes of, impact parametrization of, 22:46547
amplitudes of, impact-parameter representation for s-wave direct-channel partial-wave, 22:41880
amplitudes of, integral expressions for, 22:24060

amplitudes of, kinematic singularities and constraints of helicity, 22:50473
amplitudes of, kinematic singularities and crossing matrix for two-body helicity, 22:29770
amplitudes of, kinematic singularities and threshold relations for helicity, 22:35145
amplitudes of, kinematic singularities of transversity, 22:41874
amplitudes of, kinematical singularities of, 22:20338 (INP-555/PH, pp 213-22)
amplitudes of, MacDowell symmetry for kinematic singularities of, 22:15861
amplitudes of, method for performing absorption corrections on helicity, 22:5674
amplitudes of, multi-Regge-pole hypothesis for, 22:5673
amplitudes of, N/D equations for three-body, 22:3538
amplitudes of, N/D method for multichannel and corresponding single-channel, 22:9707
amplitudes of, N/D solutions without simultaneous equations for, 22:15864
amplitudes of, natural zeros of Regge residues of, 22:44512
amplitudes of, Poincare and Lorentz invariant expansions of, 22:18042
amplitudes of, Poincare and Lorentz invariant expansions of relativistic, 22:44477
amplitudes of, Poincare group representations for crossed partial-wave analysis of, 22:24693
amplitudes of, Pomeranchuk trajectory in low-energy, 22:35151
amplitudes of, quantum field theory for threshold behavior of partial-wave, 22:13680
amplitudes of, Regge cuts for vanishing total cross sections and constant diffraction peaks for, 22:9710
amplitudes of, Regge parameters for lower bound on high-energy, 22:50477
amplitudes of, Regge pole conspiracy relations for direct-channel, 22:32222
amplitudes of, Regge-pole theory for angular-momentum branch points in two-body, 22:3549
amplitudes of, Reggeization of helicity, 22:11741
amplitudes of, relation between current algebra and dynamic assumptions on high energy behavior of, 22:17888
amplitudes of, relation between phase contours, zeros, and high-energy behavior of, 22:37156
amplitudes of, relation with Regge trajectories and daughter poles for two-dimensional expansions of binary relativistic, 22:39492 (JINR-E2-3841)
amplitudes of, relativistic harmonic oscillator model for superconvergent, 22:3548
amplitudes of, resonances from Argand-diagram analysis of Regge, 22:50472
amplitudes of, sheet structure of s-matrix singularities in multiparticle, 22:22478
amplitudes of, solutions of Bethe--Salpeter and N/D equations for, 22:15868
amplitudes of, superconvergence conditions for forward, 22:35148
amplitudes of, three-particle K-matrix for, 22:29777
amplitudes of, threshold conditions for resonance behavior in partial-wave, 22:15860
amplitudes of, threshold kinematic constraints and correlations of helicity, 22:37210
amplitudes of, unitarity and Mandelstam representation of double spectral functions for, 22:3545
amplitudes of, unitary representation of two-body multichannel, 22:48376
amplitudes of, unitary representations of Lorentz group for functions with spin for, 22:20343
amplitudes of, use of analyticity for calculating nonrelativistic, 22:22469
amplitudes of, use of finite-energy sum rules for Regge asymptotic behavior of, 22:35149
amplitudes of, variational principles for crossing-symmetric equations for vertex functions and two-body, 22:44510
amplitudes of, zero-energy behavior of Regge poles and residues for, 22:37200 (IC-68/31)
amplitudes with definite parity, partial-wave spinor, 22:48374
angular distribution measurements of particle, method for correcting error from medium distortion for, 22:7564
angular momentum for inverse, interpolation formulas in plane of, 22:35134
angular momentum for point particle, classical relativistic, 22:39306
angular momentum for, group representations for complex, 22:15710
angular momentum for, interpolation formulas in plane of, 22:1511 (TH-180)
angular momentum operators for, construction of orthonormal, 22:46551
angular momentum singularities in, Pomeranchon for structure of, 22:22465
angular momentum theory of, signature properties of perturbation-theory models of complex, 22:41875
approximation formula for classical, by screened Coulomb fields, 22:34271
Bethe--Salpeter equation for two-body compound systems, 22:18037
book: High Energy Collisions of Elementary Particles, 22:11745
book: Nuclear Forces, 22:24923
Chandrasekhar's matrix for semi-infinite Rayleigh atmosphere, (T), 22:37063
collision lifetime matrix studies of, (T), 22:24916
computation of inelastic, in atom--diatom and diatom--diatom collisions, method for, 22:29249
cross section and S-matrix from time-dependent formulation of collision theory, 22:15863
cross sections and density matrices for, kinematic singularities in, 22:32217
cross sections at high energies and large momentum transfers, behavior of elastic, 22:1514
cross sections for high-energy, angular dependence of, (T), 22:22473
cross sections for spinless-particle, correlations among s-amplitudes and, 22:22475
cross sections for two-particle, Pomeranchuk exchange in multi-Reggeon model for contributions to, 22:44522
cross sections for, formulas for transformation from cms to laboratory system, 22:17406
cross sections for, use of inverse power potential in, 22:36705 (BNL-50102)
cross sections of elastic and inelastic, analyticity and unitarity in, 22:15850 (JINR-E2-3655)
diffraction, shrinkage of forward and backward peaks in, (T), 22:41754 (JINR-P2-3897)
dispersion relations for, boundary values of analytic functions for, 22:35155
dispersion relations in, trace calculation in quantum electrodynamics for, 22:3510
effects on energy distribution of energetic atoms in gaseous media, (T), 22:26215
electromagnetic, conference on, 22:5152
energy of three-body, spectrum of excitations from rotational, 22:26721 (ITF-67-49)
equations for one-dimensional inverse, finite-range solutions to, 22:7560
equations for quantum mechanical problems in, numerical resolution of systems of, 22:46298
equations in relativistic off-shell dynamics, 22:20357
equations of, off-shell solutions to, 22:22471
exclusion principle and equivalent potentials for complex neutrals, 22:50268
Faddeev equations for local two-body, solution of, 22:9621
Faddeev equations for, reduction to Lippman--Schwinger equation, 22:22477
Feynman diagram for, Cayley equations of reducible, 22:3542
Feynman diagram for, method for extracting asymptotics of, 22:46534 (JINR-P2-3833)
Feynman diagram in, continuation to complex angular momentum of three-particle discontinuity of, 22:44506
Feynman diagram model in, Fubini identities for, 22:15842
Feynman integrals in, homological approach to parametric, 22:15841
field theory for high-energy, review of axiomatic, 22:39491 (CERN-68-7(Vol.1), pp 290-315)
field theory for, criterion for free character of Wightman, 22:13852
form factor for, experimental consequences of analyticity of, 22:20159 (JINR-E2-3729)
form factor for, upper limit of particle radius from analyticity of, 22:1394 (JINR-E2-3509)
formalism for high-spin covariant M functions, Dirac--Rarita--Schwinger, 22:50476
formalism for, distortion operator in perturbation theory extension of, 22:46550
formulation for generalized unstable particles, complex higher-order poles in, 22:53035
four-body problem in, equations for, (T), 22:27292
helicity in field of inverse-square potential, radiation from, (T), 22:39493 (JINR-P2-3848)
interaction region model for, Hilbert space properties of, 22:42101 (UCD-CNL-95)
intermediate structure in the two-channel model of nuclear, (T), 22:30070
K-matrix elements and phase shifts for, upper and lower bounds for, 22:15852
kinematics and dynamics of two-body, computer program for relativistic, 22:24580
kinematics of five-particle processes, physical region for, 22:35150
kinematics of, relativistic, 22:41755 (JINR-P2-3902)
Lippmann--Schwinger equation for potential, derivation from Bloch theory, (T), 22:5910
Lippmann--Schwinger equations for, approximation schemes for, 22:44513
Lorentz pole contribution to high-energy forward, 22:48295
Mandelstam cuts in, properties of, 22:44504
many-center problem of, exact formal solution of, 22:41306
matrix elements for inelastic, unitarity condition for, 22:35154
model for elastic, interpretation in reactive systems of optical, (T), 22:43934
model for high energy two-body, charge invariance and group-transformation properties in dynamical, 22:3543

model for high-energy, elementary quark coupling in, 22:37202 (UCRL-18251)
model with crossing symmetry and minimal inelastic effects, 22:50475
model-independent evaluation of electron--nuclear, at low momentum transfer, (T), 22:32691
momentum eigenvalue equation for systems of, in first-order perturbation theory, 22:9712
multiple-wave, smooth perturbation method for solution of general equations for, 22:46556
N/D calculations in, centrifugal barrier effects in, 22:44438
N/D effective-range theory with J-independent short-range forces for, 22:3391
N/D equations for, pole approximations in, 22:15869
N/D equations for, threshold behavior requirements for P-wave, 22:50470
N/D equations in, self-damping mechanism for approximate, 22:9706
N/D equations of Fredholm type, analysis of, 22:46559
N/D equations with inelastic unitarity, Levinson's theory for, 22:20358
N/D method for, D-function poles for inelastic contributions in, 22:37207
N/D method for, Gribov--Pomeranchuk phenomenon in, 22:20220
operator for, integral equation for, 22:41877
parameters of, singularities in Kohn variational method for, 22:37204
particle trajectories in slabs, small-angle approximation for, (T), 22:31621
perturbation theory diagrams containing composite particles in model field theory for, analytic properties of, 22:3522
perturbation theory for, formulation of super, 22:45929
perturbation treatment of large-angle elastic, (T), 22:21888
phase shift for a soft hard-core potential, s-wave, 22:14101
phase shift for N* in zero-parameter model, effects of centrifugal barrier on, 22:44438
phase shift of elastic, effect of channel coupling on real, 22:29768
phase shifts for high-energy, repulsive singular potential, 22:13869
phase shifts for long-range singular potentials, low-energy, 22:35140
phase shifts for spherically symmetric potentials, 22:29239
phase shifts for, semiclassical treatment in multiple-turning-point problems, (T), 22:26261
photon diffusion in thick slabs, Monte Carlo technique for resonance-line, (T), 22:29206
potential and S-matrices for many-channel, determination from single function, 22:20347
potential for elastic, phase shifts for separable complex nonlocal, (T), 22:26733
potential for elastic, quantum mechanics for orbiting and resonance states in, 22:20340 (JINR-P2-3692)
potential for N hard spheres in theory for, derivation of exact pseudo-, 22:29779
potential for three-body, integration of Schroedinger equation in imaginary time for Coulomb, 22:9535
potential nonrelativistic, values and derivatives at origin in terms of S-wave phase shift and bound-state parameters, 22:29778
potential theory for two-body compound systems, 22:18037
potential theory for, phase function method for, 22:20336 (INP-555/PH, pp 73-89)
potential with power singularity at zero point in quantum mechanics, strongly repulsive singular, 22:24738 (ITF-67-22)
potential, O(3) symmetry formulation of, 22:35133
potential, angular momentum continuation from s-wave in, 22:22480
potential, Coulomb interference corrections in, 22:26724
potential, effect of CDD poles on long-range behavior in nonrelativistic, 22:1512
potential, exact quantization conditions for, 22:44515
potential, impact parameter representation of, 22:32228
potential, information content of Born series for strong, 22:7562
potential, iteration procedures for generating approximations for, 22:26730
potential, J-fraction theory for continued fraction representation of Pade approximants for K-matrix in, 22:3537
potential, N/D method for phase shifts in nonrelativistic, 22:32224
potential, O(3) symmetry for general method for solving, 22:24698
potential, Orear behavior in, 22:41876
potential, review of formal aspects of nonrelativistic fixed-source, 22:32232
potential, review of phase function formalism for, 22:37396
potential, S-wave phase shift for variational bounds for, 22:46552
potential, Schroedinger and Dirac equations for wave function properties of singular, 22:20349
potential, solutions of Faddeev equation for three-body bound-state, 22:35143
potential, summation methods for radiative corrections for external, 22:46558
potential, use of Born approximation in N/D calculations of nonrelativistic, single-channel, 22:35147
potentials for Dirac, Klein--Gordon, and Schroedinger equations, construction of solvable, 22:18038
potentials for, determination of energy-dependent, 22:15699
potentials for, Gel'fand--Levitan equations for inverse problem of determining, 22:50465
potentials for, interpolation formulas for inverse problem of determining, 22:48381
potentials in, properties of singular attractive, 22:35158
pulse approximation in multiple Coulomb excitation, 22:27265
quantum-mechanical time operator in, (T), 22:9496
radiative transfer, Eddington approximation for, (T), 22:37064
Regge conspirators and daughter trajectories in unequal-mass nonzero-spin, 22:46546
Regge cuts in high-energy elastic, absorptive corrections for, 22:20342
Regge pole hypothesis in extended particle model for high-energy elastic, 22:5668
Regge pole model for mass-zero, singularities of, 22:13863 (LPTHE-TH-228)
Regge pole theory for particle--nucleus reactions at high energies, 22:1450 (AD-648017)
Regge pole theory for, experimental data for, 22:13864
Regge pole theory for, unitarity violation in multiple Pomeranchuk exchange in, 22:26589
Regge trajectories for Bethe--Salpeter equation, stationary expectation values for calculating slopes of daughter, 22:46548
Regge trajectories for fermions, reflection symmetry of conspiring, 22:53036
Regge trajectories for, ladder approximation for parent and daughter, 22:46560
Regge trajectories in theory for, Green functions for, 22:1513
Regge trajectories in, asymptotic behavior of infinitely rising, 22:48384
Regge trajectory slopes for two-particle elastic, 22:15855
Regge trajectory slopes in, universality of, 22:3550
Regge-pole exchange in nonrelativistic potential, 22:26729
Regge-pole theory for high-energy, (T), 22:50357 (CERN-68-31)
Reggeon diagram technique in theory for high-energy, 22:22463 (ITEF-511)
research on, review of, 22:15696 (NP-17252)
resonance states in nuclear, (T), 22:32705
role of real nuclear and Coulomb phases in elastic diffraction, (T), 22:30086
S matrix for velocity-dependent potentials in, properties of, 22:48382
S-matrix elements for quasi-elastic, definition and properties of reduced, 22:7566
S-matrix for diffraction, specific properties of cross section from method of parametrization of, 22:39499
S-matrix for dressing operators in axiomatic quantum field theory, model, 22:24729 (ITF-67-41)
S-matrix for elastic, macroscopic causality in, 22:26722 (JINR-P2-3590, pp 18-21)
S-matrix for elastic, unitarization of Born approximation for, 22:46543
S-matrix for existence theorem with Euclidean Green functions for summation of Feynman-diagram contributions to, 22:22331 (ITF-67-48)
S-matrix for high-energy, nonrelativistic, Yukawa potential, 22:35136
S-matrix for multichannel, generalization of determinant method to continuous channels for, 22:20348
S-matrix for nonlocal quantum scalar field theory in, 22:26693 (JINR-P2-3590, pp 59-68)
S-matrix for two-body, causality for analytic properties of, 22:20346
S-matrix for, acausal and unitary, 22:1509 (JINR-P2-3506)
S-matrix for, analyticity in potential strength for element of partial wave, 22:18036
S-matrix for, asymptotic behavior in left half lambda-plane for, 22:3536
S-matrix for, comparison of eigenchannel and R-matrix methods for calculating, (T), 22:37385
S-matrix for, definition of macroscopic causality in, 22:26723 (JINR-P2-3590, pp 22-30)
S-matrix for, freedom in definition of reduced M-functions for elements of axiomatic, 22:11739
S-matrix for, interaction representation in covariant perturbation theory for, 22:9672
S-matrix for, macroscopic causality in functional formulation of, 22:20337 (INP-555/PH, pp 171-81)
S-matrix for, method of determination for nonlinear Born--Infeld field in two-dimensional space, 22:18032 (JINR-P2-3662)
S-matrix for, parametrization in nonorthogonal basis of, 22:32215
S-matrix for, peripheral interactions in model for

unitary, 22:15853
S-matrix for, quantization of relativistic action-at-a-distance theories for, 22:29650
S-matrix for, quantum electrodynamics in general covariant gauge for unitarity of physical, 22:9671
S-matrix for, quantum electrodynamics results in theory of, 22:20179
S-matrix for, reduction formula, currents, and current-like operators in theory of, 22:9705
S-matrix for, resonance position, width, and scattering length from elements of, 22:9704
S-matrix for, review of compositeness criteria for particles in, 22:18041
S-matrix for, review of general quantum theory for, 22:9701(T) (AERE-Trans-1066)
S-matrix for, self-interaction from standard invariance of, 22:13839
S-matrix for, theories for arbitrary-spin particles for analytic continuation in spin of elements of, 22:5527
S-matrix for, unitarity and normal form of solution in interaction-with-derivatives model for, 22:15694 (ITF-67-26)
S-matrix for, unitarity in perturbation theory for, 22:15858
S-matrix in Born--Infeld two-dimensional field model, classical and quantum, 22:46557
S-matrix in classical mechanics in, 22:39496
S-matrix in nonrelativistic, timelike cluster properties of, 22:35135
S-matrix in perturbation theory, asymptotic quantum field theory for, 22:44517
S-matrix in, bootstrap conditions for soluble models in theory for, 22:32218
S-matrix in, causality groups of, 22:35161
S-matrix in, construction without macrocausality violation of unitary physical, 22:32202
S-matrix in, extension for renormalized and nonrenormalized Green function in axiomatic field theory, 22:32201
S-matrix in, low-energy expansion for Schroedinger equation with spherically symmetric potentials, 22:32230
S-matrix in, relation between Marchenko formalism and N/D equations for regular, 22:17955
S-matrix in, relativistic SU(6) for unitary, 22:9703
S-matrix in, space-similitude properties of decomposition of, 22:9702
S-matrix in, stationary and nonstationary quantum problems soluble by contour integral technique for, 22:11743
S-matrix in, translation invariance from energy--momentum conservation for, 22:13868
S-matrix in, wave packets in relativistic theory for, 22:18039
S-matrix poles in multisheeted complex energy plane for meson--baryon interactions, 22:1434 (AD-646614)
S-matrix theory for high-isospin, symmetries in first-approximation, 22:5557
S-matrix theory for high-rank, symmetries in first-approximation, 22:5631
S-matrix theory of, group-theoretic approach to relativistic, 22:22474
Schroedinger equation for, theory for nonself-adjoint, 22:15851
Schroedinger finite-difference equation for relativistic two-body, calculus for, 22:46532 (JINR-E2-3949)
Schroedinger theory for, screening in, 22:44518
Shroedinger finite-difference equation for relativistic two-body, relativistic analogs of current, continuity equation, and phase shifts from, 22:46533 (JINR-E2-3950)
singularities in multiple, 22:32231
space--time transformations of initial and final states in, (T), 22:41706
Sturmian functions for three-body, 22:41759
sum rules for elastic, causality for, 22:13862 (LPTHE-TH-219)
sum rules for two-body, nonuniqueness theorem for narrow resonance saturation of superconvergent, 22:35131 (NP-17474)
sum rules for, method for obtaining, 22:15854
superperturbation theory for, formulation of generalized, 22:50382
symmetry breaking in, subtractions in dispersive approach to SU(2) and SU(3), 22:9633
symmetry crossing matrices for, consequences of internal, 22:13861 (COO-1573-31)
symmetry for, dispersion theory for renormalization in, 22:15857
T matrix expansion for resonance interactions, use of Lippmann--Schwinger equation for, 22:13867
T-matrix at zero momenta in, relation between classical Lagrange function and, 22:48361
theory for charged particles on short-range central potential, Levinson theorem and quantum defect for, 22:53230
theory for elastic, criterion for weak perturbing systems in, 22:13865
theory for electromagnetic, analytic properties of certain radial matrix elements in, 22:34917
theory for electron--hydrogen singlet, optical-potential calculation in, 22:38786
theory for four-fermion interactions and singular potentials in momentum space, 22:7561
theory for high-energy inelastic, cross section behavior in, 22:7565
theory for high-energy inelastic, model for multiple production in, 22:35162
theory for high-energy, impact parameter, 22:9700 (NYO-2262-TA-165)
theory for large-angle quasiclassical, at high energies, 22:50468
theory for many-particle systems with singular potentials, time-dependent, (T), 22:11997
theory for multiple spin-$^{1}/_{2}$ particle, longitudinal depolarization in, 22:3534
theory for multiple, on plane layer of matter, 22:22476
theory for potential, interpolation formulas for, 22:48381
theory for relativistic Coulomb, of hypergeometric equations for, 22:48372 (JINR-E2-3948)
theory for relativistic, SL(2,C) algebra surviving contraction for, 22:35156
theory for three-body, book on dynamics in, 22:13688
theory for three-body, Lee-type interaction in, 22:17879
theory for two-body, boost matrix elements for O(3,1) partial wave expansion for, 22:15862
theory for, approximate analytic solution for equations in quantum mechanics in, 22:32214 (JINR-P4-3741)
theory for, asymptotic condition in, 22:35157
theory for, generalized matrix N/D method for absorptive corrections in peripheral model for, 22:13873
theory for, infinite multiplets in, 22:7541 (COO-264-403)
theory for, relativistic problem of multipolar moments in, 22:15856
theory of elastic and inelastic, relativistic classical mechanics for, 22:26727
theory of high-energy, composite model for, (T), 22:7637(R) (COO-1573-33)
theory of inelastic, diagonalization of phase shift matrix in semiclassical, 22:47827
theory of potential, using generalized R-matrix formalism, 22:9981
theory of relativistic quasi-potential, Lorentz group expansion for, 22:32220
theory of relativistic spinless-particle, evaluation of partial-wave unitarity integral for N/D method for, 22:34874
theory of, four-mass kinematics for Regge crossing in, 22:5675
theory of, generalization of Haag theorem in, 22:24740
theory of, integral representations for N-particle functions in, 22:50466
theory of, uniform semiclassical approximations for quantities in elastic, 22:17405
three-body problem in, theory using second quantization formalism, (T), 22:27291
three-body system of equal masses, McGuire model of, 22:11744
time delay in total-reflection processes of, 22:44524
time delay in, stationary approach to definition of, 22:3539
time dependence of resonance, 22:50684
transition operator for, tensor decomposition of, 22:46540
transport equation in, solution of anisotropic, (T), 22:19760
two- and three-particle, Coulomb T matrix treatment of, 22:41343
variational method in, analysis of Harris, 22:50027
variational principle for quantum, time-dependent, 22:20350
vertex functions of spinor electrodynamics, 22:46507
wave functions for, finiteness principle for, 22:35159
wave operators for system in, integral representation for, 22:7568
wave-function and Green-function factorization for potential, in region of isolated poles of the S-function for, (T), 22:3778
Wigner spin rule for helium--helium collisions, validity of, (E), 22:7161

Scattering Chambers
see Radiation Target Chambers

SCb-885
see D-36 (Niobium Alloy)

SCHIFF BASES
compounds with thorium, uranium, or zirconium, preparation and properties of, 22:48854

SCHIZOMYCOTA
Acetobacter xylinum, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
Achromobacter sp., radiation effects on growth of, in haddack fillets, 22:26020
Achromobacter sp., radiation effects on growth of, in foods, effects of packaging on γ, 22:4724
Achromobacter sp., radiation effects on survival of, γ, 22:52039
Achromobacter sp., radiation effects on toxin production by, in haddock, γ, 22:17062(R) (MIT-3343-28)
Achromobacter sp., radiation effects on, isolated from irradiated seafood, 22:52061 (CONF-670945)
Actinomyces aureofaciens, radioinduced mutations for

chlortetracycline and vitamin B12 in, combined effects of ethylenimine on uv, 22:40654
actinomycetes, radiation effects on antibiotic activity of, mutagenic uv, 22:12828
Aerobacter aerogenes, radiation effects on growth of, in packaged chicken, γ, 22:47651(R) (NYO-3733-1)
Arthrobacter sp., growth in autoclaved and γ-irradiated soils, comparison of, 22:26021
Azotobacter chroococcum, nitrogenase activity of, effects of, on deuterium-hydrogen exchange, 22:51381
Azotobacter chroococcus, radiation effects on physiological activity of, γ, 22:21428
Azotobacter sp., radiation effects on physiology and survival of, in soils, γ, 22:52038
Azotobacter sp., radiation effects on, in soils, γ, 22:26006
Azotobacter vinelandii, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
Azotobacter vinelandii, nitrogenase activity of, effects of, on deuterium-hydrogen exchange, 22:51381
Azotobacter vinelandii, radiation effects on acceptor activity of RNA in, x, 22:23421
Azotobacter vinelandii, radiation effects on adaptive function of RNA of, x, 22:19259
Azotobacter vinelandii, radiation effects on physiological activity in, γ, 22:21428
Bacillus anthracis, radiation effects on immunity of sheep inoculated with, whole-body x, 22:43251
Bacillus anthracis, radiation effects on survival of, effects of dose rate and irradiation time on γ, 22:23685
Bacillus brevis, mutations induced in, by chemicals, 22:47504
Bacillus brevis, radioinduced metations in, uv, 22:47504
Bacillus cereus, content of dipicolinic acid in spores of, effects of β-2-thienylalamine on, 22:10896
Bacillus cereus, effects of heat on spores of, effects of β-2-thienylalamine on, 22:10896
Bacillus cereus, radiation effects on respiration of spores of, effects of temperature on γ, 22:49235
Bacillus cereus, radiation effects on spores of, comparison of effects of heat to γ, 22:31300
Bacillus cereus, radiation effects on spores of, effects of β-2-thienylalamine on, 22:10896
Bacillus cereus, radiation effects on survival of spores and vegetative forms of, x, 22:52076
Bacillus cereus, radiation effects on, effects of copper ions on, 22:23398 (IA-1128, pp 147-55)
Bacillus coagulans, germination of spores of, in presence of x-irradiated beet sugar, 22:40991
Bacillus coagulans, radiation effects on survival of spores and vegetative forms of, x, 22:52076
Bacillus licheniformis, radiation effects on activity of penicillinase extracts from, γ, 22:8443
Bacillus macerans, radiation effects on reproduction of, 22:52059
Bacillus megaterium, radiation effects on ability of, to form colonies, synergistic effects of zinc on γ, 22:28716
Bacillus megaterium, radiation effects on photochemistry and survival of spores of, effects of temperature on uv, 22:49656
Bacillus megaterium, radiation effects on photoproducts and survival of spores of, uv, 22:28288 (ORNL-4100, pp 166-77)
Bacillus megaterium, radioinduced photoproducts in spores and vegetative cells of, uv, 22:28719
Bacillus megaterium, radiosensitivity of spores of, effects of oxygen, temperature, and water content on x, 22:38507
Bacillus megatherium, radiosensitivity of spores of, fast electron, 22:19463
Bacillus pseudoanthracis, radiation effects on survival of spores of, uv, 22:12946
Bacillus pumillus, use for assay of erythromycin production by γ-irradiated Streptomyces, 22:49646
Bacillus pumilus, radiation effects on survival of spore and vegetative forms of, in hydrocortisone ointments, γ, 22:52101
Bacillus pumilus, radiation effects on survival of spores and vegetative forms of, x, 22:52076
Bacillus sp., biosynthesis of unsaturated fatty acids in, 22:25722 (UCLA-12-668, pp 59-69)
Bacillus sp., radiation effects on antigenic properties and virulence of, α, γ, and neutron, 22:52086
Bacillus sp., radiation effects on incidence of, in intestines of mice, x, 22:49548
Bacillus sp., radiation effects on spoilage, in packaged foods, 22:31304
Bacillus sp., radiation effects on spores of, in medical supplies, evaluation of cobalt-60 γ, 22:23701
Bacillus stearothermophilis, radiation effects on spores of, effects of salt and sugar content on photoreactivations of uv, 22:47643
Bacillus subtilis, growth in γ-irradiated sucrose, 22:19293
Bacillus subtilis, isolation of DNA from, procedure for, 22:49185(R) (YALE-2653-33)
Bacillus subtilis, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
Bacillus subtilis, radiation effects on bacteriophage and DNA activity in, γ, 22:432
Bacillus subtilis, radiation effects on cell wall and DNA synthesis in, uv and x, 22:4712
Bacillus subtilis, radiation effects on DNA of, γ, 22:28290(R) (NYO-2653-29)
Bacillus subtilis, radiation effects on DNA synthesis in, uv, 22:14943
Bacillus subtilis, radiation effects on germinating spores of, in relation to photoproducts, 22:28288 (ORNL-4100, pp 166-77)
Bacillus subtilis, radiation effects on kinetics of plaque growth of SP 3 and SP 8 bacteriophages of, uv, 22:10892
Bacillus subtilis, radiation effects on SP 8 and SP 3 phages of, effects of thymine content on uv, 22:4709
Bacillus subtilis, radiation effects on survival of, in ice, uv, 22:28717
Bacillus subtilis, radiation effects on survival of, space flight and uv, 22:33988
Bacillus subtilis, radiation effects on transformation in, following exposure of DNA, x, 22:15120
Bacillus subtilis, radiation effects on transformation activity of DNA from, effects of 5-bromouracil substitution on uv, 22:49185(R) (YALE-2653-33)
Bacillus subtilis, radiation effects on transforming activity of DNA in, x, 22:25713 (COO-78-163, pp 64-125)
Bacillus subtilis, radiation effects on transforming DNA of, combined effects of deoxyribonuclease, dimethylsulfate, and nitrous acid on uv, 22:30971
Bacillus subtilis, radiation effects on transforming ability of DNA from vegetative cells and spores of, effects of oxygen or saline solution on electron, 22:16984
Bacillus subtilis, radiation effects on, combined effects of β-lysin on uv, 22:36415
Bacillus subtilis, radiation effects on, effects of temperature on microwave, 22:8662
Bacillus subtilis, radioinduced amylase mutants of, uv, 22:36232
Bacillus subtilis, radioinduced asporogenic mutants of, chromosome mapping of uv, 22:51520
Bacillus subtilis, radioinduced inactivation of DNA of, following uptake of tritium-labeled amino acids or thymidine, β and γ, 22:47463
Bacillus subtilis, radioinduced inactivation of spores of, effects of chlorocresol and temperature on γ, 22:43488
Bacillus subtilis, radioinduced mutants of, isolation and characterization of, 22:28409
Bacillus subtilis, radioinduced mutations in, x, 22:45496
Bacillus subtilis, radioinduced photoproducts of, uv, 22:28719
Bacillus subtilis, radiolysis of DNA in, combined effects of actinomycin D on γ, 22:40591
Bacillus subtilis, radiosensitivity of spores of, effects of low temperatures on uv, 22:33972
Bacillus subtilis, uptake of DNA by, during transformation, effects of EDTA on, 22:49185(R) (YALE-2653-33)
Bacillus thuringiensis var. sotto, radiation effects on toxicity of paraspore of, for silkworm, uv, 22:8665
Bacterium prodigiosum, radiation effects on glucose reduction activity of, 22:10893
Bacterium prodigiosum, radiation effects on, protective effects of, against virulence of Escherichia coli in mice, lethal, 22:10893
Bacteroides sp., radiation effects on incidence of, in intestines of mice, x, 22:49548
Brucella sp., radiation effects on growth of, following injection in guinea pigs, x, 22:23449
Brucella sp., radiation effects on, lethal γ, 22:28718
carbon-12 metabolism by, effects of organic components of medium on, 22:428
cerium-144 content of saprophytic, in Black Sea during 1966, 22:8550
cesium-137 content of saprophytic, in Black Sea during 1966, 22:8550
Chondrococcus columnaris, virulence in rainbow trout, 22:10740 (BNWL-480, pp 153-93)
Chromatium sp., reactions induced by light in cytochromes of, 22:6192 (BNL-11684)
Citrobacter freundii, effects on survival of x-irradiated mice, 22:49548
Clostridium botulinum type C, isolation of pure cultures of, effects of sporulation on, 22:6930(R) (COO-1183-24)
Clostridium botulinum type C, production of spores by, effects of culture medium on, 22:49660(R) (COO-1183-26)
Clostridium botulinum type E, activation of toxin from, effects of trypsin on, 22:49660(R) (COO-1183-26)
Clostridium botulinum type E, biosynthesis of toxin by, in γ-irradiated oysters and shrimp, effects of dose and temperature on, 22:49667
Clostridium botulinum type E, radiation effects on content of toxin from, in cod, effects of storage temperature on, 22:49660(R) (COO-1183-26)
Clostridium botulinum type F, radiosensitivity of, effects of culture medium on γ, 22:33986(R) (ORO-3347-5)

Clostridium botulinum types B and F, sporulation of, effects of culture medium on, 22:6930(R) (COO-1183-24)
Clostridium botulinum, isolation of, methods for, 22:52061 (CONF-670945)
Clostridium botulinum, radiation effects on count of spores of, in shrimp, effects of post-irradiation storage temperature on low dose, 22:49663(R) (ORO-3698-2)
Clostridium botulinum, radiation effects on growth and toxin production of, in fish, effects of temperature on, 22:52061 (CONF-670945)
Clostridium botulinum, radiation effects on growth of, in fish, effects of storage temperature on, 22:4714(R) (COO-1183-23)
Clostridium botulinum, radiation effects on production of toxin by, in haddock and perch, γ, 22:17062(R) (MIT-3343-28)
Clostridium botulinum, radiation effects on sensitivity of mice to toxins of, 22:30985
Clostridium botulinum, radiation effects on spores of, effects of heating on, 22:52123
Clostridium botulinum, radiation effects on survival of spores of, in food, fast electron, γ and x, 22:15126
Clostridium botulinum, radiation effects on survival of, in fish, 22:2559
Clostridium botulinum, radiosensitivity in packaged food, evaluation of statistical methods for estimating, 22:49675
Clostridium botulinum, survey of Gulf Coast for presence of, 22:52061 (CONF-670945)
Clostridium botulinum, toxin production by, methods for assay of, 22:6930(R) (COO-1183-24)
Clostridium pasteurianum, effects of nitrogenase activity of, effects of, on deuterium-hydrogen exchange, 22:51381
Clostridium perfringens, radiation effects on survival of, γ, 22:52083
Clostridium sp., radiation effects on spoilage, in packaged foods, 22:31304
Clostridium welchii type A, virulence for γ-irradiated guinea pigs, 22:28673
Clostridium welchii, radiation effects on survival of spores of, in food, fast electron, γ, and x, 22:15126
coliforms, radiation effects on content of, in intestines of mice, x, 22:49548
content of coliform, in feces of rats, in relation to x-radiosensitivity, 22:557
content of environment, use of germfree mice to monitor, 22:28284 (ORNL-4100, pp 127-34)
Corynebacterium diptheriae, radiation effects on lysogenic and toxinogenic properties of phages produced by mutants of, uv, 22:593
Corynebacterium parvum, immunization of mice with, effects of, on x-radiosensitivity of immune responses, 22:40537
destruction using γ radiation for food preservation, 22:12534 (BNL-50084)
detection in radiation processed seafood, development of tests for, 22:26017(R) (TID-23835)
Diplococcus pneumoniae, genetic transformation of, role of DNA in, 22:39951 (BNL-50101)
Diplococcus pneumoniae, radiation effects on content of, in lungs of guinea pigs, protective effects of gibberellic acid against x, 22:51843
Diplococcus pneumoniae, radiation effects on structure of recombinant region of DNA in, 22:28353
Diplococcus pneumoniae, structure of recombined region of DNA in, effects of mitomycin C on, 22:28353
effects on decontamination of radioactive waste, 22:27851 (CEA-N-816, pp 66-79)
effects on leaching uranium minerals using iron sulfate or sulfuric acid, 22:27850 (CEA-N-816, pp 80-9)
effects on underground leaching of uranium oxides U_3O_8 from mining ore and waste materials, 22:18879
effects on x-radioinduced changes in the intestinal mucosa of pigs and rats, combined effects of bile on, 22:49561
effects on zinc-65 uptake by benthic algae, 22:43311(R) (PRNC-85)
Eimeria acervulina, infectivity in intestine of chickens, 22:14947
Eimeria nectrix, infectivity in intestine of chickens, 22:14947
engulfment by leukocytes, tracer study of, 22:438
enterococci, radiation effects on incidence of, in intestines of mice, x, 22:49548
Escherichia coli B, radioinduced auxotrophic mutations in, combined effects of hydroxylamine on uv, 22:43283
Escherichia coli B, radiosensitive gene of, transduction of, into K-12 recipient by pl phage, 22:36235
Escherichia coli B, radiosensitivity of caffeine-resistant mutants of, use of, for selection of excision-repair mutants, uv, 22:14942
Escherichia coli B, radiosensitivity of mutants of, in relation to oxygen enhancement ratio, mechanisms for uv and x, 22:28715
Escherichia coli C, radiation effects on, mechanism for effects of holding in buffer solutions on uv, 22:49457
Escherichia coli K_{12}, radioinduced mutations for vitamin B_{12} deficiency in, combined effects of penicillin on uv, 22:21469
Escherichia coli K12, mutations induced in, by N-methyl-N-nitro-N-nitrosoguanidine, 22:10754
Escherichia coli K12, radioinduced mutations for impairment of maltose metabolism in, uv, 22:10754
Escherichia coli K12, radioinduced mutations in, for resistance to lambda phage, uv, 22:10754
Escherichia coli K12, radioinduced phi170 bacteriophage in strains of, effects of superinfecting phage on uv, 22:8499
Escherichia coli, activity of polyribosomes in, 22:28286 (ORNL-4100, pp 153-9)
Escherichia coli, Bs2, reactivation of uv-irradiated P1 phage by, 22:47644
Escherichia coli, cerium toxicity in, 22:23687
Escherichia coli, configuration of DNA and RNA chains in, effects of heat and hydrogen peroxide on, 22:23448
Escherichia coli, conjugation of, energy metabolism during, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, conjugation of, energy requirements for pair formation during, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, conjugation of, synthesis of macromolecules during, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, content of DNA in phage-infected, repair of, 22:30414 (ORNL-4100, pp 148-51)
Escherichia coli, content of immature ribosomes in, effects of, on RNA synthesis, 22:12158 (BNWL-480, pp 107-26)
Escherichia coli, content of ribosomes in, isolation and determination of properties of, 22:38193(R) (EUR-3912)
Escherichia coli, degradation of DNA in, by decay of tritium-labeled compounds, 22:19250
Escherichia coli, dosimetry of 20 MeV electrons in, 22:38278
Escherichia coli, effects of temperature on survival of, 22:30412 (ORNL-4100, pp 141-5)
Escherichia coli, growth in γ-irradiated solutions of endoxan, 22:49279
Escherichia coli, growth in γ-irradiated sucrose, 22:19293
Escherichia coli, growth on γ-irradiated media, effects on rate of respiration, 22:51472
Escherichia coli, host control mechanisms of, effects of uv-irradiated lambda phage on, 22:52052
Escherichia coli, immune reactions of x-irradiated leukocytes to, in man, 22:2543
Escherichia coli, immune reactions of, effects of leukocyte lysosomes on, 22:20998(R) (ORO-3628-1)
Escherichia coli, infection with uv-irradiated DNA of phage T2 and T4, 22:40559
Escherichia coli, interaction of endotoxins of, with human erythrocytes, 22:23395 (COO-1285-11)
Escherichia coli, isolation of phenylalanyl-RNA synthetase from, 22:28286 (ORNL-4100, pp 153-9)
Escherichia coli, lectures on RNA synthesis, 22:37628 (ISS-68/1)
Escherichia coli, localization of photoreactivating enzyme in, 22:28399 (ORNL-4100, pp 40-7)
Escherichia coli, mitosis in, effects of cell extracts on, 22:30411 (ORNL-4100, pp 117)
Escherichia coli, mutations for cell division in, isolation of, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, mutations induced by chemicals in, method for determining specificity of, 22:4593
Escherichia coli, mutations induced in, by caffeine, effects of far red light on rate of, 22:28397 (ANL-7278, pp 144-69)
Escherichia coli, mutations induced in, by radiotoxins, 22:51522
Escherichia coli, mutations induced in, by triethylene melamine, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, pathogenicity in mice, protective effects of irradiated Bacterium prodigiosum against, 22:10893
Escherichia coli, phenolation of cells of, 22:16646 (ORNL-4075, pp 22-3)
Escherichia coli, preparation of labeled RNA from, improved methods for, 22:12746 (EUR-3669)
Escherichia coli, production for biochemical research, methods of, 22:28286 (ORNL-4100, pp 153-9)
Escherichia coli, properties of uv-radiosensitive mutants of, effects of colicins on, 22:17015
Escherichia coli, protein content of, combined effects of benzopyrene and light on, 22:28289 (ORNL-4100, pp 178-201)
Escherichia coli, radiation effects on $15T^-$ and K12, intracellular tritium β, 22:33709(R) (COO-1603-2)
Escherichia coli, radiation effects on abundance of, on human skin following therapy of mammary carcinomas, acute x, 22:49658
Escherichia coli, radiation effects on acriflavine-sensitivity of, uv, 22:52037
Escherichia coli, radiation effects on antibiotic sensitivity of, γ, 22:52054
Escherichia coli, radiation effects on antigenic properties and virulence of, α, γ, and neutron, 22:52086
Escherichia coli, radiation effects on bacteriophages infecting, mutagenic uv, 22:40625
Escherichia coli, radiation effects on binding of p-hydroxymercuribenzoate to, x, 22:23410(R) (NYO-3319-17)
Escherichia coli, radiation effects on biological

activity of transfer RNA of, x, 22:51421
Escherichia coli, radiation effects on β-galactosidase and protein synthesis in, effects of energy, thymine, or uracil starvation on uv, 22:40566
Escherichia coli, radiation effects on cell division and metabolism in, microwave, 22:38505
Escherichia coli, radiation effects on chromosome replication in, effects of oxygen on x, 22:31294
Escherichia coli, radiation effects on chromosome replications in, effects of 5-bromouracil on uv and x, 22:6786
Escherichia coli, radiation effects on colony-forming ability of mutants of, uv and x, 22:52055
Escherichia coli, radiation effects on content of nucleic acids in, continuous γ, 22:26008
Escherichia coli, radiation effects on DNA and RNA in, ionizing, 22:23448
Escherichia coli, radiation effects on DNA degradation and prophage induction in, γ, 22:52060
Escherichia coli, radiation effects on DNA in, repair of uv, 22:19309(R) (SU-326-P-7-194)
Escherichia coli, radiation effects on DNA of, effects of caffeine and 8-chlorocaffeine on dark repair of uv, 22:51435
Escherichia coli, radiation effects on DNA of, effects of 5-fluorouracil on RNA synthesis following irradiation in relation to repair of uv, 22:40969
Escherichia coli, radiation effects on DNA of, mechanisms of recovery from uv, 22:12806
Escherichia coli, radiation effects on DNA of, repair synthesis following uv, 22:52036 (ORO-3596-7)
Escherichia coli, radiation effects on DNA of, repair of uv, by infecting T_4 bacteriophage, 22:51541
Escherichia coli, radiation effects on DNA of, repair of uv and x, 22:8493
Escherichia coli, radiation effects on DNA synthesis in, combined effects of acriflavine on uv, 22:8664
Escherichia coli, radiation effects on DNA synthesis of, effects of radiosensitivity on uv, 22:33727
Escherichia coli, radiation effects on DNA synthesis in mutant of, effects of temperature on γ, 22:23455
Escherichia coli, radiation effects on early thymineless death of, effects of photoreactivation on uv, 22:591
Escherichia coli, radiation effects on fertility of populations of, in comparison with effects of caffeine, hydroxylamine, mitomycin, and nitrous acid, uv, 22:49650
Escherichia coli, radiation effects on genetic information in, effects of m-RNA on repair of uv, 22:40970
Escherichia coli, radiation effects on genetic recombination in bacteriophages of, uv, 22:19311
Escherichia coli, radiation effects on giant cell formation by mutant of, uv and x, 22:23495
Escherichia coli, radiation effects on growth of, effects of incubation in thymine-deficient medium on uv and x, 22:49648
Escherichia coli, radiation effects on host cell and viral DNA replication in lysogenic, uv, 22:28362
Escherichia coli, radiation effects on induction of lambda phage in, following mating with lysogenic recipient, uv, 22:17058
Escherichia coli, radiation effects on infection of, by phage DNA, combined effects of heat on, 22:38504
Escherichia coli, radiation effects on infectivity of bacteriophages for, uv, 22:40975
Escherichia coli, radiation effects on infectivity and replication of RNA bacteriophage f2 in, uv, 22:33989
Escherichia coli, radiation effects on infectivity of T-even phages for, combined effects of pyruvaldehyde on uv, 22:19460
Escherichia coli, radiation effects on liquid-holding recovery of, effects of acriflavine and caffeine on uv, 22:12947
Escherichia coli, radiation effects on lysogenic properties of, uv, 22:51525
Escherichia coli, radiation effects on lysogenic phage of, photoreactivation spectra of uv, 22:52057
Escherichia coli, radiation effects on lysogenic, during space flight, cosmic, 22:28721
Escherichia coli, radiation effects on lysozyme production during T4 infection of, uv, 22:26014
Escherichia coli, radiation effects on metabolism of nucleic acids in, x, 22:19266
Escherichia coli, radiation effects on metabolism of DNA in, effects of mutants of bacteriophages T3 and T7 on uv, 22:14937
Escherichia coli, radiation effects on mitosis in, protective effects of light and liquid holding treatment against uv, 22:15123
Escherichia coli, radiation effects on mutation frequency and survival in, combined effects of hydrogen peroxide incubation on uv, 22:49644(R) (NYO-3893-1)
Escherichia coli, radiation effects on nature of catabolism of RNA by, x, 22:23475
Escherichia coli, radiation effects on parent and recombinant strains of, x, 22:28397 (ANL-7278, pp 144-69)
Escherichia coli, radiation effects on phages infecting, uv, 22:25720(R) (ORO-3630-2)
Escherichia coli, radiation effects on pyrimidine dimers of, uv, 22:28288 (ORNL-4100, pp 166-77)
Escherichia coli, radiation effects on pyrimidine bases of nucleic acids of, effects of oxygen on ionizing, 22:51389
Escherichia coli, radiation effects on reproductive mechanisms of, recovery from α, 22:25873
Escherichia coli, radiation effects on sedimentation rate of, γ, 22:31293
Escherichia coli, radiation effects on septum formation by, role of DNA in uv, 22:23432
Escherichia coli, radiation effects on strain of, deficient in excision-repair of pyrimidine dimers, mutagenic uv, 22:33792
Escherichia coli, radiation effects on survival of mutants of, uv, 22:45480
Escherichia coli, radiation effects on survival of radioresistant mutants and wild types of, effects of p-fluorophenylalanine on γ, 22:45733
Escherichia coli, radiation effects on survival of, effects of 5-fluorouracil and uracil starvation on uv, 22:51683
Escherichia coli, radiation effects on survival of, relation of single-strand breaks of DNA to x, 22:49231
Escherichia coli, radiation effects on survival of, use for dosimetry at interfaces, 22:38115
Escherichia coli, radiation effects on survival of, in pharmaceutical powders, γ, 22:52077
Escherichia coli, radiation effects on survival of, uv, 22:12946
Escherichia coli, radiation effects on survival of, x, 22:16974(R) (ORO-2832-56)
Escherichia coli, radiation effects on survival of, photoreversal of uv, 22:49644(R) (NYO-3893-1)
Escherichia coli, radiation effects on survival of, effects of dose rate and irradiation time on, γ, 22:23685
Escherichia coli, radiation effects on survival of, combined effects of fluoride ions on γ, 22:40967
Escherichia coli, radiation effects on survival of, protective effects of culture media against γ, 22:40971
Escherichia coli, radiation effects on survival of, repair of uv, 22:51526
Escherichia coli, radiation effects on survival of, effects of energy level on x, 22:38502
Escherichia coli, radiation effects on survival of, effects of oxygen on acute pulsed electron, 22:49462
Escherichia coli, radiation effects on survival of, RBE for 20-MeV electron, γ, and 20-MV photon, 22:38503
Escherichia coli, radiation effects on survival of, effects of dose fractionation on uv, 22:36416
Escherichia coli, radiation effects on survival of, in water aerosol, protective effects of inositol against uv and x, 22:45643
Escherichia coli, radiation effects on survival of, effects of LET on electron, γ, and heavy ion, 22:47647
Escherichia coli, radiation effects on survival of auxotrophic, mechanism of synergistic uv and x, 22:43485
Escherichia coli, radiation effects on survival of, use of, for measuring depth dose distribution of 20-MeV electrons in Perspex, electron, 22:51690
Escherichia coli, radiation effects on survival of, uv and x, 22:36421
Escherichia coli, radiation effects on survival of, in ice, uv, 22:28717
Escherichia coli, radiation effects on synthesis of proteins by ribosomes from, γ, 22:33993
Escherichia coli, radiation effects on synthesis of enzymes in, β, 22:28376
Escherichia coli, radiation effects on synthesis of RNA in, effects of acriflavine on uv, 22:49263
Escherichia coli, radiation effects on synthesis of DNA, proteins, and RNA in, effects of glucose, histidine, thymine, or uracil starvation on uv, 22:47451
Escherichia coli, radiation effects on toxicity of Endoxan for, effects of phosphate buffer on, 22:23473
Escherichia coli, radiation effects on transcription of messenger RNA from specific genes in, phosphorus-32 β, 22:28376
Escherichia coli, radiation effects on uptake of iodine-131 by proteins in membranes of, following exposure in medium containing labeled iodoacetic acid, γ, 22:33730
Escherichia coli, radiation effects on uptake of uridine by, effects of mutants of bacteriophages T3 and T7 on uv, 22:14937
Escherichia coli, radiation effects on, analysis of mutagenic and sublethal uv and x, 22:31040
Escherichia coli, radiation effects on, and T1 phage, comparison of lesions produced by acute γ, phosphorus-32, and transmutation, 22:52041
Escherichia coli, radiation effects on, chemical kinetics of photoreactivation of uv, 22:40945
Escherichia coli, radiation effects on, during space flight, cosmic, 22:31291(T) (AD-663360)
Escherichia coli, radiation effects on, effects of temperature on microwave, 22:8662
Escherichia coli, radiation effects on, effects of cell size on x, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, radiation effects on, effects of low temperature on lethal and mutagenic uv, 22:483
Escherichia coli, radiation effects on, effects of amino

acids and phosphate on recovery from γ, 22:26012
Escherichia coli, radiation effects on, effects of, on transfer during conjugation, 22:47646
Escherichia coli, radiation effects on, effects of temperature on photoreactivation of uv, 22:28288 (ORNL-4100, pp 166-77)
Escherichia coli, radiation effects on, effects of LET and oxygen enhancement ratio on fast neutron, uv, and x, 22:6928
Escherichia coli, radiation effects on, effects of growth medium and temperature on α and x, 22:25874
Escherichia coli, radiation effects on, effects of lambda bacteriophage on recovery from uv, 22:45735
Escherichia coli, radiation effects on, in relation to spontaneous mutability, uv, 22:40636
Escherichia coli, radiation effects on, lethal γ, 22:28718
Escherichia coli, radiation effects on, mechanisms for protective effects of 5-fluorouracil against uv, 22:40782
Escherichia coli, radiation effects on, protective effects of 1,3-cyclohexanedione and methylated derivates against γ and uv, 22:33853
Escherichia coli, radiation effects on, protective effects of extracts from Micrococcus radiodurans against x, 22:31172
Escherichia coli, radiation effects on, protective effects of cysteamine, cysteine, and glycerol against γ, 22:45616
Escherichia coli, radiation effects on, protective effects of amines and thiols against γ, 22:25875
Escherichia coli, radiation effects on, protective effects of cysteine against x, 22:43361
Escherichia coli, radiation effects on, protective effects of derivatives of cysteamine and cysteine against x, 22:28598
Escherichia coli, radiation effects on, protective effects of Tween 80 against γ, 22:33987
Escherichia coli, radiation effects on, RBE of protons at end of trajectories for, 22:8519 (CONF-670305-, pp 155-73)
Escherichia coli, radiation effects on, repair of genetic, review of, 22:40552
Escherichia coli, radiation effects on, repair of genetic, review of, 22:40622
Escherichia coli, radiation effects on, role of energy in injurious γ, 22:47448(R) (PRNC-69)
Escherichia coli, radiation effects on, role of protein synthesis in repair of x, 22:33752
Escherichia coli, radiation effects on, sensitizing effects of N-ethylmaleimide on γ, 22:21569
Escherichia coli, radiation effects on, time of development and repair of pathological x, 22:26009
Escherichia coli, radioinduced breaks in DNA molecules in, effects of oxygen on, 22:33793
Escherichia coli, radioinduced chain breaks and cross links in DNA of, uv, 22:28288 (ORNL-4100, pp 166-77)
Escherichia coli, radioinduced changes in conformation and inactivation of transfer RNA in, uv, 22:33746
Escherichia coli, radioinduced cleavage of thymine dimers in, fast electron and uv, 22:45445
Escherichia coli, radioinduced degradation of DNA of, effects of bacteriophage infection on γ, 22:36211
Escherichia coli, radioinduced degradation of DNA of, effects of caffeine on photoreactivability of lambda phage for uv, 22:40965
Escherichia coli, radioinduced degradation of DNA of mutant of, mechanisms for uv, 22:49268
Escherichia coli, radioinduced dissociation of ribosomes from, γ, 22:33993
Escherichia coli, radioinduced genetic recombination in partially-diploid, uv, 22:19319
Escherichia coli, radioinduced inactivation and mutagenesis in, protective effects of AET, cysteamine, and cysteine against x, 22:40793
Escherichia coli, radioinduced inactivation of, protective effects of nucleoproteins against uv, 22:36300
Escherichia coli, radioinduced inactivation of, protective effects of acridine dyes against uv, 22:28274 (ANL-7278, pp 250-82)
Escherichia coli, radioinduced inactivation of, target theory interpretation of α, γ, and proton, 22:36218
Escherichia coli, radioinduced induction of lysogenic lambda phage in, direct and indirect uv, 22:10894
Escherichia coli, radioinduced inhibition of DNA synthesis in, effects of, on cell division, 22:36188
Escherichia coli, radioinduced inhibition of polyphenylalanine synthesis in ribosomes of, uv, 22:4568
Escherichia coli, radioinduced lambda prophage excision in, lethality of uv, 22:26013
Escherichia coli, radioinduced lambda prophage excision in, linkage relation following uv, 22:26015
Escherichia coli, radioinduced liberation of lambda phage in lysogenic, protective effects of cystamine and magnesium ions against x, 22:47559
Escherichia coli, radioinduced liberation of lambda prophage of, effects of physiological condition on uv and x, 22:40974
Escherichia coli, radioinduced low molecular weight DNA in, in relation to radiosensitivity, x, 22:45410
Escherichia coli, radioinduced mutant of, uv-radiosensitivity of uv, 22:52051
Escherichia coli, radioinduced mutants of, genetic mapping of uv, 22:45487
Escherichia coli, radioinduced mutants of, infection of, by uv-irradiated phage DNA, 22:40629
Escherichia coli, radioinduced mutants of, method for isolation of γ, 22:28428
Escherichia coli, radioinduced mutations for streptomyci resistance in, combined effects of heat treatment on rate of uv, 22:28722
Escherichia coli, radioinduced mutations for streptomyci resistance in, effects of time on photoreactivation of uv, 22:49644(R) (NYO-3893-1)
Escherichia coli, radioinduced mutations in, combined effects of xanthine analogs on uv, 22:51538
Escherichia coli, radioinduced mutations in, dark repair of uv, 22:17016
Escherichia coli, radioinduced mutations in, effects of acriflavine and caffeine on frequency of uv, 22:36228
Escherichia coli, radioinduced mutations in, effects of caffeine on dark repair of uv, 22:40648
Escherichia coli, radioinduced mutations in, for defective genetic recombination, and x-radiosensitivity, uv, 22:25822
Escherichia coli, radioinduced mutations in, for loss of ability to repair uv lesions in bacteriophage DNA, uv, 22:25822
Escherichia coli, radioinduced mutations in, for reduced ability to divide, uv and x, 22:25822
Escherichia coli, radioinduced mutations in, for x-radiosensitivity, uv, 22:25822
Escherichia coli, radioinduced mutations in, liquid holding recovery from uv, 22:49287
Escherichia coli, radioinduced mutations in, method for determining specificity of β and uv, 22:4593
Escherichia coli, radioinduced mutations in, stability of uv, 22:25814
Escherichia coli, radioinduced mutations in, through transmutation of tritium, β, 22:51553
Escherichia coli, radioinduced mutations of, characterization of uv and x, 22:40615(R) (EUR-3889)
Escherichia coli, radioinduced phage in, RBE for γ and neutron, 22:21432
Escherichia coli, radioinduced phage reproduction in, effects of, on activity of RNA-methyltransferases, uv, 22:38214
Escherichia coli, radioinduced photoproducts in, uv, 22:28719
Escherichia coli, radioinduced pyrimidine dimers in DNA of, in relation to mutagenesis, uv, 22:23457
Escherichia coli, radioinduced reproduction of lysogenic bacteriophages in, uv, 22:38193(R) (EUR-3912)
Escherichia coli, radioinduced scission in DNA of, effects of purine or thymidine starvation on x, 22:25780
Escherichia coli, radioinduced scission in DNA of, protective effects of cysteamine against x, 22:25780
Escherichia coli, radioinduced sterilization of, solar uv, 22:33984(T) (JPRS-41315, pp 44-50)
Escherichia coli, radiolysis of DNA in, fast proton, 22:40598
Escherichia coli, radiolysis of DNA of, repair of x, 22:28288 (ORNL-4100, pp 166-77)
Escherichia coli, radiometric methods for counting of colonies of, LASER, 22:43357
Escherichia coli, radiosensitive gene loci on chromosomes of, mapping of uv, 22:51530
Escherichia coli, radiosensitivity mutants of, repair synthesis of uv, 22:40628
Escherichia coli, radiosensitivity of host cell, effects of, on repair of uv-radiation injuries in bacteriophage T4 DNA, uv, 22:51367
Escherichia coli, radiosensitivity of mutants of, β, uv, and x, 22:592
Escherichia coli, radiosensitivity of phages of, γ, 22:590
Escherichia coli, radiosensitivity of slime-producing mutant of, γ and uv, 22:33795
Escherichia coli, radiosensitivity of spontaneous revertants of T-44 (lambda) mutants of, uv, 22:31298
Escherichia coli, radiosensitivity of, determination of gene loci for uv, 22:36229
Escherichia coli, radiosensitivity of, effects of copper solutions on electron and uv, 22:19366
Escherichia coli, radiosensitivity of, fast electron, 22:19463
Escherichia coli, radiosensitivity of, mechanisms for uv and x, 22:36412
Escherichia coli, sensitivity to mutagens and radiomimetics, 22:36413
Escherichia coli, sensitivity to mutagens and radiomimetics, effects of strain on, 22:36414
Escherichia coli, synthesis of antigen in, effects of mutants of bacteriophages T3 and T7 on, 22:14937
Escherichia coli, synthesis of chromosomes in, tritium-labeled thymine study of, 22:51524
Escherichia coli, synthesis of DNA in, determination of rate of, 22:16974(R) (ORO-2832-56)
Escherichia coli, synthesis of leucine RNA in phage-infected, 22:28289 (ORNL-4100, pp 178-201)

Escherichia coli, synthesis of proteins by, 22:51302(R) (HUX-2643-42)
Escherichia coli, synthesis of RNA in, effects of bacteriophage infections on, 22:38193(R) (EUR-3912)
Escherichia coli, toxicity of tritium-labeled histidine, leucine, nucleosides, and proline to, 22:51458
Escherichia coli, transfer of DNA to minicells of, 22:28404 (ORNL-4100, pp 97-103)
Escherichia coli, use for testing self-sterilization of radium sources, 22:40980
Escherichia coli, use of uv-inactivated bacteriophage for interference studies in, 22:36417
Escherichia sp., radiation effects on growth of, in packaged chicken, γ, 22:47651(R) (NYO-3733-1)
Ferrobacillus ferroxidans, use for uranium and copper leaching, 22:51077
growth in γ-irradiated solutions of blood, 22:4723
growth in radiation processed seafood, effects of oxygen abundance and pH on, 22:26017(R) (TID-23835)
growth in stored seafoods, effect of radiopasteurization on, 22:210(R) (TID-24016)
growth of hemolytic, on γ-irradiated blood agar culture media following inoculation, 22:23697
growth on irradiated culture media, factors affecting, 22:36420
Haemophilus influenzae, radioinduced inactivation of DNA in, shapes of curves for uv, 22:43490
Haemophilus influenzae, stimulation of competence of, 22:53498 (LA-3848, pp 11-20)
Hemophilus influenzae, transformation in, reaction mechanisms of, 22:25715(R) (NYO-1371-51)
Herellea vaginicola, isolation from γ-irradiated poultry, 22:40984
Humicola lanuginosa, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
Hydrogenomonas facilis, tritium uptake from media by, effects of, on reproduction, 22:52059
identification of, numerical method for, 22:25218 (LF-38, pp 127-35)
incidence of infection by enteric, in x radiation chimeras of mice with secondary disease, 22:23612
Klebsiella pneumoniae, radiation effects on content of, in lungs of guinea pigs, protective effects of gibberellic acid against x, 22:51843
Klebsiella sp., radiation effects on bacteriophages of, γ and uv, 22:33990
Klebsiella sp., radiosensitivity of phages of, γ, 22:590
Lactobacillus sp., content in feces of rats in relation to x-radiosensitivity, 22:557
Lactobacillus sp., radiation effects on growth of, in foods, effects of packaging on γ, 22:4724
Lactobacillus sp., radiation effects on growth of, in haddock fillets, 22:26020
Lactobacillus sp., radiation effects on incidence of, in intestines of mice, x, 22:49548
Leptospira pomona, effects on hamsters and swine, effects of streptomycin treatment of bacteria on, 22:25732
Leptospira pomona, radiation effects on, effects of, on hamsters and swine following injection, 22:25732
Listeria monocytogenes, radiation effects on immune reactions of mice to, chronic γ, 22:36207
Microbacterium thermosphactum, radiation effects on growth of, in haddock fillets, 22:26020
Micrococcus glutamicus, radioinduced mutations in, comparison of chemical and uv, 22:476
Micrococcus lactilyticus, kinetics of malic-lactic transhydrogenase activity in, 22:30415 (ORNL-4100, pp 165)
Micrococcus lysodeikticus, activity of γ-irradiated lysozyme against, 22:43230
Micrococcus lysodeikticus, radioinduced mutants of, transformation of uv, 22:51509
Micrococcus lysodeikticus, radioinduced mutations of, characterization and transformation of uv, 22:51510
Micrococcus lysodeikticus, radioprotective effects of extracts of, on DNA, uv, 22:40615(R) (EUR-3889)
Micrococcus pyogenes, radiosensitivity of, fast electron, 22:19463
Micrococcus radiodurans, induced mutations of, N-methyl-N'-nitrosoguanidine and uv radiation, 22:49309
Micrococcus radiodurans, radiation effects on binding of p-hydroxymercuri-benzoate to, x, 22:23410(R) (NYO-3319-17)
Micrococcus radiodurans, radiation effects on DNA of, effects of content of cytosine and guanine on γ, 22:40580
Micrococcus radiodurans, radiation effects on growth cycle of, uv and x, 22:23410(R) (NYO-3319-17)
Micrococcus radiodurans, radiation effects on nucleic acids of, 22:14916
Micrococcus radiodurans, radiation effects on transforming DNA of, uv, 22:51443
Micrococcus radiodurans, radiation effects on, RBE for charged particle, 22:23683 (UCRL-17481, pp 138-44)
Micrococcus radiodurans, radiation effects on, review of molecular basis of lethal uv, 22:49223
Micrococcus radiodurans, radiation effects on, review of ionizing and uv, 22:49251
Micrococcus radiodurans, radioinduced photoproducts in, uv, 22:28719
Micrococcus radiodurans, radioprotective effects of extracts from, on Escherichia coli, x, 22:31172
Micrococcus radiodurans, radiosensitive mutants of, isolation of, 22:23410(R) (NYO-3319-17)
Micrococcus radiodurans, radiosensitivity of, effects of low temperatures on uv, 22:33972
Micrococcus sodonensis, radiation effects on, effects of iodoacetamide on, 22:4713
Micrococcus sp., radiation effects on growth of, in haddock fillets, 22:26020
Micrococcus sp., radiation effects on incidence of, in intestines of mice, x, 22:49548
Micrococcus sp., radiation effects on survival of, in food, effects of dose on, 22:31301
Micrococcus sp., radiation effects on, effects of carotenoid pigments on gamma, light, uv, and x, 22:4707
Moraxella sp., isolation from γ-irradiated poultry, 22:40984
Mycobacterium avium, radiation effects on acid-fastness of, uv, 22:31296
Mycobacterium bovis, radiation effects on dehydrogenase activity of, comparison of lyophilization effects and γ, 22:33721
Mycobacterium leprae, pathogenicity in x-irradiated mice, 22:12811
Mycobacterium leprae, radiation effects on acid-fastness of, uv, 22:31296
Mycobacterium leprae, radiation effects on multiplication of, in foot pad of mice, combined effects of thymectomy on, 22:49654
Mycobacterium lepraemurium, radiation effects on acid-fastness of, uv, 22:31296
Mycobacterium paratuberculosis, radiation effects on acid-fastness of, uv, 22:31296
Mycobacterium phlei, radioinduced pigment mutants of, characterization of uv, 22:40623
Mycobacterium tuberculosis, carbon-14 and tritium determination in, liquid scintillation methods for, 22:43037
Mycobacterium tuberculosis, effects on calcium-45 uptake by guinea pigs, 22:6761
mycobacterium tuberculosis, immune reactions to, in mice, effects of, on growth of transplanted sarcomas, 22:25746
Mycobacterium tuberculosis, preparation of samples of, for liquid scintillation counting, 22:43037
Mycobacterium tuberculosis, radiation effects on acid-fastness of, uv, 22:31296
Mycobacterium tuberculosis, radiation effects on acid-fastness and virulence of, relation of, to isoniazid sensitivity, uv, 22:31297
Mycobacterium tuberculosis, radiation effects on antigenic properties and virulence of, α, γ, and neutron, 22:52086
Mycobacterium tuberculosis, radiation effects on immune reactions to, in guinea pigs, γ and x, 22:23443
Mycobacterium tuberculosis, radiation effects on multiplication of, in foot pad of mice, combined effects of thymectomy on, 22:49654
Mycobacterium tuberculosis, radiation effects on survival of, γ, 22:52083
Mycobacterium tuberculosis, uptake of pyrophosphates by ATP and nucleotides of, 22:40524
Mycobacterium tuberculosis, use for assay of, radiation effects on pyrophosphatase activity in medium, containing sulfur-35, 22:40524
Mycoplasma laidlawii, radiation effects on DNA in, repair of uv, 22:19309(R) (SU-326-P-7-194)
Mycoplasma pneumoniae, radiation effects on reproduction of uv and x, 22:52046
Mycoplasma sp., radiosensitivity of elementary bodies of, uv and x, 22:49649
Nitrobacter sp., radiation effects on nitrifying activity of, in soils, γ, 22:10731
Nocardia minima, radiation effects on pigment-free mutant of, lethal uv, 22:45734
Pasteurella avium, radiation effects on infection incited by, in chickens, x, 22:4680
Pasteurella pestis, radiation effects on incidence of, in wild mice at Nevada Test Site, 22:8495 (COO-1355-17)
Pasteurella tularensis, radiation effects on immune reactions of guinea pigs to viable vaccine of, x, 22:38205
Pasteurella tularensis, radiation effects on toxicity of, lethal γ, 22:49657
Photobacterium fischeri, isolation of luciferase from, 22:30410(R) (NYO-3401-4)
Photobacterium fischeri, luminescence of, biological mechanisms for, 22:30410(R) (NYO-3401-4)
photosynthesis in, energy conversion during, 22:10118 (BNL-50051)
Pneumococcus sp., transformation of, fate of heterologous and homologous DNA during, 22:14905 (BNL-50057, pp 111-22)
Propionibacterium pentosaceum, metabolism of erythritol by, carbon-14 tracer study of, 22:28273 (ANL-7278, pp 219-49)
Propionibacterium sp., synthesis of propionate by, 22:28273 (ANL-7278, pp 219-49)
Proteus mirabilis, characterization of mutants of, sensitive to EMS, photodynamic action, and uv radiation, 22:51539

Proteus mirabilis, infectivity in irradiated rats, 22:47492
Proteus mirabilis, radioinduced growth of, in human intestine following therapy of ovarian carcinoma, γ, 22:6909
Proteus mirabilis, radioinduced mutations in, deuterium, 22:43287
Proteus sp., radiation effects on antibiotic sensitivity of, γ, 22:52054
Proteus sp., radiation effects on incidence of, in intestines of mice, x, 22:49548
Proteus vulgaris, antigens of, effects of, on strontium-90 deposition in bones of rats, 22:6745
Proteus vulgaris, immune reactions of, effects of leukocyte lysosomes on, 22:20998(R) (ORO-3628-1)
Proteus vulgaris, radiation effects on activity of hydrogenases in, uv, 22:21405(R) (CU-1803-12)
Proteus vulgaris, radiation effects on activity of hydrogenase in, effects of light intensity on uv, 22:16978
Pseudomonas aeruginosa, control in rodent breeding colonies, 22:28621 (ANL-7278, pp 1-94)
Pseudomonas erythra, radiation effects on growth of, in oysters, γ, 22:47652(R) (ORO-660)
Pseudomonas fluorescens, biosynthesis of four-carbon organic acids in, use of glucose substrate to determine mechanisms of, 22:20999(R) (RLO-1387-8)
Pseudomonas fluorescens, radiation effects on, effects of ultra-high dose rates on RBE for electron, 22:45729 (UCSF-10-P-2-52)
Pseudomonas fragi, radiation effects on toxin production by, in haddock, γ, 22:17062(R) (MIT-3343-28)
Pseudomonas glycinea, radioinduced mutations for resistance to, in soybeans, x, 22:36240
Pseudomonas sp., growth in autoclaved and γ-irradiated soils, comparison of, 22:26021
Pseudomonas sp., radiation effects on growth of, in haddock fillets, 22:26020
Pseudomonas sp., radiation effects on growth of, in foods, effects of packaging on γ, 22:4724
Pseudomonas sp., radiation effects on survival of, on rice, effects of dose on γ, 22:49666
Pseudomonas sp., radiation effects on, in polished and unpolished rice, γ, 22:43505
Pseudomonas sp., radiation effects on, isolated from irradiated seafood, 22:52061 (CONF-670945)
Pseudomonas sp., radioinduced atropine-mutants of, 22:40615(R) (EUR-3889)
radiation effects on aerosols of bacteria, L form, and mycoplasma, uv, 22:23684
radiation effects on content of, in milk, γ and x, 22:12772
radiation effects on content of, in stored wheat flour, γ, 22:43500
radiation effects on content of, in yellow perch fillets, effects of, on spoilage patterns and storage life, γ, 22:34003
radiation effects on DNA and RNA of, review of ionizing and uv, 22:49251
radiation effects on growth and pigments of, laser, 22:4570
radiation effects on growth of populations of, on grapes and pomegranates, 22:10900
radiation effects on growth of, in beef, effects of oxygen on γ, 22:23703
radiation effects on incidence of prototrophy mutations and survival in, uv, 22:49284 (NYO-2740-5, pp 201-66)
radiation effects on nucleic acids of, review of, 22:14916
radiation effects on resistance of man to infections by, 22:15064
radiation effects on spores of, lethal uv, 22:15127
radiation effects on survival of proteolytic, on fish, γ, 22:23698
radiation effects on survival of vegetative spore forms of, uv, 22:19459
radiation effects on survival of, effects of chemical compounds, environment, genetic strain, and thermal radiation on γ and x, 22:52042
radiation effects on survival of, in human blood plasma, γ, 22:52094
radiation effects on survival of, in iodine-131-labeled albumins and hippuran used for diagnosis, β and γ, 22:52075
radiation effects on survival of, in soils, γ, 22:52038
radiation effects on survival of, on catgut surgical sutures, γ, 22:52088
radiation effects on survival of, on disposable plastic syringes, electron and γ, 22:52079
radiation effects on survival of, on fillets of Bombay duck, 22:4722
radiation effects on survival of, on food, γ, 22:15134
radiation effects on survival of, on foods, γ, uv, and x, 22:43515
radiation effects on survival of, on human heart valve transplants, γ, 22:52089
radiation effects on survival of, on raspberries, effects of dose and dose rate on γ, 22:28724
radiation effects on survival of, on surgical sutures, γ, 22:52090
radiation effects on survival of, on thyroid transplants in man, γ, 22:52098
radiation effects on tetracycline-resistance of coliform, whole-body x, 22:43489
radiation effects on, dose required for lethal γ, 22:31309
radiation effects on, in fruit juices, cobalt-60 γ, 22:15131
radiation effects on, lethal uv, 22:15127
radiation effects on, of air of pharmacies, uv, 22:33996(T) (JPRS-41315, pp 36-43)
radiation effects on, protective effects of methylglyoxal against x, 22:6844
radiation effects on, rate of recovery from, 22:14905 (BNL-50057, pp 111-22)
radiation effects on, review of HCR of lethal and mutagenic uv, 22:25793
radiation effects on, review of recovery from, 22:26010
radiation effects on, review of uv, 22:36419
radiation effects on, sensitizing effects of BUDR on, 22:49237
radiation effects on, use of nucleic acids to restore uv and x, 22:40766
radiation effects on, uv, 22:23672
radioinduced increase in population of, in intestine of rats, protective effects of antibiotics against, 22:10851
radioinduced loss of reproductive ability of, 22:21410(R) (YALE-2653-30)
radioinduced mutants of, methods for isolation of uv, 22:52050
radioinduced mutations in, effects of DNA incorporation of 5-bromouracil on frequency of uv, 22:33787
radioinduced mutations of non-spore-forming strains of, γ, 22:52087
radioisotope metabolism by rumen, of sheep, selenium-75 and sulfur-35, 22:40573
radioisotope uptake by, 22:12798
radiosensitivity in relation to base composition of nucleic acids, 22:47478
removal from water by filtration through charcoal, potassium permanganate, and sodium hypersulfite, 22:16700
Rhizobium meliloti, radiation effects on mutants of, correlation of, with resistance to herbicides, uv, 22:40653
Rhizobium meliloti, radiation effects on nodulation in alfalfa by, 22:4704
Rhizobium meliloti, radiation effects on production of nodules by, in alfalfa, x, 22:10890
Rhizobium meliloti, use of uv radiation to test strains of, for lysogenicity, 22:36418
Rhodomonas lens, use as food for Tintinnopsis cultures, 22:33711(R) (NYO-3658-9)
Rhodopseudomonas rubrum, light-induced EPR signals in, role of photoreactive center in, 22:7966 (SU-326-P-12-9)
Rhodopseudomonas spheroids, isolation of photochemical reaction centers in, 22:53501(R) (NYO-3759-5)
Rhodospirillum rubrum, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
role in breakdown of white oak litter, effects of naphthalene on, 22:21463
Salmonella breslau, vaccination of mice with heat-killed cultures of, effects of, on γ- and x-radiosensitivity of, 22:45694
Salmonella derby, radiation effects on growth of, in crab and fish meats, γ, 22:49673
Salmonella enteritidis, infectivity in x-irradiated mice, 22:36369
Salmonella give, radiation effects on growth of, in crab and fish meats, γ, 22:49673
Salmonella heidelberg, radiation effects on growth of, in crab and fish meats, γ, 22:49673
Salmonella heidelberg, reduction of sulfite by, isotope effects on, 22:40613
Salmonella paratyphi, radioinduced killing of, for preparation of antigens and vaccines, γ, 22:52084
Salmonella poona, isolation from laboratory mice, 22:28630 (ORNL-4100, pp 118-26)
Salmonella sp., genetic mapping for, 22:47501 (NP-17136)
Salmonella sp., radiation effects on culture characteristics and virulence of, γ, 22:52061 (CONF-670945)
Salmonella sp., radiation effects on growth of, in packaged chicken, γ, 22:47651(R) (NYO-3733-1)
Salmonella sp., radiation effects on growth of, in crab and fish, effects of dose and temperature on γ, 22:15125(R) (RLO-1730-2)
Salmonella sp., radiation effects on survival of, in chicken, 22:49670
Salmonella sp., radiation effects on survival of, on fresh eviserated poultry, γ, 22:40984
Salmonella sp., radiation effects on, in animal feeds, 22:52123
Salmonella sp., radiation effects on, in fishmeal feeds, combined effects of sanitation and temperature on cobalt-60 γ, 22:28726
Salmonella sp., radiation effects on, in frozen meat, lethal, 22:31301
Salmonella sp., radioinduced destruction of, in chicken meat, 22:52061 (CONF-670945)
Salmonella typhi, radiation effects on antigenic

properties and virulence of, α, γ, and neutron, 22:52086
Salmonella typhi, radioinduced inactivation of dehydrogenase in, comparison of γ and uv, 22:43239
Salmonella typhimurium, growth in γ-irradiated sucrose solutions, effects of hydrogen peroxide on, 22:45461
Salmonella typhimurium, radiation effects on burst size of phage 22 in, effects of colicin I factors on uv, 22:26011
Salmonella typhimurium, radiation effects on growth of, effects of weightlessness on γ, 22:47645
Salmonella typhimurium, radiation effects on growth of, effects of hydrogen peroxide and oxygen on γ, 22:23411(R) (NYO-3641-2)
Salmonella typhimurium, radiation effects on growth of, in crab and fish meats, γ, 22:49673
Salmonella typhimurium, radiation effects on immune reactions, pyrogenicity, and toxicity of, effects of dose on γ, 22:40966
Salmonella typhimurium, radiation effects on recombination-deficient strain of, uv, 22:49653
Salmonella typhimurium, radiation effects on recombination-deficient mutants of, uv, 22:40650
Salmonella typhimurium, radiation effects on, laser, 22:2547
Salmonella typhimurium, radioinduced mutant of, isolation and characterization of uv, 22:36233
Salmonella typhimurium, radioinduced rough mutants of, characterization of polysaccharides in cell walls of uv, 22:51508
Salmonella typhimurium, reproduction of bacteriophages in, 22:38193(R) (EUR-3912)
Salmonella typhimurium, structure of histidinol dehydrogenase from, 22:14905 (BNL-50057, pp 111-22)
Salmonella typhosa, radiation effects on antigens of, γ, 22:49671
Salmonella typhosa, radioinduced killing of, for preparation of antigens and vaccines, γ, 22:52084
Sarcina lutea, radiation effects on binding of p-hydroxymercuribenzoate to, x, 22:23410(R) (NYO-3319-17)
Sarcina lutea, radiation effects on survival of, in ice, uv, 22:28717
Sarcina lutea, radiation effects on, effects of carotenoid pigments on gamma, light, uv, and x, 22:4707
Serratia marcescens, radiation effects on penetration of, from intestine into abdominal organs, blood, and lymph system of dogs, ionizing, 22:52006
Serratia marcescens, radiation effects on survival of, in ice, uv, 22:28717
Serratia marcescens, radiation effects on, effects of dehydration and temperature on uv, 22:589
Serratia marcescens, radiation effects on, photosensitizing effects of prodigiosine on, 22:52047
Serratia marcescens, radiation effects on, protective effects of humidity and inositol against x, 22:49435
Serratia marcescens, radiation effects on, protective effects of inositol, oxygen, and water against x, 22:43492
Serratia marcescens, radioinduced inactivation of pyrogen-containing filtrate from, β and γ, 22:16975
Serratia sp., biosynthesis of bacteriophage-directed photoreactivating enzyme in, 22:36422
Shigella flexneri, radiation effects on, effects of LET and oxygen enhancement ratio on fast neutron, uv, and x, 22:6928
Shigella flexneri, radiation effects on, protective effects of anoxia and glycerol against α, β, deuteron, epithermal neutron, and x, 22:6929
Shigella flexneri, radiosensitivity of, effects of copper solutions on electron and uv, 22:19366
Shigella flexneri, radiosensitivity of, effects of dose rate, LET, and oxygen concentration on fast neutron and x, 22:28712
Soranguim sp., use for preparation of carbon-14-labeled myxin, 22:6748
Staphylococcus aureus, immune reactions of, effects of leukocyte lysosomes on, 22:20998(R) (ORO-3628-1)
Staphylococcus aureus, penicillinase production by, study of uv radiation effects on transducing phage to determine chromosome location of genetic elements controlling, 22:51551
Staphylococcus aureus, radiation effects on content of, in lungs of guinea pigs, protective effects of gibberellic acid against x, 22:51843
Staphylococcus aureus, radiation effects on growth of, in packaged chicken, γ, 22:47651(R) (NYO-3733-1)
Staphylococcus aureus, radiation effects on lysogenic, mechanism of uv, 22:52053
Staphylococcus aureus, radiation effects on survival of, on fresh eviserated poultry, γ, 22:40984
Staphylococcus aureus, radiation effects on transducing bacteriophage of, genetic study of uv, 22:51532
Staphylococcus aureus, radiation effects on, recovery from γ, 22:15125(R) (RLO-1730-2)
Staphylococcus sp., analysis for tellurites by neutron activation, 22:50915
Staphylococcus sp., radiation effects on abundance of, in feces of rats, whole-body x, 22:6927
Staphylococcus sp., radioinduced sterilization of, solar uv, 22:33984(T) (JPRS-41315, pp 44-50)
Streptococcus aureus, radiation effects on antibiotic sensitivity of, γ, 22:52054
Streptococcus faecalis, radioinduced formation of thymine dimers in nucleic acids of, protective effects of azathymine and azauracil against uv, 22:519
Streptococcus hemolyticus, radiation effects on content of, in lungs of guinea pigs, protective effects of gibberellic acid against x, 22:51843
Streptococcus lactis, radiation effects on enzyme activity and growth, γ, 22:40567
Streptococcus pyogenes, radiation effects on colony forming ability of, uv, 22:38506
Streptococcus pyogenes, radiation effects on mutants of, dark repair of uv, 22:23689
Streptococcus sp., radiation effects on abundance of, in feces of rats, whole-body x, 22:6927
Streptococcus sp., radiation effects on growth of, in packaged chicken, γ, 22:47651(R) (NYO-3733-1)
Streptomyces sp., radiation effects on, effects of inorganic salts on recovery from lethal and mutagenic uv, 22:23690
sulfur-32 metabolism by, effects of organic components of medium on, 22:428
sulfur-34 metabolism by, effects of organic components of medium on, 22:428
synthesis of DNA and RNA in uv-irradiated, effects of acriflavine on, 22:49644(R) (NYO-3893-1)
synthesis of proteins in, 22:38192(R) (EUR-3607)
Thiobacillus thiooxidans, radiation effects on sulfur oxidation and ubiquinone of, uv, 22:23686
Thiobacillus thioporus, metabolism of glucose in, use of concurrent pathways for, 22:20999(R) (RLO-1387-8)
toxicity of tritium-labeled water to, 22:51459
Treponema pallidum, purification for determination of molecular structure, 22:12748(R) (ORNL-4171)
uranium leaching from ores by, 22:30685
use for leaching of uranium from uranium ores, 22:10392
use in capillary lixiviation of uranium ores, 22:25486

SCHOEPITES
age of, thorium-230 accumulation method for estimation of, 22:30695
reactions with sodium hydroxide, preparation of crystallized polyuranates by, 22:40084
solubility in sodium carbonate solutions, effects of pH on, 22:40084

Schooner Project
see Plowshare Project

Schulten Reactor
see AVR Reactor

SCINTILLATION
counting of low energy beta emitters in bioassay, use of gell suspensions in, 22:43301 (AERE-R-5474)
effects on counting geometry, coincidence-summing, 22:517
efficiency of thin-layer chromatographic media for beta, 22:18709
production from recombination luminescence from alpha reactions with helium, pressure dependence of, 22:16869
stellar, detection of gravitational waves by, 22:17339
theory of astronomical, (T), 22:8857(T) (SC-T-68-1501)
theory of stellar, 22:8855(T) (SC-T-68-1500)

SCINTILLATION CAMERAS
see also Gamma Cameras
see also Positron Cameras
see also Radiation Detectors, Scintillation
book: Instrumentation in Nuclear Medicine, 22:45299
scintigram quality from, in comparison to radioisotope scanners, thyroid, 22:45304
scintillation photographs translation into color, use of Sabattier effect for, 22:45303
use with xenon-133 for determining regional pulmonary functions in lungs of man, 22:45302

Scintillation Detectors
see Radiation Detectors, Scintillation

Scintillators
see Phosphors

Scintiscanning
see Radioisotope Scanning

SCOTLAND
radon-222 content of coal mines in, 22:48918
silt movements in Firth of Forth, radioactive tracer studies of, 22:47288 (AERE-R-5500(Vol.3), pp 594-607)

SCOTT-R
see Supercritical Once-thru Tube Reactor

SCREENING
see also Particles

SCREENS
(Including sieves.)
see also Filters
configuration of dual-column M.S.-13X and M.S.-5A molecular sieves, for fuel element failure detection, 22:48765(P)
use in treatment of polymorphous light eruption in man, sun, 22:19446

Screw-worm Fly (Cochliomyia)
see Cochliomyia under Insecta

SCRUBBERS
see also Extraction Apparatus
design for conversion of uranium nitrate to uranium oxide, engineering drawings for, 22:14643

rocket reactor exhaust, description of, 22:35567 (LA-DC-9555)
SCRUP Process
see Purex Process
SCTI
see Heat Transfer Systems
Scylla
see Magnetic Mirror Machines
Sea Anemones
see Cnidaria
Sea Cucumbers (Cucumaria)
see Cucumaria under Echinodermata
Sea Lions
see Seals (Animals)
Sea Otters
see Otters
Sea Squirts (Pyura)
see Pyura under Urochordata
Sea Urchins (Arbacia)
see Arbacia under Echinodermata
Seafood
see Meats—seafood
SEALING MATERIALS
development for electric generator bore seals, 22:647(R) (BNL-50077)
preparation of carbonizable, for carbon and graphite, 22:34102(P)
SEALS (ANIMALS)
ecology in vicinity of Amchitka Island, Alaska, following underground nuclear explosion, 22:23482 (TID-24291)
radioisotope content of tissues of, in Soviet Union during 1966, cesium-137, potassium-40, and strontium-90, 22:51386
strontium-90 content of, from Okhotsk Sea during 1966, 22:25827 (NP-17204)
SEALS AND GLANDS
bonding of ceramic-to-metal, method using graded layers, 22:28772(P)
caulking device for plate-type reactor fuel elements, description of cam-driven multi-section rectangular plate, 22:35696(P)
conference on design and lubrication of, in nuclear power machinery, Miami Beach, June 5 to 7, 1967, 22:8264
configuration of air-cooled membrane-type gas chamber, description of reactor in-pile loop, 22:48758(P)
decontamination of NRU pressure vessel, remote equipment for, 22:4409
description for horizontal concentric cylinders with sphere covered holes, 22:7867(P)
description for liquid sodium environment, 22:18504
description of EBOR helium coolant loop, 22:18556 (GA-7802)
description of flexible bellows, for pressure vessel head cover, 22:12154(P)
description of Halden Boiling Reactor, 22:16150 (HPR-92)
description of pressure tube claw-and-groove plugs, 22:18647(P)
description of pressure vessel coaxial pipe access port plug-, 22:30402(P)
description of T-shaped sealing arrangement for standpipes in gas-cooled reactors, 22:48760(P)
design and performance of shaft, for nuclear power plant coolant pumps, 22:47263 (AECL-2713)
design and testing of noncontacting dynamic, for SNAP-8 alternator bearings, 22:8280
design for 2-m liquid hydrogen bubble chamber, 22:12635 (CERN-67-26(Vol.2), pp 479-84)
design for rotating neutron targets, 22:14634
design for tamper-indicating reactor safing system, 22:37910 (RL-REA-2228)
design for use in sodium, 22:206(R) (NAA-SR-12520)
design for use in sodium systems at high temperatures, review of, 22:17100 (BNL-50089)
design of gas-tight, for containers containing radioactive materials, 22:12507(P)
design of glove box, 22:27991(P)
design of high-speed rotating vacuum, for neutron-production target system, 22:15898
design of leak-tight, for fluid-containing pressure vessels, 22:12517(P)
design of pressure, for shaft, 22:38168(P)
design of quick-acting, for pressure containing enclosures, 22:8288(P)
design of rotor, for KII zonal centrifuge, engineering drawings for, 22:14650
design of sprayed metal, for welding torch inert gas tube, 22:45228(P)
development and testing elastomeric, for high-pressure carbon dioxide, 22:45833
development for nuclear and space power systems, review of, 22:23202
development of centrifugal and dynamic, for Rankine cycle turboalternators, 22:27958
development of elastomer, for high pressure carbon dioxide, 22:37467
development of glass-to-metal and ceramic-to-metal, for vacuum systems, 22:16828
development of oil-fed hydrodynamic, for reactor gas-blower shafts, 22:7849
evaluation of elastomeric O-ring and chevron, for operation at 350°F, 22:33583 (ORNL-TM-1661)
fabrication of superconductor—glass, 22:17565
failure of shaft, in Big Rock Point reactor coolant-circulation pump, 22:24991
gas-covered reactor turboblower, description of, 22:25057(P)
high pressure coolant, description of, 22:6182(P)
leakage of mating-surface, effect of surface roughness on, (T), 22:8276
lubricant flow in, effect of super-laminar, 22:8277
malfunction of, effects on mechanical system failure, 22:14606 (CONF-671011-, pp 284-313)
mechanical testing of gaskets, 22:7788(R) (ANL-7382)
multiple rings with graphite blocks for gas-cooled reactor, description of, 22:25058(P)
oxide removal from EBR-2 shield plug, prototype portable system for, 22:12005 (ANL-7379)
performance of double O ring, in ultrahigh vacuum systems, 22:16844
performance of Halden Boiling Reactor pressure vessel, description of, 22:20816 (HPR-94)
performance of metallic, for viewing parts in pressurized operating units of reactors, 22:1891
performance of modified packed shaft, effects of lubrication on, 22:27966
performance of screw, in laminar flow, (T), 22:8275
performance of spiral-groove face contact, in liquid sodium at 400 to 1000°F, 22:27967
performance of Viton A, in SNAP-19 thermoelectric generator, 22:40326 (MND-3607-239-3)
pipe joint, description of inclined radial groove, 22:10092(P)
pressure vessel multiple metal sheet thermal insulation, description of interlocking V-shaped, 22:37592(P)
pressure vessel penetration, design of, 22:10051
production of nonairtight, in aluminum, copper, and steel pipes, use of high explosives for, 22:6513 (LA-3786)
properties of plastic, 22:26099 (CONF-660706-, pp 111-23)
sealing mechanisms of vacuum gasket, methods for studying, 22:23358 (IA-1128, pp 185-212)
testing of sodium pump, facility for, 22:48982(R) (LMEC-68-20)
trap door, for containment structure personnel escape device, 22:18650(P)
turbo-compressor labyrinth gland and shaft bearing, description of gas-cooled power reactor, 22:42278(P)
vacuum testing of, for under sodium scanner, 22:24926(R) (APDA-214)
water for reactor containment structures, description of water-containing suppression chamber for actuating, 22:37581(P)
SEASONS
effects on calcium, stable strontium, and strontium-90 content of bones of mule deer, 22:47534
effects on cesium-137 content of milk in Norway, 22:33813 (NYO-3364-43)
effects on content of cesium-137 in muscles of deer, 22:49194
effects on content of radioisotopes in bones and muscles of caribou and reindeer in Alaska, 22:10776
effects on cosmic-ray intensity at 60 mwe underground in London, (E), 22:19801
effects on epithelial cell height and iodine-131 uptake in thyroid of fish, 22:43248
effects on γ- and x-radiosensitivity of dogs, rabbits, and rats, 22:8640
effects on γ-radioprotective effects of bathing in thermal springs on rabbits, 22:8641
effects on iodine-131 retention by chipmunks, 22:6769(R) (NYO-2579-17)
effects on iodine-131 uptake by thyroid of castrated male and female rats, 22:14966
effects on mercury content of wheat, 22:31064
effects on radiosensitivity of mice and rats in relation to hormones, 22:36391
effects on radium content of atmosphere, in relation to incidence of foehn disease in man, 22:12852
effects on uv-radiosensitivity of human skin, 22:6899
effects on X-agent sensitivity of aqueous solutions of neutral red, 22:49248
effects on x-radiosensitivity of mice, combined effects of dose on, 22:31270
SEAWATER
age and circulation of Indian Ocean, carbon-14 measurements for determination of, 22:23181(R) (UCSD-34-P-74-1)
age and circulation of Pacific Ocean, carbon-14 measurements for determination of, 22:23181(R) (UCSD-34-P-74-1)
age of, radiocarbon method for estimation of, 22:48933
analysis for aluminum in Dead Sea, spectrochemical, 22:23003 (IA-1128, pp 97-146)
analysis for barium and strontium by ion exchange and flame photometry, 22:4009
analysis for calcium, chlorine, and potassium, abundance ratio calculations for, 22:37649(R) (NYO-3838-1)
analysis for calcium, lithium, magnesium, potassium, rubidium, and strontium at two Atlantic stations, atomic absorption method for, 22:27563
analysis for carbon, 22:23180(R) (NYO-3648-5)
analysis for carbon dioxide and oxygen, 22:14433 (ORNL-4196, pp 66-89)

analysis for carbon dioxide and oxygen, evaluation of equipment for, 22:27524(R) (TID-24358)
analysis for cerium, ruthenium, and zirconium radioactivity, 22:10170 (CEA-R-3284)
analysis for cerium-144, cesium-137, and strontium-90, simultaneous, 22:10185
analysis for cesium by flame photometry, 22:22949
analysis for cesium, method for, 22:23003 (IA-1128, pp 97-146)
analysis for chromium and molybdenum, neutron activation, 22:48917(R) (YALE-2912-20)
analysis for cobalt, zinc, and uranium, 22:27564
analysis for cobalt-60, manganese-54, and zinc-65, 22:27561
analysis for dissolved oxygen by radio-release method using thallium-204, 22:16421
analysis for dissolved oxygen, methods for, 22:37911 (TID-24495)
analysis for europium and lanthanum by neutron activation, 22:30443
analysis for europium and lanthanum, activation, 22:21043
analysis for fluorine by photon activation, 22:50944
analysis for fluorine by photon activation methods, 22:27590
analysis for molybdenum and vanadium by ion exchange and photometry, 22:16445
analysis for molybdenum, method for spectrophotometric, 22:50945
analysis for radioactivity, spectrophotometric, 22:50913
analysis for rare earths by neutron activation methods, 22:8013
analysis for scandium by atomic absorption spectroscopy, 22:45022
analysis for trace elements by neutron activation, 22:4308 (TID-24029)
analysis for trace elements by neutron activation method including separation procedure, 22:23086 (ANL-7421)
analysis for trace elements by neutron activation methods, 22:37642 (BNWL-SA-1776)
analysis for various metals after concentration on chelating resins by atomic absorption spectrophotometry, 22:14442
analysis for yttrium, fluorimetric, 22:30443
analysis of organic matter in, for stable carbon isotopes, 22:40027
analysis of sediments in, for silicon oxides, activation, 22:21042
analysis of synthetic, for chloride, coulometric, 22:9(R) (NBS-TN-425)
ascent from dives into deep, continuous decompression schedules for, 22:37625 (BNL-50104)
beryllium-7 abundance in, (E), 22:45978
bibliography on radiology of, 22:35953 (AED-C-25-02)
cadmium-115 uptake from, by oysters, 22:28323
carbon dioxide uptake by, use of carbon-14 as tracer to study, 22:16716
carbon-14 content in Great Bahama Bank, method for measuring, 22:25551 (HASL-193, pp I.27-32)
carbon-14 content in, effect of depth and latitude on, 22:6505
carbon-14 content of, in northern and southern hemispheres, 22:10775
carbon-14 specific activity in total carbonate of, 22:43311(R) (PRNC-85)
carbon-14 transfer from atmosphere to, use of tracer techniques to study, 22:6497
carbon-14 transport processes in, development of box model to study, 22:33573
cerium and cerium-141 content of, chemical state of, 22:28350
cerium-144 chemical behavior in, 22:35954
cerium-144 content of, in Japan during 1966, 22:4605 (NP-17083)
cesium distribution in, role of exchangeable cations on absorption by marine sediments, 22:21222
cesium-137 content in, sample handling method for determination of, 22:27938 (HASL-196)
cesium-137 content of Danish, 1966, 22:10358 (RISO-155)
cesium-137 content of, in comparison to content of clams, 22:19347
cesium-137 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
cesium-137 content of, in Greenland, 1966, 22:10359 (RISO-156)
cesium-137 content of, in Japan during 1966, 22:4605 (NP-17083)
chemical and physical characteristics of Southern Oceans, 1966 to 1967 measurements of, 22:14375 (CU-2663-38)
chromium-51 chemical behavior in, 22:35954
cobalt-60 chemical behavior in, 22:35954
contamination of, methods for minimizing, 22:42876
content of major- and trace elements in, in Puerto Rico, 22:43311(R) (PRNC-85)
convection currents in, effects of bottom-located point heat sources on, 22:21214 (NYO-3109-30)
convection currents in, effects of bottom-located point heat sources on, 22:21212 (NYO-3109-28)
convection currents in, effects of bottom-located point heat sources on, 22:21213 (NYO-3109-29)
convection currents in, effects of bottom-located point heat sources on, 22:21215 (NYO-3109-31)
corrosive effects of salt deposits from, on stressed titanium--aluminum--molybdenum--vanadium alloy at 650 to 1200°F, 22:28733 (DP(NASA)-941)
corrosive effects on alloys, effects of sulfides on, 22:26029 (ORNL-4229, pp 71-83)
corrosive effects on condenser materials in power reactors, 22:47661 (CONF-671007-6)
corrosive effects on galvanically coupled SNAP-21 materials at ambient temperature, 22:28737 (USNRDL-TR-68-26)
corrosive effects on stainless steel condenser tubes, 22:52159 (CONF-671007-7)
corrosive effects on titanium and titanium alloys, 22:26029 (ORNL-4229, pp 71-83)
deaeration of, performance of equipment for, 22:27524(R) (TID-24358)
desalination of, conference on, Oak Ridge, Tenn., May 7 and 8, 1968, 22:27630 (ORNL-TM-2203)
desalination of, corrosion studies in pilot plant for, 22:38513 (CEA-N-856, pp 87-121)
desalination of, design and performance of equipment for, 22:10161(T) (AEC-tr-6909)
desalination of, development and economics of dual-purpose fossil-fueled and nuclear power plants for, 22:14627
desalination of, development of dual-purpose nuclear power plants for, 22:14626
desalination of, development of large evaporators for, 22:14623
desalination of, economic evaluation of ejectors and blowers for 50-Mgd and larger plants for, 22:25224 (TID-24346)
desalination of, economic evaluation of long tubes for multistage flash evaporators for, 22:25220 (ORNL-TM-1923)
desalination of, economics of dual-purpose reactors for, 22:10446
desalination of, economics of dual-purpose reactors for, 22:10445
desalination of, economics of processes for, 22:23204
desalination of, effects of tube bundle configuration on condenser performance for, 22:23198 (TID-24347)
desalination of, feasibility of 150 Mgd capacity dual-purpose nuclear power plant for, 22:14624
desalination of, feasibility of Beloyarsk-type reactor for, 22:14622
desalination of, feasibility of dual-purpose reactors for, 22:10448
desalination of, feasibility study of mobile, low-power, nuclear plants for, 22:14630
desalination of, IAEA role in development of methods for, 22:14628
desalination of, review of research and development programs on, 22:14631
desalination of, tests of deaerator at Freeport plant for, 22:27524(R) (TID-24358)
desalination using vapor-compression method, economics of diesel engines and gas turbines in plant for, 22:21233 (K-D-1999)
desalting of, distillation plant design for, 22:4337(P)
deuterium content in, effects of evaporation, depth, mixing, and salinity on, 22:16730
diffusion of radioactive materials in, development of model for prediction of, 22:37893 (SC-CR-68-3532)
diffusion of radioisotopes in sediments and suspended solid particles of, molecular, 22:10408
disposal of radioactive wastes in, legal aspects of, 22:48969
distillation at high temperature, development of methods for, 22:37900 (BNL-50082, pp 153-80)
distillation of, design evaluation of 50 Mgd plant for, 22:45218 (NP-17446)
distillation of, prevention of alkaline scale in equipment for, 22:26029 (ORNL-4229, pp 71-83)
ecology of fungi in, of Iceland, 22:18662(R) (ORO-3556-11)
effect on corrosion of aluminum, magnesium, and titanium, 22:4748
effects on calcium-45 exchange between solid calcium carbonate or calcium oxide and their solutions during aging, 22:42675
effects on osmoregulation in isopods, 22:23480(R) (ORO-2412-7)
effects on strontium-89 accumulation by brown algae, 22:43232
equilibrium in model, static measurements on liquid-vapor, 22:27628 (MIT-905-108, pp 79-80)
fallout content of Danish, 1966, 22:10357 (RISO-154)
flow between oceans, model of, 22:42891 (CU-2663-9, App.A)
geochemistry of organic aggregate formation in, 22:23180(R) (NYO-3648-5)
heat and salt flow in Atlantic Ocean, research on, 22:191(T) (TT-66-51029)
iron-59 chemical behavior in, 22:35954
isopiestic properties of, 22:25329 (ORNL-4229, pp 84-104)
manganese-54 chemical behavior in, 22:35954
masses in zones of mixing between coastal areas and open oceans, use of stable element ratios of particulate fractions to identify, 22:43311(R) (PRNC-85)

microbiological assay of, 22:33711(R) (NYO-3658-9)
mixing rates in, methods and analyses of, 22:42890(R) (CU-2663-9)
motion at ocean floor, model of, 22:42910 (CU-2663-9, App.T)
oxygen content of Antarctic, use of depth--salinity--temperature recorder for inspection of, 22:42900 (CU-2663-9, App.J)
plutonium-239 abundance in, 22:25516
pollutant dispersion in, use of tracer techniques to determine, 22:14696
pollution from sewage disposal, radioactive tracer studies of, 22:19061
pollution of, development of tracer techniques for studying, 22:47294(R) (TID-24349)
polonium-210 content in surface, Nov. 1966 to Dec. 1967, 22:10404 (CU-3139-1(App.A))
polonium-210 uptake from, by plankton in comparison to lead-210, 22:6817
quark content in, upper limit for, (E), 22:34841 (COO-1112-155)
radiation monitoring near Japan, 1966, 22:10381
radiation monitoring of, from Saurashtra coast of India, natural background, 22:28463
radiation monitoring of, in Scandinavia in 1965 and 1966, 22:16704 (A-AC-82/G/L-1159)
radioactive contamination of, from nuclear weapons testing, 22:2257
radioactive contamination of, research on, 22:12455(R) (EUR-3635)
radioactive waste disposal in deep, design of containers for, 22:16746
radioactive waste disposal in, impact shock testing of concrete containers for, 22:23237
radioactive wastes in, diffusion and movement of low-level liquid, 22:16729
radioactivity content of, in Galveston during 1965, effects of nuclear powered ship on, 22:28459
radioactivity content of, in Mexico during 1965 to 1966, measurement of, 22:23514
radioactivity in, chemical behavior and distribution of, 22:45207
radioactivity monitoring of Japanese, October to December 1966, 22:12449
radioactivity monitoring of, at Galveston during 1966, 22:40695
radioactivity monitoring of, near UKAEA sites, 22:279 (AHSB(RP)R-79)
radioactivity of Japanese, April to October 1966, 22:27918
radioecology in, review of, 22:28396
radioinduced reduction of nitrates to ammonia and nitrites in, γ, solar, and uv, 22:23078
radioisotope content and distribution in, of Atlantic and Pacific Ocean, cesium-137 and strontium-90, 22:40661(R) (HASL-197)
radioisotope content in world-wide, review of artificial and natural, 22:51122
radioisotope content in, design of sensitive γ radiation detectors for determining, 22:2256
radium-226 content in, effect of river inflow on, 22:8232 (ORO-2411-8)
radium-228 content in, measurement of, 22:45205 (TID-24654)
removal of trace elements from, mechanism for, 22:8232 (ORO-2411-8)
ruthenium-106 distribution in, from waste disposal at Windscale Works, 22:12456 (PG-Report-819)
sampling simultaneously with sensor measurements of depth, salinity, and temperature, for quality control, 22:42909 (CU-2663-9, App.S)
sediment deposition in, gamma spectrometry method for determination of rate of, 22:27939
sediment movements in, use of radioactive tracers for measurement of, 22:19058
sediment transport in, radioisotope tracer studies of, 22:42975(T) (ORNL-tr-1805)
sediments in deep, radioactivity in, 22:16731
separation from fission products by chelation using Chelex 100, 22:36015 (AD-663128)
separation of carbon dioxide from, 22:26029 (ORNL-4229, pp 71-83)
separation of strontium from, ion exchange chromatographic, 22:23113
separation of trace elements from, by ion exchange, review of, 22:129 (AD-648138)
separation of trace elements from, by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation of trace metals from, by solvent extraction and ion exchange, 22:23086 (ANL-7421)
separation of uranium from, by sorption on hydrous titanium oxide, 22:25481
sewage dispersion in, off Danish coast, tracer method for measurement of, 22:14695
shock wave and flow field propagation in, from ocean surface-located nuclear explosions, 22:21220
shock wave propagation in, from explosion of pressurized spheres at ocean surface, 22:21219
solids transport in, radiometric methods for measurement of, 22:42918
solids transport in, radiometric methods for measurement of, 22:42917
solvent properties for aragonites and calcites, determination using carbon-14 measurements, 22:42896 (CU-2663-9, App.F)
sorption of rare earths and yttrium from, by glass, polyethylene, and suspended particles, 22:30443
storage of, sorption of trace elements on various container surfaces in, 22:45043
strontium-90 concentration from Barents and Kara Seas, 22:28067 (TID-24454)
strontium-90 content in Great Bahama Bank, method for measuring, 22:25551 (HASL-193, pp I.27-32)
strontium-90 content in, sample handling method for determination of, 22:27938 (HASL-196)
strontium-90 content of Danish, 1966, 22:10358 (RISO-155)
strontium-90 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
strontium-90 content of, in Greenland, 1966, 22:10359 (RISO-156)
surface wave height and period measuring system for, testing of, 22:21012 (UCRL-50379)
technology of, conference on, 22:47252 (AERE-R-5500(Vol.1))
temperature of, effects on atmospheric diffusion and transport, 22:40230 (AECL-2787, pp 229-40)
thorium-228 content in surface, Nov. 1966 to Dec. 1967, 22:10404 (CU-3139-1(App.A))
thorium-228 content in, measurement of, 22:45205 (TID-24654)
thorium-234 content in surface, Nov. 1966 to Dec. 1967, 22:10404 (CU-3139-1(App.A))
thorium-234 distribution in coastal and open, in relation to sedimentation rates, 22:49182 (TID-24637)
tritium content in, effects of depth and latitude on, 22:6505
turbulence in, design of current measuring instrument for, 22:42901 (CU-2663-9, App.K)
uranium and trace element separation from, economic feasibility of, 22:47249 (AERE-R-5500(Vol.2), pp 387-98)
uranium content in deposits in, 22:25244(T) (KFK-tr-247)
uranium deposition from, 22:8233
uranium-234 content in Pacific, Antarctic, and Red Sea, 22:10407
uranium-238 content in Pacific, Antarctic, and Red Sea, 22:10407
use of thorium-234 as tracer to study rapid near-surface chemical reactions in, 22:49182 (TID-24637)
zinc-65 chemical behavior in, 22:35954
zinc-65 transport in, by Euphausia, 22:28322
zooplankton content of, species composition and chemical analyses of, 22:22902 (PRNC-104, pp 24-53)

Sedan Project
see Plowshare Project

SEDATIVES
see also Chlorpromazine
see also Hexobarbital
see also Narcotics
see also Pentobarbital Sodium
see also Phenobarbital
see also Phenobarbital Sodium
see also Reserpine

SEDIMENTARY DEPOSITS
(This heading may be modified by location in the form Sedimentary Deposits (Alaska); see also specific types of sedimentary deposits, e.g., Uranium -- Vanadium Sandstone Deposits.)
age of marine, effect of sediment surface mixing on estimation of, (T), 22:6504
analysis for chromium and molybdenum, neutron activation, 22:48917(R) (YALE-2912-20)
analysis of Pacific, for aluminum-26 and beryllium-10, 22:47093
analysis of, using natural radioactivity, 22:30703

SEDIMENTARY DEPOSITS (ORE.)
rare earths distribution in, 22:40003

SEDIMENTARY DEPOSITS (WIS.)
rare earths distribution in, 22:40003

SEDIMENTATION
method for determination of particle-size distribution, 22:14450
radiation effects on rate of, of Escherichia coli cells, γ, 22:31293
radiation effects on, of proteins, uv, 22:36161
rates in marine waters, effects of circulation and mixing on, 22:51875 (TID-4060(1st Ed.))

Sediments
see Silts

SEED
(See also specific plants.)
analysis of oil-bearing, for cesium-137, 22:47106
analysis of rice, for halides and other elements, neutron activation, 22:33286
cesium-134 distribution in germinating, of soybeans, effects of light on, 22:10709
dimethyl sulfoxide effects on, of plants, latent, 22:10824 (BNWL-480, pp 1-19)
genetic effects of EMS and ethylenimine on, of peas, latent, 22:21492
genetic effects of ethylenimine on, of wheat, 22:21494
genetics of, effects of space flight on, 22:45488

germination of Russian thistle, effects of moisture and temperature on, 22:33778 (UCLA-12-640, pp 45-60)
germination rate of, effects of deuterization on, 22:40954
growth of EMS-treated, effects of water content on, 22:7935 (BNL-11716)
irradiation prior to sowing using cesium-137 source, Russian facility for, 22:48994
maturity of, effects of, on γ-radiosensitivity of barley, 22:19379
mutations induced in, of barley by EMS and ethylenimine, 22:21490
mutations induced in, of barley by ethylenimine, 22:21465(R) (RLO-353-22)
mutations induced in, of barley, oats, and wheat by EMS, fission neutrons, and γ rays, comparison of, 22:40952 (ORO-657, pp 93-120)
mutations induced in, of broad bean plants by ethylenimine, 22:21491
mutations induced in, of peas by diethylsulfate, 22:28413
radiation dose absorbed at embryo, of dry rice, calculation of γ, thermal neutron, and x, 22:43344
radiation dose to, calculation of absorbed fast-neutron, 22:6652 (ORNL-4168, pp 183-230)
radiation effects on alfalfa, latent genetic x, 22:49306
radiation effects on amylase activity in castor, γ, 22:43227
radiation effects on barley, effects of boron on fission neutron, 22:52024
radiation effects on barley, effects of oxygen and water content on mutagenic γ, 22:49640
radiation effects on barley, latent neutron and x, 22:15119
radiation effects on chromosomes and mitosis in, of peas, effects of dose on, 22:23501
radiation effects on chromosomes and mitosis in, of barley, protective effects of urea against cesium-137 β and γ, 22:23580
radiation effects on chromosomes of, of Allium, protective effects of soaking in heteroauxin against x, 22:33864
radiation effects on clover, latent x, 22:6784
radiation effects on cotton, latent γ, 22:6762
radiation effects on cotton, protective effects of vitamin C on γ, 22:43363
radiation effects on cultivation of, effects of environment, mutation stability, and reproductive capacity on mutagenic, 22:40621
radiation effects on cytogenetics of pea, protective effects of post-irradiation soaking in water saturated with nitrogen or oxygen against γ, 22:33863
radiation effects on development and growth of potato, protective effects of propyl gallate against latent γ and proton, 22:45639
radiation effects on DNA base pairing in, of peas, 22:51399
radiation effects on embryos of pea, effects of homologous DNA on γ, 22:15113
radiation effects on endosperm in wheat, mutagenic x, 22:51540
radiation effects on fertility of sunflower, x, 22:21495
radiation effects on formation of, in tomatoes, effects of pollen exposure on x, 22:21635
radiation effects on free radical formation in wheat, effects of anoxia on x, 22:8440
radiation effects on germination and production of poplar tree, following internal deposition of cesium-137, β and γ, 22:6772 (ORNL-4168, pp 61-118)
radiation effects on germination and survival of box-elder, effects of dose on γ and x, 22:40624
radiation effects on germination and survival of, of box-elder, γ and x, 22:40624
radiation effects on germination of barley, effects of space flight on γ, 22:17052
radiation effects on germination of barley, γ, 22:49311
radiation effects on germination of grass, effects of dose, storage, and variety on x, 22:33975
radiation effects on germination of onion, effects of variety on x, 22:33974
radiation effects on germination of Salsola, 22:25800 (UCLA-12-668, pp 37-58)
radiation effects on germination of Salsoli kali, effects of dose on γ, 22:40957
radiation effects on germination of seeds of deciduous trees, combined fast neutron and γ, 22:28714
radiation effects on germination of wheat, fast neutron, γ, and x, 22:482
radiation effects on germination of, in Chenopodium botrys, cosmic, 22:8648
radiation effects on germination of, in durum wheat, effects of proembryo exposure on x, 22:8652
radiation effects on maize, effects of temperature on x, 22:33784
radiation effects on numbers of, in hybrids of Datura, x, 22:14991
radiation effects on oil from cotton, γ, 22:21127
radiation effects on onion, latent, 22:23694 (IA-1128, pp 168-84)
radiation effects on oxygen sensitivity of barley, effects of water content of seed on γ, 22:28542
radiation effects on pea, latent fast neutron and γ, 22:51523
radiation effects on production and weight of, by spring wheat, γ, 22:28703
radiation effects on production of chlorogenic acid in, of sunflower, cesium-137 γ, 22:40952 (ORO-657, pp 93-120)
radiation effects on production of haploid, in tomatoes, effects of pollen exposure on γ or uv, 22:52029
radiation effects on production of, by tulip poplar, internal cesium-137 β and γ, 22:28702
radiation effects on respiratory metabolism of barley, ionizing, 22:49187
radiation effects on ripening of, from vegetable plants, β, 22:49308
radiation effects on RNA synthesis in, of peas, cobalt-60 γ, 22:23470
radiation effects on soybean, selection studies on mutagenic combined thermal neutron and x, 22:36244
radiation effects on survival of wheat, effects of ploidy on x, 22:52031
radiation effects on synthesis of nucleic acids and proteins in barley, γ, 22:28709
radiation effects on synthesis of proteins and RNA in cotyledons of peanut, 22:31014
radiation effects on, comparison of lethal γ and thermal neutron, 22:47501 (NP-17136)
radiation effects on, effects of oxygen enhancement ratio on, 22:51396
radiation effects on, effects of water content on x, 22:21627
radiation effects on, from tomato plants, combined effects of heat treatment on x, 22:49299
radiation effects on, latent γ, 22:8507
radiation effects on, of alfalfa, latent x, 22:6785
radiation effects on, of alfalfa, latent x, 22:10890
radiation effects on, of Arabidopsis thaliana, combined effects of thermal shock on γ, 22:52030
radiation effects on, of Arabidopsis, latent, thermal neutron and x, 22:23484(R) (COO-1512-5)
radiation effects on, of arboreous plants, mutagenic, 22:45499
radiation effects on, of barley, combined effects of mutagens on γ, 22:17054
radiation effects on, of barley, cotton, oats, soybeans, and wheat, latent fission neutron and γ, 22:38427(R) (ORO-659)
radiation effects on, of barley, cress, peas, and wheat, latent fast neutron, γ, and x, 22:17050(R) (EUR-3606)
radiation effects on, of barley, effects of germination in monazite sand on latent α, β, and γ, 22:8504
radiation effects on, of barley, latent β and x, 22:33794
radiation effects on, of barley, latent fast neutron and γ, 22:21490
radiation effects on, of barley, latent γ, 22:17051
radiation effects on, of barley, latent γ and x, 22:17004 (RLO-353-15)
radiation effects on, of barley, latent thermal neutron, 22:12943
radiation effects on, of barley, latent x, 22:10886
radiation effects on, of barley, protective effects of cysteine, ferrous chloride, and thiourea against latent γ, 22:31053
radiation effects on, of barley, protective effects of ethylenimine against latent γ and fast neutrons, 22:40772
radiation effects on, of barley, RBE of fast neutron and γ, 22:31279
radiation effects on, of beans, corn, cucumbers, and radishes, latent β and γ, 22:33981
radiation effects on, of beets, carrots, cucumbers, melons, onions, squash, and tomatoes, latent γ, 22:49308
radiation effects on, of black-eyed peas, latent fission neutron and γ, 22:21638
radiation effects on, of broad bean plants, latent mutagenic, γ, 22:21491
radiation effects on, of broad beans and peas, latent γ, 22:49636
radiation effects on, of cauliflower, cucumber, lettuce, pea, pepper, and tomato plants, latent x, 22:10753
radiation effects on, of cayenne plants, latent ionizing, 22:12941
radiation effects on, of corn and radish, latent x, 22:33977
radiation effects on, of corn, latent fast neutron and γ, 22:33980
radiation effects on, of corn, latent γ, 22:36226
radiation effects on, of corn, latent x, 22:38499(T) (JPRS-44845)
radiation effects on, of corn, latent, thermal neutron, 22:23484(R) (COO-1512-5)
radiation effects on, of cotton, effects of, on oxidative processes of young plants, γ, 22:33748
radiation effects on, of cotton, effects of, on plant growth and productivity, γ, 22:40956
radiation effects on, of cotton, latent physiological cobalt-60 γ, 22:23468
radiation effects on, of crops, latent isotope, ultrasonic, and uv, 22:12942
radiation effects on, of durum wheat, latent thermal

neutron, 22:8655
radiation effects on, of durum wheat, latent x, 22:8654
radiation effects on, of gymnosperms, effects of DNA content and nuclear volume on γ, 22:45725
radiation effects on, of Japanese morning glory, latent β cobalt-60 γ, thermal neutron, 22:26003
radiation effects on, of jute, latent γ, 22:14992
radiation effects on, of lupin, latent γ, 22:23680
radiation effects on, of lupine, latent cobalt-60 γ, 22:17056
radiation effects on, of maize, latent γ, 22:33749
radiation effects on, of mustard, latent x, 22:17009
radiation effects on, of Nigella damascena, effects of ploidy on latent fast neutron and γ, 22:21489
radiation effects on, of Nigella, latent γ, 22:49297
radiation effects on, of oats, latent EMS and thermal neutron, 22:17008
radiation effects on, of peanuts, latent x, 22:40959
radiation effects on, of pearl millet, latent mutagenic thermal neutron, 22:23498
radiation effects on, of peas, effects of, swelling and germination on γ, 22:25807
radiation effects on, of peas, latent γ, 22:6758
radiation effects on, of peas, latent γ, 22:23461
radiation effects on, of peas, latent, γ, 22:21492
radiation effects on, of peas, latent, mutagenic x, 22:28413
radiation effects on, of peas, protective effects of ATP and cysteine against fast neutron and γ, 22:51518
radiation effects on, of peas, RBE of latent fast neutron and γ, 22:21628
radiation effects on, of Pennisetum, latent mutagenic, γ, 22:33798
radiation effects on, of Phaseolus mungo, latent neutron and x, 22:21630
radiation effects on, of Phaseolus, latent neutron and x, 22:10889
radiation effects on, of pines and spruces, effects of dose on germination and survival following γ, 22:33976
radiation effects on, of poppies, latent γ, 22:33982
radiation effects on, of rice plants, latent cesium-137 γ, 22:28711
radiation effects on, of rice, latent β and x, 22:21629
radiation effects on, of rice, latent γ, 22:14993
radiation effects on, of rice, latent phosphorus-32 β, 22:8510
radiation effects on, of rye, latent γ, 22:21471
radiation effects on, of soybean plants, latent cobalt-60 γ, 22:8505
radiation effects on, of squash, latent x, 22:33979
radiation effects on, of sugar beets, latent γ, 22:23677
radiation effects on, of sunflowers, effects of moisture content on latent x, 22:21495
radiation effects on, of tobacco, comparison of, with effects on pollen and seedlings, γ, 22:38500
radiation effects on, of tobacco, effects of age on latent genetic γ, 22:14985
radiation effects on, of tobacco, latent β, 22:31017 (BNL-10549)
radiation effects on, of tobacco, latent fast neutron and x, 22:49303
radiation effects on, of tomatoes, latent mutagenic γ, 22:25803
radiation effects on, of tomatoes, latent x, 22:33973
radiation effects on, of tomatoes, latent x, 22:6779
radiation effects on, of Vicia faba, combined effects of FUDR on latent fast neutron, 22:21466
radiation effects on, of Vicia faba, comparison of photon and x, 22:40960
radiation effects on, of Vicia, latent fast neutron, 22:8653
radiation effects on, of wheat, 22:23667
radiation effects on, of wheat, effects of oxygen abundance on latent γ, 22:587
radiation effects on, of wheat, effects of physiological condition on γ and x, 22:31289
radiation effects on, of wheat, genetic variances following x, 22:49314
radiation effects on, of wheat, latent fast neutron and γ, 22:21494
radiation effects on, of wheat, latent fast neutron and γ, 22:17012
radiation effects on, of wheat, latent γ, 22:28285 (ORNL-4100, pp 135-40)
radiation effects on, of wheat, latent γ, 22:478
radiation effects on, of wheat, latent γ, 22:52026
radiation effects on, of wheat, latent γ and x, 22:21493
radiation effects on, of white clover plants, latent x, 22:8656
radiation effects on, of Yucca plants, latent γ, 22:8649
radiation effects on, protective effects of iron ions on γ, 22:28707
radiation effects on, protective effects of nitrogen, oxygen, and temperature against γ, 22:36405
radiation effects on, review of role of radiotoxins in recovery from γ and x, 22:25910
radioinduced aberrations of chromosomes in barley, effects of ATP levomycetin, and streptomycin on γ, 22:25811
radioinduced aberrations of chromosomes in dormant, of Crepis capillaris, effects of water content on x, 22:8508
radioinduced aberrations of chromosomes in, of Nigella, γ, 22:40620
radioinduced aberrations of chromosomes of pea, effects of humidity on frequency of γ, 22:25806
radioinduced aberrations of chromosomes of pea, mechanism of recovery from cobalt-60 γ, 22:25805
radioinduced chromosome aberrations in barley, effects of parental environment on γ, 22:49312
radioinduced chromosome aberrations in Nigella, effects of dose fractionation on γ, 22:49321
radioinduced chromosome aberrations in pea, effects of dose and dose rate on γ, 22:4597
radioinduced chromosome aberrations in pea, γ and proton, 22:481
radioinduced chromosome aberrations in wheat, comparison of fast neutron and γ, to EMS-induced, 22:51500
radioinduced chromosome aberrations in, duration of x, 22:19316
radioinduced formation of free radicals in, of plants, relation of, to radiosensitivity, 22:23424
radioinduced genetic damage to, role of free radicals in, 22:45483
radioinduced injuries to cotton, effects of storage on restoration of viability following, 22:52025
radioinduced lesions of chromosomes of pea, protective effects of cysteine on repair of γ, 22:25865
radioinduced mutations for lower protein content of, of barley, γ, 22:45485
radioinduced mutations for maturity, size, and yield in, of barley, cotton, oats, soybeans, and wheat, γ, 22:40952 (ORO-657, pp 93-120)
radioinduced mutations in maize, effects of storage and water content on x, 22:45491
radioinduced mutations in pea, effects of temperature shock on latent γ, 22:28443
radioinduced mutations in wheat, comparison of γ, to EMS-induced, 22:47501 (NP-17136)
radioinduced mutations in wheat, γ, 22:28444
radioinduced mutations in, of Brassica juncea, for yellow color, sulfur-35 β, 22:51536
radioinduced mutations in, of citrus plants, x, 22:43292
radioinduced mutations in, of crop plants, neutron, 22:31047
radioinduced mutations in, of hybrid cotton, use of marker traits to determine effects of moisture content on incidence of fission neutron and γ, 22:40952 (ORO-657, pp 93-120)
radioinduced mutations in, of winter rye, latent γ, 22:6788
radioinduced mutations in, of Zea mays, photoreactivation of γ and uv, 22:40633
radioinduced quinones in cotton, γ, 22:6733
radioinduced sterility in, of plants, γ and neutron, 22:38501
radioinduced thermoluminescence of tomato, at low temperatures, x, 22:38230
radiosensitivity of barley, effects of ecological factors on γ, 22:17053
radiosensitivity of cross- and self-pollinated, of Cryptomería japonica, acute γ, 22:25999
radiosensitivity of plant, in relation to taxonomic differences, γ and x, 22:36411
radiosensitivity of plant, in relation to thermoluminescence, analysis of x, 22:31287
radiosensitivity of tomato, effects of developmental stage on α and uv, 22:17050(R) (EUR-3606)
radiosensitivity of, effects of pH and temperature on, 22:17004 (RLO-353-15)
radium-226 uptake by, of Brazil nut trees, relation of barium and calcium content to, 22:21413
radium-228 uptake by, of Brazil nut trees, relation of barium and calcium content to, 22:21413
streptomycin effects on wheat, latent, 22:43479
strontium-89 transfer from tree trunk to apple, 22:40606
strontium-90 content of second generation, of cereals and soybean, relation of, to contamination of soil, 22:12854
strontium-90 content of second generation, of cereals and soybeans in relation to content of soil, 22:12854
strontium-90 distribution in germinating, of soybeans, effects of light on, 22:10709
survival of EMS-treated, effects of water content on, 22:7935 (BNL-11716)
treatment of barley, with EMS and ethyl sulfate, latent mutagenic effects of, 22:17004 (RLO-353-15)
treatment of pearl millet, with EMS, latent mutagenic effects of, 22:23498
zinc-65 distribution in germinating, of soybeans, effects of light on, 22:10709
SEEDLINGS
content of chloroplast pigments in barley, effects of age and temperature on, 22:25801(R) (COO-332-2)
radiation effects on chromosomes of barley, aberrant γ, 22:49640
radiation effects on development of, in Vicia sativa, effects of seed exposure on fast neutron, 22:8653
radiation effects on flowering of Japanese morning glory, γ, 22:52035
radiation effects on growth and morphology of, of giant sequoias, γ, 22:28706
radiation effects on growth and survival of, in barley,

effects of boron content of seed and seed exposure on thermal neutron, 22:12943
radiation effects on growth of lettuce, effects of phytochrome on uv, 22:23679
radiation effects on growth of slash pine, effects of root, shoot, or whole plant exposure on γ, 22:28710
radiation effects on growth of sunflower, x, 22:43478
radiation effects on synthesis of proteins in, of peanuts, effects of seed exposure on x, 22:40959
radiation effects on weight of, of Vicia faba, comparison of photon and x, 22:40960
radiation effects on, of tobacco, comparison of, with effects on pollen and seeds, γ, 22:38500
radioinduced aberrations of chromosomes of pea, mechanism of recovery from cobalt-60 γ, 22:25805
radioinduced mutations in barley, γ, 22:49640
radioinduced resistance of soybean, to blight caused by Pseudomonas glycinea, x, 22:36240
radiosensitivity of plant, in relation to taxonomic differences, γ and x, 22:36411
strontium uptake by wheat, effects of ammonium and nitrate availability on, 22:25719(R) (ORO-2410-10)
strontium uptake by, of wheat, effects of ammonium and nitrate availability on, 22:25718(R) (ORO-2410-9)
SEFOR
see Southwest Experimental Fast Oxide Reactor
Segregation
see Phase Studies
Seignette Salts
see Potassium Sodium Tartrates
SEIGNETTOELECTRIC MATERIALS
deformation modes in, effects of anharmonic mode-mixing on, 22:24408 (IA-1128, pp 21-54)
dielectric nonlinearities of, in parametric amplifiers, dynamic, (E), 22:15570 (SC-RR-67-2928)
magnetization in ferrodielectric system, (T), 22:36969 (ITF-68-6)
Moessbauer effect in study of, review of, 22:17757
phase studies of, 22:2687(R) (N-67-15390)
radiation effects on electric and spectral properties of crystals of, γ, 22:18844
radiation effects on electric properties of crystals of, γ, 22:18842
radiation effects on electro--optic properties of, gamma, (E), 22:5449
switching life performance of polycrystalline, 22:4870 (SC-RR-67-730)
use of ceramic, for x-ray spectroscopy, 22:12580
SEISMIC WAVES
amplification by alluvium of nuclear explosion-generated, model for prediction of, 22:14599 (NVO-1163-130)
amplification of explosion-generated, effect of alluvial layer on, (E/T), 22:12457 (NVO-1163-80(Rev.))
amplitude and frequency of nuclear explosion-generated, in cavities, Sterling experiment for measurement of, 22:25561 (VUF-3026)
amplitude and frequency of nuclear explosion-generated, in cavities, Sterling experiment for measurement of, 22:47260
amplitude and frequency of, from Sterling event, measurement and analysis of, 22:25558 (VUF-1035)
amplitude of P/sub n/, effect of distance and energy distribution on, 22:10414
amplitude-distance curve for short period P, from underground explosions, 22:8238
amplitudes and travel times of, from Gnome, Bilby, and Salmon events, 22:195
damage to reactors from, from detonation of chemical explosives, control measures for prevention of, 22:35956
damage to surface structures from underground nuclear explosion, 22:37896
decoupling from underground nuclear explosions in salt deposits, 22:4300
decoupling of underground chemical and nuclear explosion, effects of emplacement cavity wall sheathing on, 22:51129
detection of temporally overlapping, digital processing for, 22:27940
direction of first motion of, from Logan underground nuclear explosion, 22:8234
effects of nuclear explosion-produced, on damage to masonry structures at Mercury, Nevada, 22:12470
effects on ecology of animals in vicinity of Amchitka Island, Alaska, following Long Shot of Vela Project, 22:23482 (TID-24291)
effects on rock stresses at Morrow Point underground power plant, 22:25557 (SA-6)
effects on structural behavior of multistory buildings, (T), 22:12459 (NVO-99-30)
generation and propagation in salt dome in Salmon experiment, 22:4300
ground motion from Parkfield earthquake, response of low-rise buildings to, 22:12171 (NVO-99-19)
measurement from underground blasting for dam construction, 22:193(T) (UCRL-Trans-10136)
measurement of underground, from Hardhat Event, use of crystal transducers for, 22:19000 (UCID-15283)
measurement of, LASA experimental signal processing system for, 22:51274(R) (AD-661358)
measurements in Project Gasbuggy underground nuclear explosion, 22:18999 (PNE-1003)
P times to Australian stations from nuclear explosions at Bikini and Eniwetok, 22:10413
propagation and measurement of pre-Gondola II, ground motion studies from, 22:51126 (PNE-1115)
propagation and travel times of P- and R-, use in detecting underground explosions and earthquakes, 22:18997
propagation from underground nuclear explosions in Longshot experiment, 22:10415
propagation times from nuclear explosions Bilby and Shoal, 22:8236
source and velocity of underground nuclear explosion-produced, uphole survey method for measurement of, 22:40279
travel times of P, from Bikini and Eniwetok nuclear explosions, 22:8235
travel times of P, from Greeley nuclear explosion, 22:37895
travel times of PcP, effects of depth on, 22:48971
travel times of, estimation of effect of earth depth on, 22:23183
velocity from underground nuclear explosions, equipment and methods for recording, 22:10412 (NVO-1163-93)
velocity in underground media at SCROLL site, 22:35927 (UCID-15233)
SEISMOLOGY
see also Seismic Waves
analysis of surface-foci travel times using data from Gnome, Bilby, and Salmon events, 22:195
attenuation and propagation of ground shock from underground explosions, Project Pre-Gondola I measurements of, 22:197 (PNE-1104)
earthquake detection in, use of P- and R- elastic waves for, 22:18997
ground motion from Salmon event, effects of Mississippi soils on, 22:2262
noise reduction during automatic detection of seismic events in, 22:14600
underground explosion detection in, use of P- and R- elastic waves for, 22:18997
use in detection of near-surface cavities, 22:37894 (N-68-12023)
SEISMOMETERS
data from NC-21, correction procedures for, 22:12172 (NVO-1163-115)
data processing from Yellowknife, for detecting underground nuclear explosions, 22:8237
development of arrays of, for detecting and identifying underground shock waves, 22:196
inspection at stations in Colombia and Panama, 22:35963 (CGS-P-117)
performance and principles of short-period arrays of, for detection of underground explosions and earthquakes, 22:18997
performance of arrays of large aperture, 22:33578 (AD-662632)
performance of Gauribidanur linear cross arrays of, for detection of nuclear explosions, 22:48970 (BARC-309)
use for detection of ground motion near reactor sites, 22:19221
use for locating basalt formations in Hanford Area, 22:25494 (BNWL-481-3, pp 5-10)
use in recording ground motion velocity from underground nuclear explosions, 22:10412 (NVO-1163-93)
use to detect ground motion from pre-Gondola II explosion at Fort Peck Dam, 22:33192 (UCRL-13329(App.A))
SELENATES
see also Radium Selenates
see also Sodium Methyl Selenates
effects on precipitation of molybdenum and tungsten with zirconium hydroxide, 22:8063
metabolism of selenium-75-labeled, by rumen microorganisms of sheep, 22:40573
radiation effects on, ESR studies of unstable intermediates in, 22:25405
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
use in kinetic method for determining molybdenum in reagents and steels, 22:16425
SELENIDES
see also Boron Selenides
see also Cadmium Chromium Selenides
see also Cadmium Selenides
see also Cerium Selenides
see also Copper Rhodium Selenides
see also Copper Selenides
see also Dysprosium Selenides
see also Erbium Selenides
see also Europium Selenides
see also Gadolinium Selenides
see also Gallium Selenides
see also Holmium Selenides
see also Hydrogen Selenides
see also Iron Selenides
see also Lanthanum Selenides
see also Lead Selenides
see also Lithium Selenides
see also Mercury Chromium Selenides
see also Neodymium Selenides
see also Niobium Selenides
see also Plutonium Selenides

    see also Radium Selenides
    see also Rare Earth Selenides
    see also Samarium Selenides
    see also Thorium Selenides
    see also Tin Selenides
    see also Tungsten Selenides
    see also Uranium Selenides
    see also Zinc Selenides
    see also Zirconium Selenides
SELENIOUS ACID
  (H_2SeO_3)
  crystal structure of, neutron diffraction study of, 22:43596 (ANL-7299, pp 280-9)
  radiolysis of crystals of, paramagnetic resonance studies on free radicals produced by γ, 22:18822
SELENITES
    see also Potassium Acid Selenites
    see also Sodium Selenites
  effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
  metabolism of selenium-75-labeled, by rumen microorganisms of sheep, 22:40573
  radiation effects on, ESR studies of unstable intermediates in, 22:25405
  radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
  separation from solution by co-precipitation with rare earth hydroxides, 22:6375
  separation from solutions by co-precipitation with various metals using potassium hydroxide as precipitant, 22:6380
SELENIUM
  abundance in chondrites, 22:2727
  analysis for copper, zinc, arsenic, and iron, neutron activation method for, 22:4050
  analysis for submicrotraces of copper by neutron activation, 22:33231
  analysis for tellurium, by neutron activation methods, 22:16441
  analysis of high-purity, for chlorine, phosphorus, and sulfur by neutron activation methods, 22:45019
  analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Uncommon Metals, 22:10981
  compatibility testing with potential cell materials at 400 and 500°C, 22:52556 (ANL-7425, pp 172-89)
  compounds with thorium or uranium and antimony, arsenic, bismuth, or phosphorus, preparation and structure of, 22:47118
  condensation in meteorites, (T), 22:5023
  content in sandstone at Shirley Basin, Wyo, 22:27929
  content of products for human consumption, federal regulations concerning, 22:51325
  crystal structure of, research using cold neutron scattering, (E), 22:9921 (JUL-Conf-1)
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  determination as trace impurity in petroleum by neutron activation methods, 22:1989
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by atomic-fluorescence spectroscopy, 22:30482
  determination by mass spectrometry using negative surface ionization method, 22:6265
  determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
  determination by photon activation methods, 22:27589
  determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
  determination in arsenic, gallium, and gallium arsenide by neutron activation techniques, 22:48840
  determination in atherosclerotic arteries of man and rats by neutron activation methods, 22:30497
  determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
  determination in biological materials, automatic separation system for, 22:8020
  determination in bismuth--tellurium ore, 22:18721
  determination in blood by neutron activation methods, 22:48835
  determination in drugs by neutron activation methods, 22:10200
  determination in electrolytic zinc sulfate solution by neutron activation methods, 22:25277
  determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
  determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
  determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
  determination in meteorites by chemical and neutron activation methods, 22:10199
  determination in minerals by chromatographic separation and photometry, 22:33234
  determination in ''moonshines'' by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
  determination in nicotinic acid, neutron activation method for, 22:4050
  determination in salmon tissues by neutron activation methods, 22:37642 (BNWL-SA-1776)
  determination in silver chloride and uranium compounds, spectrophotometric, 22:48818 (NIM-244)
  determination in silver chloride and uranium oxide, spectrophotometric, 22:42
  determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
  determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
  deuteron elastic scattering at 13.6 MeV, diffraction structure in angular distributions for, (E), 22:48501
  distribution in animals, plants, and soils, 22:51325
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  distribution in rats, autoradiographic study of, radioactive, 22:40555
  effects of trace additions of, on hydrided Zircaloy-2 and zirconium, 22:17099 (AERE-R-5639)
  effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
  effects on ESR spectra of KSeH-doped KCl and KBr crystals, (E/T), 22:41649(T) (NRC-TT-1311)
  effects on growth of sheep, effects of dietary content on, 22:30940
  effects on recrystallization of TD nickel, 22:38583
  effects on selenium-75 uptake by erthrocytes of lambs, dietary, 22:30940
  effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
  effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
  effects on titrimetric determination of uranium, 22:22972
  electric cells with lithium, performance with liquid and paste electrolytes, 22:36774 (ANL-7450, pp 90-104)
  electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
  energy-level transition multipolarities from internal pair formation data, (T), 22:20709
  gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
  gamma elastic and inelastic scattering by, γ spectra for, 22:27079
  gamma resonance scattering using neutron capture beams, spectra for, (E), 22:48510 (IA-1097)
  gamma resonance scattering using neutron capture γ rays, (E), 22:24854 (IA-1128, pp 12-20)
  interrelations with vitamin E, 22:51325
  meson (μ) and (π) reactions with targets of, condensed-state effects in x-ray spectra from, (E), 22:52507
  metabolism in animals, 22:51325
  metabolism in lower plant forms, review of, 22:12781
  metabolism in rats, tracer studies of, 22:49278
  neutron differential elastic scattering cross section and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
  neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
  neutron scattering and polarization measurements for, optical--model parameters fitting to, (E/T), 22:24925(R) (ANL-7427)
  neutron scattering by crystalline, amorphous, and liquid, (E), 22:11874(R) (JUL-463-NP)
  neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
  neutron total cross sections at 30 to 650 keV, (E), 22:20578 (WASH-1079)
  optical properties of vacuum-evaporated films of, 22:9424 (ORNL-TM-2023)
  positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
  positron annihilation in, angular distribution of photons from, (E), 22:11508
  positron annihilation radiation from, calculations using Hartree--Fock orbitals for angular correlations of two-photon, 22:36733
  protective effects against injuries in rat intestine induced by cadmium, 22:51325
  proton reactions at 10 MeV, production of short-lived bromine-78 isomer by, (E), 22:24874
  radiation effects on allotropic changes of, 22:4135
  radiation effects on electric conductivity and photoconductivity of single crystals of, as function of temperature, fast neutron, (E), 22:37046
  radiation effects on uptake of, by mitochondria isolated from spleens of rats, whole-body x, 22:40853
  radiation effects on, internal photoeffect spectral distribution from, (E), 22:20077
  reactions with boron, 22:2683
  research with microorganisms, 22:51325
  separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
  separation from mixture of metals by ring-oven method, 22:18880
  separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
  separation from other metals by chromatography on stannic

phosphate and stannic tungstate papers, 22:4248
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from tellurium by sorption of tellurium on Wofatit--SBW, 22:16661
separation from tellurium in hydrochloric acid solution, ion exchange, 22:40192
separation from tungsten by paper chromatography, 22:25257
sorption by manganese dioxide from nitric acid, 22:157
toxicity in animals and man, 22:51325
transport through animals, plants, and soils, 22:51325

SELENIUM FLUORIDES
binding energies of, 22:52257 (ANL-7425, pp 94-129)
binding energies of, molecular orbital calculations of, 22:36543 (ANL-7450, pp 39-74)

Selenium Hydrides
see Hydrogen Selenides

SELENIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
radii in alkaline earth chalcogenide ionic crystals, 22:52287

SELENIUM ISOTOPES Se-73
beta decay of isomeric, half-life and β-γ coincidence spectra for, (E), 22:48568

SELENIUM ISOTOPES Se-74
energy levels from arsenic-74 decay, spin-parity assignments for, (E), 22:44687
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture cross section and resonance integral for, thermal, (E), 22:9815
neutron capture cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
neutron resonance parameters at 0.027 to 7.216 keV, (E), 22:48479 (JINR-P3-3956)
neutron total cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)

SELENIUM ISOTOPES Se-75
content of blood of rabbits following small doses, mechanisms for, 22:51379
effect on multidispersion in x-ray radiometric well logging, 22:14586
electron-capture decay of, conversion-electron spectra for, (E), 22:18196
electron-capture decay of, γ-γ and γ-conversion electron angular correlations in, (E), 22:42080
electron-capture decay of, internal conversion electron particle parameters for, (E), 22:48509(R) (BMwF-FBK-68-22)
gamma-gamma angular correlations from, (E), 22:22572
metabolism by rumen microorganisms of sheep, 22:40573
metabolism in rats, 22:49278
metabolism of methionine-incorporated, in rats, 22:30979
metabolism of sodium selenite-incorporated, in rats, 22:33723
uptake and retention by female sheep, effects of diet content on, 22:51330
uptake by erythrocytes of sheep, effects of carbon dioxide and oxygen atmosphere on, 22:30940
uptake by erythrocytes of sheep, effects of selenium dietary intake on, 22:30940
uptake of fluorene-2-selenonate- and N-7-fluorenylacetamido-2-selenonate-incorporated, by tumors in spleen of mice, 22:51444
uptake of selenomethionine-incorporated, by human lipoproteins, 22:12864(R) (ORO-2401-10)
uptake of selenomethionine-incorporated, by parathyroid glands in rats, 22:28596
use as radiation source in gamma--gamma well logging method, 22:42858
use as tracer to study selenium movement in soil under various fertilizer treatments, 22:10364
use for scanning of pancreas and parathyroid, 22:28582
use of methionine-incorporated, for scanning of pancreas, 22:40742
use of selenomethionine-incorporated, for localization of tumors of parathyroid and thymus glands, 22:12882
use of selenomethionine-incorporated, for radiodiagnosis of carcinomas of pancreas in man, 22:28576
use of selenomethionine-incorporated, for scanning parathyroid glands, 22:28596
use of selenomethionine-incorporated, for scanning of guinea pig pancreas, 22:25714 (COO-78-163, pp 126-36)
use of selenomethionine-incorporated, for scanning pancreas, 22:49402
use of selenomethionine-incorporated, for scanning of human pancreas, 22:49403

SELENIUM ISOTOPES Se-76
deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
energy levels in giant resonance region from electron inelastic scattering, (T), 22:27072
energy levels of, measurement of, 22:3662
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture by, isomeric cross-section ratio for thermal, (E), 22:15977
neutron capture cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
neutron resonance parameters at 0.378 to 13.281 keV, (E), 22:48479 (JINR-P3-3956)
neutron total cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
photon absorption cross sections at 13 to 25 MeV, effects of giant resonance coupling to surface quadrupole oscillations on, (T), 22:30058
photon scattering cross sections at 13 to 23 MeV, effects of giant resonance coupling to surface quadrupole oscillations on, (T), 22:30058
proton elastic scattering by, isobaric analog resonances in, (E), 22:37327
proton elastic scattering by, isobaric analog resonances in, (E), 22:37281(R) (NYO-72-191)

SELENIUM ISOTOPES Se-77
alpha reactions (α,p) at 9.6 to 24.3 MeV, excitation function for, (E), 22:35275
description using Nilsson model with deformed states, (T), 22:18169
energy level at 248 keV, magnetic moment of, (E/T), 22:48509(R) (BMwF-FBK-68-22)
neutron capture and total cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
neutron inelastic scattering with isomeric excitation, cross section for fast, (E), 22:7705
neutron resonance parameters at 0.112 to 3.919 keV, (E), 22:48479 (JINR-P3-3956)
neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
neutron strength function and scattering radius at 0 to 1.5 keV, (E), 22:18285
nuclear magnetic resonance in ferromagnetic chalcogenide spinels, (E), 22:26518
nuclear magnetic resonance of, in cadmium chromium selenides, (E/T), 22:26521
production in Lecythis ollaria by neutron exposure, 22:30469
proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)

SELENIUM ISOTOPES Se-78
alpha reactions (α,np) at 9.6 to 24.3 MeV, excitation function for, (E), 22:35275
energy-level transitions from γ inelastic scattering, (E), 22:27079
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture by, isomeric cross-section ratio for thermal, (E), 22:15977
neutron capture cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
neutron resonance parameters at 0.384 to 20.15 keV, (E), 22:48479 (JINR-P3-3956)
neutron total cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
proton elastic scattering by, isobaric analog resonances in, (E), 22:37281(R) (NYO-72-191)
proton elastic scattering by, isobaric analog resonances in, (E), 22:37327
proton reactions (p,n) at 4.4 to 5.7 MeV, isobaric analog resonances in, (E), 22:15978
proton reactions (p,n) with, isobaric analog resonances in, (E), 22:37327

SELENIUM ISOTOPES Se-80
alpha reactions (α,np) at 9.6 to 24.3 MeV, excitation function for, (E), 22:35275
alpha reactions (γ,p) at 9.6 to 24.3 MeV, excitation function for, (E), 22:35275
deuteron reactions (d,2n) at 6.6 to 11.8 MeV, excitation function for, (E), 22:35275
deuteron reactions (d,p) at 5.6 to 8.3 MeV, charge-exchange potential in, (E), 22:11949(R) (ORO-2972-47)
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture at 24 keV, isomeric cross-section ratio for, (T), 22:32537
neutron capture by, isomeric cross-section ratio and spin-cutoff parameter for, (T), 22:48498
neutron capture by, isomeric cross-section ratios for thermal and epithermal, (E), 22:15977
neutron capture by, isomeric cross-section ratios for fast, (E), 22:32560
neutron capture cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron resonance parameters at 0.147 to 23.122 keV, (E), 22:48479 (JINR-P3-3956)
neutron total cross sections for, intermediate, (E), 22:48479 (JINR-P3-3956)
proton elastic scattering by, isobaric analog resonances in, (E), 22:37327
proton elastic scattering by, isobaric analog resonances in, (E), 22:37281(R) (NYO-72-191)

proton reactions (p,n) at 2.5 to 6.0 MeV, excitation function for, (E), 22:35275
proton reactions (p,n) at 3.6 to 5.7 MeV, isobaric analog resonances in, (E), 22:15978
proton reactions (p,n) with, isobaric analog resonances in, (E), 22:37327
proton reactions (p,n) with, isobaric analog resonances in, (E), 22:20578 (WASH-1079)
triton reactions (t,α) at 13 MeV, α spectra for, (E), 22:11948(R) (NP-17216)
triton reactions (t,α) with, angular distributions and Q-values for, (E), 22:26932(R) (NP-17434)

SELENIUM ISOTOPES Se-81
beta decay of normal and isomeric, γ spectra and transition probabilities for, (E), 22:9843
isomeric transition in, K-shell conversion coefficient and multipolarity of, (E), 22:27048
nuclear level density parameter for, calculation from isomeric cross-section ratio for neutron capture, (T), 22:32537
production of isomeric, by selenium-80 fast neutron capture, (E), 22:32560

SELENIUM ISOTOPES Se-82
alpha reactions (α,2np) at 9.6 to 24.3 MeV, excitation function for, (E), 22:35275
deuteron reactions (d,2n) at 6.6 to 11.8 MeV, excitation function for, (E), 22:35275
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture by, isomeric cross-section ratio for thermal, (E), 22:15977
proton elastic scattering by, isobaric analog resonances in, (E), 22:37327
proton elastic scattering by, isobaric analog resonances in, (E), 22:37281(R) (NYO-72-191)
proton reactions (p,n) at 2.5 to 6.0 MeV, excitation function for, (E), 22:35275
proton reactions (p,n) at 4.1 to 5.8 MeV, isobaric analog resonances in, (E), 22:15978
proton reactions (p,n) with, isobaric analog resonances in, (E), 22:37327

SELENIUM ISOTOPES Se-83
beta decay of isomeric branching ratio for, (E), 22:46759
beta decay scheme of, log-ft values and β and γ spectra for, (E), 22:3657
half-life of normal and isomeric, (E), 22:3657

SELENIUM ISOTOPES Se-84
beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)

SELENIUM ISOTOPES Se-85
gamma spectra, (T), 22:7706

SELENIUM ISOTOPES Se-87
gamma spectra, (T), 22:7706
half-life and fission yield for, (E), 22:48543
neutron emission from, branching ratio for delayed, (E), 22:48543

SELENIUM OXIDES
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
reactions with deuterium-labeled 1,3-diphenylpropene, isotope effects in oxidation, 22:37766

SELENIUM SYSTEMS
As--Ge--S--Se--Te, use of liquid, for resistance thermometry in reactors, 22:28260
Bi--Se--Te, radiation effects on electric conductivity of semiconductors of, neutron, 22:20086
Mo-base--Se crystal lattice constants and thermal expansion coefficients at 1100°C, 22:41073
PbSe--PbTe, development of, for thermoelectric power generation, (E), 22:24091(R) (NYO-3886-1)
Se--Te, positron annihilation in, angular distribution of photons from, (E), 22:11508
Se--Te, tin-119 Moessbauer effect in semiconducting solid solutions of, isomer shift in, (E), 22:26506
Tl--Se, densities, phase equilibria, and specific volumes of liquid, 22:10948 (NYO-2731-4)

SELENOCYANATES
see also Cobalt Selenocyanates
see also Mercury Selenocyanates
carbon-14 exchange between cobalt and mercury selenocyanate and ionic, mechanism of, 22:27693

Selenomethionine
see Butyric Acid, 2-Amino-4-(methylselenyl)-

SELF-DIFFUSION
calculation of liquid metal, from viscosity data, 22:26044
correlation of bcc, fcc, and hcp metals, with atomic bond parameters, 22:21683 (BARC-302)
kinetics in ceramic oxides, 22:28941 (AAEC/E-188)
mechanisms at uranium dioxide surfaces, 22:752
models of bcc and fcc metals, 22:36466

SELNI Power Reactor
see Trino Power Reactor

SEMEN
see also Sperm
radiation effects on quality of, in rats, effects of dose fractionation on γ, 22:10868

SEMICARBAZIDE
$(NH_2NHCONH_2)$
radiation effects on, study of radicals from, 22:21093(R) (TID-24147)

SEMICARBAZIDE HYDROCHLORIDE
radiation effects on monocrystals of deuterated and normal, ESR spectral studies on γ, 22:35839

Semiconductor Detectors
see Radiation Detectors, Semiconductor

Semiconductor Detectors (Germanium)
see Radiation Detectors, Semiconductor (Germanium)

Semiconductor Detectors (Silicon)
see Radiation Detectors, Semiconductor (Silicon)

SEMICONDUCTOR JUNCTIONS
see also Radiation Detectors, Semiconductor
see also Silicon Junctions
see also Transistors
book: Radiation Effects in Semiconductor Devices, 22:16971
characteristics of p--n, for electromagnetic radiation and alpha and beta particles, 22:45275 (CEA-Bib-97)
radiation effects on one-dimensional MOS structures, analysis, 22:40511 (SC-CR-68-3659)
radiation effects on p--n, 22:413 (AD-648236)

SEMICONDUCTORS
(See also specific materials.)
see also Electric Conductivity
see also Radiation Detectors, Semiconductor
see also Semiconductor Junctions
see also Transistors
analysis for impurities by activation methods, separation techniques for, 22:4049
atomic beam reactions with, electron excitation in, 22:13240
autoradiography in study of, (T), 22:7370
book: Electron Spin Resonance in Chemistry, 22:12335
book: Mass Spectrometry in Science and Technology, 22:40505
book: Properties of Solids and Their Atomic Structures, 22:13606
book: Radiation Effects in Semiconductor Devices, 22:16971
book: Radiation Physics of Nonmetallic Crystals (in Russian), 22:24491
book: Surface Properties of Oxidized Silicon, 22:41663
charged particle channeling in, energy loss in, (T), 22:39171
charged pions with, dielectric response function for, (T), 22:26482
chemical bonds in, (E/T), 22:26534
conference on II-VI compounds, 22:26533
de Hass--van Alphen effect in, apparatus for measurement by pulsed method, 22:46041 (UUIP-531)
density of states of bulk Type-II, for magnetic inductions below H/sub c2/ and all mean free paths, (T), 22:52703
electric conductivity and Hall effect measurements in GaAs, effects of temperature and irradiation on, 22:27396(R) (AI-AEC-12638)
electric conductivity changes in, from ion-implantation doping, 22:9484
electron transport in tunnel diodes, theory of, 22:11492 (NP-17210)
electron-beam excitation of Alfven and spiral waves in, (T), 22:26468
electronic properties of liquid, (E), 22:10142(R) (RLO-1922-7)
Fano factor in, 22:40385
fission fragment tracks in layered structures of, relation to crystal electric conductivity and particle energy loss, 22:34752
impurity diffusion in, for fabrication of semiconductor radiation detectors, 22:33640(P)
ion beam reactions with, electron excitation in, 22:13240
ion channeling and implantation in, 22:16877
ion implantation doping of, photolithographic techniques for, 22:50218 (AERE-R-5631)
ion implantation in, method for determination of distribution profiles for, 22:26481
ion motion in channels in, calculation of inelastic energy loss in, 22:37029
ion reactions in keV range with, method for depth distribution measurement based on solubility effects of, 22:34286
lithium doping of, for fabrication of radiation detectors, 22:28124(P)
magneto-optical analysis of, use of pulse magnetic field for, 22:22226
materials technology of, survey of, 22:12959
mechanisms in, competing insulating and superconducting, 22:29417
oxidation of metals forming n-type, 22:8764
photoconductivity of, effects of dyes on, 22:20038(R) (COO-1052-9)
photoelectric effect in, quantum efficiency of, 22:19838
radiation damage effects in, gamma, (E/T), 22:39178
radiation effects on carrier recombination in, neutron, 22:36965 (AD-666220)
radiation effects on germanium and silicon, electron and neutron, 22:9427 (TID-24201)
radiation effects on junction devices of, transient analysis of, 22:12725
radiation effects on metal-coated surface-oxidized silicon, model of gamma and neutron, 22:11019

radiation effects on n- and p-type silicon, 48-MeV electron, 22:764(R) (AD-644889)
radiation effects on optical attenuation of compound, fast-neutron, (T), 22:13570
radiation effects on p--n--p--n devices, 22:2478
radiation effects on physical properties of, (E/T), 22:30155(R) (NAA-SR-12296)
radiation effects on thermal conductivity at low temperatures, fast-neutron, 22:41688
radiation effects on transistors made of, design for reducing deteriorating, 22:8431(P)
radiation effects on, conference on, 22:12722
radiation effects on, conference on, 22:36986
radiation effects on, EPR and optical absorption studies of, review, 22:37001
radiation effects on, summary of conference on, 22:37022
radiation tolerances of bipolar and junction field effect transistors made of, comparison of neutron, 22:10671
radioinduced current gain in transistor made of, neutron, 22:12724
radioinduced defects in, energy and orientation dependence of production of electron, review, 22:37010
radioinduced defects in, evidence for clusters of, review, 22:37007
radioinduced defects in, method for measurement of energy levels and introduction rates of, (E), 22:37008
radioinduced defects in, microscopic nature of stable, 22:39158(R) (N-68-17349)
radioinduced electron-hole pairs in, model for, 22:20060
radioinduced excess carriers in, drift mobility and conductivity effects of, (T), 22:31940 (BNL-50083, pp 430-41)
radioinduced switching of rectifiers controlled by, 22:12727
response of transistors of, to ionizing radiation, computerized model for, 22:12726
scintillation process in, doped with isoelectric traps, 22:40428
sound dispersion law in superconducting, (T), 22:44051
stability in metal oxide, tracer studies on role of surface contamination in ion drift, 22:50953
structure sensitivity of Type II, review of, 22:43599 (NYO-3001-2)
superconductivity in degenerate, (T), 22:38994
superconductivity in, electron mechanism for, 22:34529
thermal capacity of barium strontium titanate at 0.3 to 4°K, 22:1075
thermoelectric limitations of, high-temperature, 22:19837
transition temperatures of very thin films and whiskers of superconducting, predicted, (T), 22:7242
use for radiation detection, review of, 22:43043
use of liquid, for resistance thermometry in reactors, 22:28260

SENA POWER REACTOR
construction during 1965, description of, 22:35474(R) (TID-24367)
construction during 1966, description of, 22:35473(R) (TID-24366)
control of, automate concept for functional, 22:48683
control rods for, hot channel factor determinations in, 22:16164 (WCAP-2785)
control rods for, reactivity worth of, 22:16164 (WCAP-2785)
control systems for, description of automatic, 22:48684
cooling system for, description of motor-pump sets for, 22:3858
cooling system for, performance of boron concentration meter in, 22:20825 (WCAP-3690-4)
core for, design and initial loading diagrams for, 22:16164 (WCAP-2785)
design parameters for, 22:22712 (STI/PUB-174)
economic analysis of operation of, 22:9994(R) (EUR-3482)
economics for operations during October to December 1967, 22:24975(R) (TID-24368)
economics of fabrication of, analysis of, 22:35474(R) (TID-24367)
economics of fabrication of, analysis of, 22:35473(R) (TID-24366)
fuel elements for, neutronic measurements on, 22:49817(R) (EURAEC-2036)
fuel recycling in, analysis of plutonium, (T), 22:10075(R) (EURAEC-1929)
fuels for, use of plutonium, 22:21776(R) (EURAEC-1937)
maintenance during October to December 1967, description of, 22:24975(R) (TID-24368)
moderator temperature coefficient of, 22:16164 (WCAP-2785)
neutron characteristics of, prompt and delayed, 22:16164 (WCAP-2785)
nuclear parameters for, comparison of measured and calculated, 22:3863
operation and performance during 1966 of, 22:9994(R) (EUR-3482)
operations during July to September 1967, description of, 22:18424(R) (TID-24282)
operations during October to December 1967, description of, 22:24975(R) (TID-24368)
operations history for April 1--June 30, 1967, 22:7823(T) (AEC-tr-6912)
power distribution in, effects of core lifetime on, 22:16164 (WCAP-2785)
reactivity of, effects of boron deposition on, 22:3822 (EUR-3609)
reactivity of, effects of iodine-135 and xenon-135 diffusion on, 22:21776(R) (EURAEC-1937)
shutdown of, analysis of unscheduled, 22:53286
shutdown reactivity coefficient for, 22:16164 (WCAP-2785)
startup of, description of, 22:3863
startup of, description of, 22:9994(R) (EUR-3482)
turbine for, description of, 22:18490
void coefficient of reactivity for, 22:16164 (WCAP-2785)
xenon buildup in, determination of equilibrium concentration for, 22:16164 (WCAP-2785)

Senescence
see Aging

SENN Reactor
see Garigliano Power Reactor

SEPARATED-ORBIT CYCLOTRONS
see also ORNL Separated-Orbit Cyclotron
beam acceptance in, effects of nonlinear field errors on, 22:41891 (RHEL/M-124, pp 57-70)
beam currents in, space charge effects on, 22:41893 (RHEL/M-124, pp 83-100)
beam emittance in low-energy, growth of, 22:41892 (RHEL/M-124, pp 71-81)
beam instabilities in, transverse, (T), 22:41890 (RHEL/M-124, pp 47-56)
beam intensity limitations in, using linac analogy, 22:41886 (RHEL/M-124, pp 1-11)
beam loading in, development of electron analog experiment for studying, 22:41888 (RHEL/M-124, pp 29-42)
beam monitoring and control for, proposal for, 22:41900 (RHEL/M-124, pp 199-202)
beam--cavity interactions in, 22:41887 (RHEL/M-124, pp 13-27)
beams in, transverse forces on, 22:41894 (RHEL/M-124, pp 101-5)
conference on, 22:41885 (RHEL/M-124)
description of Chalk River, 22:29796
design of 1-GeV, for use at ING, 22:41897 (RHEL/M-124, pp 145-65)
design using charged-particle cavity excitation, conceptual, 22:41905 (RHEL/M-124, pp 249-67)
magnet alignment tolerances for 1-GeV, 22:41893 (RHEL/M-124, pp 83-100)
use as booster injector for Harwell synchrotron, feasibility study for, 22:41898 (RHEL/M-124, pp 167-79)
use as injector for AG synchrotron, 22:41905 (RHEL/M-124, pp 249-67)

SEPARATION PROCESSES
see also Amine Exraction Process
see also Countercurrent Separation Processes
see also Electrolytic Separation Process
see also Electromagnetic Separation
see also Flotation
see also Fluoride Volatility Processes
see also High Temperature Separation Processes
see also Ion Exchange Processes
see also Isotope Separation Methods
see also Leaching
see also Purex Process
see also Solvent Extraction Processes
see also TBP Process
see also Volatility Separation Processes
bibliography on, July 1968, 22:42203 (ORNL-NSIC-45)
book: Chemical Technology of Rare Metal Ores, in Russian, 22:40191
book: Research in Chemical and Extraction Metallurgy, 22:33518
design and performance of 18-stage centrifugal mixer settler, (E), 22:8250 (DP-MS-67-71)
design study for reprocessing uranium--thorium fuel for 10,000-MW(t) HTGR, 22:23092 (CONF-660524-, pp 617-45)
development for analysis of irradiated Indian Point Reactor fuel, 22:17185(R) (BAW-3809-1)
development for mixtures of rare earths, 22:3697 (KFK-534)
development for processing Australian ores, 22:18889
development for separation of iodine from uranium fuel slugs, equipment and method for, 22:4302 (CEA-R-3259)
development for solutions of salts having inverted solubility curves, 22:30652(P)
development for use in fuel reprocessing, 22:27856(R) (K-1738)
development of aqueous, for fuel reprocessing, 22:23108
development of liquid--liquid extraction, double-pulsed mixer--settler for, 22:4264(P)
development of precipitation, for production of cesium-137, 22:2263 (EUR-3611)
economics of chemical, for separating uranium and trace elements from seawater, 22:47249 (AERE-R-5500(Vol.2), pp 387-98)
efficiency of pyrometallurgical, for fuel reprocessing, 22:48898(T) (KFK-tr-249)
engineering studies of salt transport, 22:51044 (ANL-7425, pp 19-41)
equipment, design and development for, for removing krypton and xenon from reactor gas streams, 22:8253(R) (K-1725)

extraction columns for, correlation of drop sizes in pulsed, 22:45142 (IS-T-259)
facilities for Eurex, design and construction of, 22:27962
materials for use in rapid radiochemical, review on, 22:27890
monthly progress report on, Argonne National Laboratory August 1968, 22:50699(R) (ANL-7487)
monthly progress report on, Argonne National Laboratory, 22:42158(R) (ANL-7460)
monthly progress report on, Argonne National Laboratory, 22:35422(R) (ANL-7445)
monthly progress report on, Argonne National Laboratory, 22:37401(R) (ANL-7457)
performance of continuous-flow chemisorption, in removal of iodine radioisotopes from tap water, 22:6815
radiochemical, review on methods for rapid, 22:27890
research programs on, summary of USAEC on-site, 22:33379 (TID-4050(1st. Ed.))
research progress on, 22:16644(R) (ORNL-4075)
research progress on, 22:27863(R) (ORNL-4204)
research progress on, 22:12402(R) (ORNL-4094)
research progress on, 22:14561 (ORNL-4139)
research progress on, summaries of off-site USAEC, 22:18811 (TID-4005(Pt.2A)(3rd Ed.))
safety procedures for spent zirconium-clad fuel, 22:283 (ORNL-4061)
use of chromatography in, 22:33256
use of substoichiometric replacement in, applications of, in activation analysis, 22:27609

SEPARATORS
see also Cascade Impactors
see also Cyclone Separators
see also Electrostatic Precipitators
see also Mass Spectrometers
cooling system internally-heated steam--water, description of boiling reactor, 22:37489(P)
description of steam, in the Gundremmingen Power Reactor, 22:16172
description of variable speed centrifugal steam, 22:20875(P)
development and testing radial vane steam, for use in Gundremmingen Power Reactor, 22:2265(R) (GEAP-5524)
development of power reactor saturated-vapor turbine, description of, 22:35511
performance of radial vane steam, effect of plenum deflector design on, 22:30150(R) (GEAP-5597)
vapor and water, description of multi-stage vertical rotating guide blade, 22:7872(P)

SER
see Systems for Nuclear Auxiliary Power

SERINE
determination of carbon-14-labeled, in ninhydrin reaction products from amino acid analyzer by scintillation counting, 22:37659
metabolism of carbon-14-labeled, in radiation chimeras, 22:28630 (ORNL-4100, pp 118-26)
radiation effects on content of, in plasma of rats, 22:419 (AD-648223)
radiation effects on distribution of tritium-labeled, in growing and resting hair of rodents, x, 22:36392
radiation effects on metabolism of carbon-14-labeled, in mice, protective effects of homologous and isologous bone marrow transplants against lethal, 22:38197 (ORO-3635-2)
radiation effects on metabolism of carbon-14-labeled, in mice, protective effects of homologous and isologous bone marrow transplants against lethal, 22:38196 (ORO-3635-1)
radiation effects on uptake of tritium-labeled, by hair of mice, electron, 22:6710 (ACRH-1000-26)
radiation effects on, in meat, review of, 22:52111
radioinduced damage to, effects of temperature on γ, uv, and x, 22:45394
radiolysis of aqueous solutions of, method for determining formation of radicals in γ, 22:35828 (BNWL-SA-1841)
radiolysis of oxygenated aqueous solutions of, ESR spectral studies on free radicals produced by γ, 22:2147
radioprotective effects of, on yeasts, x, 22:40632
reactions with hydrogen peroxide and titanium trichloride, ESR spectral studies on free radicals produced by, 22:2147

Serine Sulfhydrase
see Cysteine Synthase

L-SERINE DEHYDRATASE
radiation effects on synthesis of, in Escherichia coli, phosphorus-32 β, 22:28376

SEROTONIN
complexes with creatine sulfate, radioprotective effects of, on Vicia faba, mechanism for x, 22:10811
effects on cells of intestine of mice, combined effects of AET and glutathione on, 22:19357
effects on content of ammonia in brain tissue of rats, 22:19394
effects on content of mercapto group in spleen of mice, radioprotective effects of, 22:25889
effects on content of oxygen and SH groups in spleen of γ-irradiated mice, 22:33848
effects on contractile response of isolated duodenum from x-irradiated rats, 22:25981
effects on morphology of peritoneal mast cells of rats, 22:43427
effects on x-radiosensitivity of intestine in mice and rabbits, 22:49550
excretion by man during light- and uv-radioinduced erythema, 22:21586
metabolism in mice, chromatographic and tracer study of, 22:40752
protective effects on basal and carbohydrate metabolism of rats during x radiation sickness, 22:40584
radiation effects on content of, in blood of mice, protective effects of spleen shielding against x, 22:19436
radiation effects on content of, in central nervous system of rats, phosphorus-32 β, 22:21417
radiation effects on content of, in rat gastrointestinal tract, whole-body γ, 22:49412
radiation effects on intestinal cells secreting, in guinea pigs, pigs, and rats, γ, 22:49539
radioprotective effects of complex of creatinine sulfate with, on planarians, x, 22:23579
radioprotective effects of, in relation to protection of man, 22:25861(T) (JPRS-39391)
radioprotective effects of, mechanism of, 22:25883
radioprotective effects of, on activity of enzymes in liver of mice, x, 22:40523
radioprotective effects of, on adrenalectomized and intact mice, x, 22:45617
radioprotective effects of, on blood chemistry of rabbits, β, 22:40805
radioprotective effects of, on bone marrow of mice, 22:33841
radioprotective effects of, on chromosomes of grasshopper spermatocytes, x, 22:36318
radioprotective effects of, on eyes of rabbits, γ and neutron, 22:12875
radioprotective effects of, on function of adrenal glands of rats, x, 22:45628
radioprotective effects of, on genetics of human cells, 22:51552
radioprotective effects of, on glucoproteins and lipoprotein in blood of rabbits, phosphorus-32 β, 22:12797
radioprotective effects of, on hematopoiesis and immune reactions in rats, combined effects of AET and cysteamine on x, 22:45648
radioprotective effects of, on hematopoiesis in mice, x, 22:33923
radioprotective effects of, on immune system of mice, x, 22:43353
radioprotective effects of, on intestine of mice, x, 22:31236
radioprotective effects of, on mammalian cells, γ and x, 22:38407
radioprotective effects of, on mammals, x, 22:19383
radioprotective effects of, on mice subjected to skin wounds, x, 22:21596
radioprotective effects of, on mice, acute, 22:49383
radioprotective effects of, on mice, combined effects of AET, cysteine and glutathione on x, 22:25878
radioprotective effects of, on mice, effects of hypophosphite, sulfide and thiosulfate anions on, 22:17032
radioprotective effects of, on mice, mechanism of, 22:40752
radioprotective effects of, on mice, mechanism of x, 22:31011
radioprotective effects of, on mice, pharmaco-dynamic x, 22:40736
radioprotective effects of, on mice, x, 22:40794
radioprotective effects of, on morphology of gonads and survival of rats, ionizing lethal, 22:31157
radioprotective effects of, on rats, method for assessment of x, 22:33879
radioprotective effects of, on rats, x, 22:49436
radioprotective effects of, on skin, uv, 22:49393
radioprotective effects of, on stem cells in small intestine of mice, combined effects of AET and glutathione on x, 22:21557
radioprotective effects of, on survival of rats, x, 22:31261
radioprotective effects of, on white mice, effects of cobalt, nickel, and zinc cations on, 22:17032
use for treatment of hypoplastic bone marrow, 22:25883
use for treatment of radiation sickness in man following nuclear accidents, 22:45606

SERPENTINE
incorporation in refractory concrete with improved mechanical properties, for shielding, 22:52250(P)
shielding materials of loose unbonded dry crushed of 1900 kg/m³ density, fabrication of, 22:27511(P)

Serum Glutamic-Oxaloacetic Transaminase
see Aspartate Aminotransferase

SERUMS
see also Blood Serum
analysis for 2-amino-4-(methylselenyl)butyric acid, activation and paper chromatographic, 22:13
lymphocyte, procedures for production and purification of, 22:43397 (EUR-4032)
preparation of Salmonella, from γ-irradiated bacteria, 22:52084

radiosterilization of anti-tetanus, in glass vials, γ, 22:52097
radiosterilization of erysipelas, combined effects of freeze-drying on γ, 22:8669
use of anti-lymphocyte serum for treatment of secondary diseases in bone marrow recipients, 22:43396(R) (EUR-3946)
zinc-65 uptake by rat, effects of cirrhosis on, 22:45385

SERVOMECHANISMS
see also Cybernetics
see also Feedback Systems
see also Laboratory Equipment
see also Remote-Control Equipment
control system, description of Manchester and Liverpool Universities' Reactor, 22:12104
drive control design for fatigue tester, engineering drawings for, 22:14638
use of force-reflecting signal-delaying, for remote handling equipment, 22:33180

SEWAGE
beta activity of, from surface waters, method for measurement of, 22:51084 (SZS-8/68)
diffusion in sea, use of bromine-82 as tracer to study, 22:36003
disposal in underground nuclear cavities, feasibility study of, 22:27942 (PNE-3008)
disposal into ocean of municipal, tracer studies of effluent dispersion for, 22:14695
disposal into ocean, radioactive tracer studies of, 22:19061
mixing with Vistula River water, radioisotopic tracer method for measurement of, 22:48926
oxidation using oxygen produced by electricity from nuclear reactors, economics of, 22:16361 (ORNL-TM-1629)
phosphorus-32 removal from raw, effect of Vorticellid protozoa on, 22:10534
radiation monitoring of BNL, 1965, 22:40258 (BNL-50093)
radiation processing of, γ, 22:2145
radioactive material in, from Delta Primate Research Center, 22:47544
radioactivity measurements in, sampling methods for, 22:40268
radioinduced degradation of, pollution control by, 22:30711
radioisotope distribution in German, 1956 to 1963, 22:10368
treatment of raw and digested, use of γ radiation for, 22:10515
treatment using nuclear energy, review of economic potential for, 22:30691 (ORNL-TM-2160)

SEWAGE SYSTEMS
distribution of effluents in, methods for tracer analysis of, 22:4587

SEX
effects on autoimmune disease in man, 22:43224
effects on calcium content of bones of antelope, bighorn sheep, buffalo, elk, mule deer, and white-tailed deer, 22:6230 (SWRHL-34-r)
effects on cancer-induced mortality in human populations of Hiroshima and Nagasaki, 22:8560 (ABCC-TR-16-63)
effects on cesium-134 metabolism by mule deer, 22:19234 (COO-1156-24)
effects on cesium-134 metabolism in mule deer, 22:14908 (COO-1156-25)
effects on cesium-137 body burden of population in Soviet Union during 1964 and 1965, 22:31055 (A-AC-82/G/L-1188)
effects on cesium-137 content of man in Japan, 22:45454
effects on cesium-137 content of man in Moscow during 1966-67, 22:19323 (A-AC-82/G/L-1185)
effects on cesium-137 content of muscles in mule deer in Colorado, 22:21459(R) (COO-1156-28)
effects on chromium-51 metabolism in pheasants, 22:47493
effects on content of calcium, strontium, and strontium-90 in bones of mule deer, 22:14909 (COO-1156-26)
effects on content of cesium-137 and potassium in man, 22:33804 (A-AC-82/G/L-1193)
effects on genetic radiosensitivity of mice, 22:25819
effects on γ radiosensitivity of mice, 22:40942
effects on γ-radioinduced increase in life span of guinea pigs, 22:43415
effects on γ-radiosensitivity of cabbage flies, 22:40981
effects on γ-radiosensitivity of chickens, analysis of, 22:23643
effects on γ-radiosensitivity of Spanish goats, 22:45719
effects on immune response of mice to Ehrlich ascites carcinomas, 22:10684
effects on incidence of lymphoma in human population exposed to atomic bombing of Hiroshima, 22:8578
effects on incidence of radioinduced neoplasms in man following medical exposure, 22:10872
effects on iodine-125 uptake by thyroid of dogs, 22:28622 (ANL-7278, pp 95-131)
effects on iodine-131 retention by chipmunks, 22:6769(R) (NYO-2579-17)
effects on leukocyte and protein content of blood in chipmunks, 22:6769(R) (NYO-2579-17)
effects on long-term retention of cesium-137 by rats, 22:6714(R) (LF-35)
effects on manganese-54 retention by chickens following oral administration, 22:8471
effects on phosphorous-32 β-radiotherapy of neurodermatitis, 22:40745
effects on potassium-40 content of man, 22:38302
effects on radioactivity in Swiss populations, 22:21500
effects on radium- and x-radiosensitivity of man, 22:47614
effects on survival of γ-irradiated sugarcane borers, 22:23700
effects on toxicity of irradiated fruits for rats, 22:47650 (NYO-3422-1(Vol.4))
effects on uptake of iron-59 by erythrocytes and spleen of mice, 22:28630 (ORNL-4100, pp 118-26)
effects on x-radioinduced alterations of aging and life span in houseflies, 22:43408
effects on x-radioinduced life-shortening in mice, 22:43420
effects on x-radiosensitivity of axenic mice, 22:4659
effects on x-radiosensitivity of germ cells in chicken embryos, 22:19422
effects on x-radiosensitivity of skin grafts in mice, 22:6869 (USNRDL-TR-67-92)
effects on x-radiosensitivity of thymus gland of rats, 22:31223
effects on x-radiotherapy of human esophageal carcinomas, 22:45597
effects on zinc-65 retention by rats, 22:30941
radiation effects on expression of, in Cucumis sativus and Momordica charantia, γ and x, 22:31282
radiation effects on ratio of, in chinook salmon, low-dose chronic γ, 22:49489(R) (RLO-2056-3)
radiation effects on ratio of, in Drosophila progeny following exposure of males to x, 22:15102
radiation effects on ratio of, in humans, genetic, 22:40626
radiation effects on ratio of, in offspring of mice following exposure of newborn, x, 22:40870
radiation effects on ratio of, in rats following exposure of females for nine generations, cumulative x, 22:40652
radiation effects on ratio of, in rats, cumulative x, 22:40643

Sex Hormones
see Hormones, Sex

p-SEXIPHENYL, 3,3',2'''',3'''''-TETRAMETHYL-
light output of, in oxygen-free toluene solution, 22:40414
scintillation decay time of, in oxygen-free toluene solution, 22:40414

SEYFERT GALAXIES
see also Quasars
3C 120, electron energy distribution of, (E), 22:36685
3C 120, radio variations of, (E), 22:36685
3C120, light variation of, (E), 22:47752
envelopes of, structure and mass of, (T), 22:36575
features of compact galaxies III Zw 2 and 3C 120 resembling, (E), 22:36649
features of NGC 1068 and NGC 1275, relation of optical and radio, (T), 22:49915
identification of two, (E), 22:29033
infrared photometry of, (E), 22:52434
light emission from, variations of, (T), 22:45865
NGC 1068, gas ejection mechanism for, (E), 22:43720
NGC 1068, nonthermal component in continuum of, (E), 22:36686
NGC 1068, spectrophotometry of nucleus of, (E), 22:43720
NGC 1275, ejection of relativistic particles from nucleus of, (T), 22:23968
NGC 1275, electron concentration and mass of envelope of, (E), 22:36575
NGC 1275, radio flux density at 5.2 cm, (E), 22:43819
NGC 4151, optical and near-infrared spectrum of nucleus of, 22:21839
NGC 4151, spectral variations from 1956 to 1968, (E), 22:29030
NGC 4151, spectrum near 1 micron, (E), 22:41187
optical form of, comparison with N-type radio galaxies, (E), 22:41236
optical variability of, (E), 22:31557
radiation emission from, mechanism for, (T), 22:29095
relation to N-type galaxies and quasars, (T), 22:41200
spectra with broad emission lines, strength of Hβ in, (E), 22:49947
spectrophotometric study of six, (E), 22:29095
spectrum of nucleus of NGC 3516, variations of, (T), 22:34162
stars in, energy and mass balance equations for massive and supermassive, 22:41147
structure of radio-emitting regions of, high-resolution interferometry of, (E), 22:49880

SF MATERIALS ACCOUNTING
control at station JWC, manual for, 22:19086 (IN-1150)
control procedures for plutonium, at Battelle Memorial Institute, 22:608 (CONF-661011, pp 74-9)
development of procedures for U.S. Atomic Energy Commission, use of computers for, 22:605 (CONF-661011, pp 1-7)
gamma counting method for uranium values in production scrap, 22:609 (CONF-661011, pp 92-103)
manual of procedures for, at Idaho Chemical Processing Plant, 22:2322 (IN-1119)
methods of, review of U.S. Atomic Energy Commission,

22:607 (CONF-661011, pp 29-38)
procedures for NRTS Station JAC, 22:6204 (IDO-17246)

SGHWR
see Steam-Generating Heavy-Water-Moderated Reactor

SGOT
see Aspartate Aminotransferase

Shadow Shielding
see Shielding

SHALE DEPOSITS
(This heading may be modified by location in the form Shale Deposits (Okla.))
crater formation in, from underground explosions, Project Pre-Gondola I studies on, 22:8240 (PNE-1107(Pt.1))
leaching of uranium from, underground, 22:18899

SHALE DEPOSITS (TENN.)
analysis of Conasauga, for disposal of radioactive waste, 22:48916 (ORNL-4259)

SHALES
see also Oil Shales
content in salt structures, effect on deformation of rock salt in radioactive waste disposal sites, (E), 22:16792 (ORNL-TM-2102)
strength in triaxial compression, equipment and method for measurement of, 22:14402 (UCRL-13334)

Shaped Charges
see Explosives

Sharks (Scyliorhinus)
see Scyliorhinus under Chondrichthyes

Shasta Burst
see Plumbob Operation

SHEEP
blood types of, in relation to genetic variability, 22:6774(R) (UCD-34-P-104-8)
body composition of, relation of potassium to, 22:21460(R) (COO-1171-82)
calcium content of bones of desert bighorn, effects of age, geographic location, and sex on, 22:6230 (SWRHL-34-r)
calcium-47 transport by rumen of, 22:6774(R) (UCD-34-P-104-8)
cesium-134 metabolism in, determination of rate constants for, 22:21460(R) (COO-1171-82)
cesium-137 content of milk of, in Czechoslovakia during 1965 and 1966, 22:40682
cesium-137 transport by rumen of, 22:6774(R) (UCD-34-P-104-8)
cesium-144 metabolism by, effects of age and route of administration on, 22:23469
digestion of cellulose and proteins in rumen of, role of microorganisms in, 22:20997 (ORNL-TM-1973)
digestion of cerium-144-labeled alfalfa hay in, use of, as flow marker, 22:45432
food consumption and selection by, effects of essential oil supplementation on, 22:6774(R) (UCD-34-P-104-8)
food consumption and selection by, effects of impairment of sensory system on, 22:6774(R) (UCD-34-P-104-8)
immunity to Hemonchus following vaccination with x-irradiated larvae, 22:51356
iodine-131 assay of prolactin in, 22:12800
iodine-131 elimination in milk of, 22:10702
iodine-131 metabolism in, following oral administration, 22:10701
iodine-131 transport by rumen of, 22:6774(R) (UCD-34-P-104-8)
iodine-131 uptake and release by thyroid of, in relation to growth rate, 22:51316
life span of erythrocytes in, 22:38427(R) (ORO-659)
measurement of thyroid secretion rate in young, effects of nitrate content of diet on, 22:51298(R) (COO-1484-3)
molybdenum-99 metabolism in, 22:38427(R) (ORO-659)
preparation of radiation-leukemia protection factor from spleen of, 22:31136
radiation effects on bones of, following exposure in utero, whole-body cobalt-60 γ, 22:40827 (ORO-657, pp 3-10)
radiation effects on development of fetuses of, following whole-body exposure of mother, γ, 22:38427(R) (ORO-659)
radiation effects on end products in blood and urine of, whole-body γ, 22:40830 (ORO-657, pp 35-45)
radiation effects on function and histology of liver in, following injection of neptunium-237, α and γ, 22:33932
radiation effects on hematopoiesis and survival of, effects of dose on γ and x, 22:49578
radiation effects on hematopoiesis in, pulsed γ and neutron, 22:49472 (CONF-680410-, pp 6.1-14)
radiation effects on immunity of, inoculated against anthrax, effects of dose on whole-body x, 22:43251
radiation effects on metabolism of calcium-45 and strontium-89 in, whole-body γ, 22:38427(R) (ORO-659)
radiation effects on resistance of, to babesia and babesia-infected ticks, strontium-90β and x, 22:49570
radiation effects on serum enzyme release mechanisms in, effects of LET on fission neutron and x, 22:21427
radiation effects on survival of, effects of millisecond and microsecond exposures on γ and neutron, 22:49472 (CONF-680410-, pp 6.1-14)
radiation effects on survival of, review of effects of dose-protraction on, 22:49476 (CONF-680410-, pp 12.1-23)
radiation effects on tissues of, histopathological study of, 22:40830 (ORO-657, pp 35-45)
radiation effects on uptake and retention of calcium-45, molybdenum-99, and strontium-89 in, β and γ, 22:40831 (ORO-657, pp 46-64)
radiation effects on, effects of dose on recovery from pathological γ and x, 22:12930
radiation effects on, effects of dose rate on lethal γ, 22:19424
radiation effects on, effects of dose-rate on severity and recovery from γ, 22:49470 (CONF-680410-, pp 4.1-21)
radiation effects on, following injection of radium, latent pathological α and γ, 22:38427(R) (ORO-659)
radiation effects on, following injection of strontium-90, latent pathological β, 22:38427(R) (ORO-659)
radioinduced neoplasms in thyroid of, iodine-131 β and γ, 22:10675 (BNWL-480, pp 21-54)
radioisotope content of milk from big horn, cesium-137 and strontium-90, 22:49367
radioisotope metabolism by rumen microorganisms of, selenium-75 and sulfur-35, 22:40573
radioprotective effects of extracts from spleen of, on leukemogenesis in mice, 22:31136
radiosensitivity of gastrointestinal tract in, β and γ, 22:38263 (TID-24459)
radiosensitivity of, effects of semiquinoid free radicals on, 22:47570
radiosterilization of skins of, for enzyme depilation studies, 22:40982
radium toxicity to, in comparison to strontium-90, 22:40829 (ORO-657, pp 18-34)
selenium-75 uptake and retention by female, effects of diet content on, 22:51330
selenium-75 uptake by erythrocytes of, effects of selenium dietary intake on, 22:30940
strontium-85 transport by rumen of, 22:6774(R) (UCD-34-P-104-8)
strontium-90 content of bones of Nelson Bighorn, in United States, 22:8559
strontium-90 toxicity to, in comparison to radium, 22:40829 (ORO-657, pp 18-34)
use of a radioisotope method for isolation and measurement of thyroxine from, 22:36191

SHEETS
see also Films
see also Foils
see also Plates
coating with liquid, radiometric process and apparatus for controlling, 22:43133(P)
texture of metal, neutron diffraction analysis for, 22:28190

Sheldon Nuclear Facility
see Hallam Power Reactor

SHELLS (GEOMETRY)
bending problems of loaded circular cylindrical edge supported, solution of equations for, (T), 22:10145 (SC-DR-67-883)
buckling and creep deformation of axially compressed internally pressurized, 22:39955 (FFA-100)
creep behavior of, finite element method for analysis of, 22:27961
displacements and stresses in long two-layer circular cylindrical, effect of ring loading on, 22:14617
dynamic response to blast loading, use of finite difference method to analyze, 22:3981 (SC-DC-67-1923)
equilibrium of boundary loaded elastic parallelepiped, variational method for analysis of, (T), 22:10167(T) (WAPD-Trans-81)
failure mechanisms of thin, confined in cavities, 22:7968(R) (UCRL-13325)
fluid flow around sphere in magnetic field, slow viscous, (T), 22:17458
response of spherical, to impact loads, (E/T), 22:3980 (SC-CR-67-2540)
stability of thin orthotropic ogival, effect of static axisymmetric pressures on elastic, 22:10143 (SC-CR-67-2709)
stress analysis for perforated spherical, point-matching method for, 22:22916 (TID-24309)
stress analysis in, at partial penetration of radial and oblique nozzles, 22:51155
stress analysis of symmetrically and axisymmetrically loaded, matrix displacement method for, 22:16366 (SC-DC-67-2054)
stress analysis of thick, of revolution loaded axisymmetrically, 22:12484
stress in attachment region of hemispherical, effect of radial nozzles on, (E), 22:273 (TID-24103)
stress in elastic infinite cylindrical, effect of conduction and coupling on, 22:18669 (SC-TM-67-3025)
stress in spherical, effects of partial penetration of nozzles on, 22:27977

SHELTERS
see also Structures
basements of, fallout protection factors for, 22:43012 (RRA-M-75)
blast response of box-type, program for, 22:35962(R) (AD-663834)
concept of blast and fallout, review of recent changes in, 22:4382 (ORNL-P-3427)

construction of fallout, in Denmark and Norway, 22:16734
design and use for protection against blast and fallout from nuclear explosions, 22:10425
design for protection against nuclear weapons, 22:8528(T) (JPRS-42929, pp 208-65)
design of Canadian fallout, study of requirements for, 22:49046
design of fallout, architectural and engineering data for, 22:37961 (AD-664439)
design of fallout, new trends in, 22:14742
design of fallout, PF-COMP and CAPS-2 codes for protective factors in, 22:51195 (ORNL-TM-2285)
design of, stress--strain analysis for, 22:6550 (NP-17183)
effectiveness of basement-type fallout, factors affecting, 22:30718
effectiveness of concrete, against fallout radiation, 22:25627
entrance design for, data for ducted, 22:4390
entranceways and openings for civil defense, design, development, testing, and cost of, 22:33621 (AD-662749)
equipment for public information activities in, 22:4599(R) (AD-648319)
fallout calculations for basement, 22:4388
fallout dose rates in open basement, calculation of, 22:4389
fallout, radiation dose to human occupants of private, method for reducing, 22:33809 (BNWL-SA-1509)
planning of civil defense, guides for architects and engineers for, 22:278
protection against fallout by cylindrical, effects of ground roughness on, 22:30717
role in reducing hazards of nuclear war, 22:51639
shielding for fallout, graphical conversion equations for calculating, 22:52838 (AD-662059)
shielding testing for, 22:4391
standards for evaluation of fallout, architectural and engineering guides for, 22:37962 (AD-664478)
ventilation of aboveground fallout, analysis of requirements for, 22:4395

SHERWOOD PROJECT
see also Thermonuclear Reactors

Shield Testing Reactor
see Bulk Shielding Facility

SHIELDED CONTAINERS
closure for, design of, 22:49058(P)
closures for, design of gas-tight, 22:12507(P)
configuration of pressure-relieving flexible gas-ball for water-filled, description of, 22:44940(P)
criticality safety measurements on casks containing plutonium metal, 22:12087 (BNWL-472, pp 5.1-16)
design and drop-testing of, for radioactive materials shipping, 22:19084 (ORNL-TM-1312(Vol.6))
design and fabrication of laminated depleted uranium, for shipping fuel elements, 22:45265 (KY-F-96)
design and impact testing of model, for shipping radioactive materials, 22:40350 (NYO-2539-8)
design and performance of, for shipping radioactive materials, IAEA regulations for, 22:45262 (EUR-3485(Vol.5))
design and testing for large radiation sources, 22:290
design and testing for shipping radioactive materials, 22:289
design and testing of light-weight drum-type, for shipping fissionable materials, 22:51206 (UCRL-14903(Rev.1))
design and testing of ventilated, for dissipating heat from lead-flask-contained heat source, 22:51132 (AERE-R-5808)
design and testing of, for shipping heat-generating nuclear materials, 22:43016 (DPSPU-67-30-9)
design and testing of, for shipping SNAP-19 power supply, 22:40325 (MND-3607-239-1)
design and testing of, IAEA regulations on, 22:28042
design and thermal testing for fuel element shipping, 22:47269
design for off-site shipment of radioactive isotopes, 22:43017 (DUN-4250)
design for radioactive material transport, 22:36020(P)
design for shipment of radiation sources, IAEA regulations for, 22:45590
design for shipping and storage of radioactive materials, 22:292
design for shipping and transfer of radioactive liquids, 22:30750(P)
design for shipping irradiated reactor fuels, 22:49049
design for shipping radioactive materials, 22:48991(P)
design for shipping radium, 22:47277
design for shipping spent fuel elements, 22:12564
design for shipping spent fuel elements from HNPF to Savannah River Plant, 22:45266 (NAA-SR-Memo-10549)
design for spent fuel elements, cost aspects of, 22:2321 (GAMD-7979)
design for spent fuel-rod transport, 22:36021(P)
design for thermal cooling during shipment of Chinon Reactor fuel elements, 22:293
design for transport of radioactive liquids, 22:47309(P)
design for transport of radioactive materials, 22:25630(P)
design for transporting radioactive objects, 22:19088(P)
design of expendable, for shipping low-level radioactive materials, 22:294
design of fire and shock resistant spent fuel shipping, 22:51210(P)
design of fire-protected, for shipping radioactive materials, 22:45268(P)
design of IAEA Types A and B, 22:28043
design of lead, for sterilization, storage, and threading of radium needles for therapy, 22:43340
design of lead-lined, for shipping radioactive materials, 22:51214(P)
design of lead-lined, for shipping radioactive materials, 22:291
design of multipurpose, for radioactive material storage and for use as an irradiation device, 22:48989(P)
design of six-element, for shipping HNPF irradiated fuel elements, 22:8254 (NAA-SR-12547)
design of variable volume, for storage of radioactive materials, 22:48993(P)
design requirements for irradiated fast reactor fuel element shipping, 22:42168 (BNWL-SA-2002)
design standards for safe radioactive material transport, 22:299
design, fabrication, and testing for uranium fuel element shipping, 22:30810 (KY-546)
fabrication of laminated uranium, for shipping fuel elements, economics of, 22:45264 (KY-D-2554)
fire resistance of radioisotope, at 800°C, 22:12496
handling in storage, design of mechanism for, 22:49057(P)
handling of 2.5 ton uranium hexafluoride, equipment design for, 22:14639
heating of shipping, mathematical approximation of effects of fire on, 22:47264 (CEA-R-3373)
lid removal from, remote handling equipment design for, 22:47272(P)
safety evaluation and testing of M-101 and M-102, for shipping uranium-235, 22:51207 (Y-DD-19)
shipping of radioactive, measurement of dynamic environment during, 22:284 (SC-RR-66-677)
structural integrity of BNL Shipboard Irradiator, methods for analysis of, (E), 22:8258 (ORNL-TM-2064)
temperature analysis of Peach Bottom Power Reactor Unit 1 fuel element shipping cask, 22:22690(R) (GA-8500)
testing for shipping radioactive materials, evaluation of IAEA specifications and facilities for, 22:45261 (EUR-3485(Vol.4))
testing for shipping radioactive materials, evaluation of IAEA specifications and facilities for, 22:45260 (EUR-3485(Vol.3))
testing of BNL Mobile Gamma Irradiator shipping, for compliance with US Federal regulations, 22:49047 (ORNL-TM-2178)
testing of cylindrical, for puncture resistance, 22:30796 (ORNL-TM-1312(Vol.3))
testing of laminated uranium, for shipping spent fuel elements, 22:45263 (KY-D-2553)
testing of large, for shipping highly radioactive isotopes, 22:49062
testing of shipping, methods for thermal, 22:42996 (NYO-2539-9)
testing of Type B, for shipping radioactive materials, 22:51200 (CEA-R-3372)

SHIELDING
(Shielding from specific radiations (particles) is treated at the specific radiation (particle) concerned)
see also Bulk Shielding Facility
see also Shielded Containers
see also Shielding Materials
see also Thermal Radiation Shielding
absorption probability in slabs, invariant imbedding equation for, (T), 22:52842
bibliography on, 22:29533 (AED-C-33-04)
bibliography on space and accelerator, 22:5398 (ORNL-RSIC-11(Rev.1))
book: Concrete in Shielding of Nuclear Installations, 22:29537
book: Dosimetry and Protection from Ionizing Radiation, 22:12650(T) (AD-663372)
book: Introduction to General Theory of Particle Transport, 22:22267
book: Physical Investigation of Reactor Shielding, in Russian, 22:33122
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Radiation and Shielding in Space, 22:9129
book: Small Scale Reactor Shielding, in Russian, 22:20965
buildup factors for, analytical solution of multilayer problem in, (T), 22:46196(T) (ORNL-tr-1949)
buildup of charged-particle component in, (T), 22:31887(T) (ORNL-tr-1912)
calculation for vehicle, considering infinite surface contaminated with radioactive materials, 22:41638
calculation methods for ducts and holes in, 22:31884 (ORNL-RSIC-20)
calculation of monoenergetic γ, for heavy and very heavy concretes, 22:31883 (JUL-509-ST)
calculation of requirements for, of rooms used for dental radiography, 22:19350
calculations for 400-MeV linear electron accelerator,

22:11485 (ORNL-4211)
calculations for fallout, graphical conversion equations for, 22:52838 (AD-662059)
calculations for fallout, using Monte Carlo method, 22:24374
calculations for gamma, by GAMMONE Monte Carlo program, 22:26448
calculations for high-energy mesons (μ), 22:29787 (UCRL-18117)
calculations for high-energy mesons (μ), for cylindrically symmetric shield and no magnetic fields, 22:50502
calculations for lead, for x radiation at electron beam welding installations, 22:44204
calculations for manned space vehicles exposed to solar flares, computer program for, 22:38651 (N-68-16008)
calculations for proposed 300-GeV proton synchrotron, 22:48388 (CERN/ECFA-67/16(Vol.2))
calculations for transmission probabilities in, self-optimized exponential biasing in Monte Carlo, 22:17721
calculations for, track-length distribution biasing in Monte Carlo deep-penetration, 22:17720
calculations from measurement of electromagnetic and nuclear cascades from electron reactions with matter at 6 GeV, 22:39147
calculations of anisotropic gamma scattering for slab geometry, energy-dependent transport theory for, 22:11488
calculations of neutron and γ, SABINE program for simultaneous, 22:26444
calculations on deep penetration in, simplified Monte Carlo approach to, 22:36959 (AI-Memo-64-152)
calculations on gamma, computer programs for growth functions in, 22:26449
calculations, GEISHA-II CDC 6600 code for use in space, 22:17716 (UCID-15284)
calculations, storage and retrieval of photon production and interaction data in ENDF/B system for, 22:26441 (LA-DC-9215)
composition of FFTF, 22:22804(R) (BNWL-685)
Compton scattering angle determination from its cumulative probability in Monte Carlo calculation, 22:13529(T) (ORNL-tr-1857)
computer calculations for solar cells exposed to Van Allen belt protons, 22:39148
computer program for photon-transport in, SORS for CDC-6600, 22:20035 (UCRL-50358)
computer program for, ATTOW, two-dimensional, 22:11486 (TRG-Report-1466)
computer programs for particle trajectories in complex geometry, 22:34735
concrete, fast neutron attenuation by normal, 22:49369
concretes for biological, classification of, 22:10013(T) (AEC-tr-6722)
concretes for radiation, properties of and specifications for aggregates for, 22:3155
conference on reactor, summary of, 22:53467
configuration of Aircraft Nuclear Propulsion reactor, use of computer programs for optimum, 22:50782 (APEX-918)
configuration of Phoebus 1B 360° open-well, effects on neutron flux and neutron and gamma doses of, 22:48722 (LA-3746)
configuration of power reactor primary and secondary, design requirements for, 22:53322
construction for sodium-cooled fast breeder reactors, 22:27435
construction of, computer programs for, 22:4381 (ABS-THH-1034)
construction principles for fast breeder reactors, 22:27434
cross section calculations for rocket reactor, POINT code for γ and neutron, 22:39852(R) (N-68-13502)
description of LITR, 22:25095 (ORNL-TM-1737)
description of parameters for design of, 22:3928 (FEI-68)
description of SGHWR, 22:18468
description of THTR, 22:27433
description of TRIKT-50 reactor, 22:25064 (DLR-MITT-66-07, pp 101-10)
design and fabrication of low-background lead, for scintillation detector, 22:16860
design and fabrication of, for radiation protection, 22:27450
design and testing of SNAP-23A, 22:33605(R) (WANL-3800-12)
design considerations for gamma scintillation spectroscopy, 22:8378
design for AARR, preliminary safety analysis of, 22:37526 (ANL-7448)
design for chlorine logging sonde, 22:52848(P)
design for efficient reduction of gamma dose to man from implanted plutonium-238 power source for circulatory assist device, 22:31069
design for neutron generator, 22:9769(P)
design for patients and personnel during medical radiography, 22:10780
design for plutonium-238-powered circulatory support system, 22:40318 (AGN-8258)
design for radiation protection during dental radiography, 22:15009
design for radiotherapy apparatus, partial body, 22:10821(P)
design for servicing equipment inside shielded housing, 22:4334(P)
design for testes of infants during x-radiodiagnosis, 22:8534
design for use of fast neutrons in therapy, 22:8551
design for whole-body counter for metabolic studies of laboratory animals, 22:6567
design of biological, for SNAP-21, 22:19045(R) (MMM-3691-26)
design of biological, for SNAP-21, 22:2309(R) (MMM-3691-23)
design of bulk, computer program based on removal diffusion model for, 22:3148 (EUR-3636)
design of concrete, for Hawaii Development Irradiator Facility, engineering drawings for, 22:40297
design of FFTF secondary gamma, requirements and feasibility of, 22:18558 (NAA-SR-Memo-12586)
design of lead, for portable generator for high-level radioactive aerosols, 22:23406 (LF-38, pp 88-91)
design of lead, for radiation protection of eyes of man during therapy, 22:15007
design of low-energy accelerator, review of problems in, 22:53393
design of marine reactor biological, calculational techniques for,, 22:14235
design of MCR removable, preliminary, 22:32916 (GMAD-3078-8(Vol.2))
design of MCR, use of Shield Spectrum Generator for, 22:32919 (GMAD-3078-22)
design of PEC Fast Test Reactor, drawings for, 22:30311(T) (ORNL-tr-1787(Vol.2))
design of portable radiation, use of iron sand in, 22:48988(P)
design of protective shelter, calculations for, 22:4393
design of reactor, optimization of parameters in, 22:14611
design of shadow bar for fast-neutron scattering experiments, 22:322
design of toroidal magnetic, for spacecraft, 22:5406
design of, for plutonium-238 power source for artificial heart, 22:31907
design parameters for fast liquid lithium-cooled space-power reactor, analysis of, 22:39860 (N-68-18197)
design parameters for PEC Fast Reactor, 22:30310(T) (ORNL-tr-1787(Vol.1))
development and evaluation for protective structures, 22:4386
development for Manned Orbital Research Laboratory, 22:246 (N-67-18580)
development of gas-cooled aircraft reactor, description of, 22:35581
development of steel-paraffin radiation, for reactor fuel reprocessing plants, 22:23247(T) (EURFNR-385)
development with remote-handling and remote-viewing equipment, 22:45574
development with remote-handling and remote-viewing equipment, 22:45587
distribution of space-vehicle, determination of optimal, 22:6075
doors for Stanford Linear Accelerator, design of heavy concrete, 22:14636
effectiveness of building, relation with roof washdown systems, 22:40344 (AD-668220)
effects on alpha dose to man from plutonium-238-powered artificial heart, 22:31275
effects on bone marrow cells of irradiated rats, 22:51950
effects on development and reproduction of fruit flies, 22:47591
effects on proton-radiosensitivity of dogs, head and stomach, 22:45552
effects on radiation dose at depth in tissues during therapy using combined intracavitary, intratissular, and external irradiation, filter, 22:49345
effects on recovery from fast neutron- and x-radiation injury in lens epithelium of mice and rabbits, 22:15063
effects on recovery process in x-irradiated mice, 22:31228
effects on thymus of rats, 22:40848
effects on x radiation dose to human gonads and skin, 22:47530
effects on x radiation dose to man during roentgenokymography, grid, 22:45573
effects on x-irradiated beagles in relation to location of body organs and systems, 22:33907 (UR-49-913)
effects on x-radiosensitivity of bone marrow cells in mice, partial-body, 22:23590 (BNL-12313)
effects on x-radiosensitivity of bone marrow of rats, 22:40850
effects on x-radiosensitivity of hematopoiesis in reticular tissues of mice, 22:12903
efficiency calculations for reactor biological, measured neutron and gamma intensity distributions for,, 22:14162
efficiency of boron-containing concrete, for accelerators, 22:46572 (JINR-P16-3936)
efficiency of concrete, for d--T neutron source, 22:35179
efficiency of Peach Bottom Reactor-1, full-power measurements of, 22:12023(R) (GA-8153)

electron and bremsstrahlung spectra from aluminum, from incident electrons at 4.0 and 8.2 MeV, 22:36961 (N-68-10702)
electron beams scattered by targets into, effects of, (T), 22:31895
electron transmission through thick layers of, fast, 22:41636(T) (ANL-Trans-608)
energy buildup factors in aluminum and iron, 22:31741
environmental effects on electromagnetic, of electronic equipment enclosures, 22:44203
evaluation of integrity and reliability of canned graphite, for EBR-2, (E), 22:46858 (ANL-7424)
exponential integral functions for, 22:1290
fabrication of biological, for SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
fabrication of cast iron, for Otto Hahn reactor, 22:27452
flux calculations for fast reactors, including effects of anisotropic elastic scattering, (T), 22:50510
fuel reprocessing installation, calculations for Karlsruhe, 22:5397 (NP-17030)
gamma and neutron attenuation in sodium, (E/T), 22:9409 (NAA-SR-Memo-12467)
gamma and neutron attenuation in, methods for calculating, (T), 22:32424 (DASA-1892-3)
gamma and neutron transport in complex geometries in, Monte Carlo program SOBER for, 22:9408 (DAC-60659)
gamma attenuation in multilayer, computer program for calculating, 22:13527 (EUR-2204)
gamma backscattering on, at 0.412 to 1.25 MeV, 22:11489
gamma buildup factors in stratified iron/water, (E), 22:13531
gamma buildup factors in two-layered, comparison of methods for determining, (T), 22:5404
gamma distribution functions for air scattering at 100 to 3000 keV, moments method calculation of, 22:5394 (EGG-1183-2163)
gamma dose buildup factor in shell-shaped, for cobalt-60 cylindrical source, 22:48143
gamma dose buildup factors for iron/water, 0.5- to 15-MeV, 22:13528(T) (ORNL-tr-1856)
gamma dose growth factors in layered iron/water, 0.5- to 15-MeV, (E), 22:3146 (ABS-THH-1029)
gamma dose growth factors in layered, calculation using computer program GAMMONE, 22:3147 (ABS-THH-1035)
gamma dose rate from neutron capture in, dependence on neutron energy, 22:36962 (ORNL-TM-2209)
gamma dose rate from point source scattered by semi-infinite plane surface, (T), 22:22195
gamma doses in single-compartment above-ground concrete structures, calculation of, 22:31889
gamma leakage through lead, measurement in JRR-4 of, 22:7924
gamma measurements in Siloette lead, 22:7898 (NP-17064)
gamma penetration of lead/water slab, V⁰ importance function in Monte Carlo calculation of, 22:52846
gamma penetration through multiple layers of, buildup factors for, (E/T), 22:52841(T) (ORNL-tr-1906)
gamma penetration through two-layer slabs of, calculation of, 22:31913
gamma reduction factors within multi-story structures, fallout, (E/T), 22:34728 (AD-661091)
gamma scattering in spherical and slab, of aluminum, (E), 22:3153
gamma slant penetration in finite-slab, probabilities for, (T), 22:31890
gamma transport codes, user's manual for BIGGI-3P and -4T, 22:5395 (EUR-3555)
gamma transport in multilaminar geometry, LETO computer program for, 22:1289 (WAPD-T-2057)
gamma transport in, discrete ordinates method for calculation of, 22:5396 (K-DP-2623)
gamma transport in, importance sampling in Monte Carlo calculations for, 22:31891
gamma transport in, polynomial approximation in moments method calculations of buildup factors for, 22:31892
gamma, SABINE computer program for, 22:26445
gamma, selection of proper lead for, 22:24369 (PINSTECH/PHY-9)
gamma-heating rates in AARR biological, calculation of, 22:7788(R) (ANL-7382)
gamma-ray and neutron transport in air-over-ground geometry, Monte Carlo calculation of time-dependent, 22:50214 (ORNL-4289(Vol.2))
gamma-ray transport equation for, Monte Carlo integration of adjoint, 22:48144
geometry factors for collimated beam, performance of ESTAKOS device in determination of, (E), 22:26450
heat generation in FTR axial cover and radial neutron, (T), 22:27460 (BNWL-634, pp 4.1-55)
heat generation rates in FTR, (T), 22:12086 (BNWL-472, pp 4.1-43)
kernel-diffusion analysis for, calculations of, 22:26440 (GEMP-599)
manual of computer programs for, Danish AEK user's, 22:17715 (RISO-M-663)
materials for FTR, 22:14250(R) (BNWL-470)
materials for reactor, properties of structural, 22:10013(T) (AEC-tr-6722)
measurements on γ and neutron, analysis for NERVA Reactor of, 22:32942
meson (μ), near high-energy electron accelerators, 22:32372
methods for neutron, of 800-MeV proton linear accelerator of Los Alamos Meson Physics Facility, 22:3557 (HASL-188)
mockup experiments on MCR, (E/T), 22:32922 (GMAD-3078-26)
mockup for FRG, design for experiments, 22:3904(T) (ORNL-tr-1522)
neutron and photon data for calculations on, ENDF/B, 22:13904 (LA-3801)
neutron attenuation by air ducts in, (T), 22:31910
neutron attenuation in nonhydrogenous--thin hydrogenous, 22:31908
neutron attenuation in uniform media, calculations using solution of inhomogeneous multigroup transport equation by Fourier transform technique, (T), 22:26761 (NIJS-R-520)
neutron attenuation in water and aluminum-water slabs, (E), 22:32447
neutron data storage, retrieval, and display system for, description of, 22:29832 (UCRL-50400(Vol.1))
neutron diffusion in slab-type, calculation of, 22:4383
neutron dose calculations outside proton accelerator, 22:20396
neutron doses and spectra from slab shields, fast, (E), 22:32442
neutron energy distribution in, high-energy, (T), 22:7337 (JINR-P16-3593)
neutron flux distribution in homogeneous or multilayer infinite one-dimensional, 4- and 18-group calculations of spherical harmonics for, 22:35675
neutron flux through FTR, comparison of ANISN and MAC codes analysis of, 22:27460 (BNWL-634, pp 4.1-55)
neutron fluxes and dose-equivalent rates in soil and concrete, for 0.5-TeV proton synchrotron, 22:46568 (HASL-199)
neutron penetration in thick iron slabs, Legendre polynomial expansion of scattering integral in Boltzmann equation for, (T), 22:22519 (BNL-12322)
neutron propagation in shields, effect of anisotropic scattering on, (T), 22:32441
neutron reactions with iron/polyethylene layer, gamma production in, (E/T), 22:5403
neutron reactions with, secondary gamma transport from, 22:5402
neutron reactions with, spinney's method for secondary gamma-ray calculations from, 22:5401
neutron removal cross section for lead slab as function of polyethylene thickness, fast, (T), 22:39555 (WAPD-TM-662)
neutron scattering in, calculation methods for, 22:48142
neutron spectra from accelerator, dose conversion from, (T), 22:31905
neutron spectra in plane water--iron--water shields, position-dependent, (T), 22:20424(T) (ORNL-tr-1849)
neutron spectra in, (T), 22:50213(R) (EUR-3913)
neutron streaming in concrete, fast, (E/T), 22:34731 (AD-665003)
neutron streaming in ducts of concrete, differential dose albedo calculation of, 22:31902
neutron transport in spherical assemblies, fundamental mode decay constant for, 22:20036
neutron transport in thin slab, inverse albedo problem for, 22:50217
neutron transport in, use of Markov transition matrices to calculate time dependence of, 22:31899
neutron transport through ducts and cavities in, modeling relationships in, 22:36958(R) (AD-663570)
neutron, cross-section requirements for, 22:18102
neutron, design of modular, 22:31886 (UCRL-18093)
optimization of form and structure of, Monte Carlo method for, (T), 22:5399
optimization, Monte Carlo calculation of radiation dose derivatives for, 22:11487(T) (ORNL-tr-1884)
particle flight-path intersection with wall of helical tubular duct, method for determining, (T), 22:41919 (N-68-18541)
particle stopping in, fast-moving, 22:29534(T) (UCRL-Trans-1367)
penetration in various geometries of, gamma-ray and neutron, 22:34733
performance analysis of materials for SNAP-21A, 22:28014(R) (MND-3322-7)
performance of Fermi Fast Breeder Reactor neutron and γ radiation, testing of, 22:44807 (APDA-221)
photon transport in thin slab geometry, approximate method involving successive scatters for calculation of, 22:31893
physical aspects of x-ray, 22:26443
physics measurements for alternate concept of 1.5 to 15 MW(e) MCR, analysis of optimum economic and technical, 22:50780 (GMAD-3078-20(Vol.4))
plasma radiation, for space vehicles, 22:26442
pool for RTS-1 Galileo Reactor, description of, 22:50825
positioning device for radiation, design of liquid-cooled, 22:47270(P)
properties of space craft, review of, 22:9416
proton reactions at 660 MeV with, flux and dose of secondary nucleons from, (E), 22:31912
proton reactions with concrete, neutron back-scattering from 660-MeV; (E/T), 22:3149 (JINR-P16-3514)

proton scattering at 325.7 MeV, multiple Coulomb, (E/T), 22:31903
radiation attenuation analysis in reactor, effect of temperature coupling on, (T), 22:30367
radiation attenuation calculations in rocket reactor, KAP-V point kernel code for, 22:39854(R) (N-68-13504)
radiation attenuation characteristics of FTR, (T), 22:12086 (BNWL-472, pp 4.1-43)
radiation attenuation in, method of calculation of, 22:26446
radiation diffusion and transport calculations in rocket reactor, TAPAT code for, 22:39853(R) (N-68-13503)
radiation distribution around mockup of Japanese nuclear ship primary, determination of gamma and thermal neutron, (E/T), 22:30279
radiation distribution calculations in rocket reactor, NAGS code for two-dimensional multigroup, 22:39857(R) (N-68-13507)
radiation distribution calculations in rocket reactor, DAFT code for angular, spatial, and energy, 22:39858(R) (N-68-13508)
radiation distributions in rocket reactor, ODD-K code for spatial and energy, 22:39856(R) (N-68-13506)
radiation dose behind space vehicle, relation of particle types and energies to, 22:41382 (N-68-22849)
radiation dose behind various thicknesses of, 22:41440 (N-68-16837)
radiation dose field behind steel, mixed, 22:34734
radiation dose passing through, (T), 22:5399
radiation dosimetry in concrete, γ and neutron, 22:6652 (ORNL-4168, pp 183-230)
radiation effects on SNAP-10 test facility, fast and thermal neutron, 22:3880 (NAA-SR-12504)
radiation flux distribution calculations in rocket reactor, FASTER code for energy dependent, 22:39859(R) (N-68-13509)
radiation intensity in laminated, (E), 22:50213(R) (EUR-3913)
radiation penetration in, computer program for neutron and gamma, 22:41637 (ORNL-4181)
radiation streaming around annular duct in, analysis of γ and neutron, (T), 22:42534
radiation transport calculations in rocket reactor, methods for γ and neutron, 22:39851(R) (N-68-13501)
radiation, bibliography on U.S.S.R, 22:50806 (ORNL-RSIC-23)
radiological quantities and units for, use of ICRU, 22:52840 (ORNL-RSIC-16)
radioprotective effects of bone marrow, on survival of rats, 22:49368
radioprotective effects of grid, on skin of man, evaluation of, 22:45571
radioprotective effects of lead sieve, on mice, x, 22:8542
radioprotective effects of low atomic number absorbers as, on tissues during electron therapy, x, 22:28615
radioprotective effects of partial, 22:10777
radioprotective effects of partial-body, on mice following tourniquet injury, x, 22:25978
radioprotective effects of partial-body, on rats following drum trauma, x, 22:25978
radioprotective effects of space vehicle, on astronauts during space flight, cosmic, 22:12858
radioprotective effects of spleen, on man exposed to atomic bombing at Hiroshima and Nagasaki, 22:21559
radioprotective effects of steel, to patient and personnel during diagnosis or therapy, x, 22:4624
radioprotective effects of thymus gland, on new-born mice, x, 22:36358
radioprotective effects of, against development of lymphomas in mice, x, 22:28642
radioprotective effects of, during therapy of uterine carcinomas, x, 22:10833
radioprotective effects of, of rat bone marrow on hematopoiesis, acute x, 22:49363
radioprotective effects of, on Apollo and Gemini space vehicles, solar flare, 22:2501 (AD-635204)
radioprotective effects of, on rate of reproduction in Drosophila melanogaster, 22:17045
reactivity worth of NERVA and PHOEBUS Reactor, method of calculation using Monte Carlo coupled transport calculations of, 22:32937
requirements for highly irradiated plutonium, 22:19669 (BNWL-624, pp 2.1-32)
requirements for low-energy accelerators, 22:53062
requirements for protection against electromagnetic pulses from nuclear explosions, 22:21185 (N-66-21731)
requirements for proton synchrotrons, Monte Carlo nucleon--meson cascade calculations for determining, 22:32379
requirements for spent fuel elements, computer program for calculating, 22:40356
requirements for stray radiation from accelerators, approximate method for calculating, 22:9718 (JINR-P16-3591)
requirements for stray radiation from accelerators, approximate method for calculating, 22:37232(T) (ORNL-tr-1916)
requirements for x-ray equipment used for dental radiography, 22:28488
requirements for, German Board for Metrology and Goods Testing, 22:52847
research on, at Geesthacht reactor station, (E/T), 22:50213(R) (EUR-3913)
review of spacecraft, 22:9415
Santa Maria de Garona Power Reactor, description of, 22:53288
space radiation, review of computer use and codes for, 22:9414
space vehicle, validity of straightahead approximation in, (T), 22:22198
space-flight, review of, 22:9413
space-flight, review of, 22:9412
temperatures during orbital pre-startup for SNAP-2, (T), 22:12076 (NAA-SR-Memo-8844)
testing of biological, for SNAP-21, 22:42973(R) (MMM-3691-35)
testing of biological, for SNAP-21, 22:36000(R) (MMM-3691-30)
testing of biological, for SNAP-21A, 22:23223 (MND-3322-25(Vol.2))
testing of various materials for epithermal, fast, and thermal neutrons and γ-radiation, 22:7925
testing radiation shelter, at Bren Tower facility, 22:4391
thicknesses of FFTF blast, 22:22804(R) (BNWL-685)
transport calculations for, biorthogonal system for, 22:24371
transport theory for, anisotropic scattering in, (T), 22:48140 (BMwF-FBK-68-12)
use for protection of man against radiation and magnetic fields during space flight, 22:33915
use of calcium hydroxide, in Hinkley Point 2 Reactors, 22:46969
use of concrete in radiation, 22:41138
use of hot-water layer and water spray for loading water-cooled reactor, description of, 22:44938(P)
use of intraoral, for reduction of absorbed dose during dental radiography, 22:51811
use of massive concrete and water, for reducing background of gamma detectors, 22:23259 (BNWL-SA-1516)
use of prestressed concrete for reactor containment structure, 22:3962(P)
use of water with agar-agar as biological, to minimize leakage, 22:3963(P)
weight minimization of MCR, synthesis techniques for, (T), 22:32930 (NDA-2143-15)
weight optimization for nuclear-powered space vehicles, 22:27454
weight optimization of layered water--lead--polyethylene--water, for 60 MW(e) reactor, (T), 22:26160
SHIELDING MATERIALS
(See also specific materials.)
calculations for concrete, thermal-neutron flux, epicadmium--neutron flux, and fast-neutron dose rate, 22:1288 (ORNL-4147)
dehydration testing of serpentine, 22:16271(R) (BNWL-666)
development for surface decontamination, 22:15003(T) (AD-662586)
development of flexible lead alloy--elastomer matrix, 22:43523(P)
development of laminated, 22:9417(P)
effectiveness of barytes bricks, leaded glass, and leaded rubber curtains as, for medical personnel, 22:51978
efficiency of boron-containing concretes as, for reactors, 22:25150
efficiency of concretes containing heavy minerals and steel balls, 22:14619
evaluation for SNAP-23A, 22:14679(R) (WANL-3800-9)
fabrication of loose unbonded dry crushed serpentine minerals of 1900 kg/m^3 density, for gamma radiation, 22:27511(P)
fabrication of resin-matrix, containing boron compounds, 22:15549(P)
gamma attenuation by, 22:3157
gamma attenuation by ordinary concrete, (T), 22:50215
gamma backscattering from aluminum, lead, and polyethylene, number and energy albedos for, (E), 22:17719
gamma buildup factor behind aluminum, 22:34737
gamma buildup factors for, moments method, 22:9411
gamma dose rate behind graphite, at 4.45 MeV, 22:22197
gamma heating in, from volume source, computer program for calculating, 22:24368 (LA-3573(Suppl.))
gamma-ray and neutron albedos in, 22:31885 (ORNL-RSIC-21)
gamma-ray transmission through slabs of iron and polyethylene, (E), 22:48145
ion beam penetration into shielding material, calculation including Coulomb, nuclear, and other stochastic processes, 22:45925 (UCRL-17392(Rev.))
neutron attenuation by, 22:3157
neutron dose rate attenuation by, (T), 22:31909
neutron penetration in lithium hydride, 22:31911
neutron reactions (n,γ) with, energy effects on gamma dose calculations, 22:31894
neutron reactions with iron, cascade propagation from, (E/T), 22:31904
neutron transport in, accuracy of two-dimensional discrete ordinates code for calculation of, 22:36960 (K-DP-3106)
neutron transport in, comparison of calculations and

- experiments on, 22:7338 (ORNL-TM-1965)
- neutron-attenuation lengths in all-concrete, iron-faced concrete, and uranium-faced concrete, (E), 22:31906
- penetration in various, gamma-ray and neutron, 22:34733
- performance of lead, lithium hydride, and uranium, for SNAP reactors, 22:2613 (NAA-SR-Memo-12440)
- photon reactions at 15 to 100 MeV in lead, electron--photon cascade from, (T), 22:9410 (ORNL-4192)
- preparation of cements and plasters for, 22:28905(P)
- preparation of, use of thermal plasma in, 22:15156
- production of tungsten alloy, 22:6953
- properties for use in thermoelectric generators, 22:42993
- properties of neutron, 22:7340
- proton reactions at 660 MeV with concrete, neutron yield from, 22:34736
- radiation effects on glass, fracture susceptibility from 200- to 300-kW electron, (E), 22:31888
- radiation effects on magnetic, for reactor beam holes, neutron, 22:12103
- radioprotective effects of, evaluation of fast neutron, 22:8551
- selection and arrangement of optimum, in reactor shielding, 22:14611
- selection for use near low-level laboratories, 22:780 (CERN-67-25)
- use of chalk and steel from ex-naval guns for low-background gamma spectroscopy facility, 22:51245 (RHEL/R-161)
- use of lead and polyethylene, for fast neutron dose rate determinations, 22:40663 (LA-DC-9418)
- x-ray attenuation in, 22:26443

Shims, Magnet
- see Magnets

Shims, Reactor
- see Reactor Control Elements

Ship Inboard Reactor
- see Submarine Intermediate Reactor

Shipboard Intermediate Reactor
- see Submarine Intermediate Reactor

SHIPPING
- accidents during radioactive material, evaluation of IAEA safety tests for prevention of, 22:45260 (EUR-3485(Vol.3))
- accidents during transport of radioactive materials, analysis of, 22:28053
- authority for radioactive materials, IAEA definition of role of competent, 22:28039
- book: Safe Transport of Radioactive Materials, 22:28058
- bottles for plutonium nitrate, evaluation of polyethylene, 22:45212 (ARH-SA-18)
- casks for irradiated fast reactor fuel assemblies, design requirements for, 22:42168 (BNWL-SA-2002)
- container and packaging design for uranium hexafluoride, 22:14745
- container design for radioactive isotope, 22:43017 (DUN-4250)
- container design for radioactive materials, 22:14744
- container design for SNAP-19 thermoelectric generator, 22:4354 (MND-3607-80)
- container for BNL Shipboard Irradiator, structural integrity of, 22:8258 (ORNL-TM-2064)
- container for fuel element, design and thermal testing of, 22:47269
- container for highly radioactive isotope, testing of, 22:49062
- container for HNPF fuel element, design of six-element, 22:8254 (NAA-SR-12547)
- container for irradiated reactor fuel, design of shielded, 22:49049
- container for plutonium-238, design and testing of, 22:43016 (DPSPU-67-30-9)
- container for radioactive liquid, design of, 22:30750(P)
- container for radioactive material, design and testing of, 22:25574 (RFP-1042)
- container for radioactive material, design of, 22:23251(P)
- container for radioactive material, design of fire-protected, 22:45268(P)
- container for radioactive material, design of lead-lined, 22:51214(P)
- container for radioactive material, structural analysis of BNL Mobile Gamma Irradiator, 22:49047 (ORNL-TM-2178)
- container for radioactive material, thermal testing of, 22:42996 (NYO-2539-9)
- container for radioactive materials, dynamic environment of, 22:284 (SC-RR-66-677)
- container for radioactive materials, fire shield structure with decay heat dissipation method for, 22:42956(P)
- container for radioactive materials, impact testing of, 22:40350 (NYO-2539-8)
- container for radium, design of reusable, 22:47277
- container for SNAP-21, design, fabrication and testing of, 22:42973(R) (MMM-3691-35)
- container for SNAP-21, dynamic testing of, 22:19045(R) (MMM-3691-26)
- container for spent fuel element, design of fire and shock resistant, 22:51210(P)
- container for spent fuel element, from HNPF to Savannah River Plant, criteria and design for, 22:45266 (NAA-SR-Memo-10549)
- container for uranium fuel element, design, fabrication, and testing of, 22:30810 (KY-546)
- containers for enriched uranium hexafluoride, economics and safety of, 22:282 (CONF-661011, pp 120-31)
- containers for fissionable material, design and testing of light-weight drum-type, 22:51206 (UCRL-14903(Rev.1))
- containers for fuel element, testing of laminated uranium, 22:45263 (KY-D-2553)
- containers for radioactive material, effects of fires on heating of, 22:47264 (CEA-R-3373)
- containers for radioactive material, evaluation of IAEA regulations for testing of, 22:45260 (EUR-3485(Vol.3))
- containers for radioactive material, evaluation of IAEA regulations for, 22:45261 (EUR-3485(Vol.4))
- containers for radioactive material, IAEA regulations for design and performance of, 22:45262 (EUR-3485(Vol.5))
- containers for radioactive material, puncture resistance testing of shielded, 22:30796 (ORNL-TM-1312(Vol.3))
- containers for radioactive material, testing of Type B shielded, 22:51200 (CEA-R-3372)
- containers for radioisotope, evaluation of IAEA regulations for Type A, 22:47307 (EUR-3485(Vol.2))
- containers for SNAP-19 power supply, design and testing of, 22:40325 (MND-3607-239-1)
- containers for spent fuel element, advantages and economic aspects of laminated uranium, 22:45264 (KY-D-2554)
- containers for spent fuel element, design and fabrication of laminated depleted uranium, 22:45265 (KY-F-96)
- containers for uranium-235, safety evaluation and testing of, 22:51207 (Y-DD-19)
- control of radioactive materials in USA, 22:281 (CONF-661011, pp 11-28)
- costs of spent reactor fuel elements, by rail and truck for 1000 miles, 22:2321 (GAMD-7979)
- equipment and methods for cobalt-60 radiation sources, 22:28009 (BNL-50099)
- hazards of radioactive materials, classification of, 22:28040
- improper labeling in radioactive material, 22:45269
- insurance and liability for radioactive materials, 22:28054
- method for large radiation sources, IAEA regulations on, 22:28044
- method for radioactive materials, International Air Transport Association regulations on, 22:28047
- methods for low specific activity materials, IAEA regulations on, 22:28045
- methods for pyrophoric uranium materials, 22:51567(R) (IN-1205)
- methods for radioactive materials, 22:296
- methods for radioactive materials and films, IAEA segregation distance recommendations, 22:28046
- methods for radioactive materials in RID, implementation of IAEA, 22:28048
- methods for radioactive materials, IAEA package design for use in, 22:28043
- methods for radioactive materials, IAEA regulations on, 22:28046
- methods for uranium feed materials, 22:295
- packaging design and testing for radioactive materials, 22:289
- packaging design for Chinon Reactor fuel elements, 22:293
- packaging design for radioactive material, 22:288
- packaging design for radioactive materials, 22:292
- packaging design for radioactive materials, 22:291
- packaging design for radioactive materials, 22:290
- packaging for radioactive materials, design of, 22:30813
- packaging for radioactive materials, design of expendable, 22:294
- packaging methods for radioactive materials, IAEA regulations on, 22:28042
- packaging of radioactive materials for, German regulations for, 22:40355
- procedures for spent fuel elements of JRR-2, 22:6035
- radiation effects on quality of oranges for, low-dose, 22:49662(R) (ORO-3097-17)
- radiation monitoring of radioisotopes during, 22:45567
- radioisotope, IAEA regulations for, 22:17025
- railway for, use of explosives in construction of Abakan--Taishet, 22:44966(T) (UCRL-Trans-10255)
- regulations for radioactive compounds in U.S.S.R, 22:6810(T) (AEC-tr-6467/2(pp 143-76))
- regulations for radioactive material on roads in Europe, 22:12863
- regulations for radioactive material, economic effects of international, 22:23249
- regulations for radioactive material, in East Germany, 22:285 (SZS-10/67)
- regulations for radioactive materials in Scotland, 22:8328 (NP-17195)
- regulations for radioactive materials in Sweden, 22:17026
- regulations for radioactive materials in U.S., implementation of IAEA, 22:28049
- regulations for radioactive materials in United Kingdom, IAEA, 22:28050
- regulations for radioactive materials, IAEA, 22:28056

regulations for radioactive materials, in France, IAEA, 22:28051
regulations for railroad, of radioactive materials, 22:298
regulations for safe, of radioactive materials, 22:299
regulations for spent reactor fuel elements, 22:12564
regulations of IAEA for international, of radioactive materials, 22:45589
regulations of IAEA for radiation sources, 22:45590
regulations on radioactive materials in Canada, 22:28052
requirements for fissile materials, IAEA, 22:28041
standards for SNAP-27, emergency radiological control, 22:49027 (NUS-301(Vol.2))
standards for SNAP-27, routine radiobiological control, 22:49026 (NUS-301(Vol.1))
system for Nerva Rocket, rail, 22:4323
system for Nerva Rocket, rail, 22:4322
vehicle design for radioactive materials, 22:297
vehicles for, vibration testing of cargo on, 22:21005 (SC-DR-67-3003)

SHIPPINGPORT PRESSURIZED-WATER REACTOR
control elements in Core 2 Seed 1 of, effects of xenon burnup on position of, 22:20824 (WAPD-MRP-123)
control rods from Core 1 of, isotopic composition, corrosion resistance, tensile properties, and fatigue life of hafnium, 22:32812
coolant chemistry for, tabular summary of, 22:14133(R) (DLCS-5000367)
cooling system of, effects of pH and power level on ammonia addition rates in, 22:20824 (WAPD-MRP-123)
core 1 for, examination of Inconel-X blanket holding springs for, 22:14147(R) (WAPD-MRP-122)
Core 2 for, design characteristics of mechanical structures and fuel elements for, 22:39791 (WAPD-296)
core 2 for, performance of, 22:14133(R) (DLCS-5000367)
core 2 seed 1 for, fission product analysis of, 22:14133(R) (DLCS-5000367)
Core 2 Seed 1 for, physics measurements and calculations for, 22:46924(R) (WAPD-MRP-125)
core for, permissible power levels for extended life of, 22:14147(R) (WAPD-MRP-122)
core for, use of TNT02 computer code for lifetime behavior analysis of, 22:12036 (WAPD-TM-637)
core system for, description of hydraulic model studies of, 22:37406 (BNWL-518(Del.))
criticality of Core 2 Seed 1 of, effects of xenon burnup and control rod position on, 22:20824 (WAPD-MRP-123)
fuel assemblies for Core 2 Seed 2, analysis of structural integrity of, 22:46924(R) (WAPD-MRP-125)
fuel assembly of, performance during October to December 1967 of Core 2, 22:18359(R) (DLCS-5000467)
fuel cycle efficiency for, analysis of, 22:7826
fuel elements for Core 2 Seed 2 of, burnup analysis of, 22:20824 (WAPD-MRP-123)
fuel elements for Core 2 Seed 2 of, fabrication of, 22:20824 (WAPD-MRP-123)
fuel elements for Seed 2, radiation effects testing of, 22:46924(R) (WAPD-MRP-125)
fuel elements of, plutonium and uranium isotopic distribution in irradiated uranium oxide (UO_2), (E/T), 22:20943
fuel reprocessing for, 22:2172 (ISO-SA-46)
fuel reprocessing for, 22:33529
fuel samples from, heavy nuclide formation in, 22:19669 (BNWL-624, pp 2.1-32)
maintenance during April to June 1968, description of, 22:46862(R) (DLCS-5000268)
maintenance during October to December 1967, 22:18359(R) (DLCS-5000467)
neutron flux distribution measurements in Core 2 of, epithermal and thermal, 22:20824 (WAPD-MRP-123)
neutron flux distributions in Core 2 Seed 1 of, measurement of effects of xenon buildup on, 22:39792 (WAPD-PWR-TE-207)
operation during April to June 1968, description of, 22:46862(R) (DLCS-5000268)
operation during January to April 1968, description of, 22:32789(R) (WAPD-MRP-124)
operation during October 1967 to January 1968, 22:20824 (WAPD-MRP-123)
operation during October to December 1967, description of, 22:18359(R) (DLCS-5000467)
operations and performance during April to July 1967, 22:3819(R) (DLCS-5000267)
operations history for July 1-Sept. 30, 1967, 22:14133(R) (DLCS-5000367)
operations history of, 22:14147(R) (WAPD-MRP-122)
operations history of, 27 April 1968 to 26 July 1968, 22:46924(R) (WAPD-MRP-125)
operations history of, total, 22:1821
performance during October 1967 to January 1968, 22:20824 (WAPD-MRP-123)
performance of Core 1 and Core 2 in, effects of hot-channel factor analysis on, 22:22727
pressurizer performance during load loss for, comparison of results from TOPS computer program and experiment on, 22:18480
radiation testing of core 2 for, γ and neutron, 22:16163 (WAPD-PWR-TE-204)
radioactivity content of environment at, during 1965, β, 22:28522
refueling equipment for, description of, 22:14147(R) (WAPD-MRP-122)
steam generator for, ultrasonic inspection of tubes for, 22:46924(R) (WAPD-MRP-125)
steam generators for, wall thinning surveillance of, 22:14147(R) (WAPD-MRP-122)
xenon stability analysis of, application of spatial stability criteria to, 22:32883

SHIPS
see also Merchant Vessels
book: Power Plants for Icebreakers (In Russian), 22:6069
damage from land and sea nuclear explosions, 22:47262
effects on radioactivity content of air, milk, oysters, rain, seawater, and silt in Galveston during 1965, nuclear powered, 22:28459
facilities for Japanese nuclear-powered, harbor, 22:42954
hull structures of, guide for radiographic testing of welds in, 22:19077 (AD-639053)
operating experience of Soviet icebreaker Lenin, 22:10053(T) (JPRS-43550)
radioactivity monitoring in environs of construction and operation sites for nuclear powered, 22:51570 (NP-17401)
reactors for, description of various types of, 22:46981(T) (JPRS-46321)
regulations for radioactive waste disposal from nuclear powered, and support facilities, AEC and ICRP, 22:28457
water desalination plants for, design and performance of, 22:10161(T) (AEC-tr-6909)

SHIRLEY BASIN AREA (WYO.)
sandstone from roll-type uranium deposits in, analysis of, 22:27929
uranium ore mining at, using in-place leaching, 22:40275

SHOCK
see also Impact Shock
see also Thermal Shock
effects on x-radiosensitivity of electrical activity in cerebral cortex of dogs, traumatic, 22:43449
equation-of-state calculations, numerical problems with Grueneisen ratios in, 22:26453 (UCRL-70670(Rev.1))

SHOCK TUBES
book: Physical Processes in Electromagnetic Shock Tubes, 22:46158
coupling to mass spectrometers, optimized geometry for, 22:22936 (TID-23214)
current measurement from ionized flow to flat plate in, 22:5326 (SC-CR-67-2748)
current sheet dynamics in inverse pinch, (E), 22:26398
description of helium/air, 22:2316 (IITRI-578-P-21-22)
design for measuring attenuation of shock waves, 22:37906 (ORNL-4288)
design for plasma studies, 22:9384
design of oxygen--propane driven four-inch, producing 400 psi, 22:25626 (ORNL-TM-2094)
expansion processes in, probe analysis of, 22:1220
gas flow in boundary layer of, MHD, 22:24105
gas flow in electromagnetic, MHD properties of, 22:26284
magnetohydrodynamic, effect of magnetic-field extension on end effects in, (T), 22:17451
pinch effects in magnetically driven, with parallel-plate electrodes, (T), 22:48102 (RISO-176)
plasma diagnostics in electric, spectroscopic, (E), 22:13449
plasma diagnostics in electromagnetic, magnetic probes for, 22:13443
plasma diagnostics in high-pressure, spectroscopic, 22:36897
plasma ionization time measurement in, using Langmuir probes, 22:31794
plasma properties in electromagnetically-driven, 22:3016 (IPP-3/58)
plasma rarefaction waves in, theory of, 22:3074
properties of electromagnetically-driven T-shaped, (E), 22:34682
rare gas ionization in low-pressure, analysis of profiles for, (T), 22:29288
testing with heavy gases, Thunderpipe technique for, 22:4306 (SCL-DR-67-49)
use for high-temperature plasma production, 22:31863
use for MHD power generation, 22:47866
use for nondestructive testing of thick quartz transducers, 22:7965 (SC-TM-67-807)
use in molecular beam production, 22:936 (AGARD-CP-12(Vol.1), pp 377-410)
use in study of high-temperature ultrarapid chemical kinetics, 22:929 (AGARD-CP-12(Vol.1), pp 147-64)
use of cold-gas, for analysis of shock-front irregularities, 22:1933 (SCL-DR-67-88)

SHOCK WAVES
see also Detonation Waves
see also Impact Shock
see also Seismic Waves
absence of lunar bow and wake, (T), 22:31549
analysis of, in three-zone explosion model, 22:12460 (NVO-1163-78)
attenuation and propagation of ground, in Pre-Gondola I cratering site calibration tests, 22:197 (PNE-1104)
attenuation by foam, calculation of, 22:4307 (SCL-DR-67-115)
calculation for detached, by second-order finite

differences, 22:17837
chemical reactions in, review of Soviet research on, 22:12343(T) (JPRS-44048)
damage to structures and equipment from nuclear explosion, empirical method for prediction of, 22:27943 (TID-24483)
decay in plasma, properties of MHD, (T), 22:9351
Doppler shift of radiating layers in collisionless, (T), 22:7085
effects of impinging, on heat transfer and pressure distribution on blunt bodies in hypersonic flow, 22:49015 (FFA-115)
effects of nuclear explosion, on cabinet-stored electronic equipment in buildings, 22:51197
effects of nuclear explosion-produced, on fire-service operations, 22:47305 (CONF-680527-1)
effects of winds on atmospheric, from nuclear explosions, 22:30725
effects on argon--hydrogen and argon--hydrogen--oxygen mixtures, rate of hydrogen atom formation from, (E), 22:43904
effects on cavity formation in granite in Piledriver Event, 22:19001 (UCRL-50373)
effects on compression of benzene, carbon disulfide, carbon tetrachloride, and liquid nitrogen, Hugoniot data on, 22:27624 (LA-3915)
effects on elastic-perfectly plastic half-space, computer program for calculating, 22:6550 (NP-17183)
effects on electric conductivity of air--Teflon mixtures, (E), 22:1208
effects on electron temperature in plasma, (E), 22:1235
effects on gases, measurement of ionization rate from heating, 22:44087 (IPP-3/70)
effects on high-rise buildings, computer program for three-dimensional dynamic analysis of, 22:45259 (JAB-99-36)
effects on ignition of argon--carbon monoxide--hydrogen--oxygen systems, 22:25214 (LA-DC-9245)
effects on personnel in coniferous forests following TNT explosion, 22:43348 (AD-666822)
effects on porous solids at 300 to 17000 psi, 22:2316 (IITRI-578-P-21-22)
electromagnetic wave interaction with ionizing, (T), 22:5242
energy deposition by flare-generated, in solar wind, (E/T), 22:41267
flow of ionized air past cylinders and spheres, zone light in, 22:15402
flow of oblique, in gravitational fields, 22:1499
formation and propagation in solar atmosphere, (T), 22:26182
formation of molecular hydrogen by, in interstellar clouds, (T), 22:4949
gas parameters behind, calculations for hydrogen and nitrogen, 22:46181
generation in chromosphere and corona, 22:8985
generation of atmospheric, by nuclear explosion, (T), 22:11337
generation of detonation in granular explosives by, (E/T), 22:14408(T) (LA-tr-68-2)
generation of ground, by low altitude nuclear explosions, 22:47248
ground motion from, from large yield surface detonations, 22:27941
interactions between oblique, and a supersonic body, (E), 22:14392 (SC-CR-67-2533)
interactions of, solution of Navier--Stokes equations for, 22:17835
interactions with air and argon, ion density profiles in, 22:1221
interactions with air, electron density behind reflected, 22:34626 (AD-661805)
interactions with air, electron distributions and collisions in, 22:1197(T) (AD-653513)
interactions with air, emission spectra peaks from, 22:5377
interactions with air, ionization relaxation behind, 22:41611
interactions with air, velocity profiles behind, (T), 22:26428
interactions with argon and helium, properties of, 22:13453
interactions with argon plasma, boundary layer structure in flowing, 22:3118
interactions with argon, electron density measurements in, 22:9287
interactions with argon, electrophysical properties of, 22:5331
interactions with argon, ionization and nonequilibrium radiations from, (T), 22:24356
interactions with argon, ionization properties of, (T), 22:50197
interactions with argon, ionization rates and collision cross sections in, (E), 22:52777
interactions with electromagnetic fields, properties of, (E), 22:34682
interactions with gases in electromagnetic fields, ionization processes in, (T), 22:20024
interactions with gases, electric field ahead of, (E), 22:26399
interactions with gases, magnetohydrodynamic wave formation behind, (T), 22:20000
interactions with gases, magnetohydrodynamic wave modes behind, (E), 22:19970 (NP-17347)
interactions with gases, magnetohydrodynamic wave modes in ionizing, 22:17686
interactions with gases, maximum emissions from, 22:5378
interactions with gases, vorticity and current density behind, 22:9150
interactions with isothermal hydrogen--helium, radiations from, 22:34709
interactions with magnetoplasma, electron heating in, 22:3013
interactions with magnetoplasma, turbulent heating in, (E/T), 22:1135 (LA-3770, Paper B8)
interactions with nonequilibrium plasma, electron density and temperature in, 22:9293
interactions with plasma, electron distribution in, (T), 22:36925
interactions with plasma, ion density and electric field perturbations from, (T), 22:20001
interactions with plasma, isomagnetic jump in front of strong, (E), 22:24292
interactions with plasma, properties of, 22:52767 (AD-669572)
interactions with plasma, properties of, (E/T), 22:39055(R) (AD-664342)
interactions with plasma, summaries of conference papers on, 22:7313
interactions with plasma, turbulent, (T), 22:52774 (MPI-PAE/PL-6/68)
interactions with rare gases, radiations from, (E), 22:26430
interactions with xenon and xenon--neon mixtures, thermal ionization in, 22:3129
magnetic field effects on, in magnetodynamic tubes, transverse, (E), 22:34348
magnetohydrodynamic, jump conditions across transverse ionizing, (E/T), 22:34346
magnetohydrodynamic, relation of compressibility hypotheses to, (T), 22:36790
magnetohydrodynamic, vorticity and current density behind, 22:21989
measurement from June 1967 Chinese nuclear explosion, 22:194
parameters behind, in interstellar gas--dust mixtures, (T), 22:13107
particle acceleration by, Fermi, (T), 22:8898
pressure measurements in high noise environments, design of etched manganin gage for, 22:45365
production and propagation of, from nitromethane single charge detonation in rhyolite rock, 22:42924 (PNE-512-F)
production by solar wind interactions with moon, 22:1060
production in coaxial plasma accelerators, properties of, 22:1191 (LA-3770, Paper E8)
production in current sheets in inverse pinch MHD shock tubes, (T), 22:24107
production of OH in interstellar space by, (T), 22:13123
propagation at large distances through atmosphere, (E/T), 22:47259 (SC-DC-2342)
propagation from underground nuclear explosions, public health hazards from, 22:2261 (CONF-671029-1)
propagation in 4-in. pipe, effects of baffles and wall roughness on, 22:37906 (ORNL-4288)
propagation in atmosphere and seawater near ocean surface-located nuclear explosions, mathematical analysis of, 22:21220
propagation in degenerate electron gases, (T), 22:17338
propagation in envelopes of hot and giant stars, (T), 22:31585
propagation in gas--dust media, (T), 22:43802
propagation in gravitational fields, 22:1498
propagation in hard and porous rocks and rock salt, calculation of, 22:47257 (UCRL-13357)
propagation in high beta plasma, destruction of, 22:9302 (CLM-R-74)
propagation in inhomogeneous cosmic medium, (T), 22:821
propagation in magnetoplasma, properties of collisionless, 22:52796
propagation in magnetoplasma, properties of collisionless, (T), 22:15535
propagation in plasma, with anomalous friction, 22:9303 (IPP-1/72)
propagation in seawater, from explosion of pressurized spheres at ocean surface, 22:21219
propagation in solar wind of flare-produced, (T), 22:41286
propagation in spherically symmetric exponential atmospheres, (T), 22:36933
propagation in two-phase flow, effects of flow regime on velocity of, (E/T), 22:33181
propagation of imploding, nonlinear, (T), 22:3014
propagation of quasi-, in electron beams, 22:48402
propagation of self-similar, from nuclear explosions, (T), 22:9231
propagation of strong, in krypton, electron precursor phenomena in, (E), 22:21231 (BMwF-FBK-67-68)
propagation through deuterium--tritium gases, structure in, (T), 22:19988
propagation through high-density stellar plasmas, (T), 22:2738
propagation through porous carbon, (E/T), 22:11073 (SC-

    RR-66-2624)
  propagation through rocks, Ester data summary of, 22:47256 (UCID-5034)
  propagation through rocks, use to determine Hugoniot equation of state, 22:174
  propagation through the solar wind, (E), 22:13334
  propagation through two-phase media, mechanisms of, 22:4325
  properties of MHD, with discontinuous electric conductivity, (T), 22:9352
  properties of normal ionizing alfvenic, (E), 22:34632 (AD-663212)
  properties of normal ionizing, (E), 22:36950
  properties of nuclear explosion-generated, computational disc method for visual determination of, 22:30741
  protection from high-explosive, design of polycarbonate resin-backed glass shields for, 22:3972 (LA-3769)
  radiation transport calculations for blunt-body layer, 22:31821
  radio emission from, in rarefied plasma, (T), 22:7086
  reflection in gases, microwave measurement of electron temperature behind, 22:36890
  reflection in plasma, electron density separation from current sheet in, (E), 22:36926
  reflection of strong, by magnetic field lattice, (E), 22:52616
  response of shell structures to, calculation of dynamic, 22:3981 (SC-DC-67-1923)
  shock-front irregularities of, use of cold-gas shock tube for analysis of, 22:1933 (SCL-DR-67-88)
  structure behind moon, 22:2953
  structure in air and argon discharge plasma, (E), 22:22159
  structure in argon plasma, nonequilibrium, (T), 22:13504
  structure in argon, (T), 22:17687
  structure in argon, nonequilibrium, (T), 22:13494
  structure in argon--helium plasmas, 22:52766 (AD-669570)
  structure in binary gas, (T), 22:3122
  structure in magnetized hydrogen plasma, oblique hydromagnetic, 22:36917 (ORO-3647-3)
  structure in oblique magnetic field and transverse electric field, flow patterns, (T), 22:52609
  structure in plasma, research on collisionless oblique, (E), 22:24282(R) (ORO-3647-2)
  structure in plasma, unified profile, (T), 22:9337
  structure in Q devices, 22:19993
  structure in rarefied plasma, (T), 22:7086
  structure in rarefied plasma, theory of, 22:5372
  structure in solar wind, double, (T), 22:2939
  structure in weakly ionized plasma, (T), 22:26397
  structure of hydromagnetic, in H I regions, (T), 22:21823
  structure of magnetohydrodynamic, (T), 22:24108
  structure of MGD, in medium containing cosmic rays, 22:45970
  structure of oblique collisionless, in plasma, (E), 22:9306(R) (ORO-3647-1)
  structure of quasi-stationary magnetohydrodynamic, in plasma, (E), 22:29480(T) (NP-tr-1643)
  structure of quasi-steady oscillating magnetohydrodynamic, (T), 22:22158
  structure of reflection process in ionizing xenon, (E/T), 22:52776
  structure of strongly ionizing, in electromagnetic fields, 22:50181
  structure of weak, in fully ionized plasma, (T), 22:26402
  temperature distributions behind detached, nonadiabatic, 22:3101
  temperature of stellar, effective, (T), 22:8986
  theory of low-intensity, in nonviscous MHD liquids, 22:9160
  thermodynamic data on condensed media, compendium of, 22:18741 (UCRL-50108(Vol.1)(Suppl.1))
  thermodynamic data on condensed media, compendium of, 22:18742 (UCRL-50108(Vol.2)(Suppl.1))
  use in cladding steel with molybdenum, tantalum, or titanium, 22:19504
  velocity and current density in z-pinch plasmas, 22:39097
  velocity in crossed electromagnetic fields, 22:36946
SHOREHAM POWER REACTOR, UNIT 1
  accident analyses for, 22:39764 (DOCKET-50322-4)
  containment systems for, preliminary safety analysis of, 22:39763 (DOCKET-50322-3)
  control rods for, design for drive system for, 22:39765 (DOCKET-50322-5)
  control systems and instrumentation system for, preliminary safety analysis of, 22:39763 (DOCKET-50322-3)
  cooling system for, preliminary safety analysis of, 22:39762 (DOCKET-50322-2)
  core for, preliminary safety analysis of, 22:39762 (DOCKET-50322-2)
  core for, thermal design of, 22:39765 (DOCKET-50322-5)
  core spray cooling system for, design of, 22:39765 (DOCKET-50322-5)
  design for, revised information on all systems, 22:50727 (DOCKET-50322-6)
  electrical power systems for, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  emergency and auxiliary systems for, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  Emergency Core Cooling Systems for, preliminary safety analysis of, 22:39763 (DOCKET-50322-3)
  engineered safeguards for, preliminary safety analysis of, 22:39763 (DOCKET-50322-3)
  license application for, 22:39761 (DOCKET-50322-1)
  operation of, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  pumps for, development program for jet, 22:39765 (DOCKET-50322-5)
  radioactive waste systems at, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  shielding for, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  site for, preliminary safety analysis of, 22:39762 (DOCKET-50322-2)
  site for, seismologic analysis for, 22:39765 (DOCKET-50322-5)
  steam and power conversion systems for, preliminary safety analysis of, 22:39764 (DOCKET-50322-4)
  technical specifications for, proposed outline of, 22:39765 (DOCKET-50322-5)
Showers
    see Cascade Showers
SHREWS
  hormone secretion by thyroid of, determination of rate of, 22:21404 (COO-301-150)
SIALIC ACIDS
  synthesis in Chinese hamster cells, 22:53498 (LA-3848, pp 11-20)
Siam
    see Thailand
Sickness
    see Diseases
Siderophilin
    see Transferrin
Siemens Reactor (MZFR)
    see MZFR (Siemens Reactor)
SIERRA LEONE
  granites of, argon/potassium method for age estimation of, 22:6435 (MIT-1381-15)
Sieves
    see Screens
Sight
    see Vision
SILANE, CHLORODIMETHYL-
  chlorodimethylsilane--ethylene, radiolysis of, 22:21091 (JLI-3655)
Silage
    see Animal Feeds
SILANE
  effects on yields in fast neutron radiolysis of germanium hydride, 22:48874(R) (COO-1713-5)
  radiolysis of, yields of silicon-31-labeled products in thermal neutron, spectral studies on, 22:48874(R) (COO-1713-5)
  PH_3--SiH_4, radiolysis of, yields of silicon-31-labeled products in fast neutron, 22:48874(R) (COO-1713-5)
SILANE, CHLOROMETHYL-
  radiolysis at 77°K, EPR studies of free radicals formed by, 22:30633
SILANE, DIMETHYL-
  dimethylamine--dimethylsilane, radiolysis of, 22:21091 (JLI-3655)
  dimethylsilane--ethylene, radiolysis of, 22:21091 (JLI-3655)
  dimethylsilane--methylpropene, radiolysis of, 22:21091 (JLI-3655)
SILANE, DICHLOROMETHYLVINYL-
  radioinduced polymerization of, spectral studies on products of γ, 22:12379
SILANE, DIETHYLVINYL-
  radioinduced polymerization of, spectral studies on products of γ, 22:12379
SILANE, FLUOROTRIPHENYL-
  radiation effects on, ESR spectral studies on, 22:18806(R) (COO-1385-21)
SILANE, METHYL-
  radiolysis of, 22:21091 (JLI-3655)
  reactions with recoil tritium, 22:37789
  spectra of, effects of deuterium on infrared, 22:16501
  ethylene--methylsilane, radiolysis of, 22:21091 (JLI-3655)
  H_2O--methylsilane, radiolysis of, 22:21091 (JLI-3655)
  methane--methylsilane, radiolysis of, 22:21091 (JLI-3655)
  methylsilane--NH_3, radiolysis of, 22:21091 (JLI-3655)
SILANE, TETRAFLUORO-
  force fields of, effects of silicon-28, -29, and -30 on, 22:42682
SILANE, TETRAMETHYL-
  reactions with recoil tritium, 22:37789
SILANE, TETRAPHENYL-
  radioinduced recoil reactions in, 22:25376(R) (PRNC-114)
SILANE, TRICHLORO-
  determination in hydrogen--trichlorosilane mixture by x-ray absorption method, 22:33275
  H--trichlorosilane, analysis for trichlorosilane by x-ray absorption method, 22:33275
SILANE, TRICHLOROVINYL-
  radioinduced polymerization of, spectral studies on

products of γ, 22:12379

SILANE, TRIETHOXYVINYL-
radioinduced polymerization of, spectral studies on products of γ, 22:12379

SILANE, TRIETHYLVINYL-
radioinduced polymerization of, spectral studies on products of γ, 22:12379

SILANE, TRIFLUORO-
deuterium isotope effects on centrifugal distortion constants of silicon-28-labeled, 22:16496

SILANE, TRIMETHOXYVINYL-
radioinduced polymerization of, spectral studies on products of γ, 22:12379

SILANE, TRIMETHYL-
reactions with recoil tritium, 22:37789

SILANE, TRIPHENYL-
radiation effects on single crystals of, ESR spectral studies on radicals produced by, 22:18806(R) (COO-1385-21)
radioinduced additions of, to simple alkenes, 22:10292
radioinduced recoil reactions in, 22:25376(R) (PRNC-114)

SILANE, TRIPHENYLPHENOXY-
solvolysis in hydroxylic solvents, effects of deuterium on, 22:27724

Silica
see Silicon Oxides

Silicate Glass
see Glass

SILICATE ROCKS
see also Nepheline Syenites
analysis for cesium and cobalt by neutron activation using fast coincidence counting technique, 22:27548
analysis for trace amounts of rare earths and thorium, spectrographic, 22:22951
analysis for zirconium by x-ray fluorescence, 22:27605
meson (μ) reactions in, production of aluminum-26 in, (E), 22:31665
separation of alkali metals from, ion exchange, 22:37866

SILICATES
see also Alkali Metal Silicates
see also Aluminum Silicates
see also Barium Lead Silicates
see also Beryllium Aluminum Silicates
see also Calcium Aluminum Silicates
see also Calcium Silicates
see also Calcium Zinc Silicates
see also Cesium Aluminum Silicates
see also Coffinites
see also Ethyl Silicates
see also Glauconites
see also Hornblende
see also Iron Silicates
see also Lead Silicates
see also Lithium Aluminum Silicates
see also Lithium Silicates
see also Magnesium Silicates
see also Olivines
see also Potassium Silicates
see also Sodium Aluminum Silicates
see also Sodium Silicates
see also Sodium Zinc Silicates
see also Zinc Silicates
see also Zirconium Phosphate Silicates
see also Zirconium Silicates
analysis for aluminum and silicon by neutron activation method, 22:40038
analysis for beryllium by atomic absorption spectrophotometry, 22:27536 (NIM-138)
analysis for beryllium by atomic absorption spectrophotometry, 22:27543 (NIM-173)
analysis for hafnium and tantalum by neutron activation methods, 22:44985
analysis for iron by neutron activation methods, 22:4018
analysis for potassium and sodium by flame photometry, 22:22960
analysis for quartz by volatilization with hydrofluoric acid, 22:21029 (SC-M-67-3044)
analysis for silicon and 14 metals, spectrometric, 22:22960
analysis for zinc, anodic stripping voltammetric method for, 22:9(R) (NBS-TN-425)
analysis of inclusions of, in iron meteorites, (E), 22:21797
book: Continuous Compilation of New Reference Data on Diffusion Processes in Inorganic Solids and Their Melts, Vol. 1, No. 1, 22:31381
content in clay minerals in lake sediments, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
content of plants in Puerto Rico, 22:22904 (PRNC-104, pp 90)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
effects on corrosion of Zircaloy by steam, 22:28736 (KAPL-M-6748)
effects on determination of fluorides by thermometric titration, 22:4039
iron site positions in amphibole by Moessbauer effect, (E), 22:7377
properties as heat-resistant coatings, 22:49835
radiation effects on glasses of, 22:35837
radioactive waste fixation in, by thermite process, 22:6371
radioinduced color centers in glassy, mechanism of, 22:30606
radioinduced color centers in glassy, spectral studies on uv and x, 22:50995
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)

SILICIDES
see also Barium Silicides
see also Boron Silicides
see also Calcium Silicides
see also Chromium Silicides
see also Cobalt Silicides
see also Europium Silicides
see also Germanium Silicides
see also Iron Silicides
see also Manganese Silicides
see also Molybdenum Silicides
see also Neodymium Silicides
see also Nickel Silicides
see also Niobium Silicides
see also Plutonium Silicides
see also Rare Earth Silicides
see also Rhenium Silicides
see also Samarium Silicides
see also Tantalum Silicides
see also Titanium Silicides
see also Tungsten Silicides
see also Uranium Carbide Silicides
see also Uranium Oxide Silicides
see also Uranium Silicides
see also Vanadium Silicides
see also Ytterbium Silicides
see also Zirconium Silicides
book: Evaporation of Refractory Compounds, 22:34060
book: Interstitial Alloys, 22:19643
deposition of coatings of, from chemical vapors, 22:43636
deposition on refractory metals, 22:49697
effects of coatings of, on mechanical properties of molybdenum at 20 to 1500°C, 22:19543
mechanical properties for high temperature reactor applications, 22:4880
performance as high-temperature protective coatings, 22:36469
performance of glaze composites of, for corrosion protection of niobium alloys, 22:47663
properties as coating for refractory metals, 22:49697
properties as heat-resistant coatings, 22:49835
uses of refractory coatings of, on graphite, 22:38607

SILICON
see also Inconel 800
see also Monel
see also Monel 400
see also Nimonic PE 16
abundance in coprecipitated plutonium oxide (PuO_2)--uranium oxide (UO_2) of, impurity analysis for, 22:27489(R) (NUMEC-3524-47)
abundance in corona, chromosphere and photosphere, (T), 22:41203
abundance in envelope of P Cygni, (E), 22:810
abundance in galactic cosmic rays, (T), 22:17431
abundance in γ Capricorni, (E), 22:38692
abundance in HD 30353, (T), 22:868
abundance in HR 4072, (E), 22:11172
abundance in HR 774, (E), 22:23983
abundance in interstellar space, (E), 22:36628
abundance in photosphere, (E), 22:23933
abundance in solar corona relative to photosphere, 22:34229
abundance in solar corona, (T), 22:849
abundance in Sun, (T), 22:29012
abundance of, solar, (T), 22:13206
alpha attenuation in, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
aluminum ion implantation in, 10-keV, 22:24450
analysis for carbon by deuteron activation methods, 22:27586
analysis for carbon by deuteron activation reactions, 22:47092
analysis for impurities by neutron activation methods, 22:14459
analysis for oxygen by alpha activation methods, 22:27596
analysis for oxygen by helium-3 activation, 22:16413 (IAE-1165)
analysis for oxygen by helium-3 activation methods, 22:6278
analysis for various elements by spectrographic method, 22:48810 (AERE-R-5799)
analysis of semiconductor, for impurities, neutron activation, 22:39993
analysis of single-crystal slices of, for impurities by neutron activation, 22:37703

annealing of fast-neutron irradiated single crystals of, 22:15637
annealing of n--p transitions in 400-keV and 6.3-MeV proton-irradiated, (E), 22:15634
annealing of neutron-induced damage in p- and n-type solar cells of, injection and temperature dependence of, (E/T), 22:13577
argon ion reactions at 30 keV with, use in study of defect annealing, 22:1307
argon scattering on, angular distributions from, 22:34246 (TID-24491, pp 49-56)
argon-ion sputtering of, activation procedure for detection of implanted species in, 22:46274
atom stopping by, ion reactions with silicon and tungsten crystals for Z-dependence of, 22:29270
atomic weight of, based on carbon-12 = 12, 22:42698
book: Surface Properties of Oxidized Silicon, 22:41663
boron ion implantation by bombardment in, channeling effects on distribution profiles for, (E), 22:37027
boron-ion reactions at 40 keV, determination of degree of ionization of boron for, 22:43868
boron-ion reactions with n-type, temperature effects on current carriers in, (E), 22:15641
bremsstrahlung from thin targets of, collimation of monoenergetic, with linear polarization near 100 percent, 22:11619
carrier lifetime--excess density relations for neutron-irradiated, (E), 22:13572
carrier removal and annealing in neutron-irradiated, effects of impurities on, (E), 22:13573
charged particle channeling in, energy loss in, (T), 22:39171
charged-particle energy losses at 1 to 200 MeV, range-energy tables for, (E/T), 22:3663
charged-particle reactions at 1.0 to 200 MeV, stopping power and range tables for, 22:45284 (UCRL-17663(Rev.1))
coating with tungsten, growth of tungsten silicide layers in, 22:759
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
content in lake sediments, use of x-ray diffraction for estimation of, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
content in meteoritic chondrules, 22:16
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as impurity in uranium tetrafluoride by carrier distillation, spectrographic, 22:30431 (JEN-192-DQ/1-66)
determination as trace impurity in calcium, 22:1967 (Y-1590)
determination by activation analysis, 22:7989 (CONF-660905-2)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination by x-ray fluorescence methods, 22:1957 (ORNL-IIC-10(Vol.1), pp 336-55)
determination in alloy steel by neutron activation methods, 22:35765
determination in alloys by atomic absorption spectrophotometry, 22:30436(R) (UCRL-50006-68-1)
determination in alloys by neutron activation methods, 22:33269
determination in aluminum alloys using fast neutron activation analysis, 22:9757 (AERE-R-5616)
determination in boron-containing silicones, 22:30436(R) (UCRL-50006-68-1)
determination in cements, activation, 22:7989 (CONF-660905-2)
determination in coal by neutron activation methods, 22:33251
determination in coal by neutron activation methods, 22:37695
determination in corundum by neutron activation methods, 22:21039
determination in ferroalloys using x-ray quantometer, 22:43522
determination in ferromolybdenum, effects of impurities on γ-absorptiometric, 22:6276
determination in fuels by neutron activation methods, effects of vanadium on, 22:8028
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in high-purity niobium, 22:1981
determination in iron and ores, activation, 22:1961 (ORO-2980-17)
determination in lunar surface, equipment for neutron activation analysis for, 22:4545
determination in magnesium, evaluation of methods for, 22:27519 (NLCO-1012)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in meteorites and standard rocks by neutron activation methods, 22:25260
determination in meteoritic chondrules, activation, 22:16
determination in molybdenum--uranium alloys by spectrography, 22:27533 (JEN-187-DQ/I-63)
determination in plutonium, emission spectrographic, 22:1956(R) (MLM-1405)
determination in rocks, high-precision activation, 22:4032
determination in scandium, spectroscopic, 22:18727
determination in silicate by neutron activation method, 22:40038
determination in silicates, spectrometric, 22:22960
determination in solutions of refractory materials, spectrographic, 22:21032
determination in tungsten by neutron activation methods, 22:8029
determination in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in uranium oxide using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of trace amounts of, in uranium dioxide, 22:12256
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
determination on surface of meteorites by scanning with charged particles, 22:27598
deuteron attenuation in, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
deuteron differential elastic scattering cross sections and polarization at 7 to 11 MeV and 30° to 135°, (E), 22:29975
deuteron elastic scattering at 7, 9, and 11 MeV using polarized deuterons, cross-section and polarization angular distributions for, (E), 22:20509
dielectric properties of, superconducting cavity for determining, 22:29416
diffusion and solubility of sodium in monocrystals of, at 500 to 900°C, 22:45029 (UCRL-18043, pp 7-105)
diffusion in aluminum and zirconium, 22:17136
diffusion in molybdenum, rates of, 22:49762
diffusion of lithium in, effects of fast neutron and electron irradiation on, 22:4845
dislocation velocity in crystalline, model of, 22:36506
dissolution by liquid aluminum, heat of, 22:31362
effect on irradiation swelling of EBR--2 fuel, 22:24925(R) (ANL-7427)
effects as coating, on oxidation of niobium or tantalum, 22:2571
effects on corrosion of chromium--nickel--stainless steel by water vapor at 600°C, 22:28732 (CEA-N-816, pp 102-39)
effects on corrosion of copper--iron--zirconium alloys, 22:38513 (CEA-N-856, pp 87-121)
effects on corrosion of steel by superheated steam and water at 300 to 500°C, 22:626
effects on deformation and hardness of cast uranium at 885 to 1200°F, 22:15154(R) (NLCO-1010)
effects on electronic specific heat of iron, 22:41049
effects on mechanical properties of aluminum--chromium--steel, 22:26026 (CEA-N-616, pp 106-44)
effects on properties of copper--zirconium alloys, 22:6987
effects on reprocessing of aluminum--uranium fuels, 22:48907
effects on restoration of irradiated aluminum, 22:19594
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on thermal expansion tensor of alpha-uranium to 600°C, 22:27544(R) (NLCO-1015)
electron collisions with, radiative lifetime using phase-shift method, 22:41331
electron diffraction by foils of, anomalous absorption parameter in, (E), 22:44216 (UCRL-18158)
electron drift velocity in, 22:1323
electron reactions at 90 keV with, recombination radiation from excitation by, (E/T), 22:46283
electron reactions with, ionization cross sections for, (T), 22:45931
electron reactions with, ionization equilibria calculation from ionization, excitation, and recombination processes in, 22:38722 (N-68-18121)
electron reactions with, secondary energy distributions in, (E/T), 22:22204(R) (ORO-2755-20)
electron transmission through thick targets of, angular and energy distributions in, (E), 22:45922 (N-68-25285)

electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
energy level transition probabilities for atomic, 22:2811
fabrication of detectors of n-type, by ion-implantation, 22:323
fabrication of diodes of, by ion implantation at 1 to 2.5 MeV, 22:16862
Fano factor in, 22:40385
film deposition on, epitaxy in aluminum, copper, and nickel, 22:9420(R) (CDO-623-127)
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
gamma transport in detectors of, Monte Carlo calculations of, 22:1285 (ANL-7314)
gold diffusion in, at 1000°C, 22:13069
growth on tungsten silicide layers deposited on silicon, epitaxial, 22:759
helium ion channeling in antimony- and gallium-implanted, (E), 22:37016
helium ion scattering by oxide-coated crystals of, effects of channeling in, (E), 22:26488
helium-3 attenuation in, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
hyperfine interactions in, studied by ^{150}Sm Coulomb-excited perturbed angular correlations, 22:9108
ion channeling at 100 to 500 keV in, $Z = 5$ to 19, (E), 22:26477
ion implantation in crystals of, distribution profiles for, (E), 22:26481
ion implantation in, channeling study of antimony and gallium, 22:37016
ion implantation in, effects of channeling on, (E), 22:26490
ion implantation in, electric properties resulting from antimony, arsenic, and gallium, (E), 22:13585
ion implantation in, for fabrication of radiation detectors, 22:40387
ion implantation in, helium ion channeling study of lattice disorder from, (E), 22:26489
ion implantation in, helium-ion beam analysis of, 22:11536
ion implantation in, helium-ion-scattering studies of atom location and lattice disorder in, 22:9456
ion implantation in, interstitial indium and thallium in, 22:24452
ion ranges at low energies in, Monte Carlo calculation of, 22:29214
ion reactions at 1.5 x 10^8 cm/sec with crystals of, determination of Z dependence of atomic stopping from channeling in, (E), 22:29270
ion reactions at 100 to 500 keV with, channeling effects on electronic stopping cross sections for $Z = 5$ to 19, (E), 22:26477
ion reactions at 30 keV with, temperature dependence of ion scattering and secondary electron emission from, (E), 22:26232
ion stopping cross sections in, Z_1 dependence of electronic, (T), 22:41305
ion stopping in, atomic number dependence of electronic cross sections for, 22:50034
iron-57 Moessbauer effect in, measurement using Coulomb excitation with recoil implantation through vacuum, (E), 22:46270
joints with different materials, metallography of, 22:43553
lattice orientation by proton channeling in, (E), 22:1339
lithium diffusion in boron- and gallium-doped, 22:10555
meson (μ^-) capture at rest using polarized beams, asymmetry of neutron angular distribution from, (E), 22:35253
meson (μ^-) capture at rest, neutron energy spectra from, (E), 22:35254
meson (μ^-) reactions with, relative intensities of K x rays from, (E), 22:1008
metabolism in lower plant forms, review of, 22:12781
neon ion reactions at 30 keV with, use in study of defect annealing, 22:1307
neutron activation analysis of thin films of, 22:25
neutron differential elastic and inelastic scattering cross sections at 5.95 MeV, (E/T), 22:32526
neutron differential elastic and inelastic scattering cross sections at 4.0 to 5.8 MeV, angular distributions of, (E), 22:1621
neutron differential elastic scattering cross section and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
neutron inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
neutron reactions and scattering at 14 MeV, γ spectra from, (E), 22:44642
neutron scattering cross sections at 4, 6, 6.7, and 7.5 MeV, (E), 22:20578 (WASH-1079)
neutron total cross section and resonance parameters at 400 to 1200 keV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 0.4 to 1.2 MeV, 22:39575 (CEA-R-3279)
neutron total cross section at 4.5 to 14 MeV, fluctuations in, (E), 22:20537
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
nitrogen ion implantation in single crystals of, 2-MeV, (E), 22:37017
nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
nuclear polarization of silicon-29 in, by optical electronic saturation and optical pumping, (E), 22:20072
nucleon inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
phosphorus ion implantation at 10 to 110 keV in crystals of, distribution profiles for channeled, (E), 22:26480
phosphorus ion implantation at 30 keV in p-type, effects on carrier concentration and mobility, (E), 22:41677
phosphorus ion implantation in, effects of bombardment temperature on, 22:26493
phosphorus-32 ion implantation in crystals of, (E), 22:35285(R) (AERE-PR/NP-13)
phosphorus-ion reactions with n-type, temperature effects on current carriers in, (E), 22:15641
physical properties of, 22:37976 (CONF-670545-, pp 7-16)
positron annihilation in, angular distribution of radiation from, (T), 22:36722
positron annihilation radiation from, calculations using Hartree--Fock orbitals for angular correlations of two-photon, 22:36733
production of ultrapure, methods for, 22:49701
properties as heat-resistant coatings, 22:49835
properties at cryogenic temperatures, 22:2350 (UCRL-17818)
proton attenuation in, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
proton channeling in crystals of, feeding into and escape from channels in, (E), 22:31917 (BNL-50083, pp 45-57)
proton channeling in single crystals of, anomalous energy losses of 1.5-MeV, (E), 22:17812
proton channeling in, energy-loss distribution for, 22:17420
proton channeling in, review, 22:37003
proton channeling through crystalline at 2 MeV, 22:7395
proton elastic scattering by single crystals at MeV energies and large angles, (E), 22:11558
proton motion in single crystals of, blocking and channeling effects in, (E), 22:27087(R) (ANL-7405)
proton range--energy relations at 0.8 to 2.0 MeV, 22:6708
proton reactions at 0 to 60 MeV, excitation functions for, (E), 22:9803 (ORNL-TM-2060)
proton reactions at 100 MeV, isotope formation cross sections for, (E), 22:31535
proton reactions at 3 to 12 MeV with single crystals of, blocking effects in, (E), 22:44273
proton reactions at 6.3 MeV with, displaced atom and energy loss distributions in, (T), 22:39180
proton reactions below 60 MeV, excitation functions for radioisotope production by, (E), 22:44665
proton reactions with semiconductors of, energy distributions in, (E/T), 22:22202 (NYO-2962-6, pp 55-62)
proton reactions with, paramagnetic center production from, 22:9453
proton total cross section at 5 to 150 MeV, (E/T), 22:13927(R) (USC-136-132)
radiation and temperature effects on defect formation in, electrons, (E), 22:15640
radiation damage centers in, effects of impurity lithium on electron, 22:15262(R) (N-66-37213)
radiation damage coefficients for p-type, electron, 22:13574
radiation damage effects in, gamma, (E/T), 22:39178
radiation damage in n- and p-type, annealing of proton, (E), 22:46197 (N-68-25392)
radiation damage rate in, method for calculation of anisotropy of electron, (T), 22:37009
radiation damage to, use for neutron dosimetry, 22:12579
radiation effects on 220 reflection by plane crystals of, fast neutron, (E), 22:34788
radiation effects on capacitance and conductance of MIS structures of, 22:33702
radiation effects on carrier lifetime in n-type, neutron, (E), 22:15552 (AWRE-O-69/64)
radiation effects on carriers in, neutron, 22:36965 (AD-666220)
radiation effects on corrosion of electrodes of, in acid solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on crystal structure of, neon ion, (E), 22:34751
radiation effects on crystals of, neutron, (E), 22:5100
radiation effects on diffusion length of solar cells of, role of lithium in 1-MeV electron, (E/T), 22:13292
radiation effects on diodes of, gamma, 22:14903
radiation effects on dislocation density in oxidized and superpure, fast-neutron, 22:37032
radiation effects on dissolution rate and electric conductivity of single crystals of, cesium ion, (E), 22:39196
radiation effects on doped, high-energy electron,

22:48152(R) (N-68-23464)
radiation effects on electric and photoelectric properties of monocrystals of p-type, fast-neutron, 22:16618
radiation effects on electric conductivity of n-type, electron, 22:769(R) (N-67-25672)
radiation effects on electric conductivity of n-type, annealing by irradiation at lower temperature, 1.0-MeV electron, (E), 22:36996
radiation effects on electric properties of lithium-drifted, electron and fast neutron, 22:13010
radiation effects on electric properties of p-type, at 76°K, neutron, 22:41651 (SC-DC-68-2328)
radiation effects on lattice parameters of, at ambient temperature, fast neutron, (E), 22:48193
radiation effects on lattice parameters of, x-ray studies of electron, 22:37019
radiation effects on lithium diffusion in, electron and fast neutron, 22:13010
radiation effects on low-temperature heat transfer in, electron and neutron, 22:52849 (CEA-R-3387)
radiation effects on mechanical properties of, 22:20095
radiation effects on metal-coated surface-oxidized semiconductors of, model of gamma and neutron, 22:11019
radiation effects on n- and p-type, carrier removal rates from electron and neutron, 22:29562
radiation effects on n-type, effects of molecular oxygen on 4.5-Mev electron, (E), 22:9482
radiation effects on nucleation and precipitation of lithium in, γ, 22:27838
radiation effects on p-type single crystal, fast neutron, 22:15637
radiation effects on resistivity of, depth dependence of 6.3-MeV, 22:26524
radiation effects on semiconductor, 48-MeV electron, 22:764(R) (AD-644889)
radiation effects on semiconductors of, electron and neutron, 22:9427 (TID-24201)
radiation effects on single crystals of, fast neutron, 22:6707 (LYCEN-6756)
radiation effects on single crystals of, neutron, 22:8736 (ORNL-4170, pp 54-62)
radiation effects on solar cells of, 1-MeV electron, 22:7189
radiation effects on surface and bulk recombination rates in n- and p-type, γ, (E/T), 22:13581
radiation effects on surface electric properties of, aluminum and phosphorus ion, (E), 22:13557
radiation effects on surface properties of, boron, helium, and nitrogen-ion, (E), 22:34771
radiation effects on surface structure of, temperature dependence of helium-ion, 22:4904
radiation effects on surfaces of solar-cell n/p and p/n, 0.4- to 27.5-keV proton, (E), 22:13580
radiation effects on thermal conductivity at low temperatures, fast-neutron, 22:41688
radiation effects on thermal conductivity of oxygen-containing, at low temperatures, neutron, 22:7389
radiation effects on transistors of, annealing characteristics of neutron, 22:13578
radiation effects on, effects of oxygen addition on recombination from gamma, 22:16968
radiation effects on, energy spectra of channeled proton, 22:16966
radiation effects on, ESR studies of unstable intermediates in, 22:25405
radiation effects on, photomechanical effects from fast neutron, 22:44224
radiation effects on, relation of Fermi level to fast neutron, 22:39186
radiation effects on, relation of recoil-atom energy partition between atomic and electronic processes to neutron, review, 22:37012
radioinduced amorphous phase in, effects of channeling and temperature on formation of neon ion, 22:26491
radioinduced carrier removal in lithium-doped float-zone, 1-MeV electron, (E), 22:13576
radioinduced color centers in, kinetic model for simulating, (T), 22:22230
radioinduced damage in degenerate, irradiated at low temperatures by 1-MeV electrons, (E), 22:24490
radioinduced defect complexes in, electron, 22:50232
radioinduced defects in antimony- and arsenic-containing, ENDOR and EPR studies of impurity--vacancy pairs in electron, (E), 22:52854
radioinduced defects in doped, photoconductivity studies of 1.5- and 45- to 50-MeV electron, 22:36994
radioinduced defects in foils of, use of anomalously wide images in electron microscope studies of neutron, 22:24482
radioinduced defects in high-purity, microwave-reflection study of electron, 22:31941 (BNL-50083, pp 442-53)
radioinduced defects in lithium-doped n-type, annealing of electron, 22:1318
radioinduced defects in n-type, effects of impurities and irradiation temperature on formation and annealing of electron, (E), 22:3202
radioinduced defects in n-type, effects of impurities and irradiation temperature on formation and annealing of neutron, (E), 22:3203
radioinduced defects in n-type, production and properties of irradiation-temperature-dependent and irradiation-temperature-independent, ^{60}Co γ, 22:36997
radioinduced defects in n-type, production mechanisms and identification of, review, 22:36999
radioinduced defects in n-type, properties of irradiation-temperature-dependent and irradiation-temperature-independent, electron, (E), 22:36998
radioinduced defects in p-type, annealing of 76°K neutron, 22:52881
radioinduced defects in p-type, effects of impurities on gamma and neutron, (E), 22:36993
radioinduced defects in p-type, effects of irradiation temperature on electron and aluminum ion, (E), 22:37001
radioinduced defects in p-type, photoconductivity studies using uniaxial stress on neutron, (E), 22:36995
radioinduced defects in phosphorus-doped, ESR and galvanomagnetic studies of electron, 22:31942 (BNL-50083, pp 454-61)
radioinduced defects in photoelectric devices using, electron, 22:28270
radioinduced defects in single crystals of, lattice anisotropy effects on production by electrons, (E), 22:31929 (BNL-50083, pp 304-13)
radioinduced defects in, activation energy and annealing temperatures for phosphorus ion, (E), 22:26493
radioinduced defects in, activation energy of neutron, 22:44264
radioinduced defects in, charge state effects on behavior of, review, 22:36992
radioinduced defects in, distribution with depth of electron, 22:22214
radioinduced defects in, electron microscope observation of clusters of defects from neutron, 22:37007
radioinduced defects in, energy levels and introduction rates of ^{60}Co gamma, (E), 22:37008
radioinduced defects in, luminescence spectra from recombination of fast neutron and gamma, (E), 22:46279
radioinduced defects in, production and annealing of fission neutron, (E), 22:37041
radioinduced defects in, radiative combination at gamma, 22:26508
radioinduced defects in, recombination lifetimes in gamma, (E), 22:46204
radioinduced defects in, recombination luminescence from gamma and neutron, review, 22:37021
radioinduced defects in, transmission electron microscopy study of neutron, (E/T), 22:11505
radioinduced defects in, use of anomalous x-ray transmission for detection of fast neutron, 22:46206
radioinduced degradation of carrier lifetime in, effects of impurities on, (E), 22:17826
radioinduced dislocation motion in single crystals of, during electron microscopy, (E), 22:34772
radioinduced displacement effects in, 30-MeV electron, 22:47442 (N-68-23246)
radioinduced electric conductivity changes in, neutron, (E), 22:52860
radioinduced electron lifetime and hole concentration in, effects of isochronal annealing on neutron, 22:11502
radioinduced excess carriers in, effects on electric conductivity and Hall effect of electron, (E/T), 22:31940 (BNL-50083, pp 430-41)
radioinduced inverse current increase in, x-, 22:3205
radioinduced lifetime damage in, two-level model for neutron, 22:13575
radioinduced lithium mobility in, electron and fast neutron, 22:13010
radioinduced luminescence in, gamma and fast neutron, 22:39158(R) (N-68-17349)
radioinduced microhardness of single crystals of, neutron, 22:41691
radioinduced oriented polycrystalline films produced from, electron, (E), 22:49984 (N-68-20295)
radioinduced recombination centers in boron-doped p-type, gamma, 22:41672
radioinduced recombination emission in single crystals of, neutron, (E), 22:24431
radioinduced recrystallization of thin films of, electron, (E), 22:39159(T) (N-68-17613)
radioisotopes produced by cosmic radiation during space flight, 22:19400(R) (BNWL-531-1)
reaction with uranium dioxide and carbon at 1700 to 1800°C to produce uranium monocarbide, 22:41089(P)
reactions with carbon and uranium fluorides to produce uranium carbide, 22:26074 (SCNC-331)
recombination rates in, effect of cobalt-60 gamma radiation on bulk and surface, 22:24493
reducing effects on hafnium oxide and zirconium oxide in electron bombardment furnace, 22:10931
reducing reactions with oxide inclusions in steel, vacuum studies of, 22:28783(T) (TT-66-59003-4/A)
separation from plutonium by fluoride volatility process, 22:48900 (RFP-1052)
silicon ion reactions with semiconductors of, energy distributions in, (T), 22:22202 (NYO-2962-6, pp 55-62)
spectra from fast-neutron-irradiated single-crystal, recombination emission, 22:15636
spectral absorption lines of neutral, in solar spectrum, (E), 22:28989
spectral line tabulations for atomic, below 2000 A,

22:19737 (NRL-6648)
Stark effect constants for, quadratic, (T), 22:26204
structure factors for, fixed-scattering-angle neutron spectrometer for determining, 22:14822 (RISO-164)
symmetry elements of Brillouin zone in, observation by positron annihilation, (E/T), 22:9478
testing properties of, for use as radiation detector, methods for, 22:38034
thermal conductivity, 22:8731 (ORNL-4170, pp 37-41)
thermal conductivity of polycrystalline and single-crystal, 22:8731 (ORNL-4170, pp 37-41)
thickness of sample specimens of, determination for electron microscopy, 22:45745 (UCRL-18043, pp 107-53)
tritium solubility and diffusion in single crystals of, coefficient for, 22:44225
triton attenuation in, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
use as an activator in hot pressing beryllium powder, 22:43546(P)
use in production of inert beryllium sintered surfaces, 22:639(P)
use of phosphorus-diffused, for fast-neutron detection, 22:314
x-ray scattering at small angles by, calculation of incoherent, 22:34250
Si--V, metallography of intermetallic superconducting, optical stage for study of, 22:1120

SILICON CARBIDES
analysis for boron and nitrogen by proton activation methods, 22:27585
analysis for oxygen by helium-3 activation, 22:16413 (IAE-1165)
bonding to germanium silicide, methods for, 22:51176 (ALO-2510-2)
coating fabrication of resin-bonded uranium oxide (UO_2) and thorium oxide (ThO_2) spheres, description of, 22:42200(R) (ORNL-4200)
coating for thorium carbide (ThC_2)--uranium carbide (UC_2) proof test fuel element for Fort St. Vrain Power Reactor, method of, 22:44818 (GAMD-8552)
containment of copper--magnesium in chloride systems by, 22:25442 (ANL-7375, pp 19-45)
contamination of thorium carbide (ThC_2)--uranium carbide (UC_2) fuel pellet coatings of, effects of temperature on uranium, 22:39900 (GAMD-8325)
conversion to uranium dioxide by reactions with hydrogen and water vapor, 22:8686 (ORNL-4170, pp 108-14)
creep of polycrystalline, review on, 22:2701
deposition from chemical vapor, effects of substrate on, 22:7040
deposition of coatings of, chemical vapor, 22:7046
deposition of coatings of, on fuel particles, 22:11046 (ORNL-TM-2061)
deposition of coatings on sol-gel microspheres, techniques for, 22:8822 (ORNL-4170, pp 163-72)
deposition on boron carbide, for incorporation in metal-matrix control rods, 22:28910(P)
deposition on graphite for corrosion protection, method for, 22:4849(P)
deposition on quartz by radiant heating, 22:7043
deposition on tungsten from chemical vapors, 22:7042
deposition on uranium carbide fuel particles, equipment and method for, 22:743(P)
deposition on wires, chemical vapor, 22:7046
diffusion of barium in coatings of, on pyrolytic carbon, 22:38620 (GAMD-8326)
fabrication of filaments of, by chemical vapor deposition, 22:7046
fatigue and tensile properties of, effects of geometry and microstructure on, 22:43649 (RD/B/N-941)
incorporation of fibrous, in aluminum composites, 22:41022
insulation for gas-cooled reactor fuel assembly of, description of sleeve, 22:35515(P)
lattice stability of self-bonded, effects of post-irradiation heat treatment on, 22:4916
oxidation of fuel particle coatings of, in water vapor at 1100 to 1400°C, 22:41084 (ORNL-TM-2199)
performance for control of grain growth of refractory oxides, 22:23880(P)
production by silicon tetrachloride reduction in hydrogen--methane atmospheres, 22:8686 (ORNL-4170, pp 108-14)
properties as crucible for liquid metals, 22:43654
properties for reactor core structural materials, review of, 22:49815 (AECL-3069)
properties of boron-doped, for radiation detection, 22:33646
properties of, used for electrodeposited coatings on metals, 22:2590
radiation effects on recombination spectra and lattices in, 3-MeV electron, (E), 22:20076
radiation effects on self-bonded, fast neutron, 22:4916
radiation effects on single crystals of, neutron, 22:8736 (ORNL-4170, pp 54-62)
radioinduced luminescence in single crystals of, dependence on particle energy and surface state of electron, deuteron, and proton, (E), 22:39182
reactions in vacuum 1200 to 2000°C with niobium, 22:52231
reactions in vacuum at 1200 to 2000°C with beryllium oxide, 22:52231
reactions in vacuum at 1200 to 2000°C with molybdenum, 22:52231
reactions in vacuum at 1200 to 2000°C with tantalum, 22:52231
reactions in vacuum at 1200 to 2000°C with thorium dioxide, 22:52231
reactions in vacuum at 1200 to 2000°C with tungsten, 22:52231
reactions in vacuum at 1200 to 2000°C with zirconium oxide, 22:52231
use of diodes of, in oscillators for production of reference pulses for scintillation spectrometers, 22:2393 (JINR-P13-3523)
Al--SiC--W, performance as round-hole extrusion die nibs, 22:8719
BeO--SiC, performance as round-hole extrusion die nibs, 22:8719
SiC--UC, fabrication of dispersions of, 22:52241
SiC--UC_2, analysis for carbon using electron-probe microanalyzer, fluorescence correction in, 22:2458

SILICON CHLORIDES
reactions with hydrogen--methane atmospheres, to form silicon carbide, 22:8686 (ORNL-4170, pp 108-14)
reactions with uranium trioxide, 22:27651
sodium atom scattering by, velocity dependence of total cross sections for, (E), 22:11235

Silicon Detectors
see Radiation Detectors, Semiconductor (Silicon)

SILICON HYDRIDES
effects on corrosion of graphite by carbon dioxide of SiH_4 and Si_2H_6, analysis of, 22:30400(P)
electric field gradient for deuteron sites of deuterated, one-center expansion wave functions in calculation of, 22:12279

SILICON IODIDES
iodine-129 Moessbauer effect in SiI_4, molecular and crystal properties from, 22:34777
Moessbauer effect in crystals of, 22:24408 (IA-1128, pp 21-54)

SILICON IONS
absorption lines of Si IV in spectrum of PHL 5200, (E), 22:29031
autoionization and recombination of Si IX, in solar corona, (T), 22:897
detection in solar spectrum, (T), 22:29012
detection in spectrum of HD 125823, (E), 22:43837
energy dissipation to lattice in silicon crystals in neutron irradiation, (E), 22:5100
hydrogen atom reactions with, calculation of spin-change cross sections for, 22:47801
radiative association in the ionosphere, (T), 22:13328
reactions with silicon surface barrier detectors, energy distributions in, (T), 22:22202 (NYO-2962-6, pp 55-62)
resonance lines in solar spectra, oscillator strengths for, (T), 22:876
spectra in lower photosphere, (E), 22:2765
spectra in star BD + 10°2179, (E), 22:26140
spectra of Si IV in OB supergiant stars, uv, (E), 22:4957
spectra of stellar, superposition of configuration results for, (T), 22:17364
spectral line strengths in model atmospheres and in B stars, (T), 22:17250
spectral lines of, electron-impact broadening of, (T), 22:52349

SILICON ISOTOPES
contamination of terrain following nuclear explosions, 22:8529(T) (JPRS-42929, pp 293-330)
energy-level parameters for, data compilation for, (E), 22:9819
separation of, electromagnetic method for, using silicon disulfide as feed material, 22:14582(P)

SILICON ISOTOPES Si-26
beta decay of, gamma spectra from, (E), 22:15984
energy levels from magnesium-24 (He-3,n) reactions, (E), 22:48465
energy levels from magnesium-24 (He-3,n) reactions, (E), 22:20515
mass of, determination using magnesium-24 (He-3,n) reaction Q-value, (E), 22:48465

SILICON ISOTOPES Si-27
energy levels from aluminum-27 (p,n) reactions, isobaric-analog, (E), 22:46734
energy levels from silicon-28 (He-3,α) reactions, branching ratios and spin assignments for, (E), 22:32512(R) (AECL-3108)
energy levels from silicon-28 (He-3,α) reactions, spins of, (E), 22:9817
energy levels from silicon-28 (p,d) reactions, (E), 22:9812
energy levels from silicon-28 (p,d) reactions, spectroscopic factors for, (E), 22:9800(R) (COO-535-571)
energy levels from silicon-28 (p,d) reactions, spectroscopic factors for, (E), 22:35274
energy levels from silicon-28 (p,d) reactions, spectroscopic factors for, (E), 22:44664
energy-level spins and transitions from silicon-28 (He-3,α) reactions, (E), 22:3669
half-life, (E), 22:41980

SILICON ISOTOPES Si-28

alpha decay from T = 2 isobaric analog state, isospin-forbidden, (E), 22:50574
alpha elastic scattering at 10 to 12 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
alpha elastic scattering at 8 to 14 MeV, (E), 22:5809(R) (ANL-7354)
alpha inelastic scattering at 22 MeV, γ Doppler shifts in, (E), 22:26961
alpha inelastic scattering at 22 MeV, γ Doppler shifts in, (E), 22:24848
alpha inelastic scattering at 22.5 MeV, exchange effects in, (E/T), 22:7646
alpha inelastic scattering by, α-γ angular correlations in, (E), 22:42000
alpha reactions (α,γ) at 7 to 12 MeV, cross section for, (E), 22:20578 (WASH-1079)
alpha reactions (α,γ) at 7 to 12 MeV, cross sections and γ spectra for, (E), 22:11930
alpha reactions (α,p) with, Doppler shifts of γ spectral lines from, (E), 22:35285(R) (AERE-PR/NP-13)
binding energy of, calculation using equivalent nonlocal potentials, (T), 22:26855
burning in stellar interiors, nucleosynthesis during, (T), 22:11140
description using Hartree--Fock method with equivalent nonlocal potentials, (T), 22:35385
deuteron differential elastic scattering cross section at 28 MeV, angular distribution for, (E), 22:53100
deuteron differential elastic scattering cross sections at 1.0 to 2.5 MeV, (E), 22:15958
deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
deuteron differential inelastic scattering cross sections at 18 MeV, angular distributions for, (T), 22:27018
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron inelastic scattering at 13.6 MeV, calculation of angular distributions for, (T), 22:13956
deuteron reactions (d,α) at 6.98 to 11.06 MeV, excitation function and isospin selection rule for, (E), 22:15983
deuteron reactions (d,He-3) at 16 and 20 MeV, angular distributions for, (E), 22:44636
deuteron reactions (d,He-3) at 16 MeV, angular distribution of differential cross section for, (E), 22:26979
deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E), 22:18172
deuteron reactions (d,n) at 2.7 to 3.3 MeV, neutron--gamma correlation studies of, (E), 22:15993
deuteron reactions (d,p) and (d,t) at 21 MeV, angular distributions for, (E), 22:27018
deuteron reactions (d,p) at 4.4 and 5.3 MeV, p-γ angular correlations in, (E), 22:27013
deuteron reactions (d,p) at 8 MeV, cross-section calculations using distorted-wave Born approximation, (T), 22:7742 (LYCEN-6752)
deuteron reactions (d,p) with, (T), 22:24897 (LYCEN-6784)
deuteron reactions (d,p) with, calculation of cross sections for, (T), 22:20715
deuteron reactions (d,p) with, calculations using modified distorted-wave Born approximation, (T), 22:9975
deuteron reactions (d,p) with, γ Doppler shift attenuation in, (E), 22:37326
deuteron reactions (d,p), (d,t), and (d,He-3) at 82 MeV, differential cross sections for, (E), 22:26946
deuteron reactions (d,t) and (d,He-3) at 28 MeV, angular distributions for, (E), 22:26931 (LYCEN-6789)
deuteron reactions (d,t) and (d,He-3) at 28 MeV, differential cross sections for, (E), 22:53100
effects on force field of tetrafluorosilane, 22:42682
electron elastic and inelastic differential scattering cross sections at 100 to 200 MeV, transition matrix elements from, (E/T), 22:5805
electron elastic and inelastic scattering at 100 to 260 MeV, form factors for, (E), 22:44633
electron inelastic scattering around giant resonance region, (E/T), 22:37299
electron inelastic scattering at 0 to 300 MeV/c, E1 and M2 matrix elements for, (T), 22:26926
electron inelastic scattering at 140 MeV with giant resonance excitation, magnetic quadrupole strength in, (E/T), 22:50596
electron inelastic scattering at 150 to 225 MeV with giant dipole resonance, differential cross sections for, (E), 22:50578
energy level at 8.555 MeV, spin assignment from γ-γ angular correlation measurements, (E), 22:44669
energy level density of, as a function of isospin, (T), 22:20702
energy levels and transition rates of, calculation of electric, (T), 22:27266
energy levels from alpha elastic scattering by magnesium-24, (E), 22:7569(R) (BARC-291)
energy levels from alpha inelastic scattering, collective enhancement factors and deformation parameters for, (E), 22:20534
energy levels from alpha inelastic scattering, lifetime measurements using γ Doppler shift attenuation, (E), 22:26961
energy levels from aluminum-27 (d,n) reactions, isobaric analog, (E), 22:5795
energy levels from aluminum-27 (He-3,d) reactions at 37.7 MeV, (E), 22:15995
energy levels from aluminum-27 (He-3,d) reactions, (E), 22:9800(R) (COO-535-571)
energy levels from aluminum-27 (p,γ) reactions, (E), 22:9844
energy levels from aluminum-27 (p,γ) reactions, lifetimes and branching ratios for, (E), 22:44662
energy levels from aluminum-27 (p,γ) reactions, lifetime measurements using Doppler-shift attenuation, (E), 22:41994
energy levels from aluminum-27 (p,γ) reactions, lifetime measurements using γ Doppler-shift attenuation, (E), 22:18123(R) (RLO-1925-11)
energy levels from α inelastic scattering, lifetime measurements using γ Doppler shift attenuation, (E), 22:24848
energy levels from α inelastic scattering, spin-parity assignments for, (E), 22:42000
energy levels from bremsstrahlung inelastic scattering, giant magnetic dipole resonance, (E), 22:3623
energy levels from deuteron inelastic scattering, deformation parameters for, (E), 22:48509(R) (BMwF-FBK-68-22)
energy levels from deuteron inelastic scattering, (E), 22:27018
energy levels from electron inelastic scattering, spin-parity assignments for, (E), 22:37299
energy levels from electron inelastic scattering, testing α cluster model by, (E), 22:44633
energy levels from Hartree--Fock calculations, (T), 22:26968
energy levels from magnesium-24 (α,γ) reactions, spins of, (E), 22:26932(R) (NP-17434)
energy levels from magnesium-24 alpha elastic scattering, spin-parity assignments for, (E), 22:32559
energy levels from magnesium-24 α elastic scattering, spin-parity assignments for, (E), 22:24835(R) (BARC-305)
energy levels from proton elastic and inelastic scattering by aluminum-27, isobaric analog, (E), 22:13983
energy levels from proton elastic and inelastic scattering, (E), 22:26946
energy levels from proton inelastic scattering at 21.2 MeV, (E), 22:15994
energy levels from proton inelastic scattering at 29.7 and 40 MeV, spin flip in excitation of 2^+, (E), 22:44672
energy levels from proton inelastic scattering, (E), 22:27016
energy levels from proton inelastic scattering, (E), 22:3609 (PUC-937-164)
energy levels from proton inelastic scattering, lifetime measurements using γ Doppler-shift attenuation method, (E), 22:11926
energy levels from proton inelastic scattering, nonnormal-parity, (T), 22:22576
energy levels from silicon-29 (p,d) reactions, spectroscopic factors for, (E), 22:30048(R) (PUC-937-307)
energy levels from spin-flip proton inelastic scattering, (E), 22:27014
energy levels in giant dipole resonance region, (T), 22:27073
energy levels in giant dipole resonance region, from magnesium-24 (α,γ) reactions, (E), 22:11930
energy levels in giant resonance region, from aluminum-27 (p,γ) reactions, (E), 22:11945(R) (ANL-7384)
energy levels in giant resonance region, from electron inelastic scattering, (E), 22:22567
energy levels of, calculations using 1d/sub 5/2/-2s/sub 1/2/ shell model, (T), 22:32521
energy levels of, calculations using intermediate-coupling shell model with nonorthogonal basis states, (T), 22:20497(R) (AECL-3009)
energy levels of, calculations using projected Hartree--Fock wave functions with realistic two-body forces, (T), 22:26973
energy levels of, description using Villars formalism with Hartree--Fock method for rotational, (T), 22:22643
energy levels of, lifetimes and transition probabilities of, (E), 22:20539
energy-level transitions and widths from electron inelastic scattering, (E), 22:20472
energy-level transitions from aluminum-27 (p,γ) reactions, (E), 22:37281(R) (NYO-72-191)
energy-level transitions from electron inelastic scattering, (T), 22:26926
energy-level transitions from electron inelastic scattering, (E), 22:26911
energy-level transitions in giant resonance region from electron inelastic scattering, (E/T), 22:50596

energy-level transitions in, effects of isospin selection rule on dipole, (E/T), 22:27036
energy-level transitions in, multipolarities of, (E), 22:39598
helium-3 (He-3,n) at 4.5 to 6.2 MeV, neutron time-of-flight spectra for, (E), 22:20515
helium-3 differential inelastic scattering cross sections at 38 MeV, angular distributions for, (E), 22:9800(R) (COO-535-571)
helium-3 elastic scattering by, optical-model potential for, (E/T), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,2n) at 33 MeV, production of delayed proton emitting sulfur-29 by, (E), 22:29913
helium-3 reactions (He-3,α) at 12.75 MeV, α-γ coincidence spectra from, (E), 22:32512(R) (AECL-3108)
helium-3 reactions (He-3,α) at 8 MeV, angular distributions for, (E), 22:22560(R) (ORO-1067-2)
helium-3 reactions (He-3,α) with, α-γ angular correlations for, (E), 22:9817
helium-3 reactions (He-3,α) with, γ angular correlations and spectra from, (E), 22:3669
helium-3 reactions (He-3,α) with, zero-range DWBA analysis of angular distributions for, (E/T), 22:32513(R) (ANU-P-400)
helium-3 reactions (He-3,pγ) at 6.2 MeV, phosphorus-30 energy levels from, (E), 22:29966
meson (μ) reactions with, production of aluminum in silicate rocks, (E), 22:31665
meson (μ) scattering on, large-angle, (T), 22:21914
meson (μ^-) absorption by, charged-particle branching ratio and energy spectrum for, (E), 22:20547
meson (μ^-) capture by, description using particle-hole model, (T), 22:26926
neutron capture at 14 MeV, cross section and γ spectra for, (E/T), 22:35251 (NIJS-P-213)
neutron capture at 14 MeV, γ spectra from, (E), 22:5787 (NIJS-R-505)
neutron capture at 2.8 MeV, gamma energies and differential cross sections for, (E/T), 22:5793
neutron differential elastic and inelastic scattering cross sections at 3 to 8 MeV, (E), 22:18287
neutron differential elastic and inelastic scattering cross sections at 7.6 MeV, (E), 22:20578 (WASH-1079)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron reactions (n,d) and (n,α) at 14 to 22 MeV, angular distributions from, (E), 22:26967
neutron reactions (n,p) at 14 MeV, cross-section calculations using finite-range distorted-wave Born approximation, (T), 22:11949(R) (ORO-2972-47)
neutron reactions (n,p) at 21.3 MeV with, ionization defect of aluminum-27 recoils from, 22:22569
neutron reactions (n,p) with, use for determining composition of lunar surface by, 22:4545
nuclear charge distribution of, measurement using electron scattering, (E), 22:26911
nuclear deformation parameters for, (E), 22:27018
nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear properties from Hartree--Fock calculations using a realistic two-body force, (T), 22:5890
nuclear resonance fluorescence yields from aluminum single-crystal sources, anisotropy of, (E/T), 22:46756
nuclear structure of, Hartree--Fock calculations using density-dependent forces, (T), 22:13961
photoabsorption cross section at 10 to 30 MeV in giant resonance region, (E), 22:44654
photon reactions (γ,n) and (γ,p) at 13 to 28 MeV, coupled-channel calculations for, (T), 22:27080
photon reactions (γ,n) at 60 MeV, neutron time-of-flight spectra and yields from, (E), 22:20475
photon reactions (γ,n) from threshold to 30 MeV, cross section for, (E), 22:44634
photon reactions up to 1300 MeV, sodium-24 yield from, (E), 22:3625
proton decay of isobaric analog in aluminum-27 (d,n) reactions, 22:53164
proton differential elastic and inelastic scattering cross sections at 155 MeV, angular distributions for, (E), 22:26946
proton differential elastic scattering cross section at 28 MeV, optical-model analysis of angular distribution for, (E/T), 22:9812
proton differential inelastic scattering cross sections at 55 MeV, angular distributions for, (E), 22:27016
proton elastic and inelastic scattering at 5.8 to 6.0 MeV, isospin-forbidden analog resonances in, (E), 22:18163
proton elastic and inelastic scattering by, isospin-forbidden resonances in, (E), 22:27051
proton elastic and inelastic scattering near 6 MeV, angular distributions for, (E), 22:39615
proton elastic scattering at 152 MeV, optical-model analysis of, (T), 22:44782
proton elastic scattering at 27.6 MeV, cross-section angular distribution for, (E), 22:9800(R) (COO-535-571)
proton inelastic scattering at 17.5 MeV, differential cross sections and spectra for, (E), 22:3609 (PUC-937-164)
proton inelastic scattering at 20 MeV using polarized protons, asymmetry in, (E), 22:27010
proton inelastic scattering at 30 MeV, collective-model distorted wave calculations of, (T), 22:30102
proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:35273
proton inelastic scattering at 40 MeV using polarized protons, left-right asymmetry and differential cross section for, (E), 22:3650
proton inelastic scattering at 40 MeV, proton spin-flip probability in, (E), 22:35292 (ORNL-4217, pp 1-81)
proton inelastic scattering at 55 MeV, angular distributions for spin-flip, (E), 22:27014
proton inelastic scattering at 8 to 10 MeV, γ Doppler-shift attenuation in, (E), 22:11926
proton inelastic scattering with excitation of non-normal-parity states, differential cross sections and polarizations for, (T), 22:22576
proton reactions (p,2p) at 156 MeV with quasielastic scattering, proton energy spectra and angular distributions from, (E), 22:1642
proton reactions (p,2p) at 156 MeV, spectroscopic factors for, (T), 22:44647
proton reactions (p,d) at 155 MeV, differential cross sections for, (E), 22:26946
proton reactions (p,d) at 185 MeV, deuteron vector polarization in, (E), 22:50548
proton reactions (p,d) at 27.6 MeV, angular distributions of differential cross sections for, (E), 22:9800(R) (COO-535-571)
proton reactions (p,d) at 28 MeV, cross-section angular distributions and deuteron spectra for, (E/T), 22:9812
proton reactions (p,d) at 30.5 MeV, DWBA analysis of polarization analyzing powers and differential cross sections for, (E), 22:48489
proton reactions (p,d) at 33.6 MeV, angular distributions and spectroscopic factors for, (E), 22:44664
proton reactions (p,d) at 34 MeV, angular distributions for, (E), 22:35274
proton reactions (p,γ) with, isobaric analog resonance in, (E), 22:53149
proton reactions (p,xpn) at 150 MeV, production of sodium isotopes with A = 20 to 25 by, (E), 22:30033
triton reactions (t,p) with, calculations using surface delta interaction for residual nucleus, (T), 22:32554
triton reactions (t,p) with, shell-model two-particle matrix elements from, 22:7783

SILICON ISOTOPES Si-29
alpha reactions (α,n) with, excitation function for, (E), 22:26932(R) (NP-17434)
deuteron reactions (d,t) at 20 MeV, differential cross sections and triton spectra for, (E), 22:1598(R) (COO-1265-49)
effects on force field of tetrafluorosilane, 22:42682
energy levels from Coriolis coupling model, (T), 22:16096
energy levels from neutron elastic scattering at 0.57 to 2.28 MeV, spin-parity assignments for, (E), 22:46743
energy levels from proton inelastic scattering, spin assignments and multipole mixing ratios for, (E), 22:26993
energy levels from silicon-28 (d,p) reactions, branching ratios for, (E), 22:27013
energy levels from silicon-28 (d,p) reactions, lifetime measurements using Doppler shift attenuation, (E), 22:37326
energy levels of, lifetime measurements using Doppler shift attenuation, (E), 22:5809(R) (ANL-7354)
energy levels of, lifetime measurements using γ Doppler-shift method, (E), 22:13955(R) (COO-1468-2)
energy levels of, spin-parity assignments and widths of, (E), 22:37340(R) (EANDC(E)-89(U))
energy-level lifetimes, (E), 22:22577
energy-level spacing in compound-nucleus reactions, (T), 22:5874
neutron reactions (n,p) with, use for determining composition of lunar surface by, 22:4545
nuclear magnetic moment, (T), 22:1717
nuclear polarization in silicon by optical electronic saturation and optical pumping, (E), 22:20072
nuclear resonance fluorescence using Compton-scattered cobalt-60 γ rays, (E), 22:27004
proton differential inelastic scattering cross sections at 17.5 MeV, angular distributions for, (E), 22:30048(R) (PUC-937-307)
proton inelastic scattering at 4.9 to 5.3 MeV, γ-γ angular correlations in, (E), 22:26993
proton inelastic scattering by, resonances in, (E), 22:11948(R) (NP-17216)
proton reactions (p,d) and (p,t) with, differential cross sections for, (E), 22:30048(R) (PUC-937-307)
proton reactions (p,γ) at 0.5 to 1.5 MeV, resonances in, (E), 22:32513(R) (ANU-P-400)
proton reactions (p,γ) at 1.47 to 1.85 MeV, γ decay of resonances in, (E), 22:29951
proton reactions (p,γ) with, resonances in, (E), 22:11948(R) (NP-17216)

SILICON ISOTOPES Si-30
alpha elastic scattering at 8 to 14 MeV, (E), 22:5809(R)

(ANL-7354)
  alpha reactions (α,p) at 11 MeV, angular distributions for, (E), 22:18174
  alpha reactions (α,p) with, Doppler shifts of γ spectral lines from, (E), 22:35285(R) (AERE-PR/NP-13)
  alpha reactions (α,p) with, γ angular correlations and spectra for, (E), 22:53144
  deuteron elastic scattering cross sections at 3.2, 3.7, and 3.9 MeV, analysis for optical-model parameters, (E), 22:22560(R) (ORO-1067-2)
  deuteron reactions (d,He-3) with, angular distributions for, (E), 22:18174
  deuteron reactions (d,He-3) with, spectroscopic data from, (E), 22:5809(R) (ANL-7354)
  deuteron reactions (d,p) at 2.95 to 4.00 MeV, silicon-31 energy levels and transitions from, (E), 22:37320
  deuteron reactions (d,p) at 3.01 and 3.22 MeV, p-γ angular correlations from, (E), 22:37331
  deuteron reactions (d,p) at 6.5 to 10 MeV, differential cross sections for, (E), 22:11927
  deuteron reactions (d,p) with, γ spectra from, (E), 22:22560(R) (ORO-1067-2)
  deuteron reactions (d,t) at 22.5 MeV, triton angular distributions and spectra for, (E), 22:3673
  effects on force field of tetrafluorosilane, 22:42682
  energy level at 3786 keV, lifetime and parity of, (E), 22:29961
  energy levels from aluminum-27 (α,p) reactions, lifetime measurements using Doppler shift attenuation, (E), 22:35285(R) (AERE-PR/NP-13)
  energy levels from magnesium-26 (α,γ) reactions, spin-parity assignments for, (E), 22:26932(R) (NP-17434)
  energy levels from magnesium-26 alpha elastic scattering, (E), 22:27061
  energy levels from magnesium-26 α elastic scattering, spins and parities of, (E), 22:20535
  energy levels in giant dipole resonance region, from magnesium-26 (α,γ) reactions, (E), 22:11930
  energy levels of, calculations using j-j coupling model with surface delta interaction, (T), 22:32554
  energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
  energy-level spins from α-γ angular correlations in alpha inelastic scattering, (E), 22:5809(R) (ANL-7354)
  helium-3 differential elastic scattering cross section at 18 MeV, angular distribution for, (E), 22:27009
  helium-3 reactions (He-3,α) at 33 MeV, α angular distributions and spectra for, (E), 22:3673
  helium-3 reactions (He-3,α) at 8 MeV, angular distributions for, (E), 22:22560(R) (ORO-1067-2)
  helium-3 reactions (He-3,α) with, α spectra from, (E), 22:5809(R) (ANL-7354)
  helium-3 reactions (He-3,n) with, neutron time-of-flight spectra for, (E), 22:26932(R) (NP-17434)
  helium-3 reactions (He-3,t) at 18 MeV, differential cross sections for, (E), 22:27009
  neutron configuration of, determination using silicon-30 (d,t) and silicon-30 (He-3,α) reactions, (E), 22:3673
  neutron configuration of, research using neutron pickup reactions, (E), 22:20578 (WASH-1079)
  proton capture by, phosphorus-31 energy levels and transitions from, (E), 22:1597(R) (COO-1120-68)
  proton differential inelastic scattering cross sections at 17.5 MeV, angular distributions for, (E), 22:30048(R) (PUC-937-307)
  proton elastic scattering at 1 to 2 MeV, parities, proton widths, and reduced widths of resonances in, (E), 22:15967
  proton elastic scattering at 1.0 to 2.2 MeV, dissertation summary on, (E), 22:42007
  proton inelastic scattering by, resonances in, (E), 22:11948(R) (NP-17216)
  proton reactions (p,d) and (p,t) with, differential cross sections for, (E), 22:30048(R) (PUC-937-307)
  proton reactions (p,γ) at 0.5 to 2.3 MeV, phosphorus-31 energy levels and transitions from, (E), 22:9823
  proton reactions (p,γ) at 2 to 3 MeV, γ angular correlations and spectra in, (E), 22:27028
  proton reactions (p,γ) with, resonance widths for, (E), 22:26932(R) (NP-17434)
  proton reactions (p,γ) with, resonances in, (E), 22:11948(R) (NP-17216)
  proton reactions (p,γ) with, resonances in, (E), 22:11948(R) (NP-17216)
  proton reactions (p,He-3) at 46 MeV, helium-3 energy spectrum for, (E), 22:50574
  proton reactions (p,t) at 46 MeV, triton energy spectrum for, (E), 22:50574
SILICON ISOTOPES Si-31
  description using collective model, (T), 22:22560(R) (ORO-1067-2)
  energy levels and transitions from silicon-30 (d,p) reactions, (E), 22:37320
  energy levels from silicon-30 (d,p) reactions, spectroscopic factors for, (E), 22:11927
  energy levels from silicon-30 (d,p) reactions, spin-parity assignments and branching ratios for, (E), 22:37331
  energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
  energy levels of, calculations using strong-coupling collective model, (T), 22:37329
  energy-level transitions from silicon-30 (d,p) reactions, branching ratios for, (E), 22:22560(R) (ORO-1067-2)
  half-life of, (E), 22:24845
  production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
  reactions of recoil atoms of, in fast neutron radiolysis of phosphine in systems with butadiene, ethylene, and silane, yields in, 22:48874(R) (COO-1713-5)
  use as tracer for measurement of sea sediment movement, 22:19060
SILICON ISOTOPES Si-32
  content in glacial ice, effect of sunspots on, 22:6492
SILICON JUNCTIONS
  see also Radiation Detectors, Semiconductor (Silicon)
  charged particle energy-loss distributions in, (E), 22:11547
  description of reverse epitaxial diode, for hybrid photomultipliers, 22:40500
  radiation effects on N—P, electron and proton, 22:4563
  radiation effects on surface-barrier, fast neutron, 22:6707 (LYCEN-6756)
  radiation effects on, neutron, 22:17723(R) (COO-1624-11)
SILICON NITRIDES
  performance for control of grain growth of refractory oxides, 22:23880(P)
  properties of, used for electrodeposited coatings on metals, 22:2590
  Al_2O_3—Si_3N_4, fabrication and properties of high-temperature refractory materials of, 22:4875
  MgO—Si_3N_4, fabrication and properties of high-temperature refractory materials of, 22:4875
SILICON OXIDES
  analysis for oxygen by neutron activation, 22:30457
  analysis for sodium by neutron activation methods, 22:25267
  analysis for trace impurities by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
  analysis for water, microchemical method for, 22:9(R) (NBS-TN-425)
  analysis of surface of, for gold by scanning with charged particles, 22:27598
  chemistry in molten beryllium fluoride—lithium fluoride systems, 22:47112 (ORNL-4254, pp 88-173)
  chemistry in molten fluorides, 22:25328 (ORNL-4229, pp 50-67)
  compacting effects on structure of, 22:24405(R) (COO-1255-5)
  compatibility with molten fluorides, spectrophotometric studies of, 22:14427 (ORNL-4196, pp 15-32)
  content in lake sediments, use of x-ray diffraction spectroscopy for estimation of, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
  corrosion as container for molten fluorides, effects of silicon fluoride overpressure on, 22:45035
  crystal structure of vitreous, determination by neutron and x-ray diffraction analysis, 22:28820
  density of compacted, effects of power and vibrational frequency on, 22:2680
  deposition rates from rf sputtering, 22:43551
  determination in atmosphere, colorimetric, 22:21029 (SC-M-67-3044)
  determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
  determination in cement, on-line methods for neutron activation, 22:21236 (ORO-2980-16)
  determination in marine sediments, activation, 22:21042
  determination in taconite, on-line methods for neutron activation, 22:21236 (ORO-2980-16)
  deuterium exchange between heavy water and, 22:45060
  diffusion of gold in, at 1000°C, 22:13069
  dissolution in cryolite, kinetics of SiO_2, 22:15254(T) (ANL-Trans-560)
  effects of trace-quantity, on corrosion of aluminum oxide and beryllium oxide by potassium vapor, 22:36521
  effects on corrosion of Zircaloy by steam, 22:28736 (KAPL-M-6748)
  effects on sintering of lead zirconate titanate, 22:36527 (UCRL-18191)
  effects on yields in gamma radiolysis of adsorbed carbon dioxide, 22:10275
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
  europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
  insulation for gas-cooled reactor fuel assembly of, description of sleeve, 22:35515(P)
  interstellar extinction by grains of, (T), 22:8867
  ion implantation by bombardment of, boron and phosphorus, (E), 22:50250
  ion transport in films of, tracer studies on hydrogen and sodium, 22:50953
  ionic transport in fused, (E/T), 22:15606
  molecular configuration of, polarity in, 22:4873
  optical absorption in fused, during TRIGA pulse irradiation, 22:41648 (N-68-21124)
  physical properties of, for use in fibrous-type thermal insulation for radioisotopic power systems, 22:25613(R) (ALO-3633-8)

production of fused, use of gamma spectroscopy for control of, 22:4468
properties as matrix for radiation source, 22:21293(P)
radiation effects in, transient, (E), 22:24411 (LA-DC-8636)
radiation effects on benzene adsorbed on normal and deuterated gels of, EPR study of reactions of surface radicals in γ, 22:42774
radiation effects on capacitance and conductance of MIS structures of, 22:33702
radiation effects on etching rate of, electron, 22:1300
radiation effects on fused, in-pile, 22:19678
radiation effects on gels of, effects of water on formation of centers of delayed electron emission from, 22:42776
radiation effects on gels of, electron migration during γ, 22:37788
radiation effects on mechanical properties of, fast-neutron, (E), 22:28962
radiation effects on optical absorption in, fast neutron and gamma, (E), 22:48153 (N-68-23481)
radiation effects on optical properties of fused, electron, (E), 22:13571
radiation effects on photometric properties of, proton, (E), 22:34800
radiation effects on refractive index of fused, use to fabricate optical waveguides, 1.5-MeV proton, (E/T), 22:46203
radiation effects on single crystals of, γ, 22:30600
radiation effects on single crystals of, neutron, 22:8736 (ORNL-4170, pp 54-62)
radiation effects on sorptive capacity of gels of, γ, 22:8146
radiation effects on sorptive properties of gels of, γ, 22:14523
radiation effects on vitreous, neutron, 22:7070
radiation effects on, review, 22:26095
radioinduced charge trapping in layers of, in MOS structures, (T), 22:40511 (SC-CR-68-3659)
radioinduced polymerization of ethylene or 2-methylpropene on gels of, at 77°K, ESR studies on mechanism of γ, 22:23040
radioinduced polymerization of sands of, with methyl methacrylate, tensile strength of products of γ, 22:37775 (BNL-50082, pp 40-78)
radioinduced sintering of sand, fast-neutron, (E), 22:26090 (BNL-10279)
radioisotope incorporation in, during controlled growth of monodisperse particles, 22:12395 (UR-49-867)
radiolysis of monocarboxylic acids adsorbed on, ESR study of γ, 22:47171
reactions with aluminum hydroxide, sodium hydroxide, and water to yield radiation-resistant anion-exchange material, 22:18911(P)
reactions with americium oxides, solid-state, 22:30548
reactions with carbon and uranium fluorides to produce uranium carbide, 22:13055(P)
reactions with fluorides, use of uranium ions as indicator in spectrophotometric measurements of, 22:25328 (ORNL-4229, pp 50-67)
reactions with uranium mononitride at 600 and 1100°C, mechanism and products of, 22:48849 (KFK-771)
reactions with uranium tetrafluoride and carbon at 400 to 1300°C to produce uranium carbide, 22:49787(P)
reactions with vanadium at 800 to 1200°C, kinetics of, 22:2704
separation from clays by leaching using sulfuric acid, 22:45029 (UCRL-18043, pp 7-105)
sintering under various pressures, changes in inner hydroxyl groups during mechanical, 22:45060
sorption of photoproducts of uv-irradiated ergosterol and vitamin D_2 on, 22:12788
sorptive properties for protactinium, 22:8196
sorptive properties of colloidal, for vapors of organic solvents, 22:60(T) (TT-65-50400/4-6)
sorptive properties of gels of, for ferrocenes, Moessbauer studies of, 22:2031 (ORNL-IIC-10(Vol.1), pp 130-41)
spheroidizing powdered SiO_2, using rf induction coupled plasma generator, 22:17161 (UCRL-17896)
superconductivity of thin-film, at 3.5 to 6.5°K, 22:38510 (BNL-50082, pp 93-152)
thermal properties of, analysis of high-temperature, (E), 22:51095(R) (NDL-SP-16)
use for shielding at 400-MeV linear electron accelerator, calculations for, 22:11485 (ORNL-4211)
use of colloidal, in separation of hafnium and zirconium from Korean zircon caustic frit, 22:27884
use with grease as impregnants for improving training conditions of superconducting coils, 22:11366
vapor composition from evaporation source of, 22:50897 (UCRL-50469)
vapor pressure of, 22:50897 (UCRL-50469)
Al_2O_3--B_2O_3--Na_2O--SiO_2, composition and properties of glasses of, for vitrification of fission product solutions, 22:27849 (CEA-N-816, pp 415-80)
Al_2O_3--B_2O_3--Na_2O--SiO_2, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
Al_2O_3--BaO--CaO--SiO_2--ZnO, use of glasses of, in ionization chamber for use at high temperatures, 22:30827(P)
Al_2O_3--BeO--SiO_2, phase studies of high-silica regions of, 22:19658
Al_2O_3--CaO--Fe_2O_3--SiO_2-base--TiO_2, properties of Kaolite-20, as refractory castable, 22:43013 (BNWL-797)
Al_2O_3--Li_2O--SiO_2--TbO_2, preparation of thermoluminescent glass by irradiation of, 22:50997(P)
Al_2O_3--SiO_2, sorptive properties of Fiberfrax for magnesium chloride--potassium chloride--sodium chloride mixture, 22:25442 (ANL-7375, pp 19-45)
Al_2O_3--SiO_2, sorptive properties of gels of, for ferrocenes, Moessbauer studies of, 22:2031 (ORNL-IIC-10(Vol.1), pp 130-41)
Al_2O_3--SiO_2, ternary phase diagram, 22:7958 (SC-CR-67-2688)
Al_2O_3--SiO_2--Tb_2O_3, magneto-optical properties at low temperatures of glasses of, from Faraday effect measurements, 22:39197
BeO--SiO_2, melting point diagram for, thermodynamics for calculating, 22:2689
CaO--MgO--SiO_2, phase distribution in liquid, effects of chromic oxide and ferric oxide additions on, 22:45799 (UCRL-18043, pp 155-82)
CaO--SiO_2, phase studies of, 22:11081
CaO--SiO_2--ZrO_2, analysis for compounds formed in, using alcohol--glycerate, hydrochloric acid, hydrofluoric acid, and hydrofluoric acid--sulfuric acid, 22:50920
CaO--SiO_2--ZrO_2, phase studies of, 22:41119
$CaSO_4$--SiO_2, radioinduced thermoluminescence in, x, (E), 22:34778
CeO_2--K_2O--PbO--SiO_2, radiation resistant glass of, gamma, 22:17194(P)
Cr_2O_5--SiO_2, corrosion by air at 3200 to 3900°F, 22:12982
CrO_2--SiO_2, corrosion by air at 3200 to 3900°F, 22:12982
EuO--SiO_2, dielectric properties of $2EuO.SiO_2$, microwave-frequency, 22:44257
EuO--SiO_2, phase studies of, 22:11081
FeO--Na_2O--SiO_2, electric properties of fused, 22:45799 (UCRL-18043, pp 155-82)
hydrocarbons--SiO_2, radiation effects on, ESR study of free radicals from γ, 22:14525
N_2O--SiO_2, radiolysis of, effects of electron scavengers on yields from γ, 22:35851
Na_2O--Nb_2O_5--SiO_2, radiation effects on glasses of, ESR studies of γ, 22:30636
Na_2O--Nb_2O_5--SiO_2, radioinduced niobium centers in, ESR study of, 22:31965
Si--SiO_2, radiation effect on, x, 22:13069
Si--SiO_2, surface state density, effect of annealing on, 22:13069
SiO_2--SmO, phase studies of, 22:11081
SiO_2--SrO, phase studies of, 22:11081
SiO_2--UO_2, mechanical properties of fuel elements of, for heavy water-moderated reactors, 22:30262
SiO_2--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
SiO_2--UO_2, radioinduced volume changes in, annealing effects on fast neutron, 22:17155
SiO_2--UO_2, thermal conductivities at 100 to 800°C, 22:49832
SiO_2--W, corrosion by air at 3200 to 3900°F, 22:12982
SiO_2--W, production by hot pressing and sintering, 22:721(R) (AD-646616)
SiO_2--YbO, phase studies of, 22:11081
SiO_2--ZrO_2, crystal structure of flame-sprayed, 22:7067
SiO_2--ZrO_2, radiation effects on, cosmic and solar, 22:11093

SILICON STEEL
Al--C--Cr--Mn--Mo--Ni--Si, mechanical properties at high temperature as function of stress rate, 22:673
C--Cr--Mn--Mo--Ni--Si, mechanical properties at high temperature as function of stress rate, 22:673
C--Cr--Mn--Mo--Ni--Si--V--W, radiation effects on mechanical properties of, 2.5-MeV electron, 22:8790
Cr--Mn--Mo--Ni--Si, mechanical properties of nitrogen-containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)
Cr--Mn--Mo--Ni--Si--V, mechanical properties of nitrogen-containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)

SILICON SULFIDES
use as feed material in electromagnetic separation of silicon isotopes, 22:14582(P)

SILICON SYSTEMS
see also Inconel 800
see also Monel
see also Monel 400
see also Nimonic PE 16
testing polyethylene--polypropene--silicon, for sealing high-pressure carbon dioxide vessels, 22:45833
Al--C--Fe--Si--U-base, thermal expansion tensor of, to 600°C, 22:27544(R) (NLCO-1015)
Al--C--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015)
Al--Cr--Fe--Si--U-base, radioinduced swelling at 400 to 550°C of, neutron, 22:34090
Al--Cr--Ni--Si, grain distribution in, effects of size on, 22:10988
Al--Er--Si, crystal structure of, 22:28821
Al--Er--Si, crystal structure of Er_2AlSi, 22:2647
Al--Er--Si, crystal structure of Er_4AlSi_3, 22:2647

Al--Er--Si, phase studies of, 22:28821
Al--Fe--Mg--Ni--Si--Ti, cladding of uranium oxide (UO_2) fuel elements, radiation testing in Halden Boiling Water Reactor of, 22:44824 (HPR-100)
Al--Fe--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015)
Al--Gd--Si, crystal structure of, 22:28821
Al--Gd--Si, crystal structure of Gd_4AlSi_3, 22:2647
Al--Gd--Si, phase studies of, 22:28821
Al--Mg--Si, radiation effects on mechanical properties of, neutron, 22:4813 (TID-24148)
Al--Mo--Si--Sn--Ti-base--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Mo--Si--Sn--Ti-base--Zr, properties, 22:31323
Al--Si, compression strength of, effects of grain size on, 22:17115(R) (NYO-2394-31)
Al--Si, dislocation particle interactions in, 22:17115(R) (NYO-2394-31)
Al--Si, performance of Alpax, as brazing alloy for aluminum--aluminum oxide, 22:11028(T) (UCRL-Trans-10144)
Al--Si, radiation effects on mechanical properties of, neutron, 22:4813 (TID-24148)
Al--Si, strain-stress behavior of, analysis of, 22:17115(R) (NYO-2394-31)
Al--Si--Ti-base--W--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Si--U, analysis by microanalyzer using emission spectroscopy, 22:42633
Al--Si--U, dissolution of, effects of copper on, 22:4231(R) (IN-1087)
Al--Si--Zr, crystal structure of, 22:28821
Al--Si--Zr, phase studies of, 22:28821
Au--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
B--Co-base--Cr--Si--W, corrosion of braze alloy of, by lithium hydride at 1300°F, 22:2569 (NAA-SR-Memo-12005)
B--Cr--Fe--Ni-base--Si, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
B--Cr--Fe--Ni-base--Si--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
B--Cr--Fe--Ni-base--Si--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
B--Cr-base--Mn--Mo--Si, microstructure and properties of, 22:19639
B--Cr-base--Mn--Nb--Si, microstructure and properties of, 22:19639
B--Cr-base--Mn--Si, microstructure and properties of, 22:19639
B--Mn--Mo--Nb--Ni-base--Si, microstructure and properties of, 22:19639
B--Mn--Mo--Nb--Ni-base--Si--Ti, microstructure and properties of, 22:19639
B--Mn--Nb--Ni-base--Si, microstructure and properties of, 22:19639
B--Mn--Ni-base--Si, microstructure and properties of, 22:19639
B--Mn-base--Mo--Si, microstructure and properties of, 22:19639
B--Mn-base--Si, microstructure and properties of, 22:19639
B--Ni--Si, performance as brazing alloy for high temperatures, 22:12991
Be--Si, phase diagram, 22:4797 (NMI-TJ-37)
Be--Si, phase diagram, 22:10986(T) (JPRS-43479)
Bi--Si, corrosion and oxidation resistance as coatings for nickel-base alloys, 22:6935
C--Cr--Fe-base--Mo--Si--Ti, wear resistance of, optimum composition for maximum, 22:43580
C--Cr--Mn--Mo--N--Ni--Si--steel, transformations in TRIP alloy II, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Mn--Mo--N--Ni--Si--steel--V, transformations in TRIP alloy III, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Mn--Mo--Ni--Si--steel, mechanical properties of metastable austenitic, effects of temperature on, 22:45745 (UCRL-18043, pp 107-53)
C--Fe--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015)
C--Si--U, phases of, effects of carbon content on, 22:38637
C--Si--Zr, phase diagrams at 1300°C, 22:36548
Ca--Si, analysis for aluminum, calcium, iron, manganese, and silicon, x-ray quantometric, 22:43522
Ce--Cu--Si, crystal structure of Ce_2CuSi_3 and Ce_2Cu_3Si, 22:2647
Ce--Ni--Si, crystal structure of Ce_2NiSi_3, 22:2647
Co--Nb--Si, phase studies of, 22:10996
Co-base--Cr--Fe--Mn--Ni--Si--W, fatigue testing Cronidur 600, at 800 to 1200°C, 22:678
Co-base--Cr--Fe--Mo--Ni--Si, radiation effects on mechanical properties of S-1, neutron, 22:34077 (BNL-12438)
Cr--Hf-base--Si, corrosion by steam, 22:10921(P)
Cr--Hf-base--Si, tensile properties of, 22:10921(P)
Cr--Ni--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Ni--Si, brazing characteristics, 22:21673 (WAPD-T-1947)
Cr--Ni--Si, testing as brazing alloy for sodium corrosion loop, 22:12972
Cr--Ni--Si--stainless steel, corrosion cracking by water at 350°C, stress, 22:28732 (CEA-N-816, pp 102-39)
Cr--Pd--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Pd--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Pt--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Si--Ti, effects as coating, on oxidation of niobium or tantalum, 22:2571
Cr--Si--Ti, properties for protection of niobium alloys from oxidation, 22:36433
Cr--Si--U--Zr, welding of, electron beam, 22:34057
Cr--Si--U-base--Zr, crystal structure transformation kinetics of, 22:38576
Cr--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Si-base--Ti, performance as coating on B-66 niobium alloy at high temperatures, 22:17131
Cu--Er--Si, crystal structure of Er_2CuSi_3 and Er_2Cu_3Si, 22:2647
Cu--Gd--Si, crystal structure of Gd_2Cu_3Si, 22:2647
Cu--La--Si, crystal structure of La_2CuSi_3, 22:2647
Cu--Mn--Si, shock loading effects on lattice of, (E), 22:17828
Cu--Nd--Si, crystal structure of Nd_2Cu_3Si, 22:2647
Cu--Si, radiation effects on hardness of, annealing of fast-neutron, 22:43623
Cu--Si--Y, crystal structure of Y_2Cu_3Si, 22:2647
Cu-base--Si--Zr, properties of, 22:6987
Er--Ni--Si, crystal structure of, 22:28821
Er--Ni--Si, crystal structure of Er_4Ni_3Si, 22:2647
Er--Ni--Si, phase studies of, 22:28821
Er--Si, crystal structure of, 22:28821
Er--Si--Y, crystal structure of, 22:28821
Er--Si--Y, crystals structure of, 22:28821
Er--Si--Y, phase studies of, 22:28821
Fe--La--Si, crystal structure of La_2FeSi_3, 22:2647
Fe--Si, analysis for aluminum, iron, manganese, and silicon, x-ray quantometric, 22:43522
Fe--Si, analysis for traces of oxygen, neutron activation, 22:8010
Fe--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Fe--Si, nuclear magnetic resonance in, spin--echo technique for, 22:9438
Fe--Si, oxygen activity in liquid, electrochemical determination of, 22:72
Fe--Si, radiation effects on rate processes in, 22:15230
Fe--Si--U, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Fe--Si--U, radioinduced swelling of Zircaloy-2-clad hollow core fuels of, in-pile, 22:12999 (BNWL-473, pp 9.1-18)
Fe-base--Mn--Mo--Ni--Si, mechanical properties at high temperatures, 22:19546
Fe-base--Si, creep rates of, 22:45745 (UCRL-18043, pp 107-53)
Fe-base--Si, diffusion of iron in, at 900 to 1460°C, 22:38540 (UCRL-50314)
Fe-base--Si, radiation effects on zero magnetostriction of, fast neutron, 22:47691
Gd--La--Si, crystal structure of, 22:28821
Gd--La--Si, phase studies of, 22:28821
Gd--Si, crystal structure of, 22:28821
Ge--Si, phase diagrams and thermodynamic properties of, 22:4803
H--Si--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
La--Ni--Si, crystal structure of La_2NiSi_3, 22:2647
La--Si, crystal structure of, 22:28821
La--Si--Zr, crystal structure of, 22:28821
La--Si--Zr, phase studies of, 22:28821
Mg--Si, reactions with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Mn--Ni--Si, testing as brazing alloy for sodium corrosion loop, 22:12972
Mn--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Mo--Si, phase diagrams, 22:36548
Mo--Si, thermodynamics of surface alloying of tungsten with, 22:30575
Mo--Si--U, crystal structure of α-phase, effects of boron additions on, 22:28833
Mo--Si--U, radioinduced swelling of, in-pile, 22:13077 (BNWL-473, pp 6.1-20)
Nb--Si, thermodynamics of surface alloying of molybdenum with, 22:30575
Ni--Si, corrosion by aqueous solutions, review of, 22:52142
Ni--Si, uses in chemical processing industries, 22:52142
Ni--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ni-base--Si, particle coarsening in precipitates of, 22:15207 (CALT-221-39)
O--Si--V, phase diagram and thermodynamics of, 22:2704

Pd--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pd--Si, radiation effects on crystal structure of, amorphous state produced by fission fragment, (E), 22:37054
Pt--Si, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Si--Li-base, ductility at 800 to 1200°F, effects of composition on, 22:21650
Si--SiO_2, radiation effect on, x, 22:13069
Si--SiO_2, surface state density, effect of annealing on, 22:13069
Si--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Si--U, production of U_3S_i by vacuum induction heating, 22:23761 (IN-1131, pp 2-29)
Si--U-base properties for high-temperature water reactors, 22:43642(P)
Si--U-base, deformation testing α-phase, analysis of high-temperature, 22:26055 (NLCO-988)
Si--U-base, heat treatment and properties of, 22:2618
Si--U-base, radiation effects on electric conductivity of, effects of annealing on neutron, 22:23847(T) (AERE-Trans-1093)
Si--U-base, radiation effects on phase composition, neutron, 22:23847(T) (AERE-Trans-1093)
Si--V, magnetic flux distribution in superconducting, effects of grain boundaries and surface scratches on, (E), 22:34527
Si--V, phase transformations in, low-temperature, 22:11524
Si--V, properties of, effect of silicon content on, 22:2560(R) (IS-RD-11)
Si--V, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Si--W, thermodynamics of surface alloying of niobium, molybdenum, and tantalum with, 22:30575
Si--Y, crystal structure of, 22:28821
Si--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Si--Zr, combustion of, lower concentration limit of explosive, (E), 22:28808
Si--Zr, crystal structure of, 22:28821

SILICONE POLYMERS
see also Silicone Rubbers
coating of metallic molds with, effect on release capability of, (E), 22:2714 (R-67-ND-6)
heat transfer from surfaces of, improved liquid wetting angle effects on, 22:10495(P)
radiation effects on nerve grafts sheathed with Silastic, growth following, 22:49496

SILICONE RUBBERS
see also Silicone Polymers
polymerization of phenyl methyl, effects of organic peroxides on, 22:14516 (NP-17265)
radioinduced polymerization of phenyl methyl, β and γ, 22:14516 (NP-17265)
testing Silastic 2096, for use in reactor O rings, 22:34128 (BNWL-736)

SILICONES
analysis of boron-containing, for halogens, iron, and silicon, 22:30436(R) (UCRL-50006-68-1)
electric properties of, for use as insulation for SNAP-15A, 22:37936 (GA-7976)
foaming ability of, effects of aging on, 22:39960 (MLM-1397)
properties for use in space environment, 22:11104
radiation effects on, 22:11104
radioinduced polymerization of vaporous, on films, effects of electric field on electron beam, 22:51030
use for enclosure of radium applicators for therapy, 22:45652

Silk
see Textiles

Silkworms (Bombyx)
see Bombyx under Insecta

Siloe Reactor
see Grenoble Reactors (Siloe)

Siloette Reactor
see Critical Assemblies

SILTS
age of deep sea, bismuth-214 method for estimation of, 22:18918
age of deep sea, protactinium-231/thorium-230 method for estimation of, 22:8232 (ORO-2411-8)
age of deep sea, thorium-230/-232 method for estimation of, 22:8232 (ORO-2411-8)
age of lake, carbon-14 method for determining, 22:6490
age of ocean, protactinium-231/thorium-230 method for estimation of, 22:45180(R) (ORO-3622-2)
age of, argon/potassium method for estimation of, 22:6435 (MIT-1381-15)
age of, proposed thorium/uranium method for estimation of, 22:10366
aluminum-26 in Pacific Ocean deep-sea, activity measurements of, 22:6459
analysis and sampling of, from Anasco Bay, Puerto Rico, (E), 22:21218 (PRNC-104, pp 147-66)
analysis for chromium and molybdenum, neutron activation, 22:48917(R) (YALE-2912-20)
analysis for molybdenum by colorimetry using zinc acid sulfides, 22:42621
analysis for strontium-90 in the presence of yttrium-90, 22:42598
analysis for uranium by paper chromatography, 22:18702
analysis of coastal western Puerto Rican, for mineral trace elements, 22:21217 (PRNC-104, pp 121-46)
analysis of Columbia River, for radioisotopes, 22:12008(R) (BNWL-537)
analysis of marine, for aluminum by neutron activation methods, 22:21025 (PRNC-104, pp 91-5)
analysis of marine, for silicon oxides, activation, 22:21042
analysis of pelagic, for trace elements by neutron activation methods, 22:37642 (BNWL-SA-1776)
behavior of suspended, in San Francisco Bay System, 22:4272 (TID-24140)
beta activity in Kozlov Mountain water reservoir, 22:27900
beta activity of Atlantic Ocean, from northwest African shelf, 22:25554
beta activity of, from surface waters, method for measurement of, 22:51084 (SZS-8/68)
bismuth-214 content in deep sea, use in age estimation, 22:18918
carbon-14 content of constituents of biophase of, determination of rate of accumulation by measuring, 22:28304
cesium-137 sorption by bottom and suspended, effects of clay minerals on, 22:21186 (ORO-490-13)
cesium-137 transport by suspended, effects of clay minerals on, 22:21186 (ORO-490-13)
characteristics and distribution of Atlantic Ocean, research on, 22:191(T) (TT-66-51029)
cobalt-60 content of harbor, effects of waste disposal from nuclear powered ships on, 22:28457
composition and distribution of tropical sea, 22:8232 (ORO-2411-8)
composition of Anasco Bay, Puerto Rico, (E), 22:21216 (PRNC-104, pp 118-20)
content in streams of suspended, use of cadmium-109 electron-capture x radiation for determination of, 22:4273
content in surface waters, performance of radiometric gages for measurement of, 22:19178
content of major- and trace elements in marine, in Puerto Rico, 22:43311(R) (PRNC-85)
density of marine, gamma-densimeter for nondestructive measurement of, 22:51271
deposition of oceanic, gamma spectrometry method for determination of rate of, 22:23182
deposition rate of ocean, gamma spectrometry method for determination of, 22:27939
dispersion patterns for, in coastal western Puerto Rico, 22:21217 (PRNC-104, pp 121-46)
distribution of aragonite, calcite, and α-quartz in marine, off west coast of Puerto Rico, 22:43311(R) (PRNC-85)
distribution of marine, use of elastic properties to determine, 22:43311(R) (PRNC-85)
effect of lake and river bottom, on transport of strontium-85, (E), 22:10356 (ORO-490-12)
fallout sorption by suspended river, effect of mineral--radioisotope reactions on, 22:4272 (TID-24140)
iodine content in deep sea, neutron activation method for determination of, 22:21223
iodine-131 content of suspended lake water, effects of ion exchange on, 22:40219
iridium content in Pacific Ocean deep-sea, from cosmic origin, 22:42916
iridium content of deep sea, determination of, 22:178(R) (COO-382-76)
labeling with chromium-51 and gold-198, methods for surface, 22:19063
measurement of suspended, γ absorption method for, 22:256 (ORNL-IIC-10(Vol.2), pp 723-45)
mixing of ocean bottom, effect on accuracy of age estimation, (T), 22:6504
movement and natural radioactivity of Bay of Naples, 22:48968
movement in Ebb Channel of Firth of Forth, use of radioactive tracers for studying, 22:8300 (AERE-R-5523)
movement in rivers and seas, use of radioactive tracers for measurement of, 22:19058
movement in surface waters, development of tracer method to measure, 22:30775 (PAEC/Chem/Misc-2)
movement of Danube River gravel, radioactive tracer measurements of, 22:19064
movement of estuary, in Firth of Forth, radioactive tracer method for measurement of, 22:19059
movement of ocean, radioactive tracer method for measurement of, 22:19060
movement of river, kinetic characteristics of, (E/T), 22:18996
movement of spoil ground, radioactive tracer measurement of, 22:47288 (AERE-R-5500(Vol.3), pp 594-607)
movement of, development of gold-198 tracer techniques, to measure, 22:25614 (CEA-R-3389)

osmium content in Pacific Ocean deep-sea, from cosmic origin, 22:42916
particle size distribution in, SED computer program for calculation of, 22:51136 (LA-4001)
pollution of ocean, from sewage disposal, radioactive tracer studies of, 22:19061
radiation monitoring of Ames Laboratory area river, 22:48944 (IS-1924)
radioactivity content of, in Galveston during 1965, effects of nuclear powered ship on, 22:28459
radioactivity in deep sea, measurement of, 22:16731
radioactivity in, near Ames Research Reactor, 1962 to 1968, 22:25532 (IS-1776)
radioactivity monitoring of, at Galveston during 1966, 22:40695
radioactivity of Bay of Banyuls, 22:35955
radioactivity of bottom, of Atlantic and Pacific Oceans, 22:36261
radioactivity of Japanese, radiometric method for measuring, 22:8216
radioactivity of Neogene, in Niigata Prefecture, Japan, 22:8229
radioisotope content of Japanese coastal, 1964 and 1965, 22:40217
radium content in surface layer of Indian Ocean, (E), 22:25553
radium-226 content in marine, 22:8232 (ORO-2411-8)
radium-226 content of, in uranium mine stream, effects of particle size on, 22:47498
research on, use of naturally occurring radioisotopes in, 22:30703
sedimentation rate of deep sea, gamma spectrometry method for determination of, 22:18918
silicon dioxide content in, use of x-ray diffraction for estimation of crystalline and amorphous, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
sorptive properties of marine, for cesium, role of exchangeable cations on, 22:21222
sorptive properties of Sagami River bottom, for radionuclides, 22:40216
strontium-85 sorption by bottom and suspended, effects of clay minerals on, 22:21186 (ORO-490-13)
strontium-85 sorption by, in flowing and nonflowing aquatic systems, (E), 22:37876 (ORO-490-12-a)
strontium-85 transport by suspended, effects of clay minerals on, 22:21186 (ORO-490-13)
thorium content and isotope ratios in river, from eastern and southern US, 22:33557
thorium content in Antarctic glacial marine, 22:6498
thorium isotope content in Indian Ocean bottom, 22:33555
transport in rivers and seas, use of radioisotopes as tracers of, 22:42975(T) (ORNL-tr-1805)
uranium content and isotope ratios in river, from eastern and southern US, 22:33557
uranium content in Antarctic glacial marine, 22:6498
uranium content in Baltic Sea, effects of organic material on, 22:33564
uranium content in Japanese, in Niigata Prefecture, 22:8230
uranium content in ocean, 22:8232 (ORO-2411-8)
uranium content in surface layer of Indian Ocean, (E), 22:25553
uranium distribution in Aral Sea bottom, measurement of, 22:25548
yttrium-90 content in lake, effect on strontium-90 and yttrium-90 equilibrium, 22:12431(T) (MLM-1470(tr))
zinc-65 content of, in Columbia River estuary, 22:45469
zinc-65 distribution in, of aquatic ecosystems, 22:14980

SILVER

(For compounds where silver forms part of the anion, see Argenates)
abundance in chondrites, 22:2727
acoustic wave production by electromagnetic excitation, 22:15566(R) (NYO-2150-40)
alpha particle reactions at 54.4 MeV, energy losses, range, and straggling in, (E), 22:26744
analysis for tantalum by solvent extraction and x-ray spectrometry, 22:22984
analysis of coins of, for copper, gold, and lead by deuteron activation methods, 22:27592
analysis of refined, for gold, activation, 22:1971
antiproton reactions at 2.23 GeV in nuclear emulsions, production of fast helium nuclei in, 22:22301
antiproton reactions at 3 GeV in nuclear emulsions, (E), 22:14513 (BNL-50057, pp 60-78)
antiproton reactions at 5.0 GeV/c in emulsions with, production of Z greater than or equal to 3 nuclei in, 22:35279
argon atom reactions with single-crystal, numerical experiments on, 22:34264
argon atom scattering by (111) plane of, velocity dependence of, (E), 22:45951
argon beam scattering at 1 eV from, chopped, 22:983
argon ion reactions with, negative ion production from, 22:1547
argon--ion reactions at 90 keV, characteristic x-ray production in, (E), 22:29215
argon-atom scattering on surfaces of, at 1 to 10 eV, (E/T), 22:13258
atomic weight of, based on carbon-12 = 12, 22:42698
bremsstrahlung spectra from beta-excited, (E), 22:13248
cadmium-109 production from natural, by neutron irradiation in reactors, 22:28017 (ORNL-4247)
chromatographic behavior on cerium phosphate paper, 22:153
chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
coatings of, deposition on metal substrates using bias sputtering and ion plating, 22:34042 (MLM-1453)
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with N,N,N',N'-tetramethylethylenediamine, coordination number for, 22:27626 (MIT-905-108, pp 33-62)
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with thio ethers, enthalpies of formation of, 22:27626 (MIT-905-108, pp 33-62)
condensation in meteorites, (T), 22:5023
content in photographic film, x-ray fluorescence method for determining, (T), 22:45343
corrosion in fused chloride bath, 22:37704(T) (ANL-Trans-610, pp 57-63)
creep of, void formation during, 22:45799 (UCRL-18043, pp 155-82)
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deposition of films of, on Vycor glass, 22:35775(R) (NYO-1158-25)
deposition of mica substrates in ultra-high vacuum, epitaxy in nucleation and growth, 22:43607
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in gallium arsenide, activation, 22:1969
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as impurity in uranium tetrafluoride by carrier distillation, spectrographic, 22:30431 (JEN-192-DQ/1-66)
determination as silver molybdate, potentiometric, 22:22958
determination as trace impurity in gallium by activation methods, 22:14456
determination as trace impurity in iron oxide by solvent extraction and activation, 22:12240
determination as trace impurity in petroleum by neutron activation methods, 22:1989
determination by activation method including radiochemical separation by amalgam exchange, 22:27574
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic-absorption spectroscopy using induction plasma, 22:1985
determination by chromatographic separation using ammonium molybdophosphates, spot test for, 22:14
determination by gravimetry using sodium salt of benzilic acid, 22:4026
determination by isotope dilution or neutron activation methods, substoichiometric, 22:27618
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron resonance techniques, 22:44998
determination by photon activation methods, 22:27589
determination in airborne particulates by neutron activation methods, 22:30501
determination in aluminum-base alloys by atomic absorption spectroscopy, 22:16466
determination in ammonium sulfate, activation method for, 22:25249
determination in ancient gold coins by proton activation methods, 22:27592
determination in argyric skin by neutron activation, 22:50906
determination in atmospheric precipitation in Western North America by neutron activation methods, 22:40001
determination in Bernese coins of 15th and 16th centuries by neutron activation methods, 22:30449
determination in biological materials by automated neutron-activation methods, 22:16450
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in bismuth by activation methods, separation techniques for, 22:4049
determination in cadmium--silver alloys, polarographic, 22:9(R) (NBS-TN-425)
determination in copper ores by photon activation method, 22:40045
determination in copper, activation, 22:27558
determination in copper--nickel--silver alloys, coulometric, 22:9(R) (NBS-TN-425)
determination in galenas using phosphorus-32-labeled sodium diethyl phosphorodithioate, radiometric, 22:37682
determination in graphite, molybdenum, and tungsten by

neutron activation methods, 22:16387 (CEA-R-3267)
determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
determination in high-purity platinum by neutron activation methods, 22:7992(R) (NBS-TN-428)
determination in iron meteorites by neutron activation methods, 22:3 (AERE-R-5254)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in marine organisms by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in metallic materials, spectrochemical method for, 22:22963
determination in minerals by neutron activation methods, 22:18694(R) (TID-23668)
determination in nickel--silver alloys, polarographic, 22:9(R) (NBS-TN-425)
determination in ores by x-ray fluorescence method, 22:1958 (ORNL-IIC-10(Vol.1), pp 442-64)
determination in Pacific Ocean corals, neutron activation method for, 22:47255
determination in paint by neutron activation methods, 22:14433 (ORNL-4196, pp 66-89)
determination in palladium by neutron activation methods, 22:33261
determination in platinum by neutron activation methods, 22:33276
determination in silver ores, x-ray fluorescence analysis techniques for, 22:4430 (ORO-3224-12)
determination in solutions by null-point potentiometry, microchemical method for, 22:9(R) (NBS-TN-425)
determination in teeth fillings by neutron activation methods, 22:25254
determination in uranium oxide using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in various materials, use of gamma activation method for, 22:8006
determination in water and snow by neutron activation methods, 22:40002
determination in zone-refined zinc by neutron activation methods, 22:44988
determination of a visual complexometric, 22:33273
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of, controlled-potential coulometric, 22:30436(R) (UCRL-50006-68-1)
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination using neutron-neutron method with resonance neutrons, 22:30447
determination using rhodizonic acid, 22:7998
deuteron energy losses at 0.2 to 40 keV in thin foils of, (E), 22:17756
deuteron transmission through films of, (E), 22:48179
diffusion in aluminum and its dilute alloys, 22:13003(R) (ORO-2036-5)
diffusion in aluminum at 400 to 630°C, 22:10967
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in tin, volume and grain-boundary, 22:34767
diffusion in zinc, anisotropic, 22:45765(R) (RPI-1044-18)
diffusion in, tracer studies of near-surface self, 22:8728 (ORNL-4170, pp 15-18)
diffusion of cobalt in, tracer studies of, 22:8728 (ORNL-4170, pp 15-18)
diffusion of effects of hydrostatic pressure on self, 22:21686 (CEA-R-3316)
diffusion of nickel in liquid, 22:43565(R) (COO-841-15)
diffusion of oxygen in solid, at high temperatures, electrochemical measurement of, 22:4776(T) (NRC-TT-1295)
diffusion of silver-100m in, fulfillment of boundary conditions in isotope exchange in, 22:27701
diffusion of zinc in, determination by isotope effect, 22:43593 (ANL-7299, pp 246-50)
diffusion of, dependence on temperature of self, 22:686
dissolution by liquid aluminum, heat of, 22:31362
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects of electrodes of, on deuterium separation factor in hydrogen electrode reactions, 22:14499
effects of film coatings of, oxidation of zirconium, 22:21667
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on determination of fluorine in organic and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on phase equilibria in titanium alloys and zirconium alloys, 22:52201
effects on properties of copper--zirconium alloys, 22:6987
effects on reaction between tetravalent cerium and monovalent thallium, 22:8019
effects on restoration of irradiated aluminum, 22:19594
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on superconducting properties of niobium--titanium alloys, (E), 22:34563
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
effects on titrimetric determination of trace amounts of uranium, 22:22972
electrochemistry of single crystal electrodes of, 22:27626 (MIT-905-108, pp 33-62)
electromigration of, effects of hydrogen on, 22:45765(R) (RPI-1044-18)
electron backscattering and secondary emission coefficients at 3.2 to 14.1 MeV, (E), 22:13969
electron energy loss distribution in, at 1.52, 2.65, and 3.66 MeV, 22:19741
electron energy loss spectra in carbon-covered foils of, (E/T), 22:38771
electron reactions at 2.0 to 4.0 MeV, positron conversion yield differential in, 22:24760
electron reactions with, ionization cross sections for, (E/T), 22:11225
electron reactions with, ionization cross sections for, (E/T), 22:11224
electron scattering at 0.5, 1, and 2 MeV in thick targets of, depth dose distributions, (E), 22:11220
electron scattering at 3.2 to 14.1 MeV, angular distributions in transmission measurements on, (E), 22:44744
electron scattering in foils at 0.5 to 2.0 MeV, multiple, (E/T), 22:11966
electrorefining of, 22:49701
emission spectra excitation in, by β particles of carbon-14 or promethium-147, 22:27844
extrusion pressures in conical dies, nomogram for predicting, 22:43542 (TRG-Report-1523)
fission fragment transport in, mass dependence of stopping power for californium-252, 22:14751(R) (ORO-3638-1)
fission-fragment ranges and energy losses in, (E), 22:1350
fission-fragment scattering in, multiple, (E/T), 22:18170
fluorescence yield from silver-109 Auger spectrum, K, (E), 22:30036
gamma differential elastic scattering cross section at 1.33 MeV, (E), 22:32647
gamma incoherent scattering in, (E), 22:9072
gamma spectra of, excited by 11-MeV alpha particles, 22:26739(R) (NP-17423)
helium atom reactions with single-crystal, numerical experiments on, 22:34264
helium-3 reactions at 29 MeV, total cross section for, (E), 22:18188
ion exchange by polyantimonic acid, 22:18750
ion ranges and stopping powers in, (T), 22:45926 (UCRL-18127)
ion reactions with, gas diffusion and lattice defects following, review, 22:26484
ionization by relativistic electrons, K, (T), 22:947
joining to low-carbon steels, explosive method for, 22:38528
krypton ion reactions at 20 to 450 keV with, thermal gas release and depth distribution of residual ions following, (E), 22:26495
krypton scattering on, angular distributions from, 22:9025
manganese-54 hyperfine magnetic fields in, at 0.01 to 0.04°K, (E), 22:46218
meson (K^-) reactions at 10 GeV/c in nuclear emulsions, lithium-8 evaporation in, (E/T), 22:37335
meson (K^-) reactions at 800 MeV/c in emulsions, heavy hypernuclei production in, (E), 22:24564
meson (π^-) absorption and scattering cross sections at 0.6 to 1.6 MeV, optical model analysis of, (E/T), 22:48455
meson (π^-) coherent reactions at 17 GeV/c in emulsions, (E), 22:13663
metallography of, performance of aluminum oxide--resin mounts for, 22:26058 (RFP-1104)
molecular beam scattering from (111) plane of, deuterium, helium, and hydrogen, 22:981
neon atom reactions with single-crystal, numerical experiments on, 22:34264
neutron absorption and total cross sections for, measurement using self-indication method, (E), 22:20578 (WASH-1079)
neutron absorption cross section and resonance integral in reactor spectrum, (E), 22:44745
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288

neutron absorption resonance integrals for, measurements using pile oscillator method, (E), 22:50603
neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture cross sections at 5 to 100 keV, (E), 22:11948(R) (NP-17216)
neutron reactions with, yield of copper-64, gold-198, manganese-56, and sodium-24 from, use of, for measurement of dose to film badge shield and personal effects of man following criticality accident, 22:23504 (HW-76823)
neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
neutron total cross sections at 2 to 10 MeV, (E), 22:11936
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
optical properties in ultraviolet region, relation to electronic structure, 22:5410 (IS-T-187)
oxidation by carbon dioxide, kinetics and thermodynamics of, 22:17080
oxygen-16 ion energy loss in, at 10 to 30 MeV, 22:7163
photoelectric cross section at 145 keV, K-shell, (E), 22:9028
photon absorption cross sections up to 25 MeV, (E), 22:26963
photon reactions (γ,n) and $(\gamma,2n)$ from threshold to 25 MeV, cross sections for, (E), 22:26963
photon reactions (γ,n) at 9 to 25 MeV, integrated cross sections and yield curves for, (E), 22:35272
photon reactions (γ,p) at 17.5 to 24.0 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27224
photon reactions (γ,t) with, cross sections for, (E), 22:53095 (BMwF-FBK-68-11)
plasma of, radiative decay of tangential surface plasmons in, (T), 22:52824
preparation of colloidal, in molten potassium nitrate--sodium nitrate eutectic, 22:25374 (ORNL-4229, pp 22-49)
properties for use in gamma thermometers, 22:43055
properties for use in vacuum systems, 22:16828
properties of, effects of spin fluctuations on, (T), 22:3220
proton atomic stopping powers at 3.75 to 5.5 MeV, (E), 22:30039
proton energy losses at 0.2 to 40 keV in thin foils of, (E), 22:17756
proton fission at 20 GeV/c, fragment range and velocity in, (E), 22:53162
proton reactions (p,α), (p,d), (p,t), and $(p,He\text{-}3)$ at 156 MeV, direct and indirect mechanisms for, (E/T), 22:7703(T) (ORNL-tr-1831)
proton reactions (p,n) at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
proton reactions at 1, 2, and 3 GeV in nuclear emulsions, cross sections for, (E), 22:9837
proton reactions at 1, 2, and 3 GeV, cross sections for formation of neon-24 and sodium-24 in, (E), 22:42033
proton reactions at 100 MeV, isotope formation cross sections for, (E), 22:31535
proton reactions at 13.8 GeV/c in emulsions, particle production in, (E), 22:24531 (JEN-174-DF/I-52)
proton reactions at 2.26, 9, and 19.5 GeV in nuclear emulsions, production of fast helium nuclei in, 22:22301
proton reactions at 200 and 400 MeV, cross sections for, (E), 22:14035
proton reactions at 24 GeV in emulsions, models for analysis of fission-like disintegrations from, (E/T), 22:20126
proton reactions at 25 GeV/c with emission of two $Z > 5$ particles, (E/T), 22:9850 (INR-P-827/VI/PH)
proton reactions at 3 and 29 GeV, distribution of radionuclides produced by, (E), 22:16021
proton reactions at 30 GeV, cross sections for formation of beryllium-7, sodium-22, and sodium-24 in, (E), 22:42032
proton reactions at 660 MeV, angular distribution and differential energy spectra of lithium-8 produced in, (E/T), 22:5855
proton reactions at 660 MeV, lithium-8 angular and energy distributions from, (E), 22:27216
proton reactions at 9 GeV in nuclear emulsions, fast deuteron emission in, 22:7436
proton scattering at 10 to 140 MeV by, mean multiple scattering correction to energy loss for, 22:29804
proton spallation at 200 and 400 MeV, recoil ranges in, (E), 22:14036
radiation damage in, stage-I annealing of 2-MeV electron, (E), 22:24487
radiation effects on corrosion of electrodes of, in acid and basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on electric resistivity of thin films of, argon ion, (E), 22:26494
radiation effects on electrochemical properties of electrodes of, effects of oxides on slow-neutron, 22:6330
radiation effects on, trapped in metaphosphate glass, optical and ESR studies of x, 22:106
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced defects in thin films of, electric resistance--temperature study of proton, 22:44259
radioinduced defects in, annealing effects on recovery from electron, 22:15223 (CONF-670924-3)
radioinduced defects in, effects of pre-irradiation treatments on production and recovery from deuteron, (E/T), 22:31928 (BNL-50083, pp 291-302)
radioinduced iodination of, kinetics of γ, 22:4206
radioinduced self diffusion of, electron, 22:45794
separation by amalgam exchange after activation, 22:27574
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation by ion exchange, role of complexation reactions in, 22:33517
separation from chloride solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from copper and lead by solvent extraction using sodium diethyl phosphorodithioate, 22:37682
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from gallium by solvent extraction and ion exchange, 22:14456
separation from gold, indium, platinum, and thallium by paper chromatography, 22:4248
separation from indium by precipitation with lanthanum hydroxide, 22:51072
separation from mercury in nitric acid solution, 22:21151 (AERE-M-2008)
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals using sodium benzilate, 22:30660
separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
separation from palladium by ion exchange, 22:40199
separation from palladium by solvent extraction, 22:21120
separation from salt solutions by complexing with acrylic acid (or acrylonitrile)--divinylbenzene--vinylpyridine copolymer, 22:45059
separation from sea water by solvent extraction using dithizone, 22:23086 (ANL-7421)
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
separation of zinc from, by precipitation using sodium benzilate, 22:30660
sintering kinetics of, effects of oxygen on, 22:10923(R) (COO-1587-2)
solubility in zone-refined beryllium, solid, 22:41062
solvent properties for lanthanum, phase studies of, 22:4810
solvent properties for tungsten, 22:8825 (UCID-15238(Pt.1))
solvent properties for uranium at 1180°C, effects of metal additions on, 22:24408 (IA-1128, pp 21-54)
sorption by manganese dioxide from nitric acid, 22:157
sorption by solid sodium chloride in stirred solutions, 22:35796
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
spectra of, far-ultraviolet absorption, (E), 22:2776 (DESY-67/27)
sputtering by argon ions at 0 to 100 eV, ejection patterns and yields from, 22:11233
sputtering coefficients for argon, krypton, and neon ions of 30 keV on polycrystalline, effects of angle of incidence on, (E), 22:21870
sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
surface resistivity at 4.2°K of contacts of, 22:45230
thickness of layers of, on x-ray film, x-ray absorption gage for measuring, 22:43146
tin-119m isomer shift in, 22:17787
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
use as heat conductive pigment in acryloid cements, 22:37968
use as working fluid in rhenium heat pipes, (E), 22:33595(R) (LA-3941)
use of liquid, as coolant for heat pipe system in tubular fuel elements, 22:14216(P)
vapor pressure and surface tension of, data tabulations on, 22:10945 (EUR-3653)
wetting refractory carbides and oxides by liquid, mechanisms of, 22:23752 (AERE-M/R-1746)
x-ray attenuation coefficients below K-absorption edge of, measurement of, 22:29199
x-ray fluorescence spectra of, semiconductor detectors for measuring, 22:19096 (INR-820/II/PS)
x-ray spectra from beta-excited, (E), 22:13248
xenon atom scattering by (111) plane of, velocity

dependence of, (E), 22:45951
xenon ion reactions at 20 to 450 keV with, thermal gas release and depth distribution of residual ions following, (E), 22:26495

SILVER ALLOYS AND SYSTEMS
Ag--Al-base, grain structure of, use of transmission electron microscopy in studies of, 22:41065
Ag-base--La, physical properties of, 22:4810
analysis of, methods for, 22:37679
properties for joining reactor components, 22:49730
Ag--Al, diffusion of silver in, 22:13003(R) (ORO-2036-5)
Ag--Al, radiation effects on electric conductivity of, relations of annealing with 2 MeV electron, 22:13024
Ag--Al, relaxation measurement, 22:40993(R) (COO-1198-534)
Ag--Al-base, nuclear magnetic relaxation measurements on aluminum-27 in, 22:3162 (COO-1198-486)
Ag--Al-base--Cr--Cu--Mg--Zn--Zr, analysis for individual components by atomic absorption spectroscopy, 22:16466
Ag--Au, diffusion couple annealing at 850°C, 22:13003(R) (ORO-2036-5)
Ag--Au, silver-109 NMR and relaxation in, (E), 22:1356
Ag--Be, phase diagram, 22:10986(T) (JPRS-43479)
Ag--Be, phase diagram, 22:4797 (NMI-TJ-37)
Ag--Be, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
Ag--Cd, analysis for cadmium and silver contents, polarographic, 22:9(R) (NBS-TN-425)
Ag--Cd, diffusion activation energies in alpha-phase, 22:13003(R) (ORO-2036-5)
Ag--Cd--In, absorption properties of control elements of, measurement of, 22:30164(R) (WCAP-3703)
Ag--Cd--In, creep properties of control elements of, analysis of effects of drop tests on, 22:30168(R) (WCAP-3710)
Ag--Cd--In, performance as control rod material in pressurized water reactors, 22:30198
Ag--Cd--In, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In, use in control rods for water-cooled power reactors, economics and efficiency of, 22:30190
Ag--Cd--In--Pd, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
Ag--Cd--In--Pd, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Pd--Sn, mechanical properties of, effects of annealing temperature on, 22:30166(R) (WCAP-3707)
Ag--Cd--In--Pd--Sn, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
Ag--Cd--In--Pd--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Pt, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
Ag--Cd--In--Pt, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Pt--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Sn, mechanical properties of, effects of annealing temperature on, 22:30166(R) (WCAP-3707)
Ag--Ce, crystal structure of intermetallic compound Ag_3Ce in, 22:28819
Ag--Cu, analysis by β backscattering, 22:48830
Ag--Cu--Ni, analysis for silver, coulometric, 22:9(R) (NBS-TN-425)
Ag--Dy, crystal structure of intermetallic compound Ag_3Dy in, 22:28819
Ag--Dy, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Dy, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
Ag--Er, crystal structure of intermetallic compound Ag_3Er in, 22:28819
Ag--Er, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Er, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
Ag--Eu, crystal structure and interatomic distances of $EuAg_5$, (E), 22:13542
Ag--Gd, crystal structure of intermetallic compound Ag_3Gd in, 22:28819
Ag--Gd, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Gd, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
Ag--Ho, crystal structure of intermetallic compound Ag_3Ho in, 22:28819
Ag--Ho, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Ho, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
Ag--In, deformation of, effects of temperature on activation energies for, 22:21717 (COO-916-13)
Ag--In, optical properties in ultraviolet region, relation to electronic structure, 22:5410 (IS-T-187)
Ag--La, crystal structure of intermetallic compound Ag_3La in, 22:28819
Ag--Mn, tin-119 Moessbauer effect in, (E), 22:1342
Ag--Mn--Pd, performance as brazing alloy for high-temperature structural materials, 22:23782
Ag--Ni, analysis for nickel and silver, polarographic, 22:9(R) (NBS-TN-425)
Ag--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
Ag--Pb, analysis by β backscattering, 22:48830
Ag--Pb, superconducting proximity effect in superimposed films of, (E), 22:7219
Ag--Pd, silver-109 NMR in, Knight shifts, spin--spin, and spin--lattice relaxation times from, (E), 22:15627
Ag--Pt, corrosion--polarization and corrosion--kinetic parameters of, radioactive methods of determining, 22:2575
Ag--Pu, phase studies of, 22:2655
Ag--rare earth, crystal structure and phase studies of, 22:36492
Ag--Sb, crystal structure, 22:11000
Ag--Sb, phase diagrams and thermodynamic properties of, 22:4803
Ag--Sm, crystal structure of intermetallic compound Ag_3Sm in, 22:28819
Ag--Sn, deformation of, effects of temperature on activation energies for, 22:21717 (COO-916-13)
Ag--Sn, oxidation of, kinetics of high-temperature, 22:8764
Ag--Sn, Raoults' law behavior in molten-salt EMF cell, 22:1924 (LA-3733)
Ag--Sn, superconducting proximity effect in superimposed films of, (E), 22:7219
Ag--Sn--Zn, activity coefficients and reaction parameters of, determination by torsion-effusion method, 22:31389
Ag--Tb, magnetic structure of intermetallic $TbAg_2$, (E), 22:31986
Ag--Tb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Tb, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
Ag--Tc, phase studies of, 22:4807
Ag--Tm, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--W, wear in sliding contact with copper, effects of sintering on, 22:19487
Ag--Y, crystal structure of intermetallic compound Ag_3Y in, 22:28819
Ag--Y, phase diagram of, statistical prediction of, 22:31396
Ag--Y, thermal capacity of YAg at 1.3 to 5°K, 22:52889
Ag--Yb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Ag--Zn, transformation of, effects of stress on beta-to-zeta phase, 22:40993(R) (COO-1198-534)
Ag--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ag-base--As, magnetic resonance of, effects of arsenic content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Cd, magnetic resonance of, effects of cadmium content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Cu, magnetic resonance of, effects of copper content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Ga, magnetic resonance of, effects of gallium content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Ge, magnetic resonance of, effects of germanium content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--In, magnetic resonance of, effects of indium content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Sb, magnetic resonance of, effects of antimony content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Sn, magnetic resonance of, effects tin content on, 22:43595 (ANL-7299, pp 265-7)
Ag-base--Zn, magnetic resonance of, effects of copper content on, 22:43595 (ANL-7299, pp 265-7)

SILVER AZIDES
effects on electric conductivity and radiolysis of lead azides, 22:16581
radiation effects on thermal degradation of, x, 22:18847

SILVER BROMATES
radiation effects on recoil bromine-82g distribution in neutron-irradiated, γ, 22:12384
radiation effects on, distribution of bromine-82g recoils in various bromine oxidation states, neutron, 22:12384

SILVER BROMIDES
diffusion in, chemical sectioning method for measurement of, 22:47068 (UCRL-18345)
diffusion of iodide ions in, 22:13003(R) (ORO-2036-5)
electromotive force and solvent transport in aqueous solutions of, deuterium isotope effects on, 22:10227

SILVER CHLORIDES
alpha particle reactions with crystals of, factors affecting visible-track formation in, (E), 22:15639
analysis for selenium and tellurium, spectrophotometric, 22:48818 (NIM-244)
analysis for selenium and tellurium, spectrophotometric, 22:42
deposition on aluminum--molybdenum--titanium alloys to inhibit galling and wear, 22:45748
diffusion of cations and impurity halide ions in, 22:13003(R) (ORO-2036-5)
iron ion impurity states in, Moessbauer study of, 22:34797
iron-57 Moessbauer effect in, (E), 22:24410 (JINR-P14-

3776)
  iron-57 Moessbauer spectra in, 22:34798
  particle tracks in single crystals of, analysis of charged, 22:40364
  precipitation of iodine with, 22:42656 (UCRL-13352)
  solubility in sodium chloride solutions in heavy water, radiochemical technique for measuring, 22:16523
  solvent properties for chlorine at 518ºC, 22:37707 (BNL-50082, pp 27-39)
  solvent properties for chlorine at 518ºC, 22:15141 (BNL-50057, pp 79-100)
  space charge distribution at interface of single crystals of, and aqueous solutions of silver ions, 22:7954 (NYO-3228-9)
  sulfur valence changes in sulfur-35-doped and neutron-irradiated, 22:16614
  use in decontamination of iodine-131-containing surface waters, 22:31065
  vacancy diffusion in, correlation factor for, (E), 22:15555 (COO-1197-21)
  AgCl--LiCl, solvent properties for chlorine at 450ºC, 22:15141 (BNL-50057, pp 79-100)
SILVER CHROMATES
  radiation effects on thermal degradation of, x, 22:18847
SILVER FLUORIDES
  preparation and properties of, 22:23003 (IA-1128, pp 97-146)
SILVER IODATES
  preparation and properties of radioactive kryptonates of, for use as indicators in chelatometric titrations, 22:18698
SILVER IODIDES
  electromotive force and solvent transport in aqueous solutions of, deuterium isotope effects on, 22:10227
  radiation effects on electrophoretic mobility of sols of, x, 22:27837
  washout coefficient for, in rainwater and snow, 22:18960 (BNWL-481-1, pp 82-5)
  washout coefficient for, in rainwater and snow, 22:18954 (BNWL-481-1, pp 43-52)
SILVER IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  effects on radioinduced polymerization of butadiene, 22:21142(P)
  effects on radiolysis of lead nitride crystals, 22:42764
  electrophoretic mobility in acetate buffers, 22:27567
  exchange equilibria of, between molten sodium nitrate and sodium zeolite A, 22:42832
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  reactions with hydrogen, rate constant for, 22:2085
  space charge distribution at interface of solutions of, and single crystals of silver iodide, 22:7954 (NYO-3228-9)
SILVER ISOTOPES
  effects on far-infrared spectra of silver-doped potassium iodides, (E/T), 22:24432
  energy levels of odd-A, from proton inelastic scattering, (E), 22:32651
SILVER ISOTOPES Ag-99
  beta decay of, palladium-99 energy levels from, (E), 22:1698
SILVER ISOTOPES Ag-100
  diffusion in silver, fulfillment of boundary conditions in isotope exchange in, 22:27701
  production and decay properties from palladium-102 (p,3n) reactions at 10 to 50 MeV, (E), 22:1698
SILVER ISOTOPES Ag-101
  beta decay of, palladium-101 energy levels from, (E), 22:1699
  production by palladium-102 (p,2n) reactions at 50 MeV, (E), 22:1699
SILVER ISOTOPES Ag-102
  beta decay of, palladium-102 energy levels from, (E), 22:7729
  isomeric state with spin 2, detection by atomic beam magnetic resonance techniques, (E), 22:7729
SILVER ISOTOPES Ag-105
  beta and electron-capture decay of, γ spectra from, (E), 22:37367
  electron-capture decay of, L/K ratios for, (E), 22:3728
  energy levels from cadmium-105 decay, (E), 22:53169(R) (PPAD-647-D)
SILVER ISOTOPES Ag-106
  beta and electron-capture decay of isomeric, palladium-106 energy level spins and transitions from, (E), 22:1700
  beta decay scheme of isomeric, γ spectra and log-ft values for, (E), 22:5839
  electron-capture decay of isomeric, gamma spectra from, (E), 22:7727
  electron-capture decay scheme of isomeric, γ spectra for, (E), 22:35352
  production in proton reactions with cadmium-105 at 660 MeV, (E), 22:35352
SILVER ISOTOPES Ag-107
  alpha elastic and inelastic scattering at 42 MeV, angular distributions for, (E), 22:42030
  alpha inelastic scattering at 10 MeV with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
  alpha reactions (α,2n) at 19 to 40 MeV, isomeric cross-section ratios for, (E), 22:44721
  carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
  energy levels from α inelastic scattering, collective, (E), 22:42030
  energy levels from proton inelastic scattering, (E), 22:27152
  energy-level transitions from α inelastic scattering with Coulomb excitation, multipole mixing ratios for, (E), 22:35293(R) (ORNL-4230)
  gamma spectra, (E), 22:28148
  neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
  neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
  neutron capture by, silver-108 nuclear properties from polarized thermal, (E), 22:5854
  neutron reactions (n,2n) at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron reactions (n,2n) at 13.7 to 14.7 MeV, activation cross sections for, (E), 22:22573
  neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
  neutron reactions (n,2n) at 14.8 MeV, cross section for, (E), 22:32536
  neutron reactions (n,2n) at 14.8 MeV, cross section for, (E), 22:24835(R) (BARC-305)
  neutron reactions (n,2n) at 14.8 MeV, cross sections for, (E), 22:29973
  neutron reactions (n,3n) at 18.2 to 19.5 MeV, statistical analysis of cross sections for, (E/T), 22:50642
  neutron strength function and scattering radius at 0 to 760 eV, (E), 22:18285
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nitrogen-14 reactions (N-14,α), (N-14,d), and (N-14,p) at 74 MeV, analysis using evaporation theory with angular momentum effects, (E/T), 22:44702
  proton elastic scattering at 6.0 to 7.5 MeV, isobaric analog resonances, (E), 22:11949(R) (ORO-2972-47)
  proton inelastic scattering at 3.5, 4.0, and 4.5 MeV, γ spectra from, (E), 22:27152
  proton reactions (p,2n) at 14.3 MeV, angular anisotropy of conversion electrons in, (E), 22:20645
SILVER ISOTOPES Ag-108
  beta and electron-capture decay of, gamma spectra from, (E), 22:14052
  beta radiation asymmetry and energy-level spins from polarized thermal neutron capture in silver-107, (E), 22:5854
  energy-level transitions from silver-107 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
  gamma spectra of, high-resolution, (E), 22:30006
SILVER ISOTOPES Ag-109
  alpha elastic and inelastic scattering at 42 MeV, angular distributions for, (E), 22:42030
  alpha inelastic scattering at 10 MeV with Coulomb excitation, γ-γ angular correlations in, (E), 22:35293(R) (ORNL-4230)
  alpha reactions (α,2n) at 19 to 40 MeV, isomeric cross-section ratios for, (E), 22:44721
  carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
  energy level at 88 keV from cadmium-109 decay, internal conversion coefficient and energy of, (E), 22:30036
  energy levels at 88 to 1099 keV from palladium-109 beta decay, (E), 22:42050
  energy levels from α inelastic scattering, collective, (E), 22:42030
  energy levels from beta decay of palladium-109, (E), 22:7717
  energy levels from palladium-109 decay, conversion coefficients and spin-parity assignments for, (E), 22:37368
  energy levels from proton inelastic scattering, (E), 22:27152
  energy levels of, description with quasiparticle coupling to quadrupole moment of 2^+ phonon, (T), 22:18240
  energy-level transitions from α inelastic scattering with Coulomb excitation, multipole mixing ratios for, (E), 22:35293(R) (ORNL-4230)
  energy-level transitions from palladium-109 decay, (E), 22:50560(R) (RLO-1062-681)
  neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
  neutron capture by, silver-110 conversion-electron spectra from thermal, (E), 22:16024
  neutron capture by, silver-110 nuclear properties from polarized thermal, (E), 22:5854
  neutron cross sections and resonance integrals for, effective thermal, (E), 22:20597
  neutron reactions (n,2n) at 13.7 to 14.7 MeV, activation cross sections for, (E), 22:22573
  neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E),

22:50583
  neutron resonance parameters for, measurement using slowing-down-time lead spectrometer, 22:14828
  neutron strength function and scattering radius at 0 to 760 eV, (E), 22:18285
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nitrogen-14 reactions (N-14,α), (N-14,d), and (N-14,p) at 74 MeV, analysis using evaporation theory with angular momentum effects, (E/T), 22:44702
  nuclear magnetic resonance and relaxation in gold--silver alloys, (E), 22:1356
  nuclear magnetic resonance in palladium--silver alloys, (E), 22:15627
  preparation using cadmium-109 generator, 22:51855
  proton elastic scattering at 6.0 to 7.5 MeV, isobaric analog resonances, (E), 22:11949(R) (ORO-2972-47)
  proton inelastic scattering at 3.5, 4.0, and 4.5 MeV, γ spectra from, (E), 22:27152
  proton reactions (p,2n) at 14.3 MeV, angular anisotropy of conversion electrons in, (E), 22:20645
  use for scanning heart chambers, lungs, and veins, 22:51855
SILVER ISOTOPES Ag-110
  beta decay of isomeric, γ-γ angular correlations in internal magnetic fields, (E), 22:46778
  beta decay scheme of isomeric, γ spectra for, (E), 22:9906
  beta radiation asymmetry and energy-level spins from polarized thermal neutron capture in silver-109, (E), 22:5854
  beta transitions in isomeric, β-γ directional correlations for highly hindered allowed, (E/T), 22:18267
  content of oysters in Blackwater estuary and Irish Sea, 22:40671
  determination in oysters, spectrophotometric, 22:50913
  distribution in spring lobster, 22:43311(R) (PRNC-85)
  electrochemical properties of electrodes of, effects of oxide films on, 22:6330
  energy-level transitions from silver-109 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
  energy-level transitions from silver-109 thermal neutron capture, conversion coefficients and multipolarities of, (E), 22:16024
  gamma spectra of isomeric, (E), 22:35334
  gamma spectra of, high-resolution, (E), 22:30006
  gamma spectra, (E), 22:28148
  nuclear magnetic moment and hyperfine structure constants for isomeric, measurement using atomic-beam magnetic resonance, (E), 22:27227
  nuclear magnetic moment and spin of isomeric, from hyperfine structure in EPR spectra, (E), 22:1656 (UCRL-17699)
  removal from vagina of rat, effects of estradiol and inflammation on, 22:14960
  retention in man, estimation of radiation protection guide for, using small mammals, 22:51305 (LA-3848, pp 75-96)
  sticking coefficient of gaseous, measurement of, (E/T), 22:51095(R) (NDL-SP-16)
  uptake by spiny lobster, 22:21409 (PRNC-104, pp 83-9)
  use as tracer for detection of hydrogen chloride gas in atmosphere, 22:18958 (BNWL-481-1, pp 76-8)
  use as tracer to study movement of sands in hydraulic channels, 22:28018(R) (PAEC/CHEM-1)
  use as tracer to study sewage dispersal in ocean, 22:19061
  use in determination of dichromate and vanadate ions in natural waters by radio-release method, 22:16421
  use of isomeric, as indicator in complexometric determination of calcium in drugs, 22:42637
  use of isomeric, as radioreagent in determination of reducing agents by redox method, 22:40021
  use of isomeric, in radiochemical determination of residual chlorides on anion exchangers, 22:50919
  use of oleate-incorporated, for scanning lymph system, 22:33891
SILVER ISOTOPES Ag-111
  beta decay of, cadmium-111 energy levels from, (E), 22:20613
  beta decay scheme of 7.5-d isomer of, (E), 22:29983 (MIT-905-108, pp 1-32)
  beta emission by, effects of, on immune response of rabbits to skin transplants on ears, 22:21439
  production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
  production in uranium-238 photofission at 4.5 to 6.5 MeV, yield asymmetry in, (E), 22:32593
  production of carrier-free, 22:21120
  production of carrier-free, by neutron irradiation of palladium, 22:40199
  sorption on platinum surfaces, effects of passivation on, 22:21072
  uptake and metabolism by animals and man, 22:8644
  uptake of colloidal, by liver, lungs, and lymph nodes of rabbits following intralymphatic injection, 22:21439
SILVER ISOTOPES Ag-112
  yields in thermal neutron fission of uranium-233 and uranium-235, (E), 22:32579 (TID-24500)
SILVER ISOTOPES Ag-113
  beta decay scheme of 5.3-hr isomer of, (E), 22:29983 (MIT-905-108, pp 1-32)
  decay scheme of isomeric, 22:20975(R) (BMwF-FBK-67-89)
  gamma spectra of isomeric, 22:20975(R) (BMwF-FBK-67-89)
SILVER ISOTOPES Ag-114
  decay scheme, 22:20975(R) (BMwF-FBK-67-89)
SILVER ISOTOPES Ag-115
  beta decay of isomeric, half-life for, (E), 22:18217
  beta decay scheme of 20-min isomer of, (E), 22:29983 (MIT-905-108, pp 1-32)
SILVER ISOTOPES Ag-118
  half-life of, from uranium-235 thermal neutron fission, (E), 22:44735
SILVER NIOBATES
  $AgNbO_3$--$NaNbO_3$, preparation of, 22:2682
SILVER NITRATES
  analysis by β backscattering, 22:48830
  effects on gamma-induced polymerization of 2-methyl-1,3-butadiene, 22:27765
  electric conductivity of molten, 22:25323 (CEA-N-616, pp 97-105)
  radiation effects on distribution of, in brain tissues of rats, chronic γ, 22:38457
  use in decontamination of iodine-131-containing surface waters, 22:31065
  $AgNO_3$--HNO_3, solvent properties for biological samples containing radioiodine, 22:22953
  $AgNO_3$--$RbNO_3$, electric conductivity of, at 180 to 340°C, 22:27619 (CEA-N-816, pp 90-101)
SILVER ORES
  analysis for silver, x-ray fluorescence techniques for, 22:4430 (ORO-3224-12)
  analysis of low-grade, comparison of x-ray detectors for, 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
SILVER OXALATES
  radiation effects on thermal decomposition of, 22:15231
SILVER OXIDES
  compounds of, superconductivity of clathrate, 22:11344
  effects of films of, on electrochemical properties of irradiated silver electrodes, 22:6330
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  radiation effects on thermal degradation of, x, 22:18847
  Ag_2O--Ta_2O_5, formation of silver metatantalates in, activation heat and reaction constants for, 22:33358
SILVER PERMANGANATES
  radiation effects on thermal degradation of, x, 22:18847
SILVER SULFATES
  analysis for oxygen by neutron activation, 22:30457
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
SILVER URANATES
  preparation of $AgUO_4$, 22:23020
  spectra of $AgUO_4$, effects of oxygen vapor pressure on infrared, 22:23020
SILVER URANIUM FLUORIDES
  paramagnetic resonance spectra of $AgUF_6$, 22:18769
SIMEA Reactor
    see Latina Power Reactor
Simpson Methane Flow Scaler
    see Scalers
Simpvarp Reactor (Sweden)
    see Oskarshamn Power Reactor
Simulators
    see Reactor Simulators
Sinalost
    see Triethylamine, 2,2',2''-Trichloro-
SINGLE CRYSTALS
  charged particle reactions at 3 to 12 MeV with, blocking effects in, (E), 22:44273
  charged-particle blocking in, use for measurement of lifetimes of compound nuclei in fission, (E), 22:35308
  charged-particle motion in, blocking and channeling in, (E/T), 22:27087(R) (ANL-7405)
  charged-particle motion in, Monte Carlo calculations of blocking effects in, (T), 22:37340(R) (EANDC(E)-89(U))
  charged-particle reactions with, shadow effect in, (E/T), 22:42146
  charged-particle scattering at high energies, beam spatial regrouping in, (T), 22:29583
  deformation mechanisms of niobium, 22:700
  deformation of Zircaloy-2, effects of oxygen on, 22:664
  diameter and length of whisker-type, methods of measuring, 22:52258 (AWRE-O-71/68)
  diffraction analysis of, use of iron-55 and beta stimulated x-ray sources in, 22:23218 (COO-1239-15)
  elastic properties of tungsten, at 24 to 1800°C, 22:670
  elastic properties of uranium dioxide, calculation of temperature-dependent, 22:2695
  electron motion through, effects of lattice structure on, 22:26475
  electron reactions at 10 to 50 keV with thin films of, quasi-elastic ejection of valency electrons in, (T), 22:50036
  growth and properties of cerium and thorium oxide, 22:736
  growth and properties of superconducting niobium--tin, 22:635
  growth from nonstoichiometric melts, review, 22:26089
  growth of high-quality, by precipitation from carbon-saturated molten iron and nickel, 22:52285 (NAA-SR-12486)

  growth parameters of hafnium carbide--tantalum carbide, 22:730(R) (N-67-18983)
  metallography of niobium, 22:701
  neutron cross sections at higher energies, effects of chemical binding on, (T), 22:1567
  neutron inelastic scattering by, time-of-flight spectrometer for studying thermal, 22:40438 (INR-P-898/II/PS)
  neutron scattering by, temperature dependence of coherent extinction for, (E), 22:37283
  neutron--proton interactions in organic, effective cross sections for, (E), 22:9921 (JUL-Conf-1)
  plastic deformation in metal, effects of surface coatings on, 22:17116(R) (ORO-3401-3)
  positron motion through, effects of lattice structure on, 22:26475
  preparation of large, design of apparatus for, 22:20040(R) (COO-1629-3)
  preparation of oxide, evaporation method for, 22:26077
  properties of alloy, determination by neutron diffraction, 22:4777
  proton diffraction by thin films of, channeling in, (T), 22:44226
  radioinduced damage in, fission fragment, 22:21740
  radioinduced growth of aluminum oxide, neutron, 22:775
  slip plane mechanics in bcc elements, 22:38570
  spectra of, computer analysis of 35 GHz, 22:37780(R) (RRL-2310-242)
  spin orientation in, determination using Moessbauer effect, (E), 22:46272
  x-ray diffraction by lithium fluoride, in β-stimulated x-ray doublet, 22:251 (ORNL-IIC-10(Vol.2), pp 629-38)
Sintered Aluminum Powders
  see SAP (Sintered Aluminum Powders)
SINTERING
  conference on sintering and related phenomena, 22:31356
  diffusion controlled migration in, numerical analysis of, 22:10925 (ORNL-TM-2014)
  effects of crystallite size distribution on thorium oxide, 22:11079
  effects on powder particle size distribution of plutonium dioxide--uranium dioxide, 22:737
  factors affecting, review of, 22:36464
  kinetics of activated, review of, 22:31325
  kinetics of reactions between grain boundaries and pores in crystalline oxide, 22:31492
  mechanisms in multicomponent alloys and ceramics, in presence of liquid phase, 22:31386
  mechanisms of condensation, diffusion, evaporation, and plastic deformation in, 22:10925 (ORNL-TM-2014)
  mechanisms of diffusion in crystalline solid, 22:31388
  mechanisms of fcc metal, effects of stress on, 22:31387
  mechanisms of material transport in, review of, 22:36464
  mechanisms of plastic flow in crystalline solid, 22:31388
  method for beryllium oxide, 22:13045 (AAEC/TM-401)
  method for fabrication of high-temperature metal-melting crucibles, development of, 22:19610 (RFP-900)
  method for gas discharge, of ceramics and refractory oxides, 22:23862
  method for metal powders, using metallic activator additives, 22:4761(P)
  method for powdered carbon, electric-discharge, 22:13051
  method for reactor materials, review of, 22:12956
  method for refractory metal carbides and nitrides, 22:742(P)
  method of metal powder, for production of shapes, 22:638(P)
  method of tungsten powder, for production of shapes, 22:640(P)
  methods for high density uranium nitrides, using intermetallic decomposition depressants, 22:21756(P)
  processes for ceramic, review of pressure, 22:26079
  stages of, review of, 22:36464
  transport during, oxygen-17 tracer study of mechanisms in ceramic materials, 22:15236 (UCRL-70164)
SIOUX FALLS POWER REACTOR
  control rod movements in, effects on reactivity of, 22:9983 (ACNP-67515)
  design and operating characteristics of, tabulation of, 22:7831
  operations history of, total, 22:1821
  pressure and flow variations in, effects on dynamic reactivity testing of, 22:9983 (ACNP-67515)
  reactivity tests in, analysis of dynamics, 22:9983 (ACNP-67515)
  shutdown inspection of, discovery of foreign metallic matter in coolant and control rod weld cracks during, 22:20863
  startup of, dynamic testing during, 22:6007
SIPHONS
  breaker for swimming-pool reactor coolant system, description of, 22:7905(P)
SIR
  see Submarine Intermediate Reactor
630A Critical Assembly
  see Maritime Nuclear Steam Generator
SIZEWELL REACTORS
  (Two units comprising the Sizewell Station.)
  design parameters and layout for, 22:16146 (GA-8075)
  design parameters for, 22:22712 (STI/PUB-174)
  performance of, description of power operation, 22:46907 (NP-17599, pp 7-25)
SKELETAL SYSTEM
  see also Vertebral Column
  americium-241 content of rat, effects of administration route on, 22:47473
  beta dose to, of rats following inhalation of strontium-90 aerosols, 22:23404 (LF-38, pp 65-72)
  book: Principles of Nuclear Medicine, 22:49411
  calcium-47 retention in, of rats, effects of CPDTA on, 22:43222
  cerium-144 uptake by, of adult, fetal, and neonatal rats, 22:30950
  cesium-144 deposition and retention in, of sheep, effects of age and route of administration on, 22:23469
  lead distribution in, of man, method for study of, 22:2506(R) (NYO-3086-7)
  magnesium content of calcareous, review of effects of environment and physiology on, 22:30421
  radiation dose to human, from injected Thorotrast, 22:6798(R) (IAEA-2819-6)
  radiation dose to, of hamsters following injection of strontium-90, β, 22:51519
  radiation effects on hand, of children of man, in utero x, 22:51916
  radiation effects on mammalian, laser, 22:38421 (CONF-660573-, pp 35-48)
  radiation effects on, following therapy of neoplasms, γ and x, 22:4636
  radiation effects on, of beagle dogs, effects of administration route on strontium-90 β, 22:10827(R) (UCD-472-114)
  radiation effects on, of mice, following administration of strontium-89, β, 22:40932
  radioactivity content of human, effects of natural background radiation on, 22:38491
  radioisotope retention by, of dogs and man, methods for calculation of calcium-45, radium-226, and strontium-90, 22:30991
  radioisotope scanning of, for localization of strontium-85 in bone neoplasms in man, 22:8569
  radium-226 and stable strontium content of human, in Wisconsin during 1957 to 1961, 22:38267 (UCRL-18140, pp 175-95)
  strontium-85 retention in , of rats, effects of CPDTA, DIMEDTA, and PDTA on, 22:43222
  strontium-90 deposition in chicken, effects of age on, 22:51340
  strontium-90 equilibrium with yttrium-90 in, of rats following oral administration, 22:25772
  strontium-90 uptake and retention in, of dogs and rats, effect of age and dose on, 22:6754
  strontium-90 uptake by, of dogs and rats, 22:49246
  zinc-65 content of, in Euphausia pacifica, 22:28322
Skidoo
  see Critical Assemblies
SKIN
  analysis for heavy metals in argyrosis in, neutron activation method for, 22:50906
  blood circulation in human, effects of isotope diffusion between cutaneous and subcutaneous tissues on kryton-85 tracer study of, 22:30949
  blood circulation in, of man, measurement of, using krypton-85 or xenon-133 and autoradiograms of frozen sections, 22:25947
  book: Radiation Diseases of the Skin, 22:40816
  calcium-45 translocation through, into apples following spot application, 22:49192
  cerium-144 removal from, of dogs, combined effects of solutions of detergent or carrier-sequestering agent and ultrasound on, 22:40708
  cesium-137 removal from, of dogs, combined effects of detergent solutions or carrier-sequestering agent and ultrasound on, 22:40708
  clearance of tritium-labeled water from, of mice, effects of estradiol and hyaluronidase on, 22:51314
  decontamination of human, methods for, 22:31093
  grafting procedure using, for treatment of radionecrotic areas in man, 22:51780
  incidence of cancer of, effects of sunlight on, 22:49179(R) (ORO-3578-4)
  incidence of carcinomas in, of human population exposed to atomic bombings of Hiroshima and Nagasaki, 22:10787
  infection of guinea pig, by uv-induced mutant of Microsporum gypseum, 22:31023
  iodine-131 sorption through, ratio of, to content of air, 22:38444
  mercury-203 sorption by, of guinea pigs, effects of cleaning agents and stripping on, 22:14976
  particle retention on human, tracer study of, 22:6804 (ORNL-4168, pp 289-311)
  phosphorus-32 uptake by human vulvar, effects of lichen sclerosus et atrophicus on, 22:45398
  photosensitivity of human, review of effects of drugs on, 22:21575
  plutonium contamination on, of swine, autoradiographic analysis of, 22:23539
  plutonium-239 sorption by tissues of, in swine, 22:14925
  polonium-210 removal from human, effectiveness of unithiol for, 22:43333
  radiation dose to human, during dental radiography, x, 22:49373

radiation dose to human, during kymography, measurement of x, 22:47530
radiation dose to human, following xenon-133 exposure, calculation of maximum permissible, 22:40665 (NP-17467)
radiation dose to human, from deposited particles, 22:6804 (ORNL-4168, pp 289-311)
radiation dose to, equipment and methods for assessment of, 22:37994 (RD/B/N-1107)
radiation dose to, from contaminated surfaces, 22:23544
radiation dose to, of man during cardiac catheterization and angiocardiography, x, 22:43338
radiation dose to, of man during dental radiography, x, 22:10807
radiation dose to, of man following contamination by plutonium-238-labeled microspheres, 22:38261(R) (SC-CR-67-2845)
radiation dose to, of man following subcutaneous injection of iodine-125-labeled 4-iodoantipyrine, γ, 22:15060
radiation dose to, of man, from diagnostic radiography, x, 22:28534
radiation dose to, of man, maximum permissible γ and x, 22:6819
radiation doses to, of man during radiography, 22:43330
radiation dosimetry of, use of ring-type thermoluminescent dosimeter for β or γ, 22:45558
radiation effects on abundance of bacteria on human, following therapy of mammary carcinomas, acute x, 22:49658
radiation effects on allergic reactions of, of man to bithionol, halogenated salicylanilides, and hexachlorophene, uv, 22:19361
radiation effects on animal and human, plasma jet uv, 22:51653
radiation effects on chemical carcinogenesis in, of mice, x, 22:19439
radiation effects on cholesterol content of human, effects of pigment on uv, 22:51338
radiation effects on collagen in, of mice in relation to aging, uv, 22:6895
radiation effects on connective tissue of human, effects of age on solar uv, 22:49241
radiation effects on content of melanin in cells of, in mice, x, 22:33937
radiation effects on development of feathers in, of chick embryos, x, 22:28652
radiation effects on DNAase content of guinea pig, effects of hair clipping and shaving on β, 22:47447(R) (NYO-3445-15)
radiation effects on DNAase I activity in, of guinea pigs, in relation to cell survival, β, 22:6757
radiation effects on fine structure of mast cells of, in mice, uv, 22:49571
radiation effects on fluorescence of melanocytes in, of man, x, 22:45458
radiation effects on glycogen content of epidermal cells of human, uv, 22:49252
radiation effects on grafts of, in rabbit ears, silver-111 and iodine-131 β and γ, 22:21439
radiation effects on hair follicles and tumor incidence in rat, effects of LET on α and electron, 22:47633
radiation effects on healing of wounds in rat, protective effects of B vitamins against x, 22:36303
radiation effects on histamine content of, in rats, comparison of, to radiomimetics and vibration effects, 22:25964
radiation effects on histamine content of, of rats, γ, neutron and proton, 22:25726
radiation effects on human, carcinogenic laser, 22:51907
radiation effects on human, effects of hereditary benign chronic pemphigus on, uv, 22:36336
radiation effects on human, following exposure to sun, uv, 22:28641
radiation effects on human, following radiotherapy, late electron, 22:51761
radiation effects on human, following therapy of tumors, use of oxethazaine for treatment of, 22:47572
radiation effects on human, following therapy, carcinogenic x, 22:51961
radiation effects on human, following therapy, evaluation of grid for protection against, 22:45571
radiation effects on human, incidence of, 22:28464
radiation effects on human, pathology of, 22:6835(T) (AEC-tr-6467/2(pp 195-222))
radiation effects on human, protective effects of artificial and natural sunscreens against uv, 22:51972
radiation effects on human, review of carcinogenic solar, 22:45699
radiation effects on human, sensitizing effects of nalidixic acid on uv, 22:49424
radiation effects on human, supervoltage γ, 22:40871
radiation effects on immune reactions of mice to transplants of, from congenic donors, x, 22:40531
radiation effects on immune reactions to grafts of, in mice, x, 22:30944
radiation effects on immune reactions to transplants of, in rabbits, x, 22:51430
radiation effects on immune response of dogs and rats to transplants of, extracorporeal x, 22:49221
radiation effects on immune response of guinea pig, to rabbit dermatotoxic serum, γ, 22:30943
radiation effects on immune response of hamsters to transplants of, effects of lymphocyte injections on whole-body, 22:10683
radiation effects on incidence of inflammation in, of rats following intracutaneous injection of Escherichia coli, microwave and radio wave, 22:19406
radiation effects on lysosomes in, of mice and rats in vitro and in vivo, uv, 22:51911
radiation effects on mammalian, laser, 22:38421 (CONF-660573-, pp 35-48)
radiation effects on melanocyte population in, of man, combined effects of methyldopa on uv, 22:21622
radiation effects on melanogeneisis in human, effects of methyldopa on uv, 22:49240
radiation effects on metabolism in cultured, of guinea pigs, laser, 22:30962
radiation effects on molecular structure of acid-soluble collagen from, of calf, uv, 22:21415
radiation effects on permeability of blood vessels in, of rabbits, effects of temperature on topical x, 22:43403
radiation effects on permeability of, uv, 22:49179(R) (ORO-3578-4)
radiation effects on pigments of human, laser, 22:47604
radiation effects on polymorphous light eruption in, of man, effects of glass filter on uv, 22:19446
radiation effects on production of melanin in human, effects of phenothiazine on uv, 22:4672
radiation effects on proteins in, of rats, chromatographic and electrophoretic analyses of x, 22:51886
radiation effects on reactions of human, effects of, on RBE, 15 MeV electron, 22:51897
radiation effects on regeneration of transplants of, on Salamanders, effects of source on x, 22:52010
radiation effects on rejection of allografts of, extracorporeal γ, 22:31204 (BNL-50088)
radiation effects on respiration of guinea pigs, in vitro microwave, 22:51982
radiation effects on sections of, from guinea pigs, ruby laser, 22:31234
radiation effects on tattoo pigments in, of man, laser, 22:10691
radiation effects on tattooed, of man, rabbits, and swine, laser, 22:25989
radiation effects on tissues of epidermis of human, acute uv, 22:52017
radiation effects on transplants of, in mice, effects of age, sex, and thymectomy on γ and x, 22:6869 (USNRDL-TR-67-92)
radiation effects on transplants of, in rabbits and rats, γ, 22:19336
radiation effects on tumors of human, review of electron, 22:51686
radiation effects on ultrastructure of cells of, in rabbits, use of electron microscopy to determine x, 22:30963
radiation effects on vascular permeability in, of guinea pigs, hairless mice, and rats, acute uv, 22:51996
radiation effects on vitamin D synthesis in rat, role of uv, 22:51328
radiation effects on, aging uv, 22:49193
radiation effects on, during radiotherapy, effect of dose fractionation on electron, 22:51762
radiation effects on, during radiotherapy, electron, 22:51763
radiation effects on, effects of split dose on recovery from, 22:25990
radiation effects on, in man with photodermatitis, uv, 22:8612
radiation effects on, in man, effects of genetics, leukemia, and state of health on, 22:23646
radiation effects on, method for evaluation of laser, 22:40667 (SC-DC-68-2108)
radiation effects on, of accident victims, use of, for dosimetry, 22:8517 (CONF-670305-, pp 94-113)
radiation effects on, of animals and man, histopathology of, 22:36377
radiation effects on, of animals, laser, 22:31276
radiation effects on, of animals, uv, 22:33901(T) (JPRS-41315, pp 16-25)
radiation effects on, of astronauts, cosmic, 22:51835
radiation effects on, of dogs, effects of transplants of marrow and spleen cells on x, 22:45712
radiation effects on, of dogs, microwave, 22:554(R) (UR-49-810)
radiation effects on, of guinea pigs and man with erythropoietic protoporphyria, effects of protoporphyrin on uv, 22:51877
radiation effects on, of guinea pigs following sensitization to dinitrochlorobenzene, acute x, 22:45690
radiation effects on, of hamsters, man, and rabbits, effects of pigment on laser, 22:12784
radiation effects on, of human hand following therapy, latent pathological x, 22:43440
radiation effects on, of human neck following radium therapy of neoplasms of larynx, 22:49525
radiation effects on, of human population of Marshall Islands exposed to fallout during 1954, 22:43360
radiation effects on, of mammals, effects of dose fractionation on neutron and x, 22:49480 (CONF-680410-

, pp 21.1-25)
radiation effects on, of man, 22:31135
radiation effects on, of man, 22:4666
radiation effects on, of man and rabbits, 22:23667
radiation effects on, of man exposed to nuclear explosions, methods for treatment of, 22:4653
radiation effects on, of man following therapy for skin cancer, x, 22:15007
radiation effects on, of man following therapy, x, 22:38448
radiation effects on, of man, evaluation of hazards of laser, 22:38262 (SC-RR-68-174)
radiation effects on, of man, histological analysis of, 22:28672
radiation effects on, of man, implications of, for space missions, 22:6921
radiation effects on, of man, pathologic x, 22:23627
radiation effects on, of man, pathological, 22:49530
radiation effects on, of man, porphyric uv, 22:25987
radiation effects on, of man, prophylaxis and treatment of pathological, 22:38498
radiation effects on, of man, protective effects of topical corticosteroids against laser, 22:51842
radiation effects on, of man, review of, 22:12786
radiation effects on, of man, review of uv, 22:6891
radiation effects on, of mice following tumor therapy, effects of sieve shielding on x, 22:38386
radiation effects on, of mice, combined effects of chrysomallin on x, 22:45614
radiation effects on, of mice, effects of dose fractionation and oxygen abundance on x, 22:547
radiation effects on, of mice, effects of hypoxia on recovery from 15 MeV electron, 22:40877
radiation effects on, of mice, effects of time on fractionated γ, 22:49478 (CONF-680410-, pp 18.1-12)
radiation effects on, of mice, effects of, on hematopoiesis, x, 22:12790
radiation effects on, of mice, pathological fast neutron, 22:33940
radiation effects on, of mice, pathological uv, 22:49520
radiation effects on, of mice, pigs, and rats, RBE of α, deuteron, fast neutron, and x for, 22:8596 (CONF-670305-, pp 128-42)
radiation effects on, of mice, repair of electron, fast neutron and x, 22:12931
radiation effects on, of pigs, effects of fractionated doses on fast neutron and x, 22:572
radiation effects on, of rabbits, effects of dose on high-energy electron, 22:38419 (CEA-R-3294)
radiation effects on, of rabbits, protective effects of dimebolin, dimedrol, EAC, and trasylol against β, 22:21543
radiation effects on, of rats, effects of local hypoxia on x, 22:40949
radiation effects on, of swine, effects of pigment on pathological laser, 22:567
radiation effects on, of swine, protective effects of β-methasone-17-valerate against, 22:33852
radiation effects on, prophylactic and protective effects of cortisone against, 22:33867
radiation effects on, uv, 22:564
radiation protection methods for human, in Soviet Union, 22:40731
radioactive contamination of human, by occupational exposure, methods for removal of, 22:12850
radioactive contamination of human, methods for determination of, 22:36277
radioactive contamination of human, treatment of injuries following, 22:38298
radioactive contamination of, calculation of derived working limits for, 22:23543
radiodiagnosis of survival of pedicle grafts of human, use of technetium-99 for, 22:40763
radioinduced aberrations of chromosomes in, of man, γ and x, 22:10751
radioinduced allergic reactions in, of man to sandalwood oil, uv, 22:38213
radioinduced allergies in, of man following application of triacetyldiphenolisatin, shortwave uv, 22:28687
radioinduced basal-cell epitheliomas of human, following therapy of spondylitis, 22:40767
radioinduced burns on, of rabbits, effects of dimethyl sulfoxide on β, 22:51837
radioinduced cancer of, of man, chemosurgery technique for treatment of, 22:45701
radioinduced cancers of, of mice, uv, 22:28641
radioinduced carcinomas in, of man, effects of dose on incidence of Thorotrast, 22:10872
radioinduced carcinomas in, of mice, α and proton, 22:51934
radioinduced carcinomas in, of mice, thallium-204 β, 22:8602
radioinduced chromosome aberrations in cultures of human, determination of stable and unstable, 22:38244
radioinduced chronic polymorphous light dermatosis in, of man, determination of wavelength for uv, 22:15071
radioinduced dermatitis and ulcers in, of man, effects of Ionol on, 22:38370
radioinduced dermatitis in, of man, combined effects of halogenated salicylanilides on uv, 22:43426
radioinduced dermatitis in, of medical personnel, x, 22:36382
radioinduced dermatitis on, of dogs following therapy for mastocytomas, effects of dose fractionation on incidence of x, 22:33910
radioinduced dermatosis of, in man, uv, 22:6853
radioinduced diseases in, of man following accidental exposure to fallout from nuclear explosions, β, 22:10818
radioinduced diseases of, in man, effects of antimalarial drugs on uv, 22:19410
radioinduced diseases of, in medical personnel, x, 22:45513
radioinduced eruptions in human, following cobalt-60 therapy of gynecological cancer, γ, 22:10878
radioinduced erythema in animal and human, protective effects of drugs and hormones against uv, 22:49393
radioinduced erythema in, of psoriasis patients, uv, 22:15066
radioinduced erythema of human, effects of dose and dose fractionation on uv, 22:43323
radioinduced erythema of human, following therapy for epitheliomas, x, 22:25976
radioinduced erythema of, in man, etiology of uv, 22:23608
radioinduced erythemas in human, effects of wavelength on uv, 22:28572
radioinduced formation of kinins in human, uv, 22:15108
radioinduced free radicals in pigmented and white, of guinea pigs and rabbits, EPR study of laser, 22:40823(T) (JPRS-44070, pp 10-18)
radioinduced incisions in, of dogs and rodents, evaluation of laser, 22:8631
radioinduced inflammation of human, cytological analysis of x, 22:38442
radioinduced injuries of human, following therapy for cutaneous angiomas, effects of dose on strontium-90 β, 22:49616
radioinduced injuries of, following therapy of basal cell carcinomas, plastic surgery for treatment of, 22:28557
radioinduced injuries to human, following therapy for melanomas and spinaliomas, methods for surgical repair of, 22:31195
radioinduced injuries to human, following therapy of hemangioma, effects of plastic surgery on x, 22:31200
radioinduced injuries to, of citrus fruits during processing, effects of dose and storage temperature and time on extent of, 22:49662(R) (ORO-3097-17)
radioinduced injuries to, of human cervicofacial area following therapy for malignant tumors, technique for surgical repair of, 22:47598
radioinduced injuries to, of human hands, prednisone treatment of x, 22:49465
radioinduced keratosis in human, use of 5-fluorouracil for treatment of uv, 22:51826
radioinduced lesions in human, following therapy, methods for treatment of, 22:45599
radioinduced lesions of, following therapy of cervical carcinomas, 22:31127
radioinduced malignant neoplasms in facial, of man following therapy for acne vulgaris, x, 22:10863
radioinduced necrosis in, effects of dose and time on, 22:33947
radioinduced necrosis of, following radiotherapy of breast carcinomas, x, 22:25997
radioinduced neoplasms in, of rats, proton, 22:40852
radioinduced neoplasms of, in mice and rats from reactor debris, β, 22:36249 (AD-661489)
radioinduced pemphigoid of, following therapy for cancers of lung and spine of man, x, 22:36384
radioinduced pigmentation of human, following therapy with concentrated cobalt-60 γ, 22:47596
radioinduced production of elastic waves in, laser, 22:43467
radioinduced reactions of human, following therapy of tumors, high-energy electron, 22:51756
radioinduced reactions of human, protective effects of chrysomallin against γ and x, 22:49397
radioinduced sensitivity to tribromosalicylanilide in, of man, uv, 22:43443
radioinduced squamous cell carcinoma in tissues of, of man by contaminated jewelry, 22:43463
radioinduced tumors in, of mice, combined effects of 4-nitroquinoline-1-oxide on strontium-90 and yttrium-90 β, 22:49588
radioinduced tumors in, of rats, 120 MeV proton, 22:23668
radioinduced tumors in, of rats, effects of age on fast neutron and x, 22:21576
radioinduced tumors in, of rats, effects of dose on β, 22:47581
radioinduced tumors of, in mice, combined effects of croton oil on uv, 22:36343
radioinduced ulcerative dermatitis in human, effectiveness of iontophoresis on x, 22:38441
radioisotope absorption by, of personnel in contaminated areas, 22:38298
radioisotope distribution in, of rats, calcium-45 and strontium-89, 22:51465
radioisotope removal from, of man, testing of detergent mixtures for, 22:6820
radioisotope sorption by, of animals, method for determining, 22:49203

radiopreservation in preparation for leather processing, 22:21644
radioprotective effect of, on explants of gastric mucosa, β and x, 22:528
radioprotective effects of scalp, on brain of man, mice, and rats, laser, 22:8633
radiosensitivity of cattle, β and γ, 22:38263 (TID-24459)
radiosensitivity of guinea pig and human, effects of furocoumarins on uv, 22:529
radiosensitivity of human, effects of antibacterial agents in toilet soaps on uv, 22:49598
radiosensitivity of human, effects of cyclamate on uv, 22:23570
radiosensitivity of human, effects of environment and seasonal variations on uv, 22:6899
radiosensitivity of human, effects of halogenated salicylanilides on uv, 22:15035
radiosensitivity of human, measurement of infrared, 22:49370
radiosensitivity of human, uv, 22:21613
radiosensitivity of human, x, 22:49599
radiosterilization of sheep, for enzyme depilation studies, 22:40982
radiotherapy of acne vulgaris of human, effects of age, previous treatment, and type of acne on x, 22:47553
radiotherapy of angiomas of human, effects of dose on development of complications following strontium-90 β, 22:49616
radiotherapy of epitheliomas of, in man, betatron electron, 22:51748
radiotherapy of erythemia in human, development of neoplasia following phosphorus-32 β, 22:49589
radiotherapy of lesions in, of man, strontium-90 β, 22:51833
radiotherapy of neoplasms in human, effects of technique on x, 22:38377
radiotherapy of neoplasms of, combined effects of 5-bromodeoxyuridine infusion against x, 22:49395
radiotherapy of recurrent diseases of human, combined effects of plastic surgery on x, 22:31142
radiotherapy of recurrent tumors of human, electron, 22:51708
radiotherapy of tattoos and warts on human, use of quartz rod transmission for laser, 22:31276
radiotherapy of tumors of, comparison of ionizing and laser, 22:4647
radiotherapy of tumors of, in man, development of necroses following fast electron, 22:36400
removal from rats, combined effects of, and γ-irradiation on survival, 22:33859
sodium-22 sorption by, of guinea pigs, effects of cleaning agents and stripping on, 22:14976
strontium sorption by, of guinea pigs, tracer study of, 22:23441
strontium-90 equilibrium with yttrium-90 in, of rats following oral administration, 22:25772
transport of solutes through, of frogs, effects of hyperosmotic agents on, 22:50891(R) (RLO-1754-11)
tritium uptake by human, 22:8527 (SC-DC-67-2191)
tritium uptake by, of man from vapor in air at Chalk River, 22:14999 (AECL-2699)
tritium uptake by, of rats, 22:51619
uptake of tritium-labeled water by, of man, 22:2503 (AECL-2756)
uranium sorption through, of rabbits and swine in relation to toxicity, 22:49242
xenon-133 diffusion through human, in relation to sweating, 22:51355
xenon-133 uptake by, for study of blood flow, atraumatic method for, 22:51382
Skin Grafts
see Transplants
SL-1
see Army Reactors (SL-1)
Slag Wool
see Rock Wool
SLAGS
book: Continuous Compilation of New Reference Data on Diffusion Processes in Inorganic Solids and Their Melts, Vol. 1, No. 1, 22:31381
iron transfer to liquid fluoride--oxide, tracer study using metallic specimens, 22:15136(T) (ANL-Trans-559)
solubility of plutonium-bearing, in nitric acid, 22:18867 (RFP-890)
weight of steel production process, use of radioactive tracers for determination of, 22:14713
SLEEP REACTOR
neutron spectra in natural uranium--heavy water lattices in, thermal and epithermal, (E/T), 22:30336
neutron spectrometers for, description of beryllium filter and crystal monochromator slow chopper time-of-flight, 22:12131
SLUGS
dissolution and iodine removal from uranium, 22:4302 (CEA-R-3259)
SLURREX
see Boiling Reactor Experiments
SLURRIES
analysis of, radiometric method for, 22:18736(P)
analysis of, use of radioisotopes in, 22:47297
drying of, method and apparatus for, 22:47147(P)
SM-1
see Army Reactors (SM-1)
SM-2 Reactor (Russia)
see Reactors, Research
SM-2
see Army Reactors (SM-2)
Small Submarine Reactor
see Submarine Reactors (S1C)
SMOKE GENERATORS
see also Aerosol Generators
see also Smokes
see also Stack Disposal
SMOKES
see also Plumes
behavior of Brookhaven National Laboratory air-cooled reactor, use of tracer techniques to study, 22:27925
diffusion from elevated source of, effect of altitude on, 22:18950 (BNWL-481-1, pp 5-8)
diffusion of plumes of, measurement of lateral, 22:18949 (BNWL-481-1, pp 1-4)
effects on formation and stability of high expansion foam, 22:45357(R) (UCRL-50007-68-1)
opacity from smoldering and burning of plastics and woods, 22:16374 (UCRL-70794)
plumes of, tracer method for instantaneous detection of, 22:18953 (BNWL-481-1, pp 33-43)
plumes of, use in studies of pesticide drift behavior, 22:6194 (BNWL-SA-1480)
polonium-210 content of cigarette, 22:8459
polonium-210 content of tobacco, 22:23521
polonium-210 content of tobacco, hazards of, to man, 22:38275
properties of wood and plastics, 22:45357(R) (UCRL-50007-68-1)
radiation effects on irritating substances in tobacco, γ, 22:10891(P)
rise of buoyant, effects of meteorological conditions on, 22:16360(R) (NYO-3685-13)
Smoky Burst
see Plumbob Operation
Snails
see Mollusca--Physa
Snakes
see Reptilia--Crotilus
SNAP Reactors
see Systems for Nuclear Auxiliary Power (SNAP)
SNAPOODLE Microthruster
see Nuclear Auxiliary Power Systems
SNAPSHOT (SNAP-10A flight test)
see Systems for Nuclear Auxiliary Power (SNAP-10)
SNAPTRAN-2
see Systems for Nuclear Auxiliary Power (SNAP-10)
SNARE (Sandia)
see Critical Assemblies
SNEAK
see Critical Assemblies
SNOW
age of Antarctica, use of natural and artificial radioactivity for estimation of, 22:18916
analysis for silver by neutron activation methods, 22:40002
bromine washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
bromine washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
cesium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
effects on performance of proportional detectors for neutron monitoring, 22:45308
fallout content of Niigata City, Japan, from Chinese nuclear explosions, 1965 to 1966, 22:40270
fallout content of Niigata City, Japan, from Chinese nuclear explosions, 1963 to 1964, 22:40271
gamma attenuation by, 22:51104
iodine washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
iodine washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
radioactivity in Niigata City, Japan, 1960 to 1962, 22:30724
radioactivity in polar, measurement of, 22:16731
scandium washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
scandium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
silver iodide washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
silver iodide washout coefficient for, measurement of, 22:18954 (BNWL-481-1, pp 43-52)
strontium washout coefficient for, measurement of, 22:18960 (BNWL-481-1, pp 82-5)
washout coefficient for fallout in lower troposphere, 22:23171
water content in, use of natural radioactivity in determining, 22:35925(T) (ORNL-tr-1935)
water equivalent of, use of natural soil radioactivity for measuring, 22:16699
SOAP SOLUTIONS
effects on skin of man, combined effects of halogenated salicylanilides and uv radiation on, 22:43426
SOAPS

  see also Soap Solutions
  additives to, effects of, on uv-radiosensitivity of skin, 22:40770
  effectiveness for polonium-210 removal from human skin, 22:43333
  effects on mercury-203 and sodium-22 sorption by skin of guinea pigs, 22:14976
  effects on photosensitivity, combined effects of uv radiation on additives to, 22:40770
Soapstone
  see Steatites
SOC (ORNL)
  see ORNL Separated-Orbit Cyclotron
Soda Ash
  see Sodium Carbonates
SODA LIME
  effectiveness for polonium-210 removal from human skin, 22:43333
  properties as fluorine disposal media, 22:48901 (RFP-1200)
SODIUM
  see also Alkali Metals
  absorption bands in interstellar space due to, (T), 22:23930
  abundance in α Cygni, (E), 22:11188
  abundance in galactic cosmic rays, (T), 22:17431
  abundance in γ Capricorni, (E), 22:38692
  abundance in HR 774, (E), 22:23983
  abundance in K stars, (E), 22:23987
  abundance in K-giant stars, (E), 22:45851
  abundance in K-type giant stars, (E), 22:43831
  abundance in photosphere, (E), 22:23932
  abundance in spectra of horizontal-branch blue stars, (E), 22:29022
  abundance in Sun, (T), 22:11143
  abundance in upper atmosphere, (E), 22:19859
  abundance in Venus atmosphere, (E), 22:11188
  abundance of, solar, (T), 22:13206
  abundance on Sun, (T), 22:8912
  activation analysis of total body, in man, neutron, 22:31007
  activation analysis of, in blood serum and inner ear fluid of man, neutron, 22:21406 (KFKI-6/1967)
  activation in blood of man, use of, for calculation of neutron dose following accidents, 22:6799 (LA-3721)
  activation in FTR closed loops, γ intensity from, (T), 22:12086 (BNWL-472, pp 4.1-43)
  activation in man by neutrons, 22:10200
  aerosols of, development of high capacity--high efficiency filters for, 22:6514 (NYO-841-10)
  analyses for carbon in, 22:9988(R) (ANL-7391)
  analyses for iodine-131 and cesium-137 in EBR-2 coolant, radiochemical, 22:16265(R) (ANL-7403)
  analyses using spark source mass spectrometers, 22:27396(R) (AI-AEC-12638)
  analysis for carbon by bremsstrahlung activation methods, 22:7992(R) (NBS-TN-428)
  analysis for carbon by photon activation methods, 22:22985
  analysis for carbon, colorimetric, 22:27530 (CEA-N-816, pp 9-65)
  analysis for carbon, diffusion-cell-type for continuous, 22:47430
  analysis for carbonate by distillation and conductometry, 22:22937 (TRG-Report-1635)
  analysis for hydrogen in liquid, by mass spectrography, 22:30471
  analysis for hydrogen up to 650°C, electrolytic cell for, 22:30896(R) (UNC-5215)
  analysis for hydrogen, continuous electrochemical meter for, 22:49148(R) (UNC-5223)
  analysis for impurities by spark source mass spectroscopy, 22:30439
  analysis for impurities, development of techniques for, 22:27487(R) (LA-3880)
  analysis for impurities, procedures for, 22:30155(R) (NAA-SR-12296)
  analysis for impurities, Rhometer development for, 22:24926(R) (APDA-214)
  analysis for impurities, survey of methods in U.S. laboratories for, 22:22927 (BNWL-690)
  analysis for oxygen, amalgamation method for, 22:39977 (BNL-50118)
  analysis for oxygen, calibration of electrochemical sensors for, 22:12677 (ANL-7380, pp 118-22)
  analysis for oxygen, internal friction method using tantalum wire for, 22:43527 (ANL-7299, pp 150-72)
  analysis for oxygen, methods for, 22:38510 (BNL-50082, pp 93-152)
  analysis for oxygen, polarographic, 22:31390
  analysis of EBR-2 coolant, for trace--metal impurities, 22:22653(R) (ANL-7419)
  analysis of high temperature, lead titanate zirconate piezoelectric ceramic disk ultrasonic transducers for, 22:4498 (APDA-210)
  analysis of liquid, for carbon and hydrogen impurities, gas chromatographic, 22:33258
  analysis of liquid, for carbon, instrument for continuous, 22:647(R) (BNL-50077)
  analysis of liquid, for hydrogen, development of oxidative diffusion system for, 22:38136 (APDA-222)
  analysis of liquid, for impurities, surface tension method for, 22:8725(R) (MSAR-67-207)
  analysis of liquid, for impurities, survey of methods for, 22:7991(R) (MSAR-67-213)
  analysis of liquid, for oxygen impurities, electrochemical meter for, 22:47395 (AI-AEC-12700)
  analysis of liquid, for oxygen, sampling blanks for, 22:12223 (NAA-SR-12616)
  analysis of matrices of, for trace elements by neutron activation method including separation procedure, 22:23086 (ANL-7421)
  analysis of reactor coolant, radiochemical, 22:6001
  analysis of, state-of-the-art review on, 22:50903 (BNWL-821)
  argon atom reactions with excited atoms of, cross sections for transitions between fine structure components in, 22:11205
  atomic structure of liquid, 22:4787
  atomic weight of, based on carbon-12 = 12, 22:42698
  atomic-absorption cross sections for, 500- to 600-A, (E), 22:19759
  behavior of liquid, effects of impurities on, 22:50841(R) (LA-3993)
  behavior of superheat boiling, effects on simulated fuel rod cluster of, (E/T), 22:37614
  boiling and flashing of liquid, safety analysis of fast reactor coolant, 22:20834
  boiling burnout heat flux for, in subcooled forced-convection systems, 22:51174
  boiling characteristics of, survey of steady state and transient studies on, 22:42204 (RT/ING-(68)7)
  boiling in forced and natural convection flow, (E), 22:51170
  boiling in reactor coolant liquid, effects of, 22:53375
  boiling in reactor cores, in calculations of coolant expulsion, 22:1793
  boiling in test loop, use of magnetic flowmeters for, 22:12680 (ANL-7380, pp 183-8)
  boiling initiation in, factors affecting, 22:21682 (ANL-7383)
  boiling of liquid, analysis of pressure and temperature effects on incipient, 22:33156
  boiling of, acoustic method for detection of, (E), 22:51169
  boiling of, effects of radiation on initiation of, 22:52227
  boiling of, effects of superheat and pressure pulses on, (E/T), 22:51171
  boiling of, temperature, pressure, and acoustic-noise variations at initial, (E), 22:24925(R) (ANL-7427)
  boiling superheats in flowing, 22:647(R) (BNL-50077)
  boiling technology for, review of, 22:50812 (TID-24706)
  boiling thermodynamics of liquid, review on, 22:19509 (AERE-R-5436)
  book: Alkali Metal Handling and Systems Operating Techniques, 22:15206
  book: Uncommon Metals, 22:10981
  bubble ejection and superheating in stagnant, 22:35994
  carbon content in, equipment for measuring, 22:12676 (ANL-7380, pp 111-17)
  carbon content of liquid, effects on carburization of stainless steel, 22:4746
  carbon determination and recovery in, 22:24925(R) (ANL-7427)
  carbon mass transfer by liquid, from steel, 22:12966
  carbon removal from, efficiency of cold traps for, 22:23194 (MSAR-67-203)
  carbon transport in, 22:22653(R) (ANL-7419)
  carbon transport in liquid, 22:36543 (ANL-7450, pp 39-74)
  carbon transport in liquid, 22:52257 (ANL-7425, pp 94-129)
  carburizing effects on AISI 1010 steel at high temperatures, 22:23715 (NAA-SR-Memo-9329)
  carburizing effects on iron wire at high temperatures, 22:23715 (NAA-SR-Memo-9329)
  carburizing effects on type 304 stainless steel at high temperatures, 22:23715 (NAA-SR-Memo-9329)
  carburizing of reactor coolant, chemical and metallographic methods for analysis of, 22:7809 (NAA-SR-12410)
  cavitation phenomena in liquid, review, 22:52180
  cesium content in salts of, use of neutron activation analysis for determining, 22:4468
  cesium separation from, effects of physical conditions on, 22:12006(R) (ANL-7399)
  charge exchange with protons at 5 to 40 keV in vapor of, 22:26233
  chromatographic behavior on cerium phosphate paper, 22:153
  cold traps for liquid, testing for optimum oxygen removal by, (E/T), 22:33153
  collisions with inert gas atoms, total cross sections for inelastic, (E), 22:993
  combustion in air of, mathematical model describing aerosol production during, 22:5953
  combustion in air, characteristics of aerosols produced during, 22:5952
  combustion of fast reactor coolant, safety analysis for, 22:32783 (ORNL-TM-1937)
  combustion of sprayed, in air, analysis of temperature and burning rate from, (T), 22:22653(R) (ANL-7419)

combustion rates for, apparatus for measuring, 22:1819
compatibility of Type 316 stainless steel-clad plutonium carbide (PuC)--uranium carbide (UC) and plutonium nitride (PuN)-- uranium nitride (UN) fuel elements bonded with, 22:50641(R) (LA-3993)
compatibility of Type 316 stainless steel-clad plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel elements bonded with, analysis of interface, 22:50732(R) (GEAP-5631)
compatibility with carbide fuels at 700 to 750°C, 22:43629(R) (LA-3933)
compatibility with stainless steel cladding materials at 700 to 750°C, 22:43629(R) (LA-3933)
complexes with anthracene, hydrogenation of, effects of deuterium on, 22:42679
complexes with anthracene, reactions with deuterium, 22:42679
compressibility and thermal expansion of, 22:23777
condensation in meteorites, (T), 22:5023
condensation of vapors of, 22:35994
contamination by oxygen during fabrication of bonded fuel elements, 22:45806(R) (WARD-3791-21)
content in Rotondo granite, radiometric measurements on, 22:10391
content of animal tissues, determination of, by neutron activation analysis, 22:17049
content of aquatic plants, in relation to content of pond water, use of activation analysis for determining, 22:19301
content of diet of isopods, effects of, on cesium-134 metabolism, 22:6759
content of diet, effects of, on cesium-134 retention in rats, 22:28341
content of frog muscle, effects of quinine on, 22:14970
content of Green and Round Lakes, Fayetteville, New York, 22:45182
content of human blood, effects of radiotherapy on, 22:45436
content of man, measurement of, by whole-body counting following neutron activation, 22:36192
content of man, neutron activation methods for determination of, 22:6832 (CONF-661010)
content of plasma of atomic bomb survivors with multiple myelomas, 22:4643
content of resins, effects of, on intestinal sorption of strontium by rats, 22:8484
coolant flow of, effects on fuel temperature of loss of, 22:25083(R) (GEAP-5541)
coolant for EBR-II, determination of iodine-131 and iodine-133 in primary, 22:30118 (ANL-7438)
coolant for fast liquid metal-cooled reactors, maintenance equipment and procedures for, 22:46960
coolant for FTR, reactivity worth calculations for, 22:22804(R) (BNWL-685)
coolant mixing in fuel element bundles of liquid metal-cooled fast reactors, analysis of, (E/T), 22:35476 (WASH-1096)
coolant of liquid, effects of argon cover gas on krypton and xenon removal from, 22:25098(R) (ORNL-TM-2164)
coolant technology for United States fast breeder reactors, 22:18527
cooling system performance at 67 MW(t) operation of Fermi Fast Breeder Reactor, 22:18521
cooling systems using, effects on reactor safety of fires in, 22:9990(R) (BAW-1312)
corrosion inhibition in liquid, use of dissolved getters for, 22:7788(R) (ANL-7382)
corrosion inhibition in liquid, use of dissolved getters for, 22:12006(R) (ANL-7399)
corrosion resistance of nuclear materials containing, 22:31357
corrosive effects at 1200°F, on Type 316 stainless steel, 22:52192
corrosive effects at 450 to 750°C on brazing alloys, 22:12972
corrosive effects at 600 to 800, on Inconel 625, 22:2572
corrosive effects of 1300°F liquid, on LMFBR fuel cladding, 22:50735(R) (GEAP-5648)
corrosive effects of 1300°F pumped liquid, on test loop structural materials, 22:44822(R) (GEAP-5582)
corrosive effects of carbon-contaminated, on stainless steel at high temperatures, 22:12967
corrosive effects of flowing, on stainless steel, 22:34008 (BNL-12482)
corrosive effects of liquid, effects of oxygen content on, 22:53315
corrosive effects of liquid, fast reactor cooling system mockup for analysis of, 22:44819 (GEAP-4881)
corrosive effects of liquid, in reactor structural materials, 22:53273(T) (EURFNR-472)
corrosive effects of liquid, in reactor structural materials, 22:32775 (KFK-700(Pt. IX))
corrosive effects of liquid, on reactor components, 22:8269
corrosive effects of liquid, on stabilized chromium--molybdenum--steel at 420°C, 22:47660 (CONF-671007-2)
corrosive effects of liquid, on steels to 800°C, 22:12966
corrosive effects of liquid, on titanium-stabilized--chromium--nickel austenitic steel at 600°C, 22:47660 (CONF-671007-2)
corrosive effects of liquid, on types 304, 316, and 347 stainless steels and chromium--molybdenum steel at 600 to 650°C, 22:17077
corrosive effects of liquid, on vanadium-base titanium alloys at 500 to 600°C, 22:45752
corrosive effects of oxygen-contaminated, on niobium- and vanadium-base alloys at 650°C, 22:28731 (ANL-6982)
corrosive effects of, review of, 22:17100 (BNL-50089)
corrosive effects on austenite, 22:39794
corrosive effects on austenitic steels, at 500 to 600°C, 22:23768
corrosive effects on binary and ternary vanadium alloys at 500 to 600°C, 22:27418(T) (ANL-Trans-600)
corrosive effects on cobalt S-1 alloys, 22:52126 (BNL-50127)
corrosive effects on Fast Test Reactor fuel elements, analysis of, 22:25076 (BNWL-599)
corrosive effects on fuel cladding materials at 650°C, 22:27487(R) (LA-3880)
corrosive effects on heat-resisting alloys at high temperatures, 22:38510 (BNL-50082, pp 93-152)
corrosive effects on Incaloy 800 and 316 stainless steel at 760°C, 22:15141 (BNL-50057, pp 79-100)
corrosive effects on Incoloy 800, 22:52126 (BNL-50127)
corrosive effects on Incoloy 800 and Types 304, 316, and 347 stainless steel cladding at 1300°F of liquid, analysis of, 22:44820(R) (GEAP-5508)
corrosive effects on Incoloy and stainless steel, test loop and methods for, 22:12969
corrosive effects on Incoloy-800 of liquid, analysis at 1300°F of, 22:44821(R) (GEAP-5546)
corrosive effects on Inconel, test loop for, 22:2560(R) (IS-RD-11)
corrosive effects on metals, effects of dissolved getters on, 22:24925(R) (ANL-7427)
corrosive effects on nickel alloy and austenitic steel fuel element claddings of liquid, 22:53273(T) (EURFNR-472)
corrosive effects on nickel alloy and austenitic steel fuel element claddings of liquid, 22:32772 (KFK-700(Pt. III))
corrosive effects on nickel alloys and steel at high temperatures, 22:12965
corrosive effects on niobium--zirconium alloys, effects of oxygen on, 22:31326
corrosive effects on niobium--zirconium and hafnium--tantalum--tungsten alloys of reflux-boiling, at 1095°C, 22:33152
corrosive effects on reactor materials, effects of temperature on, 22:7788(R) (ANL-7382)
corrosive effects on reactor materials, review of, 22:12957
corrosive effects on stainless steel at 600°C, 22:2572
corrosive effects on stainless steel loops, relations with carbon and oxygen distribution, 22:12971
corrosive effects on stainless steels and chromium--molybdenum boilers of liquid, analysis of, 22:32834
corrosive effects on steels in British power reactors, 22:47660 (CONF-671007-2)
corrosive effects on structural materials for LMFBR, analysis of, (E), 22:42194(R) (MSAR-68-77)
corrosive effects on titanium--vanadium alloys at 550 to 750°C, 22:43627 (ANL-7299, pp 14-113)
corrosive effects on titanium--vanadium alloys, effects of calcium on, 22:23723
corrosive effects on titanium--vanadium alloys, effects of calcium on, 22:52130(T) (ANL-Trans-666)
corrosive effects on tubes of Type 321 stainless steel, Croloy, and Incoloy 800 by liquid, 22:35423(R) (APDA-224)
corrosive effects on type 304 and 321 stainless steels, Haynes 25, and cobalt alloys at 760°C, 22:33151
corrosive effects on Type 304 and Type 316 stainless steels of liquid, effects of exposure time, flow rate, and temperature on, 22:44820(R) (GEAP-5508)
corrosive effects on Type 304 stainless steel and Croloy tubes of liquid, effects of water leaks on, (E), 22:35423(R) (APDA-224)
corrosive effects on Type 304 stainless steel of liquid, use of electron microscopy for analysis of, 22:42397 (TID-24602)
corrosive effects on Type 304, Type 316, and Type 347 stainless steel, of liquid, analysis at 1300°F of, 22:44821(R) (GEAP-5546)
corrosive effects on Type 316 stainless steel, 22:52126 (BNL-50127)
corrosive effects on Type 316 stainless steel anode 0.5 to 1 x 10^6 Btu/h-ft^2 electron bombardment heaters at 1300°F of liquid, analysis of, 22:44820(R) (GEAP-5508)
corrosive effects on type 316 stainless steel, effects of oxygen on, 22:31326
corrosive effects on Type 321 stainless steel, 22:52126 (BNL-50127)
corrosive effects on Type-304 stainless steel pipe at 1200°F, 22:22653(R) (ANL-7419)
corrosive effects on vanadium and titanium--vanadium alloys, in-pile, 22:17082
corrosive effects on vanadium at 700°C, 22:22653(R) (ANL-7419)
corrosive effects on vanadium, effects of calcium on, 22:23723
corrosive effects on vanadium, effects of calcium on, 22:52130(T) (ANL-Trans-666)

corrosive effects on vanadium-base alloys at 650°C, 22:43627 (ANL-7299, pp 14-113)
corrosive effects on vanadium-base fuel cladding alloys, 22:45757(R) (WARD-3791-20)
corrosive effects, on Incoloy 626 and 800, 22:15149
critical temperatures and vapor density of, 22:19521 (UCID-15269)
crystal stacking fault energies at 60°K, 22:38570
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
defects in crystals of, Stark effect on F-center emission band, (E/T), 22:15567 (NYO-3564-9)
density of liquid, 22:23777
density of liquid and vapor, to critical point, method for estimation of, 22:51173
deposition of particles of, on pipe walls, design of aerosol recirculation system to measure, 22:28037(R) (NYO-841-12)
deposition of vaporous, testing system for, 22:38626(R) (WARD-3791-18)
deposition on surfaces in argon-filled enclosures from sodium pools at 400 to 500°F, 22:45806(R) (WARD-3791-21)
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in gallium arsenide, activation, 22:1969
determination as impurity in semiconductor silicon, neutron activation, 22:39993
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in calcium, 22:1967 (Y-1590)
determination as trace impurity in glass fragments by activation methods, 22:33205 (AWRE-O-3/68)
determination as trace impurity in silicon oxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
determination in agricultural samples by neutron activation methods, 22:39990 (TID-24581)
determination in airborne particulates by neutron activation methods, 22:30501
determination in aluminum, activation method for, 22:21036
determination in biological materials by neutron activation methods, 22:35766
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in bismuth by activation methods, separation techniques for, 22:4049
determination in blood by neutron activation methods, 22:12259
determination in coal by neutron activation methods, 22:37695
determination in copper, activation, 22:27558
determination in detergents by neutron activation, 22:4308 (TID-24029)
determination in glass by neutron activation and photonuclear activation methods, 22:16400 (GA-8171, pp 147-60)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in hair by neutron activation methods, 22:16404 (GA-8171, pp 203-20)
determination in hair by neutron activation metnods, 22:16405 (GA-8171, pp 221-36)
determination in human saliva by neutron activation methods, 22:14464
determination in iron meteorites, 22:35749
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in mixtures of light elements, electromagnetic isotope separation in activation methods for, 22:47090
determination in ''moonshines'' by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
determination in nutrient broth by neutron activation analysis, 22:51408
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in plutonium dioxide using α-reaction γ spectra, 22:18704
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in rice plants by neutron activation, 22:33286
determination in rice plants by neutron activation methods, 22:50
determination in salmon tissues by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in scandium, spectroscopic, 22:18727
determination in semiconductor silicon by neutron activation methods, 22:14459
determination in silicates by flame photometry, 22:22960
determination in silicon oxides by neutron activation methods, 22:25267
determination in single-crystal slices of silicon by neutron activation, 22:37703
determination in soil solutions, activation, 22:1998
determination in tissues by neutron activation methods, 22:10200
determination in uranium and its compounds by atomic absorption spectroscopy, 22:16411 (GAT-507)
determination in uranium and uranium compounds by atomic absorption, 22:45014
determination of a visual complexometric, 22:33273
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of total-body, by whole-body neutron activation, 22:50909
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination simultaneously with potassium, polarographic, 22:30547
development technology for liquid, analysis of Los Alamos Scientific Laboratory 1968, 22:50841(R) (LA-3993)
diffusion and solubility of, in silicon monocrystals at 500 to 900°C, 22:45029 (UCRL-18043, pp 7-105)
diffusion at constant volume of liquid, self-, 22:43565(R) (COO-841-15)
diffusion in argon, 22:25334(T) (AEC-tr-6934)
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in lead, coefficients of, 22:21688 (COO-1352-25)
diffusion in molybdenum, review, 22:21651
diffusion in potassium at 0 to 64°C, tracer studies of, 22:17121
diffusion in tin, coefficients of, 22:21688 (COO-1352-25)
diffusion of potassium and rubidium in, at 0 to 98°C, tracer studies of, 22:17121
diffusion of uranium in liquid, 22:25334(T) (AEC-tr-6934)
dipole polarizabilities of isoelectronic sequence of, 22:9091
dispersion of carbon in liquid, 22:25321 (ANL-7375, pp 95-134)
distribution in food chains in forest ecosystems, 22:6772 (ORNL-4168, pp 61-118)
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
effects as vapor on performance of low-pressure thermionic converters, 22:11292 (ANL-7377)
effects of 1300°F flowing liquid, on mechanical properties of LMFBR fuel cladding, 22:50735(R) (GEAP-5648)
effects of adsorbed, on work functions of single-crystal faces of rhenium and tungsten, (E), 22:13560
effects of copper-contaminated liquid, on mechanical properties of type 304 stainless steel, 22:32980
effects of high-temperature, on candidate materials for LMFBR, (E), 22:19580 (BNWL-455, Paper 12.1-100)
effects of high-temperature, on mechanical properties of LMFBR candidate materials, 22:19476(R) (MSAR-68-14)
effects of high-temperature, on mechanical properties of types 304 and 316 stainless steel, 22:8694 (MSAR-67-216)
effects of liquid, on materials wear properties, 22:16265(R) (ANL-7403)
effects of liquid, on mechanical properties of alloys, 22:647(R) (BNL-50077)
effects of liquid, on mechanical properties of cooling system materials for Prototype Fast Reactor, 22:18505
effects of liquid, on mechanical properties of fuel element cladding alloys, (E), 22:30155(R) (NAA-SR-12296)
effects of liquid, on narrow-beam ultrasonic transducers at 600°F, 22:1750(R) (APDA-206)
effects of liquid, on oxidation of niobium and tantalum, 22:10910 (ANL-7335)
effects of liquid, on wear properties of materials, 22:22653(R) (ANL-7419)
effects of vapor, on electrical resistance of Durock insulation, 22:22653(R) (ANL-7419)
effects of zirconium-gettered liquid, on creep rupture properties of austenitic stainless steels, 22:691 (NAA-SR-12353)
effects on biaxial stress-rupture properties of austenitic stainless steels at 1000 to 1400°F, 22:41032 (AI-AEC-12694)

effects on carburization of type 304 stainless steel of liquid, hardness studies on, 22:4746
effects on cavitation damage on Stellite 6B, L-605, and Type 316 stainless steel at 800°F, 22:48788
effects on cesium-134 transport in muscles of frogs, 22:45387
effects on creep and stress-rupture of Incoloy 800 and 316 stainless steel at 700°C, 22:34011(T) (EURFNR-465)
effects on creep and stress-rupture of Incoloy 800 at 700°C, 22:38532(T) (ANL-Trans-594)
effects on determination of copper in liver tissue by neutron activation methods, 22:16467
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on fast reactor materials of liquid, 22:18600
effects on fast reactor materials of liquid, analysis of environmental, 22:18503
effects on γ-radiosensitivity of mitosis in cells of bone marrow and thymus of rats, 22:23572
effects on Hallam Power Reactor fuel element orifice of liquid, testing for, 22:32779 (NAA-SR-Memo-11658)
effects on ion exchange properties of humic acid from coal for radioisotopes, 22:35906
effects on mechanical properties of chromium--molybdenum alloys and stainless steels at high temperatures, 22:8725(R) (MSAR-67-207)
effects on mechanical properties of type 304 and type 316 stainless steels at 1200 to 1400°F, analysis of, 22:33168
effects on rare gas constricted positive column discharges, 22:1237
effects on sliding friction and wear of heat-resisting metals, 22:206(R) (NAA-SR-12520)
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
effects on stress-rupture of Incoloy 800 and chromium-nickel-steel at 700°C of liquid, 22:48788
effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
effects on tensile properties of type 304 stainless steel at 1200°F of high-purity liquid, analysis of, 22:33167
effects on Type 1613 austenitic steel at 700°C, 22:38532(T) (ANL-Trans-594)
effects on Type 304 stainless steel thin-walled tubes of cycled 1200° liquid, analysis of, 22:42384 (AI-AEC-12695)
effects on wear of heat-resisting alloys and metals in sliding contact at high-temperature, 22:657 (NAA-SR-12446)
effects on wear properties of Clarite and Carboloy, 22:24925(R) (ANL-7427)
effects on yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 76-96)
ejection from sodium-cooled reactors, mathematical model for, 22:24988
electric conductivity of, 22:23777
electric conductivity of liquid, experimental and theoretical, 22:43565(R) (COO-841-15)
electron reactions with atomic, ionization cross sections for, (T), 22:17362
electron reactions with atomic, measurement of cyclotron and spin resonance of free electrons from spin-dependent, (E/T), 22:41345
electron reactions with, ionization cross sections for, (T), 22:45931
electron reactions with, long-range effects in, (T), 22:9060
emission line at 5890--96 in night airglow, intensity variations of, (E), 22:22033
energy levels of atomic, nonadiabatic corrections to, 22:9006
energy levels of, calculations using effective potential method, 22:9037
energy of atomic, pseudopotential calculation of electronic, 22:45029 (UCRL-18043, pp 7-105)
enthalpy at 250 to 2150°F, 22:647(R) (BNL-50077)
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
evaporation rates in argon-filled enclosures at 300 to 500°F, 22:45806(R) (WARD-3791-21)
evaporation rates, (E), 22:8807(R) (WCAP-3791-10)
exchange reactions with lithium in dilute nonaqueous solutions, heat of, 22:23003 (IA-1128, pp 97-146)
exchange with other cations on clinoptilolite, heulandite, or synthetic zeolite, 22:25447 (BNWL-481-3, pp 54-9)
excretion by beagle dogs, effects of cesium, lithium, or rubidium chlorides on, 22:30936 (UCRL-50405)
fission product distribution between argon cover-gas and liquid, 22:53350
fission product distribution in, from plutonium carbide--uranium carbide fuel, 22:27487(R) (LA-3880)
fission product retention and release by, review of measurements on, 22:53396
flow in pipe through solenoid of finite length, MHD, (E), 22:38855 (N-68-14472)
flow measurement at 1200°F, in FFTF, review of flowmeters for, 22:20904 (ANL-7340)
flow of boiling, characteristics of two-phase, 22:7788(R) (ANL-7382)
flow of liquid, design and operation of system for control and measurement of, 22:23189 (BNWL-705)
flow of liquid, drag measurements with aligned field and large interaction parameter in MHD, (E), 22:13314
flow of liquid, drag of disks and spheres in MHD, 22:9151
flow of liquid, effects of pressure on critical, 22:5969
flow of liquid, effects on tube wastage of, 22:14129(R) (APDA-212)
flow of liquid, electromagnetic flowmeter for measuring, 22:23387(P)
flow of liquid--vapor mixtures of, facilities for measurement of critical, 22:51168
flow rate of liquid, effects on relative volatility of cesium of, 22:27396(R) (AI-AEC-12638)
flow rates through FFTF subassemblies, equipment for measuring, 22:647(R) (BNL-50077)
flowmeters for liquid, calibration and stability of permanent magnet, 22:28215
flowrate of liquid, description of meters for measuring, 22:51164 (LMEC-Memo-68-9)
fog production measurements in FFTF refueling cell mockup, 22:44822(R) (GEAP-5582)
Fraunhofer line in solar spectrum, Doppler shift and intensity of Na D_1, (E/T), 22:41276
fuel bonding of liquid, fabrication of plutonium carbide (PuC)--uranium carbide (UC), 22:39790(R) (UNC-5201)
fuel cladding testing in, design of high heat flux heater for use in, 22:40288 (AI-AEC-12681)
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
gamma attenuation in shields of, (E), 22:9409 (NAA-SR-Memo-12467)
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
handling and preparation of, use of glove box with inert atmosphere control system for, 22:4328
handling of liquid reactor coolant, literature survey on problems of, 22:1764 (HMI-B-64)
handling of pure, sampling and transfer procedures for, 22:30155(R) (NAA-SR-12296)
heat transfer and flow characteristics of liquid, 22:647(R) (BNL-50077)
heat transfer and fluid flow of liquid, design of electron-bombardment heater to study, 22:10427 (ANL-7364)
heat transfer characteristics of boiling, 22:7788(R) (ANL-7382)
heat transfer from boiling, rates of convective, 22:35993
heat transfer from heated metal spheres to liquid, (E), 22:16767
heat transfer from liquid, flowing in tubes, effects of oxygen on, 22:16756(T) (BNL-tr-184)
heat transfer from, in sodium-heated steam generator, 22:12482
heat transfer in bonds of, on plutonium--uranium carbide fuel elements, 22:38626(R) (WARD-3791-18)
heat transfer of, evaluation of Sodium Components Test Installation to study, 22:47266 (NAA-SR-Memo-11753)
heat transfer properties of variable temperature liquid, effects of heated metal on, 22:37402 (ANL-7450, pp 75-89)
heat transfer rates for metal sphere moving through liquid, 22:24925(R) (ANL-7427)
heat transfer to flowing, from heated 7-rod bundles, 22:45236(T) (BNL-tr-220)
heat transfer to liquid, from flat stainless steel surfaces under free convection, 22:8298(T) (BNL-tr-167)
heat transfer to liquid, from spheres, 22:647(R) (BNL-50077)
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
helium-3 reactions with, 22:14433 (ORNL-4196, pp 66-89)
high-temperature boiling experiments on, 22:30118 (ANL-7438)
hydrogen determination in high temperature, in mass transfer loop, 22:44822(R) (GEAP-5582)
hydrogen determination in, evaluation of methods for, (E), 22:47040(R) (APDA-228)
hydrogen solubility in metallic, 22:14129(R) (APDA-212)
hydrogen-ion reactions at 20 to 180 keV, excitation cross sections for, 22:13239
impurities in EBR-II primary, determination of trace-metal, 22:30118 (ANL-7438)
impurities in EFFBR primary, analysis for, 22:16182
impurities in liquid, analysis of test loop carbon and metallic, 22:44821(R) (GEAP-5546)
impurities in liquid, development of instruments for measuring, 22:25691 (LMEC-Memo-68-3)
impurities in liquid, development of on-line electrochemical meter for measuring oxygen, 22:19194 (TID-24284)

impurities in liquid, development of on-line plugging meter for detecting, 22:19194 (TID-24284)
impurities in liquid, use of hexahydroxy benzene and EDTA for removal of carbon, 22:30118 (ANL-7438)
impurities in, chemical analysis for bismuth and tin, 22:12006(R) (ANL-7399)
impurities in, development of carbon meter for in-line monitoring of, 22:14144(R) (UNC-5180)
impurities in, development of carbon meter for in-line monitoring of, 22:14143(R) (UNC-5172)
impurities in, development of carbon meter for in-line monitoring of, 22:14145(R) (UNC-5181)
impurities in, development of in-line devices for monitoring and controlling, 22:12675 (ANL-7380, pp 102-10)
impurities in, development of instrumented loop for monitoring and controlling, 22:12678 (ANL-7380, pp 123-5)
impurities in, development of rhometer and electrolytic cells for detection of, 22:12953
impurities in, development of ultrasonic transducers scanner for determining, 22:40480 (APDA-210(Add.))
impurities in, in-line oxygen meter for determining, 22:22653(R) (ANL-7419)
impurities in, response of rhometer to, 22:14129(R) (APDA-212)
impurity detection in reactor coolant, development of instruments for, 22:12091(R) (BNWL-639)
impurity detection in, analytical and in-line techniques for, 22:9988(R) (ANL-7391)
impurity determination in 1300°F liquid, development of methods for, 22:50735(R) (GEAP-5648)
inspection equipment for discerning objects in liquid, development of, 22:45348 (APDA-223)
inspection of liquid, design of ultrasonic scanner for, 22:25588
investigation of chemically stable forms of fission products in liquid, thermodynamic, 22:43300 (AERE-PR/HPM-12)
ion exchange by chromium, titanium, and zirconium phosphates, 22:12291
journal bearings for use in, to 800°F, design and materials for, 22:47276
lattice dynamics of, quasi-harmonic calculations of, 22:3194
leaching rates from asphalt-solidified radioactive wastes, (E), 22:10531 (ORNL-4059)
leakage from loop systems, detector development, 22:43629(R) (LA-3933)
level control of coolants of, description of APDA Reactor, 22:30119 (APDA-CFE-18)
level indicators for liquid, performance in SCTI, 22:14125 (ANL-7380, pp 40-2)
level measurement techniques for liquid, summary of, 22:10631 (NAA-SR-Memo-12582)
line profiles in solar spectrum, (T), 22:11143
liquid superheat tests on, summary of results of, 22:27396(R) (AI-AEC-12638)
measurement of exchangeable, in human body by isotopic dilution method using sodium-24, 22:51438
metallurgical properties of nuclear materials containing, 22:31357
monitoring for impurities in Fermi Fast Breeder Reactor coolant, 22:12974
monitoring of reactor coolant, development of carbon meter for, 22:14146(R) (UNC-5187)
neutron activation in compact fast reactor coolant, radiation dose rates from, (T), 22:39782 (N-68-20355)
neutron activation of FTR shield of, (E/T), 22:27460 (BNWL-634, pp 4.1-55)
neutron activation of, in blood, for personnel dosimetry during excursions in critical assemblies, 22:36111 (LA-3910)
neutron attenuation in shields of, (E/T), 22:9409 (NAA-SR-Memo-12467)
neutron cross sections for gamma production in, ENDF/B, 22:13904 (LA-3801)
neutron elastic removal cross sections for, multigroup refinement of, 22:33086 (ANL-7310, pp 431-511)
neutron scattering law for liquid, thermal, (E), 22:46697 (IN-1199)
neutron spectra emerging from spherical shells of, time-of-flight measurements of fast, (E), 22:37276 (AERE-R-5364)
neutron total cross section at 14.7 MeV, measurement using transmission method, (E), 22:13987
neutron total cross section for, 22:32959 (ANL-7310, pp 1-30)
nucleate boiling in, effects of heat flux and pressure on, 22:7788(R) (ANL-7382)
nucleosynthesis in K-giant stars, (E), 22:45851
oxidation by dry oxygen as a function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
oxygen concentration in liquid coolant, use of sodium oxide (Na_2O) plugging meter for measuring, 22:24967 (LA-DC-9423)
oxygen content in liquid, development of on-line electrochemical meter for measuring, 22:19196 (UNC-5131)
oxygen content in liquid, equipment for continuous monitoring of, 22:21401(P)
oxygen content in, rhometer and oxygen meter response to, (E), 22:47040(R) (APDA-228)
oxygen determination in, design of plugging indicator for, 22:30900
oxygen determination in, techniques for, 22:24925(R) (ANL-7427)
oxygen gettering from liquid, use of thorium and zirconium base alloys for, 22:1749 (AD-648248)
oxygen impurities in, response of meter for measuring, 22:14129(R) (APDA-212)
oxygen removal from, efficiency of cold traps for, 22:23194 (MSAR-67-203)
phase properties of, determination of, 22:32735 (ANL-7310, pp 249-375)
phase transformation at 36°K, martensitic, (E), 22:32512(R) (AECL-3108)
photo-ionization absorption continua for vapors of, 22:29201
physical and thermodynamic properties of, review of, 22:17100 (BNL-50089)
physical properties and thermal treatment of nuclear materials containing, 22:31357
physical properties at 210 to 2500°F, review of, 22:4765 (ANL-7323)
plasma of, drift-wave stabilization by random fields in, (T), 22:7335
plasma of, Landau waves in, (E), 22:7294
plasma of, thermal conductivity of, pressure and temperature effects on, (E/T), 22:9328
plasma of, thermodynamic functions at 2,000 to 25,000°K and 10^{-4} to 100 atm, (T), 22:26411
plugging indicator for liquid, description of, 22:44820(R) (GEAP-5508)
plugging meter for liquid, analysis using, 22:14129(R) (APDA-212)
polarizability measurements of atoms of, 22:34242 (COO-1112-164)
polarographic behavior in cyclic propylene ester of carbonic acid, 22:30547
positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
positron annihilation in single crystals of, Fermi-surface shape and velocity dependence of annihilation probability from, 22:7172
positron annihilation rate in solid and liquid, (E), 22:52532
positron effective mass in, review, (E/T), 22:26205
production and properties of thin films of, on pores of Vycor glass, 22:35775(R) (NYO-1158-25)
profiles of D lines in solar spectrum, (T), 22:17302
properties as anode metal in thermally regenerative bimetallic galvanic cells with fused-salt electrolytes, (E), 22:24087 (ANL-7316)
properties at critical point to melting point, data on, 22:2268 (MND-3288)
properties of anodes of, for use in organic electrolyte battery, 22:27522 (SC-CR-67-2855)
properties of fission product-containing, 22:37900 (BNL-50082, pp 153-80)
properties of liquid, 22:4787
properties of liquid, development of 5 MW(t) test facility to study, 22:45223
properties of, data tabulations on thermophysical, 22:31343 (AGN-8195(Vol.1))
proton reactions with, calculation of cross sections for charge exchange in, 22:49985 (NP-17621)
pumping of, performance testing of equipment for, 22:647(R) (BNL-50077)
pumps for liquid, design and performance of, (E), 22:10433 (LA-3782)
pumps for liquid, development of, 22:16203
pumps for liquid, development of TREAT Mark-2 annular linear-induction, 22:44884 (ANL-7369)
purification and supply for fuel cladding test loop operation, 22:4314
purification for FFTF coolant chemistry tests, design and fabrication of loop for, 22:47007 (BNWL-812)
purification in cooling systems, performance of cold traps for, 22:6138(R) (LA-3820)
purification of liquid, analysis of cold trap, 22:44820(R) (GEAP-5508)
purification of liquid, effects of Reynolds number and temperature on performance of cold trap for, (E/T), 22:33098 (LA-3936)
purification of, evaluation of centrifuge process for, (E), 22:47040(R) (APDA-228)
purification of, getters and regenerative processes for, 22:24926(R) (APDA-214)
purification systems for FTR coolant, 22:14250(R) (BNWL-470)
purity measurement of liquid, testing of FFTF in-line meters for, 22:35589 (BNWL-562)
purity of, development of methods for controlling and measuring, 22:7788(R) (ANL-7382)
purity of, use of steam-reaction method for determining, 22:16265(R) (ANL-7403)
quality analysis and control in EBR--2 primary coolant, 22:24925(R) (ANL-7427)
quality control in, performance of cold traps for, 22:27487(R) (LA-3880)
quality control of liquid, 22:647(R) (BNL-50077)
quality control of, steam-reaction method for,

22:22653(R) (ANL-7419)
radial distribution function of liquid, x-ray diffraction measurements, 22:43565(R) (COO-841-15)
radiation effects on content of, in blood and urine of man following radon inhalation therapy for hypertension, 22:51959
radiation effects on content of, in erythrocytes following in vitro exposure of blood, x, 22:51477
radiation effects on content of, in rabbit tissues, comparison of chemical effects to polonium-210 α and γ, 22:47611
radiation effects on content of, in serum of dogs following kidney exposure and unilateral nephrectomy, x, 22:38227
radiation effects on content of, in serum of human treated for carcinoma of bronchus, 22:52016
radiation effects on distribution of, in tissues of mice, combined effects of tourniquet injury on x, 22:25979
radiation effects on metabolism of, in intestine of rats, protective effects of AET and cysteamine against, 22:6854
radiation effects on metabolism of, in rabbits and rats in relation to adrenal cortex function, acute polonium-210 γ, 22:49608
radiation effects on solubility of, in water, 22:12388
radiation effects on transport of, by rat intestine, combined effects of bile on x, 22:49544
radiation effects on transport of, in rat stomach, x, 22:49226
radioactivity removal from liquid, effects of additional cesium on efficiency of cold trap for, 22:27396(R) (AI-AEC-12638)
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced loss of, in small intestine of rats, effects of bile on x, 22:51998
radioisotopes produced by cosmic radiation during space flight, 22:19400(R) (BNWL-531-1)
reaction processes for residual liquid, in HNPF primary cooling system, 22:24970 (NAA-SR-Memo-12268)
reaction with air of liquid, analysis of, 22:37402 (ANL-7450, pp 75-89)
reaction with air of sprayed, analysis of, 22:53260 (ANL-7425, pp 130-71)
reaction with air, maximum adiabatic temperature and pressure for, 22:12148
reactions of liquid, with irradiated graphite at 600°C, 22:52300
reactions of liquid, with nitrogen, 22:36543 (ANL-7450, pp 39-74)
reactions of liquid, with water, 22:1750(R) (APDA-206)
reactions of, spin-exchange cross sections for atomic, (E/T), 22:26264
reactions with argon, cross sections for fine-structure transitions in, (E/T), 22:2800
reactions with atoms at 6 to 2300 eV, quantum effects on cross sections for, (E/T), 22:19771
reactions with graphite, threshold pressures for, 22:4083
reactions with oxygen ions (O_2^+) in merged beams, production of NaO^+ in, (E), 22:45950
reactions with rare gas atoms, mixing in ^2P state in inelastic, (T), 22:29284
reactions with scandium chloride to produce scandium metal, 22:34021
reactions with tetrakis(bipyridyl)uranium in tetrahydrofuran, 22:14494
reactions with water in reactor, gas--water simulation studies of, (E/T), 22:52158 (APDA-226)
reactions with water in sodium-heated boilers, leak detection of, 22:12672 (ANL-7380, pp 75-8)
reactions with water in sodium-heated steam generator, mechanisms of tube wastage from, (E), 22:47040(R) (APDA-228)
reactions with water in steam generators, tube wastage rates from, 22:24926(R) (APDA-214)
reactions with water, acoustic detection of, (E), 22:47040(R) (APDA-228)
reactions with water, analysis of corrosion products from, 22:14129(R) (APDA-212)
reactions with water, effects on boiler tubes, 22:4744
reactions with water, surface temperature measurements of, 22:5968
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity temperature coefficient of, effects on fast reactor dynamics, 22:6011
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reactivity worth measurements in ZPR-3 and -4, 22:24926(R) (APDA-214)
reactor coolants of, literature survey on chemical problems involved in working with, 22:53276 (HMI-B-76)
receiving and processing systems for FFTF, design data and drawings for, 22:50792 (BNWL-500(Vol.81))
removal from contaminated air, filtration method for, 22:2225(R) (NYO-841-11)
removal from cooling system components, evaluation of reagents for, 22:33143
removal from reusable hardware, use of Dowanol-EB for, 22:14605 (BNWL-637)
removal procedure for residual liquid, from HNPF primary cooling system, 22:24970 (NAA-SR-Memo-12268)
sampling and analysis of, evaluation of methods for, (E), 22:47040(R) (APDA-228)
sampling devices for liquid, description and operation of Fermi Fast Breeder Reactor, 22:24927 (APDA-306)
sampling of 1300°F liquid, use of on-line gas chromatograph for hydrogen and nitrogen, 22:50735(R) (GEAP-5648)
sampling reactor coolant, method development for, 22:43629(R) (LA-3933)
scanning systems for use in liquid, development of ultrasonic, 22:24926(R) (APDA-214)
scattering by argon and krypton, total cross sections for, (E), 22:15341
scattering by argon, krypton, and polyatomic gases, velocity dependence of total cross sections for, (E), 22:5115
scattering by argon, krypton, and xenon, total cross sections for, (E/T), 22:11235
scattering by cesium atomic beams at 14 to 2300 eV, total cross sections for, (E), 22:17417
scattering from cesium, differential spin-exchange, 22:7153
scattering of atomic, on krypton and xenon, interferences in, (E/T), 22:9079
scattering of atoms of, by molecules, velocity dependence of total cross sections for, (E), 22:11235
seals for liquid, at 400 to 1000°F, performance of spiral-groove face contact, 22:27967
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation from aqueous acid solutions by solvent extraction using nitrobenzene and nitromethane, comparison of, 22:6415
separation from cesium, effects of solvent mixtures on thin-layer chromatographic, 22:18887
separation from cesium, extraction method for, 22:22962
separation from metals simultaneously with other alkali metals, ion exchange, 22:37866
separation from neutron-activated samples by sorption on hydrated antimony pentoxide, 22:40036
separation from other alkali metals by solvent extraction using bis(2-ethylhexyl) phosphate, effects of 4-sec-butyl-2(α-methylbenzyl)phenol on, 22:16691
separation from other alkali metals, chromatographic, 22:45173
separation from other alkali metals, ion exchange, 22:37867
separation from other metals and other alkali metals by ion-exchange paper chromatography, 22:18881
separation from radioactive waters by precipitation using calcium permanganate and alkaline earths, 22:47230
separation from sea water by solvent extraction and ion exchange, 22:23086 (ANL-7421)
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation of cesium from liquid, temperature and mixing effects on, 22:9988(R) (ANL-7391)
separation of trace amounts of, from potassium by solvent extraction using tetrathiocyanatodianilinechromate, 22:35913
separation of various elements from, by sorption from acetic acid on Dowex 1-X8, 22:35914
shielding properties of liquid, analysis of FTR neutron flux, 22:42164(R) (BNWL-775)
sodium atom reactions with excited atoms of, cross sections for transitions between fine structure components of, 22:11205
sodium oxide precipitation from flowing, in cold traps, 22:12973
solubility in europium, 22:2560(R) (IS-RD-11)
solvent properties for carbon, 22:13072
solvent properties for copper, 22:52126 (BNL-50127)
solvent properties for copper at 250 to 725°C, 22:4876
solvent properties for copper at 250 to 726°C, 22:41031 (AI-AEC-12671)
solvent properties for copper, iron, and nickel at high temperatures, 22:38510 (BNL-50082, pp 93-152)
solvent properties for hydrogen, (E), 22:47040(R) (APDA-228)
solvent properties for iron, 22:52126 (BNL-50127)
solvent properties for nickel, 22:52126 (BNL-50127)
solvent properties for nitrogen, 22:647(R) (BNL-50077)
solvent properties for nitrogen, 22:52257 (ANL-7425, pp 94-129)
solvent properties for nitrogen and sodium cyanide, 22:36543 (ANL-7450, pp 39-74)
solvent properties for oxygen at 125 to 300°C, 22:27487(R) (LA-3880)
solvent properties for oxygen, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
solvent properties for oxygen, vacuum-distillation technique for analysis of, 22:6138(R) (LA-3820)
solvent properties for sodium carbonate, 22:30512
solvent properties for sodium cyanide, 22:52257 (ANL-7425, pp 94-129)
solvent properties of high purity liquid, for copper, iron, molybdenum, and nickel, 22:27396(R) (AI-AEC-

12638)
  solvent properties of liquid, 22:1750(R) (APDA-206)
  solvent properties of liquid, for fission products and uranium, 22:25334(T) (AEC-tr-6934)
  solvent properties of liquid, for metals and nonmetals, (E), 22:30155(R) (NAA-SR-12296)
  solvent properties of liquid, for transition metals, 22:15187 (UCRL-50315)
  solvent properties of liquid, for use with inorganic materials, 22:4787
  sorption by antimony pentoxide, 22:14433 (ORNL-4196, pp 66-89)
  sorption by manganese dioxide from nitric acid, 22:157
  sorption from acetic acid by Dowex 1-X8, 22:35914
  sorption of oxygen by, use of vacuum distillation at 125 to 300°C for, 22:50737 (LA-3879)
  sorption properties for uranium hexafluoride, 22:37864(P)
  sorption-trapping experiments on liquid, 22:27396(R) (AI-AEC-12638)
  spectra of Na I in peculiar flare of July 28, 1966, (E), 22:893
  spectra of, polarization in, 22:15378
  spectral line profiles in Sun, (T), 22:8912
  spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
  spectral lines in bright prominence of Sept. 18, 1960, (E), 22:8992
  spectrum in night airglow, (E), 22:17490
  stainless steel carburization by, development of carbon meter for measuring, 22:42947
  Stark effect constants for, quadratic, (T), 22:26204
  superconducting properties of, calculation from normal state data, 22:39021
  superheat measurements on, effect of pressure-temperature history on, 22:24925(R) (ANL-7427)
  superheat values for liquid, analysis of variations in, 22:35534
  superheat values for liquid, calculation of, (T), 22:35534
  surface tension of, 22:23777
  surface tension of liquid, in ultrahigh vacuum, (E), 22:17459
  surface tension of pure liquid, effects of temperature on, (E), 22:42194(R) (MSAR-68-77)
  technology of liquid, facilities for studies of, 22:48982(R) (LMEC-68-20)
  temperature coefficient of liquid, effects of neutron leakage on liquid-metal fast-breeder reactor, 22:39875 (BNL-50082, pp 1-18)
  temperature measurements in liquid, instrumentation for, 22:36453 (LMEC-Memo-68-10)
  temperature of bulk liquid, burning and release rate dependence of, 22:27396(R) (AI-AEC-12638)
  thermal capacity of, 22:647(R) (BNL-50077)
  thermal conductivity of vapors of, at 500 to 3000°K, (E/T), 22:13002 (CU-2660-37)
  thermal conductivity of, comparison of calculated and experimental, 22:14478 (CU-2660-39)
  thermodynamic properties at 0.1 to 100 atm and 2500°K, 22:19522 (UCID-15271)
  thermodynamic properties at 210 to 2500°F, review of, 22:4765 (ANL-7323)
  thermodynamic properties of, 22:23777
  thermodynamic properties of, 22:52257 (ANL-7425, pp 94-129)
  thermodynamics of boiling, review of, 22:49738
  thermodynamics of fission product solutions of, 22:4838
  thermophysical properties of liquid, data compilation on, 22:23777
  transient behavior under accident conditions, TREAT experiments on, 22:16265(R) (ANL-7403)
  transport of radioactive, through simulated aquifiers, effects of ground water on, 22:23142
  transport properties of, 22:23777
  ultrasound velocity in liquid, effects of complexes on, 22:36543 (ANL-7450, pp 39-74)
  uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
  uptake by roots of barley, effects of uranyl ion on, 22:422 (RLO-1547-4)
  use as anode material in thermally regenerative galvanic cell, (E), 22:26270 (ANL-7375, pp 160-75)
  use as working fluid in stainless steel heat pipes, (E), 22:33595(R) (LA-3941)
  use in furnace liner for temperature stabilization, 22:48978 (BNWL-862)
  vapor deposition of, shear tests of, 22:206(R) (NAA-SR-12520)
  vapor pressure and surface tension of, data tabulations on, 22:10945 (EUR-3653)
  vapor pressure of, 22:23777
  vapor transport and deposition rates measurements in FFTF refueling cell mockup, 22:44822(R) (GEAP-5582)
  vapor void growth in reactor coolant liquid, effects of, 22:53375
  vapor-aerosol transport and deposition, use of SEFOR Refueling Cell Mockup for experiments on, 22:22697 (GEAP-5560)
  vaporization of liquid, to critical point, method for calculation of, 22:51173
  viscosity at 900 to 1500°K, method for prediction of, 22:8753
  viscosity at melting point to 1040°C, 22:647(R) (BNL-50077)
  viscosity of vapors of, 22:14478 (CU-2660-39)
  viscosity of vapors of, to 1000°C and 0.4 to 5 atm, 22:38554
  void effects on reactivity in large fast reactors, analysis of, 22:18569
  waves in liquid, Faraday rotation of Alfven, (E/T), 22:41415
  wetting refractory carbides and oxides by liquid, mechanisms of, 22:23752 (AERE-M/R-1746)
  zero point energy of crystals of, 22:20051
SODIUM ACETATES
  see also Sodium Uranyl Acetates
  radiation effects on single crystals of, ESR spectral studies on radical conversions produced by, 22:18806(R) (COO-1385-21)
  radiation effects on, ESR spectra of trapped free radicals from γ, 22:2124
  radiation effects on, ESR study of trapping of free radicals in γ, 22:35865
SODIUM ACID CARBONATES
  thermal decomposition of carbon-14-labeled, in nitrogen atmosphere, effects of particle size on kinetics of, 22:35877
SODIUM ACID PHOSPHATES
  radiation effects on electron stabilization in neutral, vitreous, aqueous solutions of, at -196°C, EPR studies on γ, 22:23060
  radiation effects on glossy, at 77°K, EPR studies of γ, 22:30640
  radiation effects on thermoluminescence of, x, 22:30635
  radiation effects on, oxidation states and recoils formed by thermal-neutron, 22:42724 (COO-1618-8)
SODIUM ACID SULFATES
  radiation effects on glossy, at 77°K, EPR studies of γ, 22:30640
SODIUM ALLOYS AND SYSTEMS
  analysis for impurities, spectrochemical methods for, 22:43629(R) (LA-3933)
  analysis for uranium, colorimetric, 22:43629(R) (LA-3933)
  Ar--Na, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
  Ba--Na, crystal structure and intermetallic compounds of, 22:12951 (NYO-2731-3)
  Cd--Na, electric conductivity at 325°C, 22:38510 (BNL-50082, pp 93-152)
  Cs--K--Na--Sb, use for photoelectric surface in photomultiplier tube, 22:12582
  Hg--Na, effects on cementation of europium from aqueous solutions, 22:2037
  Hg--Na, use for separation of actinides and rare earths, 22:37718 (UCRL-17989, pp 181-252)
  Hg--Na, use for separation of einsteinium and mendelevium, 22:37718 (UCRL-17989, pp 181-252)
  Hg--Na, use in separation of mendelevium from aqueous solutions, 22:156
  K--Na, compatibility with niobium--zirconium alloys in high-temperature radiator loops, 22:31327
  K--Na, compatibility with type 316 stainless steel in high-temperature radiator loops, 22:31327
  K--Na, contaminants in simulated SNAP-8 loops, control of, 22:40307 (N-68-11912)
  K--Na, corrosive effects on uranium at 900°C, 22:13077 (BNWL-473, pp 6.1-20)
  K--Na, crystal structure of, determination by neutron and x-ray diffraction, 22:28820
  K--Na, effects of eutectic, on in-loop service performance of Type 316 stainless steel at 1400°F, 22:52140
  K--Na, effects on burnup of type-316 and type-347 stainless steel clad plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel rods, analysis of, 22:25083(R) (GEAP-5541)
  K--Na, effects on temperature of argon plasma, in electric fields, 22:3036
  K--Na, electric conductivity of circulating, design of indicator for, 22:34049
  K--Na, electromigration at 80 to 280°C in liquid, effects of temperature on, 22:45765(R) (RPI-1044-18)
  K--Na, electrostatic probe measurements in flow of argon seeded with, 22:44097
  K--Na, flow in loops, design of device for measuring temperature during, 22:12481
  K--Na, flow of, measurement using SNAP-10 magnetic pump, 22:23197 (ORNL-TM-2073)
  K--Na, heat transfer from liquid, design of heat exchanger for air dump, 22:10484 (ORNL-4159)
  K--Na, heat transfer in 60 to 1600 Peclet Number range in single tube heat exchanger, 22:12522
  K--Na, heat transfer to flowing, from heated rod bundles, 22:12526
  K--Na, oxidation by dry oxygen as a function of pressure and temperature, kinetics of, 22:37711 (CEA-R-3301)
  K--Na, preparation of liquid weightless double lenses of gallium and, 22:42654(R) (NYO-2082-18)
  K--Na, radiation monitoring of SNAP-8 coolant, analysis of, 22:18543 (NAA-SR-Memo-11131)
  K--Na, thermodynamic measurements on, equipment for,

22:12271(R) (COO-1707-1)
K--Na, use as lubricant for tilting pad bearings, 22:23196 (NYO-3363-7(Vol.2))
K--Na, use in MHD induction generators, 22:31678
K--Na, vapor quality of liquid, design of meter for measuring, 22:40492
K--Na, void fraction measurements in vertical two-phase flow of, description of methods for, (E), 22:51172
Kr--Na, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
Li--Na, reactivity effects of, effects of lithium concentration on, 22:16246(P)
Na--K, temperatures of flowing, in vertical pipes with constant heat flux, 22:28006
Na--O--Tc, preparation and phase studies of compounds in, 22:4071(T) (ANL-Trans-539)
Na--Pb, thermodynamics of, activity coefficients and equilibrium constants, 22:36774 (ANL-7450, pp 90-104)
Na--Pu, phase studies of, 22:2655
Na--PuO_2--UO_2, aerosol behavior simulation for accidents in liquid sodium-cooled fast breeder, analysis of, 22:53262 (BNL-12757)
Na--Rb, thermodynamic properties of, at 384°K, 22:25321 (ANL-7375, pp 95-134)
Na--Sn, tin-119 Moessbauer spectra in intermetallic $SnNa_4$, dependence of isomeric shift on sodium atomic radius in, (E), 22:39185
Na--U, radiation effects on paste fuels of, in-pile, 22:43613 (ANL-7299, pp 144-9)
Na--UC, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
Na--UN, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
Na--UO_2, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
Na--Xe, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
SODIUM ALUMINUM SILICATES
see also Albites
ionic transport in glass of, (E/T), 22:15606
SODIUM ALUMINUM SULFATES
spiral oscillations of sulfate group in hydrated, neutron diffraction study, (E), 22:50223(R) (PRNC-115)
structure of gamma alum, 22:23481(R) (PRNC-102)
SODIUM AMIDES
reactions with uranium tetrachloride, 22:4141
SODIUM ANTIMONATES
tin-121 Moessbauer spectra in, 22:11510
SODIUM ANTIMONY OXIDES
$NaSbO_3$--U, fluorescence of, 22:37768
SODIUM ARSANILATE
effects on plutonium retention by rats, 22:8480
SODIUM ARSENATES
effects on reproduction of yeast, use of, to determine time of x radioinduced injuries, 22:26002
SODIUM ARSENITES
reactions with uranyl nitrates, formation of uranyl arsenites by, 22:30535
SODIUM ARYL SULFATES
hydrolysis in dioxane--water--acid mixtures, solvent isotope effects on, 22:14508
SODIUM ASTATIDES
thermal properties at 0 to 300°K, 22:45078
SODIUM AZIDES
effects on strontium uptake and accumulation by wheat, 22:49206
reactions of recoil carbon-14 in neutron-irradiated, 22:12339(R) (COO-1620-2)
Sodium Bicarbonates
see Sodium Acid Carbonates
SODIUM BISMUTHATES
reaction with hexavalent neptunium to produce heptavalent neptunium, 22:45058
SODIUM BORATES
see also Borax
see also Sodium Tetraphenylborates
solvent properties for rare earth oxides, 22:17078
SODIUM BOROHYDRIDES
preparation of deuterated, 22:2079
spectra of, effects of deuterium on infrared, 22:2079
x ray yields of thick targets of, 22:249(R) (NYO-3491-2)
SODIUM BROMATES
radiation effects on recoil bromine-82g distribution in neutron-irradiated, γ, 22:12384
radiation effects on thermal decomposition of, 22:15231
radiation effects on, distribution of bromine-82g recoils in various bromine oxidation states, neutron, 22:12384
radiolysis of single crystals of, ESR spectral studies on paramagnetic species produced by electron, 22:2112
radiolysis of, yields in electron, 22:16589
thermal annealing of bromine-80 recoil processes in, effects of crystal defects on, 22:37794
$NaBrO_3$--$NaClO_3$, radiation effects on, yield of bromine-82g from neutron, 22:12384
SODIUM BROMIDES
bromine NMR in single crystals of, quadrupole effects in, (E), 22:11540
corrosive effects on titanium--aluminum--molybdenum--vanadium alloys at 650°F, 22:28734(R) (DP(NASA)-961)
dissociation equilibria in solutions of, effects of dielectric constant on isothermal, 22:25329 (ORNL-4229, pp 84-104)
effects on furmarase-catalyzed dehydration of malic acid, 22:14509
effects on survival of γ-irradiated fish, 22:33898(R) (COO-1421-3)
electric conductivity of aqueous solutions of, at 0 to 800°C and to 4000 bars, 22:25329 (ORNL-4229, pp 84-104)
electron reactions with, energy loss in, (E), 22:29204
krypton-83 Moessbauer effect in, (E), 22:9477
krypton-83 Moessbauer effect studies on, (E), 22:1292 (IA-1132)
Moessbauer effect of krypton-83 in, produced by beta decay of bromine-83, 22:24408 (IA-1128, pp 21-54)
protective effects on radioinduced sensitivity of hematoencephalic barrier of mice to acetylcholine and histamine, 22:51968
proton reactions (p,x) with, chemical state of carbon-11 recoils produced by, 22:10264(R) (ORO-3602-1)
radioinduced color centers in, Stark effect in x-, 22:22199 (COO-1105-128)
radioinduced color centers in, temperature dependence of F, K, and M bands in x, 22:52894
spectra of, effects of heavy water as solvent on far-infrared, 22:16520
spectra of, isotope effects on molecular-beam electric resonance, 22:14485 (UCRL-17916)
SODIUM tert-BUTOXIDE
reactions with 2-arylethyltrimethylammonium bromide in tert-butyl alcohol, effects of deuterium on, 22:21062
SODIUM CARBONATES
analysis for carbon-14 by flow-monitoring counter, 22:39
analysis for oxygen by neutron activation, 22:30457
corrosive effects on irradiated reactor fuel elements EDF and EL 4, 22:28732 (CEA-N-816, pp 102-39)
effects of aqueous solutions of, on reactor fuel elements during storage, 22:26026 (CEA-N-616, pp 106-44)
effects on strontium-85 uptake by sorghum and soybeans, 22:30956
radiolysis of aqueous solutions of, spectral studies on kinetics of pulse x, 22:33371 (AD-662736)
radiolysis of, reactions of hydrated electrons during and after x-ray pulse, 22:18815
reactions of plutonium ions on hanging mercury drop electrode in solutions of, 22:18778
solubility in liquid sodium, 22:30512
solvent properties for schoepite and polyuranates obtained by alkaline treatments of schoepite, 22:40084
use in removal of coatings from nuclear fuel particles in one step, 22:12500(P)
SODIUM CARBOXYMETHYL CELLULOSE
radiation effects on, evaluation as method of sterilization, γ, 22:27823
radiolysis of aqueous solutions of, reactions of hydroxyl radicals and hydrated electrons in pulse, 22:35868
SODIUM CHLORATES
electron spin resonance of color centers in, 22:1340
radiation effects on single crystals of, ESR studies of γ, 22:33432
radiation effects on, effects of copper, magnesium, and zinc ions on neutron, 22:16613
radioinduced absorption bands in crystals of, effects of optical and thermal bleaching on x, (E), 22:13603
radioinduced decomposition of crystalline, yields in γ, 22:10278
radiolysis of, yields in electron, 22:16589
spectra of, effects of heavy water as solvent on far-infrared, 22:16520
$NaBrO_3$--$NaClO_3$, radiation effects on, yield of bromine-82g from neutron, 22:12384
$NaClO_2$--$NaClO_3$, radiolysis of frozen aqueous solutions of, EPR study of radicals from γ, 22:33388
SODIUM CHLORIDES
see also Desalting
see also Sodium Iridium Chlorides
analysis for calcium by activation methods, 22:14461
analysis for trace fluorides, effects of metal ions on potentiometric, 22:33244
analysis for vanadium, neutron activation method for, 22:27560
chlorine-35 nuclear double resonance spectra in, 22:31998
chlorine-36 exchange between precipitates and stirred solutions of, kinetics of, 22:35796
color centers in, electron nuclear double resonance of F, 22:13584
color centers in, x-irradiated after quenching, effects of cadmium doping on, (E), 22:24464
content of growth solutions for paramecia, effects of, on uv-radiosensitivity of osmoregulation, 22:15121
content of water, effects of, on strontium-89 accumulation by brown algae, 22:43232
corrosive effects at 100 and 600° of aqueous, on aluminized beryllium, 22:41006
corrosive effects at high temperatures on titanium and titanium alloys, effects of concentration on, 22:31330
corrosive effects of aqueous, on stainless steel at 107°C, 22:21653 (EURAEC-1947(Pt.1))
corrosive effects on stressed titanium--aluminum--molybdenum--vanadium alloy at 650°F, 22:28733 (DP(NASA)-941)
corrosive effects on titanium alloys at high

temperatures, 22:34010(R) (DP(NASA)-1005)
corrosive effects on titanium--aluminum--molybdenum--vanadium alloys at 650°F, 22:28734(R) (DP(NASA)-961)
corrosive effects on titanium-base alloys, stress, 22:45747
crystal defects in, calculations of formation energy, 22:52287
defects in crystals of, Stark effect on F-center emission band, (E/T), 22:15567 (NYO-3564-9)
defects in, vacancy diffusion and pairs in, 22:39154 (COO-1197-30)
deformation in salt mines used for high-level radioactive waste disposal, (E), 22:16792 (ORNL-TM-2102)
determination in ores by radiometric methods, 22:40048
diffusion path networks in, 22:13065 (UCRL-70149)
dislocation velocity in crystalline, model of, 22:36506
dissociation equilibria in solutions of, effects of dielectric constant on isothermal, 22:25329 (ORNL-4229, pp 84-104)
distribution of sodium-22-labeled in kidneys of dogs, effects of uranium nitrates on, 22:28313
effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
effects on electron-radiosensitivity of transforming ability of DNA, 22:16984
effects on gamma-induced precipitation of metallic gold from aqueous solutions of gold chloride, 22:40133
effects on hydrolysis of hydrated thorium tetrafluoride at 700°C, 22:37719(T) (UCRL-Trans-10235)
effects on leachability of radium from uranium ores, 22:25478
effects on low temperature-sensitivity of Escherichia coli, 22:30412 (ORNL-4100, pp 141-5)
effects on photoreactivation of uv-irradiated spores of Bacillus stearothermophilus, effects of temperature on, 22:47643
effects on pulse radioinduced reactions between heparin and methylene blue in aqueous solutions, 22:33461
effects on recovery of Streptomyces sp. from lethal and mutagenic doses of uv radiation, 22:23690
effects on separation of strontium-90 and yttrium-90 using alkylarylsulfonic acid foams, 22:45166
effects on Serratia marcescens kappa phage, effects of light and methylene blue on inactivating, 22:51554
effects on sorption of radioisotopes from aqueous solutions, 22:35903
effects on survival of γ-irradiated fish, 22:33898(R) (COO-1421-3)
effects on temperature of maximum density of normal and heavy water, 22:42684
effects on x-radiosensitivity of bradykinin in aqueous solution, 22:47466
effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
elastic constants of, (E/T), 22:44256
elastic constants of, effects of dislocations on third order, 22:40993(R) (COO-1198-534)
electric conductivity of aqueous solutions of, at 0 to 800°C and to 4000 bars, 22:25329 (ORNL-4229, pp 84-104)
electron reactions with, energy loss in, (E), 22:29204
electron reactions with, surface potential measurement using chlorine ion ejection by, (E), 22:3184
equation of state for Tatum Salt Dome, measurement of Hugoniot, 22:47257 (UCRL-13357)
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
evaporation of monocrystals of, at 450 to 650°C, mechanism of, 22:45029 (UCRL-18043, pp 7-105)
heavy particle reactions with, dissociation cross sections for, (E/T), 22:41293 (NP-17519)
iodized, effects on incidence of goiter in man, 22:23599 (UCRL-50376)
ion channeling in crystals of, computer simulation studies of chloride, potassium, and sodium, 22:37033
ion-induced electron emission from single crystals of, incident angle dependence of 70- to 700-eV helium and neon, (E), 22:50251
iron ion impurity states in, Moessbauer study of, 22:34797
mechanical properties of, for disposal and storage of radioactive wastes, 22:16819
mixing with fused sodium iodide, heat of, 22:31502
neutron diffraction by static and rotating single crystals of, determination of wavelength and angular shift by, (E), 22:46709
neutron reactions with, at 500 keV, 22:3169(R) (NYO-3822-2)
optical extinction of sodium-containing, 22:13538 (UUIP-543)
phase distribution of americium and plutonium with, as molten-salt electrolyte for electrorefining of plutonium, (E), 22:12986 (RFP-1065)
phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
phonon dispersion curves for, measurement using neutron inelastic scattering, (E), 22:9921 (JUL-Conf-1)
physical properties of rock, for radioactive waste disposal, (E), 22:30812
proton energy loss spectra in single crystals of, effects of crystal orientation on 6.72-MeV, 22:46248
proton reactions (p,x) with, chemical state of carbon-11 recoils produced by, 22:10264(R) (ORO-3602-1)
radiation effects on, 22:14426 (ORNL-4196, pp 12-15)
radiation effects on electric conductivity of, gamma and x, (E), 22:34748
radiation effects on microhardness of whisker crystals of, x, (E), 22:46241
radiation effects on resonant phonon scattering in crystals of, containing hydroxyl ions, gamma, 22:7390
radiation effects on sensitivity of rabbit erythrocytes to hypotonic solutions of, x, 22:6867 (LFEN-56)
radiation effects on single crystals of, photostimulated exoemission of electrons excited by electron, (E), 22:41655
radiation effects on single crystals of, photostimulated exoemission of electrons and luminescence during deformation following coloration by x, (E), 22:41656
radiation effects on stored energy in pure and calcium-doped, gamma and x, (E), 22:24488
radiation effects on, at 20°K, x, (E), 22:13605
radiation effects on, chemical state of sulfur-35 from neutron, 22:45105
radiation effects on, effects of copper, magnesium, and zinc ions on neutron, 22:16613
radioinduced activator centers in europium-activated crystals of, structure of x, 22:9442
radioinduced aversion to, in rats, γ, 22:28627 (NYO-2147-13, pp 196-225)
radioinduced color centers and thermoluminescence in crystals of, gamma and x, (E), 22:34748
radioinduced color centers in crystals of, chemical method for studying, 22:34770
radioinduced color centers in crystals of, optical spectral studies of pulsed electron, (E), 22:48163
radioinduced color centers in, effects on epitaxy and nucleation density of gold deposited on, x, (E), 22:39212
radioinduced color centers in, formation kinetics of x-, 22:31973
radioinduced color centers in, Stark effect in x-, 22:22199 (COO-1105-128)
radioinduced damage in monocrystals of, fission fragment, 22:21740
radioinduced defects in crystals of, evidence for Frenkel, x, (E), 22:37045
radioinduced defects in whisker crystals of, effects of surface-to-volume ratio on production of x, (E), 22:46241
radioinduced defects in, slow electron, (T), 22:22240
radioinduced directional breakdown in, 33.5- to 44-keV electron, (E), 22:17735
radioinduced electron centers in crystalline, gamma, 22:37053
radioinduced electron centers in polycrystalline, gamma, 22:50227
radioinduced F center formation in single crystals of, gamma and neutron, 22:7386
radioinduced F-coloring of, effects of interruption on kinetics of gamma and x, 22:48167
radioinduced luminescence and photoluminescence in europium-activated crystals of, mechanism of x, 22:9441
radioinduced luminescence in nickel-activated crystals of, relation to F-center concentration, 22:9443
radioinduced luminescence of nickel-, silver-, and copper-activated, irradiation time dependence of x, 22:23271
radioinduced metastable color centers in crystals of, energy diagram for gamma, 22:20038(R) (COO-1052-9)
radioinduced stabilization of copper atoms in crystals of, EPR study of x, (E), 22:22219
radioprotective effects of aqueous solutions of, on survival of yeast, γ, 22:25891
radiosterilization of aqueous solutions of, for use during surgery, γ, 22:52103
reactions of 40-keV sulfur-35 ion beams with, 22:4203
reactions of aqueous solutions of, with alumina--chromia catalysts, 22:4066(R) (COO-1354-13)
separation of strontium from, by solvent extraction using bis(2-ethylhexyl) phosphate, synergistic effects of aliphatic diluents and TBP on, 22:35899
shear properties of single crystals of, effect of neutron or gamma irradiation on, (E), 22:46205
sodium-22 exchange between precipitates and stirred solutions of, kinetics of, 22:35796
sodium-23 NMR in powders of, effects of electric quadrupole interactions on, (E), 22:20083
sodium-23 NMR in, solid-state effect in, 22:24460
sodium-23 nuclear double resonance spectra in, 22:31998
sorptive properties of solid, for silver in stirred solutions, 22:35796
spectra at 80°K on thin films of, Cl^- L_{23} absorption, (E), 22:46228
spectra of copper-doped, copper isotope effects on far infrared, (E/T), 22:24432
spectra of, effects of heavy water as solvent on far-infrared, 22:16520
spectra of, isotope effects on molecular-beam electric resonance, 22:14485 (UCRL-17916)
temperature dependence of the brightness of x-ray luminescence and optical flash in activated phosphors

  - of, (E), 22:3188
  - thermodynamic activity of uranium trichloride in, 22:16521
  - use in stripping iodine from ion exchange resins, 22:48912
  - use of sodium-24-labeled, for evaluation of effectiveness of intra-arterial chemotherapy, 22:2482
  - vapor pressure of, development of isopiestic apparatus for measuring, 22:23003 (IA-1128, pp 97-146)
  - yields in gamma-radioinduced decomposition of crystalline sodium chlorate, 22:10278
  - $AlCl_3$--KCl--NaCl--$NbCl_5$, phase diagrams of, 22:12307
  - $AlCl_3$--KCl--NaCl--$TaCl_5$, phase diagrams of, 22:12307
  - $BeCl_2$--NaCl, electrolysis of fused, for production of beryllium powders, 22:10978
  - $CaCl_2$--$MgCl_2$--NaCl, neptunium distribution between copper--magnesium or magnexium--zinc alloys and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
  - CsCl--NaCl, radiation effects on, oxidation states of recoil radioiodine from proton, 22:25389
  - $DyCl_3$--NaCl, thermal analysis of, 22:6297
  - $GdCl_3$--NaCl, thermal analysis of, 22:6297
  - KCl--$MgCl_2$--MgF_2--NaCl, phase disengagement studies on entrainment of metals in, 22:22653(R) (ANL-7419)
  - KCl--$MgCl_2$--NaCl, cerium distribution between magnesium--zinc alloy and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, containment of copper--magnesium in, by silicon carbide, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, corrosive effects of, in mixture with copper--magnesium--uranium on molybdenum, niobium, and TZM alloy, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, corrosive effects of, in system with copper--magnesium--uranium on vitreous carbon crucibles at 700°C, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, effects on cerium transport from copper--magnesium alloy to magnesium--zinc alloy, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, neptunium distribution between copper--magnesium alloys and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, phase disengagement studies on entrainment of metals in, 22:22653(R) (ANL-7419)
  - KCl--$MgCl_2$--NaCl, plutonium distribution between copper--magnesium alloy or magnesium--zinc alloy and, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, reactions of molten, with plutonium dioxide at 800°C, 22:25442 (ANL-7375, pp 19-45)
  - KCl--$MgCl_2$--NaCl, sorption by Fiberfrax, 22:25442 (ANL-7375, pp 19-45)
  - KCl--NaCl, corrosive effects of molten equimolar, on zirconium, 22:2583
  - KCl--NaCl, electrolysis of plutonium trichloride in, preparation of plutonium by, 22:25455 (CEA-N-616, pp 295-368)
  - KCl--NaCl--NaF, complexes of uranium in melts of, 22:8078
  - KCl--NaCl--$PbCl_2$, electromotive force of, effects of uranium tetrachloride on, 22:33318
  - KCl--NaCl--$PuCl_3$, distribution of americium between liquid plutonium and molten, 22:12290
  - KCl--NaCl--$PuCl_3$, plutonium equilibrium potential in, 22:42669
  - NaCl--$NaNO_3$, molal volume and refractive index of aqueous solutions of, 22:23003 (IA-1128, pp 97-146)
  - NaCl--$PuCl_3$, plutonium equilibrium potential in, 22:42669
- SODIUM CHLORITES
  - radiolysis of frozen aqueous solutions of, EPR study of radicals from γ, 22:33388
  - $NaClO_2$--$NaClO_3$, radiolysis of frozen aqueous solutions of, EPR study of radicals from γ, 22:33388
- **SODIUM CITRATES**
  - effects on acid stability of uv-irradiated membranes of erythrocytes, 22:40557
- Sodium Components Test Installation
    - see Heat Transfer Systems
- **SODIUM CYANIDES**
  - effects on flux ratios of solutes through membranes, effects of hyperosmotic solutions on, 22:50891(R) (RLO-1754-11)
  - radiation effects on, ESR study of $(CN)_2^-$ radical from γ, 22:12369
  - solubility in liquid sodium, 22:52257 (ANL-7425, pp 94-129)
  - solubility in liquid sodium, 22:36543 (ANL-7450, pp 39-74)
- SODIUM CYANOTRIPHENYL BORATE
  - use in gravimetric determination of cesium and potassium in chloride and nitrate media, 22:18707
- **SODIUM DEUTERIDES**
    - see also Sodium Hydrides
  - thermodynamics of, 22:12958
- **SODIUM DICYANAMIDE**
  - effects on solubility of plutonium dioxide in nitric acid, catalytic, 22:1956(R) (MLM-1405)
- **SODIUM DITHIONATES**
  - radiation effects on aqueous and solid, oxidation states of phosphorus-32 produced by neutron, 22:111
  - radiolysis of solid, gamma, 22:25436
- **SODIUM DITHIONITES**
  - $NaNO_3$--$Na_2S_2O_4$, radioprotective effects of, on mice and rats, 22:25863
- SODIUM ETHOXIDE
  - effects on deuterium exchange between tricarbonyl(toluene)chromium and ethanol, 22:42691
  - reactions with 2-arylethyltrimethylammonium bromide in ethanol, effects of deuterium on, 22:21062
- SODIUM FERROCYANIDES
  - precipitation of cadmium, cobalt, copper, and zinc by, conditions for, 22:35793
- SODIUM FLUORIDES
    - see also Sodium Praseodymium Fluorides
  - color centers in electron-irradiated, optical studies of, 22:13568
  - determination in blood plasma of rabbits following oral administration, 22:16375 (UR-49-891)
  - dislocation mobility in monocrystals of, effects of atmospheric oxygen on, 22:49783
  - ductility of monocrystals of, effects of atmospheric oxygen on, 22:49783
  - effects on radioisotope uptake by tracheal cells of guinea pigs, 22:12804
  - effects on radiosensitivity of sperm of Drosophila, 22:40615(R) (EUR-3889)
  - effects on separation of trace amounts of rare earths from uranium by ion exchange, 22:47215
  - elastic constants, calculation of, 22:44256
  - electron reactions at 4 to 12 keV with films of, secondary electron emission in, (E/T), 22:49988 (SLAC-86)
  - electron reactions with, energy loss in, (E), 22:29204
  - electron reactions with, lattice vibrations from, 22:34784
  - hardness of monocrystals of, effects of atmospheric oxygen on, 22:49783
  - ionization states of F-aggregate color centers in, effects of impurities on, 22:36963 (AD-664943)
  - NaF--UF_4, corrosive effects of fused eutectic of, on metals, 22:15139 (AWRE-R-3/63)
  - photoeffect quantum yields from, (E), 22:38799
  - proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
  - radiation effects on electric conductivity of, gamma and x, (E), 22:34748
  - radiation effects on hardened areas of single-crystal, x, (E), 22:13554
  - radiation effects on mechanical properties of pure and uranium-containing, gamma and x, 22:22249
  - radiation effects on, at 20°K, x, (E), 22:13605
  - radioinduced color centers and thermoluminescence in crystals of, gamma and x, (E), 22:34748
  - radioinduced color centers in hydroxide-doped, effects of impurities on x, (E), 22:39190
  - radioinduced defects in crystals of, evidence for Frenkel, x, (E), 22:37045
  - radioinduced defects in crystals of, thermal annealing effects on proton, (E), 22:44250
  - radioinduced defects in, linear Stark effect of F_3^+ center in, 22:29564
  - radioinduced luminescence in, relation of F-to-M conversion of delayed, x, 22:31948
  - reactions with neptunium hexafluoride, 22:51045 (ANL-7425, pp 42-93)
  - reactions with plutonium tetrafluoride, products of, 22:25443 (ANL-7375, pp 46-94)
  - separation of plutonium and uranium from bed materials of, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
  - sorptive properties for molybdenum and technetium fluorides, 22:21078
  - sorptive properties for plutonium hexafluoride, 22:51045 (ANL-7425, pp 42-93)
  - sorptive properties for plutonium hexafluoride, 22:25443 (ANL-7375, pp 46-94)
  - sorptive properties for trace amounts of uranium hexafluoride, 22:42813(R) (K-L-1780(Pt.26))
  - sorptive properties for uranium hexafluoride, 22:164(P)
  - thermal expansion coefficient of, low-temperature, (E), 22:9419 (COO-623-120)
  - use for thermal neutron monitoring in aircraft, 22:25961(R) (BNWL-531-2)
  - use of fluorine-18-labeled, for diagnosis of bone tumors, hazards from, 22:38388
  - uses in sorption-desorption system for purification of uranium, 22:27856(R) (K-1738)
  - Al_2F_3--Al_2O_3--NaF, surface tension of, effects of carbon dioxide and carbon monoxide on, 22:33306
  - AmF_4--NaF, preparation and structure of, 22:30555
  - BeF_2--LiF--NaF--ThF_4--UF_4, corrosive effects on Hastelloy N at 700°F, 22:30769
  - BeF_3--KF--NaF, corrosive effects on Croloy 9M and Hastelloy N at 610°C, 22:8696 (ORNL-4170, pp 192-205)
  - CmF_4--NaF, preparation and structure of, 22:30555
  - HF--NaF--UF_6, criticality calculations for homogeneous, 22:45143 (K-1734)
  - KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  - KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:47112 (ORNL-4254, pp 88-173)
  - KCl--NaCl--NaF, complexes of uranium in melts of, 22:8078

  KF--LiF--NaF, electrochemical properties of molten, 22:10139(R) (ORO-3518-4)
  KF--LiF--NaF, electroplating of zirconium on uranium from molten, 22:52143 (BNWL-825)
  KF--LiF--NaF, voltammetry in molten, 22:10139(R) (ORO-3518-4)
  $NaBF_4$--NaF, dissociation vapor pressures in MSRE, phase diagram of, 22:12035(R) (ORNL-4191)
  $NaBF_4$--NaF, heat content of, 22:47112 (ORNL-4254, pp 88-173)
  $NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  $NaBF_4$--NaF, physical properties for use as molten-salt reactor coolant salt mixture, evaluation of, 22:44827 (ORNL-TM-2316)
  $NaBF_4$--NaF, thermodynamics of, chemical, 22:47112 (ORNL-4254, pp 88-173)
  NaBF--NaF, thermodynamic properties of, 22:25328 (ORNL-4229, pp 50-67)
  NaBF--NaF, vapor pressures of, 22:25328 (ORNL-4229, pp 50-67)
  NaF--NpF_4, preparation and structure of, 22:30555
  NaF--PaF_4, preparation and structure of, 22:30555
  NaF--PuF_4, criticality calculations for, 22:45143 (K-1734)
  NaF--PuF_4, preparation and structure of, 22:30555
  NaF--ThF_4, preparation and structure of, 22:30555
  NaF--UF_4, density of fused eutectic mixture of, at 686 to 882°C, 22:12269 (AWRE-R-6/58)
  NaF--UF_4, preparation and structure of, 22:30555
  NaF--UF_4, surface tension of fused eutectic mixture of, 22:14474 (AWRE-R-7/58)
  NaF--UF_4, thermal conductivity of fused eutectic mixture of, at 650 to 750°C, 22:14472 (AWRE-R-1/62)
  NaF--UF_4, vapor pressure of fused eutectic mixture of, at 700 to 1100°C, 22:14473 (AWRE-R-2/61)
  NaF--UF_4, viscosity of fused eutectic mixture of, 22:14475 (AWRE-R-8/58)
  NaF--ZrF_4, solvent properties of molten, for zirconium dioxide, 22:33307
  NaF--ZrF_4--ZrO_2, surface tension of, effects of carbon dioxide and carbon monoxide on, 22:33306
SODIUM FLUOROALUMINATES
  effects on growth processes of corundum crystals, 22:31485
SODIUM FLUOROANTIMONATES
  tin-121 Moessbauer spectra in, 22:11510
SODIUM FLUOROBORATES
  corrosive effects on Hastelloy N in molten-salt reactors of fused, analysis of, 22:32828
  phase studies of, 22:47112 (ORNL-4254, pp 88-173)
  physical properties for use as molten-salt reactor coolant salt, evaluation of, 22:44827 (ORNL-TM-2316)
  preparation of high-purity, 22:25327 (ORNL-4229, pp 3-21)
  radiation effects on Molten Salt Breeder Reactor coolant, analysis of γ, 22:48736 (ORNL-4254, pp 174-82)
  solvent properties for fluorides, 22:25327 (ORNL-4229, pp 3-21)
  BeF_2--LiF--$NaBF_4$--ThF_4--UF_4, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  KBF_4--KF--$NaBF_4$--NaF, phase studies of, 22:47112 (ORNL-4254, pp 88-173)
  $NaBF_4$--NaF, dissociation vapor pressures in MSRE, phase diagram of, 22:12035(R) (ORNL-4191)
  $NaBF_4$--NaF, heat content of, 22:47112 (ORNL-4254, pp 88-173)
  $NaBF_4$--NaF, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
  $NaBF_4$--NaF, physical properties for use as molten-salt reactor coolant salt mixture, evaluation of, 22:44827 (ORNL-TM-2316)
  $NaBF_4$--NaF, thermodynamics of, chemical, 22:47112 (ORNL-4254, pp 88-173)
  NaBF--NaF, thermodynamic properties of, 22:25328 (ORNL-4229, pp 50-67)
  NaBF--NaF, vapor pressures of, 22:25328 (ORNL-4229, pp 50-67)
SODIUM FLUOROSILICATES
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
SODIUM FLUOROURANATES
  paramagnetic resonance of single crystals of, 22:50980
SODIUM FORMATES
  decomposition of, effects of carbon-14 on electrolytic, 22:16531
  effects on yields in gamma radiolysis of aqueous solutions of tetranitromethane, 22:10277
  radiation effects on heavy and light water solutions of, at -196°C, EPR studies on, 22:6329
  radiolysis of aqueous solutions of, kinetics of fast-electron, 22:30587 (EUR-3914(Pt.1))
  radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
  radioprotective effects of, on trypsin, x, 22:33762
SODIUM GALLATES
  radioprotective effects of, on human skin during radium therapy, α, 22:28549
SODIUM HALIDES
  color centers in, empirical relationships for emission energies and lifetimes of F, 22:13537 (ORNL-TM-2054)
SODIUM HEXACYANOCOBALTATE(III)
  use of cobalt-60-labeled, to measure extracellular space of smooth muscle of guinea pigs, 22:16987
SODIUM HEXATHIOCYANATOBISMUTHATE(III)
  use in gravimetric determination of cesium, 22:16435
SODIUM HYDRIDES
    see also Sodium Deuterides
  content in liquid sodium, effects of injected water on, 22:1750(R) (APDA-206)
  monitoring in sodium loops, rhometer for, 22:12953
  positron lifetime in, delayed coincidence system study of, (E), 22:38732
  thermodynamics of, 22:12958
Sodium Hydrosulfites
    see Sodium Dithionites
SODIUM HYDROXIDES
    see also Soda Lime
  content in liquid sodium, effects of injected water on, 22:1750(R) (APDA-206)
  corrosive effects on aluminum, 22:34010(R) (DP(NASA)-1005)
  corrosive effects on chromium--nickel steel at 360°C, 22:26026 (CEA-N-616, pp 106-44)
  corrosive effects on Croloy in liquid sodium test loop, 22:1750(R) (APDA-206)
  corrosive effects on Croloy tubes, effects at 1300 to 2200°F of, (E), 22:35423(R) (APDA-224)
  corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
  corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
  corrosive effects on titanium alloys at high temperatures, 22:34010(R) (DP(NASA)-1005)
  corrosive effects on tungsten, 22:43530 (BM-RI-7169)
  corrosive effects on TZM molybdenum alloy, 22:43530 (BM-RI-7169)
  effects on formation of color centers in radiolysis of solutions of carbonates, formates, and methanol, 22:12357
  effects on isotopic exchange between hydrogen and water, catalytic, 22:14570
  effects on radioinduced graft polymers of Delrin filaments and styrene, 22:8095(T) (AEC-tr-6908, pp 48-55)
  gamma-ray reactions with iced, optical absorption spectrum of trapped dielectrons for, (E), 22:41335
  monitoring in sodium loops, rhometer for, 22:12953
  radiation effects on glossy, at 77°K, EPR studies of γ, 22:30640
  radiation effects on heavy and light water solutions of, spectral studies on γ, 22:23060
  radioinduced mobile electron reactions in frozen solutions of, effects of solutes on, 22:33375(R) (COO-1528-26)
  radioinduced production of trapped electrons in frozen solutions of, γ, 22:16604
  reactions of aqueous solutions of, with uranium carbides, 22:47126
  reactions with schoepite, preparation of crystallized polyuranates by, 22:40084
  reactions with silica, aluminum hydroxide, and water to yield radiation-resistant anion-exchange material, 22:18911(P)
  solvent properties for aluminum--uranium alloys, 22:27850 (CEA-N-816, pp 80-9)
  solvent properties for beryllium, 22:27845 (CEA-N-816, pp 150-276)
  solvent properties for γ-irradiated wool, effects of nitrogen or oxygen during irradiation on, 22:47174
  solvent properties of hot, for biological samples containing radioiodine, 22:22953
  spectra of deuterated, effects of heavy water as solvent on far-infrared, 22:16520
  spectra of solvated electrons in aqueous solutions of, 22:18810(R) (RRL-2310-223)
  spectra of, far-infrared, 22:16520
  use in titrimetric determination of ammonium molybdate, molybdenum trioxide, and molybdic acid, 22:25265
  KOH--NaOH, radiolysis of aqueous solutions of, formation of solvated electrons in pulsed-electron, 22:42795
  Na_2O_2--NaOH, fusion with plutonium dioxide at 600°C, 22:40041
  NaOH--Na_2O_2, use in removal of coatings from nuclear fuel particles in one step, 22:12500(P)
SODIUM HYPOBROMITES
  radiolysis of alkaline aqueous solutions of, effects of acidity on primary radical yields in γ, 22:30628
SODIUM HYPOCHLORITES
  corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
  corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
  corrosive effects on tungsten, 22:43530 (BM-RI-7169)
  corrosive effects on TZM molybdenum alloy, 22:43530 (BM-RI-7169)
  effects on pyrimidine bases of nucleic acids of Escherichia coli, 22:51389
SODIUM HYPOPHOSPHATES
  $Cu(NO_3)_2$--NaH_2PO_2, radiolysis of, effects of organic additives and solvents on γ, 22:45128
  $CuSO_4$--NaH_2PO_2, radiolysis of, effects of organic additives and solvents on γ, 22:45128

- SODIUM HYPOPHOSPHITES
  - use in baths for electropolishing of uranium, 22:36450
- SODIUM, INDOLYL-
  - protonation by heavy water, kinetics of, 22:2049
- SODIUM IODIDES
  - analysis of carrier-free iodine-131-labeled, for impurities, comparison of electrophoretic and paper and thin-layer chromatographic methods for, 22:40007
  - charged particle reactions with, density-effect correction for ionization loss in, 22:7175
  - corrosive effects on titanium--aluminum--molybdenum--vanadium alloys at 650°F, 22:28734(R) (DP(NASA)-961)
  - decomposition of iodine-131-labeled, on chromatographic paper, uv-induced, 22:12313
  - effects on survival of γ-irradiated fish, 22:33898(R) (COO-1421-3)
  - electric dipole moments of, from radio-frequency Stark spectra, 22:5045 (UCRL-17909)
  - hyperfine structure constants of, (E), 22:34241 (COO-1112-163)
  - iodine-127 nuclear magnetic resonance spectra in, 22:9465
  - iodine-131 exchange between deuterated iodomethane and, α-deuterium effects in, 22:2045
  - ion reactions at 1 to 10 MeV with thallium-activated, theory of scintillation response to heavy, 22:31952
  - light output of thallium-activated, 22:40414
  - meson (μ) energy loss and straggling in thallium-activated, at 0.5 to 10.5 MeV/c, 22:8353
  - mixing with fused sodium chloride, heat of, 22:31502
  - neutron inelastic scattering at 10 to 150 keV, cross sections and pulse-height spectra for, (E), 22:11948(R) (NP-17216)
  - optical heterogeneity of thallium-activated, 22:38003
  - performance of thallium-activated scintillation detectors of, effect of lead impurity on, 22:324
  - performance of thallium-activated, Monte Carlo method for determining intrinsic resolution for, 22:40423
  - phonon propagation in, effects of anharmonicity on, (E), 22:11944(R) (AECL-2780)
  - photoluminescence spectra of thallium-activated, effect of oxygen impurities and x radiation on, 22:1344
  - photon mass attenuation coefficients for, tables of, 22:5869 (LA-3753)
  - proton reactions at 10 MeV to 10 GeV, energy losses in, 22:45290
  - radiation effects on, at 20°K, x, (E), 22:13605
  - radioinduced luminescence in thallium-activated, at 5 to 89°K, x-, 22:40422
  - radioinduced luminescence of thallium-activated, recombination, 22:7361
  - radioinduced phosphorescence in thallium-activated, long-lived, 22:14759
  - radiosensitizing effects of, on activity of alcohol dehydrogenase, x, 22:43218
  - reactions with methyl chloride in 1,2-dimethoxyethane, chlorine isotope effects in, 22:27627 (MIT-905-108, pp 63-78)
  - scintillation characteristics of vacuum-deposited thallium-activated, 22:19100 (UCRL-70773)
  - scintillation decay time in thallium-activated, 22:40414
  - scintillation decay time of thallium-activated, use of simulated photomultiplier pulses for measuring, 22:36048
  - scintillation pulse shape in gamma-excited thallium-activated, effects of thallium concentration and temperature on, 22:40421
  - spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  - use of iodine-131-labeled, for iodination of angiotensin II, method for, 22:47470
- SODIUM IONS
  - channeling in potassium chloride and sodium chloride crystals, computer simulation studies of, 22:37033
  - chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  - chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  - chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  - detection of sodium-24, in Ehrlich ascites tumor cells by autoradiography, 22:40544
  - diffusion through membranes and in solutions, measurement of, 22:36169
  - effects on cesium emission intensity in hydrogen flames with various mixtures of nitrogen--oxygen, 22:27573
  - effects on electrolyte coagulation and stability of aquosol of antimony trisulfide, 22:4095
  - effects on rubidium-86 uptake by corn root segments, 22:33775
  - effects on solvent extraction separation of cerium or yttrium from hydrochloric acid using bis(2-ethylhexyl) ester of phosphoric acid, 22:42844
  - effects on stability of hydrosol of arsenic trisulfide, 22:12280
  - electron reaction with, ionization cross section for $Na^+ + e \rightarrow Na^{2+} + 2e$ to 3.5 keV, 22:36721
  - elution from alfalfa, 22:21460(R) (COO-1171-82)
  - energy levels of, nonadiabatic corrections to, 22:9007
  - implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  - ion exchange with polymeric resins of divinylbenzene--styrene containing phosphonic groups, 22:4086
  - radiation effects on content of, in blood plasma and cerebrospinal fluid of rabbits, protective effects of cystamine against, 22:51903
  - radiation effects on content of, in yeasts, effects of, on activity of coacetokinase, x, 22:43219
  - radiation effects on permeability of erythrocyte membranes of man to, x, 22:23426
  - radiative association in the ionosphere, (T), 22:13328
  - range in aluminum, gold, and tungsten, effect of temperature on, (E), 22:994
  - ranges in gold above 100 keV, measurement using chemical film technique, 22:26223
  - reactions with deuterium molecules, reaction rate determination from ion mobility measurements, 22:41376
  - reactions with hydrogen molecules, reaction rate determination from positive ion mobility measurements, 22:41376
  - reactions with molecular nitrogen, transfer of rotational and vibrational energies in, (E), 22:21895
  - removal from human hair by treatment with boiling or hot water, 22:10197
  - retention by erythrocyte membranes, effects of ATP, cysteine and potassium ions on, 22:19238(R) (NYO-3148-12)
  - scattering by molybdenum monocrystals at 0.3 to 4 keV, coefficients for, 22:5128
  - separation of radioactive, from potassium, use of spacers for electrophoretic, 22:161
  - sorption by phosphoorganic compounds, correlation of density with, 22:33354
  - sorption by roots of plants, effects of uranyl ions on, 22:8494
  - spectra of, level-crossing experiment on hyperfine structure in, (E), 22:53141
  - transport in silicon dioxide films, tracer studies on, 22:50953
  - uptake by Chlorella pyrenoidosa, 22:21011(R) (UCB-34-P-5-47)
- SODIUM IRIDIUM CHLORIDES
  - electrophoresis of hexahydrate of, 22:45094 (LFEN-78)
  - radiation effects on hydrates of, electrophoretic behavior of complexes from gamma and neutron, 22:45094 (LFEN-78)
- SODIUM ISOTOPES
  - contamination of terrain following nuclear explosions, 22:8529(T) (JPRS-42929, pp 293-330)
  - energy-level parameters for, data compilation for, (E), 22:9819
  - production by proton reactions with iridium, molybdenum-100, tantalum, and uranium at 10.5 GeV, cross sections for, (E), 22:24864
  - production of A = 20 to 25, in silicon-28 (p,xpn) reactions at 150 MeV, (E), 22:30033
- SODIUM ISOTOPES Na-19
  - decay by delayed proton emission, (E), 22:29913
- SODIUM ISOTOPES Na-20
  - beta decay scheme of, half-life, branching ratios, and β and γ spectra for, (E), 22:3655
  - beta decay with delayed α emission, (E), 22:3654
  - decay scheme, (E), 22:32520
- SODIUM ISOTOPES Na-21
  - beta decay of polarized, asymmetry of, (E), 22:46752
  - energy level at 332 keV, lifetime of, (E), 22:29900
  - energy level of, position of T = 3/2, (E), 22:53124
  - energy levels and mass from sodium-23 (p,t) reactions at 42 MeV, (E), 22:20555
  - energy levels from fluorine-19 (He-3,n) reactions, isobaric analog, (E), 22:26932(R) (NP-17434)
  - energy levels from fluorine-19 (de-3,n) reactions, T = 3/2, (E), 22:18166
  - energy levels from neon-20 (d,n) reactions, spectroscopic factors for, (E), 22:53142
  - energy levels from neon-20 (p,γ) reactions, (E), 22:35293(R) (ORNL-4230)
  - energy levels from neon-20 (p,γ) reactions, branching ratios for, (E), 22:42019(R) (MLM-1494)
  - energy levels of, T = 3/2 quartet, (E), 22:53129
  - nuclear polarization using optical pumping, (E), 22:46752
- SODIUM ISOTOPES Na-22
  - absorption by leaves following foliar and soil application, 22:49190
  - beta and electron-capture branching ratio, (E), 22:46733
  - beta and electron-capture decay of, branching ratio for, (T), 22:44652
  - beta and electron-capture decay ratio for, measurement of, (E), 22:39624
  - beta and electron-capture decay scheme of, measurements using γ-γ coincidence method, (E), 22:5867 (CEA-R-3260)
  - beta decay of, β^+ spectra and endpoint energy for, (E), 22:53153
  - beta decay of, gamma transition energies in, (E), 22:7674
  - beta decay of, positron spectrum from, (E), 22:20517
  - beta transitions in, β-γ directional correlations for anomalous, (E), 22:3740
  - beta transitions in, β-γ directional correlations for highly hindered allowed, (E/T), 22:18267
  - content in meteorites, cosmic-ray variations from,

22:835

- content of astronauts during space flight, measurement of, to determine proton dose, 22:43394 (BNWL-531-3)
- content of man, methods of measuring whole-body, 22:4614
- cosmogenic activity in stone meteorites, (E), 22:2742
- decay rate of carrier-containing, 4π β-γ coincidence techniques for determining, 22:45137
- determination in meteorites, (E), 22:7081
- determination in Saint Severin meteorite, (E), 22:7080
- distribution in stone meteorites, 22:34215
- distribution of sodium chloride-incorporated, in kidneys of dogs, effects of uranium nitrate on, 22:28313
- electromigration in molten lithium, potassium, and sodium nitrates, isotope effects in, 22:27710
- energy levels at 0.891 and 1.528 MeV, lifetimes and spins of, (E), 22:18179
- energy levels from fluorine-19 (α,n) reactions, lifetime measurements by Doppler-shift attenuation method for, (E), 22:50570
- energy levels from fluorine-19 (α,n) reactions, spin-parity assignments and transition parameters for, (E), 22:26958
- energy levels from magnesium-24 (d,α) reactions, spins of, (E), 22:3642 (CEA-R-3078)
- energy levels from sodium-23 (p,d) reactions, spectroscopic factors for, (E), 22:30048(R) (PUC-937-307)
- energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
- energy levels of, research using γ spectroscopy, 22:41978 (BNL-12621)
- energy levels of, spins and parities from γ linear polarization measurements, (E), 22:9836
- energy-level lifetimes from Doppler-shift attenuation, (E), 22:9839
- energy-level transition probabilities for, calculations using shell model with realistic effective interaction, (T), 22:35293(R) (ORNL-4230)
- energy-level transition probabilities for, shell-model calculations of E2, (T), 22:29927
- energy-level transitions from magnesium-22 beta decay, (E), 22:3666
- exchange between sodium chloride precipitates and stirred solutions, kinetics of, 22:35796
- excretion in urine by man, methods for calculation of safe limits of, 22:6811
- formation rate of cosmogenic, in iron meteorites, calculation of, 22:25514
- gamma emission intensity at lunar surface due to, (T), 22:29116
- movement from cisterna magna into cerebrovascular circulation of monkeys, 22:12762
- production by cosmic particles in cosmic dust, (T), 22:21945
- production by proton reactions with silicon at 0 to 60 MeV, excitation functions for, (E), 22:9803 (ORNL-TM-2060)
- production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
- production in proton reactions with gold-197, lead, silver, tantalum, and uranium at high energy, cross sections for, (E), 22:42032
- production in proton reactions with Z = 12 to 92 nuclei at 400 MeV, cross sections for, (E), 22:9816
- production in tissue equivalent phantoms by neutron and proton exposure, 22:25961(R) (BNWL-531-2)
- radiation effects on metabolism of, in rats, x, 22:51483
- radiation effects on transport of, in intestines of rats, x, 22:10824 (BNWL-480, pp 1-19)
- separation from aqueous solutions using hydrous manganese oxides and manganese oxide--iron oxide, electrophoretic, 22:14581
- separation from deuteron-irradiated magnesium targets in organic solvents by ion exchange, 22:30668
- separation from magnesium-24 by ion exchange, 22:23118
- separation from water, effects of colloidal hydrous ferric oxide on, 22:14512
- sorption by skin of guinea pigs, effects of cleaning agents and stripping on, 22:14976
- uptake from soil by plants, chemical and physical factors affecting, 22:423(R) (TID-23955)
- use for tracer studies of atmospheric exchange, 22:36771

SODIUM ISOTOPES Na-23

- alpha inelastic scattering at 22 MeV, γ Doppler shifts in, (E), 22:24848
- alpha reactions (α,d) at 18.7 MeV, DWBA analysis of differential cross sections for, (E), 22:27084
- alpha reactions (α,p) at 4 to 5 MeV, p-γ and γ-γ angular correlations from, (E), 22:26990
- alpha reactions (α,p) with, magnesium-26 energy levels and branching ratios from, (E), 22:20504
- deuteron reactions (d,α) at 1.1 MeV, alpha angular distributions from, (E), 22:7678
- deuteron reactions (d,α) at 2 to 4.2 MeV, differential cross sections for, (E), 22:27083
- deuteron reactions (d,n) at 2.980 MeV, neutron angular distributions and spectra from, (E), 22:15982
- deuteron reactions (d,n) with, angular distributions and excitation functions for, (E), 22:48480
- deuteron reactions (d,p) below Coulomb barrier, angular distributions for, (T), 22:39716
- effects on molecular-beam electric resonance spectra of sodium bromide and chloride, 22:14485 (UCRL-17916)
- electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
- energy level at 2.393 MeV from neon-22 (He-3,dγ) reactions, branching ratio for, (E/T), 22:46739
- energy levels and transitions from neon-22 (He-3,d) reactions at 10 and 12 MeV, (E), 22:3679
- energy levels from α inelastic scattering, lifetime measurements using γ Doppler shift attenuation, (E), 22:24848
- energy levels from beta decay of neon-23, (E), 22:7676
- energy levels from Coriolis coupling model, (T), 22:16096
- energy levels from proton inelastic scattering, (E), 22:18140
- energy levels from proton inelastic scattering, (E), 22:3609 (PUC-937-164)
- energy levels in rotational bands from magnesium-25 (d,α) reactions, (E), 22:50561
- energy levels of, description using angular momentum projection of Hartree--Fock deformed state wave functions, (T), 22:37304
- energy levels of, electronic g factors for, 22:9056
- gamma resonance absorption from neon-22 (p,γ) reactions, (E), 22:26932(R) (NP-17434)
- helium-3 reactions (He-3,n) with, neutron time-of-flight spectra for, (E), 22:26932(R) (NP-17434)
- hyperfine structure of, method for analyzing, 22:13226
- meson (π^-) absorption and scattering cross sections at 0.6 to 1.6 MeV, optical model analysis of, (E/T), 22:48455
- neutron activation resonance integral and self-shielding factor for, epithermal, (E), 22:16011 (JUL-503-RX)
- neutron capture at 1 to 20 MeV, activation cross section for, (E), 22:3743
- neutron capture at 1 to 200 keV, resonance parameters and radiative widths for, (E), 22:44627 (TID-24601)
- neutron capture at 1 to 200 keV, resonance widths for, (E), 22:42004
- neutron capture at 2 to 4 keV, radiative width of 2.85-keV resonance in, (E), 22:26930 (GA-8496)
- neutron capture at 2.8 MeV, gamma energies and differential cross sections for, (E/T), 22:5793
- neutron capture by, γ spectra and radiative widths for, (E), 22:20498 (BNL-12268)
- neutron capture by, Q-value for, (E), 22:45093 (COO-1618-9)
- neutron capture cross section at 0.2 to 100 keV, (E), 22:18193
- neutron capture cross section at 1 to 20 MeV, (E), 22:3674
- neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
- neutron capture resonance parameters at 2 to 139 keV, (E), 22:14001 (RPI-328-100, pp 1-56)
- neutron capture using polarized beams, γ circular polarization from thermal, (E), 22:39613
- neutron cross sections at 10^{-4} eV to 15 MeV, ENDF/B evaluation of, 22:46730 (APDA-217)
- neutron cross sections for γ production on, data format for, 22:37306 (AD-665359)
- neutron cross sections for, data file on, 22:37307 (AD-665360)
- neutron cross sections in MeV range, analysis using optical model and Hauser--Feshbach theory, (T), 22:46748
- neutron differential inelastic scattering cross sections at 2.8 MeV for γ production, (E/T), 22:20578 (WASH-1079)
- neutron elastic and inelastic scattering cross sections at 1.5 to 6.5 MeV, measurements using time-of-flight method, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
- neutron inelastic scattering at 2.8 MeV, γ angular distributions from, (E), 22:35249 (AD-663112)
- neutron reactions (n,2n) at 12.7 to 19.4 MeV, activation cross sections for, (E), 22:3624
- neutron reactions (n,2n) at 12.7 to 19.5 MeV, activation cross section for, (E), 22:3743
- neutron reactions (n,α) at 15 MeV, cross section for, (E), 22:53123
- neutron reactions (n,d) at 14.1 MeV, compound nucleus and direct effects in, (E/T), 22:26844
- neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
- neutron reactions (n,p) at 15 MeV, cross section for, (E), 22:53123
- neutron reactions and scattering at 14 MeV, γ spectra from, (E), 22:44642
- neutron reactions at 0.8 to 1.8 MeV and at 4 MeV, γ spectra for, (E), 22:20578 (WASH-1079)
- neutron resonance parameters at 2 to 139 keV, (E), 22:44627 (TID-24601)
- neutron total cross section and resonance parameters at 0.2 to 100 keV, (E), 22:18193

neutron total cross section and resonance parameters at 35 to 117 keV, (E), 22:18192
neutron total cross section at 0.3 to 30 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
nuclear double resonance spectra in sodium chlorides, 22:31998
nuclear electric quadrupole moment of, from hyperfine structure measurements, (E), 22:53141
nuclear g-factors and magnetic moments from NMR measurements, (E), 22:5779
nuclear magnetic resonance in ferroelectric Rochelle salt, relation to spontaneous polarization, (E), 22:48160
nuclear magnetic resonance in sodium chloride powders, effects of electric quadrupole interactions on, (E), 22:20083
nuclear magnetic resonance in sodium chloride, solid-state effect in, 22:24460
oxygen-18 reactions (O-18,O-16) at 12 to 30 MeV, excitation curves for neutron transfer in, (E), 22:48460
oxygen-18 reactions (O-18,O-17) at 12 to 30 MeV, excitation curves for neutron transfer in, (E), 22:48460
photon reactions (γ,p) at 10.5 MeV, proton angular and energy distributions for, (E), 22:53158
photon reactions (γ,p) at 17 to 24 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27076
photon reactions (γ,p) at 24 MeV, proton angular and energy distributions for, (E), 22:53158
proton differential inelastic scattering cross sections at 17.5 MeV, (E), 22:18140
proton elastic and inelastic scattering at 6.2 to 6.7 MeV, angular distributions and excitation functions for, (E), 22:42009
proton elastic scattering by, resonances in, (E), 22:26989
proton inelastic scattering at 17.5 MeV, differential cross sections and spectra for, (E), 22:3609 (PUC-937-164)
proton inelastic scattering at 3.6 to 4.5 MeV, γ yields for, (E), 22:22570
proton inelastic scattering by, γ yields for, (E), 22:11948(R) (NP-17216)
proton reactions (p,2p) at 156 MeV with quasielastic scattering, proton energy spectra and angular distributions from, (E), 22:1642
proton reactions (p,2p) at 156 MeV, spectroscopic factors for, (T), 22:44647
proton reactions (p,α) at 2.2 to 4.5 MeV, angular distributions and excitation functions for, (E), 22:22570
proton reactions (p,d) and (p,t) with, differential cross sections for, (E), 22:30048(R) (PUC-937-307)
proton reactions (p,d) at 26.6 MeV, deuteron angular distributions and spectra for, (E), 22:9800(R) (COO-535-571)
proton reactions (p,γ) at 4 to 12.4 MeV, cross sections for, (E), 22:46741
proton reactions (p,γ) at 4 to 13 MeV, in giant resonance region, (E/T), 22:5809(R) (ANL-7354)
proton reactions (p,γ) with, resonance widths for, (E), 22:9844
proton reactions (p,γ) with, resonances in, (E), 22:26989
proton reactions (p,t) at 42 MeV, sodium-21 mass and energy levels from, (E), 22:20555
proton reactions at 156 MeV, (E), 22:29918
proton reactions at 156 MeV, cross sections for production of lithium-9, carbon-16, and nitrogen-17 by, (E), 22:29912
reactions with sodium-23 atoms, spin-exchange cross sections for, (E), 22:45963
reactions with sodium-23, EPR measurements of spin-exchange cross sections for, 22:31594 (COO-1112-159)
triton reactions (t,p) at 1 to 3 MeV, p-γ angular correlations for, (E), 22:26992
x-ray spectra from μ-mesic atoms of, (E), 22:20482
x-ray spectra of π-mesic atoms of, (E), 22:26924

SODIUM ISOTOPES Na-24
abundance in atmosphere, 22:36756 (BNWL-SA-1741)
activation analysis in blood, revised 1946 LASL criticality excursion dose-measurements from, 22:27465 (LA-3861)
activity in rats following neutron exposure for use in dosimetry, 22:45523
activity of cosmic ray-produced, in rainwater, use as tracer in atmospheric precipitation, 22:18961 (BNWL-481-1, pp 85-7)
beta and gamma decay energies from sodium-23 neutron capture, total, (E), 22:45093 (COO-1618-9)
beta decay of, using large-volume coaxial lithium-drifted germanium detector, gamma spectrum from, 22:19138
beta energy yield from, use of Geiger--Mueller detectors for determining, 22:6592
content of drinking water in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
content of feces and urine of man following activation by neutrons, use of, for dosimetry, 22:23504 (HW-76823)
content of silver film badge shield and personal effects of man following activation by neutrons, 22:23504 (HW-76823)
decay rate of carrier-containing, 4π β-γ coincidence techniques for determining, 22:45137
deficiency in hearts isolated from frogs, effects of, on activity, 22:15068
detection of ions of, in Ehrlich ascites tumor cells, 22:40544
determination in air, blood, urine, and water, gamma spectrometric, 22:21029 (SC-M-67-3044)
determination in reactor coolant water, 22:12258
determination in Saint Severin meteorite, (E), 22:7080
determination in swimming pool reactor water, method for, 22:35760
determination of, radiometric, 22:44973 (JINR-P7-3855)
distribution in blood of man, effects of injection site on, 22:2482
effects on erosion, redeposition of sedimentary materials, and weathering, geochemical, 22:35936
effects on hematopoiesis in bone marrow of dogs and rats following injection, 22:52009
electromigration in molten lithium, potassium, and sodium nitrates, isotope effects in, 22:27710
energy level at 560 keV from sodium-23 (d,p) reactions, lifetime measurement using delayed coincidence method, (E), 22:29976
energy levels from sodium-23 (d,p) reactions, lifetimes of, (E), 22:13977
energy levels from sodium-23 thermal neutron capture, spin-parity assignments and multipole mixing ratios for, (E), 22:39613
excretion in urine by man, methods for calculation of safe limits of, 22:6811
half-life of, accurate measurement of, (E), 22:29990
loading into Maloney spheres, technique for, 22:23215 (AERE-M-1167)
measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
nuclear level density of, as a function of isospin, (T), 22:20702
permeability from blood into tissues of cats, effects of antihistaminic preparations and triiotrast on, 22:49258
preparation of carrier-free, by irradiation of magnesium oxide target, 22:27803
production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
production by alpha reactions (α,^{7}Be) with aluminum-27, 22:37776 (BNL-50082, pp 79-92)
production by irradiation of magnesium at Sorin Nuclear Research Center, 22:8315
production by neutron irradiation of element, minimizing cost function for, 22:30609
production by proton reactions with silicon at 0 to 60 MeV, excitation functions for, (E), 22:9803 (ORNL-TM-2060)
production in argon near targets bombarded by protons at 3 GeV, 22:22511
production in atmosphere by cosmic rays, (E), 22:11290
production in Australia, 22:42761
production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
production in IAN-R1 Reactor, 22:40321 (IAN-Q-6)
production in man by neutron exposure, 22:23504 (HW-76823)
production in proton reactions with copper, gold-197, silver, and uranium at 1, 2, and 3 GeV, (E), 22:42033
production in proton reactions with gold-197, lead, silver, tantalum, and uranium at high energy, cross sections for, (E), 22:42032
production in proton reactions with lead-208, uranium-233, uranium-235, and uranium-238 at 12 GeV, cross sections for, (E), 22:9875
production in proton reactions with Z = 12 to 92 nuclei at 400 MeV, cross sections for, (E), 22:9816
production in tissue equivalent phantoms by neutron and proton exposure, 22:25961(R) (BNWL-531-2)
production in uranium-238 ternary fission at low energy, (E), 22:7736
production of isomeric, by aluminum-27 (n,α) and magnesium-24 (n,p) reactions, (E), 22:32517
radiation dose to tissues of man and mice following activation of, by fast neutrons, β and γ, 22:40819
radioactive dose rate on beach from neutron-induced, calculation of, 22:35938 (AD-663103)
separation from VVR-S reactor cooling water, 22:6132
separation of carrier-free, from magnesium oxide, ion exchange, 22:27803
uptake by Chinook salmon, effects of age and water temperature on, 22:10740 (BNWL-480, pp 153-93)
uptake by marine algae, 22:43311(R) (PRNC-85)
use as tracer for measurement of polymer flow through polymerization equipment, 22:14708
use as tracer for measurement of sea sediment movement, 22:19060
use as tracer for process analyses of aluminum production methods, 22:14711
use as tracer for process analysis of electrolytic nickel refining, 22:14712

  - use as tracer for streamflow measurements, 22:19057
  - use as tracer in detection of water leaks in Banbury mixer, 22:16781
  - use as tracer in water pollution control, 22:30777
  - use as tracer to measure Eggborough Power Plant cooling water flow, 22:47279 (AERE-R-5390)
  - use for measurement of exchangeable sodium in man, 22:51438
  - use for measuring exit time of rabbit in pneumatic system, 22:24788 (IA-1128, pp 55-77)
  - use in determining shunts in blood vessels of dog muscles, 22:6718 (UCRL-17771)
  - use in measurement of exchangeable sodium in the body, 22:14462
  - use in radiopharmaceuticals, determination of half-life and radiation-emission for, 22:23586
  - yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

- SODIUM ISOTOPES Na-25
  - energy levels from magnesium-26 (t,α) and sodium-23 (t,p) reactions, (E), 22:26992
  - energy levels from magnesium-26 (t,α) reactions, branching ratios and spins for, (E), 22:20578 (WASH-1079)
- SODIUM ISOTOPES Na-27
  - production by proton reactions with iridium, molybdenum-100, tantalum, and uranium at 10.5 GeV, (E), 22:24864
- SODIUM MAGNESIUM ALUMINUM OXALATES
  - spectra of chromium oxalate ions in crystals of, ESR, 22:37712(R) (COO-773-15)
- SODIUM MAGNESIUM OXALATES
  - complexes with chromium, relaxation processes in, spectral studies on, 22:37712(R) (COO-773-15)
- Sodium Metaborates
  - see Sodium Borates
- SODIUM METHOXIDE
  - methanol--sodium methoxide, tritium exchange between polyfluorobenzenes and, kinetics of, 22:21068
- SODIUM METHYL SELENATES
  - hydrolysis in dioxane--water--acid mixtures, solvent isotope effects on, 22:14508
- SODIUM MOLYBDATES
  - use in spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
- SODIUM NIOBATES
  - phase transitions at 25 to 650°C, heats of, 22:49819
  - preparation of, 22:2682
  - $AgNbO_3$--$NaNbO_3$, preparation of, 22:2682
- SODIUM NITRATES
  - analysis for trace fluorides, effects of metal ions on potentiometric, 22:33244
  - crystallization of aqueous solutions of, behavior of americium and plutonium in directed, 22:2038
  - effects on separation of strontium-90 and yttrium-90 using alkylarylsulfonic acid foams, 22:45166
  - effects on strontium-90 uptake from soil by wheat, 22:51359
  - electromigration of sodium-22 and -24 in molten, isotope effects in, 22:27710
  - exchange equilibria of alkali metal, silver, and thallium ions between sodium zeolite A and molten, 22:42832
  - exchange reactions of calcium, cesium, and strontium ions between sodium form of zeolite and, 22:23003 (IA-1128, pp 97-146)
  - fissure closing in crystals of, effects of temperature on liquid inclusions formed in, 22:6245(T) (WAPD-Trans-78)
  - radiation effects on radical formation in, at 77°K and room temperature, ESR of γ, (E), 22:17724 (JAERI-Memo-2054)
  - radiolysis of crystals of, effects of semiconductor impurities on, 22:33398
  - radiolysis of, effects of metal oxide semiconductor impurities on rate of, 22:30632
  - radiolysis of, yields in electron, 22:16589
  - reactions with zirconium alloy surfaces, corrosion protection by, 22:19486
  - separation of cerium from, by solvent extraction using D2EHPA, complex formation and oxidation in, 22:47202 (BNWL-SA-1447)
  - separation of strontium from, by solvent extraction using bis(2-ethylhexyl) phosphate, synergistic effects of aliphatic diluents and TBP on, 22:35899
  - solvent properties for water, voltammetric studies on, 22:23003 (IA-1128, pp 97-146)
  - spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  - use as thermite additive for underground melting of radioactive wastes, 22:2331(T) (JPRS-42565, pp 56-66)
  - glucose--$NaNO_3$, radiolysis of deaerated aqueous solutions of, at high pressures, kinetics of γ, 22:12359
  - KNO_3--$LiNO_3$--$NaNO_3$, effects on anodic oxidation of tantalum above 300°C, 22:23003 (IA-1128, pp 97-146)
  - KNO_3--$NaNO_3$, preparation of colloidal silver in, 22:25374 (ORNL-4229, pp 22-49)
  - KNO_3--$NaNO_3$, voltammetry in molten, 22:10139(R) (ORO-3518-4)
  - $NaCl$--$NaNO_3$, molal volume and refractive index of aqueous solutions of, 22:23003 (IA-1128, pp 97-146)
  - $NaNO_3$--$Na_2S_2O_4$, radioprotective effects of, on mice and rats, 22:25863
  - $NaNO_3$--$TlNO_3$, electric conductivity of, at 180 to 340°C, 22:27619 (CEA-N-816, pp 90-101)
  - $NaNO_3$--tributyl phosphate--$UO_2(NO_3)_2$, flow in stacked-clone contactors, 22:16645 (ORNL-4075, pp 4-21)
- SODIUM NITRITES
  - crystal structure of, research using neutron critical scattering, 22:46729(R) (AECL-3157)
  - effects on oxidative phosphorylation in liver mitochondria of rats, 22:25893
  - rotation of nitrite groups in, neutron diffraction study of, (E), 22:50223(R) (PRNC-115)
- Sodium Nitroprusside
  - see Sodium Pentacyanonitrosylferrate
- SODIUM OXALATES
  - determination by redox method using neutron-activated silver, 22:40021
  - radiolysis of aqueous solutions of, kinetics of 2-MeV electron, 22:30586 (EUR-3914(Pt.2))
  - use in standardization of ceric sulfate solutions, 22:8055
- SODIUM OXIDES
  - aerosols of, characterization of, 22:27396(R) (AI-AEC-12638)
  - aerosols of, development of high capacity--high efficiency filters for, 22:6514 (NYO-841-10)
  - analysis for hydrogen, gravimetric, 22:27530 (CEA-N-816, pp 9-65)
  - diffuse transition and melting in, 22:23013
  - effects on performance of oxygen meters and Rhometers, analysis of, (E), 22:35423(R) (APDA-224)
  - electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  - monitoring in sodium loops, rhometer for, 22:12953
  - oxygen determination in, design of plugging indicator for, 22:30900
  - precipitation in cold traps, methods of even surface distribution, 22:12973
  - precipitation in loop orifices, kinetics of, 22:43629(R) (LA-3933)
  - production of ionized (NaO^+), in merged Na and O_2^+ beams, (E), 22:45950
  - reactions with americium oxides, solid-state, 22:30548
  - Al_2O_3--B_2O_3--Na_2O--P_2O_5, composition and properties of, for vitrification of fission product solutions, 22:27849 (CEA-N-816, pp 415-80)
  - Al_2O_3--B_2O_3--Na_2O--P_2O_5, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
  - Al_2O_3--B_2O_3--Na_2O--SiO_2, composition and properties of glasses of, for vitrification of fission product solutions, 22:27849 (CEA-N-816, pp 415-80)
  - Al_2O_3--B_2O_3--Na_2O--SiO_2, composition of glasses of, at 1000°C, 22:25456 (CEA-N-616, pp 369-434)
  - Al_2O_3--GeO_2--Na_2O, radioinduced color centers in glasses of, gamma, 22:52875
  - B_2O_3--Na_2O--Nb_2O_5, phase studies of glasses of, 22:21773
  - BaO--Na_2O--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - BeO--Na_2O, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
  - CaO--Na_2O--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - FeO--Na_2O--SiO_2, electric properties of fused, 22:45799 (UCRL-18043, pp 155-82)
  - GeO_2--Na_2O, radioinduced defects in glasses of, ESR study of paramagnetic states of electron, gamma, and neutron, 22:44213 (ORNL-TM-2264)
  - Na_2O--Nb_2O_5, compound formation in, 22:2682
  - Na_2O--Nb_2O_5, phase studies at 1200°C, 22:19651
  - Na_2O--Nb_2O_5--SiO_2, radiation effects on glasses of, ESR studies of γ, 22:30636
  - Na_2O--Nb_2O_5--SiO_2, radioinduced niobium centers in, ESR study of, 22:31965
  - Na_2O--SrO--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - Na_2O--TiO_2, radiation effects on glasses of, ESR studies of γ, 22:30636
  - Na_2O--U_2O_5, compound formation and structure in, 22:12316
  - Na_2O--U_2O_5, magnetic properties of, 22:12318
- SODIUM PENTACYANONITROSYLFERRATE
  - oxygen-18 exchange between enriched water and, rate of, 22:40056
- SODIUM PERCHLORATES
  - effects on active transport of iodine-131 in respiratory tract of guinea pigs and rats, 22:431
  - effects on hydrolysis of tellurium, solvent extraction studies on, 22:6390
  - radiation effects on electron stabilization in neutral, vitreous, aqueous solutions of, at -196°C, EPR studies on γ, 22:23060
  - radiation effects on heavy and light water solutions of, spectral studies on γ, 22:23060
  - radiation effects on, effects of copper, magnesium, and zinc ions on neutron, 22:16613
  - radiolysis of concentrated aqueous solutions of, yields in γ, 22:33451
  - radiolysis of frozen aqueous solutions of, containing impurities, EPR spectral studies on γ, 22:16578
  - radiolysis of frozen solutions of, effects of acidity on yields of radicals in γ, 22:16582
  - solvent properties for thorium and uranium pyrophosphates at 25°C, 22:27691

  solvent properties for thorium citrate, 22:10229
  spectra of, effects of heavy water as solvent on far-infrared, 22:16520
  yields in gamma-radioinduced decomposition of crystalline sodium chlorate, 22:10278
  $NaClO_4$--TBP, solvent properties for rare earths, 22:6392
SODIUM PEROXIDES
  Na_2O_2--NaOH, fusion with plutonium dioxide at 600ºC, 22:40041
  NaOH--Na_2O_2, use in removal of coatings from nuclear fuel particles in one step, 22:12500(P)
SODIUM PEROXYDISULFATES
  radiolysis of alkaline solutions of, mechanisms in, 22:40134
SODIUM PERTECHNETATES
  evaluation of technetium-99-labeled, for brain scanning, 22:25714 (COO-78-163, pp 126-36)
SODIUM PERXENATES
  reactions with trivalent actinides in cesium fluoride solutions, 22:10242
SODIUM PHENYL SULFATES
  hydrolysis in dioxane--water--acid mixtures, solvent isotope effects on, 22:14508
SODIUM PHOSPHATES
  see also Sodium Acid Phosphates
  determination in water flowing through pipes by neutron activation methods, 22:4022
  effects on fumarase-catalyzed dehydration of malic acid, 22:14509
  effects on leachability of radium from uranium ores, 22:25478
  effects on mitosis in γ-irradiated rat cells, 22:8604
  polymers, radiation effects on polymerization of glasses of, ESR studies on gamma, 22:4180
  radiation effects on electron stabilization in neutral, vitreous, aqueous solutions of, at -196ºC, EPR studies on γ, 22:23060
  radiation effects on ESR spectra of crystalline, relation of oxygen vacancies to gamma, (E), 22:20046
  radiation effects on thermoluminescence of, x, 22:30635
  treatment of seafood before radiation processing, effects of, on organoleptic properties, 22:26017(R) (TID-23835)
  treatment of thrombocytes in man following accidental overdose of phosphorus-32, 22:12866
  use in determination of uranium, 22:30488
Sodium Polyphosphates
  see Sodium Phosphates
Sodium Potassium Tartrates
  see Potassium Sodium Tartrates
SODIUM PRASEODYMIUM FLUORIDES
  crystal structure of, 22:31997
  preparation of, 22:31997
  spectra of, 22:31997
SODIUM PYROPHOSPHATES
  performance as grinding aid for size reduction of chromium--nickel alloy powders, 22:38521 (AWRE-O-39/68)
  radiation effects on yields in neutron irradiated, in presence of copper, magnesium, and zinc ions, γ, 22:16613
  radiation effects on, effects of copper, magnesium, and zinc ions on neutron, 22:16613
SODIUM REACTOR EXPERIMENT
  boiler design and operation for, 22:10437 (NAA-SR-12534)
  components and systems for, applicability to sodium-cooled fast breeders of, 22:16185
  coolant sodium for, carbon removal from, 22:7809 (NAA-SR-12410)
  cooling system for, performance of equipment in liquid sodium, 22:18504
  fuel elements for Core-3 of, safety calculations for storage of, 22:12032 (NAA-SR-Memo-12472)
  operation history of, analysis of, 22:53259 (AI-AEC-12572)
  operation of, carbon removal and reliability testing during, 22:30155(R) (NAA-SR-12296)
  operations experience at, applicability to sodium-cooled fast breeders of, 22:16185
  operations history of, total, 22:1821
  physics measurements and parameters of, description of, 22:53259 (AI-AEC-12572)
  retirement of, summary of efforts toward, 22:27396(R) (AI-AEC-12638)
  retirement program of, schedule for, 22:53259 (AI-AEC-12572)
SODIUM RHODIUM OXALATES
  oxygen-18 exchange between water and, exchange of outer and inner oxygens in, 22:37731
SODIUM RUTHENATES
  radiolysis of, mechanism for γ, 22:27830
SODIUM SALICYLATES
  radiation effects on aqueous solutions of, excitation processes in x, 22:48878(R) (NYO-3242-29)
SODIUM SELENITES
  metabolism of selenium-75-labeled, by rats, 22:33723
  paraelectric phase in trihydrogen, neutron diffraction study of, (E), 22:50223(R) (PRNC-115)
SODIUM SELENOCYANATES
  reactions with thorium chloride, effects of solvent on complexes formed by, 22:8073
SODIUM SILICATES
  see also Sodium Aluminum Silicates
  analysis for trace fluorides, effects of metal ions on potentiometric, 22:33244
  electric conductivity of molten glasses of, at 1000 to 1100ºC, 22:35741 (UCRL-18200)
  gadolinium EPR in glasses of, 22:15564 (IS-T-213)
  ionic transport in glass of, (E/T), 22:15606
  radiation effects on glasses of, electron absorption spectra of γ, 22:33393
  radiation effects on physicochemical properties of glasses of, γ and neutron, 22:12348
  solvent properties for nickel at 0 to 1000 psi hot press, 22:45799 (UCRL-18043, pp 155-82)
  thermoluminescence, EPR, and electron absorption spectra of gamma-irradiated glass of, 22:15578
  Fe--$Na_2Si_2O_5$, diffusion in glass of, at 900 to 1100ºC, 22:45799 (UCRL-18043, pp 155-82)
  FeO--$Na_2Si_2O_5$, electric conductivity of molten glasses of, at 1000 to 1100ºC, 22:35741 (UCRL-18200)
  FeO--$Na_2Si_2O_5$, electrode polarization in molten glasses of, 22:35741 (UCRL-18200)
Sodium Space
  see Extracellular Space
SODIUM SULFATES
  see also Sodium Acid Sulfates
  see also Sodium Thiosulfates
  analysis for niobium, titanium, vanadium, and zirconium by x-ray fluorescence spectrometry, 22:33280
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  distribution of sulfur-35-labeled, in liver cells of rats, 22:12807
  effects on barium-140 retention by rats, 22:10729
  effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
  radiation effects on, ESR spectra from x, 22:115
  $CdSO_4$--Na_2SO_4, analysis for cadmium, polarographic, 22:9(R) (NBS-TN-425)
  Na_2SO_4--U_3O_8, phase studies, 22:27687
SODIUM SULFIDES
  effects on ruthenium volatility in fixation of radioactive wastes in glass, 22:23094(R) (IAEA-3431-4)
SODIUM SULFITES
  complexes with uranyl oxalates, preparation and properties of, 22:10256
  effects on electron- and γ-radiosensitivity of activity of peroxidase in horseradish and turnip, 22:30973
  radiation effects on aqueous and solid, oxidation states of phosphorus-32 produced by neutron, 22:111
SODIUM TARTRATES
  see also Potassium Sodium Tartrates
  effects on solvent extraction of plutonium, uranium, and zirconium using TBP, 22:6409
SODIUM TELLURATES
  tellurium-125m Moessbauer spectra in $Na_2H_4TeO_6$, 22:52895
Sodium Test Facility
  see Heat Transfer Systems
SODIUM TETRABORATES
  see also Borax
SODIUM TETRAPHENYLBORATES
  determination after extraction using nitrobenzene, radiometric, 22:12246
  solvent properties for cesium, 22:16651
  sorption of barium and cesium from aqueous solutions of, effects of barium-137 and cesium-137 on gamma activity in, 22:10318
SODIUM THIOCYANATES
  effects on active transport of iodine-131 in respiratory tract of guinea pigs and rats, 22:431
  radiation effects on aqueous and solid, oxidation states of phosphorus-32 produced by neutron, 22:111
SODIUM THIOSULFATES
  radiation effects on aqueous and solid, oxidation states of phosphorus-32 produced by neutron, 22:111
  radiolysis of aqueous solutions, gamma, 22:25436
SODIUM THORIUM FORMATES
  preparation and properties of, 22:33322
  spectra of, ir, 22:37764
SODIUM THORIUM HYDROXIDE SULFITES
  complexes with urea, preparation and properties of hydrates of, 22:10245
SODIUM THORIUM NITRATES
  structure of crystalline hydrates of, ir spectral studies on, 22:12300
SODIUM THORIUM SULFITES
  complexes with urea, preparation and properties of hydrates of, 22:10245
  stability of hydrated, thermal, ir, and NMR studies of thermal, 22:8074
SODIUM TUNGSTATES
  use for low-energy radiation target, 22:20380
SODIUM TUNGSTEN OXIDES
  see also Sodium Tungstates
SODIUM URANIUM FLUORIDES $NaUF_6$
  paramagnetic resonance spectra of, 22:18769
SODIUM URANIUM SULFATES
  preparation of, 22:18868 (RISO-166)
SODIUM URANIUM SULFITES
  preparation of, 22:18868 (RISO-166)
SODIUM URANYL ACETATES
  fluorescence of, effects of impurities on, 22:42667

  oxygen--uranium bond distance in, estimation of, from infrared spectra, 22:27713
  rotation in cubic crystals of, natural and artificial, 22:18777
SODIUM URANYL PEROXIDES
  structure of nonahydrate of, crystal and molecular, 22:40067
SODIUM XENATES
   see also Sodium Perxenates
SODIUM ZINC SILICATES
  thermoluminescence, EPR, and electron absorption spectra of gamma-irradiated glass of, 22:15578
SOILS
   see also Humic Acids
   see also Silts
  activity of microorganisms in, effects of herbicides on, 22:14913 (ORNL-TM-2042)
  age of layers of, beryllium-10 method for estimation, 22:6458
  aggregates of, effects of γ-irradiated microbial polysaccharides on, 22:40543
  analysis for beryllium, fluorometric, 22:18683 (AAEC/TM-87)
  analysis for bromine by neutron activation methods, 22:49
  analysis for cesium-137, method for, 22:21029 (SC-M-67-3044)
  analysis for elements by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
  analysis for elements by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
  analysis for gross beta activity, method for, 22:21029 (SC-M-67-3044)
  analysis for hydrogen compounds, design of fast-neutron radiometric gage for, 22:38122(P)
  analysis for mercury by sublimation and extraction titration, 22:4057
  analysis for molybdenum by colorimetry using zinc acid sulfides, 22:42621
  analysis for plutonium, method for, 22:1945 (CEA-R-3220)
  analysis for plutonium, thorium, and uranium by alpha spectroscopy, 22:48839
  analysis for potassium by gamma spectra from potassium-41, 22:18697
  analysis for radioactive ruthenium, 22:16420
  analysis for strontium, review of methods for, 22:47071 (CEA-Bib-80)
  analysis for strontium-90 by solvent extraction of yttrium-90 daughter using bis(2-ethylhexyl) phosphate, 22:30425 (AAEC/TM-421)
  analysis for strontium-90 in the presence of yttrium-90, 22:42598
  analysis for strontium-90, method for, 22:45021
  analysis for strontium-90, method for, 22:21029 (SC-M-67-3044)
  analysis for strontium-90, solvent-extraction procedure for improving results in, 22:18685 (AAEC/TM-395)
  analysis for tellurium by atomic absorption spectrophotometry, 22:27550
  analysis for trace elements by neutron activation methods, problems in, 22:16393 (GA-8171, pp 41-8)
  analysis for trace elements, activation, 22:16423
  analysis for uranium after concentration on sodium diethyl dithiocarbamate, 22:4057
  analysis for uranium by paper chromatography, 22:18702
  analysis for uranium, method for, 22:21029 (SC-M-67-3044)
  analysis of ash of, for rare earths, activation, 22:22969
  analysis of neutron-activated, use of, in forensic science, 22:4003
  analysis of solutions of, for metals, activation, 22:1998
  anion movement in Danube River, radioactive tracer method for measurement of, 22:23158
  anion sorption by Danube River, radioactive tracer method for measurement of, 22:23158
  behavior at high temperature, 22:7958 (SC-CR-67-2688)
  behavior of water-saturated, effect of nuclear explosions on, 22:21185 (N-66-21731)
  behavior under neutron irradiation, use of model to study, 22:4270 (CEA-R-3298)
  beta activity of Bulgarian, measurement of natural, 22:40211
  beta activity of, use of, for determining isotope content, 22:45540
  blast wave attenuation, computer program for determination of, 22:6550 (NP-17183)
  calcium-45 distribution in, under stem-inoculated dogwood trees, 22:6772 (ORNL-4168, pp 61-118)
  carbon dynamics in, use of bomb-produced carbon-14 to study, 22:6457
  carbon-14 content in German, measurement of bomb-produced, 22:18929
  cation exchange coefficients for sodium in bentonite, 22:38427(R) (ORO-659)
  cation exchange phenomena in, 22:16698 (SC-RR-67-861)
  cation fixation in vermiculite, measurement of, by radioisotope equilibrium method using cesium-134, 22:38427(R) (ORO-659)
  cesium dispersion, migration, and sorption by, (E/T), 22:8206 (BNWL-CC-208)
  cesium equilibrium distribution coefficients between water and, batch and column studies of, 22:25446 (BNWL-481-3, pp 48-53)
  cesium sorption from, by clay minerals, effects of aluminum and calcium ions on, 22:35923(R) (NYO-2955-15)
  cesium uptake from, by sudan grass, effects of content of ammonium, cesium, and potassium on, 22:33745
  cesium-134 uptake from, by rye grass, effects of magnesium content on, 22:51594
  cesium-137 content in Pelindaba, South Africa, 22:180 (PEL-89)
  cesium-137 content of Danish, 1966, 22:10358 (RISO-155)
  cesium-137 content of, in Greenland, 1966, 22:10359 (RISO-156)
  cesium-137 distribution in, of Japan, 22:40707
  cesium-137 migration from podzolic turf, through food chains to man, 22:25799 (A-AC-82/G/L-1187)
  cesium-137 movement in, effects of root growth and watering on, 22:10739 (BNWL-480, pp 127-51)
  cesium-137 movement in, model of, 22:51208
  cesium-137 transport through sandy clay, effects of high-level waste salts on, 22:21298 (DP-1124)
  cesium-137 uptake by plants from, determination of, by lysimeters, 22:38257 (FOA-4-4357-28)
  cesium-137 uptake from contaminated, by grasses in Florida, 22:28511
  cesium-137 uptake from labeled poplar trees by, 22:6772 (ORNL-4168, pp 61-118)
  characterization of Trombay Island, for radioactive waste disposal, 22:28035 (BARC-297)
  chemical and physical properties of Trombay, for disposal of solid radioactive wastes, 22:16808
  clay movement through, iron-55 tracer method for measurement of, 22:23159
  colloid movement through undisturbed columns of, radioactive tracer method for measurement of, 22:23154
  composition of, effects on accuracy of chromium-51-EDTA and tritium tracer measurements of ground water flow, (E), 22:19074
  composition of, effects on ground water movement, (E), 22:18939
  composition of, effects on water seepage through dams, 22:19072
  contamination of Savannah River Plant, from underground disposal of radioactive wastes, 22:28036 (DP-MS-67-108)
  contamination of water-saturated, effect of nuclear explosions on dynamic, 22:21185 (N-66-21731)
  contamination with radioactive fallout, 22:38301
  content of fission products following nuclear explosion, 22:40669 (UCRL-70894)
  content of major- and trace elements in, in Puerto Rico, 22:43311(R) (PRNC-85)
  content of nutrients in, methods for measurement of, 22:27526
  content of organic matter in, effects of, on cesium-137 uptake by potted plants, 22:43313 (RISO-170)
  content of trace elements in, determination of, by neutron activation analysis, 22:17049
  content of water in samples of, use of γ-scintillation detector system to measure, 22:6796 (COO-1269-15)
  copper, molybdenum, and selenium movement in, effect of fertilizers on, 22:10364
  density and moisture of, gamma and neutron methods for measurement of, 22:48920
  density and moisture of, isotopic methods for measurement of, 22:48922
  density of dry, thermalized neutron flux method for measurement of, 22:23144
  density of Polish, measurement using gamma probes, 22:48925
  density of, effects of restricted scattering angle on performance of gamma-backscattering gage for measuring, 22:36104
  density of, gamma absorption method for measurement of, 22:25513
  density of, gamma and neutron attenuation methods for measurement of, 22:23145
  density of, gamma scintillation system for measuring, 22:23346
  density of, gamma-backscatter scintillation technique for measuring, 22:16923
  density of, limiting factors concerning gamma-radiation equipment for measuring, 22:6668
  density of, radiation logging method for determining, 22:6441
  diffusion of radioactive materials in, 22:2178 (UJV-1899)
  diffusion of radon-222 from, effects of ice and water on, 22:40262
  diffusion of stable and radiophosphorus in, limitations of tracer methods for measuring, 22:49030
  distribution of calcium and strontium between liquid and solid phases of, effects of soil properties on, 22:23396(R) (COO-1495-6)
  distribution of γ-emitting fission products in, effects of trees on, 22:6795(R) (COO-414-6)
  ecology of fungi in, of Iceland, 22:18662(R) (ORO-3556-11)
  effects of types of, on underground chemothermic melting

of radioactive wastes, 22:2331(T) (JPRS-42565, pp 56-66)
effects of types of, on underground storage of concrete-solidified radioactive wastes, 22:2329(T) (JPRS-42565, pp 23-35)
effects of types of, on underground storage of liquid radioactive wastes, 22:2332(T) (JPRS-42565, pp 67-81)
effects on cesium-137 uptake by potted plants, 22:43313 (RISO-170)
effects on strontium-89 uptake by potted plants, 22:43313 (RISO-170)
effects on strontium-90 uptake by agronomic crops, 22:6795(R) (COO-414-6)
elastic properties of, effects on damage to multistory buildings subjected to seismic waves, (T), 22:12459 (NVO-99-30)
erosion of, effects on cesium-137 loss from field plots, 22:2323(R) (ORNL-TM-1887)
fallout contamination of, effects of, on calcium and strontium content of fruits and vegetables, 22:28521
fallout contamination of, in Colorado, 22:21459(R) (COO-1156-28)
fallout content of, in Denmark, 1966, 22:10357 (RISO-154)
fertility in relation to strontium-90 uptake by plants, 22:19291
fission product diffusion in, reaction mechanisms for, 22:38427(R) (ORO-659)
fission product dispersion in, effects of chelating agents on, 22:33778 (UCLA-12-640, pp 43-60)
fission product sorption from, by plants, 22:51301 (FOA-4-4323)
fission products distribution in, use of γ spectrometry to measure low-level, 22:6795(R) (COO-414-6)
fission products movement through complex (non-ideal), diffusion kinetics for, 22:40516 (ORO-657, pp 65-92)
fluid flow in sub-, effects of diffusion and dispersion on, 22:16800
fluid flow through porous, acceleration factors for mathematical solutions to, 22:25496 (BNWL-481-3, pp 15-17)
fusion of, 22:7958 (SC-CR-67-2688)
ground water movement in, evaluation of radioisotopes as tracers of, 22:49038
ground water movement in, method for prediction of, 22:16803
identification by neutron activation methods, 22:48835
iodine-131 retention in marine-deposited clay, effect of iodine content and pH on, 22:2196
ion dispersion in, reaction mechanisms for, 22:27526
ion movement through undisturbed columns of, radioactive tracer method for measurement of, 22:23153
ion movement through undisturbed columns of, radioactive tracer method for measurement of, 22:23154
ion uptake from, by roots of plants, calcium and strontium, 22:23396(R) (COO-1495-6)
iron movement in Spanish, radioactive tracer method for measurement of, 22:23157
irrigation of, factors affecting ability of agriculture to pay water costs for, 22:23205
irrigation of, radiation techniques for studies of, 22:6437 (STI/PUB-133)
lead-212 content and distribution in Maryland tobacco-growing, 22:37877 (UCRL-18140, pp 145-58)
location of, effects of, on mercury content of wheat, 22:31064
manganese movement in Spanish, radioactive tracer method for measurement of, 22:23157
migration and sorption of radioisotopes in, effects of soil types on, 22:2328(T) (JPRS-42565, pp 12-22)
mineral content of clay, effects of, on strontium-90 content of oats, 22:51489
mineral content of, effects of, on strontium-90 uptake by vegetable crops, 22:6795(R) (COO-414-6)
moisture content in, calibration of neutron detection instruments for determining, 22:8404
moisture content in, development of equipment for measurement of, 22:18939
moisture content in, use of neutron scattering method for measurement of, 22:19069
moisture content of, calibration of neutron probe used to measure, 22:6667
moisture content of, calibration of neutron radiometric gage for measuring, 22:23348
moisture content of, comparison of gravimetric, electrical resistance, and neutron scattering methods for measuring, 22:23349
moisture content of, determination of calibration curve for neutron radiometric gage for measuring, 22:23347
moisture content of, effects of, on vernalization of cheatgrass, 22:10739 (BNWL-480, pp 127-51)
moisture content of, gamma absorption method for measurement of, 22:25513
moisture content of, measurement using neutron-radiometric gage, 22:23352
moisture content of, neutron moisture meter for determining, 22:43143
moisture content of, neutron probe measurements of, 22:4270 (CEA-R-3298)
moisture content of, neutron scintillation system for measuring, 22:23346
moisture content of, neutron-scattering method for determining, 22:6666
moisture content of, radiation logging method for determining, 22:6441
moisture content of, radiation techniques for measuring, 22:6437 (STI/PUB-133)
moisture content of, review of methods of measuring, 22:6670
moisture content of, status of radiometric methods for measuring, 22:6670
moisture in, bibliography on gamma and neutron probes for, 22:42862
moisture movement in Savannah River Plant, tracer technique for measuring, 22:21181 (DP-MS-68-23)
moisture movement in, determination using gamma--neutron reactions with deuterium, 22:30693
natural radioactivity of, near Schirmacher Ponds in Antarctica, 22:10365
neutron activation of elements in, effects of, on integral dose to roots, 22:31080
neutron albedo from, dose formula for, 22:4394
neutron fluxes and dose-equivalent rates in, for shielding for 0.5-TeV proton synchrotron, calculation of, 22:46568 (HASL-199)
neutron production rates in, from natural radioactivity, 22:30705
nitrogen balance in, nitrogen-15 tracer study of, 22:6766
organic matter in, effects on differential calcium to strontium adsorption, 22:27901
permeability distribution for heterogeneous porous, energy dissipation analysis of, 22:25499 (BNWL-481-3, pp 28-34)
physical properties of, effects of, on water requirements of crops, 22:23352
pollutant movement through, mathematical analysis of, 22:25500 (BNWL-481-3, pp 34-8)
polonium-210 chloride distribution in Colorado loam and podzol, 22:42977(R) (SC-PR-68-451)
polonium-210 content of, effects of, on plant content, 22:38287
polonium-210 distribution in, equilibrium coefficients for, 22:40659(R) (COO-1733-1)
polonium-210 uptake from, by roots of plants, 22:45422
polonium-210 uptake from, by tobacco plants, 22:6830
porosity of ground-water-bearing, use of radioactive tracers for measurement of, 22:25508
potassium availability and reserve of Missouri, isotopic exchange and calcium exchange studies of, 22:42662
potassium content and distribution in Adams County, Colorado surface, 22:27904
potassium exchange in, effects of edge and layer weathering on, 22:3968(R) (COO-1680-3)
profile in tropical rain forest of Puerto Rico, 22:47496(R) (PRNC-103)
properties of, effects on ground water contamination from accidental ground impact of SNAP devices, 22:12430(R) (SC-CR-67-2708)
properties of, effects on ground water flow of, (E), 22:19070
properties of, effects on underground radioactive waste disposal, 22:16823
properties of, review of chemical and physical, 22:27526
radiation effects on bacterial nutrients in, comparison of autoclaving and γ, 22:26021
radiation effects on biological, chemical, and physical properties of, γ, 22:26006
radiation effects on content of carbon, nitrogen, and phosphorus in, γ, 22:23450
radiation effects on microorganisms of, effects of temperature on γ, 22:45730
radiation effects on nitrite content of, mechanism for γ, 22:10731
radiation effects on species of algae in, α and γ, 22:8658
radiation effects on survival of microorganisms in, relation of, to growth of plants, 22:52038
radiation monitoring in, of Korea during 1961 to 1966, 22:36287
radiation monitoring of, in Federal Republic of Germany during third quarter of 1967, 22:40698
radiation monitoring of, in Federal Republic of Germany during 1967, 22:51598
radioactive contamination of, by fission products from nuclear weapons, 22:8529(T) (JPRS-42929, pp 293-330)
radioactive contamination of, dose to man in Japan from fallout, 22:47527 (JAERI-1156)
radioactive contamination of, methods for removal of,, 22:8530(T) (JPRS-42929, pp 331-58)
radioactive waste diffusion in nonabsorbing granular, (E/T), 22:27914
radioactive waste disposal in sandy, in Canada, 22:16814
radioactive waste disposal in, encapsulation, solidification, and vitrification processing methods for, 22:16813
radioactive waste storage in stainless steel bins in, Idaho Chemical Processing Plant practices for, 22:16815
radioactivity content of, 22:51875 (TID-4060(1st Ed.))
radioactivity content of forest, in New Jersey during 1964 to 1966, 22:23515
radioactivity in Federal Republic of Germany during first

quarter of 1967, 22:38290
radioactivity in Federal Republic of Germany during second quarter of 1967, 22:33820
radioactivity in Nagasaki, analysis of residual, 22:10770
radioactivity in, near Ames Research Reactor, 1962 to 1968, 22:25532 (IS-1776)
radioactivity measurements in, from Eniwetok Atoll during 1952, fallout, 22:495 (UCLA-12-654)
radioactivity monitoring in Juelich Nuclear Research Center, 1966, 22:2193(R) (JUL-485-ST)
radioactivity monitoring of Spanish, 22:2224
radioactivity of Canadian, methods for monitoring, 22:6487
radioactivity of chernozem, from Romania as function of titanium and zirconium oxide contents, 22:30690 (IFA-IS-49)
radioactivity of French, effects of fallout on, 1961 to 1965, 22:25538
radioactivity of India, 22:2222
radioactivity of India, methods and results for monitoring, 22:6488
radioactivity of Indian monazite area, methods for monitoring, 22:6440
radioactivity of middle Volga region, measurement of natural, 22:25520
radioactivity of Moscow, effects of nuclear explosions on, 1963 to 1965, 22:21195 (A-AC-82/G/L-1201)
radioactivity of Niue Island, in south Pacific Ocean, origin of, 22:37878
radioactivity of Pacific Island of Niue, 22:2215
radioactivity of Washington County, Maryland, 22:2221
radioactivity of, measurement of snow-water reserves using natural, 22:16699
radiochemical analysis of samples of, development of standards for, 22:19351
radioinduced fixation of nitrogen in, gamma, 22:42865
radioinduced thermoluminescence of, gamma, 22:44261
radioisotope absorption from, by plants, 22:49190
radioisotope analysis of, at Eniwetok, 22:25800 (UCLA-12-668, pp 37-58)
radioisotope contamination of, in Sweden, cesium-137 and strontium-90, 22:38256 (FOA-4-4354-28)
radioisotope content of BNL area, 1965, 22:40258 (BNL-50093)
radioisotope content of, cerium-144, cesium-137, radium-226, strontium-90, zirconium-95, 22:25800 (UCLA-12-668, pp 37-58)
radioisotope content of, during 1965 to 1966, effects of cultivation on cesium-137 and strontium-90, 22:28454 (NYO-2147-13, pp 168-74)
radioisotope content of, in Germany during 1960 to 1963, cesium-137 and strontium-90, 22:51587
radioisotope distributions in, column chromatographic studies of, 22:10369
radioisotope migration in, distribution and dispersion coefficients for, (E), 22:10372
radioisotope movement in aerated, effect on ground water contamination, 22:16805
radioisotope movement in Hanford, from radioactive waste disposal, 22:19085(R) (BNWL-687)
radioisotope movement in, in relation to content of cactus, 22:40688
radioisotope sorption from South American, by winter rape, effects of anions, cations, and nutrients on cesium-137 and strontium-90, 22:51299 (FOA-4-4319)
radioisotope uptake from, by grasses, fallout, 22:45541
radioisotope uptake from, by plants, chemical and physical factors affecting, 22:423(R) (TID-23955)
radioisotope uptake from, by roots of plants, 22:43233
radionuclides in, measurement of γ-emitting, 22:2212
radiosterilization of columns of, for miscible displacement experiments, gamma, 22:42989
radiosterilization of, effects of, on urease activity in black spruce humus, γ, 22:49674
radiostrontium movement through Mohave sandy loam, effects of chelating agents on, 22:33565
radium-226 content and distribution in Maryland tobacco-growing, 22:37877 (UCRL-18140, pp 145-58)
radon content in, closed circuit technique for determining, 22:6572
radon content of, method for measurement of, 22:23139
radon diffusion through, effect of porosity on, 22:10355 (MIT-952-4, pp 300-38)
radon distribution in, effects of atmospheric variables on, 22:2231
radon-220 transfer from, to atmosphere, 22:45518
radon-222 release by Galician, effects of clay content and profile on, 22:6826
radon-222 release by Galician, effects of, on lead content of native plants and ground, 22:6826
radon-222 release from, measurements in Champaign County, Illinois, 22:171 (PHS-999-RH-26)
rainwater movement in, iodine-131 tracer method for measurement of, (E), 22:23155
reactions with iodomethane and sulfur hexafluoride, 22:6436 (ORNL-4168, pp 1-60)
ruthenium transport through, effects of ground water on, 22:23142
salt movement through, effects of soil composition on, 22:23156
salt movement through, radioactive tracer method for measurement of, 22:23156
selenium distribution in, 22:51325
selenium transport in, 22:51325
separation from potatoes, gamma absorption coefficient for use in, 22:37941
separation of lanthanides and actinides from, following underground nuclear explosions by solvent extraction and ion exchange, 22:45159(P)
separation of strontium from, by sorption with crandallite, 22:37859
SNAP-27 fuel capsule burial in, temperature measurement during, 22:8303 (SC-DR-67-716)
sodium transport through, effects of ground water on, 22:23142
sorption of radioactive wastes by, factors affecting, 22:43233
sorptive properties for cesium-134 and strontium-85, 22:25445 (BNWL-481-3, pp 42-8)
sorptive properties for uranium, effects of state of uranium in solution on, 22:51076
sorptive properties of clay, for cesium-137 and strontium-90, 22:2327(T) (JPRS-42565, pp 1-11)
strontium diffusion in, (E), 22:25501 (BNWL-481-3, pp 39-42)
strontium dispersion, migration, and sorption by, (E/T), 22:8206 (BNWL-CC-208)
strontium equilibrium distribution coefficients between water and, batch and column studies of, 22:25446 (BNWL-481-3, pp 48-53)
strontium movement in, effects of freezing and thawing on, 22:6795(R) (COO-414-6)
strontium removal from, by cultivation and addition of lime, 22:51404
strontium-85 content of solutions of, effects of moisture tension on, 22:25800 (UCLA-12-668, pp 37-58)
strontium-90 accumulation in, effects on strontium-90 content in Chicago, New York City, and San Francisco diets, 22:25529 (HASL-193, pp I.217-22)
strontium-90 contamination of, in relation to content of second generation seeds of cereals and soybeans, 22:12854
strontium-90 content and distribution in Nevada Test Site, 22:18963 (BNWL-481-1, pp 93-101)
strontium-90 content and distribution in, effects of natural conditions on, 22:23128 (A-AC-82/G/L-1175)
strontium-90 content in Australian, 1966 measurements of, 22:23170
strontium-90 content in global, measurements of, 1961 to 1967, 22:27917 (TID-24341)
strontium-90 content in Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
strontium-90 content in New Zealand, 1967, 22:42870(R) (NP-17524)
strontium-90 content in Pelindaba, South Africa, 22:180 (PEL-89)
strontium-90 content in, bibliography on, 22:42863
strontium-90 content of Danish, 1966, 22:10358 (RISO-155)
strontium-90 content of Polish, 1962, 22:4275
strontium-90 content of, effects of management systems and vegetation on, 22:6795(R) (COO-414-6)
strontium-90 content of, in East Germany during 1964 to 1965, 22:12856
strontium-90 content of, in Greenland, 1966, 22:10359 (RISO-156)
strontium-90 content of, in Netherlands during 1958 through 1965, effects of calcium on, 22:15014
strontium-90 content of, in New Zealand during 1966, 22:6800(R) (NP-17015)
strontium-90 content of, in United States during 1960 to 1963, in relation to milk and rainfall, 22:25852
strontium-90 distribution in, effects of soil composition on, 22:23129 (A-AC-82/G/L-1176)
strontium-90 distribution in, review of, 22:36288
strontium-90 distribution, migration, and sorption in, 22:10370
strontium-90 leaching from, effects of composition and properties on, 22:18920
strontium-90 movement in, model of, 22:51208
strontium-90 reactions with clay fractions of, effects of, on cation uptake by plants, 22:6795(R) (COO-414-6)
strontium-90 reactions with organic matter in, 22:6795(R) (COO-414-6)
strontium-90 sorption by, 22:30696
strontium-90 sorption from, by plants, effects of clay content on, 22:8539
strontium-90 transport through sandy clay, effects of high-level waste salts on, 22:21298 (DP-1124)
strontium-90 treatment of, chemical and physical properties following, 22:6795(R) (COO-414-6)
strontium-90 uptake by plants from contaminated, effects of depth of deposit on, 22:43314 (RISO-174)
strontium-90 uptake from, by plants, chemical and physical factors affecting, 22:8543
strontium-90--yttrium-90 complexes with high molecular weight polymers in samples of, 22:6795(R) (COO-414-6)
temperature near leaks in radioactive waste storage tanks, 22:152
temperature of ANL, fifteen-year data compilation on, 22:40256 (ANL-7084, pp 275-497)
temperature of ANL, fifteen-year data compilation on,

22:40255 (ANL-7084, pp 31-274)

- temperature of, effects of, on vernalization of cheatgrass, 22:10739 (BNWL-480, pp 127-51)
- thermal conductivity of, effect on underground storage of solid radioactive wastes, 22:2330(T) (JPRS-42565, pp 36-55)
- thorium content and distribution in Adams County, Colorado surface, 22:27904
- thorium isotopic distribution in, formed from granitic materials in temperate climates, 22:27911
- thoron content of, method for measurement of, 22:23139
- transport of ions and radionuclides through, chromatographic theory of, 22:25843
- tritium content in German, measurement of bomb-produced, 22:18929
- tritium content in Sedan crater, measurement of residual, 22:12465 (UCRL-50360)
- tritium evaporation from loamy sand at various depths, rate of, 22:35921 (DP-MS-67-95)
- uranium content and distribution in Adams County, Colorado surface, 22:27904
- uranium isotopic distribution in, formed from granitic materials in temperate climates, 22:27911
- water content and movement in, neutron meter for measurement of, 22:23131 (CONF-680112-1)
- water content in fallow and planted soils in arid regions, neutron moisture meter for measurement of, 22:23150
- water content in, computer program for calculating effective volume for neutron radiometric measurements of, 22:30874 (RISO-M-637)
- water content in, description of neutron radiometric method for measuring, 22:30879
- water content in, description of radiometric gages for measuring, 22:30878
- water content in, development of neutron radiometric moisture gages for measuring, 22:30877
- water content in, effects of bulk density on calibration of neutron moisture gages used for determining, 22:28195
- water content in, hydrological measurements of, 22:8214
- water content in, performance of radiometric gages for measuring, 22:30880
- water content of Kenya, neutron moisture meter for measurement of, 22:23151
- water content of, effects of, on growth of potato tubers, 22:23353
- water content of, gamma and neutron attenuation methods for measurement of, 22:23145
- water content of, gamma attenuation method for measurement of, 22:23143
- water content of, measurement of, using neutron-radiometric gage, 22:23353
- water content of, radiometric method for measurement of, 22:48938
- water content of, thermalized neutron flux method for measurement of, 22:23144
- water content of, use of americium-241--beryllium neutron source for measurement of, 22:25511
- water content of, use of neutron radiometric gage for measurement of, 22:23351
- water movement in sandy, tritium tracer method for measurement of, 22:23160
- water movement in, mathematical model for studies of, 22:23152
- water movement in, near continuously irrigated surfaces, measurement of, 22:23147
- water movement in, neutron moisture meter for measurement of, 22:23148
- water movement in, neutron moisture meter with air-purged tensiometer for measurement of, 22:23149
- water movement in, radioactive tracer methods for measurement of, 22:23161
- water movement in, tritium tracer method for measurement of, 22:23162
- water movement in, use of tracer techniques to measure, 22:6448
- water movement through undisturbed columns of, mathematical model for studies of, 22:23153
- water purification by filtration in, 22:16700
- zinc-65 fixation in calcareous, effects of, on availability to tomatoes, 22:14933

SOL-GEL PROCESS

- development for plutonium dioxide, thorium dioxide, and uranium dioxide microsphere preparation, 22:12476 (ORNL-TM-1978)
- development for thorium fuel cycle, 22:12276 (ORNL-4094, pp 40-9)
- development of, 22:12275 (ORNL-4094, pp 28-39)
- development of gel-addition process from, for preparing plutonium dioxide--uranium dioxide fuels, 22:19608(R) (BAW-3714-5)
- drying of uranium dioxide microspheres from, steam process for removal of organics, 22:8823 (ORNL-4170, pp 211-26)
- equipment design and flowsheets for, 22:25591
- equipment design and process flowsheets for Solex, engineering drawings for, 22:25585
- equipment design and process flowsheets for Solex, engineering drawings for, 22:25586
- equipment for continuous precipitation-peptization, preparation of uranium dioxide sols by, 22:37839 (ORNL-TM-2227)
- flow sheets for preparation of plutonium dioxide--uranium dioxide and uranium dioxide fuels, 22:738
- flowsheets for production of thorium dioxide--uranium dioxide fuels by, 22:49796
- operation for production of thorium carbide and thorium--uranium dicarbide spheres, 22:49788
- performance in production of plutonium dioxide microspheres, 22:26071 (MLM-1450)
- pilot plant for direct preparation of uranium-233-enriched thorium dioxide--uranium dioxide fuel, 22:23857 (CONF-660524-, pp 417-43)
- preparation of thorium dioxide--uranium dioxide spheres by KEMA variation of, 22:23856 (CONF-660524-, pp 377-90)
- use in industry for oxide production, 22:11031
- uses of, review of, 22:8056

Solar Batteries

- see Solar Cells

SOLAR CELLS

- annealing of neutron-induced damage in p- and n-type silicon, injection and temperature dependence of, (E/T), 22:13577
- collectors of, limitations on, (T), 22:19818
- development for space power, 22:13305
- development for space use, review of, 22:29322
- development of silicon web drift-field, 22:11296
- materials for, evaluation of aluminum antimonide, cadmium--zinc, and lithium doped silicon, 22:15262(R) (N-66-37213)
- radiation damage coefficients for n/p, electron, 22:13574
- radiation damage to silicon, on D1-A satellite from particles trapped in magnetic field, 22:12719
- radiation effects on aluminum- and boron-doped silicon, 2.4-MeV electron and 22-MeV proton, 22:38187 (N-68-19924)
- radiation effects on diffusion length of silicon, role of lithium in 1-MeV electron, (E/T), 22:13292
- radiation effects on power output from, thermal annealing of electron and proton, (E), 22:24419
- radiation effects on power output of silicon, solar proton flares, 22:40510 (N-68-20944)
- radiation effects on silicon, 1-MeV electron, 22:7189
- radiation effects on silicon, effects of lithium doping on recovery from, 22:36157(R) (N-68-17065)
- radiation effects on surfaces of n/p and p/n, 0.4- to 27.5-keV proton, (E), 22:13580
- radiation effects on, electron and proton, 22:19231
- radiation effects on, environmental, 22:41400 (N-68-16191)
- radiation effects on, review of, 22:30926
- radioinduced damage in silicon, thermal annealing of 4.6-MeV proton, 22:12701
- radioinduced recombination centers in silicon, gamma, 22:51294
- shielding against Van Allen belt protons, computer calculations on, 22:39148

SOLAR CORONA

- see also Solar Radio Bursts
- abundance of iron, magnesium, and silicon in, ((T), 22:41203
- acoustic energy absorption in, (T), 22:8985
- brightness distribution in, (E), 22:13141
- brightness distribution of northern and southern, (E), 22:2744
- condensation of prominences in, (T), 22:38705
- conversion into interplanetary plasma, 22:52314
- dielectronic recombination in, effect of radiation fields on, (T), 22:17311
- diffusion of spicules into, 22:11176
- electric current systems in, (T), 22:34146
- electron densities in, (T), 22:26191
- electron densities in, (T), 22:26192
- electron densities in, (T), 22:31559
- electron density in, excitation of emission lines as a measure of, (T), 22:13169
- electron stream excitation of type-V radio bursts in outer, (T), 22:11142
- electron temperature of outer, (E), 22:7087
- elemental abundances in, determination from ultraviolet spectrum, (T), 22:849
- elemental abundances in, relative to photosphere, iron and silicon, (E/T), 22:34229
- emission lines of Fe XIII in, (E), 22:842
- energy flow to, flare origin as interruption in, (T), 22:15303
- energy flow to, from photosphere, (T), 22:19706
- expansion of, radial, (T), 22:19687
- heating by Landau damping of ion--acoustic waves, (T), 22:52414
- heating of small areas of, (T), 22:23920
- heating of, relation to motion of magneto-gravity waves, (T), 22:47781
- hydromagnetic wave propagation in, relation of Moreton's wave phenomenon to, (T), 22:34233
- inhomogeneities in, spicules as a cause of small-scale, (T), 22:23921
- ion abundance determinations in, heavy, (T), 22:4932
- ion diffusion in, heavy, (T), 22:34204
- ionization equilibrium in, effect of electron density on,

(T), 22:34157
ionization formula for, effects of doubly excited levels on, (T), 22:897
ionization processes in expanding, (T), 22:47745
iron abundance in, (T), 22:8940
iron abundance in, (T), 22:8941
iron XVII excitation in, by electron impact, (T), 22:11229
kinetics of, effects on cosmic ray variations from, 22:7184
magnetic field at one solar radius, (E), 22:8951
magnetic field of, small-scale inhomogeneities of, (T), 22:34221
magnetic-energy origin in solar flares, (T), 22:29167
magnetohydrostatic equations for, (T), 22:31559
model of, (T), 22:26175
morphology of active regions, (T), 22:26189
observations of outer F, (E), 22:2775
oxygen abundance in, (T), 22:8941
oxygen ionization state in, (T), 22:29126
photography of jets in, balloon telescope, 22:43850
physics of, (T), 22:34143 (CNIE-PE-8)
plumes in the polar, connection with surface features, (E), 22:29156
prominence in, formation of a dome around, (E), 22:884
prominences in, nature of quiescent, (T), 22:912
proton propagation in, flare-produced, (E), 22:17214
radiation field at 45 levels in, Hα, (T), 22:21794
radiation field at moving prominences in, Hα, (T), 22:21795
radiation field in, Lyman-α, (T), 22:15311
radio emission from, (E), 22:2744
radio emission from, relation to flares and prominences, (E), 22:28991
radio-burst spectra from, splitting of, (T), 22:7085
radio-burst starting frequencies of, type-III, (T), 22:15304
radio-wave scattering in the outer, (E), 22:17300
Razin effect in, (E), 22:8951
refraction of flare-produced hydromagnetic waves, (T), 22:34209
shock wave propagation in, (T), 22:7086
spectra at 3 to 21 cm during total eclipse, (T), 22:45860
spectra during eclipse of Nov. 12, 1966, (E), 22:843
spectra for 1966, (T), 22:26157
spectra of, continuous and absorption-line, (T), 22:26192
spectra of, during eclipse, photoelectric measurements of green line, 22:41284
spectra of, effects of temperature variations in formation of line profiles in, (T), 22:29157
spectra of, Fe XV, (E), 22:29072
spectra of, microwave absorption lines from dielectronic recombination of highly ionized atoms, (T), 22:31553
spectra of, population of high atomic levels in, (T), 22:36684
spectra of, review of identifications of visible lines in, 22:52318
spectral emission line at 4412 A in, laboratory observation of, (E), 22:49946
spectral lines from, isophote chart of 5303- and 6374-A, 22:15274
spectrum of, intensity of O VIII in, (T), 22:7101
spectrum of, ultraviolet emission, (E), 22:8877
spicule origin in transition region between chromosphere and, (T), 22:896
streamers in, magnetic field structure associated with, 22:52320
streamers of, photometric study during 1962 New Guinea eclipse, 22:43674
structure in eclipse of Nov. 12, 1966, (E), 22:13141
structure of, (T), 22:26191
structure of, concentric ellipse multiple-arch system in, (E/T), 22:52319
structure of, model for, (T), 22:2746
structures in, properties of helmeted, (T), 22:29098
study of, use of pulsars in, (T), 22:52351
temperature distribution in, (T), 22:26191
temperature measurements during eclipse of Nov. 12, 1966, (E), 22:843
temperature of inner, effect of sunspot cycle on, (E), 22:17231
temperature of, (T), 22:29012
temperature of, effects of dielectronic recombination on mean, (T), 22:29081
temperature of, new ionization and recombination rates for determining, (T), 22:41218
temperature structure of transition region between chromosphere and, effect of magnetic fields on conductive heat flow in, (E/T), 22:41283
temperatures in northern and southern, (E), 22:2744
temperatures in, (T), 22:31559
transition region between chromosphere and, electron density and temperature in, (T), 22:19715
transition zone between chromosphere and, (T), 22:4932
ultraviolet (XUV) and radio-wave emission above active regions, (E), 22:11182
wave propagation in magnetized, stable and unstable modes of, (T), 22:2736
x-ray burst from, hard, (E), 22:11180
x-ray emission at the limb on June 8, 1968, (E), 22:41271
x-ray emission from lower, (T), 22:38681
x-ray emission from, (E), 22:2744
x-ray emission from, (E), 22:26139
x-ray emission from, (E), 22:26138
x-ray emission from, (T), 22:15291
x-ray spectrum below 20A, spatial variability of, (E), 22:52338
SOLAR DISTURBANCES
see also Forbush Decreases
see also Solar Flares
see also Sunspots
bibliography on, (T), 22:34140 (AD-665375)
book: Solar Activity, 22:45858
catalog of, July 7-9, 1966, 22:24141
cosmic meson and nucleon variation correlations with, review of, 22:41387
cosmic ray variation correlations with, review of, 22:41387
dosimetry on February 5, 1966, 22:2501 (AD-635204)
east-limb passage of HAO-59Q on July 7, 1959, (E), 22:11136
effects of 27-day cycle on temperature field of troposphere, (E), 22:11316
effects of chromospheric, on cosmic-ray neutron intensity, (E), 22:17429
effects on air density at 150 km, (E), 22:17489
effects on airglow, (E), 22:15435
effects on annual intensity variations of cosmic radiation, (T), 22:21961
effects on cosmic radiation dose to man during space flight, 22:6829
effects on cosmic-ray 27-day intensity variations, (E), 22:11242
effects on cosmic-ray intensity in stratosphere, (E/T), 22:11247
effects on cosmic-ray intensity variations, (E), 22:11270
effects on cosmic-ray intensity variations, (E/T), 22:11252
effects on cosmic-ray intensity variations, (E/T), 22:11260
effects on critical frequencies of undisturbed F2 layer, (T), 22:24120
effects on E2 and F0 ionospheric layers, (T), 22:11312
effects on electron densities in lower ionosphere, 22:24191
effects on geomagnetic field variations (S/sub q/), (E), 22:26312
effects on geomagnetic field, (E), 22:24149
effects on geomagnetic Pi 2 pulsations, (E), 22:13354
effects on geomagnetic storms, (T), 22:26158
effects on ionosphere electron concentration and temperature at 1000 km, (E), 22:17465
effects on ionospheric electron temperature and density at 1000 km, (E), 22:36804 (N-68-10509)
effects on Mars in 1956, (T), 22:13081
effects on neutral upper atmosphere, (T), 22:17462
effects on primary cosmic radiation intensity, (E), 22:11280
effects on sporadic E at middle latitudes, (T), 22:17495
effects on temperature changes in stratosphere, (T), 22:15444
effects on terrestrial atmosphere, (T), 22:43725
effects on winter anomaly in E layer, (T), 22:17496
electron density in bright prominence of Sept. 18, 1960, (T), 22:8992
electron density in, (T), 22:13134
filament feet, distances of, (E), 22:17268
increase in 1966, (E), 22:17322
indices of, (T), 22:26183
morphology of active regions, (T), 22:26189
particle generation during, (E), 22:21807
production of activity centers at different longitudes, 22:8945
properties of M-region, (T), 22:11336
radio emission at 408 MHz, (E), 22:4935
radio emission during May 23--26, 1967, vlf, (E), 22:52666
radio emission from active regions, model for thermal gyromagnetic, (T), 22:29151
relation of UM regions to geomagnetic disturbances, (E), 22:23928
spectra of bright prominence of Sept. 18, 1960, (E), 22:8992
spectra of faculae, (T), 22:13134
spectrophotometry of three bright prominences, (E), 22:8993
spicules as a cause of small-scale inhomogeneities in solar wind and corona, (T), 22:23921
x-ray emission from plages, (E), 22:13172
x-ray emission from, (T), 22:15291
x-ray emission spectra of active regions, (E), 22:26139
SOLAR FLARES
anisotropic stage of particle bursts from Feb. 23, 1956, (T), 22:38709
area of, foreshortening effect on, (T), 22:21803
biological effects of, 22:21634
brightness curves of, (E), 22:52439
characteristics of charged particle events during minimum and maximum, (E), 22:2876

charged-particle accelerations in, effects of electric fields on, (T), 22:17293
charged-particle diffusion from, (T), 22:38708
chemical measurements of, in colloidal solutions, (T), 22:8935
cosmic emission during, in relation to hazards to astronauts during space flight, 22:12925
cosmic-ray intensity variations in Antarctica during, 22:1022
development of proton, long-term forecasting of, 22:34232
development of, charged particle acceleration in, 22:31540
distribution of, solar longitudinal, (T), 22:13171
effects of chromospheric Hα, on geomagnetic activity, 22:48027
effects of magnetic bottles from, on Forbush depressions, (E), 22:26155
effects of proton, on power output of silicon solar cells, 22:40510 (N-68-20944)
effects of x rays from, on middle ionosphere, (E), 22:34467
effects on aurora of July 8, 1958, (E), 22:11322
effects on auroral processes, (T), 22:19887
effects on cosmic-ray anisotropy, (E), 22:36693
effects on cosmic-ray intensity at the Earth on Jan. 28, 1967, (E), 22:36694
effects on cosmic-ray intensity in stratosphere, (E), 22:21806
effects on cosmic-ray intensity, (E), 22:31541
effects on daily variation of geomagnetic field, (E/T), 22:47992
effects on electron intensity in inner radiation belt, (E), 22:47985
effects on electron production in D region, (T), 22:19894
effects on equilibrium in D region, (T), 22:11323
effects on geomagnetic activity of Aug. 28, 1966, (E), 22:47954
effects on geomagnetic field variations, (E/T), 22:26320
effects on ionization at base of D region, (T), 22:19895
effects on ionization state of D region, (E), 22:24150
effects on ionizing component of cosmic radiation, (E), 22:11281
effects on ionosphere, 22:5239
effects on ionosphere of Aug. 28, 1966, euv and x-ray enhancement from, (E), 22:52324
effects on ionosphere of Dec. 29, 1965, (E), 22:21787
effects on ionosphere, (T), 22:11336
effects on ionospheric E2 layer, 22:50088
effects on lowest layers of Earth's atmosphere, 22:36828
effects on main isobaric surfaces in northern hemisphere, (E), 22:36812
effects on plasmasphere during July 7 and 9, 1966, (E), 22:38876 (N-68-11247)
effects on radio-star scintillation data and riometer ionospheric absorption, (T), 22:31532 (D-1-82-0702)
effects on radio-wave propagation in ionosphere, (E), 22:31541
effects on utility system electric equipment, (T), 22:34199
effects on vlf communications, (T), 22:34199
effects on vlf propagation in lower ionosphere, (E), 22:19853 (RAE-TR-67201)
electric current systems in, (T), 22:34146
electron densities in July 11, 1966, (E), 22:49877
electron density in, (E), 22:909
electron density in, explanation of observed value for, (T), 22:52325
electron density in, halfwidth method for, (T), 22:910
electron emission from, (T), 22:8974
electron formation in, fast, (T), 22:23919
electron generation by, > 40-keV, (E), 22:49976
electron injection and propagation in July 7 to 9, 1966, low-energy, (E), 22:43792
emission from solar active regions, (T), 22:45871
emissions in relation of Hα to 3.3-mm radio bursts, (T), 22:38645 (AD-668440)
energy accumulation in, (T), 22:15279
energy and charge spectra of Sept. 2, 1966, (E), 22:52408
energy deposition from shock waves of, in solar wind, (E/T), 22:41267
energy storage and release in, (T), 22:29167
energy transport in, (T), 22:788 (N-67-18634)
energy transport in, (T), 22:891
evolutive curves at various intensity levels, (T), 22:13140
generation of plasma flow by, (E/T), 22:17201
geomagnetic crochet production by, (E), 22:21790
geophysical activity of, as function of height of formation in solar atmosphere, (T), 22:38699
hazards to astronauts, review of medical problems arising from, 22:51835
hydromagnetic wave generation in, model for, (T), 22:34209
hydromagnetic wave propagation during, relation of Moreton's wave phenomenon to, (T), 22:34233
identification of three varieties of, (T), 22:43768
increase in 1966, (E), 22:17322
initiation of type-IV radio bursts by, (T), 22:28985
localization of, spatial, (E), 22:52439
magnetic field structure effect on, filamentary interplanetary, 22:2756
magnetic-field annihilation in, neutral-point region in Petschek's model of, (E), 22:29000
magnetic-field effects on, force-free, (T), 22:34228
magnetic-field intensities associated with, in CMP region on Sept. 20, 1963, (E), 22:29159
mechanism for, (T), 22:15279
microwave bursts associated with, origin of, (T), 22:17341
model for disappearing filaments followed by, (T), 22:11175
model for flarelike brightenings that follow disappearing filaments, (T), 22:911
model for great, (T), 22:7107
model for loop prominence formation by, (T), 22:24020
model for loop prominences, (T), 22:844
modulation of solar proton events, lunar-month, (T), 22:19711
modulation of, by planets, (T), 22:29044
neutron production in, detection at the Earth, (T), 22:41265
nuclear charge spectra in Sept. 2, 1966, (E), 22:38654 (N-68-17252)
nuclear reactions in, model for high-energy, (T), 22:19731
nuclei acceleration by, heavy, (E), 22:21805
observation in Japan during Jan. through June 1967, 22:31539
observation of hard x-ray bursts associated with, (E), 22:11179
observational analysis of Nov. 10, 1967, 22:34227
observations of class-3, on July 8, 1968, (E), 22:47741
observations of May 23, 1967 white-light, visual and photographic, (E), 22:49889
observations of Sept. 20, 1966, (E), 22:908
occurrence during solar maximum, (T), 22:43725
occurrence in connection with auroral display of Sept. 13, 1957, (E), 22:9219
occurrence in July and August 1967, (E), 22:34197
occurrence in two activity cycles, time--latitude, (T), 22:13091
occurrence of class-3, Sept. 2, 1966 PCA event associated with, 22:9206
occurrence of proton, prediction from radio burst characteristics, 22:52308 (AD-669347)
occurrence of two, on Dec. 29, 1965, ionospheric effects from, (E), 22:21787
occurrence of, intense auroral zone x-ray event during Sept. 2, 1966, (E), 22:22018
occurrence of, not producing corpuscular radiation incident on Earth, (T), 22:31577
occurrence of, prediction by study of filament structure, (T), 22:787(R) (AD-646849)
occurrence of, probability of, (T), 22:21782 (CONF-661204-(Vol.1), pp 3.1-10)
occurrence of, relation to geomagnetic crochets, (T), 22:17267
origin in temporary interruption of energy flow to corona, (T), 22:15303
particle acceleration in, simulation by laser-produced plasmas, (E), 22:11184
particle composition of Sept. 2, 1966, (E), 22:36561 (N-68-10375)
particle generation during, (E), 22:21807
photography of, techniques using progressive underexposures for fine-structure study in, 22:47785
photometric analysis of, (T), 22:13140
physics of, (T), 22:34143 (CNIE-PE-8)
physics of, energy and mass problem in, (T), 22:26190
plasma transport to Earth from, (E/T), 22:24171
polar cap absorption events following, nonconjugate aspects of, (E), 22:29358
polar cap absorption events following, prediction of, (T), 22:47892 (N-68-23538)
polarization in July 11, 1966, (E), 22:49877
position relative to photospheric magnetic fields, (E), 22:880
production by activity center HAO-59Q, (E), 22:11136
production of geomagnetic field pulsations by, (E), 22:26305
propagation of electrons and protons from, in interplanetary space, (T), 22:889
propagation of electrons from, in interplanetary space, (E), 22:2874
properties of March 2, 1966 post-limb, (E), 22:13170
properties of, (E), 22:17245
proton acceleration in, (T), 22:23917
proton emission during March 24, 1966, (E), 22:878
proton emission from July 7, 1966, (E), 22:52345
proton flux and energy spectra from, isotope formation cross sections for estimating, (E), 22:31535
proton flux from, (E), 22:17214
proton injection and propagation in July 7 to 9, 1966, low-energy, (E), 22:43792
proton, effects associated with sector boundary crossing from July 7, 1966, (E), 22:43765
proton, photometric measurement of, (E), 22:41285
protons from, detection of, 22:34357(R) (AD-663234)
radiation dose during space flight from, computer program for calculation of, 22:38651 (N-68-16008)

- radiation effects on ionosphere, sudden frequency deviations from, 22:2936
- radio burst emission from Sept. 14, 1966, (E), 22:52421
- radio bursts associated with, homology of, (T), 22:11181
- radio bursts during August 28, 1966, positions and spectra decametric, 22:47787
- radio bursts from May 23, 1967, (E), 22:34138 (AD-663445)
- radio bursts of proton-producing and nonproton, flux density measurements of, 22:2955
- radio emission accompanying, observations at 2 decimeters, (E), 22:28990
- radio emission from, model for, (E), 22:38711
- radio emission from, on Sept. 2, 1966, (E), 22:34219
- radio-burst spectrum of May 23, 1967, (E), 22:41231
- radioemission from type-III, (E), 22:23914
- relation of, to cosmic-ray anisotropies, (E), 22:47841 (N-68-24668)
- relation to a high-energy particle event, (E), 22:15308
- relation to brightness of Jupiter's great red spot, (T), 22:41165
- relation to geomagnetic crochets, (E), 22:22063
- relation to geomagnetic crochets, (E), 22:22068
- relation to ionospheric sudden frequency deviations, (T), 22:52623 (ITSA-43)
- relation to polar cap absorption events, (E), 22:38890 (N-68-18824)
- relation to prominences and coronal radio emission, (E), 22:28991
- relation to proton and alpha-particle entry into solar cap atmosphere, (T), 22:2875
- relation to radio bursts at 536 to 2000 Mc, (E), 22:28982
- review of, 22:8936
- sequence of August 28, 1966, proton, observation of, 22:52310 (AD-672330)
- shielding in space vehicles from, validity of straightahead approximation in studies of, (T), 22:22198
- shock wave propagation in, (T), 22:821
- shock waves from, singular variations near contact discontinuity in theory of, (T), 22:41286
- simulation in laboratory, 22:30868 (UCRL-17751, pp 53-80)
- solar wind generation in, (T), 22:21962
- spectra of Aug. 21, 1959, (E), 22:29046
- spectra of chromospheric, on Aug. 21, 1959, (E), 22:5007
- spectra of highly ionized iron in, (E), 22:13202
- spectra of June 25, 1960, (E), 22:29045
- spectra of sodium brightening on July 28, 1966, (E), 22:893
- spectra of, (T), 22:15287
- spectra of, comparison of chromospheric spectra to, 22:23948
- spectra of, curve of growth of, (E), 22:8990
- spectra of, detection of 3-cm hydrogen line in, (T), 22:23960
- spectra of, effect of plasma on gyrosynchrotron emission, (T), 22:34152
- spectra of, hydrogen and ionized calcium lines in, (E), 22:8989
- spectra of, metallic line emission in, (T), 22:13090
- spectra recorded in Hα of Oct. 4, 1965, (E), 22:892
- spectral characteristics of, from ionospheric electron density variations, (E), 22:21789
- spectral observations of hydrogen and calcium II lines in July 23, 1960 limb, 22:45917
- study of, basic, (T), 22:786(R) (AD-646372)
- synchrotron emission from electrons accelerated by, (T), 22:31551
- x radiation from, method of analyzing polarization of, 22:4999
- x-ray burst associated with, Sept. 18, 1963, (E), 22:11180
- x-ray emission at 10 to 50 keV in, (E), 22:36570 (N-68-23026)
- x-ray emission at 80 to 1000 keV during July 7, 1966, (E), 22:13148
- x-ray emission during June 8, 1968, (E), 22:41271
- x-ray emission during, (E), 22:879
- x-ray emission from, (E), 22:17206
- x-ray emission from, (E), 22:26138
- x-ray emission from, satellite observations of, 22:4991
- x-ray emission in, (E), 22:17245
- x-ray emission in, (T), 22:38681
- x-ray flux from three, on May 23, 1967, (E), 22:29038
- x-ray line emission during, comparison with microwave emission, (E), 22:41195
- x-ray production in, mechanisms for hard, (T), 22:820

Solar Furnaces
- see Furnaces

SOLAR GRANULES

(Small bright features of the photosphere of the sun, covering 50 to 60 percent of the surface)
- book: The Solar Granulation, 22:38676
- morphology, evolution, and dynamics of, (T), 22:38676
- origin of, convective theories of, (T), 22:38676
- spectra of velocity field of, (E), 22:29093
- spectra of, color in, (E), 22:29155
- velocity fields in, (T), 22:43818

SOLAR PARTICLES

(Including protons, neutrons, neutrinos, electrons, etc., of solar origin.)
- attenuation in space, review of, 22:9412
- dose to astronauts, interpretation of rigidity spectra for, 22:487 (AD-634608)
- effects on geomagnetic storms without accompanying radio effects, 22:7111
- flux variations in Antarctica, 22:1022
- hazards at sea level at times of geomagnetic field reversal, 22:13371
- interactions of streams of, with solar wind, (T), 22:43748
- penetration of alpha and proton, in geomagnetic equator, (E/T), 22:47854
- proton flux and energy spectra in solar flares, isotope formation cross sections for estimating, (E), 22:31535
- radio-wave phase perturbations produced by proton, vlf, 22:5237
- spectra of, relation to radiation hazards in space flight, 22:41382 (N-68-22849)
- transport of neutron component of, in Earth atmosphere, 22:31662 (ORNL-TM-2194)

SOLAR POWER
- development at Tunisian CEA 1966-1967, 22:14875(R) (NP-17229)
- economic potentials of, 22:25132 (LA-DC-9519)
- thermal integration with life sypport systems of manned space vehicles, 22:7878
- use in large manned space laboratory, evaluation of, 22:7877

SOLAR PROMINENCES

(A filament-like protuberance from the chromosphere.)
- area of calcium, at the limb, (T), 22:17321
- area of, (T), 22:26183
- coronal dome formation around, of Feb. 15, 1961, 22:884
- data for 1966, (T), 22:26157
- effects on localized enhancements at 1.2 mm, (E), 22:45856
- electric current systems in, (T), 22:34146
- eruption of, 80 MHz photography of, (E), 22:28991
- formation of, (T), 22:38705
- magnetic fields and motions in quiescent, 22:43793
- magnetic fields in quiescent, (E), 22:845
- magnetic fields in quiescent, (E), 22:11189
- magnetic fields in, longitudinal, (E), 22:29129
- magnetic fields of, polarization effects in measurement of, 22:52315
- model for loop-type, (T), 22:24020
- model for, (T), 22:844
- number of calcium, at the limb, (T), 22:17321
- occurrence of dashes in, (T), 22:31576
- photography with Fabry--Perot etalon, (E), 22:52440
- properties of eruptive, on March 25, 1967, (E), 22:877
- properties of, (E), 22:11189
- quiescent, model for, 22:912
- radiation intensity in moving, Hα, (T), 22:21795
- radio emission at 1 mm from, (E), 22:52337
- relation to flares and coronal radio emissions, (E), 22:28991
- relation to flares, (E), 22:52439
- spectra of, radial velocity observations from, (E), 22:15289
- x-ray emission from, (E), 22:26138

SOLAR RADIATION
- see also Solar Wind
- absorption of x, between 140 and 160 km, 22:2962
- book: Radiation and Shielding in Space, 22:9129
- changes in earth's, effect on carbon-14 activity in atmosphere, 22:6490
- effects on bacteria in air of Moscow, 22:33984(T) (JPRS-41315, pp 44-50)
- effects on human eyes, protective effects of filters against, 22:21505
- effects on human skin, review of carcinogenic, 22:45699
- effects on photosynthesis in vascular hydrophytes, 22:19299(R) (NYO-3018-18)
- effects on reduction of nitrates in pure and seawater to ammonia and nitrites, 22:23078
- effects on upper atmosphere, 22:24147
- energy flux of, in forest ecosystem, 22:6772 (ORNL-4168, pp 61-118)
- energy spectra of x, at 200 to 500 km, 22:2919
- flux at the Earth, new value for constant of, (T), 22:28994
- identification of 4.2-cm, during solar eclipse of Nov. 12, 1966, (E), 22:34235
- intensity during Aug. 29, to Sept. 4, 1966, catalog of, 22:31695
- interactions with ionosphere, (T), 22:2877
- measurement of shortwave, in USSR, 22:2729
- measurement of, equipment and methods for, 22:45356 (TID-24190, pp 257-300)
- measurements at ANL, fifteen-year data compilation of, 22:40256 (ANL-7084, pp 275-497)
- measurements of ANL direct and diffuse, fifteen-year data compilation of, 22:40255 (ANL-7084, pp 31-274)
- nuclei production in, radioactive, 22:13188
- observation in Japan during Jan. through June 1967, 22:31539
- photon flux from neutron--proton capture by nuclei, 22:19723
- protection against, methods for, 22:40917

review of, 22:8936
simulation of, beam uniformity at NASA proton synchrocyclotron for, 22:37231 (N-68-16785)
spectrum in relation to origin of life, 22:25787

SOLAR RADIO BURSTS
activity at 10.7 cm, index of, (E), 22:43691
association with hard x-ray burst on Sept. 18, 1963, (E), 22:11180
band splitting in type-II, (T), 22:29043
bandwidth and duration of type-I, wavelength dependence of, (E), 22:8949
book: Annals of the IQSY. Vol. I. Geophysical Measurements: Techniques, Observational Schedules, and Treatment of Data, 22:13378
charged-particle acceleration mechanisms in type-IV, 22:11110
detection of type-III, (E), 22:23914
detection of, radiometer for, (E), 22:38648 (N-68-12859)
distribution of, solar longitudinal, (T), 22:13171
effects on radio-star scintillation data and riometer ionospheric absorption, (T), 22:31532 (D-1-82-0702)
emission from solar flares, (E), 22:879
emission from sunspots, (E), 22:52464
emission of 1-mm, from lower chromosphere, (E), 22:52337
emission of decametric, during solar flare of August 28, 1966, 22:47787
emission of Type-IV, from solar flare of Sept. 14, 1966, (E), 22:52421
excitation of type-V, by electron streams in the outer corona, (T), 22:11142
flux densities of May 23, 1967, peak, (E), 22:34138 (AD-663445)
formation, theory of, 22:4942
frequencies of type-III, starting, (T), 22:15304
frequency splitting of, 22:791
homology of flare-associated, (T), 22:11181
intensity growth rate of 2800-MHz, index of impulsiveness in, 22:52321
mechanisms for Type II and III, plasma, (T), 22:38650 (N-68-14809)
model for early stage of, (E), 22:41232
model for, (E), 22:38711
observations at 2-decimeter wavelengths, (E), 22:28990
observations at 985 kHz by Venus 2 probe, (E), 22:7087
occurrence of type-IV, association with active regions, (T), 22:28985
origin of solar-flare associated microwave, (T), 22:17341
origin of Type-V, (E), 22:45898
polarization of Type-II and Type-III, (T), 22:45896
production by activity center HAO-59Q, (E), 22:11136
production by energetic electrons, (T), 22:15297
properties of, 22:26193
properties of Type-IV, on June 9, 1959, model for, 22:52322
properties of, use in prediction of proton flares, 22:52308 (AD-669347)
relation of millimeter, to flares, (T), 22:38645 (AD-668440)
relation of Type-II, with localized enhancements at 1.2 mm, (E), 22:45856
relation of type-IV, to cosmic-ray diurnal solar variations, (E), 22:11259
relation to gyro-synchrotron emission, (T), 22:34234
relation to ionospheric sudden frequency deviations, (T), 22:52623 (ITSA-43)
relation to polar cap absorption events, (E), 22:38890 (N-68-18824)
relation to prominences and loop prominences, (E), 22:52439
relation to soft x-ray events during flares, (E), 22:41195
relation to solar x-ray bursts and energetic particle emission, (E), 22:19685 (CONF-670953-1)
relation to sudden cosmic noise absorption, (E), 22:7126
relation to x-ray bursts, (E), 22:17245
spectra at 8.5 mm, power, (E), 22:52331
spectra between 536 and 2000 Mc, (E), 22:28982
spectra of May 23, 1967, flux-density, (E), 22:41231
spectra of type-II, Doppler effect as cause of splitting of, (T), 22:7085
spectra of type-IV, (T), 22:34152
spectra of type-IV, effect of coronal plasma on, (T), 22:31551
spectra of, four-frequency classification of, (T), 22:36601
spectral diagrams of type-IV, (E), 22:31589
spectral equations for, (T), 22:36579
spectrum of Mar. 6, 1968, (E), 22:52379
spectrum of Sept. 2, 1966, (E), 22:34219
spectrum of type-IV, (E), 22:8951
theory of, 22:898
time correlation with flare of Aug. 28, 1966, 22:52324
x-ray emission at 10 to 50 keV in, (E), 22:36570 (N-68-23026)

SOLAR SPICULES
(Bright spikes extending into the chromosphere of the sun from the photosphere)
properties of, (T), 22:29134
spectra of, (T), 22:29134

SOLAR SYSTEM
age of, (T), 22:5033
book: Physics of Planets, 22:43673
book: Radar Astronomy, 22:31592
chemical processes in early, as inferred from meteorites, (T), 22:52473
condensation of the planets, (T), 22:13125
cosmic-ray modulation by, (T), 22:5175
cosmic-ray modulation by, galactic, (E/T), 22:5154
cosmic-ray modulation in, (T), 22:31669
cosmic-ray modulation in, (T), 22:5168
cosmic-ray modulation in, (T), 22:5169
cosmic-ray modulation in, primary, (E), 22:47847
cosmic-ray modulation in, radial gradient for primary, (E), 22:29315
cosmogony of, (T), 22:17329
element abundance in early, plutonium-244 and iodine-129, 22:38668
exploration of, conference on unmanned, 22:2774
formation from supernova debris, (T), 22:23910 (ORO-2529-17)
formation of planets in, (T), 22:19721
formation of, critical velocity hypothesis, (T), 22:13098
formation of, review of theories on, 22:26161
formation of, survey of theories on, 22:29061
fractionation of iron in, (T), 22:5015
iron fractionation in, (T), 22:13122
isotope production in, lithium, beryllium, and boron, (T), 22:19732
isotopic abundances in, (T), 22:31543
modulation of cosmic-ray electrons by, (T), 22:8869
modulation of low-energy galactic cosmic rays, (E), 22:2871
modulation of primary electrons and positrons, (T), 22:9124
observations of zodiacal light, (E), 22:2775
origin of asteroids, comets, and meteorites in, (T), 22:28999
origin of, (T), 22:17323
origin of, book: Introduction to Space Science, 22:19898
plutonium-244 abundance in early, (T), 22:4995
quasiperiodic solutions of first kind in plane n-body problem, (T), 22:45897
structures in, analysis of micro-scale, (E/T), 22:34237

SOLAR WIND
acceleration of heavy nuclei by, preferential, (T), 22:23913
Alfven waves in, (E), 22:19891
alpha particles in, satellite observations of, 22:2717 (LA-DC-8944)
alpha/proton ratio in, (T), 22:52637
angular momentum of, (T), 22:49945
angular momentum of, model for, (T), 22:26173
anisotropy of 7.5- to 45-MeV particles in, (T), 22:31664
atmospheric heating effect observed by Explorer 6 near sunspot minimum, (E), 22:17492
book: Introduction to Geocosmic Physics, 22:11317
boundary layer between geomagnetic field and, (T), 22:2941
boundary layers of, temperature variations at discontinuous, (T), 22:9366
characteristics of, (T), 22:28995
compression of bow shock by, (E), 22:13366
convection of, (T), 22:36690
cosmic-particle acceleration at boundary of primary, (T), 22:36762
cosmic-ray modulation by, 22:50065
cosmic-ray modulation by, (E), 22:21953
cosmic-ray modulation by, (E), 22:21960
cosmic-ray modulation by, (T), 22:11275
cosmic-ray modulation by, (T), 22:19811
cosmic-ray modulation by, (T), 22:5175
cosmic-ray modulation by, anisotropy of primary, (T), 22:47842
cosmic-ray modulation by, galactic, (E), 22:21965
cosmic-ray modulation by, galactic, (E/T), 22:5154
cosmic-ray modulation by, galactic, (T), 22:47853
cosmic-ray modulation by, primary, (T), 22:21970
cosmic-ray modulation by, primary, (T), 22:36773
cosmic-ray modulation by, primary, (T), 22:23926
cosmic-ray modulation by, radial gradient for, (E), 22:29315
cosmic-ray pressure gradient effects on, (T), 22:34132(R) (AD-661573)
detector-analyzer assembly for lunar environment, (E), 22:51230
diamagnetic cavity behind Moon, (E), 22:2719
diffusion and backscatter in random magnetic field, (T), 22:36763
diffusion in interplanetary propagation of, (T), 22:2873
distortion of geomagnetic field by, (E), 22:17425
diurnal variations of, (E), 22:13338
dose rates to Black Arrow satellites due to, (T), 22:26268 (RAE-TR-67206)
effect of Sun's rotation on, 22:2754
effect of velocity of, on tropospheric and ionospheric constants, (E), 22:41175
effect on cosmic radio noise absorption events in the auroral zone, (T), 22:17506
effect on pc-3 and pc-4 pulsations, (T), 22:43984
effects of interplanetary, on electromagnetic-wave propagation, (T), 22:36560 (N-68-10164)

effects on 27-day intensity variations of cosmic radiation, (E), 22:11279
effects on anisotropy of cosmic radiation, (T), 22:21974
effects on anisotropy of galactic cosmic rays, (T), 22:9127
effects on atmosphere, (T), 22:36811
effects on atomic hydrogen emission from comets, (T), 22:43672 (JILA-93)
effects on auroral distribution, (T), 22:41501
effects on auroral poles, (T), 22:7207
effects on auroral processes, (T), 22:19887
effects on boundary of magnetosphere, (T), 22:15450
effects on confinement of geomagnetic field by, (T), 22:4939
effects on cosmic ray variations, 22:7184
effects on cosmic-ray 27-day intensity variations, (E), 22:11277
effects on cosmic-ray intensity variations of, (E), 22:11273
effects on cosmic-ray intensity variations, (E), 22:11278
effects on electron behavior in outer belt during magnetic storm of April 17--18, 1965, (E), 22:13367
effects on electron fluxes in high polar regions, (T), 22:31710
effects on energy of cosmic radiation, (T), 22:11289
effects on formation of the magnetotail, (T), 22:31729
effects on generation of electric fields in magnetosphere, (T), 22:15449
effects on geomagnetic activity, (E/T), 22:38700
effects on geomagnetic activity, (T), 22:34470
effects on geomagnetic field, (T), 22:52660
effects on geomagnetic field, average rate of S/sub q/ for 1957--1963, (T), 22:26309
effects on heating of planets and meteorite parent bodies by dynamo induction, 22:45859
effects on ionic composition of exosphere, (E), 22:47962
effects on ionosphere, (T), 22:11336
effects on ionospheric F region, ionization, (T), 22:19890
effects on iron transport away from the corona, (T), 22:8940
effects on Jovian decametric radio emission, (E), 22:41152
effects on lunar albedo differences, (T), 22:36584
effects on lunar and asteroidal surfaces, (T), 22:4985
effects on magnetosphere, 22:2956
effects on magnetosphere, (T), 22:31730
effects on Martian atmosphere, ionizing, (T), 22:905
effects on modulation of cosmic primary electrons, (E), 22:38653 (N-68-16483)
effects on modulation of cosmic radiation in interplanetary space, (E), 22:11268
effects on modulation of galactic cosmic ratiation, (T), 22:38826 (N-68-21755)
effects on modulation of primary electron flux, (T), 22:38825 (N-68-21534)
effects on motion of bow shock and magnetopause, (T), 22:41488
effects on motion of magnetospheric tail, (T), 22:24142
effects on orientation of interplanetary dust particles, (T), 22:41252
effects on planetary rotation, (T), 22:2753
effects on polar cap absorption, (T), 22:46019
effects on pre-SSC polar geomagnetic disturbances, (E), 22:38898 (N-68-20498)
effects on radio propagation in the ionosphere, (T), 22:2877
effects on S/sub D/ variations of geomagnetic field, (E), 22:24126
effects on solar magnetic fields, (T), 22:13207
effects on stratospheric warming, (T), 22:29355
effects on temperature changes in stratosphere, (T), 22:15444
effects on tritium abundance in iron meteorites, 22:4937
effects on tropospheric circulation, (T), 22:29351
electromagnetic instabilities in, (T), 22:52332
electron characteristics of, Vela 4 measurements, (E), 22:41266
electron spikes in, beyond bow shock, (E), 22:22049
energy density and pressure of , (E), 22:34222
energy deposition in, by flare-generated shock waves, (E/T), 22:41267
energy dissipation of, (E), 22:43769
energy flux in, (E/T), 22:34220
energy flux of, in sector structure of the interplanetary field, (E), 22:38706
flow along boundary of magnetosheath, (E), 22:38900 (N-68-21553)
flow around Moon, (E), 22:38881 (N-68-11628)
flow around Moon, wake effects on interplanetary field, (E/T), 22:31555
flow near Earth, satellite observations of direction of, 22:2717 (LA-DC-8944)
flow of flare-generated, three-dimensional structure of, (E/T), 22:17201
flow of, effect of polytropic heat source on, (T), 22:15312
flow of, north--south asymmetry in, 22:890
flow past aligned-field airfoils, (T), 22:24018
flow past angel's wing, (T), 22:24018
flow past Earth, sector pattern of, (T), 22:38646 (AD-664509)
flow past the Moon, (T), 22:38658 (N-68-20085)
flow past unmagnetized bodies, simulation of, 22:50091
flow post Moon, (T), 22:36691
flow temperature distribution, stationary, (T), 22:23920
flow, effects of moon on, 22:5232
flux flow to Earth, effects of Moon on, (E), 22:29152
geomagnetic cutoffs for low-energy protons in, (E), 22:34134 (AD-661959)
heavy nuclei abundance in, (E), 22:21805
hydrogen density beyond the heliosphere, neutral, (T), 22:41262
inhomogeneities in, spicules as a cause of small-scale, (T), 22:23921
interaction with atmosphere of comets, (T), 22:13146
interaction with cometary plasma, (T), 22:8858
interaction with comets, (T), 22:13100
interaction with comets, (T), 22:17320
interaction with cosmic rays, (T), 22:17320
interaction with geomagnetic field, (T), 22:17320
interaction with geomagnetic field, effects on asymptotic directions of cosmic rays, (T), 22:36769
interaction with geomagnetic field, lunar effects on, (T), 22:34378
interaction with geomagnetic field, model of magnetosphere boundary from, 22:22047
interaction with geomagnetic field, short-period pulsations during, (E), 22:38947
interaction with large (500 km) objects, (T), 22:24167
interaction with lunar magnetosphere, 22:17212
interaction with lunar surface, (T), 22:13203
interaction with magnetosphere, 22:5259
interaction with magnetosphere, (T), 22:9212
interaction with magnetosphere, (T), 22:29350
interaction with magnetosphere, bow-shock ion spectrum and magnetogram, (E), 22:13335
interaction with magnetosphere, effects on cosmic-ray equator, (E), 22:36766
interaction with magnetosphere, hydromagnetic approach in, (T), 22:41489
interaction with magnetosphere, Kp index for, (T), 22:43983
interaction with magnetosphere, model for, (E), 22:17498
interaction with magnetosphere, production of convection in, (T), 22:34384
interaction with magnetosphere, temperature jump across bow shock, (T), 22:17482
interaction with magnetosphere, viscous-like, (T), 22:5229
interaction with meteorites and cosmic dust, (T), 22:11186
interaction with Moon, (T), 22:17213
interaction with polar cap ionosphere, electron production in, (T), 22:26299
interaction with solar magnetic field, (T), 22:41162
interaction with the magnetosphere, (T), 22:24135
interaction with the Moon, hypothesis for absence of bow and wake shock waves, (T), 22:31549
interaction with Venus atmosphere and ionosphere, (E), 22:8863
interaction with Venus atmosphere, (E), 22:8859
interaction with Venus ionosphere, (E), 22:8860
interaction with Venus, (T), 22:34135 (AD-662227)
interactions with comet tails, (T), 22:45869
interactions with comets, (T), 22:36580
interactions with comets, (T), 22:47890(T) (N-68-15138)
interactions with corona, oscillations from, 22:1231
interactions with corpuscular streams from Sun, (T), 22:43748
interactions with dipole magnetic fields, (T), 22:17509
interactions with earths magnetic field, simulation of, 22:46006(T) (MATT-Trans-64)
interactions with geomagnetic field, (T), 22:34484
interactions with geomagnetic field, simulation of, (E), 22:26298(T) (MATT-Trans-56)
interactions with magnetic field from current loop, 22:38891 (N-68-19188)
interactions with magnetic field from current loops, (T), 22:13370
interactions with magnetosheath, (E), 22:52650
interactions with magnetosphere, (T), 22:34386
interactions with magnetosphere, electric fields and plasma convection from, 22:34488
interactions with magnetosphere, growth and decay of magnetotail from, 22:34487
interactions with magnetosphere, latitudinal shear in, (E), 22:13336
interactions with magnetosphere, plasma density and acceleration in magnetotail from, 22:34489
interactions with magnetosphere, properties of, 22:34493
interactions with magnetosphere, space--time relationships of oblique, (T), 22:48003
interactions with Martian magnetosphere, bow shock wave from, (T), 22:906
interactions with meteorites, historical aspects from, 22:11112
interactions with Moon and geomagnetic field, (T), 22:34402
interactions with moon, (E/T), 22:26303
interactions with moon, magnetic field in wake of, 22:41452

- interactions with moon, shock waves from, 22:1060
- interactions with neutral particles, charge exchange, (T), 22:43723
- interactions with planets, (T), 22:19712
- interactions with planets, dynamo effects from, 22:52627
- interactions with planets, rotation due to, (T), 22:36859
- ion abundance in, hydrogen, helium, and oxygen, (E), 22:17340
- ion-acoustic waves in, growth and damping of, (T), 22:46034
- ionization of polar ionosphere by, (T), 22:29347
- ionization state of, (T), 22:47745
- ions in, angular distribution of, (E), 22:38707
- kinetic equations for, conservation, 22:52647
- location of supersonic--subsonic transition region, (T), 22:41262
- magnetic field of, small-scale inhomogeneities of, (T), 22:34221
- magnetic properties of, relation of geomagnetic storms to, 22:2930
- magnetospheric tail produced by, effects on geomagnetic conjugacy, 22:26304
- measurements aboard HEOS A satellite, use of electrostatic analyzers for, 22:14891
- measurements of, instruments for, (T), 22:28995
- model of, two-fluid, (T), 22:21829
- modulation of cosmic radiation by, (E), 22:11271
- modulation of cosmic rays by, (T), 22:5168
- modulation of primary cosmic radiation, (T), 22:21962
- modulation of, (T), 22:8974
- origin of, (T), 22:17320
- origin of, dynamical, (T), 22:7184
- oxygen ionization state in, (T), 22:29126
- particle intensity in, (T), 22:15275
- particle transfer from, to magnetosphere, (T), 22:47965
- penetration into geomagnetic field, consequences of Akasofu's neutral hydrogen hypothesis for, 22:17481
- penetration into magnetosphere along allowed Stoermer trajectories, (E), 22:38960
- penetration into magnetosphere, (T), 22:31715
- penetration of magnetospheric boundary, (T), 22:13346
- pitch-angle distributions of, (E), 22:13338
- plasma diagnostics in, crossed field velocity selector for, 22:23375
- plasma diagnostics in, satellite-borne data processing system for, 22:23376
- plasma diagnostics in, satellite-borne mass-energy spectrometer for, 22:23377
- precipitation into auroral zone, (E), 22:29381
- pressure changes of, effects on size of geomagnetic sudden impulses, (E), 22:41487
- properties of, (T), 22:45872
- properties of, determination from VELA 2 and 3 satellites, 22:34492
- properties of, monitoring programs for, (T), 22:45840
- properties of, prediction from solar observations, (T), 22:26156
- properties of, review of, 22:44015
- proton characteristics of, Vela 4 measurements, (E), 22:41266
- proton flow from bow shock into, outward, (E), 22:47983
- proton penetration from, to 4R/sub E/, (E), 22:47719 (N-68-23445)
- proton temperature measurements from Venus-3, 22:36820
- reactions with interplanetary dust, sputtering, (T), 22:2775
- review of, 22:8936
- shock fronts in, produced by plasma from flares, (E/T), 22:24171
- shock wave propagation through, (E), 22:13334
- shock-wave propagation in ambient, singular variations near contact discontinuity in theory of, (T), 22:41286
- shock-wave structure in, double, (T), 22:2939
- simulation of, electric arc development for, 22:34353(R) (AD-661285)
- sporadic-E production by, (T), 22:22006
- spread of, longitudinal, (T), 22:36604
- stability of, in case of spherical symmetry and constant temperature, (T), 22:29047
- storage in magnetic bottle preceding flares, (T), 22:891
- structure of, (T), 22:41386
- structure of, during geomagnetic-field interactions, (E), 22:47937
- structure of, micro-scale, (E), 22:36558 (N-68-10005)
- structure of, nature of variations in, (T), 22:52446
- Sun rotation effects on, (T), 22:19687
- temperature anisotropy in, effect of microinstabilities on, (T), 22:19855
- temperature of, satellite observations of, 22:2717 (LA-DC-8944)
- temperature variations in, relation to interplanetary field reconnections, (E), 22:36668
- theory for stationary spherico--symmetric flow of, 22:45834(T) (N-68-23074)
- thermal anisotropies in, (T), 22:52332
- thermal anisotropies, satellite observations of, 22:2938
- turbulence of, (E), 22:43769
- velocity during magnetic storm of Jan. 13--14, 1967, (E), 22:47981
- velocity in troposphere, 22:5243
- velocity of, (E), 22:11276
- velocity of, (E), 22:52651
- velocity of, (T), 22:15275
- velocity of, (T), 22:31730
- velocity of, relation to magnetosphere electric field, (T), 22:22035
- velocity of, satellite observations of, 22:2717 (LA-DC-8944)
- viscosity of, (E), 22:43769
- whistlers in, ion-cyclotron, (T), 22:17475

SOLAR X-RAY BURSTS
- detection of 10- to 50-keV, associated with solar flares, (E), 22:36570 (N-68-23026)
- detection of June 8, 1968, (E), 22:41271
- detection of, during August 1966, (E), 22:23929
- detection of, Soviet research on, (T), 22:26159
- observation of hard, (E), 22:11179
- observation of hard, on Sept. 18, 1963, (E), 22:11180
- production by energetic electrons, (T), 22:15297
- relation to ionospheric sudden frequency deviations, (T), 22:52623 (ITSA-43)
- relation to radio bursts and energetic particle emission, (E), 22:17245
- relation to solar radio and energetic particle emission, (E), 22:19685 (CONF-670953-1)
- spectra of, (T), 22:15291
- theory of deca-keV, 22:47788

SOLCOSERYL
- effects on oxygen content of sarcomas, effects of, on radiosensitivity, 22:33878

SOLDERING
  - see also Brazing
  - see also Solders
  - see also Welding
- methods for vacuum systems, 22:16828

SOLDERS
  - see also Soldering
- development and performance of copper--iron and copper--nickel eutectic-forming, 22:17090

Solenoids
  - see Magnet Coils

Solid Propellants
  - see Propellants

SOLID SOLUTIONS
  - see also Phase Diagrams
- book: Interstitial Alloys, 22:19643
- hardness of oxygen--zirconium, 22:19607
- lattice spacings in rare-earth, 22:4804
- Moessbauer effect in, effects of order-disorder phase transition on, (T), 22:34763
- radioinduced sulfur radicals in penicillamine-sephadex, effects of heat on x, 22:6734
- strength of bcc monocrystalline, effects of solute atomic size on, 22:49760
- thermodynamics of carbon, nitrogen, and oxygen phases with niobium, 22:11061
- thermodynamics of carbon, nitrogen, and oxygen phases with tantalum, 22:11061

SOLID STATE PHYSICS
- book: Dynamical Processes in Solid-State Optics, 22:1366
- book: Elementary Theory of Metals, 22:1365
- book: Experimental Magnetochemistry, 22:20093
- book: Experimental Methods of Materials Research, 22:8779
- book: Handbook of Physics (2nd Ed.), 22:9116
- book: Pseudopotentials, 22:7418
- book: Selected Topics in Solid-State and Theoretical Physics, 22:46353
- book: Theory of Finite Groups: Applications in Physics, 22:46302
- conference at Kanpur, India, 22:26532
- conference on, 22:5024
- conference on, Santiago, 7/67, 22:39974
- data compendium of linear graphs with application to Heisenberg model, 22:3161 (BNL-50053)
- finite translations in, eigenvalues of, 22:7406
- lattice symmetry corrections to energy bands from spherical model, 22:31943 (FOA-4-4352-23)
- magnetic susceptibility uses in, review on, 22:25357
- nuclear orientation in phonon thermal conductivity of paramagnetic crystals, dynamic, (T), 22:5423
- quantum lattice gas and Heisenberg--Ising chain, (T), 22:5445
- research, 22:9924(R) (NP-17186)
- research, 22:15659 (BNL-50057, pp 3-36)
- research at Israel AEC, Jan.--Dec. 1967, 22:48806(R) (IA-1168)
- research at Puerto Rico Nuclear Center, 1967, 22:48807(R) (PRNC-121)
- research in, 22:14416
- research on, 22:22203(R) (ORNL-4250)
- research program and progress, (E), 22:41949 (ISS-67/44)
- research program in, USSR, 22:11517
- research program on, 22:9420(R) (COO-623-127)
- research program on, 22:46199 (UCRL-18043, pp 183-98)
- research using accelerators, conference on, 22:31914 (BNL-50083)
- spin wave studies in, (E/T), 22:44209 (INP-598/PS)
- stability of matter, (T), 22:5446

SOLIDS
  - see also Ion-Acoustic Waves
- alpha particle scattering by surfaces of, use in

structure studies, (E/T), 22:31924 (BNL-50083, pp 167-78)
analysis by electron-excited Auger electrons, (E), 22:21867
analysis for gases by inert gas fusion method, graphite resistance furnace for, 22:44971 (AERE-R-5763)
analysis for nitrogen or nitrogen-15 by neutron activation methods, 22:12
analysis for trace boron by high-resolution autoradiography, 22:12250
analysis of high-purity, by spark-source mass spectroscopy, 22:4045
analysis of impure, for uranium, 22:16412 (GAT-T-1475)
analysis of impurities in, by space source mass spectrometry, 22:43149 (CEA-R-3445)
analysis of sputtered, use of mass spectrometer for, 22:8425
atom and ion reflection from, comparison of, (E), 22:19766
atom scattering by, calculation of angular distribution function for incidence angles near π/2, 22:17386
atomic tunneling in, 22:13536 (NYO-3699-22)
atoms from irradiated, distribution function for, 22:13583
behavior in gas fluidization beds, 22:243
blast wave attenuation, computer program for determination of, 22:6550 (NP-17183)
Bloch equations for, derivation of, (T), 22:9481
book: Electronic Processes in Gases and Solids, 22:26431
book: Fundamentals of Gas-Surface Interactions, 22:11003
book: Ion Bombardment of Solids, 22:38770
book: Properties of Solids and Their Atomic Structures, 22:13606
book: Radiation Physics of Nonmetallic Crystals (in Russian), 22:24491
book: Radiation-Induced Defects in Solids and Liquids, in Russian, 22:20095
book: Radiospectroscopy of Solids, 22:3218
book: Studies in Radiation Effects on Solids, 22:15229
book: X-ray Diffraction Methods, 22:20092
bremsstrahlung spectrum of, effects of structure on coincidence, (T), 22:45949
brittleness of crystalline, review, 22:28728
charged particle energy-loss distributions in thin absorbers, (E/T), 22:11547
charged particle ranges in amorphous, equation for, 22:24042
charged particle reactions with, directional effects in, (T), 22:24420
charged-particle tracks in, analysis of, 22:6563
chemical bonds in, (E/T), 22:26534
chemical reactions in, review of, 22:42694
conference on quantum chemistry of, 22:26545
creep of polycrystalline, grain-boundary sliding in high-temperature, 22:43587
critical point behavior in magnetically ordered, gamma spectroscopy study of, 22:7351(R) (NYO-3823-1)
defects in nonmetallic, conference on point, 22:44267
density matrices for, effective potential matrix and Bloch equation for, (T), 22:7371
diffusion in, chemical sectioning method for measurement of, 22:47068 (UCRL-18345)
diffusion mechanisms in inorganic, data compilation on, 22:31372
diffusion mechanisms in inorganic, data compilation on, 22:34050
diffusion of radioisotopes in, 22:6313 (HMI-B-53)
diffusion of rare gases in, 22:30588(R) (HMI-B-66)
dislocation interactions with point defects in, studies, 22:43600(R) (TID-24562)
dislocation mobility in, theory, 22:36506
dislocation motion in, thermally activated, (T), 22:22221
electric conductivity and thermoelectric power in degenerate electron gas, (T), 22:1327
electromagnetic scattering by, conference on, 22:5152
electron ejection by atomic bombardment, statistics, 22:44239
electron emission from, kinetic secondary, 22:5103
electron energy losses in, line shape for characteristic, (T), 22:17755
electron exchange potential in, Hartree--Fock calculation for, 22:38781
electron Fermi surfaces of, calculation from de Haas--van Alphen effect, (T), 22:7637(R) (COO-1573-33)
electron paramagnetic resonance in, modification of Bloch's magnetodynamic equation for, 22:32013
electron ranges in massive, x-ray method for measurement of, 22:34273
electron reactions at 5 to 25 MeV with, displacement of atoms by collision cascades in, (T), 22:24441
electron reactions with crystalline, design modifications for 100--400-keV Van de Graaff accelerator for precise atomic displacement threshold energy determination from, 22:39526
electron reactions with, calculation of true secondary energy distributions in, (T), 22:22204(R) (ORO-2755-20)
electron reactions with, dielectric theory of energy losses in, 22:22204(R) (ORO-2755-20)
electron reactions with, polarization of coherent bremsstrahlung in relativistic polarized, (T), 22:5040 (NP-17173)
electron scattering by, field theory treatment of, 22:5466 (BARC-292)
electron scattering in, continuous-energy-loss approximation for, (T), 22:5121
electron--phonon interactions in, theory of isotopic effects in, 22:24440
energy bands, lattice symmetry corrections from spherical model for, 22:31943 (FOA-4-4352-23)
equation of state of, approximate, (T), 22:5422(T) (ANL-Trans-536)
exoelectron emission after x-irradiation of, impurity detection from, (T), 22:26454(T) (UCRL-Trans-10225)
fast electron scattering on nonlocalized excitons in, (T), 22:31978
fissionable material content in, use of dielectric track detectors for determining, 22:38005
gas bubbles in, properties of, (T), 22:26045
gas diffusion in porous, (E/T), 22:10124(R) (COO-1675-4)
gas scattering from surface of, three-dimensional hard-spheres model for, (T), 22:980
ion beam reactions in keV range with, conference on, 22:26266
ion beam reactions with, secondary emission from, (E), 22:44214(T) (ORNL-tr-1794)
ion implantation in, problems and methods of obtaining uniform, 22:44205 (AERE-R-5704)
ion ranges at low energies in, computer calculation of projected, 22:26219
ion ranges at low energies in, Monte Carlo calculation of, 22:29214
ion ranges in amorphous, at 20 to 50 keV, calculation of, 22:26220
ion reactions with gas-coated surfaces of, model for electron ejection in, 22:11560
ion reactions with, atom emission from, 22:9003
ion stopping by, atomic number dependence of electronic cross sections for, (T), 22:50034
ion stopping powers at 5 to 90 MeV in, semiempirical theory for heavy, 22:43920
ion tunneling through barriers in, quantum mechanical theory of, 22:7392
magnetic field direction in, determination using Moessbauer effect, (T), 22:7702(R) (PPAD-631-D)
magnetic hyperfine interactions in, review of, 22:46258
magnetic properties of, lectures on gamma-angular-correlation, Moessbauer, and slow-neutron-scattering studies of, 22:41644 (INP-570/PS)
magnetic structure of, determination from neutron-diffraction data using spin density Patterson function, 22:26509
magnetization loss of nuclear spin system in, during linear rf field sweep through, (T), 22:22241
melting of, equipment for zone-, 22:10204(R) (COO-1149-102)
meson capture in, Z dependence of negative, (T), 22:47832
metallography of, use of electron microscopes to 1200ºC for, 22:27964
Moessbauer effect in complex multicomponent systems, 22:9471
Moessbauer effect in, isomer shift of impurity atoms for, 22:39156 (INP-590/PL)
molecular beam interactions with, superficial, (E/T), 22:24031
molecular beam reactions with, energy and momentum transfer in, (T), 22:19770
molecular beam reactions with, research on, 22:19778
molecular beam reactions with, slip-flow boundary conditions for, (T), 22:19763
molecular beam scattering on, velocity dependence of normal-incidence, (T), 22:19764
neutron cross sections at higher energies, effects of chemical binding on, (T), 22:1567
neutron diffraction by polycrystalline, computer program for calculating intensities in, (T), 22:44575 (IA-1169)
neutron inelastic scattering by, conference on, 22:41918 (JAERI-1157)
neutron scattering by defects in, long wavelength, (T), 22:1291 (AERE-R-5479)
neutron scattering by paramagnetic, (T), 22:13915
neutron scattering by, bibliography on thermal, (E/T), 22:26760 (JAERI-4043)
neutron scattering by, cold and thermal, (T), 22:20428
neutron scattering law for layer and linear lattices, calculation by summing multiphonon processes, (T), 22:24797
neutron wave propagation in, elastic continuum in, (T), 22:32465
neutron-diffraction analysis of, characteristics unique to technique of, 22:8781
nuclear acoustic resonance measurements in, 22:24447
nuclear hyperfine interactions in, analysis using Moessbauer effect, 22:32019
nuclear magnetic fields in, review of methods for determining, 22:35402
nuclear magnetic relaxation in, study of ultra-slow motion by, (T), 22:3206
nuclear magnetic resonance in magnetic, 22:9103
nuclear magnetic resonance in, methods for high

resolution, (E/T), 22:20047
nuclear magnetic resonance in, use of extremely narrowed, 22:29548
nuclear magnetic resonance line shape in, modulation and cross-relaxation effects in saturated, (E/T), 22:17805
nuclear magnetic resonance moments of, digital computation of, 22:32015
nuclear magnetic resonance of, resolution of chemical shift in, (T), 22:3187
nuclear magnetic resonance spectra in rotating, 22:32002
nuclear magnetic resonance spectra in, effects of electric-field-gradient inhomogeneity on quadrupolar satellite intensities in, (T), 22:17810
nuclear polarization and electron spin--spin reservoir temperature coupling in, (E), 22:22217
nuclear polarization by optical pumping, techniques for, (T), 22:5906
nuclear polarization in, effect of exchange narrowing of EPR on dynamic, (T), 22:9474
nuclear polarization in, methods for dynamic, 22:31999
nuclear polarization in, review of methods for, 22:46838
nuclear polarization in, theory of dynamic, 22:34749
nuclear reactions in, review of chemical effects from, 22:48888
nuclear reactions in, Szilard-Chalmers relaxation following, 22:4228
nuclear spin--lattice relaxation measurements in, tone-burst modulation method for, 22:25693
optical constants of anisotropic, method for calculation from electron-energy-loss data, 22:44252
optical constants of, equipment compatible with LEED system for determination of, 22:22204(R) (ORO-2755-20)
optical constants of, theoretical correlation with electron energy-loss measurements, 22:22204(R) (ORO-2755-20)
optical properties of diatomic molecular, (T), 22:3175 (UCRL-70723)
optical properties of, effects of electromagnetic fields on, 22:37628 (ISS-68/1)
particle energy of liquid-suspended, effects on turbulence in flows of, 22:23211 (NYO-2930-13)
phonon dispersion curves for, measurement of, (T), 22:9921 (JUL-Conf-1)
phonon scattering by impurities in, (T), 22:1367 (NYO-3699-16)
photoionization and photoconductivity in, (T), 22:7388
porosity of porous, gamma absorption method for measurement of, 22:21287 (CEA-R-3204)
positron annihilation in, higher-shell contributions and polarization correlations in, (T), 22:17380
positron annihilation in, ladder-graph approximation for, 22:17378
production of small charged spherical, method for, 22:47055
properties at high temperatures, bibliography on, 22:5418 (NP-17141)
properties of interfaces and surfaces of, chemical and physical, 22:36465
properties of, (R), 22:5416(R) (NP-17117)
properties of, use of radioactive rare gases in studies of, 22:50981
proton reactions at 6.3 MeV with, displaced atom and energy loss distributions in, (T), 22:39180
proton scattering by surfaces of, use in structure studies, (E/T), 22:31924 (BNL-50083, pp 167-78)
quarks in, upper limit for number of, (E), 22:17930
radiation dose distribution in, containing thorium isotopes, 22:30643
radiation effects in, EPR study of, 22:41641(R) (COO-1054-32)
radiation effects on, 22:36516
radiation effects on, 22:40128
radiation effects on brittleness of, Saclay conference on, 22:28862
radiation effects on inorganic, 22:27832
radiation effects on mechanical properties of, literature survey, 22:43619(T) (JPRS-46209)
radiation effects on physical and physicochemical properties of, 22:40124
radiation effects on reactions of surfaces of, with adsorbed phases in heterogeneous systems, 22:21136
radiation effects on, approximation equation for energy considerations in, 22:17150
radiation effects on, conditions and methods for studying, 22:6318(T) (JPRS-43250)
radiation effects on, developments in cryogenic techniques for studying, 22:50256
radiation effects on, effects of flux and energy spectrum on damage in neutron, 22:10263 (CEA-R-3228)
radiation effects on, particle-track studies of, 22:36513
radiation effects on, research on, 22:22203(R) (ORNL-4250)
radiation effects on, role of hardness and elasticity in, 22:17150
radiation effects on, spatial distribution of defect cascades from, (T), 22:31935 (BNL-50083, pp 374-88)
radiation penetration through, 22:3157
radioinduced bubbles in, effects of energy on coalescence of, 22:21742
radioinduced defects in, calculations on production by atomic displacement, electron, 22:37011
radioinduced defects in, general cascade theory of production of, 22:22206(T) (AERE-Trans-1090)
radioinduced defects in, influence of scattering law on, 22:24469
radioinduced defects in, modified cascade theory of production of, 22:22205(T) (AERE-Trans-1089)
radioinduced diffusion in, mechanisms of, (T), 22:17754
radioinduced excitation of atoms in, by beta particles from krypton-85-enriched krypton gas, (E), 22:9486
radioinduced property changes in, electron microscopy of, 22:21738
radioinduced swelling of, effects of bubble coalescence on, 22:21742
radioisotope fixation in, 22:30588(R) (HMI-B-66)
rare gas diffusion following recoil labeling from plane and spherical, mathematical analysis of, 22:6338
rare gas reactions with, interaction potentials for molecular, (T), 22:19767
rare gas transport in, bibliography on, 22:3158 (AED-C-29-01)
reactions with gases, bibliography on, 22:5417 (NP-17130)
reactions with gases, bibliography on, 22:30506 (NP-17479)
reactions with gases, computer program for evaluation of thermodynamic data for, 22:45024 (AERE-R-5793)
recoil ranges in irradiated, 22:30588(R) (HMI-B-66)
scattering of kilovolt electrons in, energy losses and cross sections in, (E), 22:3154
sintering of crystalline, effects of stress on, (E/T), 22:31387
sintering of crystalline, mechanisms of diffusion in, (E/T), 22:31388
sintering of crystalline, mechanisms of plastic flow in, (E/T), 22:31388
spin relaxation in, research using Moessbauer effect, (E/T), 22:46237
sputtering efficiency of amorphous, calculation of, (T), 22:26226
structure of, nuclear techniques for studying, 22:40073
structure study using neutron beams, review, 22:13545
sublimation of, equipment for, 22:4159(P)
surface segregation in, analysis by Auger electron emission, (E), 22:21866
symmetry group theory for, 22:7465
thermal conductivity of, dependence on Debye temperature of Kapitza, (E/T), 22:13411
thermodynamic data from shock wave studies, compendium of, 22:18742 (UCRL-50108(Vol.2)(Suppl.1))
thermodynamic properties of crystalline, computer program for calculating effective temperature, 22:24413 (WANL-TME-1666)
thermodynamic properties of diatomic molecular, anharmonic contributions to, (T), 22:3175 (UCRL-70723)
thermodynamic properties of, calculation of, from Debye temperature from x-ray data, 22:7952 (MLM-1396)
thermophysical properties of, conference on, 22:25611
transport in seawater, radiometric methods for measurement of, 22:42918
transport in seawater, radiometric methods for measurement of, 22:42917
uses as targets in atomic scattering studies at 10 to 100 keV, 22:5039 (NP-17144)
wave propagation in plasma, low-frequency limit of helicon, 22:5430
gas--solid, properties of suspensions of, as reactor coolant, 22:7836

SOLUBILITY
aerosol, effects of radium and uranium content on, 22:10766
radiation effects on, of lysozyme, effects of pH on γ, 22:23420
xenon-133, in muscles of man, measurement of, 22:14934

SOLUTIONS
analysis for gold by neutron activation methods, 22:42620
analysis for plutonium by controlled-potential coulometry, 22:36522(R) (BAW-3714-6)
analysis for radioisotopes, hot cell for spectrographic, 22:39982 (JEN-188-DQ/1-64)
analysis for uranium by fluorimetry, 22:27541 (NIM-163)
analysis of aqueous, for beryllium, 22:27601
analysis of aqueous, for mercury by neutron activation and isotopic exchange techniques, 22:25262
analysis of aqueous, for plutonium-239, effects of radioactive impurities on liquid scintillation, 22:40018
analysis of impure, for uranium, 22:16412 (GAT-T-1475)
cation transference numbers in, moving-boundary measurements of, 22:1936 (UCRL-17807)
chemistry of metal-metal salt, development of high temperature, (E/T), 22:30155(R) (NAA-SR-12296)
chemistry of metals in presence of polyelectrolytes in, 22:40054(R) (NYO-2269-12)
chemistry of polyelectrolytes in, 22:40054(R) (NYO-2269-12)
chlorine content in, use of x-ray sources for determining, 22:4494
drop weight of radioactive, methods for determining, 22:14880
effects on calcium-45 loss from isolated rat diaphragm,

  calcium-free, 22:51419
  electric conductivity of aqueous, design of electrodeless meter for measuring, 22:16927 (CEA-R-3344)
  photochemistry of ions in, 22:2150
  photoinduced oxidation and reduction of aromatics in, 22:25346
  photolysis of aqueous, 22:2099(R) (TID-24136)
  photolysis of aqueous, properties of oxygen-containing radicals from, 22:8088(R) (NYO-3753-3)
  proton spin relaxation in paramagnetic ion, effects of deuterium on, 22:16530
  radiation chemistry of aqueous, 22:27832
  radiation chemistry of aqueous, review of, 22:27777
  radiation chemistry of aqueous, review on, 22:40119
  radiation chemistry of frozen, 22:27832
  radiation chemistry of frozen aqueous, 22:25411
  radiation chemistry of, comparison of, with results from photochemistry, 22:2151
  radiation effects on aqueous, apparatus for production of electron, 22:6319(T) (UCRL-Trans-10148)
  radioisotope precipitation from aqueous, 22:10346
  radiolysis of alkaline, fast reactions in pulse, 22:40106(R) (NYO-3383-13)
  radiolysis of aqueous, 22:2099(R) (TID-24136)
  radiolysis of aqueous and organic, reactions of electrons in, 22:48882
  radiolysis of aqueous, effects of pH and solute concentration on radical and molecular yields in, 22:40114
  radiolysis of aqueous, effects of pressure on yields from, 22:12367
  radiolysis of aqueous, method for determining relative rate constants for reactions with OH radicals in γ, 22:42778
  radiolysis of, effects of dose rate on fixed concentrations in, 22:42771
  radiolysis of, production of solvated electrons in, 22:33459
  radiolysis of, properties of oxygen-containing radicals from, 22:8088(R) (NYO-3753-3)
  radiosterilization of physiological saline, γ, 22:600
  reactions of recoils in, 22:27741 (BNL-12361)
  separation of beryllium from sulfate--containing, by solvent extraction using primary amine, 22:2189(P)
  separation of cesium-137 from aqueous, by flotation, 22:12409(T) (NSJ-tr-90)
  separation of cobalt from, by ion exchange, 22:18878
  separation of oxyacids from, 22:18911(P)
  separation of ruthenium from, precipitation method for, 22:37842(P)
  separation of strontium-90 from aqueous, using gelatin and foam formation, 22:51071
  stability of radioactive, methods for checking, 22:14681
  transport processes in, 22:6313 (HMI-B-53)
  transport processes in, 22:30588(R) (HMI-B-66)
  transport properties of concentrated electrolytic, 22:10158 (UCRL-17768)
SOLVENT EXTRACTION PROCESSES
    see also Separation Processes
  analysis of process streams in Kjeller, Norway, pilot, 22:16356 (KR-116)
  batch dispersion break times in, 22:27862 (ORNL-4204, pp 4-15)
  chemistry of formation and elimination of third phase in organophosphorus and amine, 22:16693
  chemistry of, conference on, 22:6385
  column flooding rates in, pulsed, 22:20996 (ORNL-TM-1229)
  contactors in, design of fast, 22:40180 (KR-126, pp 415-24)
  design for spent thorium-based fuels, 22:23191 (CONF-660524-, pp 509-35)
  design of optimum, for separation of lanthanum nitrate from monazite, 22:49010
  development for fuel reprocessing, 22:37824(T) (ANL-Trans-626, pp 1-35)
  development for fuel reprocessing at Eurochemic plant, 22:30649 (NP-17368)
  development for separating rare earths and strontium-90 from fission product solutions, 22:4304 (EUR-3612)
  development in Poland, 22:4257
  developments in, review on, 22:25315
  effects of salting out in, precalculation of, 22:10330
  effects of structure in extractant molecules in, PMR spectral studies on, 22:6412
  efficiency in fuel reprocessing, pilot plant for studies of, 22:6421
  efficiency in fuel reprocessing, pilot plant studies of, 22:6422
  efficiency of carboxylic acids in, 22:16692
  efficiency of, research progress on, 22:8172(R) (RLO-1053-4)
  enthalpy of distribution as measure for strength of Lewis base used as solvent in, 22:47209
  equipment for, air-pressure measurements on pulser, 22:51061
  equipment for, design of 18-stage stacked-clone contactor, 22:27862 (ORNL-4204, pp 4-15)
  equipment for, design of mixer-settler, 22:30654(P)
  equipment for, stacked-clone contactor, 22:37838 (ORNL-4267)
  liquid--liquid, double-pulsed mixer--settler system for, 22:4264(P)
  liquid--liquid, for separation of rare earths, review of, 22:42825
  metal chemistry in, conference on, Harwell, England, Sept. 27 to 30, 1965, 22:16676
  method for separation of liquid metals in fused salts by partition, 22:36473
  method for strontium-90 and rare earth separation, 22:2264 (EUR-3613)
  physical chemistry in, review on, 22:6398
  pulsed column operation in, 22:37824(T) (ANL-Trans-626, pp 1-35)
  research progress on, 22:27860(R) (NYO-1922-43)
  synergism in, for metal chelates, 22:6393
  transient behavior of, method for calculating, 22:33540
  use for calculating constants for acido- and hydroxo-complexes in presence of chelating agent, 22:6387
  use for separating solutes from molten salts, review on, 22:6414
  use in studies on complexation of metals in aqueous solutions, 22:6386
  use in treatment of irradiated fuels, 22:30655
  use of substoichiometric, with activation and isotope dilution determination of metals, 22:6418
  use of TBP in, 22:6397
  use of TBP in, bibliography on, 22:12401 (LS-70(Pt.1))
SOLVENT PARTITION
    see also Solvent Extraction Processes
SOLVENTS
  decomposition in fuel reprocessing, short-residence extractors for reducing, 22:30648 (NP-17366)
  determination of composition of, chemical, physical, and instrumental methods for, 22:21029 (SC-M-67-3044)
  effects of organic, on ion exchange separation of rare earths from hydrochloric acid, 22:21153 (ANL-7415)
  effects of polar, on photoinduced oxidation and reduction of aromatics, 22:25346
  effects on conformation of DNA, 22:14905 (BNL-50057, pp 111-22)
  effects on determination of scandium by atomic absorption, 22:45023
  effects on fluorescence excitation spectra for indoles, 22:43205(R) (COO-894-30)
  effects on fluorescence of uv-irradiated carotenes and carotenoids, 22:43205(R) (COO-894-30)
  effects on gamma-radioinduced polymerization of 3-methyl-1-butene and 4-methyl-1-pentene with and without zinc oxide, 22:8097(T) (AEC-tr-6908, pp 64-73)
  polar, effects on fluorescence of pure solutions of chlorophyll, 22:43205(R) (COO-894-30)
  properties for use as electrolyte in organic battery, 22:27522 (SC-CR-67-2855)
  radiation exposure in nuclear fuel reprocessing, method for calculation of, 22:18865 (ORNL-4212)
  radiation stability of, in nuclear fuel reprocessing, 22:18865 (ORNL-4212)
  solvent properties for curium, calculations for, 22:21164
  sorption of vapors of organic, on activated charcoal and silica gel, 22:60(T) (TT-65-50400/4-6)
  stability of organic, in reprocessing of nuclear fuels, 22:18865 (ORNL-4212)
  titrations in nonaqueous, review on, 22:25304
Solvesso
    see Solvents
SOLVOLYSIS
    see also Hydrolysis
Solway Firth
    see Irish Sea
Sonic Testing
    see Acoustic Emission Testing
SORA (Fast-Source Pulsed Reactor)
    see Reactors, Research
SORBIC ACID
  effects on γ-radiosensitivity of organoleptic properties and shelf life of evaporated milk, 22:43502
  radioinduced vapor-phase graft polymerization of solid, with polyethylene films, γ, 22:27821
  radioprotective effects of, on chromosomes of onion root tip cells, x, 22:49320
SORBITOL
    (D-Glucitol)
  effects on sorption of vitamin B_{12} by intestine of rats, 22:49545
  effects on x-radiosensitivity of carbon dioxide production by yeasts, 22:8657
SORBOSE
  radiation effects on transfer of, in intestines of rats, γ and x, 22:43216
  radiolysis of glassy aqueous solutions of, at 77°K, EPR studies of, 22:23052
SOUND
    see also Acoustic Waves
    see also Noise
    see also Ultrasound
  absorption in superfluid helium below 0.6°K, (E), 22:7229
  attenuation in gapless clean type-II superconductors, calculation of coefficients for longitudinal, 22:44031
  attenuation of high-frequency, in superconductors, calculation of, 22:39019

detection of third, in absorbed superfluid films, (E), 22:17564
detector for operation underwater, pulsed, 22:389 (AD-648216)
dispersion law in superconducting semiconductors, (T), 22:44051
effects on insects for population control, 22:17068
effects on yeasts, biochemical, 22:12944
energy flux from solar convection zone, (T), 22:52407
propagation in high pressure gas circuits, (T), 22:7841
propagation of transverse, in superconductors, (T), 22:48046
radiation effects on response to, by chicks, effects of time of embryonic exposure on, 22:45658
radioinduced, in biological materials, pathological effects of laser, 22:43409
velocity in degenerate Fermi gas of hard spheres, (T), 22:8964
velocity in helium-3 in magnetic fields, zero, (T), 22:1073
velocity in liquid helium-3, x-ray-scattering study of high-frequency, (E), 22:26331
velocity in metal carbides, relations with carbide elastic properties, 22:49830

Sounding Balloons
see Balloons

Sounding Rockets
see Rockets

Sources (Particle)
see Particle Sources

Sources (Radiation)
see Radiation Sources

South Africa
see Republic of South Africa

SOUTH AFRICAN RESEARCH REACTOR
startup source for, health physics aspects of failure of plutonium-beryllium, 22:16291 (PEL-154)

SOUTH AMERICA
cesium-137 content of blood in human population of, during 1967, 22:49336
cesium-137 content of milk in, during 1966, 22:28522
natural background radiation in Amazon valley, effects of, on radioactivity in Brazil nuts, 22:21413
radioactive content of atmosphere and precipitation in, during 1967, 22:28514
radioactivity content of airborne particulates and precipitates in, during June 1967, 22:28506
radioactivity content of airborne particulates and surface waters in, during 1966, 22:28495
radioactivity content of airborne particulates, precipitation, and surface waters in, during 1966, 22:28502
radioactivity content of atmosphere and precipitation in, during 1966, 22:28519
radioactivity content of atmosphere and precipitation in, during 1966, 22:28508
radioactivity content of atmosphere and precipitation in, during May 1967, 22:23515
radioactivity content of atmosphere and precipitation in, during 1966, β, 22:23518
radioactivity content of atmosphere and precipitation in, during April 1967, 22:28510
radioactivity content of atmosphere in, during 1966, γ, 22:23520
radioactivity content of atmosphere, precipitation and surface waters in, during 1966, gross, 22:23522
radioactivity content of atmosphere, precipitation, and surface waters in, during 1966, 22:25850
radioactivity content of precipitation in, during 1966, β, 22:36257
radioisotope content of atmosphere, milk, and precipitation in, during 1967, 22:28517
radioisotope content of milk in, during 1966, 22:28526
radioisotope content of milk in, during 1966, 22:28519
radioisotope content of milk in, during 1966, 22:23518
radioisotope content of milk in, during 1966, 22:23520
radioisotope content of milk in, during 1966, 22:25850
radioisotope content of milk in, during 1966, 22:28458
radioisotope content of milk in, during 1966, 22:28508
radioisotope content of milk in, during 1966, 22:23522
radioisotope content of milk in, during 1966 to 1967, 22:28514
radioisotope content of milk in, during 1966, cesium-137 and strontium-90, 22:36257
radioisotope content of milk in, during 1967, 22:28510
radioisotope content of milk in, during June 1967, 22:28506
radioisotope content of milk in, during May 1967, 22:23515
radioisotope sorption from soils of, by winter rape, cesium-137 and strontium-90, 22:51299 (FOA-4-4319)
radioisotopes content of milk in, during 1966, 22:28495
radioisotopes content of milk in, during 1966, 22:28502
strontium-89 content of milk in, during 1966, 22:36257
strontium-90 content of milk in, during 1966, 22:28522
strontium-90 content of milk in, during 1966, 22:36257
treaty for prohibition of nuclear weapons in, United Kingdom signing for, 22:51642

SOUTH CAROLINA
see also Aiken Area (S.C.)

Southern California Edison Plant
see San Onfre Power Reactor

SOUTHWEST EXPERIMENTAL FAST OXIDE REACTOR
accident analysis for, 22:7792 (BNWL-477)
buildings and equipment for, design and seismic analyses for, 22:35432 (DOCKET-50231-18)
containment design for, preliminary safety analysis of, 22:39744 (DOCKET-50231-19)
containment structure for, operation of doors for penetrations in, 22:44812 (DOCKET-50231-20)
containment system for, detailed description of, 22:7792 (BNWL-477)
containment systems for, complete listing of penetrations for, 22:35432 (DOCKET-50231-18)
containment systems for, design criteria and analyses for, 22:35432 (DOCKET-50231-18)
containment systems for, design of, 22:22661 (DOCKET-50231-7)
control and safety systems for, detailed description of, 22:7792 (BNWL-477)
coolant flow characteristics in half-scale vessel model, (E), 22:22696 (GEAP-5440)
coolant piping and class I systems for, seismicity analysis of, 22:22660 (DOCKET-50231-6)
coolant system for, characteristics of sodium, 22:16191
cooling system for, consequences of pipe break in, 22:44812 (DOCKET-50231-20)
cooling system for, fission product inventory in, 22:35432 (DOCKET-50231-18)
cooling systems for, activity calculations for, 22:22663 (DOCKET-50231-9)
cooling systems for, fission product inventory during operation in, 22:22663 (DOCKET-50231-9)
cooling systems for, quality control program for, 22:22668 (DOCKET-50231-14)
core channel clamping mechanism for, mockup testing of torsion bar, 22:35458 (GEAP-5465)
core for, detailed analysis of design of, 22:22664 (DOCKET-50231-10)
core for, preliminary safety analysis of design for, 22:39744 (DOCKET-50231-19)
core for, thermal-hydraulic characteristics of, 22:16191
core of, flow testing for, 22:16192
core shroud vibration in half-scale vessel model, (E), 22:22696 (GEAP-5440)
core support structure for, analysis of effects of transient-induced dynamic loadings on, 22:44812 (DOCKET-50231-20)
core support structure for, design and installation of thermal insulation on, 22:50703 (DOCKET-50231-21)
core support structure for, effects of prompt transient testing dynamic loading on, 22:50703 (DOCKET-50231-21)
core system for, description of hydraulic model studies of, 22:37406 (BNWL-518(Del.))
description of, 22:16222
description of, 22:47023
design basis accidents in, determination of fission product release from, 22:35432 (DOCKET-50231-18)
design of, detailed description of, 22:53346
design of, influence of experimental program on, 22:53346
design of, review of, 22:16191
development of, experimental program for, 22:16192
development program for, description of Phase 1, 22:22815(R) (GEAP-5595)
electrical power systems for, design analyses of, 22:22666 (DOCKET-50231-12)
emergency procedures for, description of accident and medical, 22:50703 (DOCKET-50231-21)
emergency procedures for, detailed, 22:50705 (DOCKET-50231-23)
excursion simulating device for, analytical studies on fast reactor, 22:1763(R) (GEAP-5533)
exhaust ventilation system for, description of, 22:7792 (BNWL-477)
experimental program for, 22:16222
Fast Reactivity Excursion Device (FRED) for, analysis of design and use of, 22:50703 (DOCKET-50231-21)
Fast Reactivity Excursion Device (FRED) for, design data for, 22:44812 (DOCKET-50231-20)
fuel and cladding materials for, radiation testing of, 22:18549 (DOCKET-50231-3)
fuel and fuel cladding for, in-pile testing of fuel-cladding interaction and axial fuel growth in, 22:22695 (GEAP-5309)
fuel assemblies for, development of instrumented, 22:14123 (ANL-7380, pp 15-21)
fuel assembly for, stability of heated mockup, 22:22814(R) (GEAP-5498)
fuel element loading in, request for permission for, 22:50704 (DOCKET-50231-22)
fuel element testing in, procedures and safety considerations for, 22:35431 (DOCKET-50231-17)
fuel elements for, design of, 22:22664 (DOCKET-50231-10)
fuel elements for, detailed description of, 22:7792 (BNWL-477)
fuel elements for, determination of mass flow distribution in mockup of, 22:42190 (GEAP-5184)
fuel handling equipment for irradiated fuel elements, design of, 22:22667 (DOCKET-50231-13)
fuel pellets and rods for, specifications for Core 1, 22:18551 (DOCKET-50231-5)
fuel rod thermal parameters in, control methods for

balanced oscillator measurements of, 22:24966 (KFK-650)
heat exchangers for, design of, 22:22669 (DOCKET-50231-15)
instrumentation for, specifications and drawings for nuclear, 22:18548 (DOCKET-50231-2)
ion chamber and amplifiers for, static and transient testing of, 22:14137(R) (GEAP-5561)
loading cell design for, 22:5946
loading cell for, remote servicing and fuel handling operations in, 22:5947
mockup critical experiments in ZPR-3 for, analysis of, 22:18547 (DOCKET-50231-1)
operation of, description of, 22:18502
operation of, request for permission for low power (<1 Mw), 22:50704 (DOCKET-50231-22)
operations during February to April 1967, 22:22814(R) (GEAP-5498)
operations during February to April 1968, description of, 22:44889(R) (GEAP-5629)
physics measurements for, analysis of, 22:47023
power reactivity transfer functions for 0 to 20 MW in, point reactor model calculation of, 22:22814(R) (GEAP-5498)
power supply to, analysis of effects of loss of external, 22:50703 (DOCKET-50231-21)
radiation monitoring at, description of, 22:35432 (DOCKET-50231-18)
reactivity coefficients in, control methods for balanced oscillator measurements of, 22:24966 (KFK-650)
reactivity computer for, evaluation of utility of, 22:14137(R) (GEAP-5561)
reactivity effects and physics parameters of, detailed tabulation of, 22:7792 (BNWL-477)
reactivity worths and ejection rates for, analysis of static, oscillator, and transient testing of, 22:30153 (KFK-649)
reactor vessel and internals for, preliminary safety analysis of, 22:39744 (DOCKET-50231-19)
reactor vessel for, design of, 22:30301 (DOCKET-50231-16)
reactor vessel for, design specifications and analyses for, 22:35432 (DOCKET-50231-18)
reactor vessel for, fluid flow and vibration tests on mockup for, 22:18550 (DOCKET-50231-4)
reactor vessel for, specifications for installation of internals and fuel channels in, 22:30301 (DOCKET-50231-16)
reactor vessel for, temperature distributions in, 22:30301 (DOCKET-50231-16)
reactor vessel internals for, design analysis of, 22:35432 (DOCKET-50231-18)
reflector drive control system for, specifications and drawings for, 22:18548 (DOCKET-50231-2)
reflector for, analysis of efficiency of control system for, 22:35432 (DOCKET-50231-18)
reflector for, design of control system for, 22:22665 (DOCKET-50231-11)
reflector for, modifications for control system for, 22:50703 (DOCKET-50231-21)
reflector for, structural and thermal hydraulic analyses for, 22:22665 (DOCKET-50231-11)
refueling cell for, description of, 22:16192
refueling cell for, design analysis of, 22:35432 (DOCKET-50231-18)
Refueling Cell Mockup for, sodium vapor-aerosol transport and deposition experiments using, 22:22697 (GEAP-5560)
safeguards considerations for, criteria determining, 22:16191
safety instrumentation for, description of, 22:35432 (DOCKET-50231-18)
safety system for, specifications and drawings for, 22:18548 (DOCKET-50231-2)
shielding design calculations for, preliminary safety analysis of, 22:39744 (DOCKET-50231-19)
shielding for, design parameters for, 22:22663 (DOCKET-50231-9)
shielding for, mechanical design calculations and analyses for, 22:22662 (DOCKET-50231-8)
site for, detailed meteorological data for, 22:50703 (DOCKET-50231-21)
siting of, analysis of, 22:7792 (BNWL-477)
sodium pumps and piping for, design of, 22:22669 (DOCKET-50231-15)
testing program for, description of static and transient, 22:35595 (GEAP-5576)
testing programs for, review of, 22:18515
transient-power-detector for, development of, 22:14123 (ANL-7380, pp 15-21)

SOVIET UNION
atomic energy in, review of technological advancement in, 22:7922
atomic energy in, survey of development of, 22:53502(T) (ORNL-tr-1990)
bibliography of radiobiology in, 22:4637
book: Means of Individual Protection for Work with Radioactive Materials, 22:40731
book: Protection Against Ionizing Radiation : A Manual, 22:40730
book: Radiation and the Evolution of Populations, 22:40655
cesium-137 content of man in Nenetz region of, during 1964 and 1965, 22:31055 (A-AC-82/G/L-1188)
cesium-137 content of man in, during 1962 to 1966, 22:33804 (A-AC-82/G/L-1193)
development of γ irradiation facilities in, for use in agricultural, biological, chemical, and medical studies, 22:52070
environs monitoring for cadmium-109 at ground level in, 1964 to 1966, 22:18946 (A-AC-82/G/L-1198)
fallout content of foodstuffs and water in, during 1963 to 1966, cesium-137 and strontium-90, 22:45539
fallout monitoring during 1962, 22:51615
granitoids in, uranium distribution in, 22:10389
industrial hygiene in, programs for, 22:6808(T) (AEC-tr-6467/2)
magnetohydrodynamic power plant, first, 22:11293
nuclear power development in, review of, 22:14148(T) (JPRS-43842)
nuclear research implications for industry and science, survey of, 22:44969
nuclear science and technology in, review of, 22:18682
nuclear science and technology in, review of, 22:35729(T) (JPRS-45331)
nuclear tests in, during 1966, 22:28495
program of space radiobiology in, 22:47582
radiation accidents in, during 1953, 22:4610
radiation dose to man in, contribution of artificial and natural background radioactivity to, 22:33800 (A-AC-82/G/L-1182)
radiation dose to man in, effects of content of natural background radiation in building materials on γ, 22:33799 (A-AC-82/G/L-1181)
radiation processing of foods for human consumption in, 22:33998
radiation protection standards for installation and operation of medical x-ray equipment in, 22:6809(T) (AEC-tr-6467/2(pp 177-94))
radiation protection standards in, 22:6835(T) (AEC-tr-6467/2(pp 195-222))
radioactive materials shipping in, packaging classifications for, 22:28046
radioactive waste management in, research and development on, 22:21300
radioactive waste processing and disposal in, review of research on, 22:2178 (UJV-1899)
radioactivity content of vegetables in, potassium-40 and natural, 22:43326
radiobiological research facilities in, design of, 22:40820
radiobiology in, review of 50 years of research on, 22:4638
radioisotope and radiation uses in, survey of, 22:12546
radioisotope content of bones of man in Far North, during 1965, polonium-210 and strontium-90, 22:33803 (A-AC-82/G/L-1190)
radioisotope content of man in, during 1965 and 1966, cesium-137 and potassium-40, 22:38302
radioisotope content of seals in, during 1966, cesium-137, potassium-40, and strontium-90, 22:51386
radiology in, development of medical, 22:8568
rocks of Orenburg Province in, uranium distribution in, 22:10390
sanidine from, argon/potassium method of dating, 22:48914(R) (COO-689-100)
soil conditions in, effects of, on strontium-90 uptake by cereal plants, 22:19291
standards for permissible limits of γ radiation for industrial and medical installations in, 22:31104
strontium-90 content of human bones and teeth in, during 1964, 22:49177 (NP-16519)
strontium-90 content of human bones in, during 1964 to 1966, 22:33801 (A-AC-82/G/L-1184)
transport of radioactive compounds in, regulations for, 22:6810(T) (AEC-tr-6467/2(pp 143-76))
uranium content in eclogitic rock in, (n,f) reaction method for, 22:48967
uranium ore processing in, status of, 22:18989
volcanoes in, isotopic composition of gases from, 22:12434

Soybeans (Glycine)
see Glycine under Angiospermidae

SPACE
see also Extracellular Space
see also Space Flight
see also Space Medicine
absorption bands in interstellar, origin of diffuse, (T), 22:23930
abundances of dust and atomic hydrogen in interstellar, (E), 22:43785
bibliography on 1966 Soviet activities in, 22:17461(T) (JPRS-44343)
book: Propagation Factors in Space Communications, 22:46038
conference on missiles and aerospace vehicles, Huntsville, Alabama, Dec., 1966, 22:21784 (CONF-661204-(Vol.2))
conference on missiles and aerospace vehicles, Huntsville, Alabama, Dec., 1966, 22:21781 (CONF-661204-(Vol.1))
cosmic-ray diffusion tensor in interplanetary, (E), 22:47848
cosmic-ray energy losses in interstellar, (T), 22:17427

cosmic-ray intensity variations in interplanetary, (E), 22:21967
cosmic-ray transport in interplanetary, (T), 22:15381 (D-1-82-0625)
curvature of, sign of, (T), 22:13102
density in intergalactic, (T), 22:29078
dust dynamics in interplanetary, (T), 22:26194
dust motion in interstellar, general relativity for centrally symmetric, 22:1493
effects on survival of microorganisms following satellite flight, 22:33988
electric fields in interplanetary, (T), 22:5258
electric power production in, development of systems for, 22:33607
electron content in interplanetary, (E), 22:26171
electron content in interplanetary, (E), 22:41268
electron content in interstellar, use of pulsars to determine, (T), 22:52351
electron densities in interstellar, (T), 22:47778
electron density in interplanetary, differential Doppler system for measuring, 22:1045 (MPI-PAE-EXTRATERR.-31/66)
electron density in interplanetary, methods for measuring, 22:1044 (MPI-PAE-EXTRATERR.-19/65)
electron density variations in interplanetary, (T), 22:47754
elemental abundance in interstellar, aluminum, carbon, oxygen, and silicon, (E), 22:36628
equipment for, conference on use of photo-electronic image device, 22:4539
gas temperature of intergalactic, (E), 22:43950
grains in interstellar, (T), 22:49958
heating of intergalactic, (T), 22:17217
helium-3 and hydrogen abundance in interstellar, (T), 22:17342
hydrogen density in interstellar, (T), 22:805
hydrogen density in interstellar, neutral, (E/T), 22:23945
interplanetary, book: Introduction to Space Science, 22:19898
interstellar extinction by grains of silica, (T), 22:8867
interstellar extinction by polycyclic hydrocarbon molecules in, (T), 22:36687
krypton uses in, 22:37954
light absorption at 4430 A in clouds in interstellar, (E), 22:49870
light extinction in interstellar, test for wavelength-independent, (T), 22:43843
light-element abundance in interstellar, (T), 22:19730
Lyman-α radiation detection in interplanetary, (E), 22:29135
magnetic field in intergalactic, (T), 22:29078
magnetic field in interplanetary, properties of, 22:11178
magnetic-field intensity in interstellar, (E), 22:29059
mass spectrum of clouds in interstellar, (T), 22:49948
matter density of intergalactic, (E), 22:43950
model of interplanetary, steady-state, (T), 22:36560 (N-68-10164)
molecular abundance in interstellar, (T), 22:5026
molecular hydrogen formation on dust grains in interstellar, (T), 22:52342
nuclear explosions in deep, method for optical detection of, (T), 22:2260 (CONF-671022-1)
observation of, use of nuclear-powered aircraft for continuous high-altitude, 22:50783
parameters of, instrumentation for measurement of, (T), 22:22005 (CONF-661204-(Vol.1), pp 24.1-11)
particle stationary motion in, conditions for massless, (T), 22:5665
photon absorption in intergalactic, vector dominance model for $\gamma + \gamma \rightarrow \text{rho}^0 + \text{rho}^0$ interactions at high energies for, 22:34918
physical conditions in intergalactic, (T), 22:927
plasma properties in interplanetary, 22:26429
properties of dusts in interstellar, (T), 22:45877
properties of intergalactic, (T), 22:45876
properties of interplanetary, (T), 22:45872
pulsar signal refraction from irregularities in interstellar, (T), 22:34178
quark existence in intergalactic, (T), 22:3366
quartz grain existence in interstellar, (T), 22:52413
radiation biology research program in, 22:31207(R) (UCRL-17751)
radiation conditions in, data on, 22:36273
radiation detection and measurement in, equipment and methods for, 22:49093
radiation detection in, design of scintillation detector for gamma and neutron, 22:28095
radiation doses in, measurements using Cosmos 110 satellite, 22:41393
radiation effects, conference on, 22:12722
radiation environment in, effects on spacecraft electronic circuitry, 22:205 (N-67-18431)
radiation hazards of, mathematical models for, 22:31209 (UCRL-17751, pp 81-141)
radioisotope-powered generator development for use in, review of, 22:14676 (SC-DC-67-2119)
radioisotopic systems for use in, feasibility of, 22:8309
research on function and structure of vestibular organs in monkeys and rabbits, 22:31209 (UCRL-17751, pp 81-141)
shock wave propagation in interplanetary, (T), 22:7086
simulation chamber for, design of strontium-90/yttrium-91 β source for use in environmental, 22:19046 (N-67-23959)
simulation of, development of ultrahigh vacuum system for, 22:23252
spectral absorption lines in interstellar, (T), 22:49959
structure of interstellar, (T), 22:45873
structures in, analysis of micro-scale, (E/T), 22:34237
testing in outer, radiographic method for, 22:43001
testing in, radiographic and ultrasonic methods for, 22:43000

Space Charge
see Electric Arcs

SPACE FLIGHT
book: Effects of the Space Environment of Materials, 22:11018
book: Radiation and Shielding in Space, 22:9129
book: Radiobiological Factors in Manned Space Flight, 22:6917
book: Space Systems Technology, 22:27527
economics of nuclear rockets for, mathematical model for, (T), 22:39868
effects on barley seeds, protective effects of cysteine against combined effects of γ-radiation on, 22:6924(T) (JPRS-43155)
effects on central nervous system of man, 22:12751(T) (NASA-TT-F-413)
effects on cultures of bacteria and HeLa cells, 22:31291(T) (AD-663360)
effects on development of frog eggs, 22:47503
effects on genetics and physiology of higher plants, effects of seed exposure on, 22:45488
effects on germination of barley seeds, combined effects of γ radiation on, 22:17052
effects on growth and phage induction in lysogenic bacteria, 22:47645
effects on γ-radiosensitivity of fruit flies, 22:47628
effects on γ-radiosensitivity of Neurospora, 22:47510
effects on γ-radiosensitivity of reproductive cells of Drosophila, 22:47509
effects on man, evaluation of safety criteria for, 22:12899(T) (N-67-29205, pp 77-82)
effects on man, review of biological, 22:12898(T) (N-67-29205)
effects on mitosis in γ-irradiated Tradescantia, 22:47503
effects on mutation rate and viability of Chlorella vulgaris, 22:17057
effects on organisms, mutagenic, 22:12829
effects on Pelomyxa carolinensis, 22:47503
effects on Tradescantia cells, 22:47511
effects on Tradescantia, cytological and genetic, 22:43481
environment of Chlorella, mathematical model for determining effects of, on growth, 22:52058
Manned Orbital Research Laboratory for, systems development for, 22:246 (N-67-18580)
medical problems arising from, review of, 22:51835
nuclear electric propulsion of, review of thermionic, 22:30284
propulsion systems for, gravitational losses in, (T), 22:25593
proton dose to astronauts during, use of induced radioisotope measurements to determine, 22:43394 (BNWL-531-3)
radiation dose from solar flares during manned, computer program for calculation of, 22:38651 (N-68-16008)
radiation dose to biological materials during, simulated conditions for, 22:47535
radiation dose to Germini astronauts during, proton, 22:31241
radiation dose to man during, 22:40917
radiation dose to man during manned, factors affecting, 22:6847
radiation dose to man during, effects of sunspot activity and Van Allen belts on cosmic, 22:6829
radiation dose to man during, use of nuclear emulsions for measurement of, 22:25842
radiation dose to personnel during manned, 22:6823
radiation dose to photographic film during, estimates of, 22:48983 (N-68-25220)
radiation dosimetry in Biosatellite II, evaluation of lithium fluoride-teflon disk thermoluminescent dosimeter for, 22:47529(R) (ORNL-TM-2190)
radiation effects on animals during, combined effects of acceleration on, 22:40825(T) (N-68-16163)
radiation effects on biological materials during, design of equipment for determining γ, 22:49652
radiation effects on biological materials during, criteria for evaluation of, 22:47584
radiation effects on flour beetles during, morphologic and mutagenic γ, 22:47508
radiation effects on lysogenic Escherichia coli during, cosmic, 22:28721
radiation effects on man and materials during, cosmic, 22:8627
radiation effects on man during, 22:6922
radiation effects on man during, conference on, 22:12921

radiation effects on man during, early, 22:6920
radiation effects on man during, estimation of dose from cosmic, 22:33964
radiation effects on man during, ionizing, 22:38474
radiation effects on man during, latent, 22:6921
radiation effects on Neurospora during, γ, 22:28406 (ORNL-4100, pp 202-6)
radiation effects on potatoes during, protective effects of anoxia against, 22:12939(T) (N-67-29205, pp 43-8)
radiation effects on spermatogenesis in dogs following, cosmic, 22:21588
radiation hazards during manned, evaluation of standards for, 22:6824
radiation hazards in, 22:41440 (N-68-16837)
radiation hazards to man during, analysis of standards for protection against, 22:31078
radiation hazards to man during, protection against, 22:6922
radiation hazards to man during, standards for protection against, 22:6918
radiation hazards to man in extended, importance of particle types and energies in evaluation of, 22:41382 (N-68-22849)
radiation hazards to personnel during manned, sources of, 22:6919
radiation monitoring on project Gemini, use of nuclear emulsions for, 22:486 (AD-631989)
radiation monitoring system for manned, criteria for, 22:36039
radiation protection of astronauts during, 22:21589
radiation protection of man during, 22:33916
radiation protection of man during, evaluation of problems in, 22:36273
radiation protection of personnel during, proposals of Soviet Union for, 22:25831(T) (JPRS-42635, pp 1-6)
radiobiological factors in manned, 22:51872 (LA-3848, pp 62-74)
radioinduced chromosome aberrations in human blood during, cosmic, 22:31041
radioisotope production in astronauts during, 22:19400(R) (BNWL-531-1)
radioisotope thrusters for manned orbital, systems development for, 22:246 (N-67-18580)
radioisotope uses in, 22:37945
reentry angle and velocity of objects decaying from circular orbit in, closed form approximate solution for, 22:14394 (SC-RR-67-123)
reentry of nuclear power supplies, design considerations for intact, 22:42978 (SC-RR-68-351)
reentry of radioisotope heat sources after mission aborts, environmental effects on intact, 22:42976 (SC-DC-68-2161)
reentry of SNAP-27 fuel capsule from lunar, effects of mounting hardware on aerodynamic heating during, (T), 22:25610 (SC-RR-67-2961)
role of nuclear energy in future missions, 22:16254
simulation of nuclear powered vehicle, digital computer, 22:35569 (N-68-10429)
waste reclamation and water systems for, development of radioisotope, 22:37953

SPACE MEDICINE
program in Soviet Union, discussion of proposals for, 22:25831(T) (JPRS-42635, pp 1-6)
review of problems in, 22:12898(T) (N-67-29205)

Space Power Reactor-6
see Nuclear Auxiliary Power Systems

Space Vehicle Radiators
see Radiators

SPACE VEHICLES
(A manned or unmanned device not necessarily primarily intended to orbit a planet.)
see also Rockets
see also Satellites
ablation sensors for, use of gamma sources with scintillation detectors as, 22:4490
ablative materials from, design of laser system for detecting clouds of, 22:1931 (SC-DC-67-1948)
adhesives for nuclear-powered, evaluation of, 22:11105
aerodynamics of Agena, computer programs for force and moment coefficients of, 22:42579 (SC-RR-68-446)
angle and velocity of reentering, from earth orbit, computer program for calculation of, 22:12478 (SC-RR-67-858)
atmospheric density measurements from, gamma-scatter system for, 22:21366
auxiliary power conversion systems for, application of Brayton cycle to nuclear, 22:7880
auxiliary power systems for manned, thermal integration of life support systems and, 22:7878
auxiliary power systems for, developmental status of SNAP-8 and -10A/2, 22:7879
book: Effects of the Space Environment of Materials, 22:11018
control and telemetry circuits for, effects of radiation on design of, 22:205 (N-67-18431)
design of laboratory equipment for, used in biosatellite experiment, 22:49652
dosimeter system for manned, design of radiation, 22:201 (AD-646555)
electric power systems of, design of high temperature materials for, 22:652(R) (N-67-22066)
instrumentation for Surveyor V, lunar surface alpha-backscatter system, 22:14793
Luna-10, gamma spectrometer for analysis of rocks on lunar surface aboard, 22:43083
Luna-10, pulse analyzers for gamma spectrometers used for investigation of cosmic radiation aboard, 22:43084
magnetogasdynamic re-entry phenomena, (E), 22:17455
maintenance and system checkout of Nimbus B, manual for, 22:4354 (MND-3607-80)
materials for, development of aluminum and titanium alloy, 22:45775
microwave receivers of, effects of hot plasma sheath on noise figure of, 22:10636 (SC-RR-67-2964)
nuclear propulsion of, development in Soviet Union, 22:53502(T) (ORNL-tr-1990)
nuclear propulsion of, European program for, 22:16253
nuclear propulsion of, fundamental principles for, 22:16255
nuclear propulsion of, lecture series on, 22:16252
nuclear propulsion of, NERVA engine applications to, 22:16257
nuclear propulsion of, potential applications of, 22:16256
observations of solar radio bursts by Venus 2, (E), 22:7087
performance of nuclear powered interplanetary, digital computer analysis of simulated flight, 22:35569 (N-68-10429)
photographic film for telescope on Apollo, proton effects on ATM, 22:38186 (N-68-11469)
power supplies for, bibliography on, 22:38845 (N-68-17223)
power supplies for, development of solar turboelectric, 22:13305
power supplies for, discussion of types of, 22:17438
power supplies for, performance of MHD generators for, 22:13304
power supplies for, review of, 22:29322
power system for Manned Orbital Research Laboratory, design and vehicle integration of plutonium-238 Brayton, 22:19054
power system for, description of potassium Rankine cycle turboelectric, 22:30287
power systems engineering for, 22:7874
power systems for large manned laboratory, evaluation of nuclear and solar auxiliary, 22:7877
power systems for manned and unmanned, development of nuclear, 22:42340 (AI-Memo-7585)
power systems for Orbital Research Laboratory (ORL), study of reactor, 22:1842 (N-67-17520)
power systems for, boiler design for Rankine cycle, 22:51137 (ORNL-TM-2080)
power systems for, development of large, 22:14734
power systems for, development of photovoltaic cells for, 22:13306
power systems for, efficiency of load-bearing radiators for, 22:35974 (N-68-10050)
power systems for, materials testing of components for, 22:247(R) (N-67-18969)
power systems for, performance of thermionic, 22:29321
pressure in, physiological effects of atmospheric, 22:12860
propellant gage for, optimum source-detector configuration for zero-g radiometric cryogenic, 22:43138
propellant mass aboard orbiting, gamma radiometric system for measuring, 22:38131
propellant quantities in, development of radiometric gage for measuring, 22:30884
propulsion by gas-core rocket reactors, performance analysis of, (T), 22:35577
propulsion by nuclear-electric rockets, power requirements for, 22:7876
propulsion of unmanned solar system probe, nuclear electric system application for, 22:7875
propulsion of, aerospace nuclear safety analysis of promethium oxide-fueled thruster for, 22:37950
propulsion of, design and performance of radioisotope heated thruster for, 22:33612
propulsion of, design of 10 MW(e) Rankine-cycle lithium-cooled uranium nitride (UN)-fueled reactor for electric, 22:30282 (UCRL-50382)
propulsion of, design of radioisotope subliming solid system for, 22:37947(P)
propulsion of, development of multimegawatt thermionic reactor systems for, 22:32933 (CONF-680508-2)
propulsion of, development of radioisotope heat sources for, 22:14733
propulsion of, development of radioisotope thrusters for, 22:37939 (WASH-1095)
propulsion of, testing promethium-147-powered rocket motors for, 22:19044 (MLM-1437)
propulsion system for, electron cyclotron resonance plasma accelerator, 22:13301
propulsion system for, safety of polonium-210-powered, 22:30776 (SC-CR-67-2801)
propulsion system testing for SERT I, electric, 22:13298
propulsion systems for, electrothermal and hybrid electrothermal--electromagnetic, 22:13302
propulsion systems for, general summary of radioisotope and nuclear, 22:44878
propulsion systems for, performance of cesium-contact,

22:13297
  propulsion systems for, review of colloid, 22:13300
  propulsion systems for, review of electric, 22:16377
  propulsion systems for, review of electric, 22:25594
  propulsion using nuclear explosions, feasibility studies of, 22:51128
  radiation dosimeter and survey meter for Apollo, description of, 22:37993 (N-68-21647)
  radiation dosimetry on Apollo and Gemini, 22:16918
  radiation dosimetry on Apollo and Gemini, effects of shielding on solar flare, 22:2501 (AD-635204)
  radiation effects on materials in, cosmic, 22:8627
  radiation hazards of, in Van Allen region, 22:11331
  re-entry of, evaluation of materials for oxidation resistance during, 22:10919
  reentry angle and velocity of, decaying from circular orbits, computer program for solution of, 22:14394 (SC-RR-67-123)
  reentry into atmosphere of, determination of aerodynamic friction coefficients during, (T), 22:18677(T) (ANL-Trans-576)
  reentry module for, design of 25 kW plutonium-238-powered, 22:49025 (N-68-25283)
  shielding for, design of toroidal magnetic, 22:5406
  shielding for, optimal spatial distribution of mass, 22:6075
  shielding for, plasma radiation, 22:26442
  shielding for, validity of straightahead approximation in, (T), 22:22198
  shielding of aluminum cylindrical, 140-keV to 3.0-MeV electron, (E), 22:13532
  shielding of, bibliography on, 22:5398 (ORNL-RSIC-11(Rev.1))
  shielding of, review of, 22:9415
  shielding of, review of computer use and codes for, 22:9414
  shielding of, review of considerations in, 22:9416
  shielding optimization for nuclear reactor-powered, 22:27454
  shielding, GEISHA-II CDC 6600 code for calculations for, 22:17716 (UCID-15284)
  structures for, preparation of graphite, 22:23876(P)
  superconducting systems in, use of helium for cooling, (T), 22:44061
  temperature control materials for, evaluation of passive, 22:11094
  temperature control of superconducting systems, (E), 22:29432
  temperature of reentering, equations for calculation of, 22:2299 (SC-RR-67-232)
  testing of, use of similarity techniques in, 22:234 (ORNL-TM-1975)
  waste management system for, development of human, 22:16745
SPAIN
  fuel reprocessing in, development of, 22:33536
  fuel reprocessing plant at Moncloa, 22:33546
  gammagraphy developments in, review of, 22:14741
  nuclear instrumentation developments in, review of, 22:14731
  radiation facilities in, design of γ, 22:4720
  radiation monitoring in, 22:2224
  radiation processing of food in, 22:52123
  radiation processing of foodstuffs in, program of γ, 22:43511
  radiation processing of potatoes in, economic feasibility of, 22:33995 (JEN-184-SI/I-17)
  radioisotope production and use in, 1965 and 1966, 22:14728
  uranium ore processing in, 22:33551
  uranium ore processing in, status of, 22:18987
  uranium production and sales in, 22:10344
  uranium purification plant operation in, 22:8263
  uranium reserves in, 22:4274
  uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)
SPALLATION
  see also Rupture
  see also Thermal Rupture
  correlations of evaporated products from nuclear disintegration with fragments, (T), 22:24908
  cross sections for diffraction interactions of light nuclei, (T), 22:53130
SPALLATION PRODUCTS
  see also Fission Products
  separation of palladium complexes of 2,4-pentanedione from, by solvent extraction using benzene, 22:10339
SPANISH REACTORS (DON)
  fuel element fabrication for, 22:10059 (JEN-173-DMe/I-14)
SPANISH REACTORS (JEN-2)
  control rods for, description of, 22:37546
  design parameters for, 22:37546
  instrumentation for, description of, 22:37546
  reactivity of, use of pulsed source method for calculating α_0, 22:12149
Spanish Reactors (Nuclenor)
  see Santa Maria de Garona Power Reactor
Spark Chambers
  see Radiation Detectors, Spark Chamber
Sparking
  see Electric Arcs
Special Power Excursion Reactor Tests (SPERT)
  see Reactor Safety Experiments
Special Unitary Groups
  see Symmetry Groups
Specific Gravity
  see Density
SPECIFIC HEAT
  calculation and measurement of solidified radioactive waste, 22:2330(T) (JPRS-42565, pp 36-55)
  calculation of crystalline solids, computer program for, 22:24413 (WANL-TME-1666)
  measurement for metals and alloys, equipment and procedures for adiabatic calorimetric, 22:49717(R) (ORO-3291-8)
  measurement for metals, design of equipment for, 22:4766 (CEA-R-3287)
  use of nuclear, for hyperfine interaction studies, (E), 22:9104
SPECTRA
  see also Absorption Spectra
  see also Emission Spectra
  see also Hyperfine Structure
  see also Stark Effect
  absorptance for simple, and lines with hfs and isotope shifts, asymptotic expansions for, 22:26236
  absorption bands in interstellar, origin of diffuse, (T), 22:23930
  analysis by least squares method, computer program for numerical, 22:2391 (INP-533/PL)
  analysis of complex, computer program for, 22:24457
  analysis of gamma scintillation, statistical, 22:8382
  analysis of pulse-height, for determining incident differential energy spectra, method containing gain shift, zero-drift, and background compensation for, 22:36097
  analysis of, deconvolution method for, 22:50261 (UCRL-50472)
  analysis of, effects of statistical fluctuations on, 22:36080
  analysis of, prediction method for peak separation in least-square, 22:334
  analysis of, use of Minsk-2 computer and oscillograph with light pen for, 22:33701
  atomic transition probabilities, theoretical, 22:45953
  book: Atomic Spectra, 22:5147
  book: Introduction to the Theory of Atomic Spectra, 22:13212(T) (AD-661902)
  book: Random Matrices and the Statistical Theory of Energy Levels, 22:24511
  book: Spectral Line Formation, 22:24021
  broadening of lines of, collision, (T), 22:15363
  cell volume, mathematical analysis of, 22:53498 (LA-3848, pp 11-20)
  classification of stellar, by photoelectric narrow band photometry, (T), 22:7124
  deconvolution of, method for, 22:16347 (AE-307)
  determination for DNA and guanosine in deuterium oxide, uv, 22:28274 (ANL-7278, pp 250-82)
  determination of nuclear magnetic resonance, for bovine serum albumin and ribonuclease, 22:28274 (ANL-7278, pp 250-82)
  determination of uv fluorescence, of cells and DNA stained with acridine orange, 22:36176
  effect of mass on frequency, (T), 22:41270
  effects of axial rotation on equivalent widths of pure absorption lines in, (T), 22:36635
  electron density determination from emission lines of Balmer series, (T), 22:43910
  electron-impact broadening of astrophysically-important lines, (T), 22:52349
  energy level diagrams, dual representation of, 22:13564
  energy, of electrons in water, effects of depth on, 22:31079
  fine structure of, relativistic effects in, 22:45961
  fluorescence excitation, for indole, effects of solvent on, 22:43205(R) (COO-894-30)
  fluorescence, of acridine orange complexes with cells, DNA, and nuclei, 22:36177
  formation by electro-optic methods of simultaneous radio astronomical images and, (T), 22:19713
  gamma, from radioisotopes in man, processing of, 22:28543
  gamma, of radioisotopes in fallout, 22:36259
  high resolution, of solutions of adenine, cytosine, guanine, and thymine, effects of deuterium oxide on, 22:28274 (ANL-7278, pp 250-82)
  light-induced absorption, in reaction centers of photosynthetic bacteria, 22:53501(R) (NYO-3759-5)
  limb darkening equation using Prony algorithm, inversion of, (T), 22:26130
  line broadening by inelastic electron scattering, (T), 22:45947
  line broadening in argon ion laser, 22:38806
  line broadening in, effects of Doppler and collision, 22:36714
  line formation in homogeneous magnetic field, (T), 22:43911
  line formation in variable-property media, Riccati method applied to, (T), 22:4979
  line profiles for Sun, analysis of, (T), 22:11144
  line profiles of, approximations in optically thin

plasma, 22:34272
line shape of emitted radiation, resonance fluorescence in, 22:34240 (COO-1112-162)
line shape of spontaneous emission of an atom in imperfect intermixing of degenerate levels, (T), 22:2798
line shapes and energy level ordering in, level-crossing effects on, 22:38772
line shapes in, calculations of resonance broadening of, (T), 22:41367
line strengths in two-electron, (T), 22:31620
measurement of local energy distribution, in thin foils in relation to counter resolution, 22:49326 (NYO-2740-5, pp 6-200)
measurement of x-ray, from diagnostic machines, use of portable spectrometer for, 22:43300 (AERE-PR/HPM-12)
neutron, of beryllium sources, 22:25860 (UCLA-12-668, pp 29-36)
origin of diffuse interstellar bands in stellar, (T), 22:13126
photon, design of computer program for conversion of pulse height distributions to, 22:43300 (AERE-PR/HPM-12)
pressure broadening of atomic, quantum theory of, 22:19743
quantum defects of, of Schroedinger radial equation, (T), 22:26537
radiation effects on action, of lettuce, effects of phytochrome on uv, 22:23679
radiation effects on ESR, of free radicals in amino acids, uv, 22:10720
radiation effects on fluorescence, of DNA and furocoumarins, 22:4578
recombination, of complex atoms, (T), 22:13129
recording of optical, use of image brightness intensifiers for, 22:8406 (AERE-R-5112)
red shift from surface of ultrabaric superdense stars, gravitational, 22:37196
red shift in gravitational field, violation of equivalence principle for, 22:46519
resolution of circular dichroic, use of computer of average transients for, 22:25723 (UCLA-12-668, pp 71-84)
saturation function PSI (a,y) for photospheric, 22:13101
scale of bolometric corrections, (T), 22:13144
spectra of, microwave absorption lines from dielectronic recombination of highly ionized atoms, (T), 22:31553
stellar photospheric, statistical, (T), 22:31566
theoretical aspects of uv, 22:23672
theory of complex, 22:45962

SPECTRAL-SHIFT CONTROL REACTOR
fuels for, production by recycle method, 22:49796

SPECTROMETERS
see also Alpha Spectrometers
see also Beta Spectrometers
see also Cosmic-Ray Spectrometers
see also Gamma Spectrometers
see also Mass Spectrometers
see also Neutron Spectrometers
see also Proton Spectrometers
see also Radiofrequency Spectrometers
see also X-Ray Spectrometers
amplifiers for nuclear, design of pulse, 22:38143 (N-68-18254)
angular resolution improvement in magnetic, 22:36088
beam trajectories in magnetic, for magnetic beam analyzer system, data tabulations of ratios of radii of, 22:20369 (INSJ-106)
bending magnets for 20 GeV/c, design of, 22:41913
bibliography on, for nuclear physics, 22:33635 (AED-C-06-18)
book: Electron Paramagnetic Resonance: Techniques and Applications, 22:52855
book: Electronic Digital Spectrometers in Experimental Nuclear Physics, 22:30854
calibration of liquid scintillation, design of system for automatic, 22:14843(P)
calibration of solid angle for magnetic, data tabulations for, 22:20369 (INSJ-106)
calibration of time-of-flight, system for, 22:14839
circuits for pulse amplitude, time-domain method for calculating noise of active integrator, 22:10642
circuits for, pile-up detection, 22:43090
data from, multichannel strip chart recorder for recording, 22:2449 (INP-560/PS)
data processing for CERN missing-mass, data link between SDS 920 and CDC 6600 computers for, 22:10593 (CERN-67-31)
description of double-focusing, for nuclear reactions at 180 degrees, 22:40435 (ANU-P-399)
description of magnetic, for analyzing charged particles with momenta up to 2 GeV/c, 22:47366
description of satellite-borne mass-energy, for space plasmas, 22:23377
design and optimization of iron-core magnetic, computer method for, 22:40487 (UUIP-586)
design and performance for high-energy physics experiments, 22:21349 (CONF-670923-, pp 556-70)
design and performance of germanium--telescope, for obtaining spectra from (p,p) and (p,d) reactions with carbon-12 and beryllium-9, respectively, at 100 MeV, 22:350
design and performance of magnetic, for analysis of charged particles up to 6 GeV/c, 22:38072
design and performance of multilens spectroheliograph for non-stabilized rockets, 22:49151
design and performance of recording Fabry--Perot, 22:4499 (BARC-290)
design for EPR studies, 22:32012
design modifications for Mark-II in-cell recording optical, used in operating hot cell ion exchange equipment, 22:16925 (BNWL-680, pp 5-6)
design modifications of magnetic, with dual second-order focusing, 22:40457
design of 40-MHz, for NMR studies, 22:24473
design of charged particle, magnetic optics theorems for, 22:10581
design of charged-particle, for use at Stanford Linear Accelerator, engineering drawings for, 22:25668
design of computer-based liquid scintillation, 22:40454
design of double-focusing magnetic, for detection of helium-3 recoil particles from deuteron reactions (d,n) with deuterium at 100 to 400 keV, 22:36084
design of electrostatic, for energy selection of ions, 22:47428(P)
design of high-resolution semiconductor, optimization of, 22:38068 (JINR-P13-3812)
design of ion energy, for measurement of differential cross section and energy loss for atom--atom reactions, 22:28070
design of ion-mobility, (E), 22:36853
design of isochronous time-of-flight scintillation, 22:4478
design of magnetic, first- and second-order matrix theory for, 22:4459 (SLAC-75)
design of magnetic, first-and second-order matrix theory for, 22:50496
design of magnetic, for analysis of nuclear reaction particles, 22:6636
design of photoelectron, 22:48872(R) (CALT-532-37)
design of relative fluorescence, using photoelectric null method, 22:6681(T) (NRC-TT-1294)
design of satellite, for high-energy cosmic-ray particles, 22:2417
design of satellite-borne magnetic, for 0.1- to 1.0-MeV charged particles, 22:28149
design of split-pole magnetic, 22:30851
design of time-of-flight, for 5-MeV Van de Graaff accelerator, 22:21335 (CEA-R-3325)
design of time-of-flight, of nanosecond sensitivity, 22:2394 (JINR-P13-3549)
design of vacuum ultraviolet, for auroras, engineering drawings for, 22:16378
design of variable-frequency ultrasonic, 22:3180
design of whole-body NMR, for detection of signals from protein nuclei, 22:45279 (LA-3966)
design, application of computer techniques to, 22:44256
design, construction, and performance of double-focusing magnetic, for measuring Bhabha scattering parameter, 22:16900
detector for magnetic, design of inductive spark chamber as, 22:28127
development at Scientific Institute for Nuclear Instrumentation in Soviet Union, 22:6554
development of 24-in. double-focusing, 22:32513(R) (ANU-P-400)
development of complete absorption, tests with cosmic radiation for one variant of, 22:33661
development of computer-based nuclear, using PDP-8 computer in real time, 22:16897
development of large-aperture magnetic spectrograph for analysis of charged-particle reactions, 22:30048(R) (PUC-937-307)
development of liquid scintillation, 22:23318
development of low-frequency NMR, 22:51277 (LA-3848, pp 97-107)
development of magnetic, for BNL AGS, 22:37213 (BNL-12539)
development of time-of-flight, bibliographic review of, 22:36045
development of, for analyzing energy distribution of sputtered atoms, 22:43940
efficiency of NMR, in studying structure of organic compounds, 22:14428 (ORNL-4196, pp 33-44)
electromagnetic lenses for 8- and 20-GeV/c SLAC, design of, 22:11784
field theory for high resolution of thermal radiation, quantum, 22:23302
filters for pulse amplitude, description of time-variant, 22:40449
focal plane theory and calculations for Browne--Buechner magnetic, tangent, 22:33658 (AD-665977)
ion optics of constant-deviation magnetic, 22:36083
luminosity of semicircular and double-focusing magnetic, method for increasing, 22:45324
magnets for large, performance of, 22:10582
magnets for, development of superconducting, 22:50486 (BNL-12832)
optical diagrams of charged particle prism, with quadrupole lenses, 22:45323
performance for dosimetry of carbon-14 and tritium, 22:28494
performance of high-resolution semiconductor, calculation

of amplifier fluctuation effects on, 22:38069 (JINR-P13-3813)
performance of superconducting, for NMR studies, 22:32017
performance of variable-field magnetic, 22:10579
photon fill-time of Fabry--Perot, 22:3988 (UCID-15224)
preamplifier for, resolution of FET, 22:12708
properties of double-focusing magnetic, use of position-sensitive semiconductor detector for measuring, 22:14838
properties of magnetic, use of position-sensitive semiconductor detectors for measuring, 22:8336 (ANU-P-387)
pulse forming circuit for, design of time-dependent filter, 22:45325
pulse generator as reference for semiconductor, design and performance of solid-state double, 22:40440
pulse height spectral distortion in nuclear, use of dc restoration and pile-up rejection for reducing, 22:28141
pulse shaping in nuclear, for high resolution spectroscopy, 22:28147
pulse stretches for semiconductor, design of, 22:43095
pulses for scintillation, oscillators based on silicon carbide and gallium phosphide diodes for production of reference, 22:2393 (JINR-P13-3523)
Raman effect, developments in studies using, 22:25360
resolution of D-region mobility, 22:36796 (AD-665407)
resolution of split-pole magnetic, for measuring energy spectra of charged-particle beams, 22:45317 (BARC-326)
signal processing and noise analysis in pulse amplitude, 22:40449
signals from, instruments for amplification and formation of, 22:2390 (CEA-R-3252)
spherical aberrations of magnetic, calculation of second-order, 22:4464
stabilization system for scintillation, design of, 22:6625
stabilization system for time-of-flight, operating in nanosecond range, 22:43094
stabilization system for time-of-flight, with nanosecond range, 22:51244(T) (NP-tr-1693)
theory for scintillation, statistical model for timing inaccuracies for nuclear event detection in, 22:28156
timing circuit for semiconductor, for coincidence measurements, 22:23372
use for analysis of ion scattering by atoms and molecules at 0.5 to 3.0 keV, 22:4463
use for emission spectra, review on, 22:25294
use for high-speed plasma diagnostics, 22:36899
use for measurement of internal radiation dose, 22:23526
use of direct-reading, in determination of beryllium in liquid effluent samples from Australian Atomic Research Establishment, 22:42581 (AAEC/TM-438)
use of Fabry--Perot etalon for monochromatic solar images, (E), 22:52440
use of magnetic, for measurement of energy spectra of cosmic particles, correction for instrumental noise in, 22:29316
use of magnetic, with nuclear emulsions for recording spectra of charged particles, 22:8375
use of multichannel magnetic, in on-line data acquisition system for studying γ + p interactions in GeV range, 22:367
use of scintillation, for measuring purity of radioisotopes, 22:4421

SPECTROPHOTOMETERS
data acquisition system for, digital, 22:21379 (ORNL-4219, pp 47-60)
description for ion and electron temperature measurements in hot plasma, 22:5317
design and performance of flame, 22:14425 (ORNL-4196, pp 1-12)
design and performance of, for detection of elements by atomic resonance, 22:37666
design for continuous plasma density measurements, 22:48095
design for hot-cell use, 22:14427 (ORNL-4196, pp 15-32)
design of infrared photoelectric, (E), 22:45890
glove box for, 22:14428 (ORNL-4196, pp 33-44)
performance of infrared, 22:14428 (ORNL-4196, pp 33-44)
wavelength shifting in, design of devices for, 22:25709

SPECTROPHOTOMETRY
see also Colorimetry
detection limits of procedures in, 22:18859
developments in, review on, 22:25296
measurements in, on-line computer processing of, 22:30436(R) (UCRL-50006-68-1)
method for detection of quinoids from bone marrow and liver of rats, 22:49512
performance for analysis of radiopharmaceuticals, 22:23586
photomultipliers used in, of faint astronomical sources, dark current production by Cherenkov pulses due to cosmic mesons (μ) in, 22:51286
sensitivities of atomic-absorption, 22:30441
solvents for 25 to 250°C studies in, evaluation of, 22:42578 (ORNL-4279)
standard lamps for stellar, at 3,400 to 10,000 A, (E), 22:43778
trace characterization by, 22:30490
use for determination of kinetics of fibrin formation, 22:38190 (CEA-R-3012)
use for measurement of calcium and strontium content of crops, 22:38225
use in biochemical analysis, review on, 22:25271
use in determining particle size of colloidal gold-198, 22:33347

SPECTROSCOPY
see also Beta Spectroscopy
see also Gamma Spectroscopy
see also Infrared Spectroscopy
see also Mass Spectrography
see also Neutron Spectroscopy
see also Ultraviolet Spectroscopy
see also X-Ray Spectroscopy
analysis of statistical fluctuations of peaks in nuclear, 22:23312
applications of Fourier transform methods in, (T), 22:29221
bibliography on, associated with high-temperature chemistry, 22:5417 (NP-17130)
bibliography on, of interest to high-temperature chemistry, 22:30506 (NP-17479)
book: 1968 Book of ASTM Standards with Related Materials, Part 30, 22:37678
book: Introduction to the Spectroscopy of Plasmas, 22:19959
book: Introduction to the Theory of Atomic Spectra, 22:13212(T) (AD-661902)
book: Progress in Nuclear Magnetic Resonance Spectroscopy, Volume 3, 22:20094
book: Radiospectroscopy of Solids, 22:3218
book: Random Matrices and the Statistical Theory of Energy Levels, 22:24511
book: Wave Mechanics of Atoms, Molecules, and Ions, 22:43908
coefficients for, class of null, 22:34252
conference on, 22:5146
conference on, Bombay, 1/9--1/18/67, 22:5145
containers for molten fluoride, 22:7956 (ORNL-TM-2047)
data analysis of correlated events by sampling, 22:43088
data evaluation for, computer program for, 22:42592 (NYO-2174-74)
data handling in nuclear, computer program for, 22:28164
detectors for nuclear, book on use of semiconductor, 22:2384
development for analysis of radioactive material using pulsed electric arc, 22:42624
hyperfine structure of atomic, method for analyzing, 22:13226
in-beam techniques for nuclear, (E), 22:30027
induction plasma uses in atomic-absorption, 22:1985
isotope effects in, for atoms with Z = 38 to 95, review of, 22:7765
laser sampling uses in emission, 22:1984
line shapes in, many-body problem for, 22:11239
method for measurement of α radioactivity in biological materials, 22:2517
microanalyzer for metallic samples by emission, 22:42633
Moessbauer effect, and superparamagnetism, 22:5461
Moessbauer effect, use of on-line computer techniques for, 22:5463
Moessbauer, biological applications of, 22:25717(R) (NYO-3859-1)
nuclear magnetic resonance, biological applications of, 22:25717(R) (NYO-3859-1)
performance for identification of photoproduct formed from uv-irradiated DNA, 22:33768
radio-frequency, for stored ions, use of bolometric technique for, 22:38742
research progress on, 22:42653(R) (NP-17448)
research progress on, 22:37639(T) (ANL-Trans-610, pp 1-56)
research progress on, 22:20975(R) (BMwF-FBK-67-89)
review of Soviet optics and, during past 50 years, 22:2788
sensitivity of atomic-absorption, effects of use of induction plasma heating on, 22:4000 (RT/CHI-(67)15)
trace characterization by, 22:30490
use in chemical analyses, 22:25236 (CEA-N-616, pp 20-71)
use in chemical analysis, 22:27530 (CEA-N-816, pp 9-65)
use in determination of trace elements, review on, 22:33213
use of balloon-borne gamma-ray, to locate nuclear test debris in upper atmosphere, 22:28447 (ANL-7278, pp 304-13)
use of semiconductor detectors for nuclear, 22:2363
uses of Moessbauer, philosophy of research, 22:5460

SPERM
see also Spermatocytes
see also Spermatogonia
determination of centriole adjunct in, of wasps, 22:28283 (ORNL-4100, pp 75-96)
mutations in Drosophila, induced by γ-irradiated carbohydrate solutions, 22:51393
radiation effects on activity of, of mosquitoes, γ, 22:10860
radiation effects on DNA in, of Drosophila, mutagenic β, 22:28426
radiation effects on production of, by Spanish goats, chronic low level γ, 22:45719
radiation effects on silkworm, repair of premutational γ,

22:47501 (NP-17136)
radiation effects on viability of, of fruit flies, x, 22:33967
radiation effects on, of frogs, development of haploid embryos following uv, 22:25996
radiation effects on, of man, legal aspects of x, 22:15010
radiation effects on, of rats, effects of dose fractionation on γ, 22:10868
radiation effects on, of trout, latent x, 22:15072
radioinduced chromosome aberrations in, of mice, protective effects of AET and mexamine against fast neutron and x, 22:17038
radioinduced dominant lethal mutations in, of mice, effects of, on survival of embryonic progeny, x, 22:2496
radioinduced dominant lethals in, of rabbits, effects of dose rate on γ, 22:17022
radioinduced lethal mutations in, of Drosophila in comparison to spermatogonia, x, 22:17017
radioinduced mutations in, of Drosophila, effects of weightlessness on γ, 22:47509
radioinduced mutations in, of mice, effects of age on incidence of x, 22:4590(R) (NYO-3314-10)
radioinduced mutations in, of mice, fast neutron, γ, proton, and x, 22:19408
radioinduced mutations in, of Oenothera berteriana, comparison of EMS-induced and x, 22:10746
radioinduced mutations in, of rabbits, protective effects of chemical agents against γ, 22:19376
radioinduced recessive lethal mutations in, of Drosophila, effects of sigma virus on x, 22:33780(R) (NYO-3905-2)
radiosensitivity of Drosophila, effects of protein synthesis on, 22:40615(R) (EUR-3889)
radiosensitivity of mice, effects of strain on x, 22:17039
radiosensitivity of mice, fast neutron, γ, and proton, 22:19408
radiosensitivity of rat, during development, effects of cell phase on x, 22:33953
radiosensitivity of sea urchin, effects of psoralen on uv, 22:21563
storage in spermatheca of fruit flies, effects of nitrogen abundance on, 22:14987
uptake and retention of sulfur-35-labeled cysteamine by, of Misgurnus fossilis, 22:47488

SPERMATOCYTES
see also Sperm
see also Spermatogonia
radiation effects on activity of acid phosphatase in, of rats, γ, 22:33774
radiation effects on chromosomes in primary, of Drosophila melanogaster, aberrant x, 22:8512
radiation effects on DNA content and morphology of nuclei of, from grasshoppers, uv, 22:19249
radiation effects on reproduction following phosphorus-32 labeling of, in codling moth, β, 22:52114
radiation effects on synthesis of DNA, nucleoprotein, and RNA in nuclei of, in rats, x, 22:51418
radiation effects on, in Drosophila, effects of developmental stage on x, 22:49298
radiation effects on, of Drosophila melanogaster, effects of nitrogen and oxygen on recovery from, 22:521
radiation effects on, of hamsters in comparison to effects on spermatogonia, x, 22:21583
radiation effects on, of mice in comparison to effects of strontium-90 administration, x, 22:8629
radiation effects on, of silkworms, latent γ, 22:40931
radioinduced aberrations of chromosomes of grasshopper, protective effects of anoxia and drugs against x, 22:36318
radioinduced chromosome aberrations in Drosophila, analysis and localization of x, 22:45493
radioinduced chromosome aberrations in, of pupae of Drosophila, effects of, on crossing-over in males, x, 22:17011
radioinduced crossing over of chromosomes in, of fruit flies, x, 22:14986
radioinduced crossovers in, of Drosophila, effects of cell stage and dose on x, 22:31045

SPERMATOGENESIS
effects on frequency of x-radioinduced lethal mutations in Drosophila melanogaster, 22:31032
radiation effects on fruit fly, x, 22:33967
radiation effects on human, x, 22:6877
radiation effects on, in beagles, effects of dose fractionation on x, 22:38430 (UR-49-876)
radiation effects on, in dogs following space flight, cosmic, 22:21588
radiation effects on, in mice, deuterium oxide, 22:36342
radiation effects on, in mice, effects of dose on uv, 22:15061
radiation effects on, in monkeys, effects of age and dose on γ, 22:21609
radiation effects on, of fruit flies, field evaluation of, in Capri, 22:34004
radiation effects on, of rats, effects of cell phase on x, 22:33953
radioinduced aberrations of chromosomes during, in Drosophila, γ, 22:21485
radioinduced decrease of, in man, microwave, 22:40864
radioinduced preferential segregation of chromosomes during, of Drosophila, x, 22:10744
synthesis of proteins during, in fruit flies, tritium tracer study of effects of inhibitors on, 22:28668

SPERMATOGONIA
see also Spermatocytes
radiation effects on survival of, in monkeys, local x, 22:21610
radiation effects on, of hamsters in comparison to effects on spermatocytes, x, 22:21583
radiation effects on, of mice, effects of age on x, 22:15088
radiation effects on, of mice, effects of dose-fractionation on mutagenic x, 22:28418
radiation effects on, of mice, effects of, on incidence of XO females in progeny, x, 22:40646
radiation effects on, of mice, effects of, on reproduction, x, 22:40616(R) (NYO-1979-26)
radiation effects on, of mice, frequency of mutagenic x, 22:40642
radiation effects on, of mice, generational analysis of genetic x, 22:25819
radiation effects on, of mice, population dynamics of mutagenic x, 22:45492
radiation effects on, of swine, effects of, on birth weight of progeny, x, 22:10869
radiation effects on, of swine, effects of, on weight and depth of fat of offspring, x, 22:33970
radioinduced chromosome aberrations in, of mice, RBE of fast neutron, γ, proton, and x, 22:21478
radioinduced chromosome aberrations in, of pupae of Drosophila, effects of, on crossing-over in males, x, 22:17011
radioinduced depletion of, in mice, dependence of RBE on dose rate and quality for fast neutron, 22:40912
radioinduced dominant lethal mutations in, of mice, α, proton, and x, 22:12929
radioinduced lethal mutations in, of Drosophila in comparison to spermatozoa, x, 22:17017
radioinduced mutations in, of Drosophila, effects of dose fractionation on x, 22:51490(R) (ORO-3014-3)
radioinduced mutations in, of Drosophila, γ, 22:21485
radioinduced mutations in, of mice, effects of dose rate on γ and x, 22:31027
radioinduced mutations in, of mice, fast neutron, γ, and x, 22:12839
radiosensitivity of type A, in monkeys, local x, 22:21610
radiosensitivity of, in monkeys, effects of age on γ, 22:21609

SPERMINE
radiation effects on polyuridylic acid complexes with, analysis of photoproducts from uv, 22:10727

SPERT (Special Power Excursion Reactor Tests)
see Reactor Safety Experiments

SPHENE
age of, fission track method for estimating, 22:35932
thorium content of, determination by autoradiography, 22:2203

SPHENOPSIDA
Equisetum arvense, radiation effects on, mutagenic cosmic, 22:25813
Equisetum palustre, radiation effects on, mutagenic cosmic, 22:25813
Equisetum silvaticum, radiation effects on, mutagenic cosmic, 22:25813
Equisetum sp., cesium-137 content of, in mountain bog, 22:10739 (BNWL-480, pp 127-51)

SPHERES
coating of micro-, design of sol-gel process equipment for, 22:25591
coating with pyrolytic carbon, using entrained-fluidized-beds, 22:23212 (ORNL-TM-2113)
collection of gel micro-, inclined settler for, 22:14481 (ORNL-4139, pp 43-7)
drag in MHD flow of sodium, 22:9151
electromagnetic wave scattering on imperfectly conducting, (T), 22:26383 (SC-R-68-1692)
electromagnetic wave scattering on imperfectly conducting, (T), 22:26382 (SC-R-68-1691)
electrostatics of conductive, on charged conductive planes, (E/T), 22:7404 (ORNL-4193)
explosion of pressurized, at ocean surface, shock wave propagation in seawater from, 22:21219
field of fluid, Schwarzschild interior solution for, 22:44500
flow of ionized air past, zone light in, 22:15402
fluid flow around hollow, in magnetic field, slow viscous, (T), 22:17458
gravitational forces about elastic, massive, spinning, 22:41863
heat transfer from, to liquid sodium, (E), 22:16767
heat transfer over surface of heat-producing, temperature and stress fields from variable, 22:14669
heat transfer rates for, immersed in free jets, fluidynamic effects on stagnation point, 22:22907 (SC-CR-68-3418)
heat transfer to liquid metals flowing along row of, 22:12529
heat transfer to liquid sodium from, 22:647(R) (BNL-50077)

  heating in reentry environments, computer program for transient, 22:21274 (SC-RR-67-2996)
  hypersonic reentry of small, aerodynamic parameters of, 22:42977(R) (SC-PR-68-451)
  loading of Maloney, with sodium-24 solutions, 22:23215 (AERE-M-1167)
  metallography of plasma-fired plutonium dioxide micro-, 22:8805 (CONF-670533-8)
  microstructure of carbon-coated plutonium fuel, 22:15261(R) (BMI-1819)
  packed beds of, flow distribution and pressure drop through, 22:16752 (AAEC/TM-398)
  packed beds of, velocity distribution and pressure loss for, 22:229 (AAEC/E-178)
  packing metal, visual model for powder metallurgy using vibration, 22:2594
  particle motion in fluid in isotropic, generalized Tolman solutions in general relativity for, 22:5665
  preparation of coated micro-, equipment for, 22:12476 (ORNL-TM-1978)
  preparation of micro-, sol dispersion devices for, 22:14481 (ORNL-4139, pp 43-7)
  production and stability of plutonium dioxide micro-, 22:8805 (CONF-670533-8)
  production of ceramic particle, method for, 22:7051(P)
  production of ceramic, plasma flame method for, 22:19620(P)
  production of small charged, method for, 22:47055
  randomly packed beds of, distribution of fluid velocities for, 22:16753 (CONF-671211-1)
  relativity theory for fluid, rotation of inertial frame in general, 22:37191 (N-68-10738)
  relativity theory for fluid, solutions for spherically symmetric matter distributions in general, 22:37197
  response to blast loading, use of finite difference method to analyze, 22:3981 (SC-DC-67-1923)
  stress analysis for perforated hollow, point-matching method for, 22:22916 (TID-24309)
  stress and temperature fields in heat-producing, effect of nonuniform heat transfer on, 22:14669
  temperature and stresses in surface of heat-producing, iterative perturbation method for solution of, 22:49018

Spherical Cavity Reactor
    see Reactors, Rocket

SPHINGOLIPIDS
    see also Cerebrosides

Spicules
    see Solar Spicules

Spiders
    see specific names under Arachnida

Spin
    see Nuclear Spin

Spin, Particle
    see Elementary Particles

Spinach (Spinacea)
    see Spinacea under Angiospermidae

SPINAL CORD
  radiation dose to human, estimation of iodine-131 β, 22:51646
  radiation effects on acetylcholinesterase activity and protein content in, of rats, prenatal x, 22:447
  radiation effects on content of serotonin in, of rats, phosphorus-32 β, 22:21417
  radiation effects on distribution of substance P in, of rats, x, 22:36201
  radiation effects on ether sensitivity of, in cats and mice, protective effects of s-methoxytryptamine and AET against x, 22:31173
  radiation effects on human, during postoperative therapy of thyroid tumors, techniques for protection against high-energy electron, 22:51703
  radiation effects on labile electrical characteristics of, in cats, x, 22:28626 (NYO-2147-13, pp 193-5)
  radiation effects on pyramidal cells of, in rats, effects of parabiosis on whole-body x, 22:49567
  radiation effects on scar formation in traumatically injured, in rats, x, 22:40926
  radiation effects on synaptic reflexes in, of cats, x, 22:28684
  radiation effects on synthesis of DNA in regenerating cells of, in rats, x, 22:40926
  radiation effects on tissues of, in developing rats, x, 22:28640
  radiation effects on, of rats, x, 22:49569
  radiodiagnosis of arachnitis of, in man using γ myelography, 22:23571
  radioinduced injuries to human, following therapy of hypopharynx carcinoma, radium γ and x, 22:10850
  radioinduced myelitis in, of man following therapy in hyperbaric oxygen, x, 22:28679
  radioinduced myelopathy of, following cobalt-60 therapy of lung cancer, γ, 22:43405
  radioinduced myelopathy of, in man following therapy of carcinomas of head and neck, 22:31213
  radiosensitivity of human, x, 22:31246
  radiotherapy of blastomas of human, combined γ and x, 22:43354
  scintiscanning using iodine-131-labeled serum albumin, prevention of injuries from, 22:28599

Spine
    see Vertebral Column

SPINELS
  lattice distortion of crystal sites of, 22:24377 (CEA-R-3356)
  Moessbauer effect in study of, review of, 22:17757
  production of fibers of, methods for high-strength glass-coated, 22:723(R) (AD-649537)
  production of single-crystal iron-lithium, lithium, nickel-zinc, and titanium by verneuil method, 22:8840 (ORNL-4170, pp 3-7)
  tin-119 Moessbauer effect in, above Curie point, (E), 22:31959

SPIROLACTONES
  effects on secretion of corticosteroids in irradiated animals, 22:33842

SPLEEN
  americium-241 content of rat, effects of administration route on, 22:47473
  analysis for copper by neutron activation methods, 22:33253
  antibody formation in cells of, following transplantation into x-irradiated mice, 22:51394
  blood circulation in, measurement of, using chromium-51-labeled erythrocytes, 22:25954
  calcium-45 uptake by, of guinea pigs infected with tuberculosis, 22:6761
  colony formation in mice, use of chromosome markers to study origin of, 22:36171
  content of β-aminoisobutyric acid and taurine in, of rats, 22:31264
  content of hemolysin-forming cells of, in mouse radiation chimeras, 22:36186
  content of mercapto groups in, of mice, effects of aminothiols, anoxia, and serotonin on, 22:25889
  content of SH groups in, of γ-irradiated mice, effects of radioprotective compounds on, 22:33848
  content of thorium dioxide in human, effects of, on incidence of chromosome aberrations in leukocytes, 22:28440
  content of thorium oxide in human, following injection of thorotrast, 22:31165
  content of Thorotrast in, of man, 22:6731
  development of cell colonies in, of x-irradiated mice following transplantation of bone marrow, 22:23632
  distribution of polymerized plutonium in, of mice following intravenous injection, 22:28537 (ANL-7278, pp 170-84)
  effects on control of hematopoiesis, 22:38461
  effects on incidence of autoimmune anemia in irradiated mice, 22:36206
  effects on radiosensitivity of hematopoiesis in mice, 22:38466
  effects on x-radiosensitivity of lymphoma induction in mice, effects of shielding on, 22:28670
  effects on x-radiosensitivity of lymphoma induction in mice, 22:28670
  function in man, use of mercury-197-labeled erythrocytes to study, 22:6843
  generation time of blast cells from, of mice, determination of mitotic, 22:28629 (ORNL-4100, pp 104-9)
  gold-198 content of, following therapeutic administration to knee joint, 22:14958
  growth of cells of, following transplantation into γ-irradiated mice, effects of vinblastine and vincristine on, 22:28357
  growth of injected lymphocytes in, of homologous x-irradiated rats, 22:12805
  hematopoietic activity in, of rats, 22:38461
  immune reaction in, analysis of mechanisms of, 22:8483
  immune reactions of cells of, in lethally irradiated parabiont mice, 22:40536
  immune reactions of, in γ-irradiated mice, effects of bone marrow cells on, 22:30958
  immune reactions to transplants of homogeneous, in mice, effects of, on growth of homogeneous bone marrow transplants following x irradiation, 22:33927
  immune reactions to transplants of, in mice, 22:51431
  immune response and proliferation of cells in, of chicken, relation of, 22:19276
  incidence of bacteremia in, of x radiation chimeras, of mice with secondary disease, 22:23612
  iodine content of, of animals and man, effects of infectious disease on, 22:40681
  iron-59 distribution in, of mice following liver damage by carbon tetrachloride, 22:51312
  localization of antigen in lymphatic tissue of, 22:28289 (ORNL-4100, pp 178-201)
  niobium-95 distribution in, of rats, 22:8475
  oxygen content of, in γ-irradiated mice, effects of propylamine and derivatives on, 22:49391
  oxygen content of, in γ-irradiated mice, effects of cystamine and cysteamine on, 22:33848
  phagocytosis in, of mice, effects of spontaneous mammary carcinomas and lymphomas on, 22:19235(R) (COO-1282-1)
  phosphorus-32 uptake by, of rats, effects of blocking agents on, 22:21418
  plutonium content of human, following occupational exposure, 22:38265 (UCRL-18140, pp 103-22)
  plutonium-239 retention by, of beagle dogs, effects of dose rate on, 22:28336
  preparation of radiation-leukemia protection factor from,

of sheep, 22:31136
proliferation of transplants of primed, in x-irradiated mice, 22:43217
proteolysis in relation to radiosensitivity, 22:19269
radiation dose to, following administration of Thorotrast, 22:6731
radiation effect on hematopoietic recovery in, of mice, x, 22:578
radiation effects on abundance of antibody plaque-forming cells in, of mice, in comparison to effects of phytohemagglutinin, thymectomy, and typhoid-paratyphoid vaccine, x, 22:38223
radiation effects on activity and electrophoretic patterns of alkaline phosphatase in, of rats, whole-body x, 22:2484
radiation effects on activity of acid and alkaline phosphatases in subcellular fractions of cells of, in rats, whole-body x, 22:6730
radiation effects on activity of alkaline phosphatase in, of mice, effects of intensity on x, 22:10724
radiation effects on activity of DNAase in, of rats, protective effects of AET and cysteamine against x, 22:4661
radiation effects on activity of enzymes in, of rats, x, 22:25753
radiation effects on activity of proteases from, of mice, effects of AET, carbon monoxide, and cysteamine on x, 22:19268
radiation effects on amyloidosis induction by injection of cells of, of mice, x, 22:33720
radiation effects on antibody production in, of rabbits, role of secondary nodules in whole-body x, 22:19279
radiation effects on antibody synthesis by cells of, x, 22:28629 (ORNL-4100, pp 104-9)
radiation effects on antibody synthesis by, of mice, γ, 22:47484
radiation effects on antibody-forming cells from, of mice, x, 22:4569
radiation effects on bioelectric activity of efferent nerve fibers to, of cats, x, 22:45390
radiation effects on cellular components of, in mice, effects of adrenalectomy and hydrocortisone on, 22:40929
radiation effects on colony formation in, of mice, effects of circadian clock on x, 22:49220
radiation effects on colony formation in, of mice, combined effects of genetic strain and hypoxia on x, 22:23602
radiation effects on colony-forming ability of cells from, of mice, in vitro and in vivo, x, 22:38226
radiation effects on colony-forming cells in, of mice, effects of erythropoietin on γ, 22:45622
radiation effects on colony-forming cells of, effects of hypoxia on repair of whole-body x, 22:38454
radiation effects on content of hematopoietic colony-forming units of, of mice, x, 22:51452
radiation effects on content of lymphocytes in, of dogs and man, following extracorporeal exposure, β, 22:25741
radiation effects on content of vitamin C in, of rats, γ, 22:25763
radiation effects on development of colonies in, of mice following injection of human bone marrow cells and lymphocytes, x, 22:43257
radiation effects on DNA content of nuclei of lymphocytes in, of rats, effects of physiological state on x, 22:21433
radiation effects on DNAase II activity in, of rats, strontium-90 β, 22:8487
radiation effects on dry and wet weight of, in mice, effects of dose on x, 22:40947
radiation effects on enzyme activity in, of rats, x, 22:43226
radiation effects on enzymes in, of rats, whole-body ionizing, 22:40589
radiation effects on erythropoiesis in, of mice, effects of erythopoietin on x, 22:38459
radiation effects on erythropoiesis in, of mice, effects of repeated exposure on, 22:10843
radiation effects on erythropoiesis in, of mice, protective effects of biological materials against, 22:10842
radiation effects on formation of complement-fixing antibodies against, in guinea pigs following injection of Mycobacterium tuberculosis, γ and x, 22:23443
radiation effects on formation of macrophages by colonies of hemopoietic cells of, in mice following bone marrow transplants, γ, 22:28331
radiation effects on growth of bone marrow following transplantation in, of mice, x, 22:23419
radiation effects on growth of injected bone marrow in, of mice, x, 22:23590 (BNL-12313)
radiation effects on hematopoiesis in, of rat fetuses, x, 22:49583
radiation effects on hematopoiesis in, of rats, effects of isologous bone marrow transplants on, 22:28694
radiation effects on hematopoietic cells in, of mice, 22:10841
radiation effects on hematopoietic colony formation in, of mice, effects of erythropoietic stimuli on, 22:43473
radiation effects on hematopoietic stem cells in, of mice, effects of endotoxin on x, 22:17028
radiation effects on hematopoietic stem cells in, of rats, effects of age on γ, 22:6901
radiation effects on hematopoietic tissue in mouse, x, 22:556
radiation effects on hemolysin producing cells of, of mice, effects of dose and endotoxin on x, 22:49213
radiation effects on hemolysin synthesis by cells of, effects of antigen-injection time on x, 22:45468
radiation effects on hemopoietic regeneration of bone marrow cells in, of mice, protective effects of phytohemagglutinin against x, 22:10796
radiation effects on immune competence of cells from, of mice, effects of presence of thymus tissues on sublethal, 22:19282
radiation effects on immune reactions in guinea pigs and mice to transplants of cells from, of immunized and normal donors, 22:38201
radiation effects on immune reactions of, in relation to bone marrow and thymus, combined effects of urethan on x, 22:6713(R) (COO-1455-2)
radiation effects on immune reactions to extracts of, in rats following injection, 22:25771
radiation effects on immune reactions to transplants of, in mice, effects of surgical removal of thymus gland on x, 22:33928
radiation effects on immune response cells of rat, cytological analysis of γ, 22:38222
radiation effects on immune response of cells of, in mice, against sheep erythrocytes, x, 22:14929
radiation effects on immunocompetent cells of, of mice, compartmental analysis of x, 22:10682
radiation effects on in vitro oxygen consumption by, of mice, whole-body x, 22:49524
radiation effects on interferon content of, in rats, effects of adrenalectomy, cortisol, and sindbis virus on x, 22:52000
radiation effects on lactate dehydrogenase content of, in mice, acute x, 22:49274
radiation effects on lipids of, in rats, x, 22:30929 (BMwF-FBK-67-84)
radiation effects on long-chain fatty acids in, of rabbits, acute phosphorus-32, 22:47482
radiation effects on microorganism content of, in swine, 22:33914
radiation effects on oxidative phosphorylation in mitochondria of, in rats, whole-body γ and x, 22:6750
radiation effects on oxidative phosphorylation of mitochondria from, of rats, γ, 22:8442
radiation effects on plaque-formation in, of antigen-stimulated mice following injection of immunized cells from syngeneic donors, x, 22:23477
radiation effects on rate of incorporation of tritium-labeled thymidine into DNA of, in mice, early x, 22:19243
radiation effects on release of leukemogenic agent from, of mice, effects of age on x, 22:28633
radiation effects on release of taurine from, γ, 22:36181
radiation effects on size and weight of, in mice, protective effects of AET and PAPP against, 22:15038
radiation effects on stem cell function of bone marrow cells during growth in, of mice, x, 22:28339
radiation effects on structure of nucleoproteins in, of mice, γ, 22:25768
radiation effects on subcutaneously implanted, of dogs, lymphocytopenic, 22:40882
radiation effects on survival of endogenous cells on, following transplantation in mice, x, 22:28697
radiation effects on suspensions of cells from, protective effects of ascorbic acid against γ, 22:51828
radiation effects on thromboplastin activity in, of rabbits, 22:8437
radiation effects on tissues of, from mice, factors affecting chemiluminescence following γ, 22:49499
radiation effects on uptake of carbon-14-labeled glycine by proteins in, of rats, x, 22:28675
radiation effects on uptake of proteins by, of guinea pigs, x, 22:14975
radiation effects on uptake of trace elements by isolated mitochondria from, of rats, x, 22:40853
radiation effects on weight of, in mice, effects of hematoporphyrin on x, 22:10801
radiation effects on weight of, in mice, protective effects of cysteamine against, 22:17041
radiation effects on weight of, in mice, protective effects of bone marrow transplants against x, 22:19251
radiation effects on weight of, in mice, RBE of electron and x, 22:15090
radiation effects on weight of, protective effects of mixtures of cystamine and pyridoxine against γ, 22:4658
radiation effects on, effects of, on growth of leukocytes in serum of leukemia patients, x, 22:21440
radiation effects on, of albino rats, combined effects of heat treatment on ionizing, 22:10883
radiation effects on, of animals, laser, 22:31276
radiation effects on, of mice, in relation to immunity to Ehrlich ascites carcinomas, whole-body, 22:10684
radiation effects on, of mice, protective effects of

- cystamine against x, 22:45621
- radiation effects on, of mice, protective effects of anticancer agents against cobalt-60 γ, fast neutron, and x, 22:31188
- radiation effects on, of mice, protective effects of methandrostenolone on x, 22:40775
- radiation effects on, of mice, RBE for fast neutron, γ, and x, 22:40891
- radiation effects on, of rats, histological analysis of chronic strontium-90 β, 22:38434
- radiation effects on, of rats, pathology of fast neutron, 22:43468
- radiation effects on, of rats, therapeutic effects of DNA on whole-body γ, 22:25898
- radiation effects on, of Salamander larvae, x, 22:38479
- radiodiagnosis of ruptured, efficiency of chromium-51-labeled erythrocytes and scintillation counters for, 22:38357
- radiodiagnosis of, use of radioisotopes for, review of, 22:40758
- radioinduced hyperplasia of reticulohistiocyte system in, of mice and rats, microwave, 22:40895
- radioinduced lesions in, of rabbits following uptake of iron-59, β and γ, 22:21606
- radioinduced neoplasms in human, pathology of thorotrast, 22:21597
- radioinduced nodules in, of mice, relation of, to recovery, 22:548
- radioinduced production of elastic waves in, laser, 22:43467
- radioinduced reduction of weight of, in embryos and fetuses of rats, effects of continuous exposure on γ, 22:10865
- radioinduced suppression of immune reactions of cells of isologous, in mice, 22:6744
- radioisotope uptake by, of rats following oral administration, cesium-137 and rubidium-86, 22:25762
- radioprotective effects of extracts from, of sheep against leukemogenesis in mice, 22:31136
- radioprotective effects of extracts of, against development of leukemia in mice, 22:45646
- radioprotective effects of injections of cells of, on rats, effects of Endoxan on, 22:33872
- radioprotective effects of transplants of cells of, on immune response mechanisms of mice, γ, 22:10734
- radioprotective effects of transplants of cells of, on mice, γ, 22:38455
- radioprotective effects of transplants of, from newborn rats, on survival of mice, x, 22:12865
- radioprotective effects of transplants of, in mice, effects of cell dose on γ, 22:25895
- radioprotective extract of, chemical properties of, x, 22:33873
- radiosensitivity of colony-forming capability of cells from, of mice, in vitro and in vivo, x, 22:28392
- radiosensitivity of, effects of semiquinoid free radicals on, in bull, ram, and sow, 22:47570
- removal from mice, effects of, on radioprotective effects of serotonin, 22:40794
- removal from rats, effects of, on radioprotective effects of thymus extracts, 22:33844
- removal in rats, effects of, on x-radiosensitivity of urinary excretion of 2'-deoxycytidine, 22:12916
- removal of, effects of, on iron-59 uptake by bones and erythrocytes of x-irradiated mice, 22:45674
- removal of, effects of, on survival of x-irradiated mice, 22:47632
- removal of, effects of, on x-radiosensitivity of immune reactions in rabbits, 22:8469
- removal of, from mice, effects of, on immune reactions, 22:28289 (ORNL-4100, pp 178-201)
- removal, effects of, on x-radioinduced kidney lesions in aging rodents, 22:43225
- response of chemoreceptors of, to cystamine in x-irradiated cats, 22:31245
- role in immune response of mice, cellular level studies of, 22:40615(R) (EUR-3889)
- scanning of blood circulation in, 22:33839 (UCLA-12-640, pp 1-30)
- scanning of human, use of chromium-51 and mercury-197 for, 22:38396
- scanning of, use of indium-113-labeled compounds for, 22:38334(R) (COO-1653-45)
- scanning using technetium-99 and gamma cameras, 22:25940
- scintiscanning in man, use of chromium-51-labeled erythrocytes for, 22:38339
- scintiscanning of erythrocyte mass in, of man, 22:25906
- scintiscanning of human, 22:33885
- scintiscanning of, evaluation of methods for, 22:4645
- scintiscanning using chromium-51-labeled erythrocytes on mercury-197-labeled bromomercurate hydroxypropane, 22:49466
- scintiscanning using heated technetium-99-labeled erythrocytes, 22:40748
- scintiscanning using indium-115, 22:25938
- shielding of exteriorized, effects of, on serotonin content of blood of mice, 22:19436
- shielding of rat, effects of, on combined lethal effects of traumatic shock and x-radiation, 22:40846
- shielding of, effects of, on recovery of man exposed to atomic bombing at Hiroshima and Nagasaki, 22:21559
- shielding of, effects of, on recovery of whole-body γ-irradiated mice, 22:31228
- silver-110 uptake by, of rats following intravaginal application of silver-110-labeled silver nitrate, 22:14960
- structure of nucleoproteins in, of mice, effects of urethanes on, 22:25768
- survival of x-irradiated mice following injection of cells of, effects of splenectomy on, 22:45675
- tellurium metabolism in, of rats, 22:6720(T) (TT-1283)
- transfer of immune response to human gamma globulin by cells of, in mice, 22:12765
- transplant of cells of, in mice, runting syndrome resulting from, 22:36173
- transplant to radiation chimeras of mice, effects of, on immunity to hybrid, 22:36174
- transplantation into x-irradiated mice, effects of, on development of amyloidosis, 22:16985
- transplantation of cells of, in mice, effects of casein-sensitization, heat treatment, or x-irradiation on occurrence of amyloidosis following, 22:51432
- transplantation of cells of, into mice, effects of, on x-radioinduced mortality, 22:51989
- uptake of selenium-75-labeled selenonates by tumors in, of mice, 22:51444
- uranium retention in rat, following inhalation of ADU, 22:33740
- uranium uptake by, of mice, rabbits, and swine, following sorption from lungs and skin in relation to toxicity, 22:49242
- uranium-233 uptake by, of mice following injection, effects of, on toxicity, 22:45433
- use of cells from rabbit, to test transplantation tolerance in x-irradiated mice, 22:38216
- volume determinations for human, use of radioisotope scans and roentgenograms for, 22:38360
- zinc-65 uptake by rat, effects of cirrhosis on, 22:45385

Splices
- see Cables

SPODUMENES
- see also Lithium Aluminum Silicates

Sponges
- see Porifera

SPONTANEOUS FISSION
- asymmetry of, theory using liquid drop model with core, (T), 22:27338
- bibliography on, from 1963--1967, 22:48524 (TID-24686)
- deformation parameters for, 22:3750 (INP-555/PL/PH, pp 123-4)
- energy-gap increase at saddle point, explanation of, (T), 22:18341
- gamma stability of spontaneously fissioning isomers, (T), 22:53251
- half-lives of isotopes with Z near 114 and N near 184, (T), 22:44781
- mass asymmetry in, theory of, (T), 22:22646
- neutron emission in, ν values for prompt, (E), 22:18250
- neutron yield in, variation with fragment mass, (T), 22:35394
- nuclear charge and energy distribution in, (T), 22:18339
- nuclear excitation in, correlation with kinetic energy of fission products, (T), 22:35389
- nuclear transition states in, survey on, (E/T), 22:20642
- properties of very heavy nuclei, (T), 22:1691
- rate measurements using Makrofol and mica solid-state track recorders, 22:47346
- rate of, design of negative-pressure, rotational, bubble-chamber-type detector for measuring, 22:10560
- specific activities of Z = 88 to 104 nuclides, tables of, (T), 22:44725
- theory of symmetric, using liquid drop model with two-parameter equations, (T), 22:30046 (LA-3774)
- theory of, review of, (T), 22:27393
- theory of, review of, (T), 22:35369
- theory of, using shell-model Hamiltonian for heavy deformed nuclei, (T), 22:35371
- theory of, with equilibrium distribution after saddle point, (T), 22:27337

SPORES
- see also Pollen
- content of dipicolinic acid in, of Bacillus cereus, effects of β-2-thienylalamine on, 22:10896
- deposition and transport of, use of radioactive aerosols to study, 22:14590
- development of Clostridium botulinum type F, effects of chemical composition of culture medium and temperature on, 22:33986(R) (ORO-3347-5)
- production by Clostridium botulinum type C, effects of culture medium on, 22:49660(R) (COO-1183-26)
- production by Clostridium botulinum types B and F, effects of culture medium on, 22:6930(R) (COO-1183-24)
- radiation effects on chromosomes in, of Tradescantia, effects of dose on aberrant fast neutron and x, 22:12830
- radiation effects on formation of photoproducts in, of Bacillus megaterium, uv, 22:28719
- radiation effects on germinating, of Bacillus subtilis in relation to photoproducts, 22:28288 (ORNL-4100, pp 166-77)
- radiation effects on germination of Bacillus cereus, comparison of effects of heat and γ, 22:31300
- radiation effects on germination of fungus, in stored

wheat, cobalt-60 γ, 22:31303
radiation effects on germination of, of Equisetum sp., cosmic, 22:25813
radiation effects on germination of, of parasitic fungi, effects of dose on x, 22:33992
radiation effects on germination of, of Pteris longifolia, effects of sowing time on x, 22:47638
radiation effects on germination of, of Rhizopus stolonifer, combined effects of heat treatment on γ, 22:4715(R) (UCD-34-P-73-20)
radiation effects on photochemistry and survival of Bacillus megaterium, effects of temperature on uv, 22:49656
radiation effects on photoproducts and survival of, of Bacillus megaterium, uv, 22:28288 (ORNL-4100, pp 166-77)
radiation effects on reproduction and colony survival of Bacillus megaterium, effects of oxygen, temperature, and water content on x, 22:38507
radiation effects on respiration of Bacillus cereus, effects of temperature on γ, 22:49235
radiation effects on survival of Bacillus, x, 22:52076
radiation effects on survival of Clostridium, in cod, 22:6930(R) (COO-1183-24)
radiation effects on survival of, of Rhizopus stolonifer, protective effects of cysteamine against lethal γ, 22:17029
radiation effects on thymine dimer formation in, of bacteria, uv, 22:23398 (IA-1128, pp 147-55)
radiation effects on toxin production by Clostridium botulinum type F, γ, 22:33986(R) (ORO-3347-5)
radiation effects on transforming ability of DNA from, of bacteria, electron, 22:16984
radiation effects on virulence of Coccidioides immitis, in mice, γ, 22:8492
radiation effects on, effects of oxygen enhancement ratio on, 22:51396
radiation effects on, of Ascochyta sp., uv, 22:28723
radiation effects on, of Aspergillus niger, mutagenic uv, 22:51550
radiation effects on, of Bacillus cereus, effects of β-2-thienylalamine on uv, 22:10896
radiation effects on, of Bacillus stearothermophilus, effects of salt and sugar content on photoreactivation of uv, 22:47643
radiation effects on, of Bacillus subtilis and Escherichia coli, effects of temperature on microwave, 22:8662
radiation effects on, of bacteria and molds, lethal uv, 22:15127
radiation effects on, of Microsporum gypseum, mutagenic uv, 22:31023
radiation effects on, of Rhizopus stolonifer, protective effects of cysteamine against γ, 22:4715(R) (UCD-34-P-73-20)
radioinduced inactivation of Bacillus subtilis, effects of chlorocresol and temperature on γ, 22:43488
radioinduced mutations for inhibition of formation of, by Bacillus subtilis, chromosome mapping of uv, 22:51520
radioinduced mutations for loss of formation of, by yeast uv, 22:51542
radioinduced production of, by Alternaria solani, uv, 22:49659
radiosensitivity of Bacillus pseudoanthracis, uv, 22:12946
radiosensitivity of Bacillus subtilis, effects of low temperature on uv, 22:33972
radiosensitivity of bacterial, fast electron, 22:19463
radiosensitivity of cytoplasm and nuclei of, of Colletotrichum gloeosporoides, comparison of uv and x, 22:36406
radiosensitivity of, γ, 22:28725
Spot Tests
see Colorimetry
SPR-6 (Space Power Reactor-6)
see Nuclear Auxiliary Power Systems
SPRAY COOLING SYSTEMS
configuration of steam-recirculating nozzle-controlled upward-flow, description of, 22:47060(P)
cooldown effects on Zircaloy-clad uranium oxide (UO_2)-core fuel elements in simulated coolant loss accidents, 22:27397 (ANL-7375, pp 135-59)
description of flow tube-type, for boiling water reactors, 22:20889(P)
development of water-cooled reactor coolant-loss containment, model studies for, (E/T), 22:48777
heat transfer characteristics of reactor emergency in-core, (E), 22:24964 (IDO-17249)
methyl iodide mass transfer coefficients for, 22:27416(R) (ORNL-4228)
Spraying
see Metal Spraying
SPRAYS
efficiency in removal of methyl iodide from reactor containment atmospheres, 22:14477(R) (BNWL-530)
efficiency of Containment Systems Experiment, for removal of fission products, 22:32795
efficiency of NSPP containment system, for iodine vapor removal, 22:32796
efficiency of reactor containment system, for removal of fission products, 22:32797
performance in cooling reactor containment buildings and fission product removal, effect of condensation on, 22:8257 (ORNL-TM-2002)
solutions for, radiation effects on, 22:27416(R) (ORNL-4228)
stability of reactor containment system, radiation and thermal, 22:32792
SPRF
see Sandia Pulsed Reactor
SPRF-II
see Sandia Pulsed Reactor-II
Spring
see Seasons
SPRINGS
(See also materials used for springs; for springs of water, see Ground Waters.)
analysis of hot, in Japan for rare earths, neutron activation method for, 22:8013
description of fuel element supports of multiple wave-formed strip, 22:16332(P)
description of maximum support and minimum contact reactor fuel element support, 22:20961(P)
design for plenum chamber plugs in fuel elements, 22:37918(P)
mockup testing of torsion bar, for SEFOR core channel clamping mechanism, 22:35458 (GEAP-5465)
use of opposing motion pin guided helical, for braking device, 22:14327(P)
SPUTTERING
activation analysis procedure for detection of implanted species in, 22:46274
angular distribution of scattered and sputtered particles from, effects of mass ratio on, (T), 22:26229
bibliography on surface and vacuum physics, 22:52479 (NP-17636)
computer simulation of, 22:41341
conference on, 22:7164
efficiency in amorphous materials, calculation of, (T), 22:26226
energy spectra of atoms from, calculations of, 22:20050
equipment for vacuum of thin films, duoplasmatron ion source, 22:45954
focusing collisions in high-energy, model for, 22:26230
method for fabrication of uranium-coated stainless steel neutron detector anodes, 22:2587 (BNWL-553)
process for deposition of thin metal coatings, 22:17095
review of radiofrequency, 22:43551
theory of, 22:44212 (NP-17564)
theory of close-packed-crystal, role of focusing collisions in, 22:29582
use of atomic hydrogen in, for metallographic etching, 22:49753 (LA-DC-9603)
SQUALENE
radioinduced isomerization of, 22:25417
Squash
see Magnetic Mirror Machines
Squids (Loligo)
see Loligo under Mollusca
SQUIRRELS
biochemistry of brown fat and liver of, 22:28621 (ANL-7278, pp 1-94)
Citellus tridecemlineatus, radiation effects on survival of, protective effects of hibernation against γ, 22:19367
content of proteins in blood of chipmunk, effects of sex on, 22:6769(R) (NYO-2579-17)
determination of fibrillogenesis in regenerating tendons of, use of electron microscopy for, 22:28272 (ANL-7278, pp 185-218)
ecology of chipmunk, gopher, and uinta ground, 22:6769(R) (NYO-2579-17)
iodine-131 retention by chipmunks, pocket gopher, and uinta ground, effects of altitude on, 22:6769(R) (NYO-2579-17)
leukocyte count in chipmunk, effects of sex on, 22:6769(R) (NYO-2579-17)
radiation effects on hair of chipmunk and pocket gopher, cesium-137 γ, 22:6769(R) (NYO-2579-17)
radiation effects on leukocyte count and protein content of blood in chipmunks, 22:6769(R) (NYO-2579-17)
radiation effects on survival of, γ, 22:28621 (ANL-7278, pp 1-94)
radiation effects on turnover rate within adult populations of chipmunk and pocket gopher, cesium-137 γ, 22:6769(R) (NYO-2579-17)
radiosensitivity of, effects of high natural background radioactivity on x, 22:21464
SRE
see Sodium Reactor Experiment
SS Materials Accounting
see SF Materials Accounting
SSCR
see Spectral-Shift Control Reactor
ST-222
see T-222 (Tantalum Alloy)
STABLE ISOTOPES
(See also specific stable isotopes.)
analysis for trace impurities, 22:14434 (ORNL-4196, pp 93-8)
content of marine biological materials, activation analysis method for determination of, 22:42915(R) (NYO-2174-87)

production by US power reactors through 1990, 22:45245 (BNWL-716)
production of, review of chemical technology problems related to, 22:4260
sale listings of, 1961 through 1967, 22:25615 (MLM-1466)
separation by thermal diffusion, 22:45253
separation of, electromagnetic method for, 22:37938 (ORNL-4271)
separation of, review of methods for, 22:47292(T) (K-Trans-38)
separation, applications, and availability of, bibliography on sources of information on, 22:10504 (ORNL-IIC-12)
use in determination of gases in metals, 22:667
use in study of polymer chemistry, 22:71
uses as tracers, research progress on, 22:12179(R) (ORO-2858-19)

STACK DISPOSAL
see also Meteorology
see also Plumes
see also Radiation
see also Smokes
air contamination by, use of indium oxide particles in determining, 22:42884
analysis for radioiodine in effluent of CP-5 reactor, 22:35939 (ANL-7429)
argon-41 releases from Brookhaven Reactor, environmental monitoring of, 1965, 22:40258 (BNL-50093)
atmospheric pollution from, effects of long-period effluent releases on, 22:40224 (AECL-2787, pp 59-76)
atmospheric pollution from, evaluation of methods for reducing, 22:214(T) (ANL-Trans-520)
chimney height for safe, of gaseous radioactive wastes, 22:12563(T) (JPRS-43977)
diffusion of gases from, meteorological research on, 22:40242 (AECL-2787, pp 415-25)
diffusion of pollutants from, effect of obstructions on, 22:18952 (BNWL-481-1, pp 28-32)
effect on radiation dose to man following reactor accident, computer program for calculation of, 22:19332 (ORNL-4086)
effluent gases from, tracer method for study of atmospheric dispersion of, 22:14697
environmental contamination from, from Canadian reactors, 22:6487
fly ash from Pyrmont Power Station, Sydney, Australia, radium α activity in, 22:12448
gases in, analysis of, for sulfur dioxide by radioisotope methods, 22:30496
hazards of, effect of wind and turbulent diffusion on, 22:6484 (SC-DC-67-2343)
iodine-131 release to atmosphere from, 22:21299
iodine-131 releases from Brookhaven Reactor, environmental monitoring of, 1965, 22:40258 (BNL-50093)
iodine-133 releases from Brookhaven Reactor, environmental monitoring of, 1965, 22:40258 (BNL-50093)
monitoring for iodine-131 and particulate fission products, system for, 22:45306
monitoring of, argon-41 tracer in, 22:2502 (AECL-2665)
particle diffusion from, effects of meteorological and gound conditions on, 22:45195 (TID-24190, pp 189-255)
plume behavior from, effect of meteorological factors on turbulent, 22:18951 (BNWL-481-1, pp 8-27)
plume behavior from, effects of stack height on turbulent, 22:18951 (BNWL-481-1, pp 8-27)
plume behavior from, use of argon-41 and gamma spectrometer to study, 22:27925
plume detection from, zinc sulfide tracer method for instantaneous, 22:18953 (BNWL-481-1, pp 33-43)
plume diffusion from, at medium ranges, 22:40232 (AECL-2787, pp 252-62)
plume diffusion from, effects of stack height on, 22:18950 (BNWL-481-1, pp 5-8)
plume diffusion from, measurement of lateral, 22:18949 (BNWL-481-1, pp 1-4)
plume rise from, effects of meteorological conditions on buoyant, 22:16360(R) (NYO-3685-13)
plume rise theory for, comparison with observations of high stacks, 22:40260 (NP-17543)
plumes from, effects of atmospheric conditions on behavior of, (E), 22:47240 (NYO-3685-14)
pollutant diffusion from, effects of stack height on, 22:40223 (AECL-2787, pp 1-20)
pollutant diffusion from, slide rule gage points for calculation of, 22:40227 (AECL-2787, pp 132-6)
pollutant rise and diffusion from, effects of lakebreezes on, 22:40229 (AECL-2787, pp 215-28)
pollutants from, reduction of, 22:10533
radioiodine emission from, design of sampler for, 22:18962 (BNWL-481-1, pp 87-92)
radioiodine from, washout coefficient for, 22:18954 (BNWL-481-1, pp 43-52)
reactor waste gas monitoring from, design of equipment for continuous low-level, 22:18947 (BNL-12154)
removal of radioactive particles from, design of filtration equipment for, 22:2336(P)

STADE POWER REACTOR
description of, 22:10023
design parameters for, 22:12039
power plant systems for, description of, 22:12039

Stagecoach Project
see Plowshare Project

STAINING
effects on laser-radiosensitivity of HeLa cells, 22:12784

STAINLESS STEEL
abundance of boron-10 in, epithermal neutron activation analysis for, 22:35682(P)
analysis for antimony, arsenic, and copper by neutron activation, 22:33204 (AERE-AM-106)
analysis for boron, spectrometric, 22:27530 (CEA-N-816, pp 9-65)
analysis for chromium and nickel by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
analysis for lanthanum and samarium by neutron activation methods, 22:14451
analysis for niobium in stabilized, spectrophotometric, 22:27608
analysis for oxygen, 22:12223 (NAA-SR-12616)
analysis for phosphorus, extraction method for spectrophotometric, 22:4043
analysis for phosphorus, photometric, 22:28783(T) (TT-66-59003-4/A)
analysis of carburized, for carbon by helium-3 activation technique, 22:27487(R) (LA-3880)
analysis of laser-sampled, matrix effect in spectrochemical, 22:47081
annealing effects on radioinduced voids in type 316, 22:4844
argon scattering by surfaces of, flux and speed distributions in, (E), 22:47829
autoradiographs of preoxidized, 22:30121(R) (BMI-X-10229)
boiler tube failures in type 304, analysis of cracks in, 22:32840
bonding of, handbook on adhesive, 22:19517 (NASA-SP-5085)
bonding to aluminum in transition joints with tungsten barrier, 22:627 (AI-CE-72)
bonding to aluminum or zirconium alloys, process for, 22:6978(P)
bonding to Zircaloy-2, 22:10915 (WERL-1114-3)
bonding to Zircaloy-2 of austenitic, for fuel element cladding used in steam-cooled superheaters, 22:36485
bonding with sintered aluminum powder of, description of pressure, 22:30389
brazing to beryllium using a copper barrier layer on the beryllium, 22:49704
brittleness of 304, effects of decarburization and cold-work on, 22:691 (NAA-SR-12353)
cans for thermal shielding materials for spherical reactor vessels, description of triangular, 22:39911(P)
carbon mass transfer in types 316 and 321 at 1400ºC, effects of titanium on, 22:12968
carburization by liquid sodium, hardness studies on type 304, 22:4746
carburization by sodium of type 304, effects of oxygen at 1000, 1100, and 1200ºF on, 22:23715 (NAA-SR-Memo-9329)
carburization of austenitic, by sodium, development of carbon meter for measuring, 22:42947
carburization of, by carbon-contaminated sodium at high temperatures, 22:12967
cavitation effects of mercury at 70ºF, 22:2586
cladding compatibility of Type 316, analysis of sodium-bonded plutonium oxide (PuO_2)—uranium oxide (UO_2) fuel element, 22:50732(R) (GEAP-5631)
cladding defects in Type 316, effects of annealing and cold-working on, 22:50732(R) (GEAP-5631)
cladding economics and performance testing of Type 316, analysis of LMFBR fuel element, 22:46925 (WARD-3791-19)
cladding for fuel elements of type 304, stress analysis of, 22:30167(R) (WCAP-3708)
cladding for Indian Point Power Reactor Unit 1 Core A thorium oxide (ThO_2)—uranium oxide (UO_2) fuel elements of Type 304, profilometer and metallographic analysis of burnup effects on, 22:53261(R) (BAW-3809-4)
cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
cladding for metal-insulated uranium carbide fuel elements, description of fabrication of, 22:42485(P)
cladding for plutonium carbide (PuC)—uranium carbide (UC) and mixed plutonium carbide (PuC,Pu_2C_3)—uranium carbide (UC,U_2C_3) fuel capsules of Type 304, calculation of neutron radiation effects on physical properties of, (T), 22:46923 (UNC-5219)
cladding for plutonium oxide (PuO_2)—uranium oxide (UO_2) pellet-type fuels of, effects on burnup performance of, 22:39783(R) (NUMEC-3432-32)
cladding for pressurized-water reactor fuel elements of type 304, fabrication and irradiation testing of, 22:30166(R) (WCAP-3707)
cladding for Type 2 core assemblies for PM-1, PM-2, and PM-3 reactors, fabrication of, 22:14231 (NYO-10743)
cladding for uranium oxide (UO_2) ETR-type fuel element of Type 304, analysis of burnup failures in, 22:53422 (WCAP-3269-61-A)
cladding of heat exchangers and vessels by, welding method for, 22:15164
cladding of Type 304 and Type 347, metallographic

analysis of 27 to 36 kW/ft power level performance of mixed plutonium oxide (PuO_2)--uranium oxide (UO_2) with, 22:50731 (GEAP-5556)
cladding of type 304, fabrication of pressurized-water reactor fuel elements, 22:30165(R) (WCAP-3706)
cladding of type 304, fabrication of pressurized-water reactor fuel elements, 22:30164(R) (WCAP-3703)
cladding of type 304, physics measurements of assemblies of water-moderated 5 per cent enriched uranium oxide (UO_2) fuel elements with, (E/T), 22:35593 (EURAEC-1882)
cladding of type 304, physics measurements of assemblies of water-moderated 5 per cent enriched uranium oxide (UO_2) fuel elements with, (E/T), 22:35594 (EURAEC-1882(Annex))
cladding of Type 316, compatibility with plutonium carbide (PuC)--uranium carbide (UC) and plutonium nitride (PuN)--uranium nitride (UN) of sodium bonded, 22:50841(R) (LA-3993)
cladding of, fabrication for PM-1 and PM-3A fuel element, 22:14229 (HIT-242)
cladding of, ultrasonic-probing method for defect detection in, 22:14169
cladding performance of Type 316 and Type 347, analysis of plutonium oxide (PuO_2)--uranium oxide (UO_2) sodium-bonded fuel element fission product release effects on, 22:50732(R) (GEAP-5631)
cladding performance of Type 316 and Type 347, analysis of plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element fission product distribution effects on, 22:50732(R) (GEAP-5631)
cladding performance of Type 316, analysis of plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element 125,000 MWd/Te burnup, 22:50732(R) (GEAP-5631)
cladding thermal conductivity of Type 316 and Type 347, analysis of plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element, 22:50732(R) (GEAP-5631)
coating 316, by chemical vapor deposition of niobium--zirconium alloys, 22:6966
coating for oxidation protection of, deposition from mixed beryllium--magnesium--magnesium chloride powders at 800 and 1250°C, 22:10920
coating of, method for electrodeposition of wear-resistant composite, 22:2590
coating treatments for, methods for plating type, 22:19477 (NASA-SP-5090)
coating with copper for use in testing VAPOTRON principle for boiling-water reactors, 22:1759 (EURAEC-1890)
coating with niobium and tantalum, by chemical vapor deposition, 22:43563
coefficient of friction for types 304 and 347, with graphite to 4000°F, 22:8751
compatibility of type 304, with plutonium carbide--uranium carbide fuel at 800°C, 22:31458
compatibility of Type 304, with plutonium uranium carbide fuels at 700 to 800°C, 22:43627 (ANL-7299, pp 14-113)
compatibility of Type 304, with uranium-base fuel alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
compatibility with liquid metal--fused chloride system for fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
compatibility with plutonium carbide--uranium carbide fuel at 800°C, 22:4877
compatibility with plutonium nitride--uranium nitride fuels at 1000°C, 22:21645(R) (BMI-1826)
compatibility with potassium--sodium alloys in high-temperature radiator loops, 22:31327
compatibility with uranium carbide--plutonium carbide fuel at 800°C, 22:53463(R) (UNC-5217)
compatibility with uranium nitride--plutonium nitride through sodium bond, 22:41085 (BNWL-SA-1666)
compatibity of Type 316, as cladding for sodium-bonded carbide fuel at 750°C, 22:43629(R) (LA-3933)
compression ratio of powdered 316, effects of oxidation on, 22:651 (LA-3739)
corrosion and erosion by potassium vapor, 22:4738
corrosion at 289°C and 1000 psi, linear polarization technique for, 22:12978
corrosion at 500 to 700°C of 304, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by 1 N solutions of ferric chloride at 75°F, inhibition by addition of molybdenum or uranium, 22:36438
corrosion by 1 N solutions of hydrochloric acid at 75°F, inhibition by addition of molybdenum or uranium, 22:36438
corrosion by 1 N solutions of sulfuric acid at 75°F, inhibition by addition of molybdenum or uranium, 22:36438
corrosion by 600°F water, effects of aging temperature on stress, 22:620 (KAPL-M-6580)
corrosion by acidic chlorinated water at 150 to 200°C, 22:21653 (EURAEC-1947(Pt.1))
corrosion by aqueous calcium chloride at 150°C, stress, 22:21653 (EURAEC-1947(Pt.1))
corrosion by aqueous chlorides of austenitic, review of stress, 22:21687 (COO-1319-61)
corrosion by aqueous chlorides of type 304, review of stress, 22:21687 (COO-1319-61)
corrosion by aqueous chlorides of type 347, effects of pH on stress, 22:21687 (COO-1319-61)
corrosion by aqueous chlorides of type 347, effects of oxygen on, 22:21687 (COO-1319-61)
corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
corrosion by aqueous magnesium chloride at 153°C, stress, 22:21653 (EURAEC-1947(Pt.1))
corrosion by aqueous media, review, 22:21651
corrosion by aqueous sodium chloride at 107°C, stress, 22:21653 (EURAEC-1947(Pt.1))
corrosion by boiling aqueous magnesium chloride, effects of phase structure and platinum on stress, 22:10912(R) (EURAEC-1932)
corrosion by boiling magnesium chloride of types 202, 310, and 430, optical metallography of, 22:19473(R) (COO-1319-53)
corrosion by chloride solutions at 350 and 360°C, stress, 22:21654 (EURAEC-1947(Pt.2))
corrosion by chromic acid cleaning solutions, 22:19475 (IN-1134)
corrosion by components of various media, effects of acidity, nitrogen, surface finish, and temperature on pitting, 22:31332
corrosion by concentrated solutions of boiling uranyl nitrate, 22:26026 (CEA-N-616, pp 106-44)
corrosion by ferric chloride, effect of impurities on, 22:34012 (GEAP-5530)
corrosion by flowing sodium at high temperatures, 22:38510 (BNL-50082, pp 93-152)
corrosion by flowing sodium, effects of velocity on, 22:34008 (BNL-12482)
corrosion by fluoboric--hydrofluoric acid dissolver solutions for zirconium fuels, 22:19475 (IN-1134)
corrosion by liquid bismuth--lead eutectics, effects of zirconium inhibitor on, 22:21651
corrosion by liquid metals, review, 22:21651
corrosion by liquid potassium, (E), 22:32926 (GMAD-3078-32(Vol.2))
corrosion by liquid sodium at 1300°F of cladding material of Types 304, 316, and 347, analysis of,, 22:44820(R) (GEAP-5508)
corrosion by liquid sodium at 1300°F of electron bombardment heater anode of Type 316, analysis of, 22:44820(R) (GEAP-5508)
corrosion by liquid sodium in boilers, 22:32834
corrosion by liquid sodium of Type 304 and Type 316, effects of exposure time, flow rate, and temperature on, 22:44820(R) (GEAP-5508)
corrosion by liquid sodium of Type 304, Type 316, and Type 347, effects of pressure and exposure time at 1300°F on, 22:44821(R) (GEAP-5546)
corrosion by liquid sodium of Type 304, use of electron microscopy for analysis of, 22:42397 (TID-24602)
corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
corrosion by nitric acid, effects of graphite coupling on, 22:28732 (CEA-N-816, pp 102-39)
corrosion by pressurized water at 200 to 350°C, effects of water conditions on, 22:619 (EURAEC-1896)
corrosion by pressurized water at 316°C of Types 304, 304L, and 347, 22:49683 (CONF-671007-4)
corrosion by PRTR decontamination process, analysis of, 22:22816 (HW-75557(Rev.)(Del.))
corrosion by PRTR primary system decontamination process, analysis of, 22:22805 (BNWL-711)
corrosion by reagents used in reprocessing of zirconium alloy fuels, 22:19475 (IN-1134)
corrosion by seawater in condensers of power reactors, 22:47661 (CONF-671007-6)
corrosion by sodium at 1200 to 1600°F, effects of oxygen on, 22:31326
corrosion by sodium at 572 to 1472°F at 7800 hr exposure, 22:17081
corrosion by sodium at 600°C, 22:2572
corrosion by steam at 500 and 600°C, effects of platinum additions on, 22:2567(R) (EURAEC-1918)
corrosion by steam at 500 to 700°C of 304L, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by steam at 500 to 750°C of 316, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by steam at 500 to 750°C of 321, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by steam at 500 to 750°C of ICN 164 HE, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by steam at 500 to 750°C of Uranus 30, effects of surface crystallization on, 22:618 (EURAEC-1895)
corrosion by steam at 500°C, effects of carbon content on, 22:2567(R) (EURAEC-1918)
corrosion by steam at 500°C, stress, 22:21654 (EURAEC-1947(Pt.2))
corrosion by sulfuric acid cleaning solutions, 22:19475 (IN-1134)
corrosion by sulfuric acid, intergranular, 22:17083
corrosion by superheated steam of Type 304, film composition from, 22:41011
corrosion by water of Type 304, effects of dissolved gases and temperature on, 22:41011
corrosion cracking in boiling chloride solutions, 22:8692(R) (COO-1319-57)
corrosion cracking of irradiated types 304 and 348, intergranular, 22:26027 (GEAP-5495)
corrosion cracking of nonsensitized austenitic, circulating autoclave studies of intergranular, 22:26027 (GEAP-5495)
corrosion cracking of Type 304, effects of nitrogen on

stress, 22:43531(R) (TID-24567)
corrosion cracking of type 316, by aqueous chlorides at 215°C, 22:23714 (IN-1131, pp 91-100)
corrosion cracking of, analysis of alkaline stress, 22:35686
corrosion films on fuel cladding of, analysis by spectroscopy, 22:43629(R) (LA-3933)
corrosion in air and steam at 950 to 1400°C of type 304, analysis of, 22:30388
corrosion of 347, by pressurized high-pH water, 22:10915 (WERL-1114-3)
corrosion of 410, by pressurized high-pH water, 22:10915 (WERL-1114-3)
corrosion of austenitic, by boiling sea water, 22:19520(R) (RISO-151)
corrosion of austenitic, by carbon dioxide--carbon monoxide at 650 to 900°C, role of carbon in, 22:12983
corrosion of austentic, 22:38513 (CEA-N-856, pp 87-121)
corrosion of bolts of 17-4 PH, stress, 22:8693 (DP-1102)
corrosion of condenser tubing of, by cooling water, 22:52159 (CONF-671007-7)
corrosion of low-carbon, by nitric acid at 95°C, effects of iron ions on, 22:26026 (CEA-N-616, pp 106-44)
corrosion of reactor cladding and fuel of, by aqueous and gaseous media, 22:773
corrosion of stressed 304, 309, 310, by magnesium chloride at 300 to 400°F, 22:19473(R) (COO-1319-53)
corrosion of type 304 and type 321, effects of liquid sodium at 760°C on, 22:33151
corrosion of type 304 L, by liquid sodium at 500 to 600°C, 22:23768
corrosion of type 304, by ceramic fuels in sodium paste, 22:2573
corrosion of type 304, by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
corrosion of type 304L, by metal fluorides at 675°C, 22:8696 (ORNL-4170, pp 192-205)
corrosion of type 316, by flowing sodium at 760°C, 22:15141 (BNL-50057, pp 79-100)
corrosion of Type 316, by sodium, 22:52126 (BNL-50127)
corrosion of Type 316, by sodium, 22:27487(R) (LA-3880)
corrosion of Type 316, by sodium at 1200°F, 22:52192
corrosion of type 316, by sodium at 1200°F, 22:12971
corrosion of Type 321, by sodium, 22:52126 (BNL-50127)
corrosion of Type 430, by 65 per cent boiling nitric acid, 22:36438
corrosion of Type-304, by 1200°F sodium, 22:22653(R) (ANL-7419)
corrosion of types 304 and 316, by flowing sodium at high temperatures, 22:12969
corrosion of types 304, 316, and 347, by liquid sodium at 600 to 650°C, 22:17077
corrosion of Types 304L and 316L, by low-oxygen sodium at 1000°C, 22:43629(R) (LA-3933)
corrosion of types 310, 316, 347, and 410, by molten glass, 22:23094(R) (IAEA-3431-4)
corrosion of Types 316, 304, and 347 by 1300°F liquid sodium, 22:50735(R) (GEAP-5648)
corrosion of, effects of radiation and irradiated solutions on electrochemical, (E), 22:28735 (EURAEC-2010)
corrosion of, review of, 22:12957
corrosion of, use of autoradiography to study, 22:23220 (IA-1128, pp 160-8)
corrosion resistance of low carbon, surface chromization method for, 22:21654 (EURAEC-1947(Pt.2))
corrosion resistance of types 302 and 316, 22:6518
corrosion testing of Type 304, in N Reactor secondary coolant water, 22:36430 (BNWL-753)
corrosion under strain by demineralized water at 360°C, 22:26026 (CEA-N-616, pp 106-44)
corrosive effects of NaK on plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel rods clad with type-316 and type-347, analysis of, 22:25083(R) (GEAP-5541)
cost of, for LMFBR fuel cladding using type 316, 22:21699(R) (WARD-3791-13)
crack growth at room temperature in pipes of type 304, 22:15174(R) (GEAP-5554)
crack growth in multiple configuration, three-dimensional photoelastic analysis of, 22:50734(R) (GEAP-5637)
crack growth in Type 304, effects of boiling water environment on, 22:50734(R) (GEAP-5637)
crack growth in Type 304, effects of cycles and strain range on low-cycle fatigue, 22:50734(R) (GEAP-5637)
crack growth in Type 304, effects of temperature and stress on low-cycle fatigue, 22:50734(R) (GEAP-5637)
crack growth in type 304, measurement at 550 and 650°F of, 22:15174(R) (GEAP-5554)
crack growth rates in type 304 reactor coolant pipes of, 22:2610(R) (GEAP-5512)
creep and fatigue of, 22:23765 (TRG-Report-1294)
creep and stress of Type 304, at 1400°F, 22:52126 (BNL-50127)
creep and stress-rupture of type 316, effects of sodium at 700°C on, 22:34011(T) (EURFNR-465)
creep damage and fracture in austenitic, mechanisms for, 22:52188
creep of Type 304, effects of sodium on, 22:43627 (ANL-7299, pp 14-113)
creep of type 304, in-pile testing of, 22:19580 (BNWL-455, Paper 12.1-100)
creep rupture of annealed 316, effects of liquid sodium on, 22:691 (NAA-SR-12353)
creep rupture of austenitic 304, effects of liquid sodium on, 22:691 (NAA-SR-12353)
crystal structure of austenitic, 22:52178
crystallization of, effect of cold working on surface, 22:618 (EURAEC-1895)
damage from cavitation on Type 316, effects of liquid sodium at 800°F on, 22:48788
decarburization by sodium of type 304, effects of oxygen at 1200°F, 22:23715 (NAA-SR-Memo-9329)
decarburization of austenitic 304 and 316, by zirconium in liquid sodium, 22:691 (NAA-SR-12353)
decontamination of tritium-contaminated, by moist air at 300°C, 22:16737 (CEA-R-3312)
decontamination of type 304, from cesium-137, cathodic method for, 22:23003 (IA-1128, pp 97-146)
degasification of, in ultrahigh vacuum to 200 hours, 22:23256
degassing of Type 18/8, effect of metal cleaning methods on, 22:48979 (CLM-R-93)
degassing rate at very low pressures, 22:16847
density of irradiated type 347, effects of annealing at 982 to 1350°C on, 22:31415 (BNWL-532, pp 4.1-5)
deposition of layers of, on heavy gage steels for reactor vessels, 22:21691(R) (EURAEC-1961)
deposition of layers of, on heavy gage steels for reactor vessels, 22:21692(R) (EURAEC-1962)
deposition of single layers of, on steel, 22:21689(R) (EURAEC-1959)
deposition of thin layers of, on steel, 22:21690(R) (EURAEC-1960)
diffusion of iron in, measurement at 750 to 1300°C using iron-59, 22:23800
dissolution in pilot-scale studies on nuclear fuels, 22:40189 (NP-17542)
dissolution of fuel cans of, 22:40164 (KR-126, pp 54-73)
dissolution of fuel cans of 304L, 22:8169(R) (EURAEC-1934)
dissolution of, using hydrofluoric acid and oxygen, 22:4230(R) (EURAEC-1920)
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
drawing stresses in composite rods of, with type 304 stainless steel cores, 22:4755
drawing stresses in rods of type 304, with cores of aluminum, copper, or type 304 stainless steel, 22:4755
drawing tubes of Type 304, dimensional and microstructural changes during, 22:42994 (ANL-7299, pp 173-97)
ductility and strength of irradiated annealed Type AISI 304, effects of deformation temperature on, 22:47671 (CONF-671007-3)
ductility and strength of irradiated cold worked Type AISI 304 and 348, effect of deformation temperature on, 22:47671 (CONF-671007-3)
ductility of type 304, effects of helium on, 22:17122
effects of liquid sodium at 600°C on, 22:48788
electrodesorption of gas from, comparison with gas desorption from nickel and titanium, 22:52215(T) (SLAC-Trans-86)
electron scattering and transmission at 0.075 to 1.0 MeV, (E), 22:41291 (N-68-17898)
embrittlement at high temperatures, effects of helium on, 22:8726 (NAA-SR-12601)
erosion by cavitation of Type 316, by potassium, 22:52126 (BNL-50127)
erosion by potassium, effects of temperature on cavitation-type, 22:52126 (BNL-50127)
erosion by steam, testing for bearing uses, 22:17073 (MTI-68-TR-13)
etching of, potentiostatic method using ammonium sulfate, 22:8766 (ORNL-4170, pp 233-7)
extrusion pressures in conical dies, nomogram for predicting, 22:43542 (TRG-Report-1523)
extrusion to form bimetallic tubes with niobium, evaluation of, 22:631 (N-67-22891)
extrusion to form tubes with niobium--zirconium alloys, evaluation of, 22:631 (N-67-22891)
fabrication and properties for fuel cladding, review of, 22:28769
fabrication for use in equipment in Eurochemic fuel reprocessing plant, 22:6426
fabrication of austenitic butt welded tubes of, with homogeneous grain structure, 22:8721(P)
fabrication of fuel cans of, annealing and planetary swaging, 22:45761(P)
fabrication of fuel-element cladding of, using niobium, tantalum, or tungsten diffusion barriers, 22:36533(P)
fabrication of liquid sodium sampling device from type 304, description of, 22:44820(R) (GEAP-5508)
fabrication of niobium stabilized, for cladding Windscale AGR fuel pellets, 22:50750
fabrication of precipitation-hardening, by deformation processing, review of, 22:28756 (NASA-SP-5088)
fabrication of pressure vessels of, description of forging and welding, 22:39797
fabrication of thin-walled tubular, with longitudinal helical grooves, 22:39944(P)
fabrication of uranium-coated neutron detector anodes of, use of sputtering process for, 22:2587 (BNWL-553)
fabrication problems with, description of Fukushima Power

Reactor Unit 1 pressure vessel and pipe, 22:53326
fabrication techniques for AGR fuel cans of, description of, 22:14206
fabrication, machining, and welding of tubes of, 22:19493
failure modes of Type 316 specimens of, 22:27396(R) (AI-AEC-12638)
failure of bolts of 17-4 PH, effects of heat treatment on, 22:8693 (DP-1102)
failure of pipes of type 304L, photographic analysis of, 22:27404 (CVNA-285)
failure of type 316 welded tees of, in liquid sodium--potassium, 22:23762 (IN-1131, pp 101-15)
fatigue crack growth in Type 304, measurement of, 22:49711 (GEAP-5607)
fatigue equation for irradiated, derivation of, 22:26065 (TRG-Report-1353)
fatigue of annealed AISI 304 and 348, effects of strain rate at 650 and 816°C, 22:612(R) (GEMP-69)
fatigue of types 304, 316, and 348, at 430 to 816°C, data on low-cycle, 22:15180 (GEMP-1002, pp 94-107)
fatigue testing at 25, 650, and 750°C for nuclear use, 22:49737
fatigue testing at room temperature of cylinders of type 304, analysis of, 22:15174(R) (GEAP-5554)
fatigue testing of type 304 at 550°F, effects of boiling water on low-cycle, 22:15174(R) (GEAP-5554)
fault energies of, methods of determining, 22:38570
fracture testing of type 304 reactor coolant pipes of, 22:2610(R) (GEAP-5512)
friction and wear tests of types 301 and 303, for use in nuclear rocket valves, 22:8752
friction index of powdered 316, effects of oxidation on, 22:651 (LA-3739)
fuel cladding fabrication of Type 304, description of 97- and 78-percent density uranium oxide (UO_2) pellet-type element, 22:39793 (WCAP-3269-64)
fuel element cladding of Type 316, mechanical properties of Prototype Fast Reactor, 22:18512
grain boundaries of austenitic, effects of impurities on, 22:36489 (GEAP-5503)
growth of fuel cans of austenitic, during oxidation by carbon dioxide, 22:15148
hardness of 17-4 PH, effect of aging on, 22:620 (KAPL-M-6580)
hardness of austenitic, effects of niobium additions on, 22:52178
heat transfer performance of foil insulation of, in high pressure gas, 22:7839
heat transfer properties of zirconium dioxide-coated multifoil layers of, at 200 to 800°C, 22:51177(R) (ALO-3634-10)
heat transfer to liquid sodium from flat surfaces of, under free convection, 22:8298(T) (BNL-tr-167)
heat treatment effects on mechanical properties of types 347 and 348, (E), 22:19574 (BNWL-455, Paper 4.1-18)
hydrogen accumulation in bulbs of 347, in hydrogen-bearing high-pH water, 22:10915 (WERL-1114-3)
hydrogen accumulation in bulbs of 410, in hydrogen-bearing high-pH water, 22:10915 (WERL-1114-3)
hydrogen embrittlement of 17-4 PH, by aerated and ammoniated water at 600°F, 22:620 (KAPL-M-6580)
hydrogen iodide deposition on prefilmed Type 304, 22:22657(R) (BMI-X-10222)
hydrogen iodide deposition on Type 304, mass transfer rate of vaporous, 22:30121(R) (BMI-X-10229)
hydrogen-ion reactions at 1 to 10 keV, effects of hydrogen on secondary electron emission from, 22:9043
impact and tensile properties of PH 13-8 molybdenum, 22:15181 (GEMP-1002, pp 108-22)
impact strength of Type 304, use of Charpy V-notch specimens for, 22:27396(R) (AI-AEC-12638)
iodide deposition on prefilmed type 304, 22:14132(R) (BMI-X-10213)
iodine deposition on prefilmed Type 304, (E), 22:42161(R) (BMI-X-10237)
iodine deposition on type-304, 22:5961
joining aluminum to, explosive method for, 22:38528
joining to cobalt-base alloys, explosive method for, 22:38528
joining to Hastelloy X-280, embrittlement of welds, 22:6989
joining to low-carbon steels, explosive method for, 22:38528
joining to molybdenum by braze-welding, 22:23740
joining to nickel-base alloys, explosive method for, 22:38528
joining to tungsten by braze-welding, 22:23740
joint of Zircaloy-4 to Type 316, testing and cold-working of transition, 22:43543 (WCAP-3374-7-P)
joints with different materials, metallography of, 22:43553
joints with SAP, tensile testing of rolled, 22:3813(R) (AI-CE-54)
machining of, electro-discharge machine for precision, 22:12493
machining of, review on, 22:28755 (NASA-SP-5084)
mechanical and physical properties of Type 304 and Type 316, testing for FTR core structural materials of, 22:47006 (BNWL-748)
mechanical and physical properties of Type 406, 22:52162 (ORNL-TM-2263)
mechanical and physical properties of, comparison with vanadium alloys, 22:8710(R) (WCAP-3791-9)
mechanical properties at 600°C, 22:21654 (EURAEC-1947(Pt.2))
mechanical properties of, 22:19590
mechanical properties of 347 and 348, effects of long-time heating at 800 to 1200°F on, 22:711 (BMI-1809, Sect.B)
mechanical properties of austenitic, effects of cold rolling and thermal treatments on, 22:52178
mechanical properties of irradiated type-304, effects of helium on, (E), 22:30155(R) (NAA-SR-12296)
mechanical properties of sintered type 316L, 22:11058
mechanical properties of type 304 and type 316, effects of liquid sodium at 1200 to 1400°F on, 22:33168
mechanical properties of type 304, effect of cyclotron-injected helium on, 22:8788 (ORNL-4170, pp 115-18)
mechanical properties of type 304, effects of copper-contaminated liquid sodium at 950 to 1100°F on, 22:32980
mechanical properties of type 304, effects of surface defects on, 22:27479 (BNL-50096)
mechanical properties of type 304, evaluation of, 22:35461 (GEMP-482)
mechanical properties of type 304, preparation for testing effects of high-temperature sodium on, 22:19476(R) (MSAR-68-14)
mechanical properties of type 304L, effects of exposure to sodium on, 22:7788(R) (ANL-7382)
mechanical properties of type 316, at 21 and 760°C in air, 22:23762 (IN-1131, pp 101-15)
mechanical properties of type 316, effects of liquid sodium environment on, 22:18505
mechanical properties of Type 316, effects of temperature and thickness on, 22:46925 (WARD-3791-19)
mechanical properties of type 316, preparation for testing effects of high-temperature sodium on, 22:19476(R) (MSAR-68-14)
mechanical properties of type-316 and -321, in liquid sodium, (E), 22:30155(R) (NAA-SR-12296)
mechanical properties of types 304 and 316, effects of air, helium, and sodium at high temperatures on, 22:8694 (MSAR-67-216)
mechanical properties of types 304 and 316, effects of high temperature sodium on, 22:8725(R) (MSAR-67-207)
mechanical properties of Types 316, 304, and 347, effects of 1300°F flowing liquid sodium on, 22:50735(R) (GEAP-5648)
mechanical properties of, effects of liquid sodium on, 22:647(R) (BNL-50077)
mechanical properties of, effects of molybdenum and tungsten on, 22:7002
mechanical properties of, effects of temperature on fuel cladding, 22:18511
mechanical treatments for shaping martensitic, semiaustenitic, and austenitic, 22:21694 (NASA-SP-5089)
melting of claddings of, on fuel elements, 22:149
metallography of, performance of aluminum oxide--resin mounts for, 22:26058 (RFP-1104)
metallurgy of, review, 22:12957
Moessbauer effects in types 301, 303, 310, and 316 during aging, 22:28822
neutron capture in, rate of radiative epithermal, (E), 22:32928 (NDA-2143-9)
neutron damage rate for, measurement in DFR of, 22:16293 (TRG-Report-1561)
neutron reactions (n,α) in, helium production by, (T), 22:3641 (BNWL-SA-639)
neutron shielding properties of, 22:7340
neutronic characteristics of, in FTR reflector, (T), 22:27460 (BNWL-634, pp 4.1-55)
nitrogen molecule scattering by surfaces of, flux and speed distributions in, (E), 22:47829
oxidation by steam of type 304, analysis of, (E/T), 22:35461 (GEMP-482)
oxidation in type 310, bibliography on, 22:34041 (LA-3909)
oxidation of 304L, by air and steam at high temperatures, 22:612(R) (GEMP-69)
oxidation of austenitic, effect of yttrium on, 22:4747
oxidation of austenitic, electron probe analysis of films formed in, 22:25234 (AERE-R-5756)
oxidation of ferritic, effect of yttrium on, 22:4747
oxidation of surface of, use of deuteron beam to study, 22:29926
oxidation of Type 304L, analysis of simulation of coolant-loss at 1000 to 1375°C of steam and air, 22:53459 (GEMP-619)
oxidation of Type 406 by air and carbon dioxide at 816 to 1371°C, 22:52162 (ORNL-TM-2263)
oxide formation and deposition on, effects of high-temperature water on, 22:48788
penetration of Type 304, by liquid uranium-base fuel alloys, 22:43526 (ANL-7299, pp 114-19)
performance as cladding for LMFBR fuel, comparison with vanadium alloys, 22:8710(R) (WCAP-3791-9)
performance as coating for metals, evaluation of flame-sprayed, 22:10932
performance as fuel cladding for LMFBR, physics calculations for evaluation of, 22:21699(R) (WARD-

3791-13)
performance of cladding of type 316, gamma scan analysis of plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel burnup, 22:32970(R) (GEAP-5584)
performance of cladding plutonium nitride (PuN)--uranium nitride (UN) fuel elements of, at 700 to 1000°C, 22:32816
performance of type 304L, for reactor fuel storage pool liners, 22:12494
performance of type 440C, in Nerva turbopump roller bearings, 22:8789
physical properties of type 304, evaluation of, 22:35461 (GEMP-482)
pipe fabrication methods for reactor coolant loops in Japan, 22:14177
pipes of type 304, effects of 550°F on failure stress measurements in, (E), 22:35459(R) (GEAP-5587)
pipes of type 316, effects of flaws on pressure rupture of, 22:26036(R) (BMI-1836)
pipes of, analysis of crack failures in, (E/T), 22:35459(R) (GEAP-5587)
porosity of type 316, effects of temperature on, 22:4844
preparation of single crystals of, 22:28777(R) (BMI-1837)
pressure tube joints between SAP and, performance and testing of HWOCR, 22:14604 (AI-CE-46(Add.))
production of precipitation-hardenable, by casting and powder metallurgy, 22:19490 (NASA-SP-5086)
production of thin foils from cracked Type 304 U-bend specimens of, 22:45746(R) (EURAEC-2026)
properties as superheater alloys, effects of high-temperature steam on, 22:23710
properties for reactor components, review of, 22:34061
properties for use as liquid-metal-cooled fast breeder reactor fuel element cladding, review of, (E), 22:35425 (BMI-1900)
properties of PH 13-8 molybdenum at -78 to 425°C, impact and tensile, 22:612(R) (GEMP-69)
properties of powder compacts of Type 304, prepared by high-velocity impact, 22:43562
properties of sintered powders of, 22:52127(R) (RISO-179)
properties of Type EN58e and AISI 304L as filters, 22:7014
proton reactions at 100 MeV, isotope formation cross sections for, (E), 22:31535
quality specifications and tests of Type 316L, for cladding irradiated cobalt, 22:47666 (DP-1152)
radiation effect on mechanical properties of, neutron, 22:19590
radiation effects at 100°C on tensile properties of Type 304, fast neutron, 22:38510 (BNL-50082, pp 93-152)
radiation effects at 290°C on tensile properties of types 304 and 348, 22:31414 (BNWL-532, pp 12.1-88)
radiation effects at 550°F on mechanical properties of type 347 fast neutron, 22:4837
radiation effects at 650°C on stress rupture of type 347, in-pile, 22:28777(R) (BMI-1837)
radiation effects on 18/8, alpha, 22:4840
radiation effects on 347, in-pile, 22:766 (BMI-1809, Sect.F)
radiation effects on boron-containing, in-pile, 22:21749
radiation effects on corrosion of electrodes of, in acid solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on creep of type 316, neutron, 22:2670
radiation effects on creep of, measurement of in-pile, 22:4828
radiation effects on creep rupture of type 304, fast and thermal neutron, 22:19579 (BNWL-455, Paper 11.1-18)
radiation effects on creep-rupture of AISI 304, in-pile, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on creep-rupture of type 304, in-pile, 22:8788 (ORNL-4170, pp 115-18)
radiation effects on ductility and tensile properties of type 304, neutron, 22:34035 (BNL-12439)
radiation effects on ductility of Type 316, analysis of neutron, 22:48788
radiation effects on ductility of type 347, measurement at 315 and 550°C of neutron, 22:31415 (BNWL-532, pp 4.1-5)
radiation effects on ductility of, at 2 x 10^{22} neutrons/cm², 22:4832
radiation effects on EVESR fuel cladding of type-304 and type-310 vacuum melted, 22:5925 (GEAP-5510)
radiation effects on EVESR fuel cladding of type-304 commercial, 22:5925 (GEAP-5510)
radiation effects on fatigue and tensile properties of 347, in-pile, 22:15261(R) (BMI-1819)
radiation effects on fatigue and tensile properties of type 347, fast neutron, 22:49775
radiation effects on fuel element cladding of type 316, analysis of, 22:17189
radiation effects on fuel element cladding of, analysis of neutron, 22:27492
radiation effects on mechanical and physical properties of type 304 and 304L, neutron, 22:4728 (BMI-X-455(Pt.1))
radiation effects on mechanical and physical properties of type 316 and 316L, neutron, 22:4728 (BMI-X-455(Pt.1))
radiation effects on mechanical and physical properties of type 347 and 348, neutron, 22:4728 (BMI-X-455(Pt.1))
radiation effects on mechanical properties of 347, 410, and 440C martensitic, neutron, 22:4813 (TID-24148)
radiation effects on mechanical properties of 347, in-pile, 22:15261(R) (BMI-1819)
radiation effects on mechanical properties of AISI 304, fast neutron, 22:19580 (BNWL-455, Paper 12.1-100)
radiation effects on mechanical properties of cladding of, in-pile, 22:15261(R) (BMI-1819)
radiation effects on mechanical properties of PBF fuel element cladding of, measurement of neutron, (E/T), 22:35596(R) (IDO-17260)
radiation effects on mechanical properties of plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel cladding of Type 316, analysis of fast neutron, 22:42200(R) (ORNL-4200)
radiation effects on mechanical properties of structural, data compilation on neutron, 22:36511 (N-68-16876)
radiation effects on mechanical properties of types AM 350, 304, 316, and 347, neutron, 22:21745
radiation effects on mechanical properties of type 347, neutron, (E), 22:19574 (BNWL-455, Paper 4.1-18)
radiation effects on mechanical properties of Type 347, fast neutron, 22:43615(R) (BNWL-710)
radiation effects on mechanical properties of types 304, 316L, and 347, fast neutron, 22:31437
radiation effects on mechanical properties of type 347, measurement at 315 and 550°C of neutron, 22:31415 (BNWL-532, pp 4.1-5)
radiation effects on mechanical properties of types 304, 316, and 406, fast neutron, 22:19597
radiation effects on mechanical properties of Type 304, in-pile, 22:43627 (ANL-7299, pp 14-113)
radiation effects on mechanical properties of types 304 and 348, fast neutron, 22:31414 (BNWL-532, pp 12.1-88)
radiation effects on mechanical properties of type 347, fast neutron, 22:23842 (BMI-1834)
radiation effects on microstructure of 347, annealing effects on in-pile, 22:15261(R) (BMI-1819)
radiation effects on microstructure of Type 304, fast neutron, 22:43615(R) (BNWL-710)
radiation effects on niobium stabilized, neutron, 22:19593
radiation effects on notch ductility of, fast neutron, 22:43615(R) (BNWL-710)
radiation effects on oxidation of, fission neutron, 22:4842
radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of Type 316, analysis of fast neutron, 22:39790(R) (UNC-5201)
radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of Type 316, analysis of fast neutron, 22:39789 (UNC-5198)
radiation effects on properties of reactor fuel cladding of, 22:773
radiation effects on properties of, review of neutron, 22:52192
radiation effects on residual stress in Type 304, analysis of neutron, 22:50730 (GEAP-4221)
radiation effects on tensile properties at 300 to 750°C of type 304, analysis of fast neutron, 22:30388
radiation effects on tensile properties of 347, in-pile, 22:711 (BMI-1809, Sect.B)
radiation effects on tensile properties of AISI 304 and 348, neutron, 22:34079 (BNWL-SA-1455)
radiation effects on tensile properties of AISI 316, at 540, 600, 690, and 750°C, neutron, 22:34079 (BNWL-SA-1455)
radiation effects on tensile properties of austenitic Tenelon, in-pile, 22:28777(R) (BMI-1837)
radiation effects on tensile properties of cold-worked type 304, fast neutron, 22:4834
radiation effects on tensile properties of fuel element claddings of, 22:6019
radiation effects on tensile properties of Type 304, 22:16271(R) (BNWL-666)
radiation effects on tensile properties of Type 304 and Type 348, analysis of neutron, 22:48788
radiation effects on tensile properties of type 304, fast neutron, 22:4833
radiation effects on tensile properties of type 304, type 316L, and type 347, measurement at 1300°F of fast neutron, 22:32970(R) (GEAP-5584)
radiation effects on tensile properties of Type 304, Type 316, Type 321, and Type 347, analysis of fast neutron, 22:50732(R) (GEAP-5631)
radiation effects on tensile properties of type 304, in-pile, 22:21727 (ORNL-TM-2130)
radiation effects on tensile properties of type 347, neutron, 22:21645(R) (BMI-1826)
radiation effects on tensile properties of type 410 and AM350, fast neutron, 22:31414 (BNWL-532, pp 12.1-88)
radiation effects on tensile properties of type 410, fast neutron, 22:4835
radiation effects on tensile properties of types 304, 348, 350, and 410, fast neutron, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on tensile strength of type 304L, fast neutron, 22:19589

radiation effects on type 304, 22:12091(R) (BNWL-639)
radiation effects on type 304, effects of titanium additions on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on Type 304, fast-neutron, 22:647(R) (BNL-50077)
radiation effects on type 304, neutron, 22:23845 (IN-1131, pp 83-90)
radiation effects on type 304L, at 370 to 472ºC, fast neutron, 22:32827
radiation effects on type 316, neutron, 22:4844
radiation effects on type 347, fast neutron, 22:19602
radiation effects on types 304, 348, AM 350, 406, and 410, fast neutron, 22:19601
radiation effects on types 304L and 347 at 200 and 550ºF, neutron, 22:4811(R) (AD-646662)
radiation effects on types 347, 301, and 303 at cryogenic temperatures, fast neutron, 22:19604
radiation effects on vacancy cluster production in Type 304 and Type 316, analysis of intermediate and fast neutron, 22:53411 (BNWL-819)
radiation effects on, review of in-pile, 22:21651
radiation effects on, swelling of types-304, -321, -343, and -316L, neutron, 22:25083(R) (GEAP-5541)
radiation effects on, tensile properties of types-304, -316, -321, and -347, neutron, 22:25083(R) (GEAP-5541)
radioinduced compositional changes in, neutron, 22:43615(R) (BNWL-710)
radioinduced creep of type 304, in-pile, 22:34037 (BNWL-SA-1458)
radioinduced damage to Type 316, effects of flowing sodium on fast neutron, 22:43615(R) (BNWL-710)
radioinduced embrittlement of Type 304, mechanisms of high-temperature fast-neutron, 22:45792 (BNWL-SA-1996)
radioinduced hardening of, kinetics of fast neutron, 22:36519
radioinduced helium embrittlement of type 316, alpha particle, 22:34076 (AI-AEC-12670)
radioinduced helium production in Type 304 austenitic, in-pile, 22:49774
radioinduced oxidation by carbon dioxide, neutron, 22:19593
radioinduced transmutations in type 347, thermal neutron, 22:21645(R) (BMI-1826)
radioinduced voids in Type 304L, size distribution of in-pile, 22:43615(R) (BNWL-710)
reactions of AISI-347, with oxygen and hydrofluoric acid, fuel decladding by, 22:27852(R) (EURAEC-2011)
reactions of austenitic, with uranium and plutonium carbides at 650 to 1050ºC, 22:23852 (CEA-R-3353)
reactions of Type 316, in loop with potassium--sodium eutectic alloy at 1400ºF, 22:52140
reactions with aluminum in hydrogen--oxygen flames, 22:19478 (SC-CR-67-2830)
reactions with bismuth--lead eutectics, 22:4769 (IS-T-205)
reactions with carbon in sodium at 700ºC, embrittling effects of, 22:43535
reactions with magnesium in hydrogen--oxygen and methane--oxygen flames, 22:19478 (SC-CR-67-2830)
reactions with plutonium dioxide--uranium dioxide at 1400ºF, 22:4739
reactions with plutonium nitride and uranium nitride fuels at high temperatures, 22:720 (BMI-1809, Sect.A)
reactivity measurement in large uranium carbide ZPR-6 on type 304, 22:32734 (ANL-7310, pp 137-248)
reactivity measurement of type-304, in ARMF fast flux converter, 22:6096 (IN-1143)
reactivity measurement of type-347, in ARMF fast flux converter, 22:6096 (IN-1143)
reactivity measurements in ZPR-9 assemblies 11 and 12 on type 304, 22:32734 (ANL-7310, pp 137-248)
reactivity worth determination in ZPR-3 of type 304, 22:32734 (ANL-7310, pp 137-248)
reflectors of water and Type 304, effects on criticality of aqueous uranyl fluoride (UO_2F_2) of cylindrical, (E), 22:35599 (K-D-2006)
rupture of 17-4 PH, effects of creep, hydrogen embrittlement, and tensile failure on, 22:620 (KAPL-M-6580)
rupture of type 304 and 316, effects of 1300 to 1400ºF liquid sodium on biaxial stress, 22:27479 (BNL-50096)
separation of uranium from cans of, by electrolytic dissolution, 22:8192
solvent properties for nitrogen at 538 to 982ºC, 22:45746(R) (EURAEC-2026)
solvent properties of Types 304, 308, and 384, for nitrogen, 22:43531(R) (TID-24567)
sorptive properties for ionic radioisotopes in aqueous solutions, effects of acidity on, 22:35767(T) (AEC-tr-6776)
sorptive properties for radioactive anions and cations, 22:28741
sorptive properties for radioisotopes, 22:4129
sorptive properties of type 316, for propanol, ellipsometer measurements on, 22:45029 (UCRL-18043, pp 7-105)
specifications for type 304 and 316 austenitic, for cladding fuel pins, 22:1848 (BNWL-SA-1388, pp 3.1-41)
specifications of, for use in boilers and pressure devices, 22:676
stability as the lamina of fuel- constituent elements, 22:49844
strain of Type 316, effect of sodium environment on, 22:52126 (BNL-50127)
strain rate behavior of Type 304 and Type 316, 22:27396(R) (AI-AEC-12638)
strength of types 304 and 316, effects of cold work on stress-rupture, 22:31351
stress analysis of composite plates of, for pressure vessel cladding, 22:28799
stress rupture of Type 304, effects of helium and sodium environment on, 22:52126 (BNL-50127)
stress-rupture of irradiated types 304 and 304L, effects of annealing and titanium additions on, 22:8788 (ORNL-4170, pp 115-18)
stress-rupture of thin-walled tubes of Type 304, effects of liquid sodium cycles at 1200ºF on, 22:42384 (AI-AEC-12695)
stress-rupture of Type 304 and Type 304L, effects of helium at 50ºC on, 22:48788
stress-rupture of Type 304, analysis of biaxial, 22:48788
stress-rupture properties of cold-worked and annealed Types 304 and 316, in sodium at 1000 to 1400ºF, biaxial, 22:41032 (AI-AEC-12694)
stress-rupture testing in sodium of Type 304, 22:27396(R) (AI-AEC-12638)
stress-rupture testing of Types 304, 316, and 347, in 1300ºF liquid sodium corrosion loop, 22:44822(R) (GEAP-5582)
surface treatments for, protective, 22:19477 (NASA-SP-5090)
tensile properties at 100 to 1300ºF, 22:52191
tensile properties at 1300ºF for fuel cladding of type-304 commercial, 22:5925 (GEAP-5510)
tensile properties at 1300ºF for fuel cladding of type-304 and type 310 vacuum melted, 22:5925 (GEAP-5510)
tensile properties of austenitic, effect of yttrium on, 22:4747
tensile properties of austenitic, effects of cold rolling and thermal treatments on, 22:52178
tensile properties of austenitic, effects of high-temperature sodium on, 22:19580 (BNWL-455, Paper 12.1-100)
tensile properties of electron-beam-welded type 304, 22:31340
tensile properties of ferritic, effect of yttrium on, 22:4747
tensile properties of type 304, effects of cyclotron-injected helium on, 22:19579 (BNWL-455, Paper 11.1-18)
tensile properties of type 304, effects of high-purity liquid sodium at 1200ºF on, 22:33167
tensile properties of Type 304, effects of temperature on, 22:53459 (GEMP-619)
tensile properties of type 304, effects of titanium addition on, 22:19579 (BNWL-455, Paper 11.1-18)
tensile properties of Type 316, 22:27396(R) (AI-AEC-12638)
tensile properties of type A 132 F 316, for reactor pressure vessels, 22:19577 (BNWL-455, Paper 9.1-34)
tensile properties of Types 304 and 316, effects of high-oxygen and -carbon liquid sodium at 1200 and 1400ºF on, (E), 22:42194(R) (MSAR-68-77)
tensile strength of types 301, 302, and 310, effects of rolling temperature on, 22:21687 (COO-1319-61)
testing for embrittlement of, nondestructive methods for, 22:11005 (BNWL-SA-1467)
testing for isotope capsule material, ultrasonic, 22:2607 (BNWL-547)
tests on Yankee Power Reactor pressure vessel, results of Charpy V-notch, 22:10016
thermal properties of Type 304, effects of heat treatments on, 22:53459 (GEMP-619)
thermal treatments for processing martensitic, semiaustenitic, and austenitic, 22:21694 (NASA-SP-5089)
thickness of sample specimens of, determination for electron microscopy, 22:45745 (UCRL-18043, pp 107-53)
tube erosion of Type 321, effects of liquid sodium on, (E), 22:35423(R) (APDA-224)
tubes of type 304L, burst strength of fuel cladding, 22:33618
use for cladding laminated uranium fuel element shipping containers, 22:45263 (KY-D-2553)
use for pad--foil sandwich thermal insulation of prestressed concrete pressure vessels, description of, 22:44830(T) (ORNL-tr-1966-c)
use in electromagnetic induction pump cell, effect on cavitation and performance, 22:8256 (ORNL-TM-1793)
use in heat pipe structures, effects on heat transfer, 22:23209 (LA-DC-9027)
use in heat pipes with potassium and sodium working fluids, 22:33595(R) (LA-3941)
use in Japanese boiling-water and pressurized-water reactors, description of, 22:32850
use in Japanese Materials Testing Reactor of, description of, 22:53438
use in nonsymmetric copper--Nb_3Sn--stainless steel composite superconductors, 22:11371
use of Type 355 wires of, for fabrication of composites with aluminum alloys, 22:41022
vibration damping in type-304, internal, 22:6142
wastage from water leak in Type 304 tubes of, effects of

wastage rate of tubes of Type 321, from sodium-water reaction, 22:24926(R) (APDA-214)
wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
wear of journal-sleeve combinations of type 304, with Waukesha 88 in water, effects of acidity on, 22:17071 (AECL-2784)
wear of journal-sleeve combinations of, with Duranickel, stainless steels, and Waukesha 23 or 88 in water, effects of acidity on, 22:17071 (AECL-2784)
wear testing of 17-4 PH, in water, 22:15145 (WAPD-T-1977)
wear testing of type 440C, at 500 and 700°F for use in self lubricating bearing cages, 22:8268
weldability by friction, tables of, 22:43579
welding 18-8, friction method for, 22:21672 (TRG-Report-1157)
welding 18-8-Ti, friction method for, 22:21672 (TRG-Report-1157)
welding beryllium--copper pellets to, cold molecular method for, 22:628(R) (N-67-18942)
welding foils of, method for resistance spot, 22:28758 (Y-1613)
welding for interior linings of reactor vessels, 22:2601
welding in large nuclear pump case, electroslag, 22:2286
welding in PWR steam generator, 22:52154
welding method for, using liquid nitrogen cooled electrodes, 22:41015
welding methods for nuclear rocket exhaust system, 22:26033
welding of fuel tubes and end plugs of, electric arc, 22:49694
welding of precipitation-hardening, evaluation of equipment and procedures for, 22:21671 (NASA-SP-5087)
welding of Type 406, for end closures of fuel cans, 22:52162 (ORNL-TM-2263)
welding of, factors affecting electron bombardment, 22:17089
welding pipes of type 304 H, evaluation of gas-tungsten arc for, 22:19580 (BNWL-455, Paper 12.1-100)
welding to aluminum alloys, solid-state methods for, 22:629(R) (N-67-19274)
welding to aluminum, diffusion method for, 22:31338
welding to Inconel 718, solid-state methods for, 22:629(R) (N-67-19274)
welding to magnesium or magnesium alloys, to form sealed joints, 22:12995(P)
welding to Ozhennite, methods for, 22:21703
welding to titanium-base alloys, 22:629(R) (N-67-19274)
welding tubes of Type 18/8, to tubes of Zircaloy-2 by hammering, 22:49721(P)
welds in Types 304L and 316, acoustic emission method for detecting defects in, (E), 22:47303 (BNWL-817)
welds of austenitic, effects of energy input on mechanical properties of, 22:8705 (ORNL-4170, pp 138-41)
B--stainless steel, analysis for boron, spectrophotometric, 22:22930(R) (NBL-242)
B--stainless steel, boron distribution in ingot, billet, and finished wire of, (E), 22:31344 (KAPL-M-6731)
B--stainless steel, control elements of, effects in uranium oxide (UO_2)--water lattices in NORA, (E/T), 22:30305(R) (IAEA-3498-22)
B--stainless steel, control rods of, bowing measurements for CVTR Core 1, 22:35428 (CVNA-289)
B--stainless steel, fabrication of, 22:6954
Cr--Ni--Si--stainless steel, corrosion cracking by water at 350°C, stress, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, cladding for vibratory compacted uranium oxide (UO_2) fuel elements of, fabrication of, 22:42213 (WCAP-3374-5)
Cr--Ni--stainless steel, corrosion by water vapor at 600°C, effects of aluminum and silicon additions and nickel content on, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, corrosion cracking by water at 350°C, stress, 22:28732 (CEA-N-816, pp 102-39)
Cr--Ni--stainless steel, elongation of, effects of boron and carbon content at 750°C, 22:48788
Cu--Nb--Sn--stainless steel, superconducting properties of, mechanical and electrical, 22:29447
Eu_2O_3--stainless steel, corrosion of dispersions of, by water at 300°C, 22:28883
PuO_2--stainless steel, fabrication of, 22:7050
PuO_2--stainless steel, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--stainless steel--UO_2, fabrication of cermet fuels of, 22:8810
rare earths--stainless steel, fabrication of, 22:6954
stainless steel--UO_2, fabrication of, 22:7050
stainless steel--UO_2, fabrication of zirconium boride-bearing cermet fuels of, 22:4856
stainless steel--UO_2, fuel plate core density, effects of cold rolling on, 22:23761 (IN-1131, pp 2-29)
stainless steel--UO_2, irradiation testing of dispersion-type fuels of, 22:32973 (IN-1160)
stainless steel--UO_2, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
stainless steel--UO_2, performance as reactor fuels, 22:11058
stainless steel--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
stainless steel--UO_2, radiation effects on dispersion fuels of, in-pile, 22:23843 (IN-1131, pp 37-55)
stainless steel--UO_2, radiation effects on fuel elements of, in-pile, 22:49859
stainless steel--UO_2, radiation effects on fuel performance of, relations of uranium dioxide density with in-pile, 22:4830
stainless steel--UO_2, radiation effects on, description of optical examination methods for neutron, 22:27497

STAINLESS STEEL COUPLES
Al/Al--stainless steel/Zn, corrosion by aqueous media, (E), 22:23718
stainless steel/U, corrosion by aqueous media, (E), 22:23718
thermoelectric properties for ultrasonic thermometry up to 1600°F, analysis of, 22:14139(R) (NYO-3906-1)
Al/stainless steel, corrosion by boiling nitric acid, effects of uranyl nitrate on, 22:26026 (CEA-N-616, pp 106-44)

STAMENS
radiation effects on reproductive integrity of hairs of Tradescantia, effects of chromosome volume on, 22:10742

STANDARDS
see also Frequency Standards
see also Man (Standard)
see also Radiation Protection
see also Radiation Standards and Units
AEC proposed, for design criteria for reactor pressure vessels, 22:22884
ASME Standard Code for pressure piping, 22:40298
availability of radioisotope, table of, 22:16777
chemical analysis of water, Institute of Atomic Energy (USSR), 22:20942 (ZFK-RN-31, pp 284-98)
design and operation, for steam generators for sodium-cooled reactor power plants, 22:2285
development of I.C.R.P., for maximum permissible dose, 22:23524
development of inductance, for 0.05 μH to 100 μH range, 22:1912 (BDX-613-98)
development of international, for radiometric measuring devices, 22:8326
development of nuclear and radiation, for national atomic energy program, 22:35200 (NBS-TN-283)
development of nuclear codes and, tabulary summary of, 22:30156 (ORNL-NSIC-43)
development of polyethylene, for calibration of neutron soil water instruments, 22:8404
development of radioactivity, at Atomic Energy Establishment Trombay, 22:6547
development of reference, for calibration and certification of leaks and vacuum gages, 22:6226 (SC-TM-67-775)
engineered maintenance control, for Hanford Production Reactors, 22:27476
Federal Radiation Council, for radioisotope content of shellfish, 22:23513
gravimetric, for gas flow measurement, 22:2267 (K-L-6181)
International Commission on Radiological Protection, for radioisotope content of shellfish, 22:23513
national and international nuclear, compilation of, 22:48653 (ORNL-NSIC-50)
National Committee on Radiation Protection, for radioisotope content of shellfish, 22:23513
national fire codes for laboratories handling radioactive materials, 22:16751
performance, for film badge dosimeters for broad spectrum dosimetry, 22:28496
preparation of engineering, for liquid metal systems, 22:48982(R) (LMEC-68-20)
protection, for radium-226, strontium-90, and unknown radioisotope content of water, 22:28504
radiation dosimetry reference, design of β and neutron, 22:51586
radiation protection, for industrial personnel, 22:23525
radiation protection, for laboratories and industries, 22:490 (CONF-660649)
radioactive waste category, definition of proposed, 22:14743
radioactivity, comparison of international, 22:6545
specifications for Three Mile Island Power Reactor Unit 1 containment structure, 22:18397 (DOCKET-50289-3)
test code for nuclear reactor fuel, proposed, 22:28885
wavelength, for x- and γ-ray emission, 22:11204

STANFORD LINEAR ACCELERATOR
alignment system for electron, helium--neon laser, 22:12690
beam blowup in, theoretical and experimental analysis of, 22:20368 (HEPL-297(Rev.A))
beam collimators for, design of, 22:29821
beam dump for, design of 400 kW sphere, engineering drawings for, 22:41912
beam injection system for, design of electron gun and grid pulser for, 22:29823
beam monitoring at, design of precision toroidal charge monitor for electron and positron, 22:32369 (SLAC-PUB-398)
beam monitoring at, performance of Faraday cup for,

22:46682

- beam monitoring at, resonant toroidal charge monitor for, 22:46660
- beam monitoring at, stabilization of secondary emission monitors for, 22:46686
- beam monitoring in switchyard of, design of argon-filled Cherenkov detector for, 22:47375
- beam monitoring in, calibration of Faraday cup using secondary emission monitor for, 22:32235 (CEAL-1043)
- beam monitoring systems at, description of, 22:46692
- beam monitors for, method for stabilizing high-current secondary emission, 22:32370 (SLAC-PUB-405)
- beam monitors for, performance of 20-GeV Faraday cup and quantameter, 22:32368 (SLAC-PUB-395)
- beam position monitoring in, sector electronics for, 22:14899
- beam switchyard bending magnets for, control of field strength of, 22:53054
- beam switchyard for, cooling system for, 22:29820
- beam transport system of, engineering drawings for 52° bending magnet for, 22:41913
- cooling system for, design of surge tank recombiner for, 22:29824
- development and operation of, April 1 to June 30, 1968, 22:53049(R) (SLAC-90)
- development and operation of, Jan.-Mar. 1968, 22:46575(R) (SLAC-89)
- development of, October 1 to December 31, 1967, 22:44542(R) (SLAC-87)
- development, Jan. to June 1967, 22:22490(R) (SLAC-80)
- development, June 1 to September 30, 1967, 22:32367(R) (SLAC-85)
- electron or positron beam production in, design of equipment for, 22:14635
- experimental facilities for, engineering drawings for charged-particle spectrometer, 22:25668
- experimental facilities for, particle track photography in bubble chamber and streamer chamber, 22:16907
- experimental facilities of, engineering drawings for, 22:32387
- experimental program for, 22:13877 (SLAC-PUB-369)
- klystron design for, 22:35190
- magnets for, design of quadrupole triplet, 22:29822
- operation and development, 22:37234 (SLAC-PUB-420)
- phase circuit drive amplifier for, design of, 22:25587
- shielding doors for, design of heavy concrete, 22:14636
- spectrometers for, design of large quadrupole electromagnetic lenses for 8- and 20-GeV/c, 22:11784
- storage ring for, design, fabrication, and testing of cavity resonators for, 22:11752 (SLAC-78)
- storage ring for, use of quadrupole and sextupole electromagnetic lenses for, 22:11829
- targets for, design of cryogenic oriented, 22:35166(R) (AD-663169)
- waveguide network for, design of vacuum coupling for, 22:53058
- waveguide network of, design of S-band rectangular, engineering drawings for, 22:53053
- waveguides for, use of urethane for protection during transportation and installation of, 22:11766

Stannane
- see Tin Hydrides

STANNATES
- see also Barium Stannates
- see also Lead Stannates
- radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)

STAR (Space Thermionic Auxiliary Reactor-GE)
- see Nuclear Auxiliary Power Systems

Starfish (Asterias)
- see Asterias under Echinodermata

Starfish Burst
- see Dominic Operation

STARCHES
- see also Amyloses
- depletion from roots, effects of, on response to gravity, 22:12205(T) (ANL-Trans-545)
- electron paramagnetic resonance studies of free radicals of gamma-irradiated, (E), 22:32010
- radiation effects on content of, in aracacha, γ, 22:43504
- radiation effects on content of, in corn and pea meals, effects of seed irradiation on γ, 22:23705
- radiation effects on content of, in Peruvian carrots, γ, 22:45740
- radiation effects on content of, in plants, effects of growth conditions on γ, 22:31281
- radiation effects on content of, in potato tubers, x, 22:21633
- radiation effects on content of, in potatoes, γ, 22:19397
- radiation effects on grafting acrylic acid to, electron and γ, 22:40147
- radiation effects on polymerization and viscosity of corn and potato, effects of dose on γ, 22:49238
- radiation effects on sedimentation in sols of corn, 22:42762
- radiation effects on structure of potato, effects of dose on γ, 22:51015
- radiation effects on, from potatoes, chemical analysis of cobalt-60 γ, 22:21447
- radiolysis of corn, EPR analysis of γ, 22:45466
- radiolysis of corn, γ, 22:28345
- radiolysis of potato, in vacuo, cobalt-60 γ, 22:28320
- radiolysis of potato, yield of deoxy compounds from electron or γ, 22:42750
- radiolysis of sols of corn, 22:42762
- radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)

STARK
- see Reactors, Research

STARK EFFECT
- effects of sudden field variations on, (E/T), 22:36712(T) (UCRL-Trans-10250)
- linear, from NMR and NQR lines and effective field acting on the electrons, 22:13254
- quadratic, in alkali metals, (E/T), 22:5048
- use in study of relaxed excited states of F centers, 22:15567 (NYO-3564-9)

STARS
- see also Blue Stellar Objects
- see also HII Regions
- see also Nebulas
- see also Novas
- see also Photosphere
- see also Quasars
- see also Seyfert Galaxies
- see also Stellar Flares
- see also Stellar Wind
- see also Sun
- see also Supernova
- 16 Piscium, spectra of binary, (E), 22:31544
- 22 Vul, change in the Hα equivalent width in, (E), 22:49881
- 4 CVn, photoelectric observations of, (E), 22:49911
- 53 cam, light and magnetic field variations in, phase relation between, (E), 22:17228
- 53 Tauri, spectral analysis of, (E), 22:47730
- 61 Cyg B, spectrum of, (E), 22:23986
- 63 Tau and 15 UMa, background continuum spectra and temperatures of, 22:17336
- 73 Dra, light variations of, (E), 22:41221
- abundance of carbon isotopes in carbon, (T), 22:52425
- abundance of iron-peak elements in HD 122563, (E), 22:869
- abundances in G and K, carbon, nitrogen, and oxygen, (T), 22:13179
- accretion of matter by binary system of, (T), 22:31536
- adiabatic pulsations and convective instability of gaseous masses, (T), 22:11146
- adiabatic pulsations of homogeneous gas sphere, (T), 22:23955
- AG Peg, periodic brightness variations of, (E), 22:45891
- age of extreme population-II, (T), 22:41245
- age of globular clusters of, dynamical method for determining, (E), 22:43807
- age of globular-cluster, variation of characteristics with, (T), 22:52402
- ages of oldest open clusters, (T), 22:17251
- Algol, infrared spectrum of, (E), 22:29076
- alpha Cygni, sodium resonance lines in spectrum of, 22:11188
- angles of inclination in rapidly rotating, determination from line profiles, (E), 22:45908
- angular diameter for 15 hot, (T), 22:13201
- angular diameter of radio, 22:41173
- angular momentum effects of stellar wind on, (T), 22:13207
- angular momentum transfer in close binary systems of, (T), 22:7114
- AQ Puppis, distance modulus of, (T), 22:36608
- Arcturus, curve-of-growth analysis of spectrum of, (E), 22:17263
- Arcturus, mass and surface gravity of, (E), 22:17263
- atmosphere for B4 V, model, (E/T), 22:26128
- atmosphere of cool, structure of outer, (T), 22:2746
- atmosphere of planetary nebulae, bolometric corrections for, (T), 22:2747
- atmosphere of, effect of homogeneous horizontal magnetic field on convection in, (T), 22:52444
- atmospheres for early-type, statistical-equilibrium model of, (T), 22:11156
- atmospheres for M-supergiant and M-dwarf, model, (E/T), 22:23999
- atmospheres for O5 V and B0 V, model, (E/T), 22:26111
- atmospheres of cool, high-temperature equilibria and condensation in, (T), 22:11186
- atmospheres of G- and K-type dwarf, departures from LTE in, (T), 22:4980
- atmospheres of helium, (T), 22:4952
- atmospheres of late-type, magnetic field effects on convective instabilities in, (T), 22:41158
- atmospheres of M-type, condensation of quartz grains in, (T), 22:52413
- atmospheres of pulsating, mixing length for, (T), 22:45887
- atmospheres of, models of, (T), 22:45847
- atmospheres of, Rayleigh scattering problem in, (T), 22:841
- atmospheres of, red shifted line profiles from differentially expanding, (T), 22:43841
- atmospheres of, scattering of light in, (T), 22:41230
- atmospheres of, spectral line formation with noncoherent

scattering by electrons, (T), 22:41229
atmospheres of, thermodynamic equilibrium state parameters for, (T), 22:52405
atmospheres of, transmission functions for noncoherent scattering in, (T), 22:41230
atmospheric dynamics in model RR Lyrae, (T), 22:2760
atmospheric opacity of, computer program, (T), 22:38655 (N-68-18064)
atomic energy levels in atmospheres of, effects of LTE on, (T), 22:43684
α Her, search for carbon dioxide in spectra of, (E), 22:52410
α Ori, equivalent widths for asymmetric part of Hα line in spectrum of, (E), 22:52455
α^2CVn, physical parameters of, (T), 22:36613
α-Cen, helium line strengths in spectrum of, (E), 22:52335
baryon, mass defect of, (T), 22:43722
BD + 10°2179, carbon abundance of, (E), 22:26140
BD + 10°2179, hydrogen abundance of, (E), 22:26140
beryllium abundance in main-sequence, (E/T), 22:17226
beta Cephei, luminosities of, (E), 22:43742
binary, as model for pulsating radio sources, (T), 22:29053
binary, computer program for periods of, (T), 22:43732
binary, masses of nine visual, (E), 22:43733
binary, precession and nutation of rotating fluid components in close, (T), 22:19702
binding energy of supermassive, (T), 22:925
BL Lac, identification as radio source VRO 42.22.01, (E), 22:31573
BL Lac, radio emission from, (E), 22:41167
blanketing effects in K0, K1, and K3, 22:23990
BN Ori, brightness fluctuations and color indices of, (E), 22:43808
bolometric corrections for early-type, (T), 22:17236
book: An Introduction to Astronomy: Planets, Stars, and Galaxies, 22:24022
book: Physics of Many-Particle Systems, 22:11565
book: Principles of Stellar Evolution and Nucleosynthesis, 22:47724
book: Problems in Astrophysics, 22:8979
book: Relativity Theory and Astrophysics. 2. Galactic Structure, 22:11191
book: Relativity Theory and Astrophysics. 3. Stellar Structure, 22:11190
book: Spectral Line Formation, 22:24021
book: Stellar Physics. Vol. 1, 22:29172
book: The Evolution of Stars, 22:29171
burning of carbon and oxygen in pre-supernova models, (T), 22:860
β Per, spectrum of, behavior of Ca II K line in, (E), 22:13115
calcium abundance in A, (E), 22:13208
calcium abundance in A-type, (T), 22:29037
carbon abundance ratio (^{12}C/^{13}C) for 19 Piscium, DS Pegasi, and Y Canum Venaticorum, (E), 22:23976
carbon abundance ratio (^{12}C/^{13}C) in cool carbon, (E), 22:23977
carbon burning after gravitational contraction in, effect of neutrino losses, (T), 22:31537
carbon burning in, models for, 22:34208
carbon explosive ignition in intermediate-mass, (T), 22:52333
carbon isotopic abundance ratio for metal-deficient, (T), 22:13198
carbon-burning phase in evolution of, effects of neutrino loss, (T), 22:45843
chemical composition of Am and Ap, (T), 22:49930
chemical composition of G dwarf, (T), 22:8881
chemical composition of HR 4072, (E), 22:11172
chemical composition of white dwarf, (T), 22:8894
chemical composition of, (T), 22:41255
chi CYG, aluminum hydride emission lines in, (E), 22:47720
chi Cygni, light curve of, (E), 22:23993
chromospheres of cold dwarf, (T), 22:17353
class-M long-period variable, statistical population indices of, (T), 22:24014
classification of early M giant, (E), 22:49895
classification system for planetary nebulae, (E), 22:17272
CM Lac, absolute dimensions of eclipsing binary, (E), 22:49910
CM Lac, colors, masses, and radii of the components of, (E), 22:52400
coalescence in self-gravitating cluster of, (T), 22:861
collapse and subsequent explosion of massive, (T), 22:36569 (N-68-22685)
collective processes in bounded gravitating systems of, (T), 22:36591
collisional relaxation in systems of, (T), 22:36638
collisions of, role in evolution of energetic extragalactic objects, (T), 22:26166
collisions of, shock front propagation and mass ejection in, (T), 22:43786
collisions, dynamics of, (T), 22:34132(R) (AD-661573)
color excesses for open clusters NGC 2533, NGC 2567, NGC 2571, and Ru 58, (E), 22:49878
color indices and magnitudes of uniformly rotating main-sequence, (T), 22:13182
color--magnitude array for core of Small Magellanic Cloud, (E), 22:8882
color--magnitude diagram for abnormally strong-line globular cluster M69, (E), 22:49934
color--magnitude diagram for M15 cluster of, (E), 22:43847
color-magnitude diagram for NGC 7006, (E), 22:4951
color-magnitude diagram of globular cluster NGC 5897, (E), 22:43781
colors for H II region exciting, Ly-V, (E), 22:38712
colors of faint blue and white-dwarf, (E), 22:45852
colors of Southern, (E), 22:15309
colors of Wolf--Rayet, absolute intrinsic, (E), 22:52366
comet orbit in perturbed Schwarzschild field of, perihelion advance of, 22:1497
composition of galactic halo red, ageing effects in, (T), 22:23984
composition of matter near nuclear statistical equilibrium at high density in, (T), 22:15319
concentration in GB 1, (E), 22:11165
conference on late-type, 22:23969
conference on magnetic, 22:15321
contraction of proto-, to stage of quasi-hydrostatic equilibrium, (T), 22:45842
contraction phase of one-solar-mass, first hydrostatic, (T), 22:52355
convection in delta Cephei, (T), 22:2749
convection zone in, velocity fields of outer, (T), 22:43818
convective cores in, (T), 22:8878
convective envelopes of, in gravitational-contraction stage, (T), 22:45886
convective instability in gaseous, (T), 22:45846
convective instability of homogeneous gas sphere, (T), 22:23955
convective model envelopes for T Tauri variable, (T), 22:45886
cooling rate for white dwarf, (T), 22:13087
corona effect in globular clusters, (T), 22:830
cosmic-ray production in Am and Ap, (T), 22:49930
crystallization in neutron, (T), 22:38697
crystallization of white dwarf, (T), 22:13180
Cyg X-2, population type of, (T), 22:23952
declinations of, absolute determination of, (T), 22:52452
delta Ceti, period since 1900 of, (E), 22:36611
Delta Scuti, effective temperatures, masses, surface properties, and variability of, (E), 22:38714
density distribution in Cepheids, (T), 22:13104
density in vicinity of sun, derivation of function for, 22:49879
density waves in spiral galaxies, (T), 22:43695
detection of globular mass of, in central region of Milky Way, (E), 22:8937
detection of highly reddened, near NGC 6231, (E), 22:13199
detection of variable, in NGC 2403, (E), 22:21835
detection of x-ray emitting, (T), 22:4992
diameter measurements using Fresnel diffraction on moon, 22:52383
diameters of open clusters, (E), 22:49892
diameters of, measurement of angular, 22:45864
distance modulus of Hyades, (T), 22:11153
distance modulus of Hyades, (T), 22:11154
distribution at α = 19/sup h/, delta = +11°, (E), 22:8980
distribution in galactic halo, (E), 22:36621
distribution in Galaxy, discontinuity near l/sup II/ = 140° in, (T), 22:31572
distribution in local spiral arm, (T), 22:2745
distribution in Milky Way of M-, S-, and C-type, (T), 22:24012
distribution of faint blue and white-dwarf, (E), 22:45852
distribution of RR Lyrae-type, in Milky Way, (E/T), 22:11185
distribution of spectroscopic binaries, (T), 22:43757
draft reports of commissions of the International Astronomical Union, 22:29170
dynamic instability in red giant, (T), 22:36614
dynamical friction on massive particle in field of, (T), 22:17241
dynamical tides in close binary, lag of, (T), 22:47758
dynamics in discrete phase space, (T), 22:17244
dynamics of collisionless gravitating systems, 22:31542
dynamics of shells in, (T), 22:8939
dynamics of test star in system of field, (T), 22:29100
dynamics of triple systems of, study by statistical sampling, (T), 22:36593
dynamics of, application of nonequilibrium statistical mechanics to, (T), 22:29113
dynamics of, collisionless method in, (T), 22:8934
dynamics of, effects of general relativity in, (T), 22:43787
early M-type, use for determining interstellar absorption, (T), 22:24013
early-type, statistical-equilibrium model-atmosphere calculations for, 22:49918
effective temperatures of lambda Bootis, (E), 22:4954
effects of corpuscular and light fluxes from, on orientation of interstellar dust particles, (T), 22:41252

electronic contribution to energy and pressure of elements and mixtures of elements, (T), 22:21838
element abundances in atmospheres of neutron, helium and hydrogen, (T), 22:34173
element abundances in K-type giant, calcium, magnesium, and sodium, (E), 22:43831
element nucleosynthesis by s process in 9- and 15-solar-mass, heavy, (T), 22:52403
elemental abundance anomalies in surface layers of, (T), 22:836
elemental abundances in Ap, (E), 22:5029
emission spectra of CH Cygni, ultraviolet, 22:8944
energy and mass balance of massive and supermassive, equations for, 22:41147
energy content of white dwarf, (T), 22:13087
energy distribution in G, K, and M, 22:23995
energy distribution of twelve spectrophotometric standard, calibration of, (E), 22:34207
energy distributions of G and K dwarfs at red wavelengths, (E), 22:4955
energy distributions of peculiar A, continuous, (E), 22:13178
energy emission from neutron, (T), 22:2728
energy generation in proton--proton chain, (T), 22:29124
energy generation in supermassive, (T), 22:5033
energy generation in, bibliography on, 22:15324
energy in neutron, thermal and vibrational, (T), 22:49927
energy loss due to two photon annihilation into neutrino--antineutrino pair via charged intermediate vector boson, (T), 22:21793
energy losses due to neutrino processes, (T), 22:11149
energy production in, (T), 22:41272
energy production rate of photoneutrino process in, (T), 22:8977
energy release in explosions of large, (T), 22:45884
energy requirements of supermassive, (T), 22:925
energy transfer in quasistellar sources by gravitational radiation, 22:4990
envelopes containing high-energy electrons, nonstationary, (T), 22:43710
envelopes of Be, support of, (T), 22:26127
equations for superdense configurations, solutions for, (T), 22:43803
equilibrium of rotating magnetic gas sphere, (T), 22:45907
equilibrium structure of rapidly rotating, (T), 22:41248
equilibrium structure of white-dwarf, (T), 22:41248
equivalence principle for, (T), 22:41258
eta Ursa Majoris, far-uv spectral intensity of, (E), 22:49899
evaluation of small, dense, clusters of, (T), 22:49903
evolution after central helium burning of 5-solar mass, (T), 22:24007
evolution calculations, experimental method for testing numerical stability of, 22:17262
evolution in M15, gaps in giant branch of, (E), 22:43847
evolution in Magellanic Clouds, (T), 22:7116
evolution of 0.1- to 0.4-solar-mass, (T), 22:2730
evolution of 0.5- to 100-solar-mass, early and main-sequence, (T), 22:2731
evolution of 1.3-solar mass, effects of neutrino processes on, (T), 22:24008
evolution of 5 solar mass red-giant, with mass loss, (T), 22:43777
evolution of Am and Ap, (T), 22:43677
evolution of binary systems of, with repeated mass ejections, (T), 22:34176
evolution of binary, (T), 22:45912
evolution of carbon, (T), 22:31537
evolution of carbon--oxygen, (T), 22:29173
evolution of close binary systems of shorter period and moderate mass, (T), 22:26103
evolution of close binary systems, observational results on, 22:19705
evolution of close binary, mass exchange in phase I, (T), 22:17270
evolution of contact binary, (T), 22:41196
evolution of dense systems of, (T), 22:29108
evolution of dense systems of, (T), 22:34132(R) (AD-661573)
evolution of extreme population-II, (T), 22:41245
evolution of five solar mass red giant, effects of mass loss on, (T), 22:2761
evolution of helium shell-burning, (T), 22:43826
evolution of low-mass, (T), 22:24003
evolution of low-mass, (T), 22:2766
evolution of magnetic, (T), 22:15321
evolution of massive helium-burning supergiant, (T), 22:26132
evolution of massive, during early main-sequence phase, (T), 22:36671
evolution of nonstationary, Einstein equations for, 22:1495
evolution of Of, (T), 22:21832
evolution of older, 22:39956 (ISS-67/30)
evolution of planetary nebulae central, (T), 22:13149
evolution of planetary nebulae, (E/T), 22:8887
evolution of Population-II main sequence, (T), 22:47760
evolution of proto-, (T), 22:38689
evolution of proto-, early, (T), 22:41244
evolution of proto-, of 1 and 12 solar masses, (T), 22:43776
evolution of RR Lyrae, structure of horizontal branch models in, (T), 22:13151
evolution of small systems of, (T), 22:8932
evolution of superdense degenerate Fermi gas, (T), 22:21799
evolution of supermassive, stabilized by rotation and turbulence, (T), 22:7090
evolution of triple, dynamical, (T), 22:36672
evolution of white-dwarf, mass ejection in, (T), 22:38686
evolution of, (T), 22:49968
evolution of, (T), 22:23927
evolution of, (T), 22:29172
evolution of, bibliography on, 22:15324
evolution of, blue end of the horizontal branch in globular clusters in, (T), 22:13168
evolution of, book: Introduction to Space Science, 22:19898
evolution of, early contraction phases in, (T), 22:24005
evolution of, early, (T), 22:49950
evolution of, effects of mass loss on, (T), 22:11152
evolution of, galactic, (T), 22:17225
evolution of, general-relativistic theory of, 22:922
evolution of, in associations, (E), 22:43718
evolution of, isentropic models for late stages of, (T), 22:38687
evolution of, model for baryon state in superdense degenerate gas in post π phase of, 22:29702
evolution of, pre-main sequence, (T), 22:7129
evolution of, pre-main sequence, (T), 22:7128
evolution of, production of heavy nuclei in, (T), 22:29165
evolution of, study of giant and dwarf binary systems to confirm theory of, (T), 22:43734
evolution of, to the left of the main sequence, (T), 22:52418
evolution of, very early, (T), 22:7118
evolutionary sequences of theoretical color functions for young open clusters of, (T), 22:43700
excitation of doubly excited auto-ionizing states of helium by line emission from, in planetary nebulae, (T), 22:13197
excitation temperatures of Wolf--Rayet, (E), 22:43829
existence of third family of superdense, from equation of state, 22:45875
expansion of H II regions, (T), 22:43783
expansion of HII regions around hot central, (T), 22:31591
explosions of 6 x 10^4 to 1.5 x 10^5 solar-mass, (T), 22:45884
extinction curves for reddened, mean, (T), 22:38694
FG Sagittae, brightness of, (E), 22:43771
flare from, relation to solar flares, (T), 22:891
flares from UV Ceti, photoelectric and spectrographic observations of 1965, (E), 22:814
flares in, relation to solar flares, (T), 22:788 (N-67-18634)
flux form, Narrabri scale of absolute, (T), 22:13201
formation by collapse of gas clouds, (T), 22:47728
formation by fragmentation due to gravitational instability, (T), 22:23944
formation from gases in spiral arms, (T), 22:29079
formation in expanding Universe, (T), 22:816
formation in galaxies, theory of, 22:8899
formation in infrared nebula in Orion, (T), 22:5000
formation in intergalactic, (T), 22:29087
formation of binary, (T), 22:8932
formation of binary, (T), 22:52419
formation of graphite grains in atmospheres of cool, (T), 22:43774
formation of high-velocity giant, in Milky Way, (T), 22:43831
formation of neutron, (T), 22:38686
formation of neutron, in type I supernovae, 22:859
formation of OB, lack of HII regions in, (T), 22:31571
formation of quark, (T), 22:43766
formation of type-I supernovae from white dwarf, (T), 22:859
formation of, (T), 22:41169
formation of, (T), 22:47727
formation of, (T), 22:49953
formation of, by gravitational collapse of rotating gaseous ellipsoids, (T), 22:29013
formation of, dynamic collapse of isothermal sphere in, (T), 22:29014
formation of, radiative and convective transport in, (T), 22:49950
frequency and kinematic properties of very low-luminosity, (E), 22:43740
G5 and K3 Wilson, spectral type relations, effective temperature, and colors for, (E), 22:52416
gaseous masses in, pulsations and stability of uniformly rotating, (T), 22:26136
globular cluster, age, luminosity, and chemical composition of, (T), 22:29015
globular clusters in Andromeda, subsystem of, (E), 22:45905
graphite particle formation in atmospheres of carbon, (T), 22:23998
graphite particle formation in atmospheres of Mira

variable, (E), 22:43828
gravitational collapse of massive, (T), 22:52426
gravitational collapse of neutron, (T), 22:17195(T) (UCRL-Trans-10206)
gravitational collapse of neutron, (T), 22:43762
gravitational collapse of Oppenheimer--Snyder, scattering of massless scalar waves by Schwarzschild singularity for, 22:28983
gravitational collapse of supermassive, (T), 22:7091
gravitational collapse of, (T), 22:2743
gravitational collapse of, initial-value problem for, (T), 22:52417
gravitational collapse of, instability in self-closure phenomenon in, (T), 22:900
gravitational collapse of, model for, (T), 22:36656
gravitational collapse of, optical appearance during, (T), 22:17240
gravitational field equations for spherically symmetric static perfect fluid, Einstein, 22:46528
gravitational field of globular cluster, Einstein equations for, 22:1496
gravitational instability of finite isothermal gas spheres, Jean's-type, (T), 22:43816
gravitational lens effect associated with neutron, (T), 22:23951
gravitational microfield in clusters of, effects of density gradient on, (T), 22:34217
gravitational modes in massive, asymptotic expressions for, (T), 22:31580
gravitational radiation emission from neutron, (T), 22:41205
gravitational radiation from binary, theory of scalar, 22:5658
gravitational red shift from surface of ultrabaric superdense, 22:37196
gravitational wave emission by, measurement by scintillation detection, 22:17339
gravitational wave stability in, (T), 22:17331
graviton production by close binary systems of, (T), 22:22458
gravity darkening in eclipsing binary, of W Ursae Majoris type, (T), 22:47756
gravity determinations for main-sequence B, surface, (T), 22:36634
gravity of lambda Bootis, (E), 22:4954
group combination for formation of associations of, in Centaurus, 22:13118
γ Capricorni, elemental abundances in, cure of growth analysis for, (E), 22:38692
γ Cas, spectrum from 1911 to 1966 of, (E), 22:49912
γ Equ, microturbulence in spectra of, (E), 22:36636
γ Pegasi, electron density in atmosphere of, (E), 22:45888
γ Pegasi, hydrogen and helium lines in spectrum of, (E), 22:45888
H II regions associated with, size of, (T), 22:52412
HD 116994, photoelectric observations of Delta Scuti-type variable, 22:23941
HD 116994, photoelectric of photometry, 22:29019
HD 119850, variations of Ca II H and K emissions in spectrum of, (E), 22:23985
HD 125823, spectral changes in, (E), 22:47777
HD 125823, spectrum of helium-variable, (E), 22:43837
HD 140283, elemental abundance analysis of, (T), 22:17237
HD 145675, enhanced bands of molecular carbon in spectrum of, (E), 22:43838
HD 188041, physical parameters of, (T), 22:36613
HD 1909, spectral analysis of, (E), 22:47730
HD 19445, elemental abundance analysis of, (T), 22:17237
HD 211853, identification of Lac X-1 as, (E), 22:19698
HD 23631, radial velocity study based on high-dispersion spectra of, (E), 22:52428
HD 33579, elemental abundances in, (T), 22:31568
HD 35921, period, amplitude, and spectrum of, (E), 22:49909
HD 37202, period and velocity of, (E), 22:19708
HD 3950, binary nature of, (E), 22:29083
HD 6870, spectrum, mass, and calcium/hydrogen abundance of, (E), 22:26147
HD 698, high-dispersion spectrograms of, (E), 22:43735
HD 98088, mass and spectral variations of, (E), 22:41223
HDE 310376, spectrum of hot, rapid, variable, (E), 22:36662
heavy-element abundance in globular cluster, (T), 22:29015
helium abundance in 3 Cen A, (T), 22:819
helium abundance in A- and B-type, (T), 22:13176
helium abundance in atmospheres of neutron, (T), 22:38652 (N-68-16276)
helium abundance in extreme population-II, (T), 22:41245
helium abundance in globular-cluster, (T), 22:52402
helium abundance in population II, (T), 22:38656 (N-68-18173)
helium abundance in Population-I binary, (T), 22:43738
helium abundance in subdwarf, (E/T), 22:4953
helium abundance in, (T), 22:17306
helium abundance of subdwarf and population II, (T), 22:21820
helium abundances in globular clusters, (T), 22:47731
helium abundances in members of Hyades cluster, (E), 22:45837
helium and hydrogen abundance in early-type, (T), 22:13175
helium burning in cores of red-giant, (T), 22:47731
helium burning in, core flash of, (T), 22:13168
helium content of oldest field subdwarf, (T), 22:13200
helium lines in spectrum of Feige 86, (E), 22:802
helium shell-burning, pulsational instability in, (T), 22:862
helium-3 abundance in magnetic, (E), 22:36674
helium-flash in 1.3-solar-mass, (T), 22:13143
HR 1105, spectrum of S-type, (E), 22:26142
HR 1105, technetium abundance in, (T), 22:29117
HR 1105, zirconium isotope abundances in, (E), 22:26142
HR 234, periodic changes in spectrum of, (E), 22:49885
HR 4533 and HR 4657, analysis of atmospheres of, (E), 22:29148
HR 4684, short-period light variations of, (E), 22:17314
HR 774, iron abundance in, (E), 22:41222
HR 774, metal abundances in, (E), 22:41222
HR 774, spectrum of, (E), 22:23983
HR 9080, Balmer-line behavior in spectrum of, (E), 22:26146
hydrodynamic equations of differentially rotating systems of, (T), 22:47757
hydrogen abundance in A- and B-type, (T), 22:13176
hydrogen abundance in atmosphere of neutron, 22:38652 (N-68-16276)
hydrogen abundance in hydrogen-poor, (T), 22:43739
hydrogen abundance in Population-I binary, (T), 22:43738
hydrogen detection in vicinity of open clusters, neutral, (E), 22:52393
hydrogen mixing by helium-shell flashes in, (T), 22:11151
hydrogen-rich material accretion by white dwarf, (T), 22:23938
HZ 29, period and light curve of ultrashort-period variable, (E), 22:49897
identification of blue, near Cen X-2, (E), 22:49902
identification of Cyg X-2 with G-type subdwarf, (E), 22:11121
identification of LP 9-231 as high-velocity white dwarf, (E), 22:11118
identification of neutron, optical, (E), 22:19718
identification of variable, in the vicinity of NGC 6638, 6304, and 7099, (E), 22:26164
identification of white dwarf, as rapidly pulsating radio source, 22:28997
identification of white-dwarf, photometric, (E), 22:41225
identities for systems of, Lagrange and Jacobi, (T), 22:52384
infrared emission from circumstellar shells of early-type, (T), 22:803
infrared emission from nonstationary, interpretation of excess, (T), 22:13121
infrared emission from planetary nebula NGC 7027, (E), 22:5003
infrared emission from upsilon Sgr, (E), 22:5002
infrared emitting, survey of northern sky for, (E), 22:43754
infrared observations of eta Carinae, (E), 22:29036
infrared spectra of proto-, (E), 22:36566 (N-68-16304)
instabilities in white dwarf, leading to type-I supernovae, (T), 22:34150
instability in nuclear-burning shell of, thermal, (T), 22:36597
instability in, magnetic field effects on Schwarzschild's criterion for, (T), 22:8916
interface location in quasi-static equilibrium model, use of coordinate stretching method in, 22:17266
interstellar extinction of light from, test for wavelength-independent, (T), 22:43843
ion lattice cores of white-dwarf, effects on cooling times, (T), 22:36562 (N-68-10969)
iron abundance in atmosphere of solar-type, correlation with calcium abundance, 22:7108
K, spectroscopy of, (E), 22:23987
kappa Pavonis, mass of disc Cepheid, (E), 22:29099
kappa Pavonis, metal abundance of disc Cepheid, (E), 22:29099
kappa Pavonis, temperatures of disc Cepheid, (E), 22:29099
late-type binary, planetary companions as, (T), 22:24003
late-type, colors and molecular band strengths in spectra of, (E), 22:23996
late-type, evolution of, (T), 22:24002
late-type, image-tube spectra of, (E), 22:23979
late-type, infrared photometry of, (E), 22:23995
late-type, luminosity criteria for faint, (E), 22:23980
late-type, model atmospheres for, (T), 22:24000
late-type, opacity due to water vapor in, (T), 22:23994
late-type, opacity due to water vapor in, (T), 22:24001
late-type, research on, (T), 22:23970
late-type, sources of opacity in, (T), 22:23997
late-type, spatial distribution and kinematics of, (T), 22:24009
late-type, spectra in range lambda lambda 10660 to 10915 A of, (E), 22:26145
late-type, spectroscopic observations of, (T), 22:23973
late-type, spectroscopy for, 22:23971
light absorption for planetary nebulae, interstellar,

(E), 22:52457
light curve rectification of close binary, (T), 22:36663
light curves for irregular and semiregular variable, (E), 22:8982
light element abundance in HD 30353, (T), 22:868
light emission from supermassive, spectral shift of, (T), 22:31538
light extinction and polarization from, wavelength dependence of interstellar, (T), 22:52394
light extinction from, interstellar, (T), 22:49957
light scintillation for gravitational wave detection, (T), 22:39489
light scintillation from, on passage through atmosphere, (T), 22:8857(T) (SC-T-68-1501)
light scintillation from, on passage through atmosphere, (T), 22:8855(T) (SC-T-68-1500)
light variations of dwarf G29--37, (E), 22:4963
light variations of HD 32633, (E), 22:17227
light variations of U Sgr, (E), 22:8900
light-element abundance in, (T), 22:19730
limb-darkening coefficient for dwarf, (T), 22:36673
limiting temperature in red giant, (T), 22:36614
lithium abundance in main-sequence, (E/T), 22:17226
lithium abundance in T Tauri-type, (E/T), 22:15273
lithium abundances in Pleiades and Ursa Major clusters, (E), 22:4967
lithium burning in, effects of rotational braking on, (T), 22:29003
luminosities of eclipsing binary, (T), 22:13176
luminosities of faint blue and white-dwarf, (E), 22:45852
luminosity function of white dwarf, (T), 22:8894
luminosity in vicinity of sun, derivation of function for, 22:49879
luminosity of carbon--oxygen, (T), 22:29173
luminosity of central, of planetary nebulae, (T), 22:34165
luminosity of central, of planetary nebulae, (T), 22:47748
luminosity of contracting white dwarf, (T), 22:859
luminosity of dust nebulae surrounding, (T), 22:13130
luminosity of horizontal-branch, (T), 22:38656 (N-68-18173)
luminosity of O and B, dependence of interstellar reddening on, (T), 22:8909
luminosity of, (T), 22:49967
Lyman-visual colors of, associated with H II regions, (E), 22:49933
M and S giant, light-element abundances from molecular spectra of, (E), 22:23974
M supergiant, appearance and color--magnitude diagram of, (T), 22:24010
M13 globular cluster, luminosity function, lifetimes, and helium core mass for, (E/T), 22:13155
magnesium abundances in B, (T), 22:49922
magnesium isotope abundances in atmospheres of late-type, (E), 22:52399
magnetic axes in periodic magnetic variable, orientation of, (T), 22:4959
magnetic braking by stellar wind, (T), 22:43824
magnetic field variations of HD 32633, (E), 22:17227
magnetic fields in, stability of toroidal, (T), 22:21811
magnetic fields of A/sub p/, oblique rotator hypothesis for, (T), 22:43743
magnetic fields of, (T), 22:15321
magnetic fields of, charged particle motion in, 22:19716
magnetic fields of, turbulent motion analysis for origin of, (T), 22:8929
magnetic fields of, variations of, (T), 22:8959
magnetic variability of, by precession, (T), 22:17332
magnetic variations of 73 Draconis, (E), 22:11158
magnetic, evolution and atmospheric structure of, (T), 22:41255
magnetic-energy transport in early-type, (T), 22:49930
magnetosphere of neutron, plasma oscillations in, (T), 22:38673
magnitude of HD 30353, absolute, (E), 22:867
magnitudes at 1.04μ, (E), 22:23993
magnitudes in Kapteyns Area 4, (E), 22:49873
magnitudes of faint blue, at high galactic latitudes, (E), 22:43701
magnitudes of low-luminosity members of Hyades cluster, (E), 22:2772
magnitudes of Southern, photoelectric, (E), 22:15309
magnitudes of two extremely blue, near a D galaxy, (E), 22:43716
magnitudes of Wolf--Rayet, absolute, (E), 22:52366
magnitudes of, determination by electronography, (T), 22:49882
magnitudes of, in open clusters NGC 2533, NGC 2567, NGC 2571, and Ru 58, (E), 22:49878
magnitudes of, in open clusters NGC 5617, Ly 2, and Tr 12, (E), 22:49871
magnitudes of, in Scorpius, (E), 22:23949
mass and radius of the core of neutron, (T), 22:8963
mass ejection by massive, (T), 22:41212
mass ejection from massive, (T), 22:41211
mass flow from spherical systems of, (T), 22:43813
mass loss and rotation in 0.5- to 100-solar-mass, (T), 22:2731
mass loss from three OB supergiants in Orion, (E), 22:4957
mass loss of dwarf, to neutron companion, (T), 22:29082
mass loss of evolving 15 solar mass, (T), 22:8978
mass losses from, (T), 22:43813
mass of main sequence, minimum, (T), 22:11174
mass outflow from, induced by high atmospheric opacity, (T), 22:52436
mass transfer in close binary systems, (T), 22:813
mass-luminosity relation for members of Hyades cluster, (E), 22:45837
masses in globular cluster M3, (T), 22:13136
masses of blue horizontal-branch, in M67, (E), 22:36632
masses of spectroscopic binary, in Sixth Catalog, (E), 22:43833
matter accretion by, hydrogen flicker associated with, (T), 22:26105
matter states in neutron, (T), 22:5027
matter states in white dwarf, (T), 22:5027
meridianal circulation velocities in radiative envelope of Cowling model, (T), 22:43815
meridional circulation of binary, (T), 22:8984
metal abundance in A-type, (T), 22:29037
metal abundance in globular cluster NGC 5897, (E), 22:43781
metal abundances in F and G, (E), 22:45848
metal abundances in globular cluster M69, (E), 22:49934
metal abundances in K-giant, (E), 22:45851
metal abundances in tau Bootis, 22:7108
metal deficiencies in, (T), 22:5012
MHα 328-116, four-color photometry of, (E), 22:17254
Mira-type variable, kinematics of, (T), 22:24011
mitrogen deficiency in supergiants HD 96248 and 14443, (E), 22:848
model atmosphere for A/sub m/, (T), 22:4930
model atmospheres for early-type, (T), 22:13175
model atmospheres for early-type, statistical equilibrium, (T), 22:41216
model atmospheres of epsilon Eridani and GMB 1830, effects of metal deficiency on, (T), 22:11137
model atmospheres of planetary-nebulae central, (T), 22:8875
model atmospheres of, solution of transfer equations subject to constraint of radiative equilibrium for, (T), 22:13174
model atmosphers for delta Cephei and RR Lyrae variables, mixing lengths for, (T), 22:36572
model atmosphers in Ap, Balmer discontinuities in, (T), 22:36571
model for a system of, dynamical, (T), 22:49977
model for dense massive, exact internal solutions in, 22:46521
model for planetary nebulae, computer, (T), 22:11187
model for pulsars featuring underluminous white-dwarf, (T), 22:41145
model for pulsars featuring vibrating white dwarf, (T), 22:45910
model of relativistic, solutions of gravitational field equations for, 22:48369
model of rotating neutron, with satellites, (T), 22:34188
model of self-gravitating stellar systems, thermalization in one-dimensional sheet, 22:8922
model of, asymptotic behavior of linear oscillations of homogeneous compressible, 22:43761
model-atmosphere abundance analysis of Pleiades A-type, (T), 22:29016
models for hydrogen-exhausted, (T), 22:26134
models for neutron, relativistic sphere, (T), 22:15271 (NEIC-RR-28)
models for rapidly rotating white dwarf, equilibrium, (T), 22:21812
models for slowly rotating neutron, supermassive, and white-dwarf, (T), 22:49926
models of close binary systems after rapid mass loss, (T), 22:36612
models of dense, 22:19704
models of, degenerate, 22:15320
models of, interior, (T), 22:11153
models of, similarity theory for, (T), 22:45885
models with isothermal cores, secular stability of, 22:17330
molecular band intensities in G and K, (T), 22:13179
molecular dissociative equilibria in carbon, (T), 22:11157
molecular hydrogen abundance in atmospheres of, (T), 22:7120
motion in galactic field of groups of, (T), 22:8890
motion in galaxies, Brownian, (T), 22:17243
motion of binary, equations for, 22:19703
motion of, kinematics of Gould's Belt, (T), 22:8913
motions in axially symmetric galaxies, resonance phenomena and nonapplicability of third integral, (T), 22:50270
motions in Orion association subgroup Ia Ori, internal, 22:36650
motions of faint blue and white-dwarf, (E), 22:45852
motions of O and B, peculiar, (T), 22:829
motions of uniformly dense, adiabatic radial, (T), 22:38675
motions of young, (T), 22:47727
motions relative to galaxies, proper, (E), 22:52449
μ Cas, model atmosphere abundance analysis of, (E),

22:52398
μ Orionis, radical velocity observations of, (E), 22:49891
neutrino absorption in, at superhigh temperatures, (T), 22:43705
neutrino emission effects during red giant stage, (T), 22:24015
neutrino emission from central region of 5-molar mass, (T), 22:24007
neutrino emission from $e^- + e^+ \rightarrow \nu + \text{anti } \nu$ and $\gamma + \gamma \rightarrow \nu + \text{anti } \nu$ interactions in, 22:50355
neutrino emission from massive, (T), 22:13106
neutrino emission from, (T), 22:926
neutrino emission from, Pauli principle in, (T), 22:45838
neutrino loss mechanisms at high density, (T), 22:15319
neutrino losses from carbon--oxygen, (T), 22:29173
neutrino losses from globular-cluster, (T), 22:52402
neutrino motion in internal gravitational field of superdense, 22:41791
neutrino pair production in electron reactions with nuclei in white dwarf, 22:39331
neutrino pair production in interior of, 22:17921
neutrino production in hot plasma of, (T), 22:8977
neutrino production in, (T), 22:15316
neutrino retention by neutron, (T), 22:34170
neutron capture in, models for synthesis of heavy elements by, (T), 22:18205 (FEI-64)
neutron capture reactions in, heavy element synthesis by, (T), 22:5905
neutron reactions in red giant stars, (T), 22:5033
neutron, as origin of rapidly pulsating radio source, (T), 22:34191
neutron, detection and properties of, (T), 22:15319
neutron, effects of nuclear forces on models of, (T), 22:15319
NGC 2360 cluster of, photoelectric observations of, (E), 22:26122
NGC 6031 open cluster, photographic magnitudes for, (E), 22:15288
NGC 7027, infrared emission from nebula surrounding, (E), 22:52374
NML Cyg, hydroxyl radio emission from, (E), 22:45839
NML Cygnus, spectrum from 2.8 to 5.6 μ for, (E), 22:49905
nuclear abundance anomalies in peculiar A, from alpha reactions in surface layers, (T), 22:915
nuclear burning stability in, (T), 22:34175
nuclear energy generation in, testing theory by neutrino capture in chlorine-37, (T), 22:18322
nuclear energy production in supermassive, (T), 22:13610
nuclear reaction $^{13}C(\alpha,n)^{16}O$ and $^{9}Be(\alpha,n)^{12}C$ in, rates of, (E), 22:17247
nuclear reactions in pre-main-sequence, (T), 22:49950
nuclear reactions in, review of, (T), 22:19728
nuclear statistical equilibrium in, approach to, (T), 22:15319
nucleogenesis in cores of highly evolved, (T), 22:19710
nucleogenesis in thermal relaxation cycles, s-process, (T), 22:11150
nucleogenesis in, (T), 22:15317
nucleogenesis in, (T), 22:5033
nucleogenesis in, neutron-capture cross sections for, (T), 22:4976
nucleogenesis in, review of big- and little-bang theories of, 22:17199
number in Hyades stream, (T), 22:52448
observation of neutron, (T), 22:49927
observations of proper-motion, (E), 22:11155
occultation by moon, effect of light deflection by solar gravitational field on times of, 22:35128
occurrence in H II regions of Of, (T), 22:21832
opacity in atmospheres of planetary nebular, (T), 22:49920
opacity of, correction to Cox's tables for, (T), 22:19693
optical observations of a pulsating radio source, (E), 22:29035
optical pulsations from CP 1919, search for, 22:34166
optical pulsations from CP 1919, search for, (E), 22:34186
orbital elements of spectroscopic binary, distribution of longitudes of periastron in catalog of, (T), 22:49908
orbits of low-velocity, plane galactic, (T), 22:41242
orbits of moving pairs of A-type, time of relaxation of, (T), 22:36631
orbits of old moving groups of, (T), 22:38693
oscillation periods for white-dwarf, radial, (T), 22:28992
oscillations in neutron, torsional, (T), 22:38697
oscillations in, frequency distribution of, (T), 22:13104
oscillations of Hamada--Salpeter white dwarf, including general relativistic effects, (T), 22:34179
oscillations of massive, nonradial, (T), 22:13139
oscillations of slowly rotating polytropes, nonradial, (T), 22:26135
oscillations of spherical, group-theoretical aspects of nonradial, (T), 22:34174
oscillations of supermassive, (T), 22:43714
oscillations of, effects of toroidal magnetic field on radial, (T), 22:8876
P Cygni, luminosity of, absolute, (E), 22:36607
P Cygni, proper motion of, (E), 22:36607
parallax of pygmy suspect LP 9-231, (E), 22:11118
period--color--luminosity relation of β Canis Majoris, (E), 22:865
period--luminosity relation for Cepheids at mean and maximum light, composite, (E), 22:17224
perturbations of dense clusters of, stability theory for radial, (T), 22:52404
photoelectric data for new short-period blue variable, (E), 22:41220
photoelectric measurements of colors and magnitudes for 78, in Puppis, 22:49869
photoelectric observations of EX Hydrae, (E), 22:7110
photoelectric observations of flare, ultraviolet, (E), 22:41215
photoelectric observations of flares in UV Ceti type, (E), 22:13145
photoelectric observations of Sco X-1, (E), 22:13192
photoelectric photometry of DY Pegasi, (E), 22:8981
photoelectric photometry of RR Lyrae variable, projected on spiral arm of Andromeda Nebula, (E), 22:2751
photoelectric scanning of HZ 29, (E), 22:5004
photoelectric sequence of A--K, in Scorpius, (E), 22:15285
photometric monitoring of SCO XR-1, (E), 22:11159
photometric reflection effect in close binary, (T), 22:47759
photometric standard sequences in Crux and Centaurus regions, (E), 22:15283
photometric survey of southern Be, (E), 22:36616
photometry in open clusters, photoelectric Hβ, (E), 22:8907
photometry in six colors, (E), 22:43744
photometry of 130 Puppis--Vela, photoelectric, (E), 22:49868
photometry of 500 M dwarf, narrow-band and broad-band, (E), 22:45850
photometry of A, K-line, (E), 22:13208
photometry of Ap, (E), 22:7109
photometry of Ap, (E), 22:5029
photometry of carbon, infrared, (E), 22:23995
photometry of Circinus SA 195, catalog of, (E), 22:49867
photometry of cluster Tr 15, (E), 22:36620
photometry of clusters of, five-color intermediate band, (E), 22:52429
photometry of delta Lyrae cluster of, (E), 22:26123
photometry of early-type, far-ultraviolet, (E), 22:13177
photometry of eclipsing binary, (T), 22:36573
photometry of faint blue, photoelectric, (E), 22:45852
photometry of horizontal-branch, at high galactic latitudes, (E), 22:36637
photometry of late dwarf and subdwarf, model atmospheric effects in UBV, 22:13200
photometry of magnetic, (T), 22:15321
photometry of OB, Be, and supergiant double, (E), 22:34206
photometry of southern clusters NGC 6242, NGC 6268, and Tr 24, (E), 22:36622
photometry of the Cepheus OB2 association, (E), 22:34211
photometry of white-dwarf, photoelectric, (E), 22:45852
photometry of, five-color intermediate-band, (E), 22:52429
photometry of, in Orion association, (E), 22:36651
photometry of, near south galactic pole, (E), 22:49935
photospheres of, departures from LTE in, (T), 22:13173
plasma in, thermodynamic functions of ionizing atomic, (T), 22:26126
plasma of white dwarfs, first order phase transitions in quantum Coulomb, 22:31815
polarimetric observations of nearby, (E), 22:21827
polarization and color of reflection nebula near Merope, (E), 22:13119
polarization measurements on 1400, (E), 22:41192
polarization measurements on brigh magnetically variable, (E), 22:15281
polarization measurements on faint, detection principle for photoelectric, (E), 22:15284
polarization measurements on faint, photoelectric, (E), 22:23947
polarization observations in various color regions, (E), 22:15282
polarization observations of 14 close binary, (E), 22:13132
polarization of 143 field, in Cassiopeia, (E), 22:41161
polarization of rapidly rotating early-type, intrinsic, (T), 22:21815
population of blue end of horizontal branch, (T), 22:13168
positions for ten possible horizontal-branch, at high galactic latitudes, (E), 22:36637
power surges in, limitation and termination of, (T), 22:34175
precession frequency of rotating magnetic polytropic, (T), 22:52360
primary components in double-line binaries, (E/T), 22:13093
production of neutron, by supernova explosions, (T), 22:41211
production of technetium-97 in red giant, (T), 22:31586
proper motions and radial velocities for, (T), 22:41213

proper motions of low-luminosity members of Hyades cluster, (E), 22:2772
properties of Ap and Am, (T), 22:36596
properties of BL Telescopii, (E), 22:8911
properties of cepheids, (T), 22:15280
properties of close binary systems of, (T), 22:7114
properties of close binary, (T), 22:8888
properties of dense, in intense magnetic fields, (T), 22:38679
properties of flare and rapidly brightening, (T), 22:49956
properties of gaseous nebula exciting, (E), 22:52391
properties of hydrogen-deficient carbon, (E), 22:8919
properties of hyperon, (T), 22:15320
properties of long-period M-type variable, (T), 22:7113
properties of massive, in general relativity, (T), 22:52382
properties of neutron, (T), 22:923
properties of neutron, (T), 22:924
properties of neutron, (T), 22:15320
properties of P Cyg-type, (E), 22:8958
properties of planetary nebulae, (T), 22:49961
properties of red dwarf flare, (T), 22:15280
properties of red giant long-period variable, (T), 22:15280
properties of T Tauri, (T), 22:7128
properties of visual double, (E), 22:52423
properties of white dwarf, (T), 22:15320
properties of white dwarf, (T), 22:15319
properties of Wolf--Rayet, (T), 22:45863
pulsating radio, white-dwarf interpretation of, (T), 22:29128
pulsation characteristics of, effect of central condensation on, (T), 22:43834
pulsation constant of variable, expression obtained by phase integral method for, 22:36695
pulsation in delta Cephei, (T), 22:2749
pulsation mechanism for Cepheids, (T), 22:34214
pulsation mode of nine-day cepheids, (E/T), 22:8902
pulsation of delta Scuti-type variable, effects of axial rotation on, (T), 22:36658
pulsation of RR Lyrae, (T), 22:13151
pulsation of white dwarf, after large mass loss, (T), 22:36615
pulsation periods of rotating white dwarf, (T), 22:41259
pulsation periods of rotating white dwarf, (T), 22:43680
pulsation theory of variable, (T), 22:7122
pulsation theory of variable, phase integrals in, (T), 22:38665
pulsations in classical Cepheids, overtone, 22:13183
pulsations of arbitrary amplitude in one-zone model of, (T), 22:52401
pulsations of Cepheid, theory of, 22:26162
pulsations of massive, nonlinear adiabatic, (T), 22:47736
pulsations of rotating, radial, (T), 22:4929
pulsations of rotating, radial, (T), 22:29145
pulsations of RU Cam, (E), 22:4964
pulsations of, asymptotic approximations for, (T), 22:41247
pulsations of, Baker's one-zone model for nonradial, (T), 22:36657
quark existence in, (T), 22:3366
quark state in superdense cores of, 22:29679
R Coronae Borealis, model atmosphere for and element abundance in, (T), 22:43772
R Monocerotis, spectrum and structure of, (E), 22:29021
R. Monocerotis, infrared spectrum of, (E), 22:36566 (N-68-16304)
radial velocities of 203 early type Be, (E), 22:52422
radial velocity variations of 73 Draconis, (E), 22:11158
radiation diffusion in plane layer with anisotropic scattering in atmospheres of, (T), 22:52381
radiation field outside of, relativistic energy-momentum tensor for, (T), 22:49928
radiation from homogeneous main-sequence, effects of rotation on continuum, (T), 22:21814
radiation of irregular and semiregular variable, statistical parameters of, (T), 22:43711
radiative equilibrium in hydrogen envelope of helium, (T), 22:52437
radiative opacity of, computer calculation of, (T), 22:52370
radiative source-function predictions for finite and semi-infinite nonconservative atmospheres, (T), 22:38683
radiative transfer in atmosphere of, improved boundary conditions for the Feautrier method, (T), 22:806
radiative transfer in atmospheres of, (T), 22:36629
radiative transfer in atmospheres of, iteration of monochromatic source function in presence of scattering for, (T), 22:49924
radiative transfer in atmospheres of, three-dimensional form of the Eddington approximation for, (T), 22:21818
radiative transfer in finite extended atmospheres of, (T), 22:34205
radio emission from infrared and T Tauri, search for, (E), 22:5001
radio emission from infrared, hydroxyl, (E), 22:45839
radio emission from neutron or white dwarf, detection of, 22:19717
radio emission from OH associated with infrared, (E), 22:52468
radio emission from oscillating white dwarf and neutron, (T), 22:17273
radio emission from Vulpecula, pulse structure of, (E), 22:29041
radio emission from, aurora effects on visibility fades, 22:52632
radio emission from, search for, (E), 22:8972
radio emissions from neutron, in white dwarf region, (T), 22:28997
radio observations of HD 193793 and HD 16523 at 2695 Mc, (E), 22:8873
radio observations of planetary nebulae at microwave frequencies, (E), 22:8873
radio pulse emission from rotating neutron, (T), 22:28986
radio pulse profiles from pulsating white dwarf, (T), 22:41256
radio recombination lines of six H II regions, (E), 22:8946
radius of U Sgr, (E), 22:8900
rare-earth abundances for six F, (E), 22:43741
red dwarf, model atmospheres for wholly convective, (T), 22:24004
red giant region of H--R diagram, evolutionary paths in, (E/T), 22:24006
red-giant, helium and nitrogen burning in low-mass, (T), 22:26141
reddening determination of M-type-giant and long-period-variable, (E), 22:23981
reddening lines of Cepheid, on the U--B/B--V diagram, (E), 22:34159
reflection effect in close binary systems, (T), 22:43713
relation between OH source and infrared object in Orion, (E), 22:11124
relaxation oscillations in nonrotating supermassive, (T), 22:925
relaxation time in unbounded medium containing, (T), 22:17242
resonant periodic orbits, (T), 22:41243
rho^2 Cancri, HD 145675, enhanced bands of molecular carbon in spectrum of, (E), 22:43838
rotation and stability of supermassive, (T), 22:925
rotation constant for 52 O, B, and A, (T), 22:34147
rotation in close binary, effect of nonsynchronous, (T), 22:43736
rotation in, instability of stationary, (T), 22:38695
rotation instability in, turbulent shear stress from differential, (T), 22:43836
rotation law for binary, (T), 22:8984
rotation of B2 to F2 main-sequence, (T), 22:43676
rotation of β Canis Majoris, effects of differential, 22:4978
rotation of classical cepheids, galactic, (E), 22:43842
rotation of close binary systems, theory of viscous tides in, 22:19700
rotation of main-sequence, (T), 22:866
rotation of neutron, (T), 22:41172
rotation of neutron, model for rapidly pulsating radio sources, (T), 22:34187
rotation of solar-type, effects of age on, (E/T), 22:4960
rotation of, (T), 22:43677
rotation of, convection in presence of, (T), 22:863
rotation of, differential, (T), 22:4961
rotation of, differential, (T), 22:45849
rotation of, first-order perturbation theory for uniform, (T), 22:2748
rotation of, line profiles for determining degree of differential, (E), 22:45908
rotation velocities of early-type, found using He I 4026 A line, (T), 22:17234
rotational structure of, perturbation calculation of, 22:38663
rotational velocities for main-sequence, uniform, (T), 22:13182
rotational velocities in Be, distribution of, (T), 22:43817
rotational velocities of magnetic, (T), 22:49930
rotational velocities of Praesepe cluster, (E), 22:17291
RR Lyncis, photometric elements, absolute dimensions, and mass of, (E), 22:36574
RS Ophiuchi, spectrum during recent outburst, (E), 22:19692
RU Cam, atmospheric parameters for, during quiescent phase, (E), 22:21819
RU Cam, change of pulsation period with decreasing amplitude, (T), 22:52401
RU Cam, high-dispersion spectrograms and radial velocity curve for, (E), 22:23991
RU Cam, hydrogen and iron abundance in atmosphere of, (E), 22:21819
RW Aur, energy distribution in continuous spectrum of, (E), 22:43804
RW Aur, energy release in photospheric layers of, (E), 22:43804
RW Aur, spectrum in region lambdalambda 3600 to 4800, (E), 22:43703
RW Tauri, Balmer emission lines in spectrum of, (E), 22:17271
RZ Cassiopeiae, luminosity during primary eclipse of,

(E), 22:43758
scintillation of light from, (T), 22:11109(T) (SC-T-68-1502)
Sco X-1, dynamics of neutron--dwarf binary system of, (T), 22:29082
Scorpio--Centaurus association, photometry of, (E), 22:38680
self-gravitating system of, kinetic theory for uniformly rotating, 22:17326
shock waves at high density in neutron, (T), 22:2738
shock waves in atmospheres of, effective temperature of, (T), 22:8986
shock-wave propagation in envelopes of hot and giant, (T), 22:31585
shock-wave propagation in white dwarf, (T), 22:17338
silicon-II spectra of, superposition of configuration results, (T), 22:17364
silicon-II spectral line strengths in B, (T), 22:17250
space density of white dwarf, (T), 22:8894
space motions of white dwarf, (E), 22:11155
space--velocity vectors for, (T), 22:41213
spectra at 2800, 2500, and 2100 A of sixty, (E), 22:43779
spectra for photospheres of, statistical, (T), 22:31566
spectra of A/sub m/, (E), 22:29147
spectra of A/sub m/, (T), 22:4930
spectra of A/sub p/, (T), 22:43743
spectra of accelerated particles in, (T), 22:36661
spectra of Ap, (E), 22:7109
spectra of Ap, (E), 22:5029
spectra of binary, differential center--limb darkening in eclipse, 22:43755
spectra of blue horizontal-branch, in M67, (E), 22:36632
spectra of brightest variable in ω Cen, (E), 22:43812
spectra of carbon and M, at 1 μ, (E), 22:26143
spectra of carbon, short-wavelength, (E), 22:23975
spectra of central, of NGC 5189, (E), 22:36675
spectra of chromosphere of late-type, emission cores in H and K lines of Ca II in, (T), 22:26144
spectra of cold dwarf, (T), 22:17333
spectra of early A, ultra-violet, 22:41219
spectra of early-type, formation of Lyman continuum in, (T), 22:11156
spectra of eta Carinae, polarization in, (E), 22:8910
spectra of F and G subdwarf, (E), 22:29017
spectra of flares from, (E), 22:13209
spectra of horizontal-branch, interstellar lines in, (E), 22:29022
spectra of Hyades main-sequence, (E), 22:29018
spectra of late K- and early M-dwarf, in the Hyades, (E), 22:17230
spectra of late-type, emission component of Ca II K line in, (E), 22:17229
spectra of late-type, equivalent width of Hα in, (T), 22:49881
spectra of late-type, molecular line absorption of carbon monoxide in, (T), 22:43773
spectra of late-type, ultraviolet excess in, (E), 22:41225
spectra of M-type, broadening of 4226.73 A line of Ca I in, (E), 22:23972
spectra of magnetic, effect of saturation on Zeeman triplets in, (E), 22:31545
spectra of new infrared, (E), 22:52357
spectra of No. 1, in NGC 2024, (E), 22:49913
spectra of normal main-sequence dwarf, (E), 22:29018
spectra of O and B, K line of singly ionized calcium in, (E), 22:49870
spectra of O and B, ultraviolet, (T), 22:4941
spectra of peculiar A, (E), 22:13178
spectra of pre-outburst of Nova Delphini 1967, (E), 22:49884
spectra of rapidly pulsating radio, (E), 22:29042
spectra of subdwarf, (E), 22:29018
spectra of the brighter Feige, (E), 22:29020
spectra of ultraviolet, associated with x-ray source GX3 + 1, (E), 22:36683
spectra of VV Cephei, infrared, (E), 22:4956
spectra of white dwarf, (E), 22:11155
spectra of Wolf--Rayet, line broadening in, (E), 22:43922
spectra of, analysis of far-uv filter observations of, 22:43780
spectra of, analysis of, (T), 22:26153
spectra of, Balmer-line behavior in, (E), 22:26146
spectra of, calculation of Fraunhofer lines in, 22:2733
spectra of, classification system for, (T), 22:43745
spectra of, curves of growth for noncoherent scattering and pure absorption, (T), 22:26129
spectra of, deviations from LTE in, (T), 22:45847
spectra of, effect of anisotropy and depth dependence of microturbulence on, (T), 22:8896
spectra of, effects of axial rotation on equivalent widths of pure absorption lines in, (T), 22:36635
spectra of, energy distributions in continuum, (E), 22:45890
spectra of, fine structure of molecular carbon high-pressure bands in, (E), 22:52528
spectra of, flux measurements at centers of H- and K-lines in, (E), 22:41227
spectra of, identification of magnesium hydride bands in, (E), 22:15277
spectra of, image-tube observations of lambda 4430 interstellar band in, (E), 22:52339
spectra of, in cluster NGC 6475, (E), 22:29096
spectra of, in open clusters Tr 22 and Ho 17, (E), 22:49874
spectra of, infrared, (E), 22:23992
spectra of, interstellar absorption features of, (E), 22:38703
spectra of, interstellar absorption lines in, (T), 22:49959
spectra of, inversion of limb-darkening equation using Prony algorithm, (T), 22:26130
spectra of, lattice bands in interstellar grains in, (T), 22:839
spectra of, line formation with noncoherent scattering by electrons and atoms in, (T), 22:49925
spectra of, line strengths in two-electron, (T), 22:31620
spectra of, lithium line broadening in, (E), 22:36609
spectra of, near the position of CP 1919 + 21, (E), 22:38661
spectra of, origin of diffuse interstellar bands in, (T), 22:13126
spectra of, Paschen discontinuity in, (T), 22:31565
spectra of, scale of bolometric corrections for, (T), 22:13144
spectra, radiation transfer in, (T), 22:945(T) (CLM-Trans-10)
spectral absorption line strengths in rotating; (T), 22:45909
spectral absorption lines of main-sequence, effects of rapid rotation on, (T), 22:43775
spectral analysis of α Per and β Aqr, (E), 22:870
spectral characteristics and statistical population indices of Mira-type variable, (E), 22:47762
spectral characteristics of M, S, and high-velocity, (E), 22:23978
spectral classification by photoelectric narrow-band photometry, (T), 22:7124
spectral classification for bright eclipsing binary, (E), 22:41224
spectral classification of carbon, (E), 22:26170
spectral classification of Hetzler, infrared, (T), 22:847
spectral classification of M-type-giant and long-period-variable, (E), 22:23981
spectral energy distribution for 14 bright Pleiades, (E), 22:7102
spectral energy distribution for B5--M2, absolute, (T), 22:13117
spectral intensities of Balmer lines of long-period variable, (T), 22:43706
spectral line formation in, Riccati method applied to, 22:4979
spectral line formation with noncoherent electron scattering in O and B, (T), 22:807
spectral line profile in moving atmospheres of, center-limb variation of, (T), 22:43737
spectral lines in early-type, effects of axial rotation on equivalent widths of, (T), 22:13181
spectral lines of Wolf--Rayet, analysis of, (T), 22:815
spectral types in Scorpio--Centaurus association, (E), 22:21816
spectral-energy curves of subdwarf, (E), 22:41226
spectral-line formation in inhomogeneous atmospheres of, (T), 22:21817
spectrophotometry of AG Draconis, (E), 22:7098
spectrophotometry of faint, dark current production by Cherenkov pulses due to cosmic mesons in photomultiplier tubes used in, 22:51286
spectrophotometry of Orion region, uv, (E), 22:13190
spectrophotometry of red giant, infrared, (E), 22:52343
spectrophotometry standards for, (E), 22:43778
spectroscopic study of α Lupi on β Cen, (E), 22:8921
spectroscopy of Cepheus OB2 association, (E), 22:34211
spectroscopy of early-type, far-ultraviolet, (E), 22:13177
spectroscopy of long-period variable, of spectral type Se near maximum light, (E), 22:23989
spectroscopy of magnetic, (T), 22:15321
spectroscopy of OB, Be, and supergiant double, (E), 22:34206
spectroscopy of v 603 Aql, (E), 22:43709
spectroscopy of, non-LTE diagnostic, (T), 22:52406
spectroscopy of, non-LTE diagnostic, (T), 22:52405
spectroscopy of, Schuster mechanism for production of emission lines in, (T), 22:52406
spectrum of β Doradus, hydrogen line profiles in, (E/T), 22:8871
spectrum of GX 3 + 1, (E), 22:41166
spectrum of HD 101065, (E), 22:8886
spectrum of P Cygni in 1964, 22:810
spectrum of supernova Chuadze--Lovas, (E), 22:4962
spectrum of V 372 Mon, (E), 22:4958
spectrum variations of 73 Draconis, (E), 22:11158
Spica, resolution of components by lunar occultations of, (T), 22:41194
SS Cyg, energy distribution of continuous spectrum of, (E), 22:43809
SS Cygni, mass losses during outbursts from, (T), 22:52397

SS Cygni, spectroscopic observations of rapid irregular light variations of, (E), 22:52397
stability and radial vibration periods of Hamada--Salpeter white dwarf, (T), 22:34189
stability in, absolute and convective, (T), 22:13103
stability of blue supergiant, pulsational, (T), 22:26133
stability of chemically inhomogeneous layers in, (T), 22:8892
stability of rotating, self-adjointness for Lagrangian systems in, (T), 22:49975
stability of system containing gases and, Lagrange and Jacobi identities for, (T), 22:47732
stability of, virial equations of fourth order for, 22:26137
statistics of open clusters of, (T), 22:45882
stellar density and luminosity in vicinity of, derivation of function for, 22:49879
stellar wind model for magnetic, (T), 22:23967
structure and dynamics, relativistic, (T), 22:15320
structure of contact binaries, (T), 22:21809
structure of convective red dwarf, (T), 22:4928
structure of Hyades cluster, (E), 22:45883
structure of low-mass, (T), 22:2766
structure of massive, effect of line absorption on internal, (T), 22:832
structure of massive, with convective core, (T), 22:36671
structure of narrow shells in red giant, (T), 22:8885
structure of neutron, (T), 22:15318
structure of nonspherical, perturbation method for, (T), 22:47721
structure of polytropic, with very strong magnetic fields, (T), 22:52359
structure of rapidly rotating, equilibrium, (T), 22:21813
structure of slowly rotating relativistic, (T), 22:11147
structure of uniformly rotating upper main-sequence, effects of equilibrium poloidal magnetic fields on, (T), 22:41150
structure of, (T), 22:43681
structure of, (T), 22:29172
structure of, general-relativistic theory of, 22:922
structure of, in magnetostatic equilibrium, (T), 22:7074
structure of, interior, (T), 22:49968
structure of, nonradial problems in theory of, 22:19707
structure of, radiation pressure effects on internal, (T), 22:22267
structure of, solutions for spherically symmetric matter distributions in general relativistic fluid spheres for, 22:37197
structure of, with purely toroidal magnetic fields, (T), 22:41149
structure, bibliography on, 22:15324
superdense, theory of, 22:7123
supermassive, theory of, 22:15320
supernovae explosions in, induced by pair-production instability, (T), 22:47761
surface gravities for bright eclipsing binary, (E), 22:41224
surface gravity of main-sequence B, effects of rotation on, (T), 22:36634
SW Lyncis, light curves for eclipsing binary, two-color, (E), 22:36655
synchrotron radiation from eta Carinae, (T), 22:5032
SZ Lyncis, mass and radius of, (E), 22:13142
T Tauri, age and mass of, (E), 22:21822
T Tauri, infrared excesses in, (E), 22:21822
tau Bootis, metal abundances in, (E), 22:45848
temperature effects in K0, K1, and K3, (T), 22:23990
temperature of Ba II, (T), 22:49923
temperature of β Doradus, minimum effective, (E/T), 22:8871
temperature of HD 101065, effective, (E), 22:8886
temperature of HD 30353, effective, (E), 22:867
temperature of low-mass, maximum central, (T), 22:11174
temperature of N, (T), 22:49923
temperature of Nova Herculis 1963, (E), 22:45889
temperature of subdwarf, effective, (T), 22:21820
temperatures for, H/sub γ/ profiles in effective, (T), 22:21831
temperatures of A and B, effective, (T), 22:36633
temperatures of central, of planetary nebulae, (T), 22:8914
temperatures of early-type, effective, (T), 22:17236
temperatures of F dwarf, from Hβ photometry, (E), 22:41176
temperatures of nine-day cepheids, (E/T), 22:8902
temperatures of planetary nebulae central, effective, (T), 22:21821
temperatures of white dwarf, (T), 22:8894
theory for, geodetic lines in Einstein--Friedmann spaces in, 22:1494
thermal stability of pure carbon, (T), 22:31587
thermodynamic conditions in interiors, 22:17196
tides in close binary systems of, dynamical, (T), 22:34148
tides in close binary, dissipation of energy due to, (T), 22:38682
tides in close binary, dynamical, (T), 22:26102
TV Cet, colors, masses, and radii of the components of, (E), 22:52400
ultraviolet emission from early-type, dissociation--ionization of molecular hydrogen by, (T), 22:52367
ultraviolet excess in spectra of, (T), 22:5012
ultraviolet excess of G dwarf, (T), 22:8881
ultraviolet radiation from chromosphere of, (T), 22:2770
ultraviolet spectra for early-type, for, (E), 22:47755
V 338 Herculis, period of eclipsing binary system, (E), 22:36664
V 444 Cygni, electron density in atmosphere of, distribution of, (T), 22:36573
V 463 Cygni, period of eclipsing binary, (E), 22:36665
V 505 Sag, elements of eclipsing binary, (T), 22:13092
V 505 Sgr, light curve rectification for, (T), 22:36663
V444 Cyg, spectrophotometric study of, (E), 22:43799
V477 Cyg, colors, masses, and radii of the components of, (E), 22:52400
variational principle for one-dimensional system of, (T), 22:17235
velocities from Coude spectrograms, radial, (E), 22:31567
velocities in Milky Way, rapid relaxation of peculiar, (T), 22:52456
velocities in Scorpio--Centaurus association, rotational, (E), 22:21816
velocities of faint A, radial, (E), 22:34213
velocities of, radial, (T), 22:8933
velocity dispersion of population-I, (T), 22:4950
velocity distribution in rotating massive, angular, (T), 22:7075
velocity distribution of near, (T), 22:8931
velocity of β Cen, (E), 22:8921
velocity of U Sgr, (E), 22:8900
vibrational model of pulsed radio sources, 22:43756
vibrational stability of convective red dward, (T), 22:4928
vibrational stability of red dwarf, (T), 22:24004
VV Cephei, spectrum during and after eclipse of 1956--57, (E), 22:23988
W Ursae Majoris, evolution and structure of, (T), 22:49890
W Ursae Majoris, light curves for, (T), 22:49931
W Vel, objective-prism spectrum of, (E), 22:49888
weak interaction processes in highly evolved, (T), 22:38684
white dwarf, active regions on rapidly rotating, source of radio emission, (T), 22:23959
white dwarf, model for rapidly rotating magnetic, 22:49932
white dwarf, review of properties, spectroscopy, and photometry of, 22:45862
Wolf--Rayet V444 cyg, spectrum of, (E), 22:26121
Wolf--Rayet, identification as x-ray sources, (E), 22:19698
Wolf--Rayet, interstellar obscuration of, (E), 22:23957
WX Cen, optical identification of Cen XR-2 as, (E), 22:52470
WX Cen, photographic observations of, (E), 22:52471
x-ray emission from Cgy A, (E), 22:36565(R) (N-68-16118)
x-ray emission from envelopes of Of and Wolf--Rayet, (T), 22:19699
x-ray emission from, review on, (T), 22:11135
XZ Andromedae, apsidal rotation in the eclipsing system, (T), 22:15278
Z And, binary nature of, (T), 22:29065
Z Cam, spectrum during a light stage, (E), 22:19726
zeta Aurigae, photoelectric observations during the eclipse of 1963-1964, (E), 22:49875
zeta Lyr A, spectrum of, (E), 22:29147
zeta Oph, interstellar line spectrum of, (E), 22:38691

Static Eliminators
see Radioactive Static Eliminators

Statistical Analysis
see Statistics

Statistical Mechanics
see Physics

STATISTICS
see also Biometry
see also Economics
see also Mathematics
see also Particle Statistics
see also Sampling
see also Stochastic Methods
algorithms and random sequences, 22:7973(T) (LA-tr-67-105)
analysis of counting data from radiation detectors, 22:10566
analysis of gamma scintillation spectroscopy data, 22:8382
analysis of mortality, techniques for, and application to radiation effects, 22:43430
analysis of parameters determining survival of hematopoietic tissues in irradiated mice, 22:43203 (BNL-12594)
analysis of radiation detector pulses, method of sequential, 22:45286
analysis of radioinduced and spontaneous chromosome aberrations in liver cells, 22:36227
analysis of reinforced concrete beam strength, 22:272 (NP-17075)
analysis of x-radioprotective effects of cysteamine, histamine, and serotonin on mice, 22:40736
application of coherent state in quantum mechanics, (T),

22:1367 (NYO-3699-16)
bivariate distributions, definition of properties of, 22:27521(R) (ORNL-4236)
book: Equilibrium Statistical Mechanics, 22:15657
book: Lectures on Quantum Statistics, Vol. 1, 22:13627
book: Quantum Statistical Mechanics, 22:15654
boson and fermion excitations in para- and super-, 22:9675
commutator products in statistical mechanics, Baker--Hausdorff formula for properties of higher-order, 22:41832
computer program for evaluation of maximum likelihood estimates of parameters in mixtures of normal distributions using, 22:16362 (ORNL-TM-2110)
conference on mathematical statistics and probability, 22:34815
curve smoothing, modified least-structure method for, 22:25705
density matrix in, integral equation for, 22:32021 (ITF-68-3)
density matrix in, integral equation for, 22:32023 (ITF-68-5)
development of computer programs for analysis of, on bovine leukemia in Minnesota, 22:23591(R) (COO-910-6)
drift correction of binary cross-correlation measurements, 22:21369 (AEEW-R-583)
estimation of error in nuclear radiation measurements, 22:10546
formulation of quantum statistical mechanics, field-theoretic, 22:41855
gamma distribution estimators for, derivation of, 22:51092 (CTC-1)
information in Borel subfield, use of probability measures to define, 22:27521(R) (ORNL-4236)
interaction approximation in, kinetic equations for, 22:32022 (ITF-68-4)
least squares method for fitting functions to experimental data, computer program for, 22:25210 (DP-1128)
least squares method for fitting quadratically interpolated tables to two-dimensional data array, computer program for, 22:10157 (UCID-15244)
least-squares method for quantal response and sensitivity analysis and minimum chi-square estimation, 22:6207 (LA-3763)
many-body equations of motion in, linearization of, 22:34810
mathematical aspects of relativistic statistical mechanics, 22:26407
maximum likelihood theory for nonlinear correlated vector fields, computer program for, 22:3966 (BNWL-390)
mechanics of irreversible processes, (T), 22:7403 (ITF-66-7)
mechanics of many-particle systems, 22:29198
method for detection of shifts in saturated standard cell values, 22:6225 (SC-TM-67-765)
method for evaluation of neutron cross sections for computer calculation, 22:29838
method for evaluation of plutonium-239 excretion by man, 22:38266 (UCRL-18140, pp 123-43)
method of least squares, computer program for analyzing rho- decays by, 22:7492 (INFN/AE-66/6, pp 46-101)
noncentral chi-square distribution, minimum average risk decision procedures for, 22:22899 (ORNL-4225)
noncentral chi-square distributions, minimum-average-risk decision procedures for noncentrality parameters for, 22:27521(R) (ORNL-4236)
nonnull distribution, definition of uniform convergence to noncentral chi-square distribution of, 22:27521(R) (ORNL-4236)
normal populations with unknown variances, nonnull distribution method for making inferences about difference between means of two, 22:27521(R) (ORNL-4236)
nuclear data analysis using optical model, failure of chi square criterion in, (T), 22:35400
perturbation theory for retarded-temperature Green's function, 22:17841
Poisson approximation to binomial as relation between percent points of beta and gamma distribution, 22:12195 (SC-RR-67-886)
probabilistic method for prediction and evaluation of hazards from atmospheric radioactivity, 22:18968 (LA-DC-9094)
probability distributions for sums of certain random variables as compared to Gaussian approximation, 22:6224 (SC-RR-67-799)
probability distributions involving Stirling numbers of second kind, discrete random variable form of, 22:27521(R) (ORNL-4236)
probability estimates using, effects of mixtures of distributions on, 22:27521(R) (ORNL-4236)
probability ratio, limiting distribution under class of local alternatives, 22:22899 (ORNL-4225)
processing of matrices for particle--gamma radiation correlation experiments, 22:6602
quantum-mechanical phase and angle variable applications in, 22:24499
random variables, nonparametric tests of independence between successive elements in sequence of, 22:27521(R) (ORNL-4236)
selection for response surface designs, method for, 22:27521(R) (ORNL-4236)
spectral densities in quantum, equations for, 22:48199
techniques in mass spectrometry, 22:21019 (BNWL-SA-1717)
temperature dependence near phase transitions in quantum mechanical canonical, (T), 22:1372
theory of, review for physicists, 22:41697 (BNL-12602)
three-particle hyper-netted chain approximation in classical, 22:26540
trend removal in counting experiments, 22:2356
use for analysis of radioinduced mutations in peanuts, 22:45478
use for analysis of strontium-90 content of fish of Atlantic and Indian oceans, 22:28535
use for averaging data during scintiscanning, 22:40804
use in analysis of multifold coincidence circuits, 22:10641
use in chemistry, review on, 22:25359
use in design of physical experiments, (T), 22:17829 (JINR-P1-3612)
use in human cytogenetics, summary of, 22:27521(R) (ORNL-4236)
use of probabilistic, in evaluation of programs of bioassay sampling, 22:51634
uses in determining radioactive homogeneity of granites, 22:2200
uses in nuclear and analytical chemistry, 22:27534 (NBS-TN-421)
Weibull density function parameter determination, use of fuel element failure data for, 22:39894 (BNWL-SA-1920)
zero-probability method for determining prompt neutron decay constants in slightly enriched critical assemblies, 22:30312

Statitrons
see Electrostatic Generators

STATORS
coatings for windings of alternator, design of ceramic, 22:36521

STEAM
see also Water Vapor
analysis for hydrocarbons, system for continuous, 22:14427 (ORNL-4196, pp 15-32)
condensers for, design of, 22:2292 (CONF-660120)
coolant properties of endothermic reaction with hydrocarbon of, description of dual-purpose desalination and power reactor use of, 22:37523(P)
corrosive effects and properties of, as bearing lubricant, 22:17073 (MTI-68-TR-13)
corrosive effects at high temperatures on defected Zircaloy-2-clad uranium fuels, 22:49690
corrosive effects of high temperature, on pyrolytic carbon coatings of fuel particles, 22:42201 (ORNL-4269)
corrosive effects of high-pressure, on hafnium alloys, 22:10979(P)
corrosive effects of superheated, on reactor structural materials, 22:53273(T) (EURFNR-472)
corrosive effects of superheated, on reactor structural materials, 22:32775 (KFK-700(Pt. IX))
corrosive effects of superheated, on Zircaloy-2, 22:21664
corrosive effects on graphite in AVR reactor, effects of temperature on, 22:30145 (EUR-3900)
corrosive effects on graphite, solution of mass balance equations for, (T), 22:35548
corrosive effects on hafnium alloys, 22:10921(P)
corrosive effects on hafnium alloys at 350 to 450°C, description of, 22:30387
corrosive effects on Incoloy, Inconel, and stainless steels at 500 to 700°C, 22:618 (EURAEC-1895)
corrosive effects on metals, analysis of, 22:30385
corrosive effects on nickel alloy and austenitic steel fuel element claddings, 22:32772 (KFK-700(Pt. III))
corrosive effects on nickel alloy and austenitic steel fuel element claddings, 22:53273(T) (EURFNR-472)
corrosive effects on reactor metals, review of, 22:12957
corrosive effects on stainless steel, relations with carbon and platinum content, 22:2567(R) (EURAEC-1918)
corrosive effects on steel at 300 to 500°C by superheated, effects of aluminum, molybdenum, nickel, silicon, and tungsten on, 22:626
corrosive effects on Type 304 stainless steel, 22:41011
corrosive effects on type 304 stainless steel at 950 to 1400°C, analysis of, 22:30388
corrosive effects on Zircaloy and zirconium alloys at high temperatures, 22:52127(R) (RISO-179)
corrosive effects on Zircaloy, effects of silicon dioxide in autoclave test water on, 22:28736 (KAPL-M-6748)
corrosive effects on Zircaloy-2 and Zircaloy-4 at 300 to 400°C, analysis of, 22:32895
corrosive effects on Zircaloy-2 and Zircaloy-4 at 1050 to 1800°C, analysis of, 22:30388
corrosive effects on Zircaloy-2 and zirconium alloys at 300 to 450°C, 22:617 (EURAEC-1894)
corrosive effects on Zircaloy-2, Zircaloy-4, type 304 stainless steel, and uranium oxide (UO_2) of, analysis of, (E/T), 22:35461 (GEMP-482)
corrosive effects on Zircaloy-4 at 1100 to 1800°C, 22:15143 (GEMP-1002, pp 123-36)
corrosive effects on zirconium-base alloys, high temperature, 22:21655 (WAPD-TM-517)
cycles for power reactors, description of saturated,

22:16230
cycles for steam-cooled power reactors using the Loeffler principle, 22:16231
cycles for water-cooled power reactors, discussion of, 22:3869
effects of high-temperature, on superheater alloys, 22:23710
effects of superheated, on Zircaloy-2 in fast neutron flux, 22:34084(T) (WAPD-Trans-87)
effects on fast breeder reactor reactivity of temperature and pressure, analysis of, 22:27401 (BNWL-713)
effects on γ-induced decomposition of iodomethane, 22:21088 (BMI-1829)
effects on γ-induced formation of iodomethane, 22:21088 (BMI-1829)
erosive effects of superheated, on bend configurations of steam generator tubing, 22:43529 (BAW-1280-53)
erosive effects on turbines, literature survey on, 22:36432 (ORNL-TM-2088)
expansion diagrams for nuclear power stations, method for determination of, (T), 22:37458
heat transfer deterioration at supercritical pressure and high heat fluxes, analysis of, 22:45237 (DSR-70332-55)
leakage into sodium systems, acoustic detection of, (E), 22:47040(R) (APDA-228)
oxidative effects on aluminum--zirconium alloys at 300 to 650°C, 22:2565 (AECL-2776)
production for power plants, design of improved boiler for, 22:6519(P)
production in nuclear power plants, design of generator for, 22:6524(P)
production of industrial process, economics of nuclear, 22:16232
production of superheated, design of improved generator for, 22:19022(P)
production of, design of once through steam generator for, 22:40299
production of, development of sodium-heated generator for, 22:51133(R) (BAW-1280-56)
production of, development of sodium-heated generator for, 22:8247(R) (BAW-1280-47)
radiolysis in Beloyarsk nuclear power station, effects of hydrogen on suppression of, 22:48889
reaction with fuels and graphite, effects of temperature on rate of, 22:27416(R) (ORNL-4228)
reactions with bonded coated-particle fuel compacts, 22:26070 (ORNL-4229, pp 119-24)
reactions with carbon, fission product release and transport from, 22:7816(R) (ORNL-TM-2057)
reactions with graphite, computer analysis for hydrogen production by, 22:1768 (K-1724)
reactions with graphite, high temperature gas cooled reactor in-pile loop simulation of, 22:7816(R) (ORNL-TM-2057)
reactions with needle-coke graphite, 22:26070 (ORNL-4229, pp 119-24)
reactions with tantalum boride--uranium dioxide dispersions at high temperatures, 22:17173
reactions with tungsten boride--uranium dioxide dispersions at high temperatures, 22:17173
reactions with Zircaloy in reactor coolant-loss accidents, 22:5979
separation from steam--water mixtures in boiling water reactors, design and testing of radial vane separator for, 22:48981(R) (GEAP-5655)
separation from steam--water mixtures in boiling water reactors, design and testing of radial vane separator for, 22:48980(R) (GEAP-5567)
separation from steam--water mixtures, in boiling water reactors, design and testing radial vane separator for, 22:2265(R) (GEAP-5524)
separation from water, design and testing of cyclone separators for, 22:12475(R) (EURAEC-1945)
separation in boiling water reactors, development of gravity-type cyclones for, 22:3826(R) (EURAEC-1900)
separator for, development of radial vane, 22:40291(R) (GEAP-5636)
superheating of, control behavior of superheater for, 22:236(T) (ORNL-tr-1802)
thermodynamic performance as reactor coolant, 22:7835
use in arresting gas detonations and fires in nuclear cavities, 22:12458 (MSAR-67-187)
use in cleaning sodium system components, 22:33143
void fraction in subcooled boiling, method for calculation of, 22:16764
water gas production using reactor-generated, economics of, 22:22792 (BNL-12319)
air--steam, iodine-131 removal from, by sorption on impregnated charcoal, 22:42874
air--steam, particle transport and deposition in, review of mechanisms for, 22:51160 (BNWL-848)
air--steam, sorption of methyl iodide from, use of impregnated charcoal at 280°F, 90 percent relative humidity, and 60 psia for, 22:1771 (ORNL-4180)
H_2O--steam, film thickness measurements on spray annular flow through tubes and rod bundles, 22:42958 (CONF-680903-1)
H_2O--steam, flow at 50 to 150 psia, equations for calculation of critical, 22:51168
H_2O--steam, flow in long tubes at low qualities, analysis of critical, (E/T), 22:49013 (ANL-7430)
H_2O--steam, flow in nine-rod channel at 1000 psia, determination of vertical structure of, (E), 22:2293 (GEAP-5480)
H_2O--steam, flow metering by sharp-edged orifices, effects of dryness fraction on, 22:2280
H_2O--steam, heat transfer crisis in upward flow in round tubes, 22:40304 (EUR-3920)
H_2O--steam, heat transfer in, prediction of critical, 22:33599
H_2O--steam, void fraction measurements in flowing, design of fast neutron densimeter for, 22:30875
He--steam, effects on HTGR fuel elements, 22:27490 (ORNL-4229, pp 149-55)
steam--water, critical heat flux in two phase flow of, analysis of nine-rod square lattice Inconel-X tubes, 22:53275 (GEAP-5616)
steam--water, densimeters for, description of simultaneous quick-closing valves inlet and outlet for, 22:20838
steam--water, density in steam boilers, use of radioactive tracers to measure, 22:14725
steam--water, flow in circular tubes, critical heat flux in, 22:19041
steam--water, heat transfer in horizontal tubes, effect of gravity on boiling, 22:14670
steam--water, heat transfer in two-phase flow in vertical pipes of boiling reactors, (T), 22:14299
steam--water, separators for, description of variable speed centrifugal, 22:20875(P)
steam--water, turbulent flow in fuel element pressure tubes for critical heat flux efficiency, description of rings to impart, 22:22786(P)
steam--water, vapor volume measurement of in-tube flowing, by dilatation, 22:4350
steam-water, heat transfer in, design of test loop for measurement of, 22:21275 (SGAE-RT-13/1967)

STEAM-GENERATING HEAVY-WATER-MODERATED REACTOR
commissioning program for, description of, 22:30179
commissioning program for, description of, 22:44846
construction of, minor incidents and problems occurring during, 22:30179
containment and associated safety characteristics of, analyses of, 22:18454
containment building for, description of, 22:30218
containment system for, description of, 22:18468
control system for, transient testing for effects of void coefficients on, 22:16161 (TRG-Report-1343)
core configuration of, description of, 22:44837 (TRG-Report-1692)
core performance of, analysis of hydraulic and thermal, (E/T), 22:30236
core performance of, comparison of predicted values with December 1967 to April 1968, 22:44846
description of, 22:27447
description of, 22:30171
design of, 22:1809
design parameters for, 22:22712 (STI/PUB-174)
development program in the United Kingdom, 22:6053
development schedule for, description of pre-startup, startup, and power operation, 22:46908 (NP-17599, pp 26-9)
electricity from, production of commercial, 22:12038
engineering aspects of, description of, 22:42229
fuel channels of, effect of power transients on dryout in, 22:6526 (AEEW-R-553)
fuel elements for, design and fabrication of, 22:46937
fuel loading facility for, description of, 22:16238(P)
fuel management scheme for, calculation of optimum, 22:22781
loading machine for, description of, 22:18468
loading system for, description of on-power, 22:46921 (TID-24679(Vol.2))
loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
neutron flux distribution in, comparison of neutron cross section variation effects on, (T), 22:50745 (ZJE-24(Pt.1))
operation and performance of, description of, 22:14206
operation at power of, description of, 22:46922 (TRG-Report-1686)
operation of 100 MW(e), description of, 22:30174
operations of, description of August 1967 to April 1968, 22:44846
performance of, description of, 22:20847
power production by, economics of, 22:1809
pressure tubes for, crack propagation in Zircaloy-2, 22:43578
pressure tubes for, description of, 22:18468
pressure tubes for, design of creep strain gages for in-pile measurements on, 22:28229
pressure tubes for, failure measurements on Zircaloy-2, 22:1780
shielding for, description of rotating, 22:18468
shutdown system for, description of valve actuated absorber fluid for, 22:30188
startup of, description of, 22:46922 (TRG-Report-1686)
testing of, description of pre-startup, 22:46922 (TRG-Report-1686)
tube failure in, effects of embrittlement on zirconium, 22:21728
turbine hall mockup for, containment efficiency for burst gas flow in, 22:30217

- turbine-generator for, description of 100 MW, 22:53295

Steam Generators
- see Boilers

STEAM POWER PLANTS
- control systems using digital computers in, bibliography on, 22:32784 (RISO-M-725)
- cooling of, cost and environmental effects of, 22:27514 (BNWL-SA-1546)
- cooling system for Eggborough, sodium-24 tracer method for water flow measurements in, 22:47279 (AERE-R-5390)
- development aspects of, 22:18486
- development of, discussions on, 22:18499
- economic comparison with pressurized-water power reactors, 22:30185
- economics of coal-fired and nuclear, comparison of, 22:16210
- economics of combination nuclear and fossil-fuel-fired superheater for, 22:25035
- economics of large units, 22:50766
- materials for construction of fossil-fuel, review of, 22:52191
- power production using combination nuclear power plant and, economics of, 22:25020

Steam Superheaters
- see Superheaters

STEARATES
- see also Barium Stearates
- see also Lead Stearates

STEARIC ACID
- polymerization of layers of, 22:8087(R) (COO-1580-3)
- radiation effects on content and distribution of, in mice with carcinoma transplants, acute x, 22:47483
- sorptive properties for rare earth ions, 22:47109 (AERE-R-5323)
- use in preparation of cement and plaster shielding materials, 22:28905(P)
- yields in self-radiolysis of methyl stearate, 22:37802

STEARIC ACID, METHYL ESTER
- radiolysis of 9,10-tritium-labeled, yields in self-, 22:37802

Stearyl Alcohol
- see 1-Octadecanol

STEATITES
- coating with nickel, methods for, 22:7033
- properties of hot pressed, (E), 22:34098 (JEN-190-DMe/I-18)
- radiation effects on electric insulating materials of, neutron, 22:776

STEEL
- see also Aluminum Steel
- see also Austenite
- see also Boron Steel
- see also Carbon Steel
- see also Chromium Steel
- see also Cobalt Steel
- see also Manganese Steel
- see also Martensite
- see also Molybdenum Steel
- see also Nickel Steel
- see also Niobium Steel
- see also Silicon Steel
- see also Stainless Steel
- see also Titanium Steel
- see also Tungsten Steel
- see also Vanadium Steel
- see also Zirconium Steel
- abrasion between lubricated lapped plates of, in high-velocity shear tests, 22:37960
- analysis by laser sampling and emission spectroscopy, 22:1984
- analysis for antimony, arsenic, and copper by neutron activation, 22:33204 (AERE-AM-106)
- analysis for boron by alpha tracking, 22:27610
- analysis for boron, colorimetric, 22:30460
- analysis for boron, spectrometric, 22:27530 (CEA-N-816, pp 9-65)
- analysis for carbon by proton-beam activation, microscale, 22:30427 (BNL-50083, pp 192-202)
- analysis for cerium and vanadium by direct amperometry, 22:45016
- analysis for chromium traces by stable isotope dilution-mass spectrometry, 22:30466
- analysis for chromium, iron, and nickel, activation, 22:7989 (CONF-660905-2)
- analysis for hafnium, niobium, and zirconium by x-ray spectroscopy, 22:30481
- analysis for impurities by spark-source mass spectrography, 22:22930(R) (NBL-242)
- analysis for lead by flame photometry, 22:25236 (CEA-N-616, pp 20-71)
- analysis for lead by spectrophotometry, 22:4024
- analysis for lead in leaded, polarographic, 22:9(R) (NBS-TN-425)
- analysis for magnesium by bremsstrahlung activation methods, 22:7992(R) (NBS-TN-428)
- analysis for metals, x-ray fluorescence, 22:50938
- analysis for molybdenum by amperometric titration with chromium and vanadium solutions, 22:30492
- analysis for molybdenum by gamma-excited x-ray fluorescence, 22:1960 (ORNL-IIC-10(Vol.1), pp 483-502)
- analysis for molybdenum using morpholine-N-dithiocarboxylic acid morpholinium, spectrophotometric, 22:42609
- analysis for molybdenum using selenate ions, kinetic method for, 22:16425
- analysis for molybdenum using thiocyanate, photometric, 22:2003
- analysis for molybdenum using vacuum spectrometer, 22:18715
- analysis for niobium by spectrophotometry using 4-(2-pyridylazo)-resorcinol, 22:25283
- analysis for niobium, colorimetric, 22:1979
- analysis for niobium, spectrophotometric, 22:22971
- analysis for nitrogen, fusion method for, 22:27530 (CEA-N-816, pp 9-65)
- analysis for oxygen by activation methods, 22:22942
- analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
- analysis for oxygen, activation, 22:37696
- analysis for oxygen, activation, 22:1961 (ORO-2980-17)
- analysis for phosphorus, extraction method for spectrophotometric, 22:4043
- analysis for phosphorus, photometric, 22:28783(T) (TT-66-59003-4/A)
- analysis for phosphorus, silicon, and sulfur by neutron activation methods, 22:35765
- analysis for silicon by atomic absorption spectrophotometry, 22:30436(R) (UCRL-50006-68-1)
- analysis for trace amounts of nickel, chromatographic and radiometric, 22:22973
- analysis for tungsten, x-ray fluorescence method for, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
- analysis for vanadium, spectrophotometric, 22:14467
- analysis for zirconium, photometric, 22:2005
- analysis of aluminum-killed, for nitrogen by isotope dilution method using nitrogen-15-labeled aluminum nitride, 22:21045
- analysis of highly alloyed, by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
- analysis of irradiated, for iron and manganese-54 using lithium-drifted germanium detector, method for, 22:4001 (RT/CHI-(67)16)
- analysis of micron-sized volumes in, electron probe microanalyzer for, 22:45254 (BISRA-SM/B-16/66)
- analysis of standard, for vanadium by neutron activation methods, 22:7992(R) (NBS-TN-428)
- analysis of, use of phytin for precipitation of metals in, 22:33319
- annealing effects on irradiated type A302B, 22:4811(R) (AD-646662)
- annealing of A350-LF1, description of in-place pressure vessel, 22:53402
- antimony surface segregation in, analysis by Auger electron emission, (E), 22:21866
- balls of, effects on concrete shielding efficiency, 22:14619
- bonding adhesives for asbestos-, effectiveness of, 22:22657(R) (BMI-X-10222)
- book: Effects of Irradiation on Materials, 22:34092
- book: Hot Dip Galvanizing, 22:8717
- brittle fracture of austenitic EP-150, effects of cold-rolling or forging on critical temperature of, 22:26043
- brittle fracture of ferritic EP-142, effects of cold-rolling or forging on critical temperature of, 22:26043
- brittleness of neutron-irradiated, methods for determination of, 22:32804
- carburization of AISI 1010, and 1015, effects of chromium additions on sodium, 22:23715 (NAA-SR-Memo-9329)
- casting of, tests on tundish nozzles for continuous, 22:23892
- chromium surface segregation in, analysis by Auger electron emission, (E), 22:21866
- cladding heavy gage, method using stainless steel, 22:21690(R) (EURAEC-1960)
- cladding of heavy gage, method using stainless steel, 22:21691(R) (EURAEC-1961)
- cladding of heavy gage, method using stainless steel, 22:21692(R) (EURAEC-1962)
- cladding of mild, method using stainless steel, 22:21689(R) (EURAEC-1959)
- cladding with molybdenum, tantalum, and titanium, explosive method for, 22:19504
- coating by stainless steel, welding techniques for, 22:15164
- coating of tool, method for electrodeposition of wear-resistant composite, 22:2590
- coating thickness on sheets of, radiometric gage for measuring zinc, 22:14868
- coating with cadmium, 22:37704(T) (ANL-Trans-610, pp 57-63)
- coating with nickel--niobium alloys, by electrodeposition, 22:17087
- cobalt-60 contamination of, electrolytic removal of, 22:4626
- compacting model for powdered, using vibration, 22:2594
- containment structures of, standards for operation at less than 300ºC of, 22:14330
- corrosion by carbon dioxide at less than or equal to 550ºC, 22:17075
- corrosion by mercury at 500ºF, 22:647(R) (BNL-50077)
- corrosion by sodium at high temperatures, 22:12965

corrosion by steam and liquid sodium of fuel element cladding of austenitic, 22:32772 (KFK-700(Pt. III))
corrosion by steam and liquid sodium of fuel element cladding of austenitic, 22:53273(T) (EURFNR-472)
corrosion by superheated steam at 300 to 500ºC, effects of aluminum, molybdenum, nickel, silicon, and tungsten on, 22:626
corrosion by water at 240 to 250ºC, 22:16356 (KR-116)
corrosion by water at 300 to 500ºC, effects of aluminum, molybdenum, nickel, silicon, and tungsten on, 22:626
corrosion film thickness determination by beta backscatter, 22:49687(P)
corrosion in fluoride volatility process, 22:150
corrosion of austenitic, by liquid sodium at 500 to 600ºC, 22:23768
corrosion of low-alloy, by carbon oxide coolants for reactors, 22:8701
corrosion of mild, by flowing water at 15 to 20ºC, 22:49684 (KR-127)
corrosion of reactor cladding and fuel of, by aqueous and gaseous media, 22:773
corrosion of underground pipes of, cathodic protection of, 22:40996 (CONF-680605-1)
corrosion of, effects of molybdenum on, 22:38513 (CEA-N-856, pp 87-121)
corrosion protection using solventless epoxy-polyamide dye, 22:23909
corrosion resistance of nuclear materials containing, 22:31357
corrosion resistance of nuclear reactor, handbook on, 22:33109
corrosion testing of A212, in N Reactor secondary coolant water, 22:36430 (BNWL-753)
crack growth in ASTM A-212B, effects of cycles and strain range on low-cycle fatigue, 22:50734(R) (GEAP-5637)
crack growth in multiple configuration low alloy, three-dimensional photoelastic analysis of, 22:50734(R) (GEAP-5637)
crack propagation in delayed failures of, 22:649 (BNWL-SA-1134)
crack propagation in low-alloy, fracture mechanics of, 22:43570 (RD/B/N-1050)
cracking and fatigue of Type 4340, relations with sub-critical flaw growth, 22:52170
cracking in pipes of, under high frequency pressure oscillations during heat transfer, (E), 22:2302
cracking of high-strength, effects of hydrogen and oxygen on, 22:52170
cracking of high-strength, effects of water vapor on, 22:52170
creep deformation of thick visco elastic rings of, mathematical analysis of, 22:19011
creep rupture of ASTM A212BQ, 22:28805
creep rupture of ASTM A387BQ, 22:28805
creep rupture of ASTM A517A, 22:28805
creep rupture of ASTM A517B, 22:28805
creep rupture of ASTM A517E, 22:28805
creep rupture of ASTM A517F, 22:28805
creep rupture of ASTM A533A, 22:28805
creep rupture of ASTM A533B, 22:28805
creep rupture of ASTM A542, 22:28805
creep rupture of ASTM A543, 22:28805
creep-rupture of HT 70 pressure vessel, effects of heat treatments on, 22:43589
crystal phases in, effects of temperature on, 22:28844 (EURAEC-1751)
crystal structure and properties of thick sections of type A533B, 22:19531
cutting plates of, for reactor pressure vessels, 22:12992
decontamination of acid-resistant, from cobalt-60, electrolytic, 22:21159
decontamination of surfaces of, efficiency of water vapor jet for, 22:31114
defects in, sensitivity of scintillation detector for use in bremsstrahlung radiography for determining, 22:28117
dissolution by sulfuric acid, effects of induced radioactivity on inhibitors of, 22:12981
drawing tubes of mild, dimensional and microstructural changes during, 22:42994 (ANL-7299, pp 173-97)
ductility and strength of Type H-11, variations of, 22:45745 (UCRL-18043, pp 107-53)
ductility of A350-LF3 pressure vessel, for PM-2A reactor, 22:42196 (NRL-6739)
ductility of WB 35, effects of tempering on, 22:15173(R) (EURAEC-1963)
effects on air oxidation of graphite, 22:779 (AERE-R-5552)
embrittlement by fabrication and operation in pressure vessels, analysis of, 22:30807
embrittlement of high-strength, effects of hydrogen on, 22:21713
embrittlement of reactor pressure vessel, effects of hydrogen on, 22:19511 (BNWL-455, Paper 7.1-6)
embrittlement of type A302-B, effects of temperature on aging, 22:31417 (BNWL-532, pp 9.1-23)
embrittlement, effects of plastic fatigue on, 22:2609 (EURAEC-1892)
erosion rate of mild, effects of energy transfer from eroding particles on, 22:42575 (NYO-3477-12)
extrusion of thin-section shapes of, process parameters for, 22:8719
extrusion pressures in conical dies, nomogram for predicting, 22:43542 (TRG-Report-1523)
fabrication of compacts of, by powder metallurgy, 22:34048
fabrication of pressure vessels of laminated, calculations for, 22:30354
fabrication of type A302B, 22:15166
failure of tubular, during sodium--water reactions, 22:12970
fatigue crack growth in Type A212B, measurement of, 22:49711 (GEAP-5607)
fatigue crack growth in Type A387D, 22:49711 (GEAP-5607)
fatigue crack growth rates in A302-B and A508-2, 22:41033 (KAPL-P-3439)
fatigue cracking of ASTM A302-B and A508-2, effects of loading on, 22:23763 (KAPL-3383)
fatigue cracking of types A201A, A302B, and A517F, pressure vessel, 22:23767
fatigue of alloy, methods of determining, 22:8749(T) (AD-652470)
fracture behavior for pressure vessel, 22:7816(R) (ORNL-TM-2057)
fracture behavior of 12 in. thick ASTM A533, effects of austenitizing from 1600ºF on, 22:20909(R) (ORNL-TM-2095)
fracture mechanics evaluation of reactor-vessel, research program on, 22:28845(R) (WCAP-3677-7)
fracture mechanics in pipes of ASTM A-106B, analysis of, 22:50734(R) (GEAP-5637)
fracture of A350-LF3, photographic analysis of, 22:31416 (BNWL-532, pp 7.1-18)
fracture of ductile pipes of A106B, defect size for initiation of, 22:45763(R) (BMI-1847)
fracture of pressure vessel, fatigue and pressure, 22:42997 (SwRI-1228-P-5-46)
fracture testing Tokai-Mura Power Reactor pressure vessel, analysis of double tension, ESSO, and Robertson, 22:27448
fracture toughness of A302-B type, effects of thickness on, 22:13036 (BNWL-473, pp 7.1-71)
fracture toughness of nonirradiated and irradiated type A302B and SA336, effects of temperature on, 22:27491 (WAPD-TM-565)
fracture toughness of type A 302-B, (E), 22:19512 (BNWL-455, Paper 8.1-6)
fracture toughness of, effect of transformation on, 22:2615 (UCRL-17810)
fracture toughness testing of A302-B pressure vessel, 22:10944(R) (COO-1477-9)
fuel element cladding of austenitic, stress analysis of, 22:32774 (KFK-700(Pt. VIII))
gamma attenuation by thin sections of, broad-beam, 22:17718
gamma penetration of slabs of, comparison of calculated and measured, 22:4385
gamma shielding by, effects of geometry on, 22:12553
gamma streaming through two-legged thick-wall ducts of, 22:34730 (AD-663563)
gamma transmission in, in lead/steel/water layers, buildup factors for, (E/T), 22:52841(T) (ORNL-tr-1906)
gas content in, effects of cerium additions on, 22:19527
gas content in, effects of lanthanum additions on, 22:19527
gas content in, effects of neodymium additions on, 22:19527
grain size in, methods for reduction, 22:31411
hardenability of low-carbon, effects of nitrogen, titanium, and zirconium on boron-induced, 22:49745
hardening behavior of killed and heat treated ASTM A212, 22:45793(R) (EURAEC-2028)
hardness diagrams of carburized 20Mo Cr4, 22:28783(T) (TT-66-59003-4/A)
hardness diagrams of carburized EC80, 22:28783(T) (TT-66-59003-4/A)
hardness diagrams of carburized ECMo80, 22:28783(T) (TT-66-59003-4/A)
hardness diagrams of carburized ECN200, 22:28783(T) (TT-66-59003-4/A)
hardness of SA33 Grade B Class I, 22:43615(R) (BNWL-710)
heat treatment of irradiated type A 350 LFI, to improve ductility, (E), 22:19577 (BNWL-455, Paper 9.1-34)
homogeneity of, use of autoradiography and activation analysis for determining, 22:6259
impurities in, use of vacuum spark source mass spectrometer for analysis of, 22:25702
inspection and testing reactor pressure vessel, 22:30800
inspection for hydrogen in plates of, radiographic, 22:277
inspection of Swedish pressure vessel, 22:30801
inspection of thin sections using ytterbium-169 sources, 22:253 (ORNL-IIC-10(Vol.2), pp 648-62)
inspection programs for reactor pressure vessels, review of, 22:30809
integrity and properties of pressure vessel, evaluation of materials, 22:7816(R) (ORNL-TM-2057)
iodine-131 contamination of, removal of, by detergents, 22:4626
joints with different materials, metallography of, 22:43553
joints with SAP, tensile testing of rolled, 22:3813(R)

(AI-CE-54)
machining of high-strength alloy, review on, 22:28755 (NASA-SP-5084)
magnetic properties of, used in magnets of CERN intersecting storage rings, device for measuring, 22:11803
manufacture of, use of nuclear gages and tracers in, 22:2444
mechanical and physical properties of reactor pressure vessel, 22:52160 (EURAEC-2051)
mechanical and physical properties of, tabulations of, 22:4731
mechanical properties at high temperature as function of stress rate, 22:673
mechanical properties of 12-in.-thick specimens of A533-B, 22:43615(R) (BNWL-710)
mechanical properties of 12-inch plate of A-533-B Class I, variation with depth, 22:31345 (ORNL-4246, pp 38-41)
mechanical properties of alloy, effects of tungstate reducers on, 22:2598
mechanical properties of construction, effects of niobium additions on, 22:19530
mechanical properties of forged rings of type ASME-SA336, effects of carbon content on, 22:23787
mechanical properties of heavy-section plates of, for reactor pressure vessels, program for evaluation of, 22:10524(R) (ORNL-4176)
mechanical properties of nitrogen-containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)
mechanical properties of, effects of liquid sodium on, 22:647(R) (BNL-50077)
mechanical properties of, effects of temperature on, 22:28844 (EURAEC-1751)
melt temperature of, determination in electron-beam furnace by color pyrometry, 22:19468(T) (UCRL-Trans-10215)
melting of, design and operation of electron beam furnaces for, 22:2284
melting of, heat transfer to water-cooled crucibles during vacuum arc, 22:232 (BM-RI-7035)
metallurgical properties of nuclear materials containing, 22:31357
neutron capture in, rate of radiative epithermal, (E), 22:32928 (NDA-2143-9)
neutron scattering in, radiographic method for measuring, (E), 22:49042
neutron shielding properties of, 22:7340
neutron streaming through two-legged thick-wall ducts of, (E/T), 22:34730 (AD-663563)
neutron-induced gamma activity in manganese-containing, (E), 22:1286 (FOA-4-4320-23)
oxidation of chromium--nickel--niobium-stabilized austenitic, by carbon dioxide, effects of thermal cycling on, 22:47665
oxidation of low-alloy and rimming, by carbon dioxide, effects of water vapor on, 22:52135
oxidation resistance of Russian Kh20N80, effects of lanthanum and cerium on, 22:2585
performance in ducted radiation shelter entrances, 22:4390
phosphorus and sulfur distributions in, radiometric techniques for measuring, 22:8324
phosphorus-32 contamination of, removal of, by detergents, 22:4626
physical properties and thermal treatment of nuclear materials containing, 22:31357
physical properties of H-11 tool, effects of marworking and tempering temperature on, 22:31333 (BDX-613-103)
physical properties of H-13 tool, effects of marworking and tempering temperature on, 22:31333 (BDX-613-103)
pipes of A106B, effects of flaws on pressure rupture of, 22:26036(R) (BMI-1836)
pipes of low alloy, analysis of crack failures in, (E/T), 22:35459(R) (GEAP-5587)
plating process for, 22:34030
pressure vessel, development for large reactors, 22:3945
pressure vessels of low alloy, heat treatment of fusion welded, 22:49736(P)
pressure vessels of, analysis of mechanical properties of, 22:25098(R) (ORNL-TM-2164)
pressure vessels of, description of fabrication with multi-sections and ferro-concrete top, 22:14344(P)
production in electron-beam furnace, 22:19491(T) (UCRL-Trans-10220)
production of, radioactive tracer method for measurement of efficiency of molten metal mixers for, 22:14722
production of, use of radioactive tracer techniques in Swedish, 22:14713
production of, use of radioisotopes in, 22:47297
production of, uses of radiometric methods in, 22:49040
properties as superheater alloys, effects of high-temperature steam on, 22:23710
properties at high temperatures, effects of heat treatments on, 22:31378
properties for use in vacuum systems, 22:16828
properties of ASTM-A302B, for nuclear pressure vessels, 22:23786
properties of ferritic, for sodium-cooled reactors, 22:34008 (BNL-12482)
properties of mild, for pressure vessel liners, 22:20830
properties of silicon-killed low-carbon, effects of niobium on, 22:2640

radiation attenuation in, method of calculation of, 22:26446
radiation dose field behind shield of, mixed, 22:34734
radiation effect on HBWR pressure vessel of mild, neutron, 22:17146 (HPR-91)
radiation effects at 50 to 60°C on ductility of A302B, neutron, 22:31419 (BNWL-532, pp 11.1-43)
radiation effects at 550°F on A533 Grade B plates of, effect of thickness on, 22:36508(R) (AD-661229)
radiation effects at 550°F on ductility of A533, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
radiation effects on A302B, neutron, 22:17147 (NRL-6649)
radiation effects on A350, neutron, 22:23845 (IN-1131, pp 83-90)
radiation effects on A353, 22:36508(R) (AD-661229)
radiation effects on ASTM A302-B, research program on fast neutron, 22:19584 (GA-8064)
radiation effects on Barkhausen noise in, neutron, 22:23241
radiation effects on BR-2 in-pile loop, at 300°C on, fast neutron, 22:1856 (EUR-3626)
radiation effects on brittleness of A302B, analysis of fast neutron, 22:53345
radiation effects on brittleness of A350-LF3, destructive testing for neutron, 22:53403
radiation effects on brittleness of A350-LF3, destructive testing for neutron, 22:53401
radiation effects on cathodic hydrogen charging of, fast-neutron, 22:43618 (IN-1200)
radiation effects on Charpy V-notch and tensile specimens of Type A302-B pressure vessel, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on crystal phases and mechanical properties of, neutron, 22:28844 (EURAEC-1751)
radiation effects on crystal structure and mechanical properties of Type A212-B, in-pile, 22:43615(R) (BNWL-710)
radiation effects on ductility of A212B, relations of temperature with neutron, 22:31419 (BNWL-532, pp 11.1-43)
radiation effects on ductility of hydrogen-charged Hy-80, 22:43615(R) (BNWL-710)
radiation effects on ductility of Type A302-B pressure vessel, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on ductility of type A302-B, analysis of neutron, (E/T), 22:35413 (AD-661803)
radiation effects on ductility of, analysis of fast neutron, 22:42338
radiation effects on embrittlement of A302B, effects of annealing on neutron, 22:4801
radiation effects on ferrite, neutron, 22:52225
radiation effects on foundry ML5, γ, 22:8803
radiation effects on fracture toughness of A302B, 22:16109 (BNWL-609)
radiation effects on fuel element claddings of, 22:32776 (KFK-700(Pt. X))
radiation effects on fuel element claddings of, 22:53273(T) (EURFNR-472)
radiation effects on hardness of pressure vessel, 22:19520(R) (RISO-151)
radiation effects on heavy-section plates of, neutron, 22:10524(R) (ORNL-4176)
radiation effects on high-temperature embrittlement of austenitic, α and neutron, 22:13039(T) (CEA-tr-A-1912)
radiation effects on hydrogen embrittlement at 1200°C of A302B, HY80, and A542, measurement of neutron, 22:31416 (BNWL-532, pp 7.1-18)
radiation effects on impact properties of welds of Hy 80, fast neutron, 22:34087
radiation effects on impact strength of Uddeholm UHB 2103/R3, fast neutron, 22:47692
radiation effects on low-alloy, spectral effects on fast-neutron, 22:26066 (UJV-1931)
radiation effects on mechanical properties of A302B, for pressure vessels, 22:2620
radiation effects on mechanical properties of alloys of, progress during May to July 1967 on neutron, 22:31413(R) (BNWL-532)
radiation effects on mechanical properties of ASTM A302-B, neutron, (E), 22:19576 (BNWL-455, Paper 6.1-9)
radiation effects on mechanical properties of cast industrial ML5, neutron, 22:8802
radiation effects on mechanical properties of structural, data compilation on neutron, 22:36511 (N-68-16876)
radiation effects on mechanical properties of Types A350-Lf 3, A320-B, and SSS-100, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on notch ductility and tensile properties of A302-B, neutron, 22:8794
radiation effects on notch ductility of type A 350-LFI, neutron, (E), 22:19577 (BNWL-455, Paper 9.1-34)
radiation effects on notch ductility of types A 302-B, and A 517-E, effects of moderating media on neutron, (E), 22:19577 (BNWL-455, Paper 9.1-34)
radiation effects on notch ductility of weldments of, neutron, (E), 22:19577 (BNWL-455, Paper 9.1-34)
radiation effects on Otto Hahn reactor pressure vessel, fast neutron, 22:37508
radiation effects on phosphorus- and sulfur-modified A302-B, annealing of neutron, 22:43615(R) (BNWL-710)

radiation effects on pressure vessel, effects of fabrication heat treatments on neutron, 22:33169
radiation effects on pressure vessel, fast neutron, 22:19598
radiation effects on pressure vessel, review of in-pile, 22:21651
radiation effects on properties of 40Kh5SNEM, 22:23848
radiation effects on reactor structural, in-pile, 22:19585 (NRL-6620)
radiation effects on reactor structural, neutron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on strain aging of A-212-B, temperature dependence of fast-neutron, 22:31424 (ORNL-4246, pp 30-5)
radiation effects on strain-stress properties of A-212-B, annealing of fast-neutron, (E), 22:31423 (ORNL-4246, pp 27-30)
radiation effects on tensile and fatigue properties of types A302, A105, and A212, neutron, (E), 22:30159 (SWRI-1228-P-9-15)
radiation effects on tensile properties of A-302-B and A-212-B, effects of cadmium shielding on fast neutron, 22:31425 (ORNL-4246, pp 36-7)
radiation effects on tensile properties of reactor pressure vessel, neutron, (E), 22:19577 (BNWL-455, Paper 9.1-34)
radiation effects on tensile properties of type A302-B plate, neutron, (E), 22:19577 (BNWL-455, Paper 9.1-34)
radiation effects on tensile properties of type A350-LF3, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
radiation effects on tensile strength of ASTM 212B, relations of hydrogen content with in-pile, 22:43613 (ANL-7299, pp 144-9)
radiation effects on tensile strength of SAE 4340, relations of hydrogen content with in-pile, 22:43613 (ANL-7299, pp 144-9)
radiation effects on toughness of type A302B, neutron, 22:34088
radiation effects on transformation temperature of type A302B, neutron, (T), 22:13038 (WAPD-TM-471(Add.1))
radiation effects on transition temperature in pressure vessel, measurement of neutron, 22:27448
radiation effects on Type A350-LF1, in-pile, 22:43615(R) (BNWL-710)
radiation effects on type A353, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
radiation effects on Types A212-B and A302-B, relations of cadmium shielding with in-pile, 22:43615(R) (BNWL-710)
radiation effects on, fast neutron, 22:19599
radiation embrittlement of A-212-B, tensile and notch-impact studies of fast-neutron, (E), 22:31422 (ORNL-4246, pp 6-27)
radiation intensity distributions from a plane parallel beam in shields containing, measurement of γ and neutron, 22:14162
radiography of 200- to 450-mm, data on, 22:9736
radioinduced embrittlement of A302B, effects of phosphorous and sulfur on, 22:38589(R) (AD-663888)
radioinduced embrittlement of low-alloy pressure vessel, effects of solid-solution nitrogen on neutron, 22:11010
radioinduced embrittlement of pressure vessel, 22:36508(R) (AD-661229)
radioinduced embrittlement of pressure vessel, design of ultrasonic inspection equipment for, 22:40493
radioinduced embrittlement of type 16/13, relations of boron and carbon content with neutron, 22:34080(T) (EURFNR-464)
radioinduced embrittlement of Type A302-B, effects of copper, nitrogen, and vanadium content on neutron, 22:43615(R) (BNWL-710)
radioinduced embrittlement of, determination method for neutron, 22:38591
radioinduced embrittlement of, effects of ceramic oxide dispersions on fast-neutron, 22:7027
radioinduced embrittlement of, mechanisms of in-pile, 22:31421 (ORNL-4246, pp 1-6)
radioinduced embrittlement of, stress-wave attenuation method for evaluation of neutron, 22:28875
radioinduced embrittlement sensitivity of, development of reduced neutron, 22:31441
reactivity coefficients for, use of Sandia Pulsed Reactor 2 for determining, 22:42366 (SC-CR-68-3571)
reduction of oxide inclusions in, using silicon, 22:28783(T) (TT-66-59003-4/A)
reflector reactivity worth in SEFOR, calibration of, 22:35595 (GEAP-5576)
sampling of 12-inch plates of SA-533-B Class I, for irradiation testing, 22:28845(R) (WCAP-3677-7)
selection for use in deep hole casings, 22:207 (NVO-193-3)
separation of phases from, electrolytic, 22:38562 (KFK-692)
shielding properties for gamma rays from iridium-192, 22:42988
slag inclusions in, manual on examination of, 22:28839
sliding wear of pressure vessel, against graphite, 22:15250 (GAMD-8374)
sorptive properties for radioactive anions and cations, 22:28741
spherical shells of, effects of impact loads on, 22:3980 (SC-CR-67-2540)
strain hardening and tensile properties of metastable austenitic, effects of composition, and temperature on, 22:660 (UCRL-17805)
stress analysis of fuel element cladding of austenitic, 22:53273(T) (EURFNR-472)
stresses in type 4340, measurement of residual surface, 22:14737 (CONF-671011-, pp 168-83)
strontium-90 contamination of, removal of, by detergents, 22:4626
structural beams of type 1022, large deflection response of clamped, 22:18668 (SC-RR-67-848)
structure analysis of, use of Moessbauer spectroscopy for, 22:3172 (ORNL-IIC-10(Vol.1), pp 85-100)
sulfur surface segregation in, analysis by Auger electron emission, (E), 22:21866
sulfur-35 contamination of, removal of, by detergents, 22:4626
surface friction of, effects of soft metallic films on, 22:49722
tensile properties and Charpy V-notch data for A533 Grade B Class 1 pressure vessel, measurement of, 22:44926(R) (WCAP-3677-8)
tensile properties of A350-LF3 pressure vessel, for PM-2A reactor, 22:42196 (NRL-6739)
tensile properties of reactor pressure vessel, test procedures for, 22:19512 (BNWL-455, Paper 8.1-6)
tensile properties of structural, 22:36508(R) (AD-661229)
tensile properties of Super Elso, effects of plate thickness, stress, and temperature on, 22:23759(R) (EURAEC-1987)
tensile properties of Type A350-LF1, effects of in-place annealing on, 22:43620 (NRL-6721)
tensile properties of types A212-B and A302-B, measurement at 250 to 750°F of, 22:31417 (BNWL-532, pp 9.1-23)
testing A302B, for use in Japanese reactor pressure vessels, 22:2620
testing and acceptance of, for pressure and safety vessels, 22:27499
testing capsules of SAE 4130, for radioactive heat sources, 22:51181 (SC-RR-68-528)
testing for use in ventilation ductwork, 22:14756(R) (UCRL-50007-67-2)
testing of case hardened types of UNI, at 950 to 1025, 22:31376
testing of cast, radiometric method for nondestructive, 22:10501 (EUR-3645)
testing of Charpy specimens of, use of Barkhausen effect in nondestructive, 22:23241
testing of tensile properties and welds in pressure vessel plates of, 22:30806
tests on impact strength of welded joints in plates of AMMO and SUPERELSO, 22:6981 (EURAEC-1927)
thermal fatigue life of H-13 die, 22:6999
time-temperature history during quench of heavy section, 22:27416(R) (ORNL-4228)
tungsten content in, use of x-ray sources for determining, 22:4494
ultrasonic inspection of heavy section plate, quenching effects on results of, 22:27416(R) (ORNL-4228)
ultrasonic inspection of pressure vessel, method for, 22:12556 (BNWL-473, pp 10.1-12)
use for sheathing in hot-rolling beryllium foil, 22:52150(P)
use in reactor pressure vessels, fabrication and properties evaluation for, 22:10082 (ORNL-NSIC-21)
use of ex-naval gun, as shielding materials in low-background gamma spectroscopy facility, 22:51245 (RHEL/R-161)
use of thin sheets of, for structural materials in heterogeneous reactors, 22:26043
weldability by friction, tables of, 22:43579
welding methods for, description of, 22:30389
welding of mild, for use in fabrication of reactor pressure vessels, 22:633
welding of studs in pressure vessels of, friction, 22:17091
welding of, for use in fabrication of high-pressure vessels for reactors, 22:634
welding technique for, development of explosive, 22:38528
welding thick plates of Type A302B, for pressure vessels, 22:52149
welding to copper of type Kh18N10T, electron beam, 22:41020
welding tungsten carbide coatings on tools of, method for, 22:19613
x-ray absorption coefficients for, 6-MeV, 22:24370
x-ray scattering by, attenuation of, 22:28497
yttrium-90 contamination of, removal of, by detergents, 22:4626
zinc coating on, use of x-ray fluorescence gage to weigh, 22:260 (ORNL-IIC-10(Vol.2), pp 805-16)
Al--Co--Ni--steel--Ti crystal structure and properties of maraging-processed, 22:45745 (UCRL-18043, pp 107-53)
Al--Cr--steel, corrosion by demineralized water and water vapor, 22:26026 (CEA-N-616, pp 106-44)
Al--Cr--steel, mechanical properties of, effects of silicon on, 22:26026 (CEA-N-616, pp 106-44)

Al--Ni--steel--Ti, radiation effects on mechanical properties of pressure vessel, evaluation of temperature and neutron, 22:50748 (ZJE-27)
B--steel, use for hermetically sealed multiple spring-braced plate-type cross-shaped cross-section control elements of, description of, 22:48772(P)
C--Cr--Mn--Mo--N--Ni--Si--steel, transformations in TRIP alloy II, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Mn--Mo--N--Ni--Si--steel--V, transformations in TRIP alloy III, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Mn--Mo--Ni--Si--steel, mechanical properties of metastable austenitic, effects of temperature on, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Mn--Ni--steel, characteristics of, used in end bells of generator rotors, 22:47672 (CONF-671007-5)
C--Mo--steel, tensile properties at 100 to 1300°F, 22:52191
C--N--Nb--steel, composition and crystal structure of delta- and epsilon-phase, 22:41120
C--Nb--steel, composition and crystal structure of delta- and epsilon-phase, 22:41120
C--steel, corrosion by boiling aqueous nitrate solutions, effects of uranium addition on stress, 22:45753
C--steel, corrosion by boiling irradiated water, 22:40995 (AECL-2800)
C--steel, corrosion by boiling water, effects of oxygen on, 22:49684 (KR-127)
C--steel, corrosion of tanks of, by radioactive waste, 22:36437
C--steel, joining to tungsten by braze-welding, 22:23740
C--steel, pressure vessels of, heat treatment of welded, 22:49736(P)
C--steel, radiation effects on, spectral effects in fast-neutron, 22:26066 (UJV-1931)
C--steel, tensile properties at 100 to 1300°F, 22:52191
C--steel, tensile properties of, effects of electrospark alloying with transition metal refractories on, 22:26030
C--Steels, corrosion cracking of, analysis of alkaline stress, 22:35686
Cr--Mn--N--steel, transformations TRIP alloy I, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
Cr--Mn--steel, properties of, effects of molybdenum or niobium alloying on, 22:28794
Cr--Mo--Nb--Ni-steel--V, creep and stress-rupture of Type 1613, effects of sodium at 700°C on, 22:38532(T) (ANL-Trans-594)
Cr--Mo--Ni--steel, fatigue limits at 500 and 600°C, 22:26041
Cr--Mo--Ni--steel, fracture toughness of HT 80 and HY 100, 22:49732
Cr--Mo--Ni--steel, properties of Swedish steels for reactor pressure vessels at low and intermediate pressures, 22:31370
Cr--Mo--Ni--steel, radiation effects on ductility of, 22:36508(R) (AD-661229)
Cr--Mo--Ni--steel, radiation effects on ductility of, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
Cr--Mo--Ni--steel, radiation effects on impact properties of, fast neutron, 22:52127(R) (RISO-179)
Cr--Mo--Ni--steel, radiation effects on mechanical properties of, fast neutron, 22:47671 (CONF-671007-3)
Cr--Mo--Ni--steel, radioinduced embrittlement at 250 to 740°F, fast neutron, 22:31435
Cr--Mo--Ni--steel, radioinduced embrittlement of, 22:38589(R) (AD-663888)
Cr--Mo--Ni--steel, radioinduced embrittlement of, effects of aluminum and nitrogen on fast neutron, 22:43615(R) (BNWL-710)
Cr--Mo--Ni--steel--V, radiation effects on ductility of, 22:36508(R) (AD-661229)
Cr--Mo--Ni--steel--V, radiation effects on ductility of, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
Cr--Mo--Ni--steel--V, uses in rotors of hydrogen-cooled electric generators powered by steam turbines, 22:47672 (CONF-671007-5)
Cr--Mo--steel, corrosion by liquid sodium, 22:47660 (CONF-671007-2)
Cr--Mo--steel, crack growth in, effects of cycles and strain range on low-cycle fatigue, 22:50734(R) (GEAP-5637)
Cr--Mo--steel, crack growth in, effects of temperature and stress on low-cycle fatigue, 22:50734(R) (GEAP-5637)
Cr--Mo--steel, heat treatments in forging of UNI type 5462-64, 22:31377
Cr--Mo--steel, impurities in Grades C. 4736 and C. 4737, determination of nonmetallic, 22:28783(T) (TT-66-59003-4/A)
Cr--Mo--steel, tensile properties at 100 to 1300°F, 22:52191
Cr--Mo--steel, welds on boiler tubes of, evaluation of, 22:45764 (NAA-SR-Memo-4998)
Cr--Mo--steel--V, fatigue testing at 80°F of, analysis of, (E), 22:35414 (AD-663133)
Cr--Ni--Mo--steel, compatibility with plutonium carbide--uranium carbide fuel at 800°C, 22:31458
Cr--Ni--steel, corrosion by liquid sodium at 500 to 600°C, 22:23768
Cr--Ni--steel, corrosion by magnesium chloride, 22:26026 (CEA-N-616, pp 106-44)
Cr--Ni--steel, corrosion by sodium hydroxide at 360°C, 22:26026 (CEA-N-616, pp 106-44)
Cr--Ni--steel, fatigue limits at 540 and 600°C, 22:26041
Cr--Ni--steel, oxidation of niobium-stabilized, by carbon dioxide at 750 and 850°C, structure of surface oxides formed by, 22:34123
Cr--Ni--steel, stress-rupture of, effects of liquid sodium and air at 700°C on, 22:48788
Cr--Ni--steel--Ti, corrosion by carbon dioxide in Windscale AGR tubes of austenitic, (E), 22:44857
Cr--Ni--steel--Ti, corrosion by liquid sodium, 22:47660 (CONF-671007-2)
Cr--Ni--steel--Ti, corrosion by liquid sodium at 500 to 600°C, 22:23768
Cr--steel, corrosion of, electrochemical, 22:38513 (CEA-N-856, pp 87-121)
Cr--steel--W, crystal structure of, effects of tempering on, 22:34051
Mn--Mo--Nb--Ni--steel, radiation effects on mechanical properties of pressure vessel, evaluation of temperature and neutron, 22:50748 (ZJE-27)
Mn--Mo--steel, ductility transition temperature of, effects of sample width on, 22:34058
Mn--Mo--steel, fracture of Charpy test samples of, effects of temperature on, 22:34058
N--Nb--steel, composition and crystal structure of and delta- and epsilon-phase, 22:41120
Ni--steel, fatigue testing at 250, 300, and 480°C for nuclear use, 22:49737
Ni--steel, heat treatment for improved low temperature properties, 22:28783(T) (TT-66-59003-4/A)
Ni--steel, radiation effects on impact properties of, fast neutron, 22:52127(R) (RISO-179)
steel--Ti, forging lubricants for, 22:8719
steel--V, impurities in Grades C. 4736 and C. 4737, determination of nonmetallic, 22:28783(T) (TT-66-59003-4/A)
STEEL COUPLES
see also Stainless Steel Couples
STELLAR CORONAS
model of, magnetogasdynamic, (T), 22:29146
STELLAR FLARES
see also Solar Flares
distribution of amplitudes of, from irregular and semiregular variables, (T), 22:43711
frequency of occurrence in SS Cyg, (E), 22:43809
model for, in pre-main-sequence stars, (T), 22:45886
optical study of, (E), 22:13209
particle acceleration by, (T), 22:36661
photoelectric observations of, in UV Ceti type stars, (E), 22:13145
photospheric heating of stars due to, (T), 22:43710
properties of, (T), 22:49956
ultraviolet observations of, (E), 22:41215
x-ray flare from Sco X-1, observation of, (E), 22:29121
STELLAR WIND
see also Solar Wind
dynamics of, (T), 22:36598
effect of ion recombination in, (T), 22:31591
flow of, recombination fronts in, (T), 22:21830
flow of, recombination fronts in, (T), 22:34132(R) (AD-661573)
in flow of, blast waves, (T), 22:34132(R) (AD-661573)
interaction with diffuse nebulae, (T), 22:52373
magnetic braking by, (T), 22:23967
magnetic braking of stars by, (T), 22:43824
model for, from magnetic stars, (T), 22:23967
model for, shock waves in, (T), 22:31591
STELLARATORS
see also Thermonuclear Reactors
charged particle motion in, single, (T), 22:9280
design of Sirius, 22:9277(T) (MATT-Trans-45)
design of strong negative V'', (E/T), 22:17619
divertor of Sirius, analysis of, 22:13430(T) (MATT-Trans-46)
electron beam interactions with plasma in Sirius, heating in, 22:9276(T) (MATT-Trans-44)
magnetic configurations from internal separatrices, (T), 22:24247 (MATT-Q-25, pp 201-22)
magnetic field calculation for Sirius, longitudinal, 22:19935(T) (NP-tr-1619)
magnetic field calculations for l = 3, elimination of double axes of, 22:24248 (MATT-Q-25, pp 321-40)
magnetic field of levitated quadrupole W VI, 22:52729 (IPP-2/67)
magnetic surface breakup in, due to magnetic field perturbations, 22:5309(T) (NP-tr-1601)
magnetic surfaces in two-inlet, toroidal effect on, (T), 22:44074 (NP-17561)
magnetic surfaces in W Ib, determination using pulsed electron beams, 22:52730 (IPP-2/69)
magnetic surfaces in, destruction of, (T), 22:17626
magnetic surfaces in, stochastic destruction of, 22:3006
magnetic surfaces of l = 2, calculation of, 22:24253(T) (NP-tr-1636)
magnetic system alignment of Sirius, (E), 22:19939(T) (NP-tr-1632)
magnetoacoustic wave excitation in, fast, 22:7275(T) (MATT-Trans-43)

- performance of pulsed, with dense plasma, (E), 22:15505 (IIF-LA-4)
- plasma confinement in negative V'' with shear, (T), 22:19936(T) (NP-tr-1621)
- plasma confinement in, computer simulation of, 22:46112 (MATT-618)
- plasma confinement in, single-particle, (E), 22:50136
- plasma confinement in, velocity--space effects in computer simulation of, 22:50132 (MATT-648)
- plasma confinement properties in SIRIUS, (E), 22:7261
- plasma confinement properties of Sirius, (E), 22:26356(T) (NP-tr-1620)
- plasma diffusion in toroidal, (T), 22:24255(T) (NP-tr-1644)
- plasma electron density and fluctuation measurements in L-1, equipment for, 22:44091 (NP-17587)
- plasma equilibrium in triple-wound, with circular magnetic axis, 22:3012
- plasma injection and confinement in, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma injection and confinement in, with double-helix-type magnetic fields, 22:15508
- plasma instabilities in, balloon mode of, (T), 22:22191
- plasma instabilities in, resistive interchange and ballooning modes in, (T), 22:24357 (MATT-Q-25, pp 223-38)
- plasma ion cyclotron resonance heating in, limitations of, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma oscillation modes in, microwave-heated turbulent, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma stability in, pressure effects on, 22:15546
- properties of Wendelstein W 16, (E/T), 22:50130 (IPP-2/70)

STELLARATORS (A-2)
- plasma fluctuation properties in, strongly-turbulent microwave-heated, 22:36905 (MATT-580)
- plasma injection and confinement in Etude, 22:26357

STELLARATORS (B-3)
- plasma injection and confinement in, 22:26357

STELLARATORS (C)
- ion cyclotron instabilities in, 22:52828 (CONF-671127, pp 196-214)
- magnetic coils for, mechanical testing of, 22:24244 (MATT-Q-25, pp 347-56)
- magnetic pumping system for, development of, 22:3004 (TID-24139)
- magnetic surfaces in, effects of Dawson rings on, (T), 22:24247 (MATT-Q-25, pp 201-22)
- plasma anomalous resistivity in, fluctuations and collision frequency effects on confinement in, 22:44070 (MATT-621)
- plasma conductivity measurement in, using Thomson scattering, 22:22140
- plasma conductivity measurements in, using Thomson scattering, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma confinement in, xenon, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma density measurements in, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma heating by fast hydromagnetic waves in, 22:9279
- plasma ion cyclotron instabilities in mirror-confined, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma oscillations in, Ohmic-heated, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma production and confinement in, injection, (E), 22:24242 (MATT-Q-25, pp 30-117)
- plasma waves in, optimum generation of ion cyclotron, (E), 22:24242 (MATT-Q-25, pp 30-117)

Stellin
- see Protamines

Stellite No. 21
- see Haynes Stellite No. 21

Stemetil (R)
- see Proclorperazine

STEMS
- see also Xylem
- analysis of rice, for halides and other elements, neutron activation, 22:33286
- distribution of lead-210, polonium-210, and strontium-89 in, of kidney bean plants, effects of citrate ions, 2,4-D, and salts on, 22:6728
- radiation effects on length of, in Yucca plants, effects of seed exposure on γ, 22:8649
- radioinduced mutations for leaf shape in apex of potato, x, 22:6781

STERILITY
- see also Reproduction
- radioinduced mutations for male, in jute plants, x, 22:8503
- radioinduced, in beagles, effects of dose fractionation on x, 22:38430 (UR-49-876)
- radioinduced, in Drosophila, effects of actinomycin on x, 22:31018 (NP-17337)
- radioinduced, in gypsy moths, γ and x, 22:8642
- radioinduced, in moths following exposure of pupae, x, 22:17070
- radioinduced, in progeny of male mice, effects of parental age at exposure on x, 22:40900
- radioinduced, in sugarcane borers, effects of sex on, 22:23700

STERILIZATION
- see also Radiopreservation
- see also Radiosterilization
- radioinduced, in maize pollen, effects of, on use for bee feeding, γ, 22:31312
- radiomimetric analysis of effects of vegetable sugar on, by steam under pressure, 22:43261
- use of disinfection substances for surface, of radium cells, 22:40980

STEROIDS
- see also Betamethasone
- see also 5β-Cholanic Acid, 3α-Hydroxy-
- see also Hormones
- see also Sterols
- analysis of, isotope derivative methods using sulfur-35 for, 22:10202
- book: Steroid Hormone Analysis. Vol. 1, 22:10202
- determination by double-isotope derivative methods, 22:16476
- effects on radiosensitivity of mice and rats in relation to circadian clock, 22:36391
- effects on secretion of thyroid hormones, 22:21404 (COO-301-150)
- excretion in urine of beagle dogs, effects of ACTH on, 22:25216 (LF-38, pp 118-22)
- hydration of, using tris(triphenylphosphine)rhodium chloride, effects of deuterium on catalytic, 22:33302
- radiation effects on content of 17-oxycortico, in urine of guinea pigs, prophylactic effects of repeated uv irradiation on x, 22:47571
- radiation effects on content of, in plasma of rabbits, γ, 22:43234
- radioprotective effects of, on human skin, uv, 22:51972
- secretion by adrenals of rabbits in Ohio, effects of physiographic regions on, 22:25208(R) (COO-1446-2)

STEROIDS, 17-BETA-
- radiation effects on excretion of, by man following therapy, α and x, 22:31273

STEROIDS, 20-KETO-
- photolysis of, deuterium isotope effects in uv, 22:67
- radiation effects on content of, in urine of man, 22:21623

STEROLS
- see also Cholesterol
- radiation effects on biosynthesis of, in yeasts, x, 22:52021

STIBINE OXIDE, TRIBUTYL-
- preparation of, 22:22901(R) (ORO-2733-13)

STIBINE OXIDE, TRIPENTYL-
- preparation of, 22:22901(R) (ORO-2733-13)

STIBINE OXIDE, TRIPROPYL-
- preparation of, 22:22901(R) (ORO-2733-13)

STILBENE
- positron annihilation in, (E), 22:26207
- preparation of scintillation layers of, 22:36064
- proton reactions at 10 MeV to 2 GeV, energy losses in, 22:45290
- radiation effects on monocrystalline, containing anthracene and naphthacene, scintillation studies on α, 22:114
- radioinduced isomerization in frozen organic solvents, kinetics of γ, 22:10301
- radioinduced isomerization of, in toluene solutions, γ, 22:48878(R) (NYO-3242-29)
- radioinduced scintillations in, time dependence of gamma and neutron, 22:40415
- scintillation decay time of, 22:40414
- scintillation light output of, 22:40414
- scintillation pulse shape discrimination parameters for, use of zero cross-over technique for measuring, 22:36047
- scintillation response to recoil protons generated in, 22:40419
- use in fast neutron spectrometer, 22:1956(R) (MLM-1405)
- use in scintillation detector for simultaneous neutron and gamma spectroscopy, 22:19141

STILBENE, 4,4'-DIMETHOXY-
- effects on γ-induced isomerization of 4-methoxy-4'-nitrostilbene in naphthalene, 22:27776

STILBENE, 4-METHOXY-4'-NITRO-
- radioinduced isomerization in naphthalene, effects of naphthacene and pyrene on γ, 22:27776

Stilbene Oxide
- see Bibenzyl, α,α'-Epoxy-

4-STILBENECARBOXYLIC ACID
- radiation effects on cis-trans conversion in, uv and x, 22:16571

2,2'-STILBENEDISULFONIC ACID, 4,4'-BIS[(3,4-DIHYDROXYPHENYL)AZO]-, AMMONIUM SALT
- use in photometric determination of aluminum in iron alloys, 22:18700

Stills
- see Distillation Apparatus

Sting Rays (Dasyatis)
- see Dasyatis under Chondrichthyes

STIRRING APPARATUS
- see also Mixing

STOCHASTIC METHODS
- see also Mathematics
- see also Monte Carlo Method
- coherence function for two-node coupled-core neutron densities, properties of, 22:42561
- differences of zero using random sampling, determination

  - of Sterling numbers of second kind and table of, 22:27521(R) (ORNL-4236)
  - kinetics of heterogeneous power reactors using, analysis of, (T), 22:37459
  - neutron generation time by discrete time and discrete state Markov process, analysis of fast reactor, 22:35545
  - neutron transport probability calculations using, space, 22:1878 (ANL-7307)
  - probability density function estimation of random variable by, computer program for, 22:6219 (SC-DC-67-2118)
  - probability distributions in riff shuffle using, determination of discrete, 22:27521(R) (ORNL-4236)
  - random variable representation using, regression equations for, 22:27521(R) (ORNL-4236)
  - sampling size determination using, decision theory formulation of optimum, 22:16364 (SC-CR-67-2752)
  - use for predicting human injuries induced by radioactive contamination from unplanned re-entry of satellites, 22:43429

- Stokes Burst
  - see Plumbob Operation
- STOMACH
  - see also Gastric Juice
  - fallout content of, in mule deer in Colorado during 1963 and 1964, 22:21459(R) (COO-1156-28)
  - iodine-131 content of, in fetuses of rabbits, effects of maternal injection on, 22:10686
  - radiation doses to, of man during radiography, 22:43330
  - radiation effects on acid secretion and bioelectric potential in, of rats, x, 22:49226
  - radiation effects on acidity and clearance of, in rats, effects of atropine on, 22:28683
  - radiation effects on dry and wet weight of, in mice, effects of dose on x, 22:40947
  - radiation effects on emptying of, in rats, effects of, on barium meal aversion, β and x, 22:23605
  - radiation effects on food retention by, of rats, effects of papaverine on, 22:21556
  - radiation effects on motility of, of mice, protective effects of cholinergic drugs against, 22:19358
  - radiation effects on retention of contents of, in rats, effects of irradiation site on, 22:28688
  - radiation effects on, following therapy, incidence of β, γ, and x, 22:2550
  - radiography of human, use of technetium-99 labeled pertechnetates for, 22:10786
  - radioinduced carcinomas in, of man, effects of dose on incidence of Thorotrast, 22:10872
  - radioinduced ulcers in, of man following therapy to lumbo-aortic lymphatic chain, γ, 22:49450
  - radioinduced ulcers in, of rabbits, combined effects of cortisone on x, 22:36372
  - radioprotective effects of shielding of, in dogs, 22:45552
  - radiosensitivity of mucosa of, in dogs, effects of stimulation on x, 22:45440
  - radiotherapy of neoplasms of, in man, bremsstrahlung, 22:51789
  - radiotherapy of neoplasms of, in man, combined effects of 5-fluorouracil on γ, 22:4679
  - scanning of human, use of technetium-99-labeled pertechnetate for, 22:8451
  - scanning of, use of technetium-99 for, 22:25941
  - scanning, use of technetium-99-labeled pertechnetate for, 22:25919
  - scintiscanning of human, 22:33885
  - scintiscanning using technetium-99-labeled sodium pertechnetate, 22:31162
  - technetium-99 content of, in dogs, effects of absorption through bladder wall on, 22:28330
  - use of technetium-99m to study gastric secretion in, of man, 22:36306
- Storage
  - see Handling and Storage
- STORAGE BATTERIES
  - radiation effects on silver--zinc, up to 1.5-MeV electron, 22:36158 (N-68-22226)
- STORAGE RINGS
  - see also Accelerators
  - beam behavior in, review of, 22:11840
  - beam characteristics of low-intensity ACO electron--electron, 22:11809
  - beam current in proton, effects of electron compensation of space charge on limited, 22:32339 (CEAL-2000, pp A103-5)
  - beam currents in proton, charge-exchange injection method for obtaining large, 22:11838
  - beam injection in Adone, description of linear accelerator project LEALE for, 22:3571
  - beam instabilities in ACO, equations for damping time constant of, 22:11832
  - beam instabilities in Orsay, summary of, 22:41889 (RHEL/M-124, pp 43-5)
  - beam instabilities in, modulated, 22:48397
  - beam interactions in electron--positron, physics of, 22:11818
  - beam interactions in, phase-space limitations on yields from, 22:32354 (CEAL-2000, pp A158-9)
  - beam luminosity control system at Adone, description of, 22:11820
  - beam motion in strong-focusing, analysis of transverse coherent, 22:32259 (CEAL-2000, pp 135-43)
  - beam oscillations in CESAR electron, analysis of coherent transverse, 22:32250 (CEAL-2000, pp 86-9)
  - beam phase instabilities in VEP-1 electron--electron, 22:11812
  - beam phase instabilities in VEP-2 electron--positron, 22:11812
  - beam polarization by strong interaction scattering in, proton, 22:44555
  - beam splitting by third order resonance in CESAR electron, 22:32250 (CEAL-2000, pp 86-9)
  - beam stability in, criteria for longitudinal, 22:48395
  - beam stacking in CERN ISR, methods for betatron, 22:32356 (CEAL-2000, pp A163-7)
  - beam stacking with missing buckets in CESAR electron, 22:32250 (CEAL-2000, pp 86-9)
  - beam stacking with missing buckets in proton, modulation method for, 22:32249 (CEAL-2000, pp 85)
  - beam stacking with suppressed rf buckets in CERN ISR, 22:44530 (CERN-68-22)
  - beam transport for CERN, bibliography on, 22:22487 (NP-17329)
  - beam transverse resistive instabilities in circular, throbbing, 22:44549
  - beam--beam interactions in VEP-1 electron, effects on beam characteristics, 22:32257 (CEAL-2000, pp 126-9)
  - beam--beam interactions in VEPP-2 electron--positron, effects on beam characteristics, 22:32257 (CEAL-2000, pp 126-9)
  - beam--beam interactions in, effects of crossing angle on rate of, 22:32260 (CEAL-2000, pp 144-7)
  - betatron oscillations in ACO, effects of energy spread, betatron amplitudes, and closed orbit excursions on frequency shift of, 22:32326 (CEAL-2000, pp A63-5)
  - betatron oscillations in, effect of chamber wall conductivity on, 22:11813
  - bremsstrahlung production in, from $e^- + e^-$ interactions at 2 x 43 to 2 x 160 MeV, 22:11816
  - cavity resonators for SLAC, design, fabrication, and testing of, 22:11752 (SLAC-78)
  - characteristics of low-intensity ACO electron--electron, measurement of, 22:11808
  - charged-particle beam transversal oscillations between electrodes in, production of electromagnetic fields from, 22:11814
  - charged-particle interactions in CERN ISR, electron--proton, 22:32350 (CEAL-2000, pp A135-8)
  - conference on electron and positron, Saclay, France, 9-66, 22:11806
  - description of Ada 250-MeV, 22:3570
  - description of Adone 1.5-GeV, 22:3570
  - description of bypass, for NAL 200-GeV synchrotron, 22:15891
  - design and operation of, review on, 22:11841
  - design and performance of proton intersecting, 22:3554 (CERN-66-29(Vol.3), pp 153-65)
  - design of 3-GeV electron--positron, for DESY facilities, 22:32253 (CEAL-2000, pp 104-11)
  - design of alternating-gradient, 22:26757(P)
  - design of DESY 3-GeV electron and positron, 22:11839
  - design of proton, with superconducting guide field, economic aspects of, 22:50493 (UCRL-18186)
  - design of small electron, with high intensity, 22:11837
  - design parameters, 22:7575 (ORNL-AIC-1)
  - design parameters of CERN ISR proton, 22:32246 (CEAL-2000, pp 58-63)
  - design parameters of VEPP-3 3.5-GeV electron--positron, 22:32252 (CEAL-2000, pp 102-3)
  - design, operation, and performance of Kharkov 100-MeV electron, 22:32258 (CEAL-2000, pp 130-4)
  - development and survey of colliding-beam, 22:5689
  - development at CERN, 1967, 22:50491(R) (NP-17628)
  - development for beam injection in 200-GeV NAL proton synchrotron, 22:44539 (NAL-11-0100)
  - development of CESAR, 22:29782 (CERN-68-8)
  - development of intersecting, at CERN, 22:13888
  - development of ISR, 22:11834
  - development of, review, 22:15888
  - development status of Orsay electron--positron, 22:32247 (CEAL-2000, pp 64-76)
  - efficiency of CESAR, effects of high-frequency noise on, (E/T), 22:32359 (CERN-68-3)
  - electrodes for Orsay, output of high-energy, 22:11821
  - electromagnetic lenses for ISR, use of quadrupole, 22:11830
  - electromagnetic lenses for SLAC, use of quadrupole and sextupole, 22:11829
  - electron interactions with electrons at 2 x 135 MeV in, angular distribution from, 22:11815
  - experimental capabilities of proton intersecting, 22:3554 (CERN-66-29(Vol.3), pp 153-65)
  - experimental facilities for 3-GeV electron--positron, 22:11822
  - experimental facilities for study of $e^- + e^+ \to e^- + e^+$ interaction with charge recognition at Adone, 22:48205 (ISS-68/20)
  - experimental facilities for, design of spark chamber, 22:11824
  - experimental facilities for, design of spark chamber--cage coil detector, 22:11825

experimental facilities for, use of spark chamber, 22:11823
experiments with CESAR, 22:29782 (CERN-68-8)
gamma ray monitoring in Orsay, fabrication of lead-sandwiched scintillation detectors for, 22:11819
instrumentation for Adone, development of, 22:3572
magnetic field mapping and reproducibility studies of CERN muon, 22:11800
magnets for CERN intersecting, device for measuring magnetic properties of steels used in, 22:11803
operation of ACO, in vicinity of constant linear coupling resonance, 22:11831
operation of CERN meson (μ), 22:11833
operation of CESAR electron, 22:11810
operation of SLAC, VEP-1, VEPP-2, and ACO, review of, 22:11842
operation of Stanford electron--electron, 22:11807
particle motion in electron, linear theory of, 22:26745
performance capabilities of proton, which intersect horizontally at small angles, 22:32248 (CEAL-2000, pp 77-84)
performance of CERN ISR, review of improvement possibilities in, 22:32356 (CEAL-2000, pp A163-7)
phase space compression in electron, 22:44534 (HMI-B-55)
proton density in ISR, method for controlling, 22:11835
radiation background in Orsay electron--positron, use of spark chambers for studying charged particle and gamma, 22:11817
research, 22:3559(R) (LAL-1176)
targets for electron--positron, calculations for experiments using, 22:5696
use for obtaining synchrotron radiation with visible spectra, 22:11836
use of Adone, for determining baryon form factors with $e^+ + e^- \to p$ + anti p interactions, 22:11828
use of Adone, for production of meson (μ) pairs, 22:11826
use of Adone, for studying phi $\to K^+ + K^-$, phi $\to \mu^+ + \mu^-$, and phi $\to$ neutral particle decays, 22:11827
use of CESAR, for studying basic problems of design and operation of proton storage rings, 22:41911
use of colliding beam, for studying K_2^0 decay and CP violation parameters for K^0 decay, (E), 22:52924 (LNF-68/43)
use of synchrotrons as, characteristics of, 22:11811
Storage Tubes
see Memory Devices
Straight Tube Aircraft Reactor (STAR)
see Reactors, Aircraft
STRAIN
(Deformation produced by a stress)
see also Stress
analysis in PM reactor core structures, 22:20895 (HIT-3583-88(Add.))
effects on x-ray diffraction peak shifts of thorium, 22:21716 (BARC-298)
model of metal, incorporating dislocation movement against Peierls--Nabarro friction stress, 22:23837
STRAIN GAGES
see also Extensometers
bonding apparatus for, design of thermistor temperature control circuit for, 22:12687 (Y-1602)
bonding to beryllium surfaces, method for, 22:49720 (UCRL-71233)
calibration of, ASTM standards for, 22:40332
circuits for, amplitude-change detector, 22:51276(R) (IDO-17269)
control system for, in reactors, design of two-stage pressure, 22:36132(P)
design for internal strain measurements in concretes, 22:14896
design for internally gaging small diameter nozzles of pressure vessels, 22:14895
design of creep, for in-pile measurements on SGHWR reactor, 22:28229
development of high-temperature, for use in sodium environment, 22:12674 (ANL-7380, pp 91-101)
performance for use in high temperature sodium environment, 22:48982(R) (LMEC-68-20)
performance in liquid sodium, 22:10438(R) (NAA-SR-12585)
pressure transducers for, fast neutron and γ effects on, 22:4559 (TID-24144)
radiation effects on structural response of, in nuclear-device environments, 22:4560 (UCRL-70646)
radiation effects on temperature characteristics of silicon semiconductor, 2-MeV electron, 22:47444 (N-68-25414)
sensitivity and zero shift measurements on LMFBR, effects of temperature on, 22:30118 (ANL-7438)
testing in cryogenic and radiation environment, design of test fixture for remote, 22:4562
testing of high-temperature electric resistance, 22:12673 (ANL-7380, pp 79-90)
use for measurements during resistance welding, 22:14405 (Y-1580)
use for testing pressure vessels, Dextir data acquisition system for monitoring, 22:21380 (ORNL-4219, pp 61-7)
STRAINERS
see also Filters
STRANGE PARTICLES
see also Baryons, Resonance (Y*)
see also Hyperons
see also Mesons (K)
see also Mesons, Resonance
coupling constants in π + N interactions below 1.5 GeV, (T), 22:34977 (AD-666680)
decay of, vector constants for, (T), 22:9566
decay with change in strangeness, SU(3) symmetry for properties of vectors constants for beta, 22:13815
decays of, relation between current algebra and vector meson dominance for parity-nonconserving, 22:5562
interactions of, experimental evidence against angular momentum nonconservation in weak, 22:50342 (UCRL-18399)
production from γ + p interactions at high energies in hydrogen bubble chamber, (E), 22:13638
production from particle reactions with nuclei at high energies, specific character of cascade calculations for, 22:7488 (JINR-P2-3562)
production in electron and photon interactions, use of current algebra and PCAC hypothesis for amplitudes of, 22:15715
production in γ + p interactions at 1.5 to 6 GeV, review of, 22:22273 (CONF-670923-, pp 254-69)
production in p + p interactions at 6 GeV/c in hydrogen bubble chamber, (E), 22:32058
production in p + p interactions at 6.92 GeV/c in bubble chamber, partial cross sections for neutral, (E), 22:15673
production in p + p interactions at 8 GeV/c, cross sections for, (E), 22:46327
properties of, index on, 22:37091 (AED-C-23-25)
properties of, index on, 22:37092 (AED-C-23-26)
research in, index for, 22:15693 (AED-C-23-20)
research on, index for, 22:22327 (AED-C-23-23)
research on, index of, 22:20153 (AED-C-23-22)
research on, index of, 22:24567 (AED-C-23-24)
strangeness of, para-field representation of intrinsic degrees of freedom of, 22:46354
theory for leptons, 22:24619
Strangeness
see Elementary Particles
Strangeness Conservation
see Invariance Principles
STRATIGRAPHY
effects on storage of radioactive waste in salt mine, 22:51064
STRATOSPHERE
behavior of southern, use of cosmic ray-produced beryllium-7 to study, 22:188
beryllium-7 content of, during 1963 and 1964, 22:28447 (ANL-7278, pp 304-13)
cadmium-109 content in northern and southern hemispheric samples of, 1962 to 1966, 22:21201 (HASL-184, pp I.53-118)
carbon-14 transport processes in, development of box model to study, 22:33573
cerium-144 distribution in northern, 1962 to 1963, 22:35948
circulation in, powered by solar heating, (T), 22:44010
cosmic-particle energy spectra in, primary, (E/T), 22:11253
cosmic-ray intensities in, primary and secondary, (E), 22:11274
dust collection in, (E), 22:17216
electron density and collision frequencies in, (T), 22:19863
energy budget of, during 1965, statistical analysis of eddy transport effects on, 22:31692 (MIT-2241-38)
exchange processes in, tracer studies of, 22:25542
exchange with troposphere, use of ozone and radioactivity to measure, 22:33570
fallout circulation in, effect of polar night vortex on, 22:10384
fallout distribution in lower, over Alaska, Argentina, and western US, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
mixing processes in, use of ground-level atmospheric radioactivity to study, 22:25523 (BNWL-SA-1739)
oscillation of, sunspot-cycle effects on quasi-biennial, (T), 22:22031
ozone diffusion and transport in, 22:21207(R) (NYO-3317-3)
plutonium-238 content of northern and southern hemispheric samples of, 1964 to 1967, 22:21201 (HASL-184, pp I.53-118)
plutonium-238 inventory of, from SNAP-9A reentry burnup, 22:4362
radioactivity content of lower, during 1967 to 1968, 22:40661(R) (HASL-197)
radioactivity diffusion and transport in, 22:21207(R) (NYO-3317-3)
radioactivity in lower, Project Airstream measurements of, 22:25527 (HASL-193, pp I.33-207)
radioactivity measurements over Berlin from June 1967 Chinese test, 22:12445
radioactivity of, measurements using balloons during Oct. 1966 to June 1967, 22:21204 (HASL-184, pp II.26-86)
sampling of western hemispheric, for radioactivity during Aug. and Nov. 1967, 22:21202 (HASL-184, pp I.119-223)
strontium-90 content in, depletion of, 22:186
strontium-90 content in, from Jan. to April 1964, 22:35942 (NYO-3654-4)

strontium-90 content of northern and southern hemispheric samples of, 1963 to 1967, 22:21201 (HASL-184, pp I.53-118)
strontium-90 diffusion and transport in, numerical models for predicting, 22:35942 (NYO-3654-4)
strontium-90 distribution in northern, 1962 to 1963, 22:35948
strontium-90 residence time in, effects of rain on, 22:33571
temperature variations in polar, effects of solar activity on, (T), 22:15444
trace material transport to troposphere from, 22:10377
transport processes in, use of tungsten-185 tracer to study, 22:12447
tungsten-185 diffusion and transport in, numerical models for predicting, 22:35942 (NYO-3654-4)
variations of parameters of seasonal, (T), 22:36818
warming in, relation to radio-wave absorption in D region, (E), 22:24176
warming of, effects of solar particles on, (T), 22:29355
x-ray bursts and auroras in, detection of, (E), 22:11251
Streptodornase
see Deoxyribonuclease
STREPTODORNASE--STREPTOKINASE
radiation effects on, effects of, on formation of stem cells in animals, x, 22:16990
streptokinase, radiation effects on fibrinolytic activity of, γ and microwave, 22:51391
STREPTOMYCIN
effects on Leptospira pomona, effects of, on hamsters and swine following injection, 22:25732
effects on mutagenic x-radiosensitivity of Chlorella, 22:51511
effects on x-radiosensitivity of autoimmune processes in rabbits, 22:21446
induced albinism in wheat following seed exposure, protective effects of x radiation against, 22:43479
mutations in Rhizobium for resistance to, effects of herbicides on, 22:40653
protective effects of, against radiomimetic effects of oxidized oleic acid on mice and yeasts, 22:19380
radiation effects on sensitivity of bacteria and yeast to, γ, 22:52054
radioinduced mutation for independence to requirement of, in Proteus mirabilis, deuterium, 22:43287
radioinduced mutation for resistance to, in Escherichia coli, effects of time on photoreactivation of uv, 22:49644(R) (NYO-3893-1)
radioprotective effects of, on chromosomes of barley seeds, γ, 22:25811
radioprotective effects of, on genetics of human cells, 22:51552
radioprotective effects of, on mice with tapeworm infections, x, 22:38207
radioprotective effects of, on survival of mice, γ, 22:40787
resistance of Staphylococcus, use of uv-irradiated transducing phage for mapping of gene loci for, 22:51532
sensitivity of Eudorina elegans, 22:38241
STREPTONIGRIN
effects on chromosomes in roots of Vicia faba, combined effects of hydroxyurea on aberrant, 22:47505
effects on chromosomes of Vicia faba, effects of hydroxyurea on mutagenic, 22:31022
STRESS
see also Strain
see also Thermal Stresses
analysis by Monte Carlo method, in prismatic bars with torsion, 22:18674 (UCRL-70600)
analysis for circumferential cracks in pipes subjected to internal pressure and symmetric bending, 22:27952 (GEAP-5557)
analysis for involute plates, one- and two-dimensional transient, (T), 22:24925(R) (ANL-7427)
analysis for spherical shells perforated by radial holes, point-matching method for, 22:22916 (TID-24309)
analysis in circular plates subjected to symmetrical loads and temperatures, 22:10154 (TID-23984)
analysis in cylindrical shells for deep hole casing, use of computer programs for, 22:207 (NVO-193-3)
analysis in fuel element cladding, derivation of COMET computer-code for, 22:53458 (EUR-4049)
analysis in long cylindrical shell-core systems, development of equations for, 22:21004 (SC-DC-67-3210)
analysis in pressure vessel models, photoelastic testing for, 22:19007(T) (ORNL-tr-1877)
analysis in prestressed concrete pressure vessels for gas-cooled reactors, 22:12471 (AAEC/TM-390)
analysis in reactor containment vessels due to earthquakes, 22:23184
analysis in spherical shells penetrated by welded nozzles, 22:27977
analysis in thick shells of revolution, use of SEAL--SHELL-2 computer program for, 22:12484
analysis of attachment region of hemispherical shells with radially attached nozzles, (E), 22:273 (TID-24103)
analysis of bending, in elastic infinite cylindrical shell, 22:18669 (SC-TM-67-3025)
analysis of circular plates under symmetrical variable load, 22:27969
analysis of circular plates under uniform load on concentric circle, 22:27968
analysis of dynamic, in beams and rings, UNIVALVE computer program for, 22:18665 (SC-RR-66-2682)
analysis of elastic, in cylindrical bodies with circumferentially symmetric impact, computer program for, 22:21002 (SC-CR-68-3501)
analysis of interface, in long two-layer circular cylindrical shells, 22:14617
analysis of plane strain, displacement equations for, 22:14667 (WAPD-TM-737)
analysis of plastic or creeping material, under incremental loading, 22:4775 (WAPD-TM-712)
analysis of pressure vessel, formulas and methods for, 22:37920
analysis of prestressed concrete pressure vessels using three-dimensional photoelasticity technique, 22:18589(T) (ORNL-tr-1876)
analysis of primary coolant pipe, reliability, 22:15174(R) (GEAP-5554)
analysis of surface thermoelastic, in cylindrical heat-producing bodies, 22:12523
analysis of thin-shell bodies of revolution, computer program for, 22:45255 (GA-7852)
analysis of thin-walled cylinders subjected to moving pressure waves, 22:48808 (SC-CR-67-2630)
calculation for circular plates with square pitch perforations, 22:14618
calculation for surface of heat-producing spheres, iterative perturbation method for, 22:49018
calculation in spherical shells at partial penetration of radial and oblique nozzles, 22:51155
calculation of coupled axisymmetric two-plate core support, MAIN computer program for, 22:50836 (ANL-7162(Suppl.))
calculation of dynamic, in fuel elements of fast-pulsed cores, (T), 22:20918
calculation of earth target, SCIT computer program for projectile-induced, 22:23134 (SC-RR-65-179)
calculation of SNAP-21 pressure vessel, 22:2309(R) (MMM-3691-23)
determination at openings in thin-walled cylindrical pressure vessels, photoelastic method for, (E/T), 22:2317 (TID-24106)
determination in plates with circular holes, FORTRAN IV computer program for, 22:28031 (GEMP-598)
determination of residual, in tubular systems, boring method for, 22:48998
distribution in two interconnected multiregion plates, matrix-inversion analysis of, (E/T), 22:10072 (ANL-7162)
effect of shear, on strain rate in niobium single crystals, (E/T), 22:13029
effects of precipitates on alloy critical shear, 22:21701(T) (IS-Trans-75)
effects of uniaxial, on optical spectra of M' and R' centers in lithium fluoride, 22:48155 (NYO-3464-12)
effects on deformation in polycrystalline graphite, 22:4902
effects on transient power increase on waterlogged fuel elements, (E/T), 22:30170
effects on volumes of porous solids at 300 to 17000 psi, 22:2316 (IITRI-578-P-21-22)
equipment for analysis of, use of iron-55 x-ray sources in, 22:252 (ORNL-IIC-10(Vol.2), pp 639-47)
fatigue of structural materials by cyclic, mechanics of crack growth from, 22:52170
measurement in, metals during direct and inverse extrusion, 22:4757
measurement of carbon steel, low alloy steel, and stainless steel pipe failure, description of computer program for, (E/T), 22:35459(R) (GEAP-5587)
measurement of earth, in Pre-Gondola I cratering site tests, 22:197 (PNE-1104)
measurement of internal, development of method for, 22:10525(T) (UCRL-Trans-10185)
measurement of rock, in triaxial compression, 22:14402 (UCRL-13334)
measurement of surface residual, nondestructive methods for, 22:14737 (CONF-671011-, pp 168-83)
measurement of underground dynamic, during Hardhat Event, 22:19000 (UCID-15283)
measurement of, kryptonate method for, 22:37954
model of metal fatigue from cyclic, 22:8749(T) (AD-652470)
strain--time relations of, review of, 22:270 (GEMP-555)
theory of material flow, statistical, 22:43591 (ANL-7299, pp 227-37)
Stress, Biological
see Biological Stress
STRESS CORROSION
effects on stainless steel bolt failure, relations with annealing, 22:8693 (DP-1102)
effects on steel storage tanks for radioactive waste, methods of retarding, 22:36437
metal cracking by, analysis by wedge-force loading, 22:52168
model of, for beryllium--copper alloys, 22:41005
Strong Focusing
see Alternating-Gradient Focusing
STRONTIUM

see also Alkaline Earth Metals
absorption from soil by roots of lettuce, soybeans, tomatoes, and wheat, 22:23396(R) (COO-1495-6)
abundance in carbon stars, (E), 22:23975
abundance in early A stars, (T), 22:29016
abundance in γ Capricorni, (E), 22:38692
abundance in HR 4072, (E), 22:11172
abundance in photosphere, (E/T), 22:43825
abundance in zeta Lyr A, (E), 22:29147
accumulation by maize, selection of populations according to differences in, 22:33712(R) (NYO-2744-53)
accumulation in cultures of Tetrahymena during growth in comparison to calcium, 22:30931 (NYO-1822-21)
analysis for isotopic composition by isotope dilution, mass spectrometric method for, 22:30699
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
atomic weight of, based on carbon-12 = 12, 22:42698
book: Uncommon Metals, 22:10981
chromatographic behavior on cerium phosphate paper, 22:153
circulation and distribution in natural waters around Casaccia, Italy, 22:16811
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
content and distribution in earth, method for determination of, 22:23146
content and distribution in human skeletons in Wisconsin during 1957 to 1961, 22:38267 (UCRL-18140, pp 175-95)
content in Caspian Sea, 22:35931
content in French rocks, use in age estimation, 22:48928
content in rocks of Central Alps, use in age estimation, 22:6476
content in surface waters of Western Victoria, Australia, effect of total salinity on, 22:25512
content of aquatic plants, in relation to content of pond water, use of activation analysis for determining, 22:19301
content of bones of cattle, effects of nuclear testing on, 22:51310 (SAN-509-2)
content of bones of children, ratio of, to calcium, 22:493(R) (NYO-2753-5)
content of bones of mule deer, effects of age and sex on, 22:14909 (COO-1156-26)
content of bones of mule deer, effects of age, diet, and season on, 22:47534
content of calcareous skeletons, review of effects of environment and physiology on, 22:30421
content of diet of cattle, in relation to strontium-89 uptake and retention, 22:10722
content of feces and urine of human infants, use of paper diapers for sample collection for measurements of, 22:40732
content of fruit and vegetable crops, use of flame spectrophotometry to measure, 22:38225
content of fruits and vegetables grown in strontium-enriched soils, 22:28521
content of leaves, determination by activation analysis and flame photometry, 22:12938 (NP-17124)
content of marine algae, crustaceans, fish, and mollusks, 22:22903 (PRNC-104, pp 57-67)
content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
content of pasture grasses, effects of cultivation and addition of lime to soil on, 22:51404
content of plankton of Atlantic and Pacific Oceans, 22:36261
content of radioactive, in fallout in Czechoslovakia following Chinese nuclear tests during 1964 to 1967, 22:45517
content of resins, effects of, on intestinal sorption of strontium by rats, 22:8484
content of serum of man, effects of osteomalacia and osteoporosis on, 22:45392
content of shells of bivalve marine mollusks, effects of temperature on, 22:43212
content of stable, in animals and plants in Black Sea during 1965 and 1966 in relation to strontium-90, 22:33805 (A-AC-82/G/L-1194)
content of zooplankton in Puerto Rico, 22:22902 (PRNC-104, pp 24-53)
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
detection by atomic absorption spectroscopy using acetylene—nitrous oxide flame, 22:37662
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in glass fragments, activation, emission spectroscopic, and mass spectrometric methods for, 22:33205 (AWRE-O-3/68)
determination as trace impurity in silicon oxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic absorption spectroscopy, effects of alkali and alkaline earth metals on, 22:35752
determination by flame photometry, 22:12827
determination by induced precipitation, 22:45013
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by photon activation methods, 22:27589
determination by x-ray fluorescence methods, 22:1959 (ORNL-IIC-10(Vol.1), pp 465-82)
determination in ammoniacal media by titration with EDTA using manganese dioxide electrode, potentiometric, 22:8008
determination in animal bone by x-ray fluorescence method, 22:40040
determination in biological materials, automatic separation system for, 22:8020
determination in biological materials, method for spectrophotometric, 22:50936
determination in blood by neutron activation methods, 22:12259
determination in bone, milk, and vegetable ashes by ion exchange separation and flame photometry, 22:22934 (PG-Report-815)
determination in bone, milk, and vegetable ashes by atomic absorption spectrophotometry, 22:6256 (PG-Report-775)
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in clays and kaolins, x-ray fluorescence, 22:22968
determination in complex mixtures, use of cobalt-60 gamma source for photonuclear activation analysis for, 22:30450
determination in environmental media by flame photometry after ion exchange separation, 22:10192
determination in G-2 granite samples, isotopic-dilution technique for, 22:22957
determination in geologic materials by isotope dilution for use in age estimation, 22:30698
determination in geologic materials, x-ray-fluorescence method for, 22:48914(R) (COO-689-100)
determination in GSP-1 sample of granodiorites by isotope dilution, 22:22956
determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
determination in human blood by x-ray activation techniques, 22:42642
determination in human saliva by neutron activation methods, 22:14464
determination in iron ores, spectrochemical, 22:27615
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in mixture with yttrium using barium sulfate, complexometric, 22:27553
determination in molten fluoride fuels, spectrographic, 22:14430 (ORNL-4196, pp 55-9)
determination in molybdenum and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in ''moonshines'' by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
determination in ocean water at two Atlantic stations, atomic absorption method for, 22:27563
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in presence of barium and calcium by flame photometry, 22:12255
determination in seawater by ion exchange and flame photometry, 22:4009
determination in seawater by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in silicates, spectrometric, 22:22960
determination in soils by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
determination in soils, review of methods for, 22:47071 (CEA-Bib-80)
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in waste water containing barium-140 and other fission products after separation by ion exchange and precipitation, 22:37661
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, electrochromatographic, 22:48824
determination of trace amounts of, in presence of barium and calcium, ring-oven method for, 22:30472
determination of, atomic absorption spectrophotometric method for, 22:25245
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, polarographic method for, 22:30547
determination of, review of methods for, 22:8000
determination using rhodizonic acid, 22:7998
deuteron elastic scattering at 13.6 MeV, diffraction

structure in angular distributions for, (E), 22:48501
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in irradiated, melted basalt, 22:16660
diffusion in soil columns, (E), 22:25501 (BNWL-481-3, pp 39-42)
dispersion, migration, and sorption in soils, laboratory studies of, (E/T), 22:8206 (BNWL-CC-208)
distribution between fused salts and liquid metals in fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
distribution between liquid and solid phases of soil, effects of soil properties on, 22:23396(R) (COO-1495-6)
distribution coefficients in soil--water systems, batch and column studies of, 22:25446 (BNWL-481-3, pp 48-53)
distribution in blood serum and bones in rabbits, tracer study of, 22:30999
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in nature and integration with other elements, 22:12827
distribution in starfish from coast of Puerto Rico, 22:21408 (PRNC-104, pp 54-6)
distribution on ion exchanger of Napolitan yellow tufa, 22:35883 (EUR-3922)
effects of fission-product, on swelling of uranium, (T), 22:34089
effects on cell adherence in epidermis of frog embryos, 22:49243
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on excretion of radiostrontium in animals, combined effects of citrate ions on, 22:45508(R) (PG-Report-826)
effects on γ-radiosensitivity of mitosis in cells of bone marrow and thymus of rats, 22:23572
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on strontium-85 excretion by man, 22:451
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
electron energy losses in, measurement of, 22:50228
electron reactions with, excitation of Rydberg states in, (E), 22:19797
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
exchange between molten sodium nitrate and sodium form of zeolite, 22:23003 (IA-1128, pp 97-146)
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
ion exchange by chromium, titanium, and zirconium phosphates, 22:12291
ion exchange by polyantimonic acid, 22:18750
isotope shifts in hfs, 22:9101
leaching from borosilicate and phosphate glasses, 22:18906
metabolism by man in Europe, effects of, on growth, 22:6866 (EUR-3553.f)
metabolism in man, tracer study of, 22:14906 (BNL-50057, pp 123-37)
metabolism in Tetrahymena, effects of antimetabolites and metabolic inhibitors on, 22:40515 (NYO-1822-25)
metabolism in Tetrahymena, effects of deficiencies of folic acid, nicotinamide, pantothenate, pyridoxamine, riboflavin, and thiamine on, 22:30932 (NYO-1822-24)
movement in soil profile, effects of temperature variation on, 22:6795(R) (COO-414-6)
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture at 0.058 eV, gamma spectra from, (E), 22:32546
plasma of, temperature determination from spectral shift and broadening, 22:3021
polarographic behavior in cyclic propylene ester of carbonic acid, 22:30547
precipitation of trace amounts of, with barium chromate, 22:50989
property data sheets for metal containing strontium-90, 22:8689 (ORNL-4188)
proton reactions at 10 MeV, production of short-lived yttrium-88 isomers by, (E), 22:24874
proton reactions at 660 MeV, rubidium isotope production by, (E), 22:35283
proton spallation at 730 MeV, krypton and xenon yields from, (E), 22:13974
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
reactions with phosphonazo III, spectral studies on, 22:48867
release in upper atmosphere, cloud characteristics from, (E), 22:17522
removal from gastrointestinal tract of personnel in contaminated areas, methods for, 22:38298
retention in rats, effects of EDTA on, 22:8479
separation by solvent extraction, method for, 22:51054
separation from aqueous solutions by solvent extraction using 1-phenyl-3-methyl-4-capryl-2-pyrazolin-5-one, 22:33495
separation from aqueous solutions by solvent extraction using various dialkyl phosphates, 22:33512
separation from aqueous solutions by solvent extraction using naphthenic acids, 22:6379
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from aqueous solutions by sorption in soil column, 22:25445 (BNWL-481-3, pp 42-8)
separation from aqueous solutions using gelatin and foam formation, 22:51071
separation from arsenic by paper chromatography, 22:25257
separation from barium and calcium by anion exchange using mixed eluents, 22:4241
separation from barium and magnesium by paper chromatography, 22:4248
separation from barium by ion exchange and precipitation, 22:37661
separation from barium by precipitation using pyromellitic acid, 22:16430
separation from barium, beryllium, calcium, and magnesium by cation exchange chromatography in ammonium malonate, 22:2184
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from calcined wastes, 22:152
separation from calcium and magnesium in seawater, ion exchange chromatographic, 22:23113
separation from calcium by solvent extraction using D2EHPA and dioctyl ester of phosphoric acid, effects of diluent on, 22:45154
separation from cerium, cesium, and yttrium by ion exchange using tin phosphate, 22:33552
separation from cesium by electrodialysis, 22:27892(P)
separation from effluents by zeolites, 22:37834 (EUR-3452(Vol.2))
separation from fission products by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33271
separation from hydrochloric acid solutions by partition chromatography using tridodecylamine, 22:40153 (CEA-R-3469)
separation from irradiated fuels by fluidized-bed volatility process, 22:8181
separation from low-level waste by ion exchange, 22:47206(T) (ORNL-tr-1771)
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from milk by ion exchange, 22:48913
separation from milk by ion exchange, 22:42822
separation from neutron-irradiated uranium dioxide by volatilization, 22:25476
separation from other fission products by electrophoretic focusing of ions, 22:35912
separation from other fission products by thin-layer chromatography, 22:8001
separation from other metals using alginic acid, ion exchange, 22:45170
separation from perchloric acid solutions by solvent extraction using TBP, 22:30675
separation from radioactive waste by precipitation-scavenging foam process, 22:40351 (ORNL-3803)
separation from radioactive waste by precipitation with lead sulfate, 22:18874
separation from radioactive waste by solvent extraction, 22:16694
separation from radioactive waste using strontium carbonate, 22:27851 (CEA-N-816, pp 66-79)
separation from radioactive waste water by precipitation and ion exchange, 22:25465 (SZS-3/68)
separation from sodium solutions by solvent extraction using bis(2-ethylhexyl) phosphate, effects of aliphatic diluents and TBP on, 22:35899
separation from soil by sorption with crandallite, 22:37859
separation from solutions by ion exchange using Napolitan yellow tufa, 22:35883 (EUR-3922)
separation from solutions of fission products by ion exchange, 22:51081(P)
separation from tungsten by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation from waste solutions by solvent extraction using D2EHPA, antagonistic and synergistic effects of organic phosphorus compounds on, 22:42807 (BNWL-759)
separation from waste solutions using surface-active agents, 22:25449 (CEA-N-616, pp 72-85)
separation from yttrium, 22:42598
separation from yttrium by electrodialysis, 22:40135
separation from yttrium by solvent extraction using naphthenic acids, 22:6379

separation from yttrium by sorption on magnesium dioxide, 22:157
separation from yttrium using barium sulfate, 22:27553
separation of alkali metals simultaneously from, ion exchange, 22:37866
separation of barium and calcium from, by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of radioactive, from waste solutions by evaporation, 22:25449 (CEA-N-616, pp 72-85)
separation of rare earths from, effects of lactic acid on anion-exchange, 22:18882
separation of uranium from, in acetic acid, paper electrochromatographic method for, 22:16672
separation of, preparation of alkaline earth zeolites for, 22:10340
solvent distribution in dinonylnaphthalenesulfonic acid--hydrochloric acid system, 22:6392
sorption and ion exchange on montmorillonite suspensions in water, 22:10323 (LF-37)
sorption by intestines in rats, effects of alginates on, 22:19240
sorption by manganese dioxide from nitric acid, 22:157
sorption by phosphate mineral crandallite, 22:37859
sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
spectral lines in bright prominence of Sept. 18, 1960, (E), 22:8992
uptake and accumulation by wheat, relation of metabolic and physical mechanisms to, 22:49206
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
uptake by Chara fragilis from culture medium, effects of calcium on, 22:40520
uptake by corn and peas, effects of mixed culturing and pH on, 22:40608
uptake by Daphnia, effects of metabolic toxins, starvation, and temperature on, 22:45420
uptake by femoral bones of rats, 22:8450
uptake by flesh and hard parts of pelagic fish, 22:2491
uptake by human bones, effects of fluorine content of diet on, 22:6746
uptake by marine mollusks, 22:51329
uptake by roots of wheat seedlings following nitrogen depletion, effects of ammonium and nitrate availability on, 22:25718(R) (ORO-2410-9)
uptake by seedlings of wheat, effects of calcium availability and nitrogen nutrition on, 22:25719(R) (ORO-2410-10)
uptake by skin of guinea pigs, effects of concentration of strontium chloride solution on, 22:23441
uptake by thallus of lichens, effects of pH and uronic acid content on, 22:15112
vapor pressure, density, and surface tension of, data tabulations on, 22:10945 (EUR-3653)
washout coefficient for, in rainwater and snow, 22:18960 (BNWL-481-1, pp 82-5)
STRONTIUM ACETATES
analysis for oxygen by neutron activation, 22:30457
stability constants for, paper electrophoretic studies on, 22:8051
STRONTIUM ALLOYS AND SYSTEMS
Ga--Fe--O--Sr, iron-57 Moessbauer spectra in, 22:24465
Ge--Sr, preparation and crystal structure of intermetallic SrGe, 22:2593
Li--Sr, crystal structure and intermetallic compounds of, 22:12951 (NYO-2731-3)
Mg--Sr, crystal structure and intermetallic compounds of, 22:12951 (NYO-2731-3)
O--Sr--U, chemical equilibria in, 22:35776 (ORNL-TM-2105)
O--Sr--U, phase studies of, 22:25333 (ORNL-4229, pp 162-79)
O--Sr--U, phases and vapor pressures of, at 2000 to 3000°K, 22:31490
Pb--Sr, preparation and crystal structure of intermetallic SrPb, 22:2593
Pu--Sr, phase studies of, 22:2655
Sn--Sr, preparation and crystal structure of intermetallic SrSn, 22:2593
Sr--SrBr$_2$, phase studies on miscibility in, 22:33345
Sr--SrCl$_2$, phase studies on miscibility in, 22:33345
Sr--SrI$_2$, phase studies on miscibility in, 22:33345
Sr--Y, separation from plutonium by solvent extraction using nitromethane, 22:33521
STRONTIUM AZIDES
radiation effects on thermal degradation of, x, 22:18847
STRONTIUM BORIDES
crystal structure and preparation of Ba$_{.62}$Sr$_{.33}$Ca$_{.05}$B$_6$, 22:8843
crystal structure and preparation of Ba$_{.64}$Sr$_{.36}$B$_6$, 22:8843
crystal structure and preparation of SrB$_6$, 22:8843
STRONTIUM BROMIDES
Sr--SrBr$_2$, phase studies on miscibility in, 22:33345
STRONTIUM CARBONATES
neutron capture by, gamma spectrum from thermal, 22:14832
STRONTIUM CERIUM FLUORIDES
preparation, properties, and structure of, 22:10252
STRONTIUM CHLORIDES
effects on leachability of radium from uranium ores, 22:25478
effects on separation of strontium-90 and yttrium-90 using alkylarylsulfonic acid foams, 22:45166
photoeffect quantum yields from, (E), 22:38799
radioinduced defects at 77°K in, ESR spectra of, 22:50237
radioinduced electron centers in crystalline, gamma, 22:37053
Sr--SrCl$_2$, phase studies on miscibility in, 22:33345
STRONTIUM COBALT LANTHANUM OXIDES
see also Strontium Lanthanum Cobaltates
Strontium Diuranates
see Strontium Uranates
STRONTIUM FLUORIDES
data sheets for SrF$_2$, 22:8689 (ORNL-4188)
fluorine-19 nuclear relaxation times in europium-doped, 22:24449
multiphonon orbit-lattice relaxation of excited rare earth ions in crystals of, (E/T), 22:48183
radioinduced color centers in plastically deformed crystals of, x, (E), 22:17772
radioinduced exoelectron emission from, photo- and thermostimulation of, (E), 22:31969
volatility in molten beryllium fluoride--lithium fluoride systems, 22:10324 (ORNL-TM-2058)
Ga$_2$O$_3$--SrF$_2$, use as carrier in spectrographic determination of impurities in uranium oxide, 22:22977
HF--H$_2$O--SrF$_2$, complexing in, solubility studies on, 22:45071
STRONTIUM HAFNATES
performance as electric insulation for high-temperature thermocouples, 22:15144 (GEMP-1002, pp 137-42)
physical properties of, measurement of, 22:669
STRONTIUM HYDRIDES
positron lifetime in, delayed coincidence system study of, (E), 22:38732
STRONTIUM IODIDES
fabrication of crystals of europium-activated, for use as scintillation detectors, 22:28129(P)
Sr--SrI$_2$, phase studies on miscibility in, 22:33345
STRONTIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
effects on action potential in excised frog muscle fibers, 22:8461
effects on barium uptake by rat liver mitochondria, 22:47449 (UCRL-50435)
effects on physiology of ureteral muscle of guinea pigs, effects of manganese ions on, 22:43240
electrophoretic mobility in acetate buffers, 22:27567
polarizability of, determination in alkaline earth chalcogenide ionic crystals, 22:52287
uptake by barley roots, mechanism of, 22:31004
STRONTIUM IRON URANIUM OXIDES
crystal structure of Sr$_3$FeUO$_9$, 22:10232
STRONTIUM ISOTOPES
absorption by intestines of man, protective effects of sodium alginate against, 22:28612
abundance measurements on, dual collector for mass spectrometric, 22:33278
accumulation and transfer in forest ecosystem following inoculation in young loblolly pines, 22:43274 (TID-24597)
determination in strontium by isotope dilution, mass spectrometric method for, 22:30699
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
determination in waste waters containing barium after separation by ion exchange and precipitation, 22:37661
determination of ratio of, in granodiorites, 22:22956
diffusion of fission product, from uranium dioxide fuel elements, 22:2709 (RT/FIMA-(67)2)
evolution in dynamic Earth, model for, 22:31727
excretion in animals, effects of alginates, fluoride, and hexametaphosphate on, 22:45508(R) (PG-Report-826)
excretion in animals, synergystic effects of citrate ions and stable strontium on, 22:45508(R) (PG-Report-826)
metabolism in bone, effects of hydroxy apatite on, 22:45459
proton spallation at 660 MeV, neutron-deficient isotope production from, (E), 22:35284
sorption by gastrointestinal tract of rats, inhibition of, by ion exchangers, 22:8484
uptake by intestine of mammals, effects of alginate preparations from seaweed on, 22:40685
uptake from soil by plants, chemical and physical factors affecting, 22:423(R) (TID-23955)
yields in plutonium-239 thermal neutron fission, (E), 22:44680(R) (IN-1189)
yields in uranium-238 neutron fission at 14 MeV, cumulative, (E), 22:35325
STRONTIUM ISOTOPES Sr-83
beta and electron-capture decay of, conversion-electron and γ spectra and log-ft values for, (E), 22:39623
beta and electron-capture decay scheme of, β and γ

spectra and log-ft values for, (E), 22:26960
beta decay of, internal-conversion electron and positron spectra from, (E), 22:18200
beta decay scheme of, conversion-electron and γ spectra for, (E), 22:27001
nuclear spin and parity of ground state of, (E), 22:26960

STRONTIUM ISOTOPES Sr-84
metabolism in human children, use of activation analysis for tracer study of, 22:31008
neutron capture by, isomeric cross-section ratios for thermal and epithermal, (E), 22:15977
neutron capture cross section for, fast, (E), 22:27086 (ANL-7375, pp 176-7)

STRONTIUM ISOTOPES Sr-85
clearance from bones of man, use of, for measurement of bone-blood flow, 22:8584
content of blood plasma in man, effects of aluminum phosphate gel, 22:6845
content of bones of dogs, effects of age on, 22:28352
content of feces in man, effects of aluminum phosphate gel ingestion on, 22:6845
content of human tissues and tumors following use for brain scanning, 22:49447
content of milk in cattle, effects of sodium alginate on, 22:28277 (NYO-2147-13, pp 23-7)
content of poplar, effects of chemical, climatic, and physiological factors on, 22:19304
content of soil solutions, effects of moisture tension on, 22:25800 (UCLA-12-668, pp 37-58)
detection in tracer studies, use of liquid scintillation spectrometry for, 22:10719
distribution and excretion in rats, 22:51475
distribution in ion exchange column, 22:10369
distribution in man following intravenous injection, 22:36213
distribution in man, effects of disease incidence on, 22:14935
distribution in mice, evaluation of methods for in vitro and in vivo measurements of, 22:38235
distribution in model of stream ecosystem, 22:19303
electron capture decay of, K x-ray γ- directional correlation in K-, (E), 22:39669
electron-capture decay of, gamma transition energies in, (E), 22:7674
evaluation for use as ground water tracer, 22:49038
excretion by man, effects of stable calcium and strontium on, 22:451
excretion by mice, effects of pilocarpine nitrate on, 22:51305 (LA-3848, pp 75-96)
gamma emission by, effects of, on radiation dose to human infants and children during use for scintiscanning, 22:33826
half life in lichens, 22:12842 (BNWL-SA-1266)
incorporation in bone transplants, use of, for photoscanning, 22:51802
incorporation in ear bones of dogs in comparison with other bones, 22:28276 (NYO-2147-13, pp 16-22)
metabolism by infant swine following intravenous injection, 22:51424
metabolism by insects, 22:19262
metabolism in bluegill fish, effects of content of environment on, 22:6772 (ORNL-4168, pp 61-118)
metabolism in fractured bones of rats in relation to calcium mobilization, 22:51319
metabolism in man, use of whole-body counting for study of, 22:38233
metabolism in old and young rats, compartmental and experimental analysis of, 22:30961
metabolism in rats following inhalation in aerosols, 22:23404 (LF-38, pp 65-72)
metabolism in rats, effects of thyroidectomy and parathyroidectomy on, 22:6716 (ORO-284-10)
metabolism in suckling mice, effects of content of milk and placental transfer on, 22:36193
metabolism, by blue-green and green algae, 22:25754
performance in biosatellite radiation sources, 22:4359
production for use in biosatellite program, 22:6864 (BNWL-SA-1344)
radiation effects on metabolism of, in rats, x, 22:49225
radiation effects on uptake of, by rats, effects of aging on x, 22:33713(R) (NYO-3728-2)
removal from milk by ion exchange, 22:42822
removal from milk, use of large scale fixed-bed ion exchange system for, 22:31063
retention in blood and soft tissues of mice, 22:28621 (ANL-7278, pp 1-94)
retention in man, effects of bone disease on, 22:38232
retention in man, effects of disease incidence on, 22:14935
retention in swine, effects of age, dietary calcium to phosphorus ratios, and genetics on, 22:420 (COO-1339-16)
scanning for skeletal metastases in body of man, comparison of, with radiology, 22:36291
scanning in bones of man, 22:10781(R) (NYO-910-59)
separation from milk, performance of ion exchange processing plant for, 22:33816 (PHS-999-RH-28)
separation from water by slurrying with Yazoo and Zilpha clays, 22:25482
sorption and retention in man, effects of calcium content of diet on, 22:12774
sorption by blue-green algae, effects of temperature on, 22:38191 (DP-MS-66-88)
sorption by calcium phosphate anion exchange resin, 22:51052
sorption by intestines of man, protective effects of aluminum phosphate gel against, 22:526
sorption by sediments in flowing and nonflowing aquatic systems, (E), 22:37876 (ORO-490-12-a)
sorption from intestine of rats, effects of aluminum phosphate gel and guluronic acid alginate on, 22:49245
toxicity to rats following inhalation, 22:23404 (LF-38, pp 65-72)
transfer from blood to bone of dogs, determination of rate of, 22:14923
transport by rumen of deer and sheep, 22:6774(R) (UCD-34-P-104-8)
transport in potatoes following contamination of tubers, 22:40529
transport in rivers, mathematical model for calculation of effects of uptake by aquatic plants on, 22:33815(R) (ORO-490-14)
transport in turbid streams, effects of induced clay suspensions on, 22:21186 (ORO-490-13)
uptake and elution by powdered rat bone, mechanism and rate of, 22:8455
uptake and retention in bones of mice and rats, effects of sex hormones on, 22:51345
uptake and retention in skeleton of rats, effects of CPDTA, DIMEDTA, and PDTA on, 22:43222
uptake by Ankistrodesmus falcatus, 22:23138
uptake by bones in dogs and rabbits, 22:33839 (UCLA-12-640, pp 1-30)
uptake by duodenum of rats, effects of sodium alginates on, 22:30975
uptake by fetal and neonatal mice, 22:450
uptake by fetuses of rabbits following injection into mother, effects of gestation stage on, 22:38427(R) (ORO-659)
uptake by metastases of mammary gland neoplasms, 22:21541
uptake by neoplasms in human bone, 22:8569
uptake by plants consumed by deer and sheep, 22:6774(R) (UCD-34-P-104-8)
uptake by rats, in relation to osseous activity in dental extraction wounds, 22:33713(R) (NYO-3728-2)
uptake by river plants and sediments, (E), 22:10356 (ORO-490-12)
uptake by slices of rat duodenum, effects of oxydized amylose, oxycellulose, and sodium alginate on, 22:6900
uptake by small intestine of chickens following perfusion, effects of content of calcium and strontium in perfusate on, 22:38427(R) (ORO-659)
uptake by sorghum and soybeans, effects of placement depth and sodium carbonates on, 22:30956
uptake by vascular tissues of plants, 22:10708
uptake by vertebral bones of man, effects of fracture on, 22:51701
uptake by wheat in relation to content of wheat products, 22:6739
uptake from brown algae by rats, effects of algal alginate content on, 22:45399
uptake from gastrointestinal tract by blood in man, compartmental and experimental analysis of, 22:38209
use as tracer for measurement of ion and water movement through undisturbed soil columns, 22:23153
use as tracer to study strontium diffusion in soil columns, 22:25501 (BNWL-481-3, pp 39-42)
use for bone scanning, 22:21540 (ACRH-1000-34)
use for bone scintigraphy, review of, 22:43386
use for diagnosis of bone tumors, 22:33847
use for diagnosis of tuberculosis of bone in man, evaluation of, 22:8585
use for localization of bone tumors in man, comparison of, to fluorine-18, 22:40765
use for localization of metastases in bones, 22:28582
use for photoscanning of bone metastases, 22:40801
use for photoscanning of prostate carcinomas in man, 22:51814
use for scanning bone lesions in man, 22:40735
use for scanning bones, 22:49445
use for scanning bones in man, 22:40744
use for scanning bones, evaluation of, 22:40764
use for scanning human bones, 22:51785
use for scanning joints of bones in man, 22:33883
use for scanning malignant metastases of human bones, 22:49433
use for scanning of bones for lesions, 22:38400
use for scanning sympathetic nervous system, 22:49448
use for scintiscanning of bones in man, 22:36308
use for scintiscanning of human bones, 22:38344
use for studying blood circulation in small intestine of cats, 22:43243

STRONTIUM ISOTOPES Sr-86
abundance in Norton County achondrite, (E), 22:13166
content ratio to rubidium-87 in plutonic igneous rocks in Antarctica, 22:175
content ratio to rubidium-87 in sulfide ores, 22:50935
content ratio to strontium-87 in Caribbean volcanic rocks, 22:48914(R) (COO-689-100)
content ratio to strontium-87 in Central American volcanic rocks, 22:25504

- content ratio to strontium-87 in Lesser Antilles volcanic rocks, 22:25504
- content ratio to strontium-87 in Mariana Islands volcanic rocks, 22:25504
- content ratio to strontium-87 in Mid-Tertiary volcanic rock, 22:48914(R) (COO-689-100)
- content ratio with strontium-87 in Indian and Pakistani carbonatites, 22:33560
- energy levels from rubidium-85 (p,n) reactions, isobaric analog, (E), 22:18159
- neutron capture cross section for, fast, (E), 22:27086 (ANL-7375, pp 176-7)
- neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
- neutron reactions (n,p) at 14.8 MeV, cross sections for, (E), 22:48499

STRONTIUM ISOTOPES Sr-87
- abundance in Norton County achondrite, (E), 22:13166
- content ratio to strontium-86 in Caribbean volcanic rocks, 22:48914(R) (COO-689-100)
- content ratio to strontium-86 in Central American volcanic rocks, 22:25504
- content ratio to strontium-86 in Lesser Antilles volcanic rocks, 22:25504
- content ratio to strontium-86 in Mariana Islands volcanic rocks, 22:25504
- content ratio to strontium-86 in Mid-Tertiary volcanic rock, 22:48914(R) (COO-689-100)
- content ratio with strontium-86 in Indian and Pakistani carbonatites, 22:33560
- determination in iron meteorites, (E), 22:21797
- deuteron reactions (d,p) at 7.5 MeV, angular distributions for, (E), 22:44658
- energy levels from strontium-88 (He-3,α) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
- energy levels from strontium-88 (He-3,α) reactions, spectroscopic factors for neutron-hole, (E), 22:26988
- energy levels from yttrium-87 decay, (E), 22:1615(T) (ORNL-tr-1796)
- energy-level transitions from neutron capture by strontium at 0.058 eV, (E), 22:32546
- energy-level transitions from yttrium-87 decay, (E), 22:11934
- filtrability in human plasma in relation to calcium, 22:30947
- neutron capture by, γ-γ angular correlations from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron capture by, γ-γ angular correlations in, (E), 22:26999
- neutron capture by, strontium-88 γ-γ angular correlations from thermal, (E), 22:3698 (KFK-616)
- neutron inelastic scattering at 2.2 to 3.5 and 13.7 to 14.8 MeV, activation cross sections for, (E), 22:24842
- neutron inelastic scattering with isomeric excitation, cross section for fast, (E), 22:7705
- preparation of isomeric, for scanning of bones, 22:51779
- production of isomeric, for clinical uses, generator for, 22:245 (BNL-11435)
- production of isomeric, milking system for, 22:2091 (BNL-11849)
- shipments by BNL from 1965 through 1967, 22:37776 (BNL-50082, pp 79-92)
- sorption by human intestine, effects of sodium alginate on, 22:8444
- uptake by bones of man for use in detecting occult metastases, 22:10781(R) (NYO-910-59)
- use for bone scanning, 22:21540 (ACRH-1000-34)
- use for bone scintigraphy, review of, 22:43386
- use for photoscanning of bone metastases, 22:40801
- use for scanning bones, evaluation of, 22:40764
- use for scintiscanning of bones in man, 22:38343

STRONTIUM ISOTOPES Sr-88
- content of marine organisms during 1964 and 1965, 22:10772
- deuteron reactions (d,p) at 5.1 to 10.5 MeV, charge-exchange effects in, (E), 22:11949(R) (ORO-2972-47)
- deuteron reactions (d,p) at 7 MeV, angular distributions and spectra for, (E), 22:13972
- deuteron reactions (d,p) with, interpretation using particle + core coupling model for strontium-89, (T), 22:41995
- electron reactions $(e,e\pi^-)$ at 350 MeV, cross sections for, (T), 22:52959
- energy levels at 3.22 and 3.52 MeV, from yttrium-88 decay, (E), 22:24835(R) (BARC-305)
- energy levels from beta and electron-capture decay of yttrium-88, (E), 22:7674
- energy levels from beta decay of rubidium-88, (E), 22:29983 (MIT-905-108, pp 1-32)
- energy levels from electron inelastic scattering at 65 and 70 MeV, (E), 22:15970
- energy levels from rubidium-87 (p,n) reactions, isobaric analog, (E), 22:18159
- energy levels from rubidium-88 decay, spin-parity assignments for, (E), 22:26942
- energy levels from strontium-87 (d,p) reactions, (E), 22:44658
- energy levels from strontium-87 neutron capture, (E), 22:26999
- energy levels from strontium-87 thermal neutron capture, spin-parity assignments from γ-γ angular correlations, (E), 22:37340(R) (EANDC(E)-89(U))
- energy levels of, calculations using particle-hole model, (T), 22:7661(R) (NYO-3525-26)
- energy levels of, effects of core polarization on, (T), 22:53135
- energy-level transitions from neutron capture by strontium at 0.058 eV, (E), 22:32546
- gamma-gamma angular correlations from strontium-87 thermal neutron capture, (E), 22:3698 (KFK-616)
- helium-3 reactions (He-3,α) and (He-3,d) at 18 MeV, angular distributions for, (E), 22:39602 (CONF-670970-, pp 101-15)
- helium-3 reactions (He-3,α) at 18 MeV, angular distributions for, (E), 22:26988
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27141
- helium-3 reactions (He-3,d) at 37.7 MeV, deuteron angular distributions from, (E), 22:11942
- neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
- neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron reactions (n,p) at 14.8 MeV, cross sections for, (E), 22:48499
- photon reactions (γ,π^-) at 230 MeV, cross sections for, (T), 22:52959
- proton capture at 5.85 to 8.4 MeV, analog resonances in yttrium-89 from, (E), 22:7675
- proton elastic and inelastic scattering at 19 MeV, angular distributions for, (E), 22:11942
- proton elastic and inelastic scattering at 4.9 to 8.7 MeV, strontium-89 isobaric analog levels from, (E), 22:15992
- proton elastic and inelastic scattering at 7.0 to 8.5 MeV, isobaric analog resonances in, (E), 22:32516 (MIT-2098-422, pp 43-68)
- proton elastic scattering at 4.7 to 8.4 MeV, isobaric analog resonances in, (E), 22:11949(R) (ORO-2972-47)
- proton elastic scattering by, isobaric analog resonance widths for, (T), 22:24846
- proton inelastic scattering at 7.4 to 8.0 MeV, isobaric analog resonances in, (E), 22:27210
- proton inelastic scattering by, interpretation of isobaric analog resonances in, (T), 22:41995
- proton reactions (p,2n), (p,3n), (p,4n), and (p,p3n) at 7 to 85 MeV, cross-section ratios for isomer production in, (E/T), 22:7684
- yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
- yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
- yields in thermal fission of uranium-233 and -235, absolute, (E), 22:24855(R) (IN-1157(Rev.))

STRONTIUM ISOTOPES Sr-89
- activity in subcellular fractions of liver from rats, effects of uncoupling agents on, 22:16989
- beta emission by, effects of, on Lilium longiflorum and Zea mays, mutagenic, 22:31044
- beta emission by, effects of, on skeletal system of mice, 22:40932
- biological half-life in quail, 22:40831 (ORO-657, pp 46-64)
- contamination of different surfaces, methods of removal of, 22:23558
- content in atmosphere over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
- content in atmosphere, Fayetteville, Arkansas, 1967, 22:8222(R) (ORO-2529-15)
- content in fallout from June 1967 Chinese thermonuclear explosion, Fayetteville, Arkansas, (E), 22:10383
- content in fallout, lithium-drifted silicon beta spectrometers for determining, 22:45331
- content in German rainwater, 1959 to 1967, 22:25533 (SZS-4/68)
- content in ground-level air, Fayetteville, Arkansas, 1966, 22:8222(R) (ORO-2529-15)
- content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
- content in Italian fallout, milk, and surface waters, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
- content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
- content in milk and rain in New Zealand, effects of French nuclear tests on, 22:4279(R) (NRL-F-25)
- content in milk and rain in New Zealand, October to December 1967, 22:42869(R) (NP-17523)
- content in milk in New Zealand, 1967, 22:42870(R) (NP-17524)
- content in monthly precipitation in US cities, 1957 to 1967, 22:25530 (HASL-193, pp II.1-30)
- content in rainwater at selected global stations, 1957 to 1967, 22:14588(R) (HASL-184(App.))
- content in rainwater, Fayetteville, Arkansas, 1967, 22:8222(R) (ORO-2529-15)
- content in surface air samples at stations along 80th meridian west from 76° north to 63° south, 22:21203 (HASL-184, pp II.6-25)
- content in surface atmosphere at western hemisphere land sites, 1963 to 1968, 22:25531(R) (HASL-193(App.))

- content in Swedish atmosphere and soil from Dec. 18, 1966, Soviet Union underground nuclear explosion, 22:6482 (FOA-4-4296-23)
- content of aquatic fish in Germany during 1964, 22:31076
- content of atmosphere during 1963 to 1964, 22:2514
- content of atmospheric precipitation at Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
- content of bones in deer, effects of age on, 22:49194
- content of bones, eggs, and tissues in chickens, 22:6768
- content of caribou and reindeer in Alaska during 1966, 22:28517
- content of diet in United Kingdom during 1962 to 1964, 22:36256
- content of diet of children in 1966, 22:28523
- content of diet, human bone, and milk in United States during 1965, 22:28516
- content of drinking water, maximum permissible, 22:6828
- content of food and milk in Germany, effects of fallout on, 22:51658
- content of grass in water-sediment system, 22:12843 (NP-17131)
- content of human diet in U. S. during 1966, 22:28519
- content of human diet in U. S. during 1966, 22:28517
- content of institutional diets in U. S. during 1966, 22:23520
- content of institutional diets in United States during Jan. to March 1967, 22:28506
- content of milk and rainwater in New Zealand during 1966, 22:6800(R) (NP-17015)
- content of milk in California, Oregon, and Washington during 1966, 22:23518
- content of milk in Canada during 1967, 22:4606 (NP-17146)
- content of milk in North and South America during 1966, 22:28508
- content of milk in North and South America during 1966, 22:36257
- content of milk in North and South America during 1966, 22:25850
- content of milk in North and South America during 1966, 22:28458
- content of milk in North and South America during 1966, 22:23522
- content of milk in North and South America during 1967, 22:28510
- content of milk in North and South America during May 1967, 22:23515
- content of milk in North and South America during 1967, 22:28523
- content of milk in North and South America during 1966, 22:23518
- content of milk in North and South America during 1966, 22:23520
- content of milk in North and South America during June 1967, 22:28506
- content of milk in USA during 1959 to 1963, 22:10775
- content of milk, rye, and water, procedures for determination of, 22:33835
- content of shellfish, FRC, ICRP, and NCRP standards for, 22:23513
- content of tissues in chicks, effects of calcium and phosphate content of diet and vitamin D_3 on, 22:36215
- deposition at Nevada Test Site from Plumbbob Operation, 22:18963 (BNWL-481-1, pp 93-101)
- deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
- determination in atmospheric water precipitations by ion exchange and beta counting, 22:27551
- determination in liquids, sensitivity of G--M detectors for, 22:19116
- determination in milk using alkaline earth sulfate separation, 22:19337
- diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
- dispersion in white sand, development of equations to determine coefficients of, 22:16804
- distribution in atmosphere, 22:25542
- distribution in mice, evaluation of methods for in vitro and in vivo measurements of, 22:38235
- distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
- distribution in soils, 22:23396(R) (COO-1495-6)
- distribution in subcellular fractions of liver in rats, effects of time on, 22:25769
- distribution in tissues of rats, 22:51465
- effects on calcium content of bones in chicks, 22:36215
- effects on gastrointestinal tract of rats, pathological, 22:49331
- energy levels from proton elastic and inelastic scattering by strontium-88 at 4.9 to 8.7 MeV, isobaric analog, (E), 22:15992
- energy levels from strontium-88 (d,p) reactions, isobaric analog, (E), 22:11949(R) (ORO-2972-47)
- energy levels from strontium-88 (d,p) reactions, spectroscopic factors for, (E), 22:13972
- energy levels of, calculations using particle + core coupling model, (T), 22:41995
- fallout at Leningrad from 1954 to 1965, 22:12453
- fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
- fission product release from silicon carbide (SiC)-coated uranium carbide (UC_2) and uranium oxide (UO_2) at 1700 and 2000°C, analysis of, 22:42200(R) (ORNL-4200)
- global distribution in rainwater, 1966 and 1967, 22:12439 (AERE-R-5575)
- inhalation by rats, kinetics of, 22:8476
- leaching from beans, cucumbers, peas, and tomatoes, following uptake by leaves and roots, 22:33812(R) (NYO-2598-36)
- leaching from cements and clay grouts in geologic formations, 22:16824
- metabolism by young chickens, effects of phosphate content of diet on, 22:28334
- metabolism in chickens, effects of calcium, phosphate, sodium alginate, and vitamin D_3 content of diet on, 22:36215
- metabolism in kidney bean plants, effects of citrate ions, 2,4-D, and salts on, 22:6728
- metabolism in rat liver, role of mitochondria in, 22:33751
- metabolism in rats, effects of calcium content of diet on, 22:25770
- movement through Mohave sandy loam soils, effects of chelating agents on, 22:33565
- production by 15-MeV alpha reaction (α,n) with krypton-86, 22:4207
- radiation effects on metabolism of, in cattle, sheep, and swine, whole-body γ, 22:38427(R) (ORO-659)
- radiation effects on uptake and retention of, in cattle, sheep, and swine, β and γ, 22:40831 (ORO-657, pp 46-64)
- separation from ashed bone, fish meal, and milk, method for, 22:8197
- separation from neutron-irradiated yttrium oxide by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4237
- separation from radioactive wastes using coated diatomite in filters, 22:35910
- separation from radioactive wastes using ion exchangers derived from sawdust, 22:6374
- separation of carrier-free, from fission products by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4236
- sorption by Chlorella pyrenoidosa, effects of calcium and magnesium content of substrate on, 22:31013
- sorption by humic acid from coal, effects of sodium on, 22:35906
- sorption from aqueous solutions by humic acid from oxidized coal, 22:12426
- uptake and distribution in fruits and tissues of apple trees, 22:40606
- uptake and distribution in leaves and roots of plants, autoradiographic analysis of, 22:6764
- uptake and distribution in young chickens, 22:40831 (ORO-657, pp 46-64)
- uptake and metabolism by animals and man, 22:8644
- uptake and metabolism by young chickens, effects of sodium alginate on, 22:40585
- uptake and retention by brown algae, effects of sodium chloride content of water on, 22:43232
- uptake and retention by cattle, effects of calcium and strontium content of diet on, 22:10722
- uptake and retention by tissues of chicks, effects of phosphorus on, 22:14973
- uptake by cultured bone tissue, effects of lanthanum on, 22:45456
- uptake by embryo from shell in chicks, 22:36215
- uptake by man following inhalation, 22:33715 (SZS-15/67)
- uptake by man from fallout, relation of, to radiation dose, 22:43345
- uptake by potted plants, effects of calcium/strontium ratio, soil type, and species on, 22:43313 (RISO-170)
- uptake from foods by man, 22:40725
- use as tracer to study strontium absorption by skin of guinea pig, 22:23441
- use in measurements on specific surface of strontium sulfate, 22:47133
- yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
- yields from uranium-238 spontaneous fission in uranium minerals and salts, (E), 22:39656

STRONTIUM ISOTOPES Sr-90

- accumulation in soils, effects on uptake by food plants, 22:25529 (HASL-193, pp I.217-22)
- activity in Saxton Power Reactor plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel elements, radiochemical analysis of burnup effects on, 22:27417(R) (WCAP-3385-14)
- activity of solutions of, results of international comparisons of, 22:6545
- aerosols of, design of chamber for exposure of beagle dogs to high-dose, 22:23406 (LF-38, pp 88-91)
- assay of human bones by bremsstrahlung measurement, 22:51623
- beta decay of, electron depolarization and energy losses in aluminum, (E), 22:9904
- beta dose to rabbit ear, determination of integral absorbed, 22:45546
- beta dosimetry in bones using point source method, 22:19324 (AERE-R-5679)
- beta dosimetry in small body cavities using

thermoluminescence, 22:31107
beta emission by implant of, in eye of rats, pathological effects of, 22:45655
beta emission by ingested, effects of, on intrauterine development of rats, 22:40904
beta emission by, aberrant effects of, on chromosomes in marrow of hamsters, 22:51519
beta emission by, dosimetry of, in relation to production of bone tumors in rats, 22:38483
beta emission by, effects of internal, on survival of rats, 22:51377
beta emission by, effects of, on beagle dogs following inhalation as aerosols, neoplastic, 22:23401 (LF-38, pp 1-18)
beta emission by, effects of, on bones of rats following intramuscular injection, tumorigenic, 22:43395 (CEA-R-3388)
beta emission by, effects of, on chromosomes in bone marrow of rats, internal, 22:51945
beta emission by, effects of, on count of lymphocytes in blood of dogs and man following extracorporeal exposure, 22:25741
beta emission by, effects of, on DNA synthesis and mitosis in corneal epithelium of rats, 22:45411
beta emission by, effects of, on early development of embryos in rats, 22:28275 (NYO-2147-13, pp 11-15)
beta emission by, effects of, on embryonic development of toads, 22:10875
beta emission by, effects of, on frequency of chromosome aberrations in bone marrow cells and leukocytes of man, 22:28441
beta emission by, effects of, on growth, life span, reproduction, and x-radiosensitivity of mice following ingestion, 22:45457
beta emission by, effects of, on hemangioma in children, therapeutic, 22:33849
beta emission by, effects of, on hematopoietic system in rats, 22:23594 (LF-38, pp 108-12)
beta emission by, effects of, on incidence of viruses in rectum and respiratory tract of dogs following inhalation, 22:19236 (LF-36)
beta emission by, effects of, on induction of chromosome aberrations in bone marrow following injection in Chinese hamsters, 22:23486 (LF-38, pp 73-8)
beta emission by, effects of, on morphology of lymph nodes and spleen of rats, 22:38434
beta emission by, effects of, on morphology of nasal mucosa and survival of rats, 22:51992
beta emission by, effects of, on peripheral blood of rats, 22:19442
beta emission by, effects of, on rats following inhalation in aerosols, 22:23404 (LF-38, pp 65-72)
beta emission by, effects of, on resistance of sheep to babesiasis, 22:49570
beta emission by, effects of, on sheep following injection, latent pathological, 22:38427(R) (ORO-659)
beta emission by, effects of, on skin lesions in man, therapeutic, 22:51833
beta emission by, effects of, on survival of rats following injection, 22:23405 (LF-38, pp 79-87)
beta emission by, effects of, on synthesis of androgen in beagles, 22:43244
beta emission by, effects of, on weight of adrenal glands of rats, 22:51967
beta emission by, measurement of, in liver of rats, 22:49347
beta emission by, neoplastic effects of, on hematopoietic tissue of miniature swine, 22:45406
beta emission by, use of, for extracorporeal irradiation of human blood, 22:28533
beta emission from, effects of, on function of pituitary of swine, 22:36365
beta emission in rats, combined effects of dimethyl benzanthracene on carcinogenic effects of, 22:23609
bremsstrahlung emission by, calibration of standards for whole-body monitoring of, 22:10827(R) (UCD-472-114)
bremsstrahlung intensity in solutions of, use of scintillation detectors to measure, 22:10827(R) (UCD-472-114)
complexes with high molecular weight polymers in soil samples, 22:6795(R) (COO-414-6)
contamination in soils in relation to content of second generation seeds of cereals and soybeans, 22:12854
contamination of biosphere, review of, 22:47541
contamination of human diet, estimation of β dose to children from acute and chronic, 22:43305(R) (NYO-2753-6)
contamination of polyvinylchloride foil, glass, and steel, removal of, by detergents, 22:4626
contamination of surfaces for determination of detector efficiency, 22:23548
contamination of terrain following nuclear explosions, 22:8529(T) (JPRS-42929, pp 293-330)
content and deposition in seawaters of Atlantic and Pacific Oceans, 22:40661(R) (HASL-197)
content and distribution in soils, effects of natural conditions on, 22:23128 (A-AC-82/G/L-1175)
content in air, milk, and rain in New Zealand, October to December 1967, 22:42869(R) (NP-17523)
content in Antarctic Ocean, 22:42893 (CU-2663-9, App.C)
content in Atlantic Ocean, 22:42893 (CU-2663-9, App.C)
content in Atlantic Ocean, 1964, 22:18994 (A-AC-82/G/L-1168)
content in atmosphere above and surface waters of equatorial Atlantic Ocean, effect of trade winds on, 22:25555
content in atmosphere over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
content in atmosphere, seasonal variations in global, 22:51102
content in Australian drinking water supplies, 1961 to 1965, 22:8215
content in Belgian fallout, 1966, 22:21192
content in British milk from radioactive waste disposal operations, 22:279 (AHSB(RP)R-79)
content in Caribbean Sea, 22:42893 (CU-2663-9, App.C)
content in Chicago, New York City, and San Francisco diets, comparison of predicted and measured values for, 1967, 22:25529 (HASL-193, pp I.217-22)
content in Danish atmosphere and precipitation, Jan. to June 1967, 22:23164 (NP-17330)
content in Danish atmosphere and precipitation, July through Dec. 1967, 22:51093 (FFR-401/68)
content in environment in Faroes, Denmark, 1966, 22:10358 (RISO-155)
content in environmental samples in Denmark, 1966, 22:10357 (RISO-154)
content in environmental samples in Greenland, 1966, 22:10359 (RISO-156)
content in fallout, 22:23129 (A-AC-82/G/L-1176)
content in fallout from June 1967 Chinese thermonuclear explosion, Fayetteville, Arkansas, (E), 22:10383
content in fallout in various countries at same latitudes, 22:21196 (A-AC-82/G/L-1202)
content in fallout, lithium-drifted silicon beta spectrometers for determining, 22:45331
content in firn and ice from Austrian Alps, 22:12436
content in German rainwater, 1959 to 1967, 22:25533 (SZS-4/68)
content in global precipitation, 22:25525 (HASL-193, pp I.2-16)
content in global soils, measurements of, 1961 to 1967, 22:27917 (TID-24341)
content in ground water at Hanford Project, 22:40208 (BNWL-835)
content in ground waters at Hanford, 22:19085(R) (BNWL-687)
content in ground-level air, Fayetteville, Arkansas, 1966, 22:8222(R) (ORO-2529-15)
content in human bone, milk, rain, and soil in New Zealand, 1967, 22:42870(R) (NP-17524)
content in human bones and milk in India, 22:6488
content in Indian Ocean in 1962, 22:23178 (A-AC-82/G/L-1177)
content in Israeli foods, 1966, 22:23133 (IA-1128, pp 156-9)
content in Italian environment, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
content in Japanese coastal silts, 1964 and 1965, 22:40217
content in lake waters, effect of yttrium-90 in bottom silts on, (E), 22:12431(T) (MLM-1470(tr))
content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
content in Meuse River, 1966, 22:21192
content in milk and rain in New Zealand, effects of French nuclear tests on, 22:4279(R) (NRL-F-25)
content in milk and soil of, from SNAP heat source burnup in space, 22:12535 (SC-CR-67-2792)
content in monthly precipitation at Atlantic Ocean weather stations, 1965 to 1967, 22:25531(R) (HASL-193(App.))
content in monthly precipitation at global land sites, 1957 to 1968, 22:25531(R) (HASL-193(App.))
content in monthly precipitation in US cities, 1957 to 1967, 22:25530 (HASL-193, pp II.1-30)
content in Moscow atmosphere and food products, 1965 to 1966, 22:23163 (A-AC-82/G/L-1192)
content in Nevada Test Site milk, 22:18963 (BNWL-481-1, pp 93-101)
content in New York City milk and tap water, 1954 to 1968, 22:25531(R) (HASL-193(App.))
content in New York City milk and tap water, data tabulations on, 1954 to 1967, 22:14588(R) (HASL-184(App.))
content in Pacific Ocean, 22:42893 (CU-2663-9, App.C)
content in Pelindaba, South Africa milk, 22:180 (PEL-89)
content in precipitation and seawater at Great Bahama Bank, methods for measuring, 22:25551 (HASL-193, pp I.27-32)
content in rainwater at selected global stations, 1957 to 1967, 22:14588(R) (HASL-184(App.))
content in rainwater at Sydney, Australia, 1966, 22:8225
content in rainwater, Fayetteville, Arkansas, 1967, 22:8222(R) (ORO-2529-15)
content in Richland, Wash., environment, effects of fallout on, 22:18964 (BNWL-SA-1606)
content in seasonal stratospheric samples collected during 1963 to 1967 in northern and southern hemispheres, 22:21201 (HASL-184, pp I.53-118)
content in seawater, design of sensitive γ radiation detectors for determining, 22:2256

content in seawater, sample handling method for determination of, 22:27938 (HASL-196)
content in soil and vegetation of Pelindaba, South Africa environs, 22:180 (PEL-89)
content in soils in southern Poland, 1962, 22:4275
content in soils, bibliography on, 22:42863
content in surface air samples at stations along 80th meridian west from 76° north to 63° south, 22:21203 (HASL-184, pp II.6-25)
content in surface atmosphere at western hemisphere land sites, 1963 to 1968, 22:25531(R) (HASL-193(App.))
content in Swedish atmosphere and soil from Dec. 18, 1966, Soviet Union underground nuclear explosion, 22:6482 (FOA-4-4296-23)
content in Turkish atmosphere, milk, and rainwater, 22:181(R) (TAEC-D-5)
content in UK drinking water, 1965, 22:18943
content of air, milk, rainwater, and vegetables in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
content of animals and plants in Black Sea during 1965 and 1966 in relation to stable strontium, 22:33805 (A-AC-82/G/L-1194)
content of aquatic fish in Germany during 1964, 22:31076
content of aquatic invertebrates, removal of, using EDTA, 22:12847(T) (CEA-tr-R-1906)
content of atmosphere and foods in Italy, 22:51588
content of atmosphere during 1963 to 1964, 22:2514
content of atmosphere in North America during July to Dec. 1966, 22:23515
content of atmosphere, world wide distribution of, 22:40699
content of atmospheric precipitation and milk in Canada during 1967, 22:38258 (NP-17119)
content of atmospheric precipitation at Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
content of birch leaves and fir, pine, and spruce needles sampled in U.S.R. during 1962, 22:51615
content of bone meal, dried fruits, and tea during 1961 to 1962, 22:40699
content of bone, milk, rainwater, and soil in New Zealand during 1966, 22:6800(R) (NP-17015)
content of bones and teeth buds of human fetuses in relation to content of diet of mother, 22:38292
content of bones in deer, effects of age on, 22:49194
content of bones in man during 1962 to 1963, effects of age on, 22:28520
content of bones of animals in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
content of bones of cattle, effects of dietary calcium on, 22:49195
content of bones of cattle, effects of nuclear testing on, 22:51310 (SAN-509-2)
content of bones of children, effects of age and diet on, 22:493(R) (NYO-2753-5)
content of bones of deer, 22:6774(R) (UCD-34-P-104-8)
content of bones of large game in Western United States, 22:8559
content of bones of man in Far North USSR during 1965, 22:33803 (A-AC-82/G/L-1190)
content of bones of mule deer and forage plants in Colorado during 1961 to 1965, 22:19298 (COO-1156-23)
content of bones of mule deer in Colorado during 1961 to 1967, effects of age on, 22:21459(R) (COO-1156-28)
content of bones of mule deer, effects of age and sex on, 22:14909 (COO-1156-26)
content of bones of mule deer, effects of age, diet, and season on, 22:47534
content of bones of rats, effects of content of diet on, 22:12767
content of brown trout in England in relation to I.C.R.P. minimum dose standards for man, 22:10773
content of butter and cheese, effects of isotope content of milk on, 22:45538
content of caribou and reindeer in Alaska during 1966, 22:28517
content of cattle, human bones, and milk, 22:38301
content of cereals, meat, and milk from fallout, 22:38304
content of children's bones in United States during 1958 to 1962, 22:40699
content of crops and milk in Sweden, calculations for predicted, 22:38256 (FOA-4-4354-28)
content of crops grown in fallout-contaminated soils, 22:28521
content of deer antlers, use of, for age determination, 22:33825
content of diet and environment in Japan during 1967, 22:4605 (NP-17083)
content of diet and milk in Berlin, Germany, during 1962 to 1965, 22:51648
content of diet and tissues of man in Germany from 1958 to 1966, 22:33808 (BMwF-FBK-67-70)
content of diet in United Kingdom during 1962 to 1964, 22:36256
content of diet of children in 1966, 22:28523
content of diet of children in United States during 1965, 22:28522
content of diet of teenagers, use of urine samples to estimate, 22:28449 (NYO-2147-13, pp 122-33)
content of diet, human bone, and milk in United States during 1965, 22:28516
content of drinking water in United Kingdom during 1966, 22:15017
content of drinking water in United Kingdom during 1965, 22:28507
content of drinking water in United Kingdom during 1965 and 1966, 22:40711
content of drinking water, maximum permissible, 22:6828
content of eggs, fish, meat, and milk, 22:40699
content of environment in Elk River, Minnesota, 22:23522
content of fallout and human bone in U. S. during 1965, 22:23522
content of feces and urine of human infants, use of paper diapers for sample collection for measurements of, 22:40732
content of feces, milk, plants, and water, methods of determining and separating, 22:33818 (UCLA-12-676)
content of fish in Atlantic and Indian oceans, 22:28535
content of flesh of brown trout in British Isles during 1961 to 1966, effects of potassium content of surface waters on, 22:28460
content of food in Chicago, New York City, and San Francisco during May to June 1967, 22:40697
content of food in Czechoslovakia during 1965, 22:51655
content of foods imported from United States, 22:6827
content of foods in countries of EAEC during 1965, 22:40660 (EUR-3640)
content of foods in Europe during 1966, 22:51582
content of foods in Germany during 1960 to 1964, 22:15006
content of foods in Netherlands during 1966, 22:15001 (RA-30)
content of foods, milk, and rainwater in Netherlands during 1964, 22:4616
content of foods, plants, and soils, 22:513
content of foodstuffs and population in Alaska during 1961 to 1966, 22:23516
content of foodstuffs and water in USSR during 1963 to 1966, 22:45539
content of foodstuffs in Canada, Europe, and United States, 22:31077
content of foodstuffs in New York during 1960 to 1963, ratio of, to calcium, 22:40699
content of forage crops and milk in Czechoslovakia in 1965, 22:51585
content of fresh and powdered milk and water in New York City during 1954 to 1968, 22:40661(R) (HASL-197)
content of fruit, hay, and vegetables during 1957 to 1962, 22:40699
content of fruits, potatoes, and vegetables in Germany during 1963, 22:10775
content of German foodstuffs during 1962 to 1963, 22:40699
content of grains during 1956 to 1963, 22:40699
content of grass and soil in Netherlands during 1958 through 1965, effects of calcium on, 22:15014
content of Green and Round Lakes, Fayetteville, New York, 22:45182
content of honey in Roumania, 22:15011
content of human bone and diet in United States during 1965, 22:36257
content of human bone and teeth in Soviet Union during 1964, 22:49177 (NP-16519)
content of human bone in United States during Oct. to Dec. 1966, 22:23515
content of human bone samples during 1965, 22:23518
content of human bones during 1967, 22:28523
content of human bones in Germany, 22:38269
content of human bones in Paris during 1962 to 1966, 22:31059 (CEA-R-3381)
content of human bones in U. S. during 1965, 22:28502
content of human bones in United Kingdom during 1966, effects of age on, 22:15016
content of human bones in United Kingdom during 1966, 22:19344
content of human bones in United Kingdom, effects of age and fallout on, 22:8533
content of human bones in United States during 1966, 22:28526
content of human bones in United States during 1964 to 1965, 22:28512
content of human bones in United States, federal surveillance network for measurement of, 22:51570 (NP-17401)
content of human bones in US during 1966, 22:28508
content of human bones, diet, and placenta, 22:38356
content of human bones, during July to September 1966, 22:38305
content of human bones, in relation to incidence of leukemia, 22:43242
content of human bones, in USSR during 1964 to 1966, effects of age on, 22:33801 (A-AC-82/G/L-1184)
content of human bones, methods of measuring, 22:38291
content of human bones, ratio of cesium-137 content to, 22:2504 (NP-16514)
content of human deciduous teeth, effects of caries on, 22:51584
content of human diet and yearly mean of daily intake in the Netherlands during 1967, 22:43312 (RA-34)
content of human diet at representative world sites, 22:28487
content of human diet in Chicago, New York City, and San

Francisco during 1966, 22:23518
content of human diet in Chicago, New York City, and San Francisco during 1965, 22:23522
content of human diet in Chicago, New York City, and San Francisco during Aug. to Dec. 1966, 22:23515
content of human diet in Finland, 22:10768
content of human diet in Netherlands during 1963, 22:33817 (RA-32)
content of human diet in relation to age groups, 22:43305(R) (NYO-2753-6)
content of human diet in U. S. during 1966, 22:28519
content of human diet in U. S. during 1966, 22:28517
content of human diet in United Kingdom during 1965, 22:23518
content of human diet in United States during 1966, 22:28514
content of human diet, use of urine assays to measure, 22:51645
content of human milk, ratio of calcium content to, 22:456
content of human vertebrae during 1967, 22:40661(R) (HASL-197)
content of imported dry skimmed milk, soybeans, and wheat, 22:25846
content of institutional diets in U. S. during 1966, 22:23520
content of institutional diets in United States during Jan. to March 1967, 22:28506
content of Japanese fallout, 1957 to 1967, 22:48945
content of leaves of cattle food, 22:43337
content of leaves of tropical forest plants in Puerto Rico during 1966, 22:23481(R) (PRNC-102)
content of man, calibration of whole-body γ-spectrometer for determination of, 22:8556
content of man, use of log-normal function for stochastic model of, 22:8545
content of man, use of pooled urine samples to estimate, 22:28450 (NYO-2147-13, pp 134-40)
content of mandibles and teeth of mule deer in California during 1958 to 1961, effects of biological and environmental variables on, 22:36283
content of marine organisms during 1964 and 1965, 22:10772
content of meat-bone meal produced in Bulgaria during 1966, 22:21502
content of milk and water in Finland during 1966, 22:10764 (SFL-A-8)
content of milk and water in Italy during 1966, 22:49327 (PROT-SAN.-01/67)
content of milk from Arctic mammals, 22:49367
content of milk in California, New York, Oregon, and Washington during 1965, 22:36257
content of milk in California, Oregon, and Washington during 1966, 22:23518
content of milk in Canada during 1967, 22:2505 (NP-17042)
content of milk in Canada during 1967, 22:4606 (NP-17146)
content of milk in France during 1962 to 1966, 22:43317
content of milk in Germany during 1964, 22:505
content of milk in Italy, biometric analysis of, in relation to calcium, cesium-137, and potassium, 22:51576
content of milk in Japan during 1963 to 1965, effects of fallout on, 22:6825
content of milk in Japan during 1966 and 1967, effects of Chinese nuclear tests on, 22:23540
content of milk in New Zealand, effects of radioactive fallout on, 22:40715
content of milk in North and South America during 1966, 22:23518
content of milk in North and South America during 1966, 22:23520
content of milk in North and South America during 1966, 22:28508
content of milk in North and South America during 1966, 22:36257
content of milk in North and South America during 1966, 22:25850
content of milk in North and South America during 1966, 22:28458
content of milk in North and South America during 1966, 22:23522
content of milk in North and South America during 1967, 22:28523
content of milk in North and South America during June 1967, 22:28506
content of milk in North and South America during 1966, 22:28522
content of milk in North and South America during May 1967, 22:23515
content of milk in North and South America during 1967, 22:28510
content of milk in Oklahoma and Texas during 1966, 22:23520
content of milk in Sweden, 22:28469
content of milk in U.S., effects of, on uptake by man, 22:23534
content of milk in United Kingdom during 1958 to 1964 in relation to cesium-137 content, equation for calculation of, 22:6821
content of milk in United Kingdom during 1962 to 1965, 22:36258
content of milk in United States during 1960 to 1963, in relation to soil content, 22:25852
content of milk in USA during 1959 to 1963, 22:10775
content of milk, commercial facilities for extraction of, 22:40697
content of milk, effects of climate on, 22:28455 (NYO-2147-13, pp 175-9)
content of milk, rye, and water, procedures for determination of, 22:33835
content of milk, technique for removal of, 22:28514
content of milk, use of, for estimating levels in dairy products, fruits, grain, and vegetables, 22:28453 (NYO-2147-13, pp 160-7)
content of oats, effects of minerals in clay soils on, 22:51489
content of oyster larvae in Columbia River, 22:40614(R) (RLO-2047-2)
content of plants and soils in Germany during 1960 to 1963, 22:51587
content of precipitation in United States during 1966 to 1967, 22:28506
content of rumen of mule deer in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
content of seals in Okhotsk Sea during 1966, 22:25827 (NP-17204)
content of seawater in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
content of shellfish, FRC, ICRP, and NCRP standards for, 22:23513
content of soil following nuclear attack, methods of reducing, 22:45516
content of soil in East Germany during 1964 to 1965, 22:12856
content of soil in United States during 1960 to 1963, in relation to rainfall, 22:25852
content of soil in United States during 1960 to 1963, in relation to milk content, 22:25852
content of soils and vegetables during 1965 to 1966, effects of cultivation on, 22:28454 (NYO-2147-13, pp 168-74)
content of soils in relation to content of second generation seeds of cereals, 22:12854
content of surface waters in New York during 1966, 22:23515
content of surface waters in United States during October, 1965 to June 1966, 22:40693
content of surface waters in United States during 1965 to 1966, 22:28510
content of tap waters in New York during 1966, 22:28514
content of teeth in Japan, 22:4605 (NP-17083)
content of teeth of man, effects of year of birth on, 22:28307
content of tissues in man, 22:40692
content of tissues of seals in Soviet Union during 1966, 22:51386
content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
content of vertebrates in Atlantic and Indian Oceans during 1966, 22:25827 (NP-17204)
content of water supplies in New York City during 1965 to 1966, 22:23518
content of water supplies in New York City during March to November 1966, 22:40697
content of water supplies in New York during 1965, 22:36257
content of water, state and territorial regulations and standards for, 22:28504
content of waters in Athens during 1964 and 1965, 22:21504
content of waters of Caribbean Sea and Atlantic Ocean, 22:42915(R) (NYO-2174-87)
content of wheat and wheat flour in Bulgaria during 1965, 22:25847
content of wheat and wheat products in USA during 1962, 22:10775
content of wheat in Czechoslovakia during 1963 to 1965, fallout, 22:28468
content of wheat in United States during 1965, effects of geography on, 22:28528
content of whole milk, residual, 22:10775
content ratio to cerium-144 in Illinois rainwater during convective storms, 1963, 22:30727
counting in man, performance of whole-body counters for, 22:28483
decontamination of milk by resin treatment, effects of, on nutrient composition, 22:15008
deposition and distribution of, from 1961 and 1962 weapons testing, 22:179(R) (NYO-3654-3)
deposition in Japan, 1966 to 1967, 22:33569
deposition in Japan, seasonal variations of, (E), 22:23167
deposition in New York during 1954-1963, 22:40699
deposition in Niigata, Japan, long-term studies of, 22:12443
deposition in northern and southern hemispheres during 1958 to 1963, 22:10775
deposition in rainwater at Atlantic Ocean weather stations, 1965 to 1967, 22:14588(R) (HASL-184(App.))
deposition in United States during 1961-1963, 22:40699
deposition of fallout, 22:43300 (AERE-PR/HPM-12)

deposition of fallout, comparison of collection methods for determining global, 22:25525 (HASL-193, pp I.2-16)
deposition of, implications of changes in global, 22:186
deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
deposition on earth's surface of, from SNAP heat source burnup in space, radiological hazards to man from, 22:12535 (SC-CR-67-2792)
deposition on surface of earth, estimation of, 22:42885
determination following separation from other radioisotopes by thin-layer chromotography, 22:8001
determination in air and rainwater, 22:35750
determination in atmospheric water precipitations by ion exchange and beta counting, 22:27551
determination in biological and environmental materials by solvent extraction of yttrium-90 daughter using bis(2-ethylhexyl) phosphate and beta counting, 22:30425 (AAEC/TM-421)
determination in biological materials, quality control of radiochemical methods for, 22:21020 (HASL-184, pp I.224-45)
determination in biological materials, sample preparation for, 22:6804 (ORNL-4168, pp 289-311)
determination in fallout and mud, method for, 22:45021
determination in fallout samples, quality control of radiochemical methods for, 22:21020 (HASL-184, pp I.224-45)
determination in food, analytical methods for, 22:10769
determination in irradiated coated fuel particles, 22:39998
determination in milk by regression method, 22:12235
determination in milk using alkaline earth sulfate separation, 22:19337
determination in oyster flesh, separation process for improving, 22:18684 (AAEC/TM-394)
determination in oysters, spectrophotometric, 22:50913
determination in presence of calcium-45 by beta counting, 22:8012
determination in seawater from Barents and Kara Seas, 22:28067 (TID-24454)
determination in seawater simultaneously with cerium-144 and cesium-137, 22:10185
determination in sediments and soils in the presence of yttrium-90, 22:42598
determination in soils and sands, separation process for improving, 22:18685 (AAEC/TM-395)
determination in soils, vegetation, and water, method for, 22:21029 (SC-M-67-3044)
determination in urine by reverse-phase partition chromatography, 22:12254
determination of, laboratory blank experience in, 22:37653 (UCRL-18140, pp 13-36)
diffusion and transport in stratosphere, numerical models for predicting, 22:35942 (NYO-3654-4)
diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
distribution in animal body, 22:51445
distribution in Atlantic Ocean surface waters, 22:42914 (NYO-2174-77)
distribution in atmosphere, 22:25542
distribution in germinating seeds of soybeans, effects of light on, 22:10709
distribution in ground water, effects of mineral salts on, 22:18913 (HNS-21)
distribution in ground waters and soils from accidental ground impact of SNAP devices, 22:12430(R) (SC-CR-67-2708)
distribution in ion exchange column, 22:10369
distribution in mice, evaluation of methods for in vitro and in vivo measurements of, 22:38235
distribution in northern stratosphere, 1962 to 1963, 22:35948
distribution in sewage and drinking water in Germany, 1956 to 1963, 22:10368
distribution in soils, column chromatographic studies of, 22:10369
distribution in soils, effects of soil composition on, 22:23129 (A-AC-82/G/L-1176)
distribution in soils, review of, 22:36288
distribution in stratosphere for Jan. to April 1964, 22:35942 (NYO-3654-4)
distribution in tissues of dogs, guinea pigs, rabbits and rats, 22:8473
distribution in tissues of rat, 22:8474
distribution, migration, and sorption in soils, effect of soil cation exchange capacity and ground water flow on, 22:10370
effects on animals and man, review of carcinogenic and leukemogenic, 22:12853
effects on bone marrow of Chinese hamsters, cytogenetic, 22:23486 (LF-38, pp 73-8)
effects on chemical and physical properties of soils, 22:6795(R) (COO-414-6)
effects on epithelium of mouth and paranasal sinuses of rats, neoplastic, 22:45717
effects on hematopoiesis in mice following body surface exposure, 22:12790
effects on radiation body burdens of man, 22:33800 (A-AC-82/G/L-1182)
effects on spermatogonia of mice in comparison to effects of x radiation, 22:8629
effects on survival of fish embryos, effects of dose on, 22:51954
equilibrium with yttrium-90 in rats following oral administration, 22:25772
excretion by rats, 22:2479 (BNWL-SA-1252)
excretion in feces and urine of rats, effects of calcium content of diet on, 22:30959
excretion in rats, effects of polyvinylpyrrolidone on, 22:21456
excretion in urine by man, methods for calculation of safe limits of, 22:6811
fallout at Leningrad from 1954 to 1965, 22:12453
fallout from 1961 and 1962 atmospheric nuclear explosions, comparison with iron-55, 22:48953
global distribution in rainwater, 1966 and 1967, 22:12439 (AERE-R-5575)
half life in bones of rats following inhalation, 22:23404 (LF-38, pp 65-72)
half life in lichens, 22:12842 (BNWL-SA-1266)
ingestion by miniature swine, development of leukemia and sarcoma following, 22:2479 (BNWL-SA-1252)
ingestion by rats, effects of, on liver function, 22:28667
ingestion by swine, pathological effects of chronic, 22:6865 (BNWL-SA-1418)
ingestion of fallout, hazards from, 22:38417 (ACRH-1000-59)
inhalation by rats, dynamics of, 22:8538
injection into atmosphere from nuclear explosions, 22:179(R) (NYO-3654-3)
leaching from copper ores fractured by underground nuclear explosions, effect of leach solution acidity on, 22:45208(R) (ORNL-TM-2298)
leaching from soils, effects of composition and properties on, 22:18920
measurement on surfaces, efficiency of wipe test, 22:19346
metabolism and toxicity in rats, 22:8466
metabolism by dogs and rats following chronic ingestion, 22:49246
metabolism by rats and swine, relation of calcium content of food to solubility in gastrointestinal tract, 22:51373
metabolism in aquatic and marine algae, 22:47461
metabolism in beagle dogs following inhalation as aerosols, 22:23401 (LF-38, pp 1-18)
metabolism in bones of rats, effects of immunization on, 22:6745
metabolism in chickens, 22:51340
metabolism in exoskeleton and muscles of crayfish, 22:45421
metabolism in man in relation to time, analysis of, 22:31083
metabolism in man, effects of calcium content of diet on, 22:12775
metabolism in mice, effects of chelating agents on, 22:51583
metabolism in rats following inhalation in aerosols, 22:23404 (LF-38, pp 65-72)
metabolism in rats following injection, 22:23405 (LF-38, pp 79-87)
metabolism in rats, effects of age and calcium on, 22:47472
metabolism in rats, effects of calcium, phosphorus, and sex hormones on, 22:45404
metabolism in skeleton of dogs and man, 22:30991
metabolism in skeleton of man, design of biological model for analysis of, 22:28305
metabolism, use of whole-body counters to study, 22:43300 (AERE-PR/HPM-12)
migration and sorption in soils, liquid waste disposal experiments on, 22:2328(T) (JPRS-42565, pp 12-22)
monitoring in Australian environment during 1966, 22:23170
monitoring in Canada by milk and precipitation sampling, during September 1967, 22:18969 (NP-17269)
monitoring in environment at Pelindaba South Africa during 1966, 22:10763 (PEL-160)
movement in soils, model of, 22:51208
movement through Mohave sandy loam soils, effects of chelating agents on, 22:33565
power source for USSR Beta-2 isotopic generator, description of, 22:27470(T) (JPRS-45100)
production by US power reactors through 1990, 22:45245 (BNWL-716)
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in power reactors, economic aspects of, 22:119
properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
properties for use as heat sources, 22:8260
property data sheets for, 22:8689 (ORNL-4188)
radiation dose from, at groundlevel during 1954 to 1966 and 1967 to 1971, calculation of, 22:40716
radiation dose to man following ingestion or inhalation of titanate particles containing, β, 22:23509(R) (SC-CR-67-2729)
reactions with alkylarylsulfonic acid in aqueous solutions, extraction studies on, 22:10317
reactions with alkylarylsulfonic acids, effects of salts of alkali and alkaline earth metals on, 22:45166

reactions with clay fractions of soils, effects of, on cation uptake by plants, exchange, and leaching, 22:6795(R) (COO-414-6)
reactions with organic matter in soils, 22:6795(R) (COO-414-6)
recovery from radioactive waste, 22:48911
removal from aluminum, chemical and electrolytic methods for, 22:12422
removal from milk, pilot plant for, 22:502
removal from milk, use of large scale fixed-bed ion exchange system for, 22:31063
removal from radioactive wastes prior to disposal, use of adsorbents for, 22:51204 (SZS-9/68, pp 14-25)
removal from soils by cultivation and liming, 22:51404
retention by soil, effects of soil management systems and vegetation on, 22:6795(R) (COO-414-6)
retention in blood and soft tissues of mice, 22:28621 (ANL-7278, pp 1-94)
separation analysis of, in contaminated areas, 22:38298
separation by solvent extraction, design of pilot plant for, 22:2264 (EUR-3613)
separation from aqueous solutions using gelatin and foam formation, 22:51071
separation from ashed bone, fish meal, and milk, method for, 22:8197
separation from cesium-137-free fission product solutions, design of plant for, 22:4304 (EUR-3612)
separation from crushed bone in vitro, use of nitric acid for, 22:49204
separation from fission product solutions by ion exchange, 22:51081(P)
separation from milk using calcium pyrophosphate and strontium pyrophosphate, 22:4269(P)
separation from milk, ion exchange method for, 22:28473
separation from milk, performance of ion exchange processing plant for, 22:33816 (PHS-999-RH-28)
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
separation from uranium using silicotungstate, paper chromatographic method for, 22:8176
separation from waste solutions by ion exchange, 22:25449 (CEA-N-616, pp 72-85)
separation from yttrium-90 by thin-layer electrophoresis, 22:8183
separation from yttrium-90 using silicotungstate, paper chromatographic method for, 22:8176
separation of carrier-free, from fission products by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4236
separation of yttrium-90 from, by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
separation of yttrium-90 from, by sorption on glass powders, 22:30684
separation of yttrium-90 from, on carboxymethylcellulose filter papers by ring-oven method, 22:37844
sorption by clay soils near Moscow, 22:2327(T) (JPRS-42565, pp 1-11)
sorption by crushed bone, in vitro, 22:49204
sorption by pasture plants in Sweden, effects of fertilizers and lime on, 22:51565 (FOA-4-4322)
sorption by Sagami River sediments, 22:40216
sorption by winter rape from soils of South America, effects of anions, cations, and nutrients on, 22:51299 (FOA-4-4319)
sorption by zeolites, 22:45151
sorption from aqueous solutions by synthetic zeolites, effects of sodium chloride and humus materials on, 22:35903
sorption from soil by plants, effects of clay content on, 22:8539
sorption on soils, 22:30696
stratospheric residence time and interhemispheric mixing of, from fallout in rainwater, 22:33571
toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
toxicity in sheep in comparison to radium, 22:40829 (ORO-657, pp 18-34)
toxicity to beagle dogs following inhalation, 22:23401 (LF-38, pp 1-18)
toxicity to rats following inhalation, 22:23404 (LF-38, pp 65-72)
toxicity to rats following injection, combined effects of injected cesium-137 on, 22:23405 (LF-38, pp 79-87)
transport in earth atmosphere, effect of particle size on, 22:48951
transport through clay soils, effects of high-level waste salts on, (E), 22:21298 (DP-1124)
transport through soils, theory of, 22:25843
turnover rate in human children in relation to strontium/calcium ratio, 22:43305(R) (NYO-2753-6)
uptake and metabolism by animals and man, 22:8644
uptake and retention by skeletons of dogs and rats, effects of age and dose on, 22:6754
uptake by agronomic crops, effects of liming and soil type on, 22:6795(R) (COO-414-6)
uptake by algae in relation to calcium uptake, 22:21438
uptake by barley and beans, effects of clinoptilolite on reduction of, 22:25800 (UCLA-12-668, pp 37-58)
uptake by beans from soils, effects of mineral treatment of soils on, 22:30974
uptake by dead thallus of lichens, 22:51647
uptake by dogs, in relation to content of hydroxyproline in urine and development of bones, 22:10827(R) (UCD-472-114)
uptake by man following inhalation, 22:33715 (SZS-15/67)
uptake by man from fallout, relation of, to radiation dose, 22:43345
uptake by man, reduction of, by increased intake of calcium and stable strontium, 22:31077
uptake by plankton, effects of calcium content of lake water on, 22:47500
uptake by plants from soil, chemical and physical factors affecting, 22:8543
uptake by plants from soil, effects of depth of deposit on, 22:43314 (RISO-174)
uptake by plants in East Germany during 1964 to 1965, 22:12856
uptake by plants in Landes, France during 1964, autoradiography study of fallout, 22:31066
uptake by plants, effects of soil conditions on, 22:19291
uptake by plants, effects of soil properties on, 22:27901
uptake by rats from foods, effects of alginates on, 22:49262
uptake by rats, relation of content of calcium and fluorine in diet to, 22:51377
uptake by rats, transfer to offspring following, 22:14926
uptake by sausages, protective effects of casings against, 22:19340
uptake by Scenedesmus acutus, 22:4705
uptake by trees, effects of calcium content of leaf on, 22:6795(R) (COO-414-6)
uptake by Ulva lactuca, effects of pH on, 22:2488
uptake by vegetable crops, effects of mineral content of soil on, 22:6795(R) (COO-414-6)
uptake by wheat in relation to content of wheat products, 22:6739
uptake by wheat plants, effects of soil conditions on, 22:51359
uptake from alfalfa hay by milk of cows, 22:45511
uptake from atmosphere and soil by grasses, 22:45541
uptake from food and water by human adults and children in USSR during 1964 and 1965, 22:33802 (A-AC-82/G/L-1186)
uptake from food by deer and sheep, 22:6774(R) (UCD-34-P-104-8)
uptake from foods by man, 22:40725
uptake in human bones and bone marrow, from SNAP heat source burnup in space, 22:12535 (SC-CR-67-2792)
use as β source in hardness measurements, 22:12561(P)
use as electron source in power generators, 22:45252(P)
use as heat source for electric power generation, performance characteristics for, 22:19051
use as heat source in isotope powered lighthouse, 22:28019
use as heat source in RIPPLE, 22:12552
use as heat source in RIPPLE, 22:33608
use as heat source in SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
use as heat source in SNAP-21A, 22:23223 (MND-3322-25(Vol.2))
use as heat source in SNAP-21A, 22:28014(R) (MND-3322-7)
use as heat source in SNAP-23A, 22:30785
use as heat source in SNAP-23A, 22:12536(R) (WANL-3800-4)
use as heat source in SNAP-23A, 22:14679(R) (WANL-3800-9)
use as heat source in thermoelectric and thermionic generators for marine use, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
use as heat source in thermoelectric generators, 22:10514
use as heat source in undersea radioisotope thermoelectric generator, 22:23217 (CONF-670445-, pp 18.33-54)
use as radiation source for static electric charge removal, 22:33613
use as reference source for determining radiation hazard to man from re-entry of isotopic power devices, 22:38293
use as source in radiometric method for determining water content of soil, 22:48938
use as tracer to study radioisotope dispersion in sands, 22:19073
use for contact therapy, 22:51787
use for contact therapy of human pterygium, β, 22:51783
use for extracorporeal therapy of leukemia, 22:4682
use for removal of static charges from oils, 22:14732
use for therapy, monitoring of patients following, 22:51641
use in nuclear batteries, 22:23219 (DLR-MITT-66-07, pp 73-82)
use to determine water residence times in oceans, 22:45207
use with scintillator as standard light source, luminosity of, 22:47415
use with yttrium-91 in sealed β source, 22:19046 (N-67-23959)
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
yields from nuclear explosions, effects of, on radiation

  - dose to man, 22:23511 (UCRL-70788)
  - yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  - yields from uranium-238 spontaneous fission in uranium minerals and salts, (E), 22:39656
  - yields in thermal neutron fission of uranium-233 and -235, absolute, (E), 22:24855(R) (IN-1157(Rev.))
  - ^{90}Sr--^{90}Y, separation of carrier-free yttrium-90 from, by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4237
  - strontium-90--yttrium-90, thermal output of, 22:14433 (ORNL-4196, pp 66-89)
- STRONTIUM ISOTOPES Sr-91
  - beta decay of, gamma spectra, half-life, and decay scheme for, (E), 22:44681 (IS-T-234)
  - range of fission-fragment, in tungsten, (E), 22:9458
  - separation by solvent extraction using naphthenic acid, 22:35904
- STRONTIUM ISOTOPES Sr-92
  - yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
- STRONTIUM ISOTOPES Sr-95
  - gamma spectra, (T), 22:7706
  - standardization of, use of anticoincidence methods for, 22:14769
- STRONTIUM ISOTOPES Sr-96
  - metabolism in adult and young rats, 22:8486
  - production in proton fission of uranium, (E), 22:27168
  - toxicity in rats, effects of age on, 22:8486
- STRONTIUM ISOTOPES Sr-97
  - half-life, (E), 22:46732 (NP-17528)
  - neutron emission probability for, (E/T), 22:29994
- STRONTIUM ISOTOPES Sr-98
  - neutron emission probability for, (E/T), 22:29994
- STRONTIUM LANTHANUM COBALTATES
  - ferromagnetic phase in, relation of localized-electron to collective-electron transition to, (E), 22:15593
- **STRONTIUM NEPTUNIUM FLUORIDES**
  - preparation, properties, and structure of, 22:10252
- STRONTIUM NIOBATES
  - crystal structure and preparation of $SrNb_2O_6$, 22:47713
- STRONTIUM NITRATES
  - concentration of, use of beta backscattering method for determining, 22:28197
  - separation of cerium from, by solvent extraction using D2EHPA, complex formation and oxidation in, 22:47202 (BNWL-SA-1447)
  - strontium-90 incorporation in solutions of, effects of, on strontium-90 uptake by sausages, 22:19340
- STRONTIUM OXIDES
  - crystal defects in, calculations of formation energy, 22:52287
  - effects on γ-induced polymerization of substituted oxetane, 22:35848(P)
  - electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  - europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
  - formation of solid-solution Pb/sub 1-z/Sr/sub z/Ti/sub 0.46/Zr/sub 0.54/O_3, 22:45827
  - purity of research, evaluation of, 22:52289
  - radiation effects on sorptive properties of, for oxygen, γ and neutron, 22:12370
  - radioinduced color centers in deformed and undeformed single crystals of, neutron and x, (E), 22:17770
  - radioinduced F centers in, Faraday rotation studies of neutron, 22:52886
  - radioinduced thermoluminescence in, x, 22:41674
  - reactions with americium oxides, solid-state, 22:30548
  - thermodynamic properties of gaseous, 22:35776 (ORNL-TM-2105)
  - thermodynamic properties of gaseous, calculation using computer program TCDATA, 22:50222 (ORNL-4304)
  - Al_2O_3--CaO--SrO--ZrO_2, phase diagrams, 22:23887
  - Al_2O_3--CaO--SrO--ZrO_2, properties for use as heat-resisting materials, 22:23887
  - B_2O_3--Eu_2O_3--SrO, phase studies at 1100°C, 22:41123
  - B_2O_3--Ho_2O_3--SrO, phase studies of, 22:31515
  - B_2O_3--Nd_2O_3--SrO, phase studies of, 22:31515
  - B_2O_3--Sm_2O_3--SrO, phase studies at 1100°C, 22:41123
  - B_2O_3--SrO, solvent properties for rare earth oxides at 1100°C, 22:41123
  - BeO--SrO, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
  - CeF_3--SrO, phase studies, 22:17178
  - CeO_2--SrO, thermal expansion coefficients, 22:2698
  - Li_2O--SrO--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - Na_2O--SrO--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - SiO_2--SrO, phase studies of, 22:11081
  - SrO--Tc_2O_7, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - SrO--TcO_2, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
  - SrO--U_2O_5, magnetic properties of, 22:12318
- STRONTIUM PLUTONIUM FLUORIDES
  - preparation, properties, and structure of, 22:10252
- STRONTIUM PYROPHOSPHATES
  - sorptive properties for strontium-90, 22:4269(P)
- STRONTIUM SULFATES
  - decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  - dissolution of beta-radioactive crystals of, in water, 22:42775
  - radiation effects on solubility in water of, γ and neutron, 22:42775
  - solubility of sulfur-35-labeled precipitates of, in water, kinetics of, 22:33475
  - surface of solid, isotopic ion exchange measurements on specific, 22:47133
- STRONTIUM TANTALATES
  - crystal structure and preparation of $SrTa_2O_6$, 22:47713
- STRONTIUM THORIUM FLUORIDES
  - preparation, properties, and structure of, 22:10252
- STRONTIUM TITANATES
    - see also Barium Strontium Titanates
  - burnup of strontium-90 heat sources of, radiological hazards to man from, 22:12535 (SC-CR-67-2792)
  - iron-57 Moessbauer effect in, source--absorber studies, (E), 22:26460
  - phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
  - production of, 22:42811 (HMI-B-69)
  - property data sheets for Sr_2TiO_4, 22:8689 (ORNL-4188)
  - property data sheets for $SrTiO_3$, 22:8689 (ORNL-4188)
  - reactions with zirconium at 950 to 1600°C, 22:25320 (AERE-R-5671)
  - superconducting transition temperature of very thin films and whiskers of, predicted, (T), 22:7242
  - superconducting transition temperatures of semiconducting, (E/T), 22:1117
  - transition temperature of superconducting, anomalous behavior of, 22:11359
  - transition temperature of, model for calculation of superconducting, 22:24222
  - $SrTiO_3$--$SrZrO_3$--TiO_2--ZrO_2, phase studies of, 22:25320 (AERE-R-5671)
- STRONTIUM TUNGSTATES
  - radiation effects on structure of crystals of, at 77°K, EPR spectral studies on x, 22:27828
- STRONTIUM URANATES
  - magnetic susceptibility at 85 to 300°K, 22:16540
- STRONTIUM URANIUM FLUORIDES
  - preparation, properties, and structure of, 22:10252
- STRONTIUM ZIRCONATES
  - mechanical behavior of, effect of porosity on, 22:747(R) (AD-646925)
  - performance as electric insulation for high-temperature thermocouples, 22:15144 (GEMP-1002, pp 137-42)
  - physical properties of, measurement of, 22:669
  - $SrTiO_3$--$SrZrO_3$--TiO_2--ZrO_2, phase studies of, 22:25320 (AERE-R-5671)
- STROPHANTHIDIN
  - effects on cesium-134 transport in muscles of frogs, effects of sodium content on, 22:45387
- STRUCTURAL BEAMS
  - deflection of dynamically-loaded, UNIVALVE computer program for analysis of, 22:18665 (SC-RR-66-2682)
  - deflection of explosively-loaded clamped aluminum and steel, equipment for measurement of, 22:18668 (SC-RR-67-848)
  - mass matrix for prismatic segment, (T), 22:25625 (KAPL-M-6913)
  - response of Bernoulli--Euler, to repetitive impact with rigid body, 22:6227 (SC-TM-67-867)
  - shear strength of reinforced concrete, statistical analysis of, 22:272 (NP-17075)
  - wave phase velocity in, computer calculation of elastic, 22:7963 (SC-DR-67-816)
- STRUCTURAL COLUMNS
  - buckling under lateral restraint, 22:220
- STRUCTURAL ENGINEERING
  - book: Physical Metallurgy of Engineering Materials, 22:36429
  - materials used in, fracture of, 22:4791
- Structural Materials
    - see Building Materials
- STRUCTURAL PANELS
    - (See also specific panels, e.g., Plates and Windows.)
    - see also Plates
    - see also Windows
  - design of laminated radiation-resistant, 22:9417(P)
  - effects of stress on Celotex board, at 300 to 17000 psi shock loading, 22:2316 (IITRI-578-P-21-22)
  - materials for, properties of brittle, 22:52260 (CONF-670927)
  - testing physical and thermal properties of Unarcoboard-36, 22:40289 (BNWL-809)
- STRUCTURES
    - (See also specific structures, types of structures, and structural members by name.)
    - see also Underground Structures
  - damage claims for surface, from underground nuclear explosions, 22:37896
  - damage from ground shock, empirical method for prediction of, 22:27943 (TID-24483)
  - damage to Colombian and Venezuelan, from 1967 earthquakes, 22:39963 (NVO-99-25)
  - damage to low-rise, effects of Parkfield earthquake on, 22:12171 (NVO-99-19)
  - damage to Mercury, Nevada masonry, effect of nuclear

explosion-produced seismic waves on, 22:12470
damage to multistory, effects of earthquakes and underground nuclear explosions on, 22:12459 (NVO-99-30)
damage to surface building, following Salmon event, 22:2262
damage to surface, from Salmon Event nuclear explosion, 22:37899 (VUF-1029)
damage to urban, prediction of fire, 22:33579 (AD-661851)
damage to, spectral matrix method for prediction of, 22:23243 (NVO-99-33)
design of multi-story cylindrical, for protection of internal components and personnel from nuclear explosion shock, 22:51196
design of steel-frame, for housing and protection of electronic equipment from nuclear explosion shock waves, 22:51197
dynamic characteristics of multistory, effects of earthquakes and underground nuclear explosions on, (T), 22:12459 (NVO-99-30)
dynamics of cantilever-type, effects of stiffness and strength of horizontal and vertical members on, 22:18661 (NVO-99-31)
fire damage to, development and control of nuclear explosion-produced, 22:47305 (CONF-680527-1)
foundation construction for, use of radioisotopes in studies of, 22:37934(T) (AEC-tr-6933)
gamma attenuation by floors and roofs of multi-story, reduction factors for, (E/T), 22:34728 (AD-661091)
gamma doses in single-compartment above-ground concrete, calculation of, 22:31889
gas diffusion near, effects of flow field on, 22:45195 (TID-24190, pp 189-255)
joints in, radiation attenuation by, 22:6551
protection factors for, calculation of radiation, 22:45196 (TID-24190, pp 301-77)
response of high-rise, to ground motions, computer program for three-dimensional dynamic analysis of, 22:45259 (JAB-99-36)
roof washdown system for, relation with shielding, 22:40344 (AD-668220)
seismic stresses on, from earthquakes, (E/T), 22:12207(T) (ORNL-tr-1824)
wakes of, effects on pollutant diffusion of, 22:18952 (BNWL-481-1, pp 28-32)
wall openings in reactor, design of quick-acting seal for, 22:8288(P)

STRYCHNINE
effects on x-radiosensitivity of central nervous system of rats, mechanism of, 22:47625

STSF-1
see Exponential Piles

Sturgeon (Acipenser)
see Acipenser under Osteichthyes

STYRENE
determination in pyrolyzed polystyrene films, gas chromatographic, 22:33257
graft polymerization to irradiated poly(vinyl alcohol), oxygen consumption during, 22:8118
grafting on electron-irradiated rayon, effects of emulsifiers and oxygen on emulsion, 22:12374
grafting on γ-irradiated polytetrafluoroethylene, preparation of anion exchange membranes by, 22:8147
grafting on pre-irradiated rayon, effects on agitation on suspension, 22:12373
grafting on preirradiated polynosic rayon, effects of degree of swelling on, 22:33445
grafting on preirradiated rayon, kinetics of, 22:33444
meson (μ^-) residual polarization in, 22:38718 (JINR-P14-3809)
oxidation of butyl hydroperoxide, cyclohexyl hydroperoxide, diphenylmethyl hydroperoxide, deuterium isotope effects and rate of self-reactions of peroxy radicals in, 22:21076
polymerization of, effects of high pressure on cationic, 22:4194
polymerization to irradiated poly(vinyl alcohol), oxygen consumption during, 22:42704(T) (AEC-tr-6937, pp 12-20)
radiation effects on electric conductivity of dried, effects of additives and dose rate on, 22:8100(T) (AEC-tr-6908, pp 97-116)
radiation effects on, in tetrahydro-2-methylfuran at 77°K, ESR spectral studies on free radicals in γ, 22:8128
radiation effects on, in tetrahydro-2-methylfuran at 77°K, ESR studies of free radicals from γ, 22:42713(T) (AEC-tr-6937, pp 109-16)
radioinduced emulsion polymerization of, comparative study of chemical-initiated and γ, 22:30604
radioinduced emulsion polymerization of, effects of temperature on, γ, 22:23036(R) (TID-24281)
radioinduced graft polymerization of, onto Celcon or Delrin filaments, effects of N,N-dimethylformamide or methanol on rate of γ, 22:8094(T) (AEC-tr-6908, pp 42-7)
radioinduced graft polymerization of, onto Delrin filaments, effects of acids, alkali, and heat on products of γ, 22:8095(T) (AEC-tr-6908, pp 48-55)
radioinduced graft polymerization of, to cellulose in aqueous emulsion or methanol--water solution, properties of products of electron, 22:8119
radioinduced graft polymerization on polyethylene or paraffins, effects of crystallinity on yields from γ, 22:27752
radioinduced graft polymerization on polyethylene monocrystalline aggregate films, 22:21096
radioinduced graft polymerization on vinyl alcohol polymer, effects of carbon tetrachloride on γ, 22:33465
radioinduced graft polymerization onto hydrochloric acid lignin, effects of oxidation on products of γ, 22:33403
radioinduced graft polymerization to cellulose in aqueous emulsion or methanol--water solutions, properties of products of electron, 22:42703(T) (AEC-tr-6937, pp 21-32)
radioinduced graft polymerization with cotton, electron microscopic studies on products of γ, 22:21114
radioinduced graft polymerization with nylon, properties of products of, 22:33472(P)
radioinduced graft polymerization with rayon, properties of product of γ, 22:33466
radioinduced grafting of, to rayon, electron microscopic studies of γ, 22:23032 (AECL-2706, pp 29-49)
radioinduced grafting on polytetrafluoroethylene and polypropylene, γ, 22:25418
radioinduced grafting to cellulose, 22:14545(P)
radioinduced grafting to cellulose acetate, effects of nitrobenzene on γ, 22:14551
radioinduced grafting to cellulose, effects of methanol, solvents, and oxygen on, 22:33434
radioinduced grafting to polyethylene single-crystal films, 22:4182
radioinduced grafting to wool, effects of diffusion on γ, 22:6352
radioinduced ionic polymerization of, mechanism and rate of, 22:40144
radioinduced polymerization at 0 to 50°C, γ, 22:4223
radioinduced polymerization in wood combinations, gamma, 22:19683
radioinduced polymerization in wood, gamma, 22:52302 (BARC-331)
radioinduced polymerization of concrete-impregnated, properties of products of γ, 22:37775 (BNL-50082, pp 40-78)
radioinduced polymerization of dried, ionic propagation in γ, 22:12378
radioinduced polymerization of glassy, γ, 22:14542
radioinduced polymerization of, as function of temperature, γ, 22:37775 (BNL-50082, pp 40-78)
radioinduced polymerization of, effects of electric fields on rate of, 22:8124
radioinduced polymerization of, effects of electric fields on rate of, 22:42709(T) (AEC-tr-6937, pp 69-74)
radioinduced polymerization of, effects of electron scavengers on, 22:42710(T) (AEC-tr-6937, pp 75-83)
radioinduced polymerization of, effects of electron scavengers on, 22:8125
radioinduced polymerization of, effects of high electric field on, 22:33411
radioinduced polymerization of, in emulsion, kinetics of γ, 22:37801
radioinduced polymerization of, in wood, 22:10283
radioinduced polymerization of, rate constant for ionic, 22:8101(T) (AEC-tr-6908, pp 117-29)
radioinduced polymerization of, under anhydrous conditions, effects of scavengers on, 22:8099(T) (AEC-tr-6908, pp 79-96)
radioinduced polymerization of, with acrylonitrile in bulk, gels, and solutions, 22:14541
radioinduced polymerization of, with bis(2-chloroethyl) vinylphosphonate, mechanism of γ, 22:18849
radioinduced polymerization on glass fiber in ethanol solution, mathematical model for γ, 22:23065
radioinduced polymerization with bis(2-chloroethyl) vinylphosphonate, γ, 22:33386
radioinduced polymerization with cord and polyester foil, strength and adhesive properties of copolymers from γ, 22:18808 (INR-841/XVII/C)
radioinduced reaction with phenanthrenequinone, photolysis of oxetanes from γ, 22:14531
radiolysis of aqueous solutions of, pulsed-electron, 22:35833
radiolysis of, effects of organic solvents on pulsed-electron, 22:35834
radiolysis products of, 22:15141 (BNL-50057, pp 79-100)
acrylonitrile--styrene, radioinduced polymerization of concrete-impregnated, properties of products of γ, 22:37775 (BNL-50082, pp 40-78)
alkene--styrene, radioinduced polymerization with poly(vinyl chloride), 22:35861(P)
butadiene--styrene, polymers, radiation effects on curing of γ, 22:27747
divinylbenzene--styrene, polymers, ion exchange properties of resins of, containing phosphonic groups for uranyl nitrate, effect of porosity on, 22:4092
divinylbenzene--styrene, polymers, ion exchange properties of resins of, containing phosphonic groups for sodium and uranyl ions, 22:4086
divinylbenzene--styrene, preparation and properties of polymeric resins of, containing phosphonic groups,

22:4086
divinylbenzene--styrene, radiation effects on polymerization of ion exchange resins of, 22:12352
hydrocarbons--styrene, radiation effects on lubricating properties of radiopolymerized, 22:785(P)
hydrocarbons--styrene, radioinduced polymerization of, 22:785(P)
lignin--styrene, radioinduced polymerization of, 22:8145
methyl methacrylate--styrene, radioinduced polymerization on cotton fibers, γ, 22:45135(P)
p-bromostyrene--styrene, radioinduced polymerization of, 22:10296
p-chlorostyrene--styrene, radioinduced polymerization of, 22:10296
styrene--wood, radiation effects on, to improve structural properties, 22:10283
styrene--wood, radioinduced polymerization of, kinetics of, 22:35858
STYRENE, p-BROMO-
radioinduced polymerization of, 22:10296
p-bromostyrene--styrene, radioinduced polymerization of, 22:10296
STYRENE, p-CHLORO-
radioinduced polymerization of, 22:10296
p-chlorostyrene--styrene, radioinduced polymerization of, 22:10296
STYRENE, α-METHYL-
effects on energy transfer in electron- and uv-irradiated poly(methyl methacrylate), 22:2095 (COO-1224-15)
effects on radiolysis of poly(methyl methacrylate), 22:35856
preparation of, 22:6350
radiation effects on electric conductivity of dried, effects of additives and dose rate on, 22:8100(T) (AEC-tr-6908, pp 97-116)
radioinduced polymerization of, as function of temperature, γ, 22:37775 (BNL-50082, pp 40-78)
radioinduced polymerization of, γ, 22:6350
radioinduced polymerization of, rate constant for ionic, 22:8101(T) (AEC-tr-6908, pp 117-29)
radiolysis of, 22:6350
radiolysis of aqueous solutions of, pulsed-electron, 22:35833
radiolysis of, effects of organic solvents on pulsed-electron, 22:35834
STYRENE, ar-METHYL-
polymers, electric charge on monodisperse spheres of, aerosolized from suspensions, 22:51574 (UR-49-1000)
polymers, neutralization in tritium de-ionizer of monodisperse spheres of, aerosolized from suspensions, 22:51574 (UR-49-1000)
2,2'-p-phenylenebis[5-phenyloxazole]--poly (methylstyrene)--terphenyl, use as scintillator for beta detection, 22:10561
Styrene Oxide
see Benzene, (1,2-Epoxyethyl)-
STYRENE POLYMERS
analysis of pyrolyzed films of, gas chromatographic, 22:33257
clearance of gold-198- and scandium-46-labeled particles of, from lungs of rabbits, effects of sulfur dioxide on, 22:25751
effects on birch wood, combined effects of γ radiation on, 22:28713
electron charge distribution in, at 20 MeV, 22:52490
electron energy loss in, at 0.45 to 0.75 MeV, 22:25711 (COO-78-163, pp 1-38)
electron ionization energy losses in films of, (E/T), 22:38729(T) (SLAC-Trans-82)
electron slowing-down spectra in, secondary, 22:43853(T) (AEC-tr-6937, pp 6-11)
electron transmission through slabs of, 22:8043(T) (AEC-tr-6908, pp 6-9)
electrophoretic properties of monodispersed lattices of, in solutions, effects of lanthanum, neodymium, and thorium nitrates on, 22:27664
fracture toughness of, effects of loading and temperature on, 22:45745 (UCRL-18043, pp 107-53)
fracture toughness testing of, 22:26100 (UCRL-17911)
heat transfer from surfaces of, improved liquid wetting angle effects on, 22:10495(P)
krypton diffusion in polyvinyltoluene, used as scintillation detector, determination of, 22:25640
meson (μ⁻) residual polarization in, 22:38718 (JINR-P14-3809)
polystyrenes--ZnS(Ag), use in scintillation detectors for gamma and x radiation dose rate measurements at 0.03 to 3 MeV, 22:16913
positron annihilation in, (E), 22:26207
radiation dosimetry in tissue-equivalent phantoms of, 22:15005
radiation dosimetry in, proton, 22:15018
radiation effects on creep rates of, electron, 22:6346
radiation effects on electric conductivity of, x, 22:33401
radiation effects on electric properties of, transient x, (E), 22:39200
radiation effects on graft polymerization of polypropene with, structural effects on γ, 22:40145
radiation effects on mechanical and tensile properties of adhesives of, γ, 22:23908
radiation effects on molecular weights of, in the pre-gel region, γ, 22:14549
radiation effects on properties of, neutron, 22:15270
radiation effects on temperature dependence of electric conductivity of, γ, 22:42735
radioinduced grafting to wool, location of grafted polymer in, 22:35859
radioinduced luminescence of, effects of polymerization time on γ, 22:8154
radioinduced polymerization to cellulose, ir studies of, 22:45136
radioinduced polymerization with chlorotrifluoroethylene, solubility of products of γ, 22:37800
radiolysis of pure and solute-containing, spectral studies on electron, 22:10276
radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)
radiolysis of, mechanism of pulse electron, 22:42700 (AD-664883)
radiolysis of, pulse, 22:14513 (BNL-50057, pp 60-78)
sorption of radon daughters to disperse submicron aerosols of, mechanisms in, 22:51621
sorptive properties of aerosols of, for radon daughters, 22:37765
spectra of secondary electrons in, slowing down, 22:8117
stress effects in foams of, at shock loads of 300 to 17000 psi, 22:2316 (IITRI-578-P-21-22)
sulfonated, osmotic properties of, 22:20558
sulfonated, sodium salt, effects on reaction of hydrated electrons with metachromatic dyes, 22:42783
sulfonated, sodium salt, radiolysis of aqueous solutions of, reactions of hydroxyl radicals and hydrated electrons in pulse, 22:35868
thermal properties of, effects of radioinduced cross links on low-temperature, 22:22212
use in packaging radioactive materials for transport, 22:51198 (AERE-M-2086)
polybutadiene--polystyrene, radiation effects on curing of, γ, 22:27747
polystyrene--PuO_2, criticality of bare and plexiglass-reflected rectangular parallelepipeds of 5 hydrogen to plutonium ratio, measurement of, 22:37530 (BNWL-SA-1630)
polystyrene--PuO_2, criticality of rectangular-shaped lattices of, analysis of, 22:42164(R) (BNWL-775)
polystyrene--PuO_2, criticality studies of homogeneous systems of, 22:6114
STYRENESULFONIC ACID
neutron time-of-flight spectra in hydrated polymer of, (E), 22:11874(R) (JUL-463-NP)
Styrofoam
see Styrene Polymers
SU(3)
see Symmetry Groups SU(3)
SU(6)
see Symmetry Groups SU(6)
Subcritical Assemblies
see Exponential Piles
Subcritical Time-of-Flight Spectrum Facility
see Exponential Piles
SUBERIC ACID
deuterium exchange between heavy water and, 22:12327
SUBLIMATION
equipment for, design of, 22:4159(P)
SUBMARINE INTERMEDIATE REACTOR
steam generators for, testing of, 22:10437 (NAA-SR-12534)
SUBMARINE POWER PLANTS
description of British, analysis of reliability, 22:14234
Submarine Reactor Small
see Submarine Reactors (S1C)
SUBMARINE REACTORS
see also Submarine Intermediate Reactor
SUBMARINE REACTORS (S1C)
radioactivity content of environment at facility of prototype of, during 1965, 22:28502
SUBMARINES
description and history of U. S. nuclear powered, 22:30278
development program for advanced nuclear, JCAE hearings on, 22:48721
development program for advanced nuclear, JCAE hearings on, 22:48720
loss of U.S.S. Thresher, JCAE hearings on, 22:14415
nuclear-powered, air purification and control on, 22:31056(R) (AD-648505)
SUBSONIC FLOW
see also Supersonic Flow
SUCCINAMIC ACID, N-ALLYL-
radioinduced polymerization of solid-state, γ, 22:18853
Succinamic Acid, α-Amino-
see Asparagine
Succinamic Acid, N-[[2-Methoxy-3-[(1,2,3,6-tetrahydro-1,3-dimethyl-2,6-dioxopurin-7-yl)mercuri]-propyl]carbamoyl]-
see Meralluride
SUCCINAMIDE
yields in γ radiolysis of crystalline and liquid acetamide, 22:33450
SUCCINATE DEHYDROGENASE
effects on hydrogen exchange with deuterium or tritium between succinates and water, catalytic, 22:35789

- effects on tritium exchange between meso-2,3-ditritiosuccinate and water, catalytic, 22:35788
- radiation effects on activity of, in bacteria, effects of dose on γ, 22:28718
- radiation effects on activity of, in mitochondria of mice, effects of fasting on x, 22:31009
- radiation effects on activity of, in Paramecium, x, 22:36184
- radiation effects on activity of, in salivary gland tumors of mice, x, 22:23459
- radiation effects on activity of, in tumor cells from rats, x, 22:28377
- radiation effects on content of, in adrenal glands of rats, x, 22:14957
- radiation effects on content of, in intestines of rats, x, 22:40595
- radiation effects on, of mitochondria, uv, 22:28315
- radioinduced activation of, in Proteus vulgaris, uv, 22:21405(R) (CU-1803-12)

SUCCINATES
- hydrogen exchange with deuterium or tritium between water and, catalytic effects of succinate dehydrogenase on, 22:35789
- radiation effects on metabolism of, by mitochondria from rat liver, 22:8457
- tritium exchange between water and, catalytic effects of succinic dehydrogenase on, 22:35788

SUCCINIC ACID
- complexes with uranium, stability constants for, 22:47119
- deuterium exchange between heavy water and, 22:12327
- dihydrazide, radioprotective effects of, on mice, 22:8561(R) (COO-1223-10)
- effects on deuterium oxide-sensitivity of alkaloid production in Claviceps sp, 22:8456
- effects on fast neutron- and x-radiosensitivity of oxidative phosphorylation in mitochondria from brain of mice, 22:16994
- oxidation of deuterium-labeled, in biological systems, determination of rate of, 22:21405(R) (CU-1803-12)
- radiation effects on, ESR study of trapping of free radicals in γ, 22:35865
- radiolysis of aqueous solution of, products and reaction kinetics of γ, 22:2133
- radiolysis of tritium-labeled, yields of free radicals from auto-, 22:30641

Succinic Acid, Amino-
- see Aspartic Acid

SUCCINIC ACID, [(CARBOXYMETHYL)THIO]-
- radioprotective effects of, on mice and rats, 22:25863

Succinic Acid, 2,3-Dihydroxy-
- see Tartaric Acid

Succinic Acid, Hydroxy-
- see Malic Acid

SUCCINIC ACID, MERCAPTO-
- complexes with uranium, stability constants for, 22:47119
- complexes with uranyl ions, stability constants for, 22:47129

SUCCINIC ACID, METHYLENE-
- anhydride of, radioinduced polymerization with trioxane and maleic anhydride, 22:47190(P)
- complexes with uranium, stability constants for, 22:47119
- complexes with uranyl ions, stability constants for, 22:47129
- effects of anhydrous, on radioinduced polymerization of trioxane, 22:35845(P)
- radioinduced polymerization of derivatives of, 22:8157(P)
- radioinduced polymerization of derivatives of, with trioxane, 22:37810(P)
- radioinduced polymerization with vinyl monomers, 22:8157(P)
- synthesis by γ- and uv-radioinduced mutants of Aspergillus terreus, 22:23499

SUCCINIC ACID, METHYLENE-, DIMETHYL ESTER
- radioinduced polymerization of, in supercooled liquid phase, 22:14540

Succinic Acid, Oxo-
- see Oxalacetic Acid

SUCCINIMIDE
- allyl 5-norbornene-2,3-dicarboxylate--succinimide, radioinduced polymerization of solid, phase studies on, 22:109

SUCCINIMIDE, N-1,3-BUTADIENYL-
- polymerization of, 22:18835
- radioinduced polymerization on polyethylene, γ, 22:18835

SUCCINIMIDE, N-VINYL-
- radioinduced polymerization of liquid and solid, kinetics of γ, 22:14539
- radioinduced polymerization of solid, γ, 22:10288
- radioinduced solid-state polymerization of binary eutectic of, with monoallyl ester of 5-norbornene-2,3-dicarboxylic acid, 22:51036
- allyl 5-norbornene-2,3-dicarboxylate--N-vinylsuccinimide, radioinduced polymerization of solid, phase studies on, 22:109

SUCCINONITRILE, 2,3-DIMERCAPTO-
- complexes with actinides, preparation of, 22:30515

SUCCINONITRILES
- production in radiolysis of acetonitrile, mechanism of, 22:37775 (BNL-50082, pp 40-78)
- radiation effects on, ESR study of trapped electron and its reversible reaction in, 22:33433
- yields in gamma radiolysis of acetonitrile, effects of scavengers on, 22:16573

Succinoxidase
- see Succinate Dehydrogenase

SUCROSE
- content of growth solutions for paramecia, effects of, on uv-radiosensitivity of osmoregulation, 22:15121
- effects on porosity and density of irradiated plutonium oxide (PuO_2)--uranium oxide (UO_2) sintered powder, analysis of, 22:27488(R) (NUMEC-3524-39)
- radiation effects on aqueous solutions of, effects of, on growth of artichoke roots, 22:40519
- radiation effects on content of, in citrus fruits, low-dose, 22:49662(R) (ORO-3097-17)
- radiation effects on metabolism of, in man following therapy of extra-abdominal neoplasms, x, 22:28650
- radiation effects on mutagenicity of solutions of, for Vicia faba, γ, 22:31043
- radiation effects on nutrient properties of, γ, 22:19293
- radiation effects on optical rotation in, 22:27806
- radiation effects on optical rotation in, theoretical studies on, 22:27805
- radiation effects on solutions of, effects of, on mutations in Drosophila, γ, 22:51393
- radiation effects on, effects of, on carbohydrate metabolism in carrot cells, 22:10712
- radiation effects on, effects of, on chromosomes of Vicia faba root tip cells, 22:4715(R) (UCD-34-P-73-20)
- radioinduced aversion to, in mice, effects of dose rate on γ, 22:51891
- radioinduced aversion to, in mice, x, 22:23613
- radioinduced aversion to, in rats, effects of content of solution on x, 22:10858
- radioinduced aversion to, in rats, effects of dose and time on x, 22:43447
- radioinduced aversion to, in rats, effects of time of exposure on x, 22:49606
- radioinduced aversion to, in rats, γ and x, 22:49488(R) (ORO-2903-43)
- radioinduced formation of glyoxal and glyoxylic acid in solutions of, effects of hydrogen peroxide on γ, 22:23411(R) (NYO-3641-2)
- radiolysis of aqueous solutions of, yield of glyoxal from γ, 22:51471
- radiolysis of glassy aqueous solutions of, at 77°K, EPR studies of, 22:23052
- radiolysis of solutions of, effects of, on growth of Salmonella typhimurium, γ, 22:45461
- radiolysis of, yield of deoxy compounds from electron or γ, 22:42750
- radiolysis of, yields of free radicals from γ, 22:45110
- reactions with plutonium nitrate--uranium nitrate for production of plutonium--uranium monocarbide, 22:19609(R) (NYO-3713-3)

Sucrose 6-Glucosyltransferase
- see Dextransucrase

SUGAR PHOSPHATES
- see also Fructose Phosphates
- see also Glucose Phosphates
- see also Hexose Phosphates

SUGARS
- (See also the specific sugars.)
- see also Carbohydrates
- see also Glyceraldehyde
- see also Hexoses
- see also Lactose
- see also Maltose
- see also Sucrose
- see also Trehalose
- content of blood of animals in relation to radiosensitivity, 22:19269
- effects on photoreactivation of uv-irradiated spores of Bacillus stearothermophilus, effects of temperature on, 22:47643
- gamma ray attenuation in determination of coefficient of, 22:25829 (TID-24488)
- radiation effects on binding and compartmentalization of, by starved yeast cells, effects of, on carbon dioxide production, x, 22:51402
- radiation effects on content of reduced, in stored Korean chestnuts, γ, 22:40985
- radiation effects on content of reducing, in arracacha, γ, 22:43504
- radiation effects on content of reducing- and total, in citrus fruits, low-dose, 22:49662(R) (ORO-3097-17)
- radiation effects on content of, in blood of man, microwave, 22:21623
- radiation effects on content of, in blood of rabbits following administration of iron-59, β and γ, 22:21602
- radiation effects on content of, in blood of rabbits following injection of glycogen, x, 22:23623
- radiation effects on content of, in blood, uv, 22:33901(T) (JPRS-41315, pp 16-25)
- radiation effects on content of, in chestnuts, γ, 22:34002
- radiation effects on content of, in fruits, 22:52061 (CONF-670945)
- radiation effects on content of, in guavas, γ, 22:43503

radiation effects on content of, in peaches, effects of storage temperature and time on low-dose, 22:49662(R) (ORO-3097-17)
radiation effects on content of, in Peruvian carrots, γ, 22:45740
radiation effects on content of, in plants, effects of growth conditions on γ, 22:31281
radiation effects on content of, in plasma of embryonated chicken eggs, γ, 22:25980
radiation effects on content of, in potatoes, γ, 22:40988
radiation effects on content of, in sugar beets, effects of seed exposure on γ, 22:23677
radiation effects on sorption of, in human intestine, γ, 22:49547
radiation processing of, adverse effects of, 22:26018
radiation processing of, effects of, on chemical and microbiological properties, x, 22:40991
radiolysis of glassy aqueous solutions of, at 77°K, EPR studies of, 22:23052
radiolysis products of, radiomimetic effects of, on cultured vegetable tissues, 22:43261
radioprotective effects of, on yeast in apple preserves, γ, 22:43513
reaction kinetics of, with hydrated electrons and hydroxyl radicals, 22:52119
synthesis of primordial, 22:33734

SULFAGUANIDINE
effects on frequency of γ-radioinduced chromosome aberrations in Vicia faba, 22:51543

SULFAMATES
complexes with plutonium, spectra of, effects of sulfamic acid on, 22:27658

SULFAMIC ACID
analysis for oxygen by neutron activation, 22:30457
effects on spectra of monosulfamate complex of plutonium, 22:27658
reactions with nitrous acid in nitric acid, rate of, for use in oxidation control of plutonium--uranium separations, 22:40061

SULFAMIPYRINE
radioprotective effects of, on skin of man, uv, 22:45594

SULFANILIC ACID
use in spectrophotometric determination of cerium, 22:14467

SULFATES
see also Aluminum Sulfates
see also Americium Sulfates
see also Ammonium Aluminum Sulfates
see also Ammonium Iron Sulfates $NH_4Fe(SO_4)_2$
see also Ammonium Iron Sulfates $(NH_4)_2Fe(SO_4)_2$
see also Ammonium Sulfates
see also Ammonium Uranyl Sulfates
see also Antimony Sulfates
see also Barium Sulfates
see also Beryllium Sulfates
see also Bismuth Sulfates
see also Cadmium Sulfates
see also Calcium Sulfates
see also Cerium Sulfates
see also Cesium Sulfates
see also Chromium Sulfates
see also Cobalt Sulfates
see also Copper Sulfates
see also Dysprosium Ethyl Sulfates
see also Dysprosium Sulfates
see also Erbium Sulfates
see also Ethyl Sulfates
see also Europium Sulfates
see also Gadolinium Sulfates
see also Gallium Sulfates
see also Germanium Sulfates
see also Glycine Sulfates
see also Hafnium Sulfates
see also Holmium Sulfates
see also Indium Sulfates
see also Iridium Sulfates
see also Iron Sulfates
see also Lanthanum Ethyl Sulfates
see also Lanthanum Sulfates
see also Lead Sulfates
see also Lithium Sulfates
see also Lutetium Sulfates
see also Magnesium Sulfates
see also Manganese Sulfates
see also Mercury Sulfates
see also Methyl Sulfates
see also Neodymium Ethyl Sulfates
see also Neodymium Sulfates
see also Nickel Sulfates
see also Palladium Sulfates
see also Plutonium Sulfates
see also Polonium Sulfates
see also Potassium Sulfates
see also Potassium Uranium Sulfates
see also Potassium Uranyl Sulfates
see also Praseodymium Sulfates
see also Radium Sulfates
see also Rare Earth Sulfates
see also Rhodium Sulfates
see also Rubidium Sulfates
see also Ruthenium Sulfates
see also Samarium Sulfates
see also Scandium Sulfates
see also Silver Sulfates
see also Sodium Aluminum Sulfates
see also Sodium Aryl Sulfates
see also Sodium Phenyl Sulfates
see also Sodium Sulfates
see also Sodium Uranium Sulfates
see also Strontium Sulfates
see also Terbium Sulfates
see also Thallium Sulfates
see also Thiosulfates
see also Thorium Sulfates
see also Thulium Sulfates
see also Tin Sulfates
see also Titanium Sulfates
see also Uranium Sulfates
see also Uranyl Sulfates
see also Vanadium Sulfates
see also Ytterbium Sulfates
see also Yttrium Sulfates
see also Zinc Sulfates
see also Zirconium Sulfates
analysis for oxygen isotopes, 22:10189
analysis for thorium, 22:10196
analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
analysis of naturally occurring, for oxygen-18, 22:14466
content in sandstone at Shirley Basin, Wyo, 22:27929
content of brain, tracer study of effects of cerebrospinal fluid on, 22:40607
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
determination in air using sulfur isotopic ratio measurements, 22:177 (BNL-11848)
determination in aqueous solutions by automatic radiometric method, 22:18687 (EUR-3738)
determination in brine by automatic radiometric method, 22:18687 (EUR-3738)
determination in uranium, method for, 22:27530 (CEA-N-816, pp 9-65)
determination of, substoichiometric isotopic-dilution method for, 22:10186
determination on paper chromatograms, radiometric, 22:10183
determination using thorium complexes of pyrocatechol violet, spectrophotometric, 22:10198
effects of adsorbed, on density of hot-pressed beryllium oxide, 22:11063
effects on cobalt, copper, and nickel ion-catalyzed, on oxidation of water, oxygen-18 isotope effects on, 22:27660
effects on colorimetric determination of uranium, 22:33262
effects on determination of fluorides by thermometric titration, 22:4039
effects on determination of scandium by atomic absorption, 22:45023
effects on distribution of americium, curium, and europium in cation exchangers or bis(2-ethylhexyl) phosphate in toluene, 22:37818
effects on electrode processes in polarographic reduction of uranyl ions, 22:18782
effects on gravimetric determination of zirconium, 22:33264
effects on precipitation of molybdenum and tungsten with zirconium hydroxide, 22:8063
effects on solvent extraction of plutonium from nitric acid solution by phosphonates and phosphinates, 22:16648 (UJV-1312)
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
metabolism of sulfur-35-labeled, by rumen microorganisms of sheep, 22:40573
radiation effects on uptake of, by cultures of guinea pig skin, laser, 22:30962
radioinduced formation of radicals of, in ice matrices, electron transfer in, 22:2150
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
reaction with hexavalent neptunium to produce heptavalent neptunium, 22:45058
separation from aqueous solutions using hydrous manganese oxides and manganese-iron oxides, electrophoretic, 22:14581
separation of labeled, from phosphate ions by coprecipitation with iron hydroxide, 22:45171
separation of niobium, tantalum, and zirconium from, by solvent extraction using phosphoryl compounds, 22:6403
sorption on copper, nickel, and zirconium surfaces, 22:10917
use of sulfur-35-labeled, for determining volume of extracellular fluid in dogs, 22:14977

SULFATHIAZOLE
effects on dissociation in Bacillus brevis, 22:47504

Sulfhydryl Group
see Mercapto Group

Sulfide, Bis(2-chloroethyl)
    see Mustard Gas
Sulfide, Dimethyl
    see Methyl Sulfide
SULFIDE, METHYL PHENYL
  deuterium exchange between methyl sulfoxide and, catalytic effects of lithium and potassium tert-butoxide on, 22:45087
SULFIDES
    see also Actinide Sulfides
    see also Arsenic Sulfides
    see also Berkelium Sulfides
    see also Cadmium Chromium Sulfides
    see also Cadmium Sulfides
    see also Calcium Zinc Sulfides
    see also Carbon Sulfides
    see also Carbonyl Sulfide
    see also Cerium Sulfides
    see also Chromium Sulfides
    see also Cobalt Sulfides
    see also Copper Rhodium Sulfides
    see also Copper Sulfides
    see also Dysprosium Sulfides
    see also Ethylene Sulfide
    see also Europium Sulfides
    see also Germanium Sulfides
    see also Hydrogen Sulfides
    see also Indium Sulfides
    see also Iron Chromium Sulfides
    see also Iron Sulfides
    see also Lanthanum Sulfides
    see also Lead Sulfides
    see also Manganese Sulfides
    see also Molybdenum Sulfides
    see also Neodymium Sulfides
    see also Nickel Sulfides
    see also Niobium Sulfides
    see also Plutonium Sulfides
    see also Potassium Sulfides
    see also Praseodymium Sulfides
    see also Radium Sulfides
    see also Rare Earth Sulfides
    see also Scandium Sulfides
    see also Silicon Sulfides
    see also Sodium Sulfides
    see also Thorium Sulfides
    see also Tin Sulfides
    see also Tungsten Sulfides
    see also Uranium Oxide Sulfides
    see also Uranium Sulfides
    see also Vanadium Sulfides
    see also Ytterbium Sulfides
    see also Yttrium Sulfides
    see also Zinc Sulfides
    see also Zirconium Sulfides
  analysis of meteoritic nodules of, for vanadium, neutron activation, 22:30474
  analysis of nodules of, for gold by neutron activation methods, 22:18718
  analysis of ores of, for rubidium and strontium, age estimation from, 22:50935
  book: Radiolysis of Sulfur Compounds, 22:12394
  density of sintered, effects of porosity and temperature on, (E/T), 22:31513
  effects on corrosion of alloys by saline water, 22:26029 (ORNL-4229, pp 71-83)
  effects on radioprotective effects of AET and serotonin in mice, 22:17032
  mechanical properties for high temperature reactor applications, 22:4880
  radiation effects on content of protein, in rats, ionizing, 22:51485
SULFINYL (FREE RADICAL)
  electron spin resonance spectra of gas-phase, hyperfine interactions in, 22:11217
SULFITES
    see also Ammonium Sulfites
    see also Ammonium Thorium Sulfites
    see also Antimony Sulfites
    see also Hyposulfites
    see also Potassium Sulfites
    see also Potassium Thorium Sulfites
    see also Sodium Sulfites
    see also Sodium Thorium Hydroxide Sulfites
    see also Sodium Thorium Sulfites
    see also Sodium Uranium Sulfites
    see also Thorium Chloride Hydroxide Sulfites
    see also Thorium Hydroxide Sulfites
    see also Thorium Oxide Sulfites
    see also Thorium Sulfites
    see also Uranyl Sulfites
  effects on precipitation of molybdenum and tungsten with zirconium hydroxide, 22:8063
  radiation effects on, ESR studies of unstable intermediates in, 22:25405
  radioprotective effects of, against radiolysis of atropine, lidocaine, and morphine in aqueous solutions, γ, 22:52099
  reduction by bacteria, isotope effects on, 22:40613
SULFOBROMOPHTHALEIN SODIUM
  evaluation of iodine-131-labeled, for liver scanning, 22:4630 (UCLA-34-P-119-16)
SULFONAMIDES
  effects on uv-radiosensitivity of skin, 22:40770
  radiation effects on content of, in blood of rats, 22:21614
SULFONIC ACIDS
    see also Methanesulfonic Acid
    see also Taurine
    see also Toluenesulfonic Acid
  mutagenic effects of alkyl alkane derivatives of, on barley and yeast, 22:21465(R) (RLO-353-22)
  radioinduced preparation of, from sulfur dioxide, oxygen, and hydrocarbon, 22:4221(P)
  reactions of foams of substituted, with strontium-90 and yttrium-90, effects of salts of alkali and alkaline earth metals on, 22:45166
  reactions of substituted, with cerium-144, strontium-90, and yttrium-90, extraction studies on, 22:10317
SULFONIUM COMPOUNDS
  (3-amino-3-carboxypropyl) dimethylsulfonium chloride, radioprotective effects of, in man, 22:33882
  dimethyl (9-fluorenyl) sulfonium bromide, radiation effects on, ESR spectra of free radicals from x, 22:23053
  dimethyl-2-phenethylsulfonium bromide, reactions with sodium hydroxide, effects of dimethyl sulfoxide and deuterium on, 22:2044
  dimethylphenethylsulfonium bromide, reactions in deuterated and normal water, mechanism of isotope effects in elimination, 22:4105
  methyl methionine sulfonium chloride, effects on platelet count of irradiated rats, 22:47578
  radioprotective effects of, 22:31118
SULFOXIDE, PHENYL p-TOLYL
  oxygen-18 exchange in acetic or chloroacetic acid, 22:42678
  racemization in acetic or chloroacetic acid of, 22:42678
SULFUR
  abundance in chondrites, (T), 22:2727
  abundance in galactic cosmic rays, (T), 22:17431
  abundance in HD 30353, (T), 22:868
  abundance in HR 774, (E), 22:23983
  abundance in NGC 604, (E), 22:17221
  abundance in photosphere, (E), 22:36618
  abundance in photosphere, (E), 22:31550
  abundance in photosphere, (E), 22:23932
  abundance in solar corona, (T), 22:849
  abundance of, solar, (T), 22:13206
  analysis for tellurium using 2-mercapto-4-(2-naphthyl)-Δ^2-1,3,4-thiadiazoline-5-thione, extraction-photometric, 22:16428
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Radiolysis of Sulfur Compounds, 22:12394
  casting pellets of, for use in neutron dosimetry, 22:12273 (K-1720)
  compounds with thorium or uranium and antimony, arsenic, bismuth, or phosphorus, preparation and structure of, 22:47118
  content in hydrocarbons, use of x-ray sources for determining, 22:4494
  content in protein fractions, densitometer for electrophoretic determination of, 22:2453 (ORNL-IIC-10(Vol.1), pp 282-97)
  content of Green and Round Lakes, Fayetteville, New York, 22:45182
  corrosive effects on K Monel, stress, 22:38515 (RCN-91)
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by mass spectrometry using negative surface ionization method, 22:6265
  determination by neutron activation analysis using beta absorption, 22:5790(T) (CEA-tr-A-1898)
  determination by neutron detection following alpha reactions (α,n), 22:7994(T) (ANL-Trans-543)
  determination in alloy steel by neutron activation methods, 22:35765
  determination in aluminum and magnesium by neutron activation techniques, 22:47083
  determination in coal, portable x-ray fluorescence analyzer for, 22:30883
  determination in coal, x-ray fluorescence analysis techniques for, 22:4430 (ORO-3224-12)
  determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
  determination in heavy oils, x-ray absorptiometry method for, 22:256 (ORNL-IIC-10(Vol.2), pp 723-45)
  determination in high-purity selenium by neutron activation methods, 22:45019
  determination in hydrocarbons by x-ray-absorption methods, 22:33211
  determination in iron meteorites, 22:35749
  determination in iron meteorites, absorptiometric, 22:3 (AERE-R-5254)
  determination in oil by neutron activation, 22:4308 (TID-24029)
  determination in oil products by absorption of bremsstrahlung of tritium, 22:37697
  determination in organic reactor coolants, 22:12224 (NP-17239)

- determination in petroleum products by fast-neutron activation methods, 22:51
- determination in petroleum, effects of interfering elements on activation, 22:48831
- determination in plutonium sulfide and uranium sulfide--plutonium sulfide mixture, amperometric, 22:8015
- determination in uranium sulfides, 22:37639(T) (ANL-Trans-610, pp 1-56)
- determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
- determination in zone-refined tungsten, mass spectrographic, 22:25316
- determination of trace amounts of, in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
- diffusion in carbon steel, effects of rare earths on, 22:7003
- diffusion in crystalline niobium, effects of temperature on, 22:17133
- diffusion in monocrystals of molybdenum at 2220 to 2470°K, 22:34055
- diffusion in nickel or steel, Auger electron emission analysis of surface segregation, (E), 22:21866
- diffusion in zirconium at 870 to 1250°C, 22:615
- distribution in steel, use of sulfur-35 as tracer in autoradiographic studies of, 22:8324
- effects in presence of uranium on properties of carbon steels, 22:10947 (NP-17211)
- effects on color centers in potassium chloride crystals, (E), 22:15574(T) (NP-tr-1614)
- effects on crosslinking of rubber, 22:25396
- effects on ESR spectra of KSH doped KCl and KBr crystals, (E/T), 22:41649(T) (NRC-TT-1311)
- effects on grain structure of cast molybdenum--uranium alloys, 22:43602
- effects on molecular crosslinking in organisms, relation of, to aging, 22:49193
- effects on radioinduced structural transformations in rubber, 22:47160
- effects on recrystallization of TD nickel, 22:38583
- effects on x-radiosensitivity of sunflower seedlings, 22:43478
- electron reactions with, ionization cross sections for, (T), 22:45931
- electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
- energy level transition probabilities for atomic, 22:2811
- forbidden lines of neutral, in solar Fraunhofer spectrum, (E), 22:36618
- gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
- identification of forbidden line of, in solar spectrum, (E), 22:31550
- lifetime by electron collision using phase-shift method, radiative, 22:41331
- meson (μ^-) capture at rest using polarized beams, asymmetry of neutron angular distribution from, (E), 22:35253
- meson (μ^-) capture at rest, neutron energy spectra from, (E), 22:35254
- meson (μ^-) reactions with, relative intensities of K x rays from, (E), 22:1008
- metabolism in bacteria, isotope effects on, 22:40613
- neutron capture by, resonances in fast, (E), 22:27068
- neutron capture resonance parameters at 1 to 100 keV, (E), 22:20578 (WASH-1079)
- neutron capture using polarized beam, γ circular polarization from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron differential elastic and inelastic scattering cross sections at 5.95 MeV, (E/T), 22:32526
- neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
- neutron differential elastic scattering cross section and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
- neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
- neutron differential elastic scattering cross sections at 60 to 226 keV, angular distributions for, (E), 22:11948(R) (NP-17216)
- neutron inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
- neutron inelastic scattering at 2.8 MeV, γ angular distributions from, (E), 22:35249 (AD-663112)
- neutron reactions and scattering at 14 MeV, γ spectra from, (E), 22:44642
- neutron total cross section at 0.0022 to 0.266 eV, measurement using time-of-flight method, (E), 22:20548
- neutron total cross section at 0.3 to 30 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron total cross section at 14.7 MeV, (E), 22:44649
- neutron total cross section at 4.5 to 13 MeV, fluctuations in, (E), 22:20537
- neutron total cross section at 5.3 to 6.3 MeV, measurement using time-of-flight method, (E), 22:20523
- neutron total cross sections at 1.8 to 2.6 MeV, (E), 22:48488
- neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
- nuclear charge distributions from μ-mesic x-ray spectra, (E), 22:5778
- nucleon inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
- performance as thermal booster in calciothermic reduction of niobium pentachloride, 22:43548
- photon incoherent scattering cross section at 30 to 130 keV, (E/T), 22:17389
- photon reactions (γ,n) at 30 MeV, cross sections for, (E), 22:11921
- photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
- preparation of films of, for use as neutron activation detectors, use of polyvinyl alcohol for, 22:14814
- purification for use in neutron dosimetry, 22:12273 (K-1720)
- radiation effects on allotropic changes of, 22:4135
- radiation effects on oxidation of, by Thiobacillus thiooxidans, uv, 22:23686
- radiation effects on production of carrier-free phosphorus-32 in, neutron, 22:18786
- radiation effects on urinary excretion of, by rats, ionizing, 22:51485
- radiation effects on, nature of phosphorus-32 produced by neutron, 22:16605
- radioinduced formation of radicals of, in lysozyme and RNAase, fast neutron, γ and proton, 22:12820
- radioinduced thermoluminescence of, effects of phase transitions on x, 22:16593
- radioisotopes produced by cosmic radiation during space flight, 22:19400(R) (BNWL-531-1)
- radioprotective effects of organic compounds containing, on nucleoproteins, 22:31143
- removal from fuels and flue gases, methods for and importance of, 22:214(T) (ANL-Trans-520)
- role in x-radioprotective effects of Micrococcus radiodurans extracts on Escherichia coli, 22:31172
- separation from phosphorus by solvent extraction, 22:12355
- separation from phosphorus by sorption on magnesium dioxide, 22:157
- separation from various irradiated targets by radiochemical method, 22:8027
- sorption by manganese dioxide from nitric acid, 22:157
- spectra of highly ionized, solar, (E), 22:34293
- spectra of, effect of elastic collisions of ion lines, 22:17353
- spectral line tabulations for atomic, below 2000 A, 22:19737 (NRL-6648)
- Stark effect constants for, quadratic, (T), 22:26204
- use for measuring fast neutron flux by activation, technique for increasing efficiency of, 22:21320(T) (ORNL-tr-1842)
- use for measuring fast neutron flux by activation, calibration of, 22:21321(T) (ORNL-tr-1843)
- use in alumino-thermic reduction of tantalum pentoxide for production of tantalum, 22:28763
- use in production of graphite for reactor moderators, 22:41094(P)
- use of technetium-99-labeled colloidal, for diagnosis of infections in kidneys of dogs and rats, 22:28330
- use of technetium-99-labeled colloids of, for scintiscanning, 22:4645
- x-ray absorption coefficients for, in 2- to 200-A region, 22:11199

SULFUR CHLORIDES

- effects on radioinduced crosslinking of polyolefins, 22:14544

SULFUR DIOXIDES

- cesium scattering on, angular distributions from, 22:8994 (TID-24203, pp 1-3)
- content of atmosphere at Hanford site, 22:6793 (BNWL-564)
- determination by radio-release method using krypton-85-labeled clathrates, 22:16421
- determination in air using sulfur isotopic ratio measurements, 22:177 (BNL-11848)
- determination in atmosphere by radio-release method using chlorine-36 or iodine-131, 22:16421
- determination in atmosphere, colorimetric, 22:21029 (SC-M-67-3044)
- determination in stack gases by radioisotope methods, 22:30496
- dilution and transfer of radioactive, design of equipment for safe, 22:4326
- effects on lung clearance of aerosol particles in rabbits, 22:25751
- emission at Chicago, plans for control of, 22:35940(R) (ANL/ES-CC-002)
- oxidation of, porous structure of vanadium catalyst for, 22:60(T) (TT-65-50400/4-6)
- pollution of urban atmosphere by, instrumentation for measurement of, 22:40234 (AECL-2787, pp 271-4)
- potassium scattering on, angular distributions from, 22:8994 (TID-24203, pp 1-3)
- radioinduced polymerization of, with 2-methylpropene at -78 and -196°C, 22:4171
- radioinduced polymerization of, with 3-methyl-1-butene, 4-methyl-1-pentene, and 2-methylpropene, 22:8098(T) (AEC-tr-6908, pp 74-8)
- radioinduced polymerization of, with vinyl chloride, 2-vinylpyridine, 4-vinylpyridine, or 4-vinylcyclohexene at -20 to 75°C, γ, 22:4193

  radioinduced polymerization with gaseous ethylene, effects of solubility on yields in γ, 22:37775 (BNL-50082, pp 40-78)
  radioinduced polymerization with vinyl chloride at -196°C to room temperature, γ, 22:42739
  radioinduced reactions of, with hydrocarbons and oxygen to yield sulfonic acids, 22:4221(P)
  reactions of gaseous, with irradiated amide crystals, products of, 22:37775 (BNL-50082, pp 40-78)
  reactions with free radicals produced by radiolysis of polymers of high molecular weight, 22:37779(T) (ORNL-tr-1969)
  reactions with graphite at 700 to 1040°C, effects of added carbon dioxide and carbon monoxide on products of, 22:35770 (BNWL-SA-1849)
SULFUR FLUORIDES
  binding energies of, 22:52257 (ANL-7425, pp 94-129)
  binding energies of, molecular orbital calculations of, 22:36543 (ANL-7450, pp 39-74)
  boiling heat transfer and natural convection in sulfur hexafluoride in critical point region, 22:45244
  determination in methane by gas chromatography, 22:14428 (ORNL-4196, pp 33-44)
  effects on decontamination of fission products by volatilization of uranium and its compounds, 22:33545
  effects on formation of nitrogen and phenol from γ-radiolysis of benzene--nitrous oxide, 22:42765
  effects on fragmentation of excited ions in gamma radiolysis of liquid 2,2-dimethylpropane and 2,2,4-trimethylpentane, 22:10274
  effects on γ-induced luminescence from phosphors in cyclohexane, 22:27759
  effects on γ-radiolysis of cyclohexane, 22:2156
  effects on γ-radiolysis of gaseous hydrochloric acid, 22:16623
  effects on γ-radiolysis of gaseous hydrogen halides, 22:6316 (PRNC-105)
  effects on γ-radiolysis of solid cyclohexane, 22:12345
  effects on hydrogen yields from γ-radiolysis of methylcyclopentane, 22:33438
  effects on mechanism of hydrogen formation in gamma and x radiolysis of gaseous hydrochloric acid, 22:18823
  effects on nitrogen yields from γ-radiolysis of cyclohexane--nitrous oxide solutions, 22:27759
  effects on radiolysis of gaseous hydrogen bromide, 22:40129
  effects on radiolysis of water--heavy water mixture, 22:2159
  effects on x-radiolysis of gaseous hydrogen bromide, 22:23050
  effects on x-radiolysis of water vapor containing methanol, 22:35853
  effects on yields from γ-radiolysis of normal and deuterated cyclohexane in xenon matrices at 77°K, 22:27797
  effects on yields from radiolysis of ammonia, 22:2127
  effects on yields from x-radiolysis of water vapor, 22:27798
  effects on yields in γ radiolysis of cis- or trans-2-butene in argon, 22:33473
  effects on yields in radiolysis of tetrachloroethylene in dilute pentane solutions, mechanism of, 22:23034 (IA-1128, pp 78-96)
  effects on yields in radiolysis of vaporous carbon tetrachloride--methylcyclohexane, 22:103
  effects on yields in radiolysis of vaporous methylcyclohexane, 22:102
  electric discharges in, boundary conditions in wall-stabilized arcs, (E/T), 22:48121
  electron attachment at 273 to 473°K to, cross sections for, (E), 22:15328 (ORNL-TM-1444)
  electron attachment by, in ionized argon flows at high temperatures, (E), 22:41340
  photolysis of, in presence of acetylenes, propene, and vinyl chloride, ESR spectral studies on free radicals produced by, 22:96(R) (RRL-2310-214)
  properties of SF_6, as working fluid for shock tube testing, 22:4306 (SCL-DR-67-49)
  reactions with soils, 22:6436 (ORNL-4168, pp 1-60)
  shock properties of, determination in cold-gas shock tube, 22:1933 (SCL-DR-67-88)
  sodium atom scattering by, velocity dependence of total cross sections for, (E), 22:11235
  bromomethane--SF_6, radiolysis of cyclohexane solutions of, yields in, 22:30591(R) (RRL-2310-231)
  charcoal--SF_6, radiation effects on, products from neutron, 22:10265(R) (ORO-3632-1)
SULFUR IONS
  detection of emission lines of S III in spectrum of Seyfert galaxy NGC 4151, (E), 22:41187
  energy loss and stopping in Mylar, (E/T), 22:38796
  energy loss in gold at 19 to 40 MeV, 22:7163
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  radii in alkaline earth sulfide ionic crystals, 22:52287
  resonance lines in solar spectra, oscillator strengths for, (T), 22:876
  spectra in star BD + 10°2179, (E), 22:26140
  spectral lines of, electron-impact broadening of, (T), 22:52349
  stopping power in gases at 5 to 90 MeV, (E), 22:43920
  valence changes in sulfur-35-doped and neutron-irradiated silver chloride, 22:16614
SULFUR ISOTOPES
  abundance ratio measurements of, by balance method, mass-spectrometric, 22:6264
  content in ore deposits at Great Slave Lake area, Canada, 22:51088
  content in ore deposits at Yellowknife Area, Canada, 22:51088
  determination of variations in ratios of, instruments for, 22:6262
  energy-level parameters for, data compilation for, (E), 22:9819
  nuclear wave functions for, determination using direct reactions, (E/T), 22:3684
  separation of, 22:37938 (ORNL-4271)
  use of ratios of, for predicting origination of atmospheric pollution, 22:37775 (BNL-50082, pp 40-78)
SULFUR ISOTOPES S-27
  production by neutron irradiation of element, minimizing cost function for, 22:30609
SULFUR ISOTOPES S-29
  decay by delayed proton emission, (E), 22:29913
SULFUR ISOTOPES S-30
  energy levels from silicon-28 (He-3,n) reactions, (E), 22:20515
SULFUR ISOTOPES S-31
  energy levels from sulfur-32 (He-3,α) reactions, spins and parities of, (E), 22:3685
  energy levels from sulfur-32 (p,d) reactions, spectroscopic factors for, (E), 22:44664
  energy levels from sulfur-32 (p,d) reactions, spins and spectroscopic factors for, (E), 22:35274
  production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
SULFUR ISOTOPES S-32
  alpha elastic and inelastic scattering at 25 MeV, angular distributions for, (E), 22:48502
  alpha elastic scattering at 10 to 18 MeV, optical-model analysis of angular distributions for, (E), 22:27019
  alpha elastic scattering at 10.0 to 17.5 MeV, optical-model analysis of angular distributions for, (E), 22:18176
  alpha elastic scattering at 18 to 50 MeV, model for backscattering in, 22:32723
  alpha reactions (α,p) at 6 to 8 MeV, γ Doppler shift attenuation factors for, (E), 22:32512(R) (AECL-3108)
  description using Hartree--Fock method with equivalent nonlocal potentials, (T), 22:35385
  deuteron differential elastic scattering cross section at 28 MeV, angular distribution for, (E), 22:53100
  deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
  deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
  deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
  deuteron inelastic scattering at 12 MeV, spin-flip, (E), 22:27011
  deuteron reactions (d,α) at 4.5 to 5.3 MeV, angular distributions and excitation functions for, (E), 22:26932(R) (NP-17434)
  deuteron reactions (d,He-3) with, angular distributions for, (E), 22:18174
  deuteron reactions (d,He-3) with, spectroscopic data from, (E), 22:5809(R) (ANL-7354)
  deuteron reactions (d,t) and (d,He-3) at 28 MeV, angular distributions for, (E), 22:26931 (LYCEN-6789)
  deuteron reactions (d,t) and (d,He-3) at 28 MeV, differential cross sections for, (E), 22:53100
  electron inelastic scattering at 0 to 300 MeV/c, E1 and M2 matrix elements for, (T), 22:26926
  electron reactions (e,e'p) with quasielastic scattering, (E), 22:27381
  energy level at 4.46 MeV, spin and parity of, (E), 22:32526
  energy levels at 8.79 to 10.26 MeV from chlorine-32 beta decay, alpha and proton emission and spin and parity assignments, (E), 22:32544
  energy levels from alpha inelastic scattering, collective enhancement factors and deformation parameters for, (E), 22:20534
  energy levels from α inelastic scattering, deformation parameters for, (E), 22:48502
  energy levels from phosphorus-31 (d,n) reactions at 4.9 MeV, isobaric analog, (E), 22:26966
  energy levels from phosphorus-31 (p,α) reactions and proton elastic scattering, (E), 22:24841
  energy levels from phosphorus-31 (p,α) reactions, widths of, (E), 22:11929
  energy levels from proton elastic and inelastic scattering, (E), 22:26946
  energy levels from proton inelastic scattering, (E), 22:3609 (PUC-937-164)
  energy levels from proton inelastic scattering, lifetimes of, (E), 22:11944(R) (AECL-2780)
  energy levels from proton inelastic scattering, non-normal-parity, (T), 22:22576
  energy levels from silicon-30 (He-3,n) reactions, isobaric analog, (E), 22:26932(R) (NP-17434)
  energy levels in giant dipole resonance region, (T),

22:27073
energy levels in giant dipole resonance region, from silicon-28 (α,γ) reactions, (E), 22:11930
energy levels of, calculations using shell model with jj-coupling approximation, (T), 22:27241
energy levels of, lifetime measurements using γ Doppler-shift attenuation, (E), 22:20497(R) (AECL-3009)
energy levels of, lifetimes of, (E), 22:32512(R) (AECL-3108)
energy-level spins and transitions from phosphorus-31 (p,α) reactions and proton elastic scattering, (E), 22:20516
energy-level transitions from electron inelastic scattering, (T), 22:26926
helium-3 (He-3,n) at 4.5 to 6.2 MeV, neutron time-of-flight spectra for, (E), 22:20515
helium-3 reactions (He-3,2n) at 33 MeV, production of delayed proton emitting argon-33 by, (E), 22:29913
helium-3 reactions (He-3,α) at 7.6 MeV, differential cross sections for, (E), 22:3685
helium-3 reactions (He-3,α) at 7.6 MeV, optical-model analysis of angular distributions for, (E), 22:27021
helium-3 reactions (He-3,α) at 8 MeV, angular distributions for, (E), 22:22560(R) (ORO-1067-2)
meson (μ^-) capture by, description using particle-hole model, (T), 22:26926
metabolism by anaerobic sulfate-reducing bacteria, effects of organic components of medium on, 22:428
neutron capture at 14 MeV, giant dipole resonance in, (T), 22:35251 (NIJS-P-213)
neutron capture at 2.8 MeV, gamma energies and differential cross sections for, (E/T), 22:5793
neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
neutron differential elastic and inelastic scattering cross sections at 7.6 MeV, (E), 22:20578 (WASH-1079)
neutron differential inelastic scattering cross sections at 2.8 MeV for γ production, (E/T), 22:20578 (WASH-1079)
neutron reactions (n,d) at 14 MeV, angular distributions and yields for, (E), 22:29978
neutron reactions (n,d) at 14 MeV, phosphorus-31 energy levels from, (E), 22:20528
neutron reactions (n,p) at 1.0 to 2.2 MeV, cross section for, (E), 22:18195
neutron reactions (n,p) at 14.8 MeV, cross sections for, (E), 22:48499
neutron reactions (n,p) at 2.17 to 2.88 and 12.5 to 17.5 MeV, cross sections for, (E), 22:30013
neutron reactions (n,p) with, activation cross sections for fast, 22:24862 (WANL-TME-1746)
neutron reactions (n,p) with, fission spectrum-averaged cross section for, (E), 22:32524
neutron reactions (n,p) with, in sulfur compounds, oxidation states of phosphorus-32 produced by, 22:111
neutron reactions $^{32}S(n,p)^{32}P$ with, in human hair, 22:23504 (HW-76823)
nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
nuclear properties from Hartree--Fock calculations using a realistic two-body force, (T), 22:5890
nucleogenesis during silicon burning, (T), 22:11140
photon reactions (γ,n) at 20 to 32 MeV, cross sections for, (E/T), 22:9830
photon reactions (γ,n) from threshold to 30 MeV, cross section for, (E), 22:44634
photon reactions (γ,p) at 17 MeV, proton angular and energy distributions for, (E), 22:53158
photon reactions (γ,p) at 17 to 24 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27076
photon reactions (γ,p) at 21.5 and 23.5 MeV, pulse shape discriminator for identifying protons in strong gamma and electron background from, 22:36135
photon reactions (γ,p) at 24 MeV, proton angular and energy distributions for, (E), 22:53158
proton capture by, chlorine-33 energy levels from, (E), 22:1597(R) (COO-1120-68)
proton differential elastic and inelastic scattering cross sections at 155 MeV, angular distributions for, (E), 22:26946
proton differential elastic and inelastic scattering cross sections at 2.8 to 5.5 MeV, (E), 22:26932(R) (NP-17434)
proton inelastic scattering at 17.5 MeV, differential cross sections and spectra for, (E), 22:3609 (PUC-937-164)
proton inelastic scattering with excitation of non-normal-parity states, differential cross sections and polarizations for, (T), 22:22576
proton reactions (p,d) at 33.6 MeV, angular distributions and spectroscopic factors for, (E), 22:44664
proton reactions (p,d) at 34 MeV, angular distributions for, (E), 22:35274
proton reactions (p,γ) at 0.475 to 3.215 MeV, γ angular distributions and spectra for, (E), 22:32514(R) (COO-1120-71)
proton reactions (p,γ) at 1.74 to 1.77 MeV, γ spectra for, (E), 22:11950(R) (ORO-3624-1)
proton reactions (p,γ) at 1.754 MeV, resonance in, (E), 22:22560(R) (ORO-1067-2)
proton reactions (p,γ) near 1754 keV, resonance in, (E), 22:20578 (WASH-1079)
  reactions with manganese-55, cross sections for, (E/T), 22:37316(R) (UR-3591-9)
SULFUR ISOTOPES S-33
  energy levels from phosphorus-31 (He-3,p) reactions, collective model analysis of, (E/T), 22:53134 (COO-1120-70)
  energy levels from sulfur-34 (He-3,αγ) reactions at 7 and 12 MeV, low-lying T = 312, (E), 22:48496
  energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631
  magnetic hyperfine splitting in ESR spectra of sulfinyl radicals, 22:11217
  neutron reactions (n,p) with, cross section for fast, (E), 22:5790(T) (CEA-tr-A-1898)
  neutron reactions (n,p) with, cross section for thermal, (E), 22:35280
SULFUR ISOTOPES S-34
  deuteron reactions (d,He-3) with, angular distributions for, (E), 22:18174
  deuteron reactions (d,He-3) with, spectroscopic data from, (E), 22:5809(R) (ANL-7354)
  dilution and transfer of sulfur dioxide containing, design of equipment for, 22:4326
  energy levels from chlorine-35 (d,He-3) reactions, (E), 22:20578 (WASH-1079)
  energy levels from chlorine-35 (n,d) reactions, (E), 22:5798
  energy levels from phosphorus-31 (α,p) reactions, triple γ-γ angular correlation measurements on, (E), 22:46729(R) (AECL-3157)
  helium-3 reactions (He-3,αγ) at 7 and 12 MeV, cross sections and α--γ coincidence spectra for, (E), 22:48496
  metabolism by anaerobic sulfate-reducing bacteria, effects of organic components of medium on, 22:428
  neutron capture cross section for, thermal, (E), 22:18167
  neutron reactions (n,d) at 14 MeV, angular distributions and yields for, (E), 22:29978
  neutron reactions (n,d) at 14 MeV, phosphorus-33 energy levels from, (E), 22:20528
  neutron total cross section at 30 to 600 keV, resonances in, (E), 22:22560(R) (ORO-1067-2)
  neutron total cross section at 30 to 600 keV, resonances in, (E), 22:20578 (WASH-1079)
  proton inelastic scattering at 2.8 to 3.1 MeV, excitation function for, (E), 22:9806
  proton reactions (p,2pn) at 50 MeV to 3 GeV with, cross sections for, (T), 22:21356 (CEA-R-3376)
  proton reactions (p,γ) at 1.0, 1.2, and 1.5 MeV, angular distributions, triple angular correlations, and polarization in, (E), 22:9829
  proton reactions (p,γ) at 1.2 to 2.0 MeV, isobaric analog resonances in, (E), 22:26940
  proton reactions (p,γ) with, angular distributions, triple correlations, and polarization in, (E), 22:9831
  proton reactions (p,γ) with, γ angular correlations and spectra from, (E), 22:26994
SULFUR ISOTOPES S-35
  accumulation by dragonfly larvae, effects of instar on, 22:28393
  analysis for trace impurities, spectrographic, 22:4055
  beta activity of, in liquid samples, design of anthracene scintillation cell for measuring, 22:38038
  beta decay of, bremsstrahlung emission in, (T), 22:9958
  beta dosimetry in small body cavities using thermoluminescence, 22:31107
  beta emission by, effects of, on Chlorella vulgaris, mutagenic, 22:43291
  beta emission by, effects of, on chromosomes in root tip cells of jute, 22:43279
  beta emission by, effects of, on induction of early ripening of fruits and seeds of vegetable plants, 22:49308
  beta emission by, effects of, on Lilium longiflorum and Zea mays, effects of pollen exposure on mutagenic, 22:31044
  beta spectra of, efficiency of semiconductor-junction spectrometers for measuring, 22:16894 (CEA-R-3315)
  beta spectra of, use of semiconductor spectrometer for analysis of, 22:14825
  chemical state of, from neutron-irradiated potassium chloride or sodium chloride, 22:45105
  contamination of polyvinylchloride foil, glass, and steel, removal of, by detergents, 22:4626
  content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
  decay of, effects on photoconductivity of zinc sulfide crystals, 22:11557
  deposition of thiocyanate-incorporated, in parotid, submaxillary, and thyroid glands of guinea pigs, 22:12777
  determination by solvent extraction, purification, and scintillation counting, 22:37654 (UCRL-18140, pp 57-69)
  determination by sorption on zirconium hydroxide and counting, 22:16454
  determination in neutron-irradiated sulfate solutions, using beta absorption, (E), 22:5790(T) (CEA-tr-A-1898)
  determination in polyacrylamide gels by scintillation counting, 22:37660

  determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
  determination in waste streams at Savannah River Plant, 22:37654 (UCRL-18140, pp 57-69)
  determination of, separation procedures in, 22:8027
  distribution of glutathione-incorporated, in mice, use of whole-body autoradiography for determination of, 22:16988
  distribution of sodium sulfate-incorporated, in liver cells of rats, 22:12807
  effects on erosion, redeposition of sedimentary materials, and weathering, geochemical, 22:35936
  effects on seeds of Brassica juncea, mutagenic, 22:51536
  effects on zinc sulfide crystals, 22:1316
  energy levels from chlorine-37 (d,αγ) reactions, spin--parity assignments for, (E), 22:50566
  energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631
  exchange between crystalline--solution system of potassium sulfate, effects of solid phase radioactivity on, 22:2041
  exchange between hydrogen sulfide and zinc sulfide phosphor, 22:42660
  exchange between potassium platinum thiocyanate and platinum thiocyanate complexes, 22:10290
  fixation in bones of rats, effects of growth hormone and hypophysectomy on, 22:47494
  half-life, (E), 22:46757
  incorporation in methyl isothiocyanate by reactor irradiation, 22:45111
  labeling of lipids, review of methods for, 22:40570
  metabolism by rumen microorganisms of sheep, 22:40573
  metabolism of Bayer 9017-incorporated, by calves, 22:33741
  metabolism of fenthion-incorporated, by insects, 22:33741
  metabolism of thiourea-incorporated, in man, effects of thyroid diseases on, 22:14918
  production by neutron-irradiation of potassium chloride, 22:35874
  production in human bone by 600 MeV protons, 22:51296 (CERN/HER/AP-2-68)
  production in IAN-R1 Reactor, 22:40321 (IAN-Q-6)
  production in neutron-irradiated alkali metal chlorides, 22:4203
  properties in doped and neutron-irradiated silver chloride, 22:16614
  radiation effects on metabolism of, by blood vessels of rats, combined effects of hypertension on x, 22:45602
  reactions of 40-keV ion beams of, with sodium chloride, 22:4203
  reactions of recoil, in neutron-irradiated alkyl chlorides, 22:16612
  separation from water, effects of colloidal hydrous ferric oxide on, 22:14512
  sorption of ionic, by aluminum surfaces, 22:35767(T) (AEC-tr-6776)
  sorption on metal and oxide surfaces, 22:4129
  uptake and metabolism by animals and man, 22:8644
  uptake and retention of cysteamine-incorporated, by sperm of Misgurnus fossilis, 22:47488
  uptake by tissues of eyes and nose in rabbits, effects of methyl prednisolone on, 22:25903
  uptake by tracheal cells of guinea pigs, effects of atropine sulfate, 2,4-dinitrophenol on monoiodoacetate, KCN, Ringer potassium-glucose medium and NaF on, 22:12804
  uptake of methionine-incorporated, by human lipoproteins, 22:12864(R) (ORO-2401-10)
  uptake of thiol-incorporated, by cultured mammalian cells, analysis of, 22:40771
  use as tracer for measurement of complex compound movement through soils, 22:23156
  use as tracer for measuring moisture movement during drying of shredded peat on moist soils, 22:25620
  use as tracer in autoradiographic studies of sulfur distribution in steels, 22:8324
  use as tracer in hydrocarbon separation processes, 22:14723
  use in autoradiographic determination of fissure conditions in rocks, 22:14691
  use in measurements on specific surface of strontium sulfate, 22:47133
  use in tracer technique for lubricant studies, 22:10512
  use in tracer technique for measurement of rubber tire tread wear, 22:10518
  use in tracing sulfur diffusion in niobium, 22:17133
  use of sulfate-incorporated, for determining volume of extracellular fluid in dogs, 22:14977
  use of sulfate-incorporated, for measurements of extracellular fluid volume in man, 22:51857
  use of sulfuric acid-incorporated, beta emission by, effects of, on uptake of phosphates in Mycobacterium tuberculosis, 22:40524
  use to determine distribution of sulfur in monocrystalline molybdenum, 22:34055
  uses for dispersion studies of Anopheles sergenti, 22:51403
  yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
SULFUR ISOTOPES S-36
  Coulomb displacement energy, (E), 22:27030
  energy levels from chlorine-37 (d,He-3) reactions, (E), 22:5809(R) (ANL-7354)
  energy levels from chlorine-37 (d,He-3) reactions, (E), 22:20578 (WASH-1079)
  energy levels from chlorine-37 (d,He-3) reactions, positive-parity, (E), 22:18165
  proton reactions (p,γ) at 0.80 to 1.94 MeV, resonance parameters and Q-values for, (E), 22:29963
  proton reactions (p,γ) at 2.05 to 2.30 MeV, excitation function for, (E), 22:39618
  proton reactions (p,γ) with, chlorine-37 energy levels from, (E), 22:9807
  proton reactions (p,γ) with, γ angular correlations and spectra from, (E), 22:26994
SULFUR ISOTOPES S-37
  beta decay of, γ energy spectra for, (E), 22:50594
  beta decay of, half-lives, log-ft values, and β and γ spectra for, (E), 22:3656
  energy levels of, 1f(7/2) and 2p(3/2), (T), 22:1631
  nuclear spin and parity of ground state, (E), 22:3656
  production in argon near targets bombarded by protons at 3 GeV, 22:22511
SULFUR ISOTOPES S-38
  activity of cosmic ray-produced, in rainwater, use as tracer in atmospheric precipitation, 22:18961 (BNWL-481-1, pp 85-7)
  effects on erosion, redeposition of sedimentary materials, and weathering, geochemical, 22:35936
  production in atmosphere by cosmic rays, (E), 22:11290
  production in uranium-238 ternary fission at low energy, (E), 22:7736
  use of cosmic ray-produced, to study atmospheric precipitation processes, 22:40250 (AECL-2787, pp 567-80)
SULFUR NITRIDES
  reactions of disulfur dinitride with antimony pentachloride, boron trichloride, and boron trifluoride, 22:45029 (UCRL-18043, pp 7-105)
  reactions with ammonia, spectral studies on, 22:45029 (UCRL-18043, pp 7-105)
  reactions with sulfuric acid, spectral studies on, 22:45029 (UCRL-18043, pp 7-105)
  thermal splitting of S_4N_4, 22:45029 (UCRL-18043, pp 7-105)
SULFUR OXIDES
    see also Sulfur Dioxides
    see also Sulfur Trioxides
  determination in high-fired thorium oxide by gas chromatography, 22:14423 (NLCO-1006)
  effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
  reactions with radicals from γ-irradiated amides, 22:27749
SULFUR SYSTEMS
    see also Monel 400
  As--Ge--S--Se--Te, use of liquid, for resistance thermometry in reactors, 22:28260
  Mo-base--S, crystal lattice constants and thermal expansion coefficients at 1100°C, 22:41073
  O--S--U, crystal structure and phase studies of, 22:43631 (ANL-7299, pp 120-37)
  Pu--S, phase relations in, 22:2699
SULFUR TRIOXIDES
  force fields of, 22:42682
SULFURIC ACID
  analysis for protactinium-233, 22:7985 (AERE-AM-105)
  analysis for uranium by comparative and direct polarography, 22:27547
  analysis of solutions of, by beta back-scattering, 22:14458
  analysis of solutions of, for plutonium using Arsenazo III, 22:45018
  corrosive effects of 1 N, on Type 430 stainless steel at 75°F, 22:36438
  corrosive effects of oxygenated, on zirconium at 100 to 300°C, 22:31321
  corrosive effects on austenitic stainless steel, 22:17083
  corrosive effects on carbon steel, 22:10947 (NP-17211)
  corrosive effects on molybdenum, 22:43530 (BM-RI-7169)
  corrosive effects on molybdenum--tungsten alloys, 22:43530 (BM-RI-7169)
  corrosive effects on Monel 400 and stainless steel, 22:19475 (IN-1134)
  corrosive effects on niobium-base alloys, 22:17118
  corrosive effects on tungsten, 22:43530 (BM-RI-7169)
  corrosive effects on TZM molybdenum alloys, 22:43530 (BM-RI-7169)
  deuterium exchange between aniline acid sulfates and, rate of, 22:16525
  deuterium exchange between anisidine or xylidine acid sulfates and, rate of, 22:16524
  effects of aqueous solutions of, on electrolytic separation of deuterium from hydrogen, effects of overpotential on, 22:12424
  effects of deuterated, on isotope effects in hydration of deuterated and normal phenylacetylenes in heavy and light water, 22:21075
  effects on calcium-45 exchange between solid calcium carbonate or calcium oxide and their solutions during aging, 22:42675
  effects on complexometric determination of zirconium in

zircon and zirconium oxides using EDTA, 22:23
effects on critical temperature of water, 22:25329 (ORNL-4229, pp 84-104)
effects on decarboxylation of p-methoxy-β-methylcinnamic acid, 22:10223
effects on distribution of valence forms of neptunium-239 in beta decay of uranium-239 solutions, 22:27843
effects on oxidation of uranium oxides by ferric ions, effects of diffusion on, 22:10216
effects on radioinduced graft polymers of Delrin filaments and styrene, 22:8095(T) (AEC-tr-6908, pp 48-55)
effects on yields from γ-radiolysis of liquid methanol, 22:37796
effects on yields in electron radiolysis of deuterated and normal ethanol in solid state at -196°C, 22:18827
effects on yields in gamma radiolysis of methanol solutions containing nitrous oxide, 22:10281
effects on yields in radiolysis of aqueous solutions, 22:23034 (IA-1128, pp 78-96)
incorporation in chemical dosimeter for high intensity radiation sources, 22:8540
leaching of uranium minerals, effects of bacteria on, 22:27850 (CEA-N-816, pp 80-9)
properties for decontamination of steel from cobalt-60, electrolytic, 22:21159
properties in tributyl phosphate--water systems, 22:154
radiation effects on glassy, kinetics of reaction of trapped hydrogen atoms from γ, 22:37791
radiation effects on glossy, at 77°K, EPR studies of γ, 22:30640
radiolysis of aqueous solutions of, spectral studies on kinetics of pulse x, 22:33371 (AD-662736)
radiolysis of dilute aerated solutions of, effects of acid concentration on hydrogen peroxide yield in α, 22:10307
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
radiolysis of, reactions of hydrated electrons during and after x-ray pulse, 22:18815
reactions with amorphous boron, degree of oxidation of boron in, 22:2676
reactions with hydrogen peroxide, effects deuterium on rate of, 22:10207 (UCRL-17915)
reactions with S_4N_4, spectral studies on, 22:45029 (UCRL-18043, pp 7-105)
separation of cerium from, by solvent extraction using bis(2-ethylhexyl) ester of phosphoric acid in kerosene, 22:2185
separation of hafnium and zirconium from solutions of, by solvent extraction using thiocyanate and ethyl acetate, 22:23117
separation of metals from, by solvent extraction using TBP, 22:23119
separation of neptunium from solutions of, by solvent extraction using 4-benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one, 22:45174
separation of nickel and palladium from aqueous solutions of, by precipitation with salicylaldoximate, 22:33359
separation of protactinium from, by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33493
separation of thorium and zirconium from aqueous solutions of, by precipitation with cupferron, 22:33359
separation of uranium from, by solvent extraction using long-chain aliphatic amines, mechanism of, 22:35915
separation of zirconium from, by solvent extraction using TBP, composition of solvate in, 22:12419
solubility in dioctylarsinic acid, 22:22901(R) (ORO-2733-13)
solvent properties for mixed uranium oxides, effects of γ radiation on, 22:27764
solvent properties for neutron-irradiated Armco iron, 22:16596
solvent properties for steel, effects of induced radioactivity on inhibitors of, 22:12981
solvent properties for thorium and uranium, mechanism of, 22:21167
solvent properties for U_3O_8, effects of state of oxide on, 22:2036
solvent properties for uraninites effects of ferric sulfate on, 22:33519
solvent properties for uranium dioxide, effects of iron ions on, 22:37757
solvent properties for uranium peroxide, effects of acid concentration on, 22:16486(T) (LA-tr-68-4)
solvent properties for uranium trioxide, kinetics of diffusion-controlled, 22:4091
solvent properties of solutions of, for uranium oxides, review on kinetics of, 22:10209
spectrophotometric studies at 25 to 250°C of aqueous, 22:42578 (ORNL-4279)
use for drying seeds, effects of, on x-radiosensitivity, 22:21627
ammonium acetate--H_2SO_4, use in separation of praseodymium and thulium impurities from cerium, 22:33511
butyl dibutylphosphinate--H_2O--H_2SO_4, phase studies on solubility in, 22:6407
carbon tetrachloride--dibutyl phosphate--H_2SO_4, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
carbon tetrachloride--dibutyl phosphate--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
carbon tetrachloride--dibutyl phosphate--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
CH_3OH--$HClO_3$--H_2SO_4, use for etching dislocations in molybdenum single crystals, 22:21719
$CuSO_4$--H_2O--H_2SO_4, effects on laminar free convection at vertical electrode, 22:45029 (UCRL-18043, pp 7-105)
D_2O--D_2SO_4, effects on hydration of derivatives of propiolic acid at 25°C, mechanism of, 22:4104
dibutyl phosphate--hexane--H_2SO_4, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
dibutyl phosphate--hexane--H_2SO_4--TBP, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
dibutyl phosphate--hexane--H_2SO_4--trioctylphosphine oxide, distribution of dibutyl phosphate in, equilibrium constants and reactions for, 22:6401
H_2O--H_2SO_4, effects on hydration of derivatives of propiolic acid at 25°C, mechanism of, 22:4104
H_2SO_4--$(NH_4)_2SO_4$, use for etching plutonium, 22:23748(P)
H_2SO_4--KI, separation of antimony from, by solvent extraction using benzene, 22:16658
H_2SO_4--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
HBr--H_2SO_4, separation of antimony from, by solvent extraction using benzene, 22:16658
HF--H_2SO_4, use in phase analysis of calcium oxide--silicon dioxide--zirconium dioxide system for compound formation, 22:50920
HNO_3--H_2SO_4, solvent properties for plutonium in tridodecylamine, 22:27845 (CEA-N-816, pp 150-276)
HNO_3--H_2SO_4--H_3PO_4, solvent properties of aqueous, for clad ceramic fuels, 22:19670 (BNWL-624, pp 6.1-20)
Sulfuric Acid, Thio-
see Thiosulfuric Acid
Sulky Project
see Plowshare Project
Summer
see Seasons
SUN
see also Chromosphere
see also Photosphere
see also Solar Corona
see also Solar Disturbances
see also Solar Radio Bursts
see also Solar X-Ray Bursts
see also Stars
acceleration of heavy nuclei by, mechanism for, (E), 22:13105
accretion of matter by young, (T), 22:19721
activity cycle of, relation of carbon-14 content in materials to, (T), 22:36568(T) (N-68-22567)
activity cycle of, relation of sunspot formation to, 22:52328
activity cycle variation in mass absorption coefficients for neutron monitors, 22:2864
activity cycle, effects on variation of ionospheric F2 layer, (T), 22:19889
activity cycles of, determined-probabilistic learning information system for forecasting of, 22:52323
activity cycles, longitudinal distribution of sunspots during initial phase of, (E), 22:52454
activity of, and phenomena in upper atmosphere, 22:24147
activity of, basic research on, (T), 22:786(R) (AD-646372)
activity of, bibliography on, 22:36564 (N-68-15117)
angular momentum of, effects of solar wind on, (T), 22:13207
angular momentum transport in the nebula of, (T), 22:2720
angular velocity distribution on, (T), 22:11145
atmosphere of, circulation of, (T), 22:8965
atmosphere of, effect of homogeneous horizontal magnetic field on convection in, (T), 22:52444
atmosphere of, structure of outer, (T), 22:2746
atmosphere of, velocity fields in, (E), 22:914
atmospheric dynamics of, dishpan experiments for, 22:49979
atmospheric turbulence on, variation of velocity of, (E), 22:45902
bibliography on 1966 Soviet studies on, 22:17461(T) (JPRS-44343)
book: Introduction to Space Science, 22:19898
book: Problems in Astrophysics, 22:8979
book: Solar Activity, 22:45858
book: Spectral Line Formation, 22:24021
book: The Solar Granulation, 22:38676
book: Vacuum Ultraviolet Spectroscopy, 22:24019
brightness and velocity fluctuations in atmosphere of, (E/T), 22:41276
brightness temperature near 1-cm wavelength, (E), 22:17290
carbon abundance in, molecular, (T), 22:31583
comet orbit in perturbed Schwarzschild field of, perihelion advance of, 22:1497

core of, spin down of rapidly rotating, (T), 22:38657 (N-68-19136)
cosmic-ray modulation by, primary, (T), 22:41386
cosmic-ray production in, (T), 22:15385
cosmic-ray variation in lower ionosphere from, 22:38902
distribution of proton flares, radio bursts, and sunspots, longitudinal, (T), 22:13171
draft reports of commissions of the International Astronomical Union, 22:29170
eclipse effects on dynamics of D region, May 20, 1966, (E), 22:15442
eclipse effects on topside electron density, (E), 22:9195
eclipse of May 30, 1965, effects on ionospheric electron densities, (E), 22:22030
eclipse of Nov. 12, 1966, S component identified at 4.28 cm during, (E), 22:34235
eclipse of, effects on cosmic noise absorption in ionosphere, (E), 22:22016
eclipse of, effects on critical frequency of F2 layer, (E), 22:47909
eclipse of, effects on equilibrium in D region, (T), 22:11323
eclipse of, effects on long-path vlf transmission, (E), 22:19882
eclipse of, photoelectric measurement of green coronal line during, 22:41284
eclipses of, effects on ionospheric E and F regions, (T), 22:52662
effect of activity of, on atmospheric density near 200 km, (E), 22:7208
effect of zenith angle on boundary frequencies of E/sub s/ layer, (E/T), 22:11319
effect of zenith angle on critical frequency of E layer, (E), 22:11318
effect on cosmic-ray flux at the Earth, 22:11286
effects of 11-year activity cycle of, on cosmic-ray intensity variations, (E), 22:21960
effects of 11-year activity cycle of, on intensity of primary cosmic radiation, (T), 22:21971
effects of 11-year activity cycle of, on spectrum of primary cosmic radiation, (E), 22:21968
effects of 27-day activity cycle of, on cosmic-ray anisotropy, (T), 22:21973
effects of activity cycle of, on diurnal variation of cosmic radiation, (E), 22:21958
effects of activity cycle of, on sidereal diurnal variation of cosmic radiation, (E), 22:21948
effects of activity minimum of, on cosmic-ray diurnal anisotropy, (E), 22:21975
effects of activity minimum of, on diurnal variations of cosmic radiation, (E), 22:21956
effects of activity minimum of, on Forbush decreases, (E), 22:21808
effects of eclipse of, on cosmic neutron flux on Nov. 12, 1966, 22:31663(T) (SC-T-68-1516)
effects of partial eclipse of, on ionospheric and exospheric electron contents, (E), 22:41485
effects of quiet, on cosmic-ray neutron intensity, (E/T), 22:11262
effects on auroral behavior, maximum and minimum, (E), 22:47935
effects on connective tissue of human skin, effects of age on, 22:49241
effects on cosmic-ray intensity in interplanetary space, (E), 22:21967
effects on density variations of ionospheric layers, 22:36834
effects on electron density profiles of D layer, (E), 22:19866
effects on F1 layer, (E), 22:22064
effects on geomagnetic storm sudden commencements, 22:34409
effects on human skin, excretion of serotonin and 5-hydroxyindole acetic acid following erythemogenic, 22:21586
effects on human skin, sensitizing effects of nalidixic acid on, 22:49424
effects on modulation of amplitude of diurnal variations of cosmic rays, geometric factors in, (E), 22:21957
effects on primary cosmic-ray intensity during activity minimum, (E), 22:21969
effects on scintillation of cosmic radio sources, (T), 22:11117
effects on variations in E and F1 ionospheric layers, (E), 22:9207
effects on velocities of electron concentration inhomogeneities in interplanetary medium, (T), 22:47754
electron stream emission from, (E), 22:41268
element abundance in, iron, neon, nickel, and oxygen, (E), 22:26139
element abundance on, light-, (T), 22:13206
element abundances in, (T), 22:26176
element abundances in, light, (T), 22:19729
element abundances in, light, (T), 22:19730
element diffusion in, effects on abundances in, 22:23916
elemental abundances in, (T), 22:26110
energy emission at 4477 to 8638 A from center of disk of, (E), 22:31579
energy generation by CNO cycle on, (T), 22:41246
energy production on, by carbon-nitrogen cycle, 22:31590
equivalence principle for, (T), 22:41258
formation of polyatomic molecules in, (T), 22:31583
generation of heavy nuclei on, (E), 22:2734
glossary of terms and abbreviations, 22:21785 (RAE-TR-67158)
granulation, photometric statistical study of, (E), 22:4934
gravitational field equations for spherically symmetric static perfect fluid, Einstein, 22:46528
gravitational field of, (T), 22:21796
gravitational field of, quadrupole moment of, (T), 22:34185
gravitational radiation from, (T), 22:39486
growth curve for center of solar disk, (E), 22:52443
hydrogen abundance in center of, (T), 22:31558
hydrogen abundance in core of, (T), 22:38657 (N-68-19136)
hydrogen abundance in neighborhood of, (E), 22:15305
hydrogen spectrum in, continuous and line, (T), 22:17275
infrared brightness of, center-to-limb variation of, (E), 22:17289
infrared brightness temperature of quiet, (E), 22:34131 (AD-660897)
infrared brightness temperature of quiet, (E), 22:36642
infrared spectra of, molecular identifications in, (E), 22:26179
infrared spectrometry of, (E), 22:26177
lead abundance in, (E), 22:43830
light deflection by gravitational field of, (E), 22:41190
light deflection by gravitational field of, effect on occultation times of star by moon, 22:35128
limb darkening on, effects of departures from LTE on, (T), 22:4980
limb model for, (T), 22:26175
lithium abundance in, (E), 22:31575
lithium burning in, effects of rotational braking on, (T), 22:29003
luminosity of, (T), 22:49967
luminosity of, (T), 22:41246
Lyman-α radiation from, scattering by galactic hydrogen, (T), 22:824
magnetic field at surface of, (T), 22:26173
magnetic field development in active regions of, prior to sunspot formation, 22:47784
magnetic field of, (T), 22:15321
magnetic field of, general, (T), 22:26186
magnetic field of, origin of radial, 22:45916
magnetic field of, properties of, 22:1066
magnetic field with differential rotations in spherical fluid shell of, axisymmetric, (T), 22:21810
magnetic fields of, charged particle motion in, 22:19716
magnetic fields of, measurement using photoelectric magnetographs, 22:52313
magnetic fields of, polarization effects in measurement of, 22:52315
magnetic fields of, properties of general and localized, 22:52326
magnetic fields on quiet, spatial description of background, (E), 22:49944
magnetic fields on, relation to central intensities of Hα and K3 lines, (E), 22:47772
magnetic fields on, spectroscopic determination of, (T), 22:26185
magnetic-field oscillations, short-term, (E), 22:7088
magnetic-field reversals on, thermally driven Rossby-mode dynamo for, (T), 22:29168
meridional currents on, (T), 22:11145
microwave emission from, (E), 22:26138
microwave emission from, directivity of bright regions of, (E), 22:47786
mixing of cores and outer layers in, effects on neutrino fluxes, (T), 22:47767
model for interior of, (T), 22:41246
modulation of primary electron flux, (T), 22:29308
neutrino emission from baron 8 in, (T), 22:31558
neutrino emission from interior of, detection of, (T), 22:17295
neutrino emission from, (T), 22:926
neutrino emission from, (T), 22:21804
neutrino emission from, boron-8, (T), 22:41199
neutrino emission from, due to boron-8 decay, (T), 22:31588
neutrino emission from, effects of beryllium-7 K-capture on, (T), 22:11148
neutrino emission from, review on, 22:47740
neutrino flux from, (T), 22:41246
neutrino flux from, boron-8, (T), 22:4977
neutrino flux from, boron-8, (T), 22:38657 (N-68-19136)
neutrino flux from, due to boron-8 decay, (E), 22:31590
neutrino flux from, experiments for detecting, (T), 22:17197
neutrino flux from, preliminary results for upper limit of, (E), 22:41741 (COO-1749-5)
neutrino flux from, relation to initial solar helium abundance and solar age, 22:52460
neutrino flux in, (T), 22:29124
neutrino spectra from, model for, 22:17197
neutron emission from, detection during eclipse of Nov. 12, 1966, (E), 22:24067(T) (SC-T-68-1514)
neutron emission from, experiment to detect fast, (T),

22:28981(T) (SC-T-68-1518)
neutron emission from, search for, (E), 22:875
nuclear reactions in, bibliography on, 22:15324
oblateness of, (E/T), 22:13187
oblateness of, (T), 22:5010
oblateness of, (T), 22:8927
oblateness of, and perihelion advances of planets, (T), 22:8924
oblateness of, cause of, (T), 22:8923
oblateness of, implications for perihelion advance of Mercury, (T), 22:36602
obleteness of, (T), 22:11120
observation from space platforms of, (T), 22:26195
occulation of Taurus A by, (E), 22:13152
occultation of radio noise storm source on May 20, 1966, lunar, (E), 22:888
photographic equipment for analyzing, 22:10660
photography at 2000 A, high-resolution, (E), 22:45857
photon emission at 2.22 MeV from, continuous flux of neutron--proton capture, 22:19723
photon propagation in gravitational field of, general-relativistic formula for frequency shift in, 22:39480
physics of, (T), 22:34143 (CNIE-PE-8)
physics of, conference on, 22:26174
planet orbiting, solar wind and angular velocity of, (T), 22:2753
properties of, coordinate system for describing, (T), 22:41143 (NP-17530)
proton emission from, 10-MeV, (T), 22:8974
quadrupole moment of, (T), 22:5010
quadrupole moment of, test for existence of, (T), 22:11120
radar deflection by gravitational field of, (E), 22:41188
radar studies of, (T), 22:31592
radial gradient of cosmic-ray density between Earth and, (T), 22:31664
radiation field of, effect of photospheric inhomogeneities on emergent, (T), 22:24017
radiations from, constant for, (T), 22:28994
radio astronomical observations of, (T), 22:52458
radio brightness temperature of quiet, (E), 22:36642
radio emission at 1.2 mm, localized enhancements of, (E), 22:45856
radio emission at millimeter wavelengths, spectrum of slowly varying component of, (E), 22:29164
radio emission at mm- and sub-mm wavelengths from, (E), 22:36578
radio emission during total eclipse of Nov. 12, 1966, (E), 22:4986
radio emission from discrete region on west limb of, lunar occultation of 4-cm, (E), 22:21786
radio emission from, (T), 22:26193
radio emission from, forecast technique for 10.7 cm, (T), 22:34142 (AD-666948)
radio emission of, quasi-periodic low-frequency fluctuations of, (E), 22:49980
radio emission spectrum of, dip in millimeter, (T), 22:29077
radio flux density of, measurements of total, (E), 22:13135
radio reflection from, interpretation of, 22:47747
radio spectral line at 5.65 mm, atmospheric absorption and brightness temperature, (E), 22:4994
radiobrightness temperature of quiet, (E), 22:34131 (AD-660897)
radius of HII zone around, (T), 22:824
rare earth abundances for, (T), 22:23982
rotation instability in, turbulent shear stress from differential, (T), 22:43836
rotation of core of, spin-down of, (T), 22:31558
rotation of, differential, (T), 22:11145
rotation of, differential, (T), 22:4961
rotation of, eddy transport maintenance of differential, (T), 22:2769
rotation of, effect on solar wind, 22:2754
rotation of, effect on solar wind, (T), 22:19687
rotation of, polar, (T), 22:8874
rotation of, spin-down in, (E/T), 22:13187
rotation rate of interior of, (T), 22:17295
shock-wave formation and propagation in atmosphere of, (T), 22:26182
sodium velocity fields in comet 1965f, (E), 22:43767
solar wind emission from pre-main sequence T Tauri phase of, (T), 22:45859
spectra at lambda 4281 to 4302 A during annular eclipse and out of eclipse, (E), 22:45900
spectra at the limb, emission gradients in continuum, (E), 22:29070
spectra of Mg II doublet, (E), 22:11133
spectra of, 7229 A line of neutral lead in, (E), 22:43830
spectra of, absorption lives of neutral silicon in, (E), 22:28989
spectra of, analysis of 33- to 110-A range of, (T), 22:29012
spectra of, calculation of Fraunhofer lines in, 22:2733
spectra of, carbon monoxide fourth positive system in, (T), 22:41338
spectra of, carbon monoxide lines in, (E), 22:36581
spectra of, CN red system in, (T), 22:38678
spectra of, Compton effect interpretation of redshift in, (T), 22:29142
spectra of, displacement and broadening of Fraunhofer lines in, (E), 22:45902
spectra of, effect of forbidden continuum of H- in, (T), 22:36644
spectra of, effect of term parity on curve of growth in, (T), 22:45903
spectra of, emission cores of H and K lines in, (T), 22:41280
spectra of, euv and x-ray, (E), 22:41168
spectra of, forbidden lines of ionized iron in absorption, (T), 22:26180
spectra of, H and K profiles in, (E), 22:29080
spectra of, identification of forbidden S I line in, (E), 22:31550
spectra of, iron lines at 182 A in, (T), 22:29028
spectra of, laboratory investigation of ultraviolet lines in, 22:34293
spectra of, measurement and correlation of solar continuum intensity, Doppler shift, and magnetic field from Fe line lambda 6173A in, (E/T), 22:41278
spectra of, measurement of transverse and longitudinal Zeeman effect in, (E), 22:36617
spectra of, method for determining elemental abundances in, (T), 22:41228
spectra of, multilens spectroheliograph for non-stabilized rockets for measuring, 22:49151
spectra of, observations of K line of Ca II and Hα in, (E), 22:41142 (NP-17529)
spectra of, optical depth of titanium lines in, 22:52472
spectra of, origin of O VI lines in, (T), 22:52317
spectra of, oscillator strengths for resonance lines of sulfur and silicon ions in, (T), 22:876
spectra of, oxygen lambda 6300 A line in, (T), 22:52472
spectra of, relative strengths of resonance lines in the Ne I and Ar I isoelectronic sequences in, (T), 22:41209
spectra of, scale of bolometric corrections for, (T), 22:13144
spectra of, search for forbidden lines of neutral sulfur in Fraunhofer, (E), 22:36618
spectra, radiation transfer in, (T), 22:945(T) (CLM-Trans-10)
spectral intensities of Hα and K3 lives, relation to magnetic fields, (E), 22:47772
spectral line profiles for sodium D lines, (T), 22:8912
spectral line profiles for, effects of progressive Alfven waves on, 22:52312
spectral lines in 1- to 2-μ region, (E), 22:49943
spectral-line profiles for, analysis of, (T), 22:11144
spectral-line profiles of sodium-D lines, (T), 22:11143
spectrographic observations of dark surges and mottles at limb, (E), 22:15287
spectrophotometry in the near infrared, (E), 22:26178
spectrum in 5577- and 6300-A regions, (E), 22:17200
spectrum near 6708 A, (E), 22:4983
spectrum of sodium D lines in, profiles of, (T), 22:17302
spectrum of, effects of line blanketing on windows in, (T), 22:17286
spectrum of, far ultraviolet, (E), 22:17284
spectrum of, forbidden carbon I lines in, (E), 22:913
spectrum of, high-dispersion continuous uv, (E), 22:17287
spectrum of, intensity of continuum, (T), 22:17283
spectrum of, interpretation of absorption-line red shifts in, 22:47782
spectrum of, limb darkening in continuous, (E), 22:17285
spectrum of, radio measurement of atmospheric ozone transition at 101.737 GHz in, (E), 22:19690
spectrum of, source functions in cores of infrared Fraunhofer lines, (T), 22:17278
spin-down currents of, effect of convection zone on, (T), 22:43835
structure of, (T), 22:43681
surface inhomogeneities of, two-color photometric observations of differences between, 22:43797
synchrotron radiation emission from, time variation of spectrum of gyro-, (T), 22:34234
temperature minimum of, (E), 22:17284
temperature of atmosphere of, (T), 22:11143
temperature of quiet, at 2 cm, (E), 22:49900
temperatures of photospheric layers of, from Lyman-α and -β spectra, (E/T), 22:11173
theory of activity of, review of, 22:47717 (CEA-BIB-121)
transition zone between chromosphere--corona, (T), 22:4932
transition zone between photosphere and chromosphere, (T), 22:4933
ultraviolet emission from, (E), 22:36586
ultraviolet spectrum, energy distribution in continuum between 1550 and 2100 A, (E), 22:5011
velocity distribution of outer part of, angular, (T), 22:17312
velocity of, relation to cosmic microwave background, (T), 22:7125
wave generation by turbulence in isothermal stratified atmosphere, acoustic and gravity, (T), 22:15299
wave propagation in atmosphere of, compression, (T), 22:5207 (MPI-PAE-EXTRATERR.-9/65)
x-ray emission by, measurements on, (T), 22:34196

x-ray emission from C VI and N VII of, 22:34230
x-ray emission from, (E), 22:26138
x-ray emission from, (E), 22:4944
x-ray emission from, distribution of, (E), 22:47775
x-ray emission from, Soviet research on, (T), 22:26159
x-ray emission from, ultrasoft, (E), 22:49901
x-ray image of, at solar minimum, (E), 22:13172
x-ray spectra of, (E/T), 22:790(T) (TT-65-50400/4-6, pp 5-15)
x-ray spectrum below 20 A, (E), 22:907
x-ray spectrum below 20A, spatial variability of, (E), 22:52338
x-ray spectrum below 25 A, (E), 22:34137 (AD-663415)
x-ray spectrum below 5 A, (E), 22:17204
x-ray spectrum near minimum activity, absolute intensities in, (E), 22:11183
yttrium abundance in, (E), 22:36643

Sunflowers (Helianthus)
see Helianthus under Angiospermidae

SUNSHINE PROJECT
see also Fallout
see also Strontium Isotopes Sr-90

SUNSPOTS
activity cycle of, relation to solar tidal force induced by planets, (T), 22:29048
activity of zonal, duration of, 22:34225
area of, (T), 22:26183
area of, comparison of Pulkovo and Greenwich catalogs for, (T), 22:36583
book: Solar Activity, 22:45858
chromosphere heating above, mechanism of, (T), 22:822
convection in umbrae of, instability and overstability in, 22:29066
cosmic-ray modulation during minimum of, (E), 22:36772
cycle of, effects on atmospheric circulation, 22:34168
cycle of, random number prediction technique for, (T), 22:21783 (CONF-661204-(Vol.1), pp 5.1-13)
data for 1966, (T), 22:26157
development of, regularities in, (T), 22:29084
diffraction images of, shear interference of, (E), 22:23958
distribution at the minimum of new cycles, periodicity in asymmetry of, (T), 22:825
distribution in new cycles during initial phase of solar activity, longitudinal, (E), 22:52454
distribution of, solar longitudinal, (T), 22:13171
distribution on solar disk, (T), 22:13089
effect on carbon-14 content in atmosphere, 22:6493
effect on cosmic-ray-produced radioisotopes in atmosphere, 22:6492
effects of cycle of, on geomagnetic pulsations, (T), 22:43993
effects of increased activity of, on production of carbon-14, 22:6485
effects of minimum, on D-region electron densities during IQSY, (E), 22:19858
effects on blanketing frequency of midlatitude E/sub s/, (E), 22:17468
effects on brightness of comet Alcock 1963b, (E), 22:47773
effects on brightness of Jupiter's great red spot, (T), 22:34192
effects on brightness variations of comet Alcock 1963b, (E), 22:47768
effects on characteristics of F2 layer, (E), 22:29370
effects on charged-particle density in upper ionosphere, (E), 22:22060
effects on cyclic changes in S/sub q/ variations, 22:48021
effects on development of F1 layer, (E/T), 22:34405
effects on diurnal geomagnetic variations, 22:2923
effects on drift speed in F region at Waltair, (E), 22:29343
effects on electron temperature in ionospheric E region, 22:41439 (N-68-15890)
effects on electron temperatures in E layer, (E), 22:41462
effects on electron temperatures in F region, (E), 22:24180
effects on fine structure of Sq, (T), 22:34446
effects on fluctuating local gradients of geomagnetic field, (E), 22:36830
effects on geomagnetic activity in Arctic region, (T), 22:34481
effects on geomagnetic field variations, (T), 22:38930
effects on inner corona temperature, (E), 22:17231
effects on ionization in near-maximum part of E layer, (T), 22:34408
effects on ionization rates in F2 layer at high latitudes, (E), 22:34462
effects on ionospheric electron abundance profiles, (E), 22:15428
effects on ionospheric electron content, (E), 22:47898
effects on ionospheric electron content, (E), 22:47927
effects on ionospheric electron temperature, (E), 22:9232
effects on ionospheric radio propagation, (E), 22:36795(R) (AD-665351)
effects on ionospheric radio-wave absorption at midlatitudes, (E), 22:41457
effects on latitude variation of maximum h'F and spread F occurrence, 22:46011
effects on magnetic activity at high latitudes, (E), 22:34476
effects on mass mortality among vertebrates and nonvertebrates due to parasitic activity, (T), 22:43698
effects on midlatitude electron and ion temperatures, (T), 22:17508
effects on morphology of vhf radio aurorae, (E), 22:22022
effects on occurrence of noctilucent clouds, (T), 22:9217
effects on occurrence of red auroral, (T), 22:29369
effects on occurrence of sporadic E, (E), 22:19893
effects on parameters of ionosphere, (T), 22:36818
effects on quasi-biennial stratospheric oscillation, (T), 22:22031
effects on radio-emission spectra, (E), 22:36667
effects on radio-star scintillation data and riometer ionospheric absorption, (T), 22:31532 (D-1-82-0702)
effects on radio-wave absorption in the ionosphere, (T), 22:9210
effects on slow neutron densities in the atmosphere at solar minimum, (E), 22:38833
effects on spread-F and K indices at Kodaikanal, (E), 22:22029
effects on spread-F occurrence, (T), 22:13356
effects on storm activity, (T), 22:15310
effects on stratification of E layer, (E/T), 22:34404
effects on sudden commencement of magnetic storms, 22:48017
effects on temperature and density of thermosphere, (E), 22:29372
effects on total electron content in ionosphere, (E), 22:24183
effects on vhf radio auroral, (T), 22:19873
effects on weather, (T), 22:9211
effects on winter ionospheric drifts, (E), 22:15461
electric conductivity gradients in, (T), 22:894
electric conductivity in regions of, in presence of magnetic fields, (T), 22:29071
energy transfer in, vertical magnetic field model for, 22:41251
Evershed effect as wave phenomenon in, (T), 22:11177
Evershed motion in, 22:41279
evolution of bipolar groups of, effect of twisting in, (T), 22:17312
flare analysis in group of, across disk Oct. 29 to Nov. 10, 1967, 22:34227
flare produced on Oct. 4, 1965, from old group of, (E), 22:892
formation of, effect of Mercury on, (T), 22:34151
formation of, magnetic field development prior to and during, 22:47784
formation of, model for, 22:52328
frequency of, secularly smoothed data on minima and maxima of, (T), 22:873
groups of, arch-filament systems in young, (E), 22:15302
hydromagnetic wave propagation in layers beneath, (T), 22:7094
hydromagnetic-wave generation in, magnetic field effects on, (T), 22:34212
increase in 1966, (E), 22:17322
intensity measurements of, correction for scattered light, 22:52316
lithium abundance in, (E), 22:31552
magnetic field occurrence in invisible, (T), 22:887
magnetic field strength in regions of, (E), 22:8901
magnetic field strengths in, (T), 22:26183
magnetic fields above, (E), 22:11189
magnetic fields for, in region CMP on Sept. 20, 1963, (E), 22:29159
magnetic fields in quiescent prominences, (E), 22:845
magnetic fields in small and young, (E), 22:895
magnetic fields in umbrae of, (T), 22:26184
magnetic fields in, (E), 22:29158
magnetic fields in, (T), 22:23917
magnetic structure, velocity, and intensity of regions of, (E), 22:41277
magnetic-field patterns in, (E), 22:36617
magnetic-field strength of, (E), 22:17296
magnetic-field strength of, time dependence of, (T), 22:36582
model of umbra of, (T), 22:881
modulation of activity by planets, (T), 22:29044
motion in, origin of Evershed, (T), 22:29144
motion of, proper, (T), 22:8874
movements of, hypothesis for circulation of Sun's atmosphere from, 22:8965
number during declining phase of cycle 19, relative, (T), 22:29163
number of, relative, (T), 22:26183
number series for 1940-1964, existence of 29-day period in, 22:2755
numbers for July and August, 1967, relative, (E), 22:34197
observational data from 1953 to 1956, (E), 22:47851
observations using shearing interference of diffraction image, (E), 22:15286
oscillatory convection of gases in, in strong magnetic fields, (T), 22:36577
particle acceleration in, (T), 22:23917

  photometry of, method for reducing scattered light in, (E), 22:49872
  physics of, (T), 22:34143 (CNIE-PE-8)
  properties of, coordinate systems for describing, (T), 22:41143 (NP-17530)
  properties of, review, 22:52327
  proton emission from regions of, (E), 22:36563 (N-68-11005)
  radial velocities in small and young, (E), 22:21802
  radiation intensity in umbrae of, relation to magnetic field, (T), 22:21801
  radio emission at 4.5 cm from groups of small area, (E), 22:45899
  radio emission from active regions, slowly varying component of, (T), 22:52442
  radio emission from, (E), 22:52464
  radio spectrum with passage behind solar limb, change in, (E), 22:36585
  relation to 27-day cosmic-ray intensity variations, (E), 22:11277
  relation to 5577 A [O I] night airglow intensity, (E), 22:17519
  relation to brightness of Jovian red spot, (T), 22:43685
  relation to red auroral displays, (T), 22:9220
  relation to type-IV radio bursts, (T), 22:28985
  spectra of faculae, determination of turbulent velocities in, (E), 22:52453
  spectra of, (E), 22:874
  spectra of, (E), 22:2763
  spectra of, curves-of-growth for, (T), 22:13150
  spectra of, effect of plasma on gyrosynchrotron emission, (T), 22:34152
  spectra of, effect of saturation on Zeeman triplets in, (E), 22:31545
  spectra of, enhancement of lines in, (E), 22:31575
  spectra of, equivalent widths of titanium oxide lines in, (E), 22:29097
  spectra of, Evershed effect in, (T), 22:26187
  spectra of, helium lines in, (T), 22:52472
  spectra of, K_3 absorption line of Ca II in, (E), 22:872
  spectra, effect of magneto-sonic waves on Zeeman triplet in, (T), 22:34226
  spectral line contours in regions of, (E), 22:8901
  spectral line profiles for, effects of progressive Alfven waves on, 22:52312
  spectroscopy of, (T), 22:26184
  stability of, (T), 22:45870
  statistics of solar active regions, (T), 22:45871
  structure in groups of, H-alpha photographs of, 22:43675
  structure of, (T), 22:45870
  structure of, magnetohydrodynamics of penumbra in, (T), 22:29143
  structure of, model for, (T), 22:29166
  structure of, observation of Wilson effect from white-light photographs of, 22:34231
  structure of, properties of umbral fine structure (umbral dots) for determination of, 22:43796
  surfaces corresponding to synodic rotations of, calculation of autocorrelation functions for, 22:41148
  ultraviolet (XUV) and radio-wave emission above active regions, (E), 22:11182
  umbra of, saturation effect for π component of normal triplet in, 22:43795
  velocities in, (E), 22:29158
  velocity fields in, Evershed effect in, (E), 22:2763
  velocity fields surrounding, (E), 22:874
  x-ray emission from, (E), 22:52338
  x-ray emission from, (T), 22:38681
  x-ray emission from, (T), 22:15291
Super Kukla
  see Critical Assemblies
SUPERCONDUCTIVITY
  applications in development of linear accelerators, 22:44547
  book: An Introduction to the Theory of Superconductivity, 22:29438
  book: Superconductivity in Science and Technology, 22:41535
  book: The Many-body Problem in Quantum Mechanics, 22:11564
  current density in superconductor/normal/superconductor junction, equation for phase-dependent super-, 22:44050
  destruction by electric currents, (T), 22:38978
  developments in, review of, (T), 22:19911
  dislocation effects on, (T), 22:38977
  electron pairing interaction in theory for, 22:7233
  electron—electron interaction properties in, (T), 22:31735
  field dependence of properties induced in S/N layers by proximity effects, (T), 22:9243
  finite-geometry effects in systems with condensation, 22:52693
  Ginzburg—Landau equations for, solutions applied to long cylinder, 22:36863
  Ginzburg—Landau theory for arbitrary tangential magnetic fields, 22:13420
  high-temperature, review of problems of, 22:46059
  impurity effects on, in one-dimensional systems, 22:38976
  in degenerate semiconductors, (T), 22:38994
  in hydrides with A-15 structure, (E), 22:7227
  in metallic hexa- and dodecaborides, (E), 22:13385
  induction by proximity effects, 22:24192 (CEA-R-3157)
  lectures on, (T), 22:46068
  magnetic flux quantization in one-dimensional model of interacting electrons, 22:17606
  magnetic flux quantization in ring of charged particles, effects of dimensionality on, (T), 22:17605
  magnetic surface levels in presence of surface, theory, 22:44027
  many-body problem in theory of, 22:13382 (NP-17258)
  mechanism in metals having two overlapping bands, electron, (T), 22:34535
  mechanism of high-temperature superficial, electron, (T), 22:9268
  models of, many-body formalism in, (T), 22:13388
  nucleation above H/sub c3/, 22:34532
  nucleation in, (T), 22:2991
  nucleon state of, quark model for, 22:34947 (JINR-P2-3819)
  origin of, contribution of bonding relationships to, 22:36878
  properties of, (T), 22:41537
  quantum effects in, macroscopic, 22:50108
  quantum properties of, review of, 22:7224
  quantum theory for, Green function techniques in many-body, 22:24196 (NP-17413)
  quenching in nonideal type-II superconductors, (T), 22:11356
  research on, review of history and prospects for, 22:9245
  research programs on, summary of AEC, 22:22071 (WASH-1081)
  review of, 22:31762
  studies in metals and alloys, (T), 22:31977
  technological aspects of, for development of electron linear accelerators, 22:9728
  theories of, review of BCS and other, 22:9233 (EGG-1183-4002)
  theory for alloys with paramagnetic impurities, extension of Ginzburg—Landau, 22:22116
  theory for small systems, 22:13421
  theory near critical points, phenomenological, 22:44030
  theory of Fermi liquid, spin branch of collective excitations in, with S-pairing, 22:13405
  theory of photoinduced, 22:48060
  theory of, application of relativistic theory of irreversible processes to, 22:44046
  theory of, as prototype of many-body problem, 22:29385 (PEL-159)
  theory of, correlation functions for, 22:38974
  theory of, empirical, 22:46084
  theory of, existence and bifurcation theorems for Ginzburg—Landau, 22:19912
  theory of, Friedrichs—Berezin transformation and spectral analysis of BCS reduced Hamiltonian in, 22:9252
  theory of, in one dimension, using quantized sound wave method, (T), 22:24238
  theory of, resonating-valence-bond, 22:38970
  theory of, s—d exchange interactions in, 22:5276
  theory of, spectral densities in quantum statistic of, 22:48199
  theory of, transposition to atomic and molecular systems, 22:29190
  theory, free energy for model dynamical systems of BCS type, 22:32028
  theory, mathematical structure of BCS model in, 22:34550
  uses of, survey of commercial, 22:46083
  vortex lattices in, collective modes of, 22:15488
  wave functions in non-transition metals, (T), 22:17587
SUPERCONDUCTORS
  antiferromagnetic spin ordering of paramagnetic additives in condensed layers of, 22:13404
  Bernoulli potentials in, 22:38984
  Boltzmann-type kinetic equation for impure anisotropic, derivation of Khalatnikov's, (T), 22:31771
  bound states in magnetic-impurity-containing, conditions for, (T), 22:7252
  bound states in, with magnetic impurities, 22:44043
  boundary scattering in gallium single-crystal, 22:9249
  charge density near vortex line in type-II, 22:1103
  coil configuration of niobium—tin, used as combined function elements in accelerators, 22:32352 (CEAL-2000, pp A150-1)
  coil configurations for niobium—tin, for use as separated-function elements in accelerators, 22:32297 (CEAL-2000, pp 391-2)
  critical current anomalies in microstrip, relation to fluctuations in phase of Ginzburg—Landau order parameter, (T), 22:7253
  critical current curves and resistive transitions of type-I and type-II, 22:11399
  critical current curves of, system design for continuous recording of, 22:4524
  critical current densities in titanium—vanadium alloy, 22:29445
  critical current density and pinning strength of high-field, temperature and magnetic field dependence of, 22:11345
  critical current density and spatial distribution of magnetic fields in lead—bismuth-alloy, (E/T),

22:46050
critical current density in cold-rolled alloy, correlation with defect structure, 22:17570
critical current density in type-II foils, orientational dependence of, (E), 22:22097
critical current density in type-II, as function of angle between current and rolling direction, (T), 22:34521
critical current density of alloy, effect of plastic deformation on, (E), 22:1092
critical current density of lead--bismuth type-II foils, pinning at surface, (E), 22:1110
critical current density of niobium--titanium alloy, with yttrium, gadolinium, thorium, and oxygen inclusions, 22:1099
critical current density of niobium--titanium--zirconium, effects of valence-electron concentration of, 22:23823
critical current density of, method for increasing, 22:11401(P)
critical current in niobium, microstructure dependence of maximum, 22:5287
critical current in Type-II, effect of small oscillating fields on ''peak effect'' in, 22:52686
critical current in type-II, relation of current--voltage characteristics to peak effect in, (E), 22:44049
critical current in type-II, relation of microstructural heterogeneities to peak effect in, 22:44048
critical current of, in composite cables, 22:19920
critical current peak effect of niobium nitride, 22:29450
critical currents and ac transitions in surface sheath of, (E/T), 22:2994
critical currents and current vortices in Josephson junctions, (T), 22:7247
critical currents and flux fluctuations in tin ring, (E/T), 22:31740
critical currents and magnetization curves for, calculation from Ginzburg--Landau equations, 22:36863
critical currents as function of applied magnetic field in lead--thallium alloy, 22:34555
critical currents in intermetallic niobium--tin, in pulsed fields up to 330 kOe, 22:22084
critical currents in niobium--zirconium, effects of chemical composition on, 22:44060
critical currents in thin wires driven from current sources, relation to thermodynamic fluctuations, (T), 22:39016
critical currents in type-I, asymmetric, (E), 22:17578
critical currents of copper-clad niobium--40 percent titanium, 22:29446
critical currents of type-II, step structure of, 22:31763
critical currents of, design of self-balancing current regulator for measuring, 22:10658
critical exponents for mean field and Ising models below transition temperature for, evaluation of, 22:44023 (TID-24510)
critical field curves for gapless, (E/T), 22:39017
critical field curves for thorium and gadolinium--thorium, with magnetic impurities, (E/T), 22:44019 (IS-T-221)
critical field in indium-alloy, anomalous values of upper, (E/T), 22:50101
critical field of aluminum, as function of pressure and temperature above 0.3ºK, (E), 22:11394
critical field of aluminum, as function of pressure and temperature above 0.3ºK, (E), 22:11382
critical field of indium--lead, temperature and mean-free-path dependence of upper, (E), 22:29431
critical field of niobium, relation of magnetocaloric effect to upper, 22:7220
critical field of surface superconductivity of, (T), 22:50123
critical field of vanadium--zirconium alloys, resistive and upper, (E), 22:48041
critical fields and temperatures of lanthanum-alloy, effects of paramagnetic impurities on, (E), 22:7218
critical fields and temperatures of, relation to pressure, 22:13395
critical fields for clean films of, calculation of surface-parallel, 22:11380
critical fields for, existence and bifurcation theorems for Ginzburg--Landau theory for, 22:19912
critical fields H/sub c2/ and H/sub c3/ of thin film type-II, calculations for parallel magnetic field, 22:26323
critical fields in strong-coupling, 22:41505
critical fields in type-II two-band, upper, (T), 22:5290
critical fields of disordered lead and tin films, effects of annealing on upper, (E), 22:34525
critical fields of high field, (E), 22:22080
critical fields of indium--tin alloy, anisotropy effects on, (E), 22:46071
critical fields of lead films and foils, thickness dependence of, (E), 22:44058
critical fields of molybdenum carbide, at 4.2ºK, (E), 22:24225
critical fields of pure niobium, temperature dependence of ratio of upper two, (E), 22:17576
critical fields of thin film, dependence on thickness, 22:50115
critical fields of thin-film, (T), 22:46048
critical fields of tin films and foils, thickness dependence of, (E), 22:44057
critical fields of tin, at 240 and 270 kbar and 0.1 to 4.2ºK, (E), 22:31761
critical fields of weakly coupled linear chains in, upper, (T), 22:34528
critical fields of, backed by normal metal, upper, (E/T), 22:1080
critical fluctuation of order parameter in, 22:52696
critical magnetic field of thin film, (T), 22:34561
critical magnetic field of tin film, (E/T), 22:2996
critical magnetic field of tungsten, (E), 22:36876
critical magnetic fields in quenched indium and lead films, effects of structural disorder and defects on, (E), 22:34553
critical magnetic fields in tin telluride, at ultralow temperatures, (E/T), 22:24231
critical magnetic fields of indium, lead, and tin, dependence on film properties and angle between field and film plane, (E/T), 22:36862 (COO-1054-41)
critical magnetic fields of Meissner-state cylinders, size dependence of, (T), 22:22100
critical magnetic fields of thin lead films, angular and temperature dependence of, (E), 22:39018
critical magnetic fields of tungsten, 22:29439
critical properties of copper-clad niobium--40 percent titanium, 22:19900 (NP-17338)
critical state equation for niobium wire, 22:52685
critical surface current of type-II, (T), 22:13413
critical surfaces of niobium--tin ribbon and niobium--zirconium wire, (E), 22:46082
critical temperature and energy gap of aluminum film, dependence on thickness of, (E/T), 22:50119
critical temperature and field of indium film, effect of deformation of crystal lattice on, (E/T), 22:34560
critical temperature of aluminum, containing organic molecule inclusions, (E), 22:22105
critical temperature of niobium--vanadium alloy, 22:15497
critical temperature of paramagnetic-impurity-containing, effect of concentration nonuniformity on, (T), 22:44052
critical temperature of thin tin films, thickness dependence of, 22:52717
critical temperature of two-band, (T), 22:24213
critical temperature of ultrathin films, review, (E), 22:2966 (BNL-11901)
critical temperatures of, problems of producing high, 22:46059
critical transport currents in niobium--titanium, 22:1102
crystal structure of intermediate state in lead, effect of defects on, 22:24217
crystal structure of interstitial compound, 22:26347
current attenuation in lead, in low-frequency magnetic field, (E), 22:31750
current decrease due to depairing in tin films, (E), 22:50124
current density in niobium--zirconium, maximum completely stabilized, (E), 22:41527
current distribution in thin strip, (T), 22:52697
current in combined normal and superconducting conductors, stability criteria for, (T), 22:22081
current in sandwiches of normal metals and, equation for, 22:13417
current losses in hard, ac surface, 22:17561
current losses in magnets of, (E/T), 22:41521
current losses in Type-II, alternating, 22:46040 (N-68-19140)
current losses in type-II, effects of static magnetic field on alternating, (E), 22:52701
current losses near lower critical field in monocrystalline and polycrystalline niobium, ac, (E), 22:36875
current of niobium--titanium wire, minimum propagating, 22:1100
current stability in simply connected, zero frequency, (E), 22:50097
current transport properties of Corbino discs of type-II, 22:11358
current--voltage characteristics of Josephson junctions, analog-computer studies of, 22:7245
current--voltage characteristics of lead--lead tunnel junctions, (E), 22:36867
current--voltage relations for wires of, model for prediction of, 22:11381
currents in magnets of, homopolar generator for producing high, 22:11363
currents in tunnel junctions of, excess, 22:39011
currents in wide high-current Josephson junctions of, evidence for Meissner effect in magnetic-field dependence of, (E), 22:7248
currents in, with paramagnetic impurities, 22:41512
density of states in composite films of, Tomasch oscillations in, (T), 22:31743
density of states in thallium, electron tunneling study of, 22:34571
design of large size coils of, 22:11377
design of large-size coils of, 22:11378
design of niobium--titanium, in composite with copper for magnets of Argonne and Brookhaven bubble chamber, 22:28173

design of solenoid of, 22:7214
development and uses, review of, 22:9245
development of niobium--titanium, for magnet coils, 22:22083
development of, for magnet technology, 22:26330
diffusion between surfaces and interfaces of dirty, (T), 22:34549
dislocation interactions in Type II, studies, 22:43600(R) (TID-24562)
dissipative processes in mixed-state, in field of reactor irradiation, 22:50120
echo phenomena in powdered, (E), 22:31747
economic aspects of, 22:41535
effects of deformation on single-crystal niobium, (E/T), 22:34566
effects on antiferromagnetic metal, proximity, 22:1325
elasticity effects in type-II, phenomenological theory of, 22:31745
electric conductivity above transition temperature of, (T, 22:46047
electric conductivity and dissipation in mixed state of, nonlinear, (E/T), 22:24218
electric conductivity in γ phase in thallium--tellurium, (E/T), 22:36872
electric conductivity near transition temperature, effects of order-parameter fluctuations on, (T), 22:34524
electric conductivity of composite, effects of mechanical stress on, 22:11369
electric conductivity of joints between, (E), 22:1090
electric conductivity of lead and tin, calculation of complex, 22:26333
electric conductivity of pure niobium, (E), 22:24235
electric conductivity variations, effects of paramagnetic impurities on, (T), 22:52702
electric contacts of, under mechanical loads, 22:17579
electric fields in type-I, evidence for existence of, (E), 22:19904
electric fields on niobium--tantalum alloy, surface, 22:13021
electric properties and microhardness, 22:1095
electric resistive fields in niobium, measurement of Hall and longitudinal, 22:41519
electrodynamic response to laser microwaves, bilinear, (T), 22:26322
electrodynamics of tin thin film, microwave analysis of, 22:29453
electrodynamics of two-zone, (T), 22:19916
electrodynamics of, with p-pairing and collective excitations, 22:48072
electromagnetic properties of indium, audio-frequency, (E), 22:11391
electromagnetic properties of, with overlapping zones, (T), 22:1093
electromagnetic radiation from tunnel junctions of, (E), 22:36867
electromagnetic response and proximity effect of clean S/N system, (T), 22:24237
electromagnetic response to microwaves of dirty, effects of collective fluctuations of order parameter on, (T), 22:39030
electron band structure of A_3B-type, with β-W structure, 22:5285
electron emission from, using electric fields, (T), 22:52684
electron interactions with paramagnetic impurities in, (T), 22:29402
electron mechanism in semiconductor, semimetal, and molecular crystal, 22:34529
electron pairing across dielectric barriers in, review, (E), 22:2966 (BNL-11901)
electron scattering by Bi--Pb, low-temperature diffraction pattern of, 22:34562
electron tunneling and flux quantization in, (E), 22:13408
electron tunneling between junctions of normal metal and, theory of, 22:1346
electron tunneling between two-zone, with nonmagnetic impurities, (T), 22:29436
electron tunneling characteristics of aluminum diode, edge effects in, (E), 22:1087
electron tunneling in anisotropic, effects of nonmagnetic impurities on Josephson, (T), 22:38982
electron tunneling in $Cd/Al_2O_3/Al$ junctions, (E), 22:24232
electron tunneling in cerium--lanthanum, due to scattering from localized noninteracting spins, 22:2968
electron tunneling in lanthanum and lanthanum--lutetium alloy films, (E/T), 22:7244
electron tunneling in lanthanum thin-film diodes, structure due to phonon effects, (E), 22:31753
electron tunneling in lead/insulator/aluminum junctions near transition temperature, (E), 22:1108
electron tunneling in lead--tin junctions, relation to electromagnetic radiation absorption, 22:2987
electron tunneling in thin-film $Ta/Ta_2O_5/Nb$ and $Nb/Nb_2O_5/V$ junctions, (T), 22:46056
electron tunneling in, review of theory and applications of, 22:41535
electron tunneling in, zero-bias supercurrent and barrier energy calculations for Josephson, 22:1112
electron tunneling into amorphous films of, (E), 22:38998
electron tunneling through thin CdS film between layers of, effects of light on, (E), 22:31752
electron--phonon coupling and phonon spectra in, electron tunneling study of, (E), 22:24214
electron--phonon interaction in non-magnetic dilute alloy, 22:41536
electron--phonon interaction in, (T), 22:24221
energy gap anisotropy in indium, (E), 22:52699
energy gap anisotropy in, ultrasonic study of, 22:11361
energy gap equation for nonhomogeneous, solution of linearized, 22:11357
energy gap in $Al/Al_2O_3/Al$ junction, temperature dependence of, 22:17581
energy gap in lead films, tunneling measurements of pressure effects on, 22:22075
energy gap in lead, pressure effects, (E), 22:17594
energy gap in niobium, (E), 22:1127
energy gap in superconducting evaporated films of, 22:24207
energy gap in tin, dependence on magnetic field and film thickness, (E), 22:15499
energy gap of impure tin, ultrasonic studies of reduced anisotropy of, (E), 22:17603
energy gap of niobium, as function of crystallographic orientation, (E), 22:2977
energy gap of niobium, in Nb/oxide/In tunneling functions, (E), 22:26332
energy gap of thin-film, temperature dependence of, (T), 22:26325
energy gap of, effect of phonon spectrum on, (T), 22:15484
energy losses associated with magnetic flux motion in indium strips and films, (E), 22:13424
energy losses in magnets of niobium--titanium, measurement of ac, 22:29386 (UCRL-18176)
energy-gap anisotropy and specific heat of aluminum--magnesium alloy, (E), 22:41508
entropy transport in, mechanical, (E), 22:17546
excitations in pure type-II, 22:29395
fabrication of 30-kG room-temperature aperture solenoids of, 22:11375
fabrication of intermetallic Nb_3Sn, 22:22079
Fermi level in bulk Type-II, impurity effects and effect of electron mean free path on, (T), 22:52703
flow stress at 4.2°K in niobium and lead, (E/T), 22:48064
fluctuation of order parameter in type-II, (T), 22:38996
flux creep in hard Type-II, measurements, 22:48036 (NYO-3029-29)
flux flow resistance and temperature dependence for vanadium, (E), 22:50103
flux flow resistance minimum in type-II, 22:52716
flux flow resistance of type-II, ideal, (E/T), 22:13389
flux jumping in sintered Nb_3Sn, use of helium flowing through pores to control, 22:11367
flux jumps in cylinders of hard, occurrence and origin of, (E), 22:29411
flux jumps in hard, (T), 22:22109
flux jumps in niobium--titanium alloy, (E), 22:44047
flux jumps in type-II, (E/T), 22:22107
flux linkage and self-inductance of solenoids of, (T), 22:22104
flux pinning by grain boundaries in type-II, 22:38968
flux pinning frequency of Type-II, 22:44025
flux quantization in, in one dimension using quantized sound wave method, (T), 22:24238
flux quantization in, temperature dependence of magnetic field periodicity in, 22:22113
flux shuttling in, as readout method for memory cells, 22:11350
flux spot interactions in solid cylinders of type-I, (T), 22:11393
flux trapping in type-II, 22:39029
flux vortex pinning in type-II, 22:44026
flux-line lattice in type-II, (E/T), 22:46054
fluxoid quantization in vanadium, (E), 22:24233
formalism for dilute alloy, with paramagnetic impurities, 22:46051
Ginzburg--Landau equations for thin, in arbitrary tangential magnetic fields, (E/T), 22:7222
Ginzburg--Landau equations for type-I flux tube structures, cylindrically symmetric solutions of, 22:29390
Ginzburg--Landau parameter change under pressure in, (T), 22:24211
Ginzburg--Landau parameters of indium--lead, concentration and temperature dependence of, 22:52706
Ginzburg--Landau theory of, fluctuations in time-dependent, 22:52719
Ginzburg-Landau parameter of Type-II, effects of pressure on, 22:52688
Ginzburg-Landau parameters of tantalum--niobium alloy, temperature dependence of, (E), 22:44028
Gorkov's equation for Type-II, transformation into transport-like equations of, 22:41529
grain size effect in, (T), 22:17597
grain structure of niobium--tin alloy, (E), 22:19917
ground state of, with single magnetic impurity, (T), 22:1091

Hall effect in mixed state of vanadium, purity dependence of, (E), 22:34564
Hall effect in mixed-state molybdenum--titanium alloy, (E), 22:24201
Hall effect in type-I, gravitation-induced, 22:29399
heat generation and transfer in copper-embedded wires of, calculation of unsteady-state, (T), 22:7235
heat transfer in type-I, by moving magnet, (E), 22:17545
heat transfer of coils of, 22:11365
helicon wave studies, 22:15566(R) (NYO-2150-40)
helicon waves in intermediate-state tin, (E), 22:34522
hypersonic attenuation in mercury, (E), 22:24234
hysteresis mechanisms of, 22:15141 (BNL-50057, pp 79-100)
impedance at 3 to 40 MHz of intermediate state type-II, relation of motion of Abrikosov vortices to ac, 22:36864
impurities in overlapping-band, effects of nonmagnetic, (T), 22:9239
impurity effect in filamentary α-uranium, (E), 22:46052
impurity effects in dilute lanthanum alloys, paramagnetic, 22:9253
inductances of structures of, self and mutual, 22:19908
infrared absorption by thin-film, magnetic field dependence of, (E), 22:17557
infrared absorption spectra of thick-film, multiple absorption edges in, 22:17549
instability in niobium alloy, source of, (E), 22:44024
interaction in, temperature-dependent, (T), 22:7228
interface properties of two, theory of, 22:9233 (EGG-1183-4002)
isotope effect in α-uranium, (T), 22:50118
isotope effect in molybdenum boride and tungsten boride, (E/T), 22:11390
isotope effect in stabilized gamma-uranium alloys, 22:1111
isotope effect in transition metal, (T), 22:9238
isotope effect in zirconium dodecaboride, boron, (E/T), 22:17548
isotope shift in rhenium, (E), 22:17601
Josephson barrier equations, stability of solutions of, 22:1118
Josephson current in anisotropic, temperature dependence of, 22:1094
Josephson current interactions with surface plasmons in tunnel junctions of, (T), 22:19914
Josephson effect in, interpretation based on general principles, (T), 22:52710
Josephson effect in, separated by normal metal, 22:44045
Josephson effect induced by light in CdS film between layers of, (E), 22:31752
Josephson junctions of, millimeter-wave mixing in, (E/T), 22:29408
Josephson junctions of, quantum-field theory of fluctuations in long, 22:22093
junctions of, effect of ac impedance on dc voltage--current characteristics of weak-link, (T), 22:36870
Knight shift in, 22:26516
Kondo effect in molybdenum single crystal, (E), 22:46065
layer formation on nonconductive supports, method for, (E), 22:24229(P)
London model modification for type-II, 22:17600
losses in, immersed in liquid helium, optical observation of, (E), 22:29414
magnet coils of semistabilized niboium--zirconium, performance of, 22:22082
magnet coils of, equilibrium and stability of, (T), 22:17572
magnetic field distribution in type-II, measurement using perturbed γ angular correlations, (E), 22:32573 (MIT-2098-422, pp 69-94)
magnetic field distributions in type-II, measurements using time-dependent perturbed γ-γ angular correlations, (E), 22:46062
magnetic field effects on, quadratic response of intermediate state to transverse alternating, 22:34539
magnetic field enhancement in magnets using coils made of, use of rare earth metal pole piece for, 22:10651
magnetic field measurements in type II, vibrating coil magnetometer for, 22:47439
magnetic field penetration depth in, (T), 22:34526
magnetic field produced by persistent current in niobium--25 percent zirconium solenoid, decay rate of, (E), 22:24206
magnetic flow and stabilization in niobium--titanium, (E/T), 22:22070(R) (ORNL-TM-2162)
magnetic flux creep in, device for measuring, 22:15482 (NYO-3029-23)
magnetic flux distribution in, effects of metallurgical structure on, (E), 22:34527
magnetic flux distribution in, method for observation of, (E), 22:5294
magnetic flux flow and stabilization in, 22:31733(R) (ORNL-TM-2233)
magnetic flux flow and stabilization of, 22:9234(R) (ORNL-TM-2075)
magnetic flux flow and thermal stability of stabilized, 22:29451
magnetic flux flow in type-II foils, orientational dependence of, (E), 22:22097
magnetic flux flow resistance in near H/sub c/$_2$ in type-II, temperature dependence of, 22:36865
magnetic flux jump size distribution in low-kappa type-II, as function of magnetic field, (E), 22:46086
magnetic flux jumping in niobium film, as function of applied field, temperature, and film thickness, (E), 22:41520
magnetic flux jumps in niobium--zirconium alloy, 22:48062
magnetic flux line arrangement in intermediate state type-II, (E), 22:34552
magnetic flux line distribution in mixed state type-II, thermodynamic treatment of, (T), 22:34568
magnetic flux line motion in current transport through, (E), 22:13416
magnetic flux line motion in intermediate states of, (E), 22:41525
magnetic flux lines in hard, effects of time-varying magnetic fields on motion of, (E), 22:36877
magnetic flux motion through indium strips, torsion energy losses from, (E), 22:1113
magnetic flux penetration and dissipation in niobium, (E), 22:5295
magnetic flux penetration in niobium, (E), 22:7234
magnetic flux pumps for, development of, 22:48033 (LA-DC-9820)
magnetic flux pumps in, from changes in geometry or thermal and electrical environment, (E/T), 22:50092 (BNL-12842)
magnetic flux transport noise in type-II, 22:17599
magnetic hysteresis in niobium--tin alloy, relation to structure, 22:44035
magnetic hysteresis of niobium--tin alloys, (E), 22:24199
magnetic induction distribution in type-II current-carrying indium--lead, (E), 22:34556
magnetic induction in tube walls of type-II, (E), 22:2972
magnetic macrovortex structure in hard, 22:29449
magnetic moment measurements of hard, review, 22:20064
magnetic moments in two-band, localized, (T), 22:41509
magnetic properties at 0.1°K, 22:38510 (BNL-50082, pp 93-152)
magnetic properties of hollow cylinders of type-I, effect of surface energies on field retention and shielding, (E), 22:44059
magnetic properties of indium--lead solid solutions, (E), 22:52706
magnetic properties of indium--tin films, 22:34569
magnetic properties of niobium and vanadium, anomalous, (E), 22:19909
magnetic properties of niobium, effects of temperature and molybdenum substitution on, 22:44056
magnetic properties of oriented lamellar lead--tin eutectic, (E), 22:2986
magnetic properties of type-II alloy, reversible and irreversible, (E), 22:11402
magnetic structure of, high-resolution magneto-optical observation of, 22:29401
magnetic-field distribution in lens system with dysprosium poles, (E/T), 22:17563
magnetic-flux flow in disks of mixed-state type-II, in absence of flux density gradient, (E), 22:7246
magnetization and energy losses in wires of, ac-induced, (T), 22:13423
magnetization in film, of thickness much less than coherence distance, (T), 22:48045
magnetization in films of, as function of magnetic field, (T), 22:31732 (NP-17482)
magnetization of copper--lead alloy, correlation with microstructure, 22:41523
magnetization of hollow tube in, in sheath state, (E/T), 22:50107
magnetization of intermetallic beryllium--rhenium alloys, 22:11354
magnetization of molybdenum--rhenium alloy, effect of microstructure on, 22:22077
magnetization of synthetic filamentary, dependence of critical current density on temperature and magnetic field in, (E), 22:36871
magnetization of the sheath in type-II, (E), 22:7216
magnetization of type-II, calculation of hysteresis loss as function of magnetic field and superconductor width in, 22:13407
magnetization of, sources of hysteresis in, (E), 22:5296
magnetostriction in type-II, 22:22092
materials for, review of classification and properties of, 22:41535
mechanical and electrical properties of diffusion-processed niobium--tin--copper--stainless steel, 22:29447
mechanisms in semiconductor and semimetal, competition with insulating, 22:29417
Meissner effect in thin plates of type-II, surface effects in, (E), 22:7236
Meissner state of, stability limits of, (T), 22:31746
metallography of, variable-temperature liquid helium stage for study of, 22:1120
microstructure of thin-wire Nb--Ti alloy, 22:44063
microwave absorption by magnetic-field-induced surface states in type-I, (T), 22:1106
microwave absorption in bulk aluminum, magnetic field dependence of, 22:11388

microwave phonon absorption in aluminum, (E/T), 22:11389
microwave properties of, for use in linear accelerators, 22:46085
microwave surface resistance of niobium, (E/T), 22:46053
microwave surface resistance of tin, magnetic-field dependence of, 22:7240
mixed state of two-band, near lower critical field, (T), 22:17590
mixed states in type-I indium--bismuth alloy foils in transverse magnetic field, (E), 22:17598
model for Josephson junctions, current--voltage characteristics in, 22:24208
model for metallic, with incomplete inner shells, 22:24220
model for, quasi one-dimensional (thread-like) structures in, 22:44042
model for, with incomplete inner bands, 22:17591
model of intermediate state in current-carrying, 22:48054
model of self-trapped laser filaments, type-II, 22:11360
model of, with anisotropic energy gap, 22:48073
Nernst effect in niobium, measurement of, 22:41513
neutron passage through type-II, polarized, (E), 22:26338
neutron scattering in V_3Si, absence of paramagnetic, 22:37035
noise in thin-foil, explanation for flicker, 22:2979
noise spectra of type-II, calculation of background, 22:1088
nuclear magnetic resonance in, 22:31779
nuclear magnetic resonance in type-II, (T), 22:31778
nuclear magnetic resonance study of M_3X-type, with two overlapping energetic bands, 22:46075
nuclear spin relaxation in small-size, (T), 22:48047
nuclear spin--lattice relaxation in pure and impure indium, (E), 22:13391
nuclear spin--lattice relaxation in type-II, 22:31780
nuclear spin--lattice relaxation in vanadium, 22:11398
nuclear spin--lattice relaxation time in mixed state, as function of magnetic field and temperature, (E), 22:34544
nuclear-magnetic-resonance Knight shift in tin, particle-size effects on, (E), 22:1114
nucleation fields in, anomalous, (T), 22:22106
nucleation fields of strong-coupling alloy, 22:1068 (AD-646909)
nucleation of, (T), 22:2991
order parameter at tunneling barriers in pure, boundary condition on, (T), 22:17554
order parameter in type-I, nonequilibrium behavior of, (T), 22:29421
order parameter near magnetic impurities in, spatial variations of, (T), 22:22094
order parameter near upper critical field in type-II, thermodynamic fluctuations of, (T), 22:7241
organic, tests of tetracyanoquinodimethane derivatives of cyanine dyes as, negative, 22:36866
paramagnetic impurity effects on properties of, (T), 22:48050
paramagnetism in metals, review of orbital, 22:26324
particle recombination in films of aluminum, quasi-, 22:26339
performance as coaxial transmission line, analysis using two-fluid model, 22:29397
performance of current-stabilized, in bending magnets, 22:11796
performance of stabilized wire, (T), 22:24224
periodic structure of mixed state in type-II, use of mesons (μ) in study of, 22:48048
phase change in niobium--titanium alloy, during heating in electron microscope, (E), 22:29394
phase precipitation in niobium--titanium, omega, 22:1102
phase transformations in titanium--niobium alloys, 22:48063
phase transition (N/S) of 10-μ spheres of Type-I, mutual inductance system for measuring, 22:46063
phonon density of states in lead, tunneling and neutron derived, 22:24219
phonon spectrum of thallium, electron tunneling study of, 22:34571
physics of, conference on, 22:19899 (AD-661848)
positron annihilation in, use as probe for many-body effects of, 22:50257
power densities in hard, of cylinder or tube geometry, (T), 22:9246
power losses in magnets made of Nb_3Sn ribbon, used in accelerators, ac, 22:53042 (BNL-12889)
power losses in niobium, effects of surface on field dependence of ac, (E), 22:2985
power losses in niobium--zirconium coils, thermal effects on ac, (E), 22:46078
preparation and properties of niobium nitride with and without added tantalum, titanium, and zirconium, (E), 22:17559
preparation and properties of niobium--titanium wire, 22:2980
preparation of intermetallic niobium--tin, 22:635
preparation of Josephson barriers, physics of, 22:29458
preparation of layers of, design of automated evaporation apparatus for, 22:24200
preparation of stabilized Nb_3Sn tape, by diffusion process, (E), 22:11353
production of strip, for multisection 100-kG solenoid, 22:11372
properties and techniques of winding for tapes of intermetallic Nb_3Sn, 22:11370
properties and uses in magnets for high-energy physics, review, 22:1107
properties for use in magnets, 22:15496
properties for use in microwave filters, 22:11347
properties in high fields, pulse measurements of degradation effects in, 22:9263
properties induced by proximity effects in S/N layers, field dependence of, (E), 22:24210
properties of, 22:26346
properties of A_3B-type, relation to d-band structure, (T), 22:1105
properties of abnormal, (T), 22:31736
properties of Abrikosov fluxoids in type-II, internal, (T), 22:13422
properties of aluminum--germanium--niobium alloys as, in high magnetic fields, (E), 22:38980
properties of amorphous bismuth as, tunneling measurements of, 22:2976
properties of cerium as, at pressures above 50 kbar, (E), 22:52709
properties of cubic, effects of magnetic impurities with singlet ground state on, 22:52689
properties of film, with current, (T), 22:52690
properties of gallium, tunneling measurements on amorphous and crystalline phases, 22:34543
properties of granular aluminum films as, (E), 22:22095
properties of granular, calculation of characteristic parameters for, 22:17550
properties of hot-pressed niobium--tin alloy, effects of oxide additives on, 22:38530
properties of indium, audio-frequency electromagnetic, 22:15481 (NYO-2150-20)
properties of intermetallic Nb_3Sn--niobium carbide, effects of crystal structure on, 22:4851 (UCRL-17826)
properties of intermetallic niobium--tin, effect of hydrogen impurities on, (E), 22:26329
properties of iron--niobium--titanium alloy, 22:19535
properties of lanthanum intermetallic compounds with Cu_3Au structure, (E), 22:24223
properties of magnetically dilute alloy, Kondo effect in, 22:2971
properties of magnets of, using NMR, 22:7213 (NYO-2150-36)
properties of metal, above critical temperature, effects of fluctuations on, (T), 22:50110
properties of mixed state of type-II, (T), 22:52680
properties of molybdenum carbide, at 1.5 to 20°K, (E/T), 22:44037
properties of new, review of, 22:52682
properties of niobium carbide and tantalum carbide, at 1.5 to 18°K, (E), 22:44038
properties of niobium, effects of extended defects on, 22:26327
properties of niobium, effects of oscillating magnetic fields on, (E), 22:1089
properties of niobium--copper composite, 22:22076
properties of niobium--titanium alloy, 22:26321(T) (ANL-Trans-598)
properties of niobium-base alloy, 22:31766
properties of nonsymmetric copper--Nb_3Sn--stainless steel composite, electrical and mechanical, 22:11371
properties of palladium--tungsten and platinum--tungsten alloy, 22:36496
properties of partially resistive rings of, macroscopic coherence and quantization in, (E), 22:17556
properties of phosphorus, 22:34530
properties of point-contact Josephson junctions of, structures for measurement of high-frequency, 22:11355
properties of pure niobium single crystals in mixed state, effects of crystal orientation on, (E), 22:31769
properties of reactively sputtered thin-film ternary nitrides, 22:29428
properties of simple metals as, calculation from normal state data, 22:39021
properties of small particles of tin embedded in oxide film as, (E/T), 22:34541
properties of small samples of, (T), 22:5286
properties of small, (T), 22:13421
properties of technetium--vanadium alloy, 22:1079
properties of thin film, in strong magnetic fields, nonlinear and nonlocal effects in, (T), 22:17551
properties of thin lead film at microwave frequencies, nonlinear, (T), 22:17582
properties of thin strip, in presence of ferromagnetic materials, 22:36703(R) (AD-666453)
properties of tin telluride, as function of carrier concentration, (E/T), 22:29427
properties of tin thin film at microwave frequencies, nonlinear, 22:17580
properties of tin, effects of aluminum impurities on, (E), 22:41504
properties of titanium monoxide, effect of lattice vacancies on, (E), 22:29437
properties of tungsten film, structural effects on, (E/T), 22:1126
properties of type II, pinning potential and hf,

22:29454
properties of type-II, voltage--current linearity, (E), 22:29404
properties of V_3Si-type, anomalous, (T), 22:48049
properties of, effect of electron--phonon interaction on high-frequency, (T), 22:50122
properties of, effect of structure on, 22:1096
properties of, electromagnetic and thermodynamic, 22:5291
properties of, relation to lattice stability, (T), 22:44034
proximity effect in lead-containing sandwiches as function of temperature and lead thickness, (E), 22:7250
proximity effect in superimposed films of normal metals and, (E), 22:7219
proximity effect of niobium, with copper and nickel, (E), 22:22096
proximity effects in, microwave analysis of, (E), 22:34558
quantized flux lines in bulk type-II, equations for, 22:1116
quantum fluctuations in uniform filamentary, intrinsic, (E), 22:17583
quantum interference in the resistive state of, (E), 22:41518
quantum interference magnetometry and thermal noise from conducting environment in, (T), 22:52704
quantum phase coherence in, using electromagnetically stabilized Josephson junctions to verify long-range, (E), 22:2993
quantum phase fluctuations in tin, (E), 22:17595
quantum theory for, Green function techniques in many-body, 22:24196 (NP-17413)
quasi-particle excitations in aluminum film, diffusion constant for, (E), 22:34542
quasiparticle approximation for, fluctuation-dissipation theorem from, 22:26583
quenching in nonideal type-II, (E), 22:11356
quenching of wires in electrical power equipment, 22:46080
radiation absorption in thin lead film, far-infrared, (E), 22:11386
radiation effects on electric resistivity and magnetization properties of niobium wire, neutron, (E), 22:31751
radiation effects on intermetallic, with β-tungsten crystal structure, proton, 22:14547(P)
radiation effects on niobium, neutron, 22:1070
radiation effects on type-II, used in accelerator magnets, 22:50492 (SLAC-PUB-469)
radio-frequency losses in penetration depth of, 22:29448
relaxation properties of niobium, from internal friction and Young's modulus measurements, 22:1115
research program on magnets of, at Rutherford Laboratory, 22:11376
resistance jump in cylindrical, with current, (T), 22:50099
resistance measurement of lead, at 2.868 GHz, surface, 22:29452
resistance of thin filament, temperature effects on, (T), 22:13410
resistance of thin thread, at near critical currents, (T), 22:19918
resistive states in high-field type-II, (T), 22:29422
review of development of practical, 22:24228
skin effect in, review, 22:13414
sound attenuation in gapless clean type-II, calculation of coefficients for longitudinal, 22:44031
sound attenuation in, calculation of high-frequency, 22:39019
sound dispersion law of, in semiconductors, (T), 22:44051
sound propagation in Type-I, theory of transverse, 22:48046
specific heat of niobium--titanium, temperature effects on, 22:46066
spin compensation in cerium--lanthanum alloy, 22:34534
spin flip breaking of Cooper pairs in S/N sandwiches, (E/T), 22:38992
spin--lattice relaxation in M_3X compounds with two overlapping energy bands, (T), 22:46061
spin--lattice relaxation processes in type-II, (E), 22:31739
stability of cylinders of, Lange's criterion of ultimate, 22:11368
stability of flux-flow state in niobium--titanium strips, (E), 22:38981
stability of type-I, in external magnetic fields, (T), 22:19919
stability of, carrying transport current in resistive mode, (T), 22:48035 (NP-17607)
stabilization of levitated rings of, servo, 22:24248 (MATT-Q-25, pp 321-40)
stabilization of magnets of, methods for, 22:11364
stabilization of superconductor/normal metal composite, by nucleate cooling in liquid helium, 22:46077
stress fields and magnetic fluxoids in type-II, interactions between, (T), 22:19903
stress on, system for measuring effects of mechanical and magnetic, 22:12632 (CERN-67-26(Vol.2), pp 457-64)
structure of intermediate state of, macroscopic description of dynamic lamellar, 22:2990
structure of surface layers of, in inclined field, (T), 22:50123
structure of, theory of two-phase domain, 22:9254
supercooling and superheating fields of lead and mercury, (E), 22:17577
superheating field of giant-vortex- and Meissner-state cylinders of, 22:22100
surface conductivity of tantalum, above thermodynamic critical field, (E/T), 22:41522
surface energy effects in type-II, calorimetric study of, (E), 22:24230
surface impedance in magnetic field, calculation of high-frequency, 22:2988
surface impedance of lead and tin, microwave measurements of, (E/T), 22:24236
surface impedance of niobium, near H/sub c2/, (E/T), 22:50111
surface impedance of type-I, effects of static magnetic field on microwave, (T), 22:44054
surface nucleation field H/sub c3/ of pure lead, (E), 22:13392
surface nucleation fields, effects of planar defects on, 22:24216
surface resistance at microwave frequencies of lead, effects of high fields and trapped magnetic flux on, (E), 22:38972
surface resistance of, magnetic field dependence of high-frequency, 22:1104
surface sheath states in, effects of small ac fields on, 22:2967 (NYO-3029-13)
surface sheaths below bulk critical field in type-I, evidence for metastable, 22:2978
surface strain effect on diamagnetic and field-retaining properties of cylindrical, (E/T), 22:38987
technology of, compared with conductors at low temperatures, 22:38986
temperature control in space, (E), 22:29432
temperature distribution in low-temperature cables of, with counterflow cooling, 22:26335
theory for alloys with paramagnetic impurities, extension of Ginzburg--Landau, 22:22116
theory of Fermi liquid, spin branch of collective excitations in, with S-pairing, 22:13405
theory of Fermi liquids with P pairing, 22:2983
theory of, s--d exchange interactions in, 22:5276
thermal capacity measurements on niobium--tin intermetallic, 22:17604
thermal capacity of barium strontium titanate at 0.3 to 4°K, 22:1075
thermal capacity of eutectic alloy, proximity effects in, (T), 22:1082
thermal capacity of spherical indium--lead, at 1.6 to 4°K, 22:39010
thermal conductivity and magnetization of type-II, in gapless region, (E), 22:11400
thermal conductivity of cadmium-doped tin, energy gap anisotropy effects on, (E), 22:1109
thermal conductivity of clean and dirty type-II, 22:1125
thermal conductivity of indium--lead type-II, comparison with Caroli--Cyrot theory, 22:29433
thermal conductivity of intermediate state of tin, (T), 22:34570
thermal conductivity of intermediate-state, (T), 22:2989
thermal conductivity of niobium--titanium alloy, (E), 22:44029
thermal conductivity of tin film, effects of magnetic fields on, (E), 22:17552
thermal conductivity of tin film, in magnetic field, 22:29440
thermal conductivity of, (T), 22:44046
thermal conductivity of, below 1°K, 22:1122
thermal effects in intermediate state, dynamic, 22:31765
thermal properties of strong-coupling, near critical temperature, (T), 22:34536
thermal-conductivity measurements of proximity effect in, 22:38985
thermodynamic and transport properties of nonmagnetic-alloy, effects of resonance scattering and impurity correlations on, (T), 22:7249
thermodynamic properties in multiple pair-breaking regimes, (T), 22:17596
thermodynamic properties of contacts between normal metals and, (T), 22:11340
thermodynamic properties of, effects of impurity scattering on, (T), 22:31744
thermodynamics of type-II, (T), 22:13415
thermodynamics of weakly connected rings of, (T), 22:13412
thermodynamics with volume and pressure effects for ideal bulk type-II, (T), 22:17602
thermodynamics, of, in magnetic fields, 22:38988
thermoelectric effect in, (T), 22:13400
thermomagnetic effects in mixed-state and intermediate-state, (E/T), 22:7239
training conditions of coils of, use of grease and silica impregnants for improving, 22:11366
transformer effect in magnetically coupled thin tin films, effects of temperature and magnetic fields on, (E), 22:52712
transition currents in niobium-alloy solenoids in helium

I and II, liquid temperature effects on, 22:46074
transition during destruction of superconductivity in, effects of phase composition and structure on, 22:19923
transition in, with magnetic impurities in applied magnetic field, (T), 22:29430
transition of niobium--zirconium, in pulsed magnetic fields, effects of low-temperature aging on resistive, 22:1101
transition of strontium titanate, anomalous behavior of, 22:11359
transition temperature for dilute magnetic alloy, calculation from Nagaoka's Green-function method, 22:22101
transition temperature for indium single spheres, hysteresis in, (E), 22:17575
transition temperature in indium, effect of film thickness in, (E), 22:7223
transition temperature in, pressure dependence of, (T), 22:17588
transition temperature measurements in niobium thin-film, deposited by sputtering, 22:1078
transition temperature of alloy, fluctuations in critical behavior near, 22:1085
transition temperature of aluminum, calculation of, 22:2974
transition temperature of aluminum, effects of transition-metal impurities on, (E), 22:7217
transition temperature of bismuth-film, (E), 22:1084
transition temperature of cerium--cobalt alloy, (E), 22:50096
transition temperature of cerium--cobalt alloy, effects of nickel or rhodium substitution for cobalt on, 22:7237
transition temperature of chromium--osmium alloy, (E), 22:41531
transition temperature of eutectic alloy, proximity effects in, (T), 22:1082
transition temperature of indium, effect of strain on, (E), 22:11392
transition temperature of intermetallic vanadium--indium alloy, 22:9262
transition temperature of iridium-based dilute-alloy, containing exchange-enhanced impurities, 22:46058
transition temperature of isotropic, calculation of, (T), 22:22099
transition temperature of lanthanum selenide, as function of electron concentration, (E/T), 22:22098
transition temperature of lanthanum, different effect of cerium and gadolinium impurities on pressure dependence of, (T), 22:50125
transition temperature of lanthanum--gadolinium--aluminum intermetallics, 22:26342
transition temperature of lanthanum--tin, effect of gadolinium impurities on, 22:48058
transition temperature of lead, effects of additions of transition metals and their oxides on, (E), 22:13402
transition temperature of mercury--tin, as function of composition, (E), 22:17573
transition temperature of metals mixed with anthraquinone, (E), 22:17543
transition temperature of microstrip, relation to fluctuations in phase of Ginzburg--Landau order parameter, (T), 22:7253
transition temperature of niobium films reactively sputtered in argon containing nitrogen, 22:48057
transition temperature of niobium, tantalum, and vanadium, effects of pressure up to 45 kbar on, (E), 22:7232
transition temperature of niobium--tin intermetallic compound, effects of stoichiometry deviations, 22:44062
transition temperature of rhodium--titanium, 22:7231
transition temperature of strong-coupled, calculation as function of electron--electron and electron--phonon coupling constants, 22:17553
transition temperature of strontium titanate, model for calculation of, 22:24222
transition temperature of technetium, pressure effects on, (E), 22:29391
transition temperature of thallium, effect of impurities on, 22:46067
transition temperature of thin-film thallium and tin, effects of thin germanium coatings on, (E), 22:2975
transition temperature of thin-film, (T), 22:26325
transition temperature of tungsten--rhenium--carbon alloy, 22:19922
transition temperature of vanadium silicides, correlation with lattice instability temperature, (E/T), 22:26340
transition temperature of, effects of impurity scattering on, (T), 22:31744
transition temperature of, effects of thermal phonons on, (T), 22:52715
transition temperature of, proximity effects on, (T), 22:26326
transition temperatures for spinel, (E), 22:9237
transition temperatures in carbides and nitrides of transition metals, effects of valence electrons on, 22:48034(T) (LA-tr-68-31)
transition temperatures of double layers of, as function of layer thicknesses, (E), 22:13393
transition temperatures of indium--lead alloy, as function of composition, (E), 22:39015
transition temperatures of intermetallic compounds of uranium with cobalt, iron, manganese, and nickel, (E), 22:24202
transition temperatures of lead--indium and lead--thallium alloys, 22:7215
transition temperatures of lead-base alloy, (E), 22:48039
transition temperatures of metastable bismuth eutectic alloy, pressure effects up to 30 kbar on, (E), 22:34523
transition temperatures of narrow channels of, relation of large improbable fluctuations to, (T), 22:7243
transition temperatures of pseudobinary alloys Nb$_3$Al--Nb$_3$Ge, (E), 22:17585
transition temperatures of rhenium and rhenium--osmium alloys, pressure effects on, 22:11342
transition temperatures of semiconducting strontium titanate, (E/T), 22:1117
transition temperatures of two-band transition metal, effects of nonmagnetic impurities on, (T), 22:39020
transition temperatures of very thin films and whiskers of, predicted, (T), 22:7242
transition temperatures of zinc, isotope effects on, (E), 22:7251
transition temperatures of, effects of nonmagnetic localized impurity states on, (T), 22:29410
transition temperatures of, expression for calculation of, 22:29402
transition temperatures of, resonating-valence-bond theory for, 22:38970
transition temperatures, lattice constants, and microhardness of niobium-base ternary solid-solution, 22:48059
transition to intermediate state of indium, resistance jump in, (E), 22:34551
transition width of single-crystal gallium, (E), 22:11385
transitions in dirty, Curie--Weiss behavior and fluctuation phenomena in resistive, (E), 22:24227
transitions in niobium and niobium--tantalum alloys, kappa$_1$ and kappa$_2$, (E), 22:29429
transport coefficients in clean type-II, convergence of perturbation expansions for, 22:9247
transport coefficients of gapless clean type-II, 22:44031
transport current distribution in sheets of type-II, (E), 22:5293
tunnel effect between two-zone, with nonmagnetic impurities, 22:48040
tunnel effect in lead at 15 kbar, 22:38979
tunnel effect in niobium single crystal, (E), 22:26334
tunnel effect in tin/tin oxide/tin, relaxation oscillations in, 22:29457
tunnel effect in, Josephson dc, (T), 22:31770
tunnel effect in, preparation of Josephson barriers, 22:29458
tunnel effect in, production and detection of vhf resonance in, 22:13403
tunnel effect in, radiation line width in Josephson, 22:13401
tunnel effect in, self-field limitation of Josephson current, (T), 22:17560
tunnel effects through series-connected barriers, (E), 22:26343
tunnel structure of, emitted-frequency band width from charge quantum fluctuations in, (T), 22:17586
tunneling between thin films of tin and bulk niobium, microwave-photon-assisted, (E), 22:17592
tunneling between, microwave-assisted, (T), 22:38993
tunneling conductance for high-field, zero bias, 22:34540
tunneling from indium film, with superconductive and ferromagnetic overlays, 22:24212
tunneling in anisotropic, (T), 22:50121
tunneling in thin film junctions of, current effects on electron, 22:15486
tunneling in, high-frequency effects in ac Josephson, 22:11338 (CEA-Bib-113)
tunneling in, in magnetic field, (E), 22:2995
tunneling in, Josephson plasma resonance in, (T), 22:24226
tunneling in, model predicting quantized phase effect in, (T), 22:17555
tunneling measurements on thin aluminum films, 22:36869
ultrasonic absorption in two-zone alloy, calculation by correlation function method, 22:9266
ultrasonic absorption near transition temperature in, peak effect in transverse, 22:52711
ultrasonic attenuation coefficient for anisotropic, in limit ql much less than 1, (T), 22:17574
ultrasonic attenuation in dirty, effects of p-wave scattering on, (T), 22:5297
ultrasonic attenuation in indium, 22:17571
ultrasonic attenuation in lead, (E/T), 22:24239
ultrasonic attenuation in lead, amplitude-independent longitudinal, (E), 22:39013
ultrasonic attenuation in mercury and mercury--cadmium alloy, 22:29441
ultrasonic attenuation in niobium near H/sub c2/, (E), 22:29407

    ultrasonic attenuation in niobium, (E/T), 22:22108
    ultrasonic attenuation in pure and cadmium-doped mercury, (E), 22:44055
    ultrasonic attenuation in pure strong-coupling, calculation of longitudinal, 22:39014
    ultrasonic attenuation in pure type-II, anisotropy of, (T), 22:17547
    ultrasonic attenuation measurements in zinc, 22:50106
    ultrasonic attenuation near H/sub c2/ in niobium, dependence on magnetic field orientation and temperature, (E/T), 22:52705
    ultrasonic attenuation near transition temperature of indium, model for amplitude dependence of shear-wave, 22:44053
    ultrasound absorption in aluminum, (E), 22:22115
    ultrasound absorption in, having multiband anisotropic Fermi surface, (T), 22:13390
    use as automatic flux pump, 22:39006
    use as highly sensitive voltage detector, 22:29460
    use as magnetic field probe, 22:1119
    use as stabilized levitated rings, 22:29455
    use for 750-MVA power cable, 22:11349
    use for determining magnetothermodynamic properties in high fields at low temperatures, 22:44044
    use for electron microscope magnetic lenses, 22:5284
    use for enlarging magnetic flux changes, 22:41516
    use for expanding 200-GeV synchrotron to energies of 400 GeV, 22:5687 (UCRL-17862)
    use for magnetostriction measurements in ferromagnets, 22:41517
    use for producing or measuring torques at low temperatures, 22:4527
    use for pulsed magnet coils for proton synchrotrons, 22:11798
    use for shields for magnetic field shaping, (T), 22:11351
    use in 1.3-m-diameter 50-kG magnet for bubble chamber, 22:10601
    use in 400-kJ magnet for polarized target experiment, 22:10602
    use in 7.5-GeV electron linac, 22:37237
    use in accelerators, 22:50485 (BNL-12831)
    use in ammeters, 22:29419
    use in automatic switches, 22:29388
    use in bubble chamber magnets, review of, 22:37237
    use in cables for magnet coils, 22:15502(P)
    use in cables for underground nuclear testing instrumentation, 22:47412
    use in cables, testing for, 22:52692(P)
    use in coils for energy storage in pulsed systems, 22:10649
    use in content-addressable memories using flux-shuttling nondestructive readout, 22:29389
    use in continuous film memory cells, 22:31737
    use in continuous film memory cells having nondestructive readout, 22:31738
    use in cryoelectric arrays, dynamic fault tolerance in, 22:29392
    use in current-accumulating transformers, 22:44041
    use in design of gravimeters, 22:45367
    use in device for releasing stored electric energy, 22:2289(P)
    use in direct energy conversion device, (E), 22:21983 (CONF-661204-(Vol.2), pp 69.1-12)
    use in dynamos, 22:41528
    use in electron microscope lenses, optical properties for, 22:36137
    use in engineering, review of, 22:15498
    use in generator field windings, (T), 22:15500
    use in high energy physics, 22:50486 (BNL-12832)
    use in high-field Helmholtz coil with forced helium cooling, 22:24198
    use in instrumentation for Apache rocket, 22:10649
    use in large magnets, review of technology of, 22:41503 (UCRL-71077)
    use in linear accelerator cavities, 22:46657
    use in magnet coil design, 22:11403(P)
    use in magnet coils for ANL 12-ft hydrogen bubble chamber magnet system, 22:12631 (CERN-67-26(Vol.2), pp 427-33)
    use in magnet coils for energy storage in pulsed systems, 22:11352
    use in magnet coils for producing homogeneous magnetic fields for NMR and electronic resonance measurements, 22:10650
    use in magnet coils, review of, 22:22085
    use in magnet systems, cryogenic problems of, 22:11379
    use in magnetic lens exciter circuit of electron microscope objective, (E), 22:30753
    use in magnetic system of MHD pulse generator, 22:17441
    use in magnetometer design, 22:29425
    use in magnetometer design, 22:38972
    use in magnets for MHD generators, 22:5201
    use in magnets in high-energy physics, 22:7603
    use in magnets with ferromagnetic pole pieces, 22:29413
    use in magnets, magnetic field sweep for, 22:5292
    use in magnets, review, 22:41530
    use in magnets, review of, 22:26341
    use in memory cells, pulse measurements on layers of, 22:2984
    use in microwave devices, review of, 22:11348
    use in microwave meander lines, 22:29456
    use in multipole magnets, 22:5703(P)
    use in storage cell for associative memory, 22:12702
    use in storage coils for power supplies for proton synchrotrons, 22:11797
    use in test of Blackett's hypothesis, (T), 22:5470
    use in transformers, 22:11339
    use in tunable rf preselectors, 22:34537
    use in tunnel junction neuristor, (E/T), 22:46076
    use of cavity, as photodielectric detector, 22:29416
    use of film, for radiant-energy detection, 22:29420
    use of intermetallic niobium--tin, for coil in iron-core magnet, 22:5289
    use of Josephson effect in, for far-infrared detection, 22:41526
    use of Josephson junctions for frequency conversion, 22:29398
    use of niobium--zirconium alloy, in delay lines, 22:6684
    use of solenoids of, in bridge rectifier, (E), 22:13386
    use of thin film, in strip transmission lines with periodic load, 22:34557
    use of, review of, 22:39001
    uses in instruments and devices, conference on, 22:19899 (AD-661848)
    uses in magnets, review of, 22:9235
    uses of tunnel effect in, device, 22:29443
    uses of, employing tunneling and weak-link phenomena, 22:29444
    uses of, review of development and prospects, 22:41535
    vacuum sealing of wires of, to glass, 22:17565
    viscosity in, local temperature-gradient contribution to flux-flow, (T), 22:19901
    voltages due to longitudinal temperature gradients in type-I, transverse, 22:1077
    vortex coupling between two insulated tin film, (E), 22:48056
    vortex excitations in pure Type-II, (T), 22:50105
    vortex filament interactions in type-II, with elastic field, (T), 22:38997
    vortex motion in dirty and pure type-II, in high magnetic fields, (T), 22:7238
    vortex nucleation in type-II, mechanism of spontaneous, (T), 22:31746
    vortex properties in type-II, Green's-function study of, 22:11387
    vortex structure stability in Type-II, (T), 22:50102
    vortex vibrations in type-II, calculation of damping in triangular lattice, 22:1083
    vortices in lead film, thermal force on, (E), 22:9236
    wire for magnet coil in MHD generators, cost of, 22:48053
  properties of zirconium alloys with transition elements as, (E), 22:24203
  transition temperature of phases for Bi--Pb, 22:34559
SUPERCRITICAL ONCE-THRU TUBE REACTOR
  design of 1000 MW(e) uranium oxide (UO_2)-fueled, analysis of optimum economic and technical conceptual, 22:50742 (WCAP-2240)
SUPERFLUIDITY
  alpha particle reactions with helium, energetic neutral excitation in, 22:50113
  anisotropy of counterflow of liquid helium II past flat plate, (E), 22:17607
  back-flow effect in helium II, microscopic theory of, 22:9250
  book: Experimental Superfluidity, 22:11396
  circulation changes around vibrating wire in liquid helium II, vortex wheel interpretation of apparent, 22:34554
  cluster expansion for degenerate Bose fluids, 22:38983
  current decay in, persistent, (E), 22:38990
  density of liquid helium II in critical region, 22:13398
  dissipation at roton critical velocity, wave-radiation model for, 22:46042
  dynamics of, application of relativistic theory of irreversible processes to, 22:44046
  electron and ion mobility in liquid helium, review of, 22:13380 (CEA-Bib-101)
  energy dissipation of vortex lines of rotating liquid helium, 22:9267
  excitation in helium II, energetic neutral, (E), 22:19906
  finite-geometry effects in systems with condensation, 22:52693
  first sound attenuation in helium near critical point, 22:31774
  flotation of helium II, pressure measurements in, 22:19913
  flow of helium II through orifices, (E), 22:15491
  flow of helium II through porous media, (E), 22:15490
  flow of helium II, electric field suppression of, (E), 22:15494
  flow through wire grating, diffraction pattern from, 22:1098
  flow transitions in helium II, in rotating narrow annuli, 22:5282
  fluctuations and correlations in helium, 22:46073
  functional integrals for many-boson systems, 22:52698
  gauge invariance properties of an interacting Bose system, (T), 22:1069 (ISS-67/15)
  generalized hydrodynamic equations, (T), 22:11396
  heat exchange torques on cylinders in, 22:1071
  heat torques and circulation in helium, 22:31755

heat torques on uniform bodies in liquid helium, 22:5283
Huang--Olinto theory for ion mobilities in, test of, 22:39023
ion motion in helium II, temperature effects on critical velocities, (T), 22:15489
ion trapping in rotating liquid helium, effects of electric fields, pressure, and temperature on, (E/T), 22:46045
laser beam scattering on helium, measurement of, 22:5277
model for helium II, local gauge invariance and broken symmetry in Gross--Pitaevskii, 22:2982
model for helium, hard-sphere Bose gas, 22:48061
model for, boson, 22:38969
models of, many-body formalism in, (T), 22:13388
nucleation rates in, theory of, 22:48071
particle motion in superfluid helium, effects of experimental conditions on, 22:26345
penetration into narrow pores, (E), 22:2973
phase transition in ideal boson gas, onset of ODLRO in, 22:34548
phenomenological theory of liquid helium II, 22:24193 (LA-DC-8457)
phonon--quasi particle interactions in dilute solutions of helium-3 in helium-4, 22:5278
phonon-limited drift of electron bubble in helium, (E/T), 22:48070
properties of boson systems at low temperatures, equilibrium, 22:5298
properties of low-density fermion systems, 22:11341
quantum properties of, review of, 22:7224
quantum-mechanical phase and angle variable applications in, 22:24499
quasi-particle model for helium, (T), 22:11396
relaxation of rotation in helium, (T), 22:19921
resonance frequencies in superfluid Helmholtz resonator, 22:48044
rotation of liquid helium II about wire, quantized, 22:13399
rotation of liquid helium II, in annular channels, (T), 22:9258
second sound anomalous dispersion in liquid helium II, (T), 22:29412
second sound propagation in liquid helium II, pressure amplitude of, (E), 22:29406
second-sound damping in liquid II helium, critical region, 22:52694
sound dispersion in helium II, first, (E), 22:13409
sound propagation in liquid helium II, (T), 22:29426
sound velocity in helium-3 in magnetic fields, zero, (T), 22:1073
surface tension of liquid helium II, (T), 22:1072
technological aspects of, for development of electron linear accelerators, 22:9728
theory near critical points, phenomenological, 22:44030
theory of many-boson systems, quantum, 22:11395
theory of, coherent states in, 22:15487
theory of, macroscopic quantum effects in, 22:50108
thermal conductivity of dilute solutions of helium-3 and -4, 22:52695
thermal properties of helium II, Landau theory of second order phase transitions for, 22:34538
thermodynamic potential of helium II near T/sub lambda/, 22:26336
thermodynamics of rotating liquid helium II, 22:2981
third sound in absorbed films, (E), 22:17564
transition of helium II to helium I under rotation, 22:5281
transition of two-dimensional Bose system, nature on, (E/T), 22:22112
transition temperature of helium II in rotating annulus, (T), 22:5275 (ISS-67/24)
transitions in ^{4}He, effect of gravitational field on, 22:39009
two-fluid model and macroscopic quantization, (T), 22:11396
violation of Griffith's inequality for helium-4, apparent, (T), 22:17584
vortex density in rotating helium II, (T), 22:26337
vortex distribution in rotating helium II, (T), 22:22088
vortex lattices in, collective modes of, 22:15488
vortex lines in helium II, motion of negative ions along quantized, 22:34531
vortex ring interactions with vortex lines in helium II, 22:9256
vortex ring production by ions in liquid helium, (E), 22:22090
vortex rings in liquid helium below 0.8°K, formation of charged, (E), 22:29396
vortex-ring interactions in liquid helium, (E), 22:38989
vortices in, theory of quantized, 22:50112

SUPERHEATERS
(Does not include nuclear superheaters.)
see also Reactors, Superheating
control behavior of steam, analog computer simulation of, 22:236(T) (ORNL-tr-1802)
cooling of, economics of gas, 22:16740 (WB-KE-2004)
corrosion of chromium--molybdenum steel, by mercury at 315 to 703°C, 22:4745
design and operation of, for Sodium Component Test Installation, 22:2285
design for once through sodium-heated steam generator, engineering drawings for, 22:40299
design of 98 MW(t) sodium-heated reheat, 22:35465 (KFK-654)
materials for, studies of alloys as, 22:23710
performance of, Fortran IV digital code for thermodynamic, 22:40305 (EUR-3948)
steam pressure regulation for, description of method for entry, 22:42441(P)
steam pressure regulation to fossil fuel-fired, from pressurized water reactor supply, 22:53325(P)
tubes for, eigenvalues and natural frequencies of, 22:12006(R) (ANL-7399)
use of fossil-fueled, in nuclear power plants, 22:12069(P)
vibration studies on, 22:9988(R) (ANL-7391)
vibration testing of EBR-2, 22:16265(R) (ANL-7403)

Superheaters (Nuclear)
see Reactors, Superheating

Superlattices
see Crystal Structure

SUPERNOVA
alpha-particle capture reactions at 1 to 5 x 10^9°K, (T), 22:13088
burning of oxygen and carbon in white dwarfs preceeding, (T), 22:860
carbon explosive ignition in stars of intermediate mass, (T), 22:52333
carbon-14 production in atmosphere by, (T), 22:36568(T) (N-68-22567)
Cas A and Crab Nebula, radio polarized brightness distribution over, (E), 22:13161
colors of type-I and -II, phase dependence of, (T), 22:13114
convection effects on, (T), 22:36569 (N-68-22685)
cosmic, very heavy primary origin in, (T), 22:29305
cosmic-grain formation in expansion of, (T), 22:17335
cosmic-ray emission from nearby, biological effects of, (T), 22:38824 (N-68-19937)
cosmic-ray production by type-II, dosage levels at the Earth, (T), 22:15290
cosmic-ray production in, (T), 22:15385
effects on heating of HI regions, (T), 22:36653
effects on peculiar motions in Cas--Per arm, (T), 22:36645
electron equations of state with pair creation in calculations of, (T), 22:49919
energy emission from neutron stars in remnants of, (T), 22:2728
envelopes of, structure and mass of, (T), 22:36575
explosion of 45-, 52-, and 60-solar-mass stars, (T), 22:26167
explosions in, induced by pair-production instability, (T), 22:36569 (N-68-22685)
formation of neutron stars by, (T), 22:41172
gamma emission from Crab Nebula, (E), 22:13191
gamma emission from Crab Nebula, search for, (E), 22:52424
gamma emission from Crab, germanium detector assembly for measuring, 22:14831
gamma spectrum from Cygnus constellation and Crab Nebula, 22:41156
gravitational collapse and anticollapse in, relation to high-energy particles and magnetic fields associated with, (T), 22:41146
hydrodynamics of, (T), 22:41212
hydrodynamics of, (T), 22:29165
identification of three x-ray sources or remnants of, (E), 22:47774
inducation by pair-production instability, (T), 22:47761
infrared observations of Crab Nebula, (E), 22:29115
infrared spectra at 2.2 and 3.5 μ of Crab Nebula, (E), 22:29119
mass ejection by, (T), 22:41212
mass ejection from, (T), 22:41211
mechanism for type-I, (T), 22:859
mechanism for, (T), 22:15319
model for quasar energy featuring, (T), 22:26151
model for, (T), 22:52426
model for, (T), 22:837
model of quasars with multiple, (T), 22:861
models for, (T), 22:52365
neutrino emission in, (T), 22:13106
neutron capture reactions in, rapid, (T), 22:19710
neutron reactions in, (T), 22:5033
nuclear reactions in, bibliography on, 22:15324
nuclei production in, heavy, (T), 22:29165
nucleogenesis in, (T), 22:19688
occurrence in galaxies, search for, (T), 22:36587
occurrence in Sc galaxies, frequency of, (T), 22:43800
occurrence in Sc galaxies, frequency of, (T), 22:43801
origin of type-I, explosions in white dwarfs as, (T), 22:34150
particle acceleration in nucleus of NGC 1275 by, (T), 22:23968
photography of peculiar nebula in Monoceros, (E), 22:34171
plasma parameters in envelopes of, (T), 22:13112
polarization at 9.8 cm in Crab Nebula, distribution of, (E), 22:29127
production of neutron stars in type-I, (T), 22:924
production of neutron stars in, (T), 22:49927
properties of matter in, (T), 22:17239

properties of, (T), 22:15280
radiation incident on Earth from nearby, (T), 22:34307
radio brightness distributions of three suspected remnants of, (E), 22:45835(T) (NRC-TT-1323)
radio brightness of remnants of, (E), 22:34201
radio emission from collapsing, rapid pulsation of, (T), 22:23966
radio emission from remnant HB 3, (E), 22:23935
radio emission from remnant in W49, (E), 22:11162
radio emission from remnants of, (E/T), 22:28998
radio emission from remnants of, nonthermal, (T), 22:49963
radio emission from Tau A, circular polarization of, (E), 22:11129
radio observations of two remnants of, (E), 22:13086
radio observations of W49, (E), 22:52433
radio spectrum of remnant IC443, (E), 22:43823
radio-brightness distribution of the Crab Nebula at 535 MHz, (E), 22:45894
remnants of, as origin of pulsars, (T), 22:34191
residues of, production of solar system from, (T), 22:23910 (ORO-2529-17)
search for, 1966 Palomar, (E), 22:49893
shock wave propagation in high-density plasma in, (T), 22:2738
SN 1604, x-ray emission from, (E), 22:36640
SN 1967 h, x-ray emission from, (E), 22:34193
spectra of Type-1 1962a, in coma cluster of galaxies, (E), 22:47771
spectra of, radio, (T), 22:45867
spectrum of Chuadze--Lovas, (E), 22:4962
Stromlo 16, optical spectrum of filaments in, (E), 22:47738
synchrotron emission from, (T), 22:29109
theory of neutron stars, 22:7123
x-ray emission by remnants of, (E), 22:34201
x-ray emission from Crab Nebula, (T), 22:49965
x-ray emission from, upper limits on, (T), 22:34193
x-ray spectrum of Crab Nebula, (E) 2, 22:13163

SUPERSONIC FLOW
see also Hypersonic Flow
magnetohydrodynamic, around blunt bodies, (T), 22:2910
pressure determination for cone-cylinders, use of monorail rocket sled to obtain, 22:21003 (SC-DC-66-1967)
stability of very thin cylindrical shells in, analysis of aeroelastic, 22:22910 (SC-DC-68-2077)

Suprarenal Glands
see Adrenal Glands

SURFACE-ACTIVE AGENTS
(See also specific agents.)
see also Flotation Reagents
see also Polysorbate 80

Surface Bursts (Nuclear)
see Nuclear Explosions, Surface

SURFACE FRICTION
coefficient of metal, effects of crystal structure on, 22:52177

Surface Hardening
see Nitridation

SURFACE PROPERTIES
see also Surface Friction
see also Surface Tension
measurement of area and roughness, use of radioisotopes for, 22:16789

SURFACE TENSION
measurement of sodium, effects on impurities on, (E), 22:19476(R) (MSAR-68-14)
radiation effects on, of blood serum of rabbits, whole-body x, 22:10680

SURFACE WATERS
(Limited to information on surface waters in general, including rivers, lakes, ponds, sloughs, etc. For information on specific rivers and bodies of water, see by name, e.g., Columbia River and White Oak Creek.)
alpha and β activity in, of Wyoming mountain bog, assay of, 22:25833
analysis for chromium and molybdenum, neutron activation, 22:48917(R) (YALE-2912-20)
analysis for europium and lanthanum, activation, 22:21043
analysis of Green and Round Lakes, Fayetteville, New York, for carbon and its isotopes, 22:45182
analysis of lacustrine and marine deposits in, for trace elements, activation, 22:1944 (AE-296)
beta activity of, method for measurement of, 22:51084 (SZS-8/68)
carbon-14 uptake by fish from, role of phytoplankton in, 22:25837
cesium-137 content in Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
cesium-137 content in Meuse River, 1966, 22:21192
cesium-137 content of, in British Isles during 1961 to 1966, effects of potassium content on, 22:28460
cesium-137 content of, in Finland during 1966, 22:10764 (SFL-A-8)
cesium-137 transport in turbid, effects of induced clay suspensions on, 22:21186 (ORO-490-13)
cobalt content in Par Pond, of Savannah River Plant, 22:37875 (DP-MS-66-81)
contamination and flow of, nonradioactive tracer studies of, 22:6268
contamination around Casaccia Nuclear Center, effects of ground disposal of radioactive wastes on, 22:16811
contamination by sewage-type materials, control by radiation degradation of pollutants, 22:30711
contamination of Swiss, by radioactive waste disposal, 22:16810
content of pollution in, activation analysis method for tracer study of, 22:31008
content of suspended sediments in flowing, use of cadmium-109 electron-capture x radiation for determination of, 22:4273
control and storage using nuclear formed craters and chimneys, 22:8245 (UCRL-70762)
current velocity of, design of radiometric deep-water flowmeters for measuring, 22:16921
currents in, development of radiometric flowmeter for measurement of ultra-low-velocity, 22:18941
decontamination of iodine-131-containing, rapid filtering arrangements using silver chloride or silver nitrate for, 22:31065
ecology of Chaoborus in Wisconsin, iodine-131 tracer study of, 22:38236 (COO-1281-6)
ecology of fungi in, of Iceland, 22:18662(R) (ORO-3556-11)
effects of power reactors on temperature of, discussion of hearings of policy-forming committee for analysis of, 22:48687
evaporation of Perch Lake, measurement using tritium, 22:35919(R) (AECL-3022)
evapotranspiration of irrigation, use of radiation techniques to determine, 22:6450
filtration of Venezuelan, 22:42983
flow measurements in, use of radioactive tracers for, 22:19057
flow measurements of, using radioactive tracers, accuracy of open channel, 22:45345 (AERE-R-5676)
flow measurements using radioisotopes, turbulent, 22:12554
flow of Australian, radiometric methods for measurement of, 22:12435
flow of, use of activation analysis in measurements, 22:14433 (ORNL-4196, pp 66-89)
flow through reservoirs, use of radioactive tracers for measurement of, 22:18940
geochemistry of Western Victoria, Australia, 22:25512
heating St. Lawrence seaway, for season extension using reactor waste heat, 22:37925 (AECL-3061)
hydrology of Big Lost River, 22:2192 (IDO-22049)
iron content in Par Pond, of Savannah River Plant, 22:37875 (DP-MS-66-81)
manganese content in Par Pond, of Savannah River Plant, 22:37875 (DP-MS-66-81)
measurement of riverflow using gold-198 and chromium-51 as tracers, 22:48952
mixing with waste waters, radioisotopic tracer method for measurement of Vistula River, 22:48926
monitoring program for, in North Carolina, 22:51603
natural radioactivity in, near Schirmacher Ponds in Antarctic, 22:10365
oxygen uptake by, rate measurement using krypton-85, 22:30707
oxygen-18 content in French, measurements of, 22:18934
pollutant dispersion in, use of tracer techniques to determine, 22:14696
pollution by paper industry complexes, use of radioisotopes in control of, 22:30779
pollution by thermal energy industries, problems of, 22:27514 (BNWL-SA-1546)
pollution of Swedish, use of radioactive tracers in control methods for, 22:30777
quark content in, upper limit for, (E), 22:34841 (COO-1112-155)
radiation monitoring of Ames Laboratory area, 22:48944 (IS-1924)
radiation monitoring of BNL area, 1965, 22:40258 (BNL-50093)
radiation monitoring of Mound Laboratory area, January through June 1968, 22:45183 (MLM-1522)
radiation monitoring of Savannah River Plant, January through June 1968, 22:45178(R) (DPST-68-30-2)
radiation monitoring of, at Goodyear Atomic Corporation, 22:18966(R) (GAT-553)
radiation monitoring of, in Federal Republic of Germany during third quarter of 1967, 22:40698
radioactive contamination of, following re-entry dispersion of SNAP radioisotope fuel elements, calculations of, 22:23509(R) (SC-CR-67-2729)
radioactive waste disposal in, 22:35924 (ORO-490-15)
radioactive waste disposal to, hazards from, 22:23250
radioactive waste disposal to, IAEA review of factors affecting, 22:12562 (STI/PUB-170)
radioactive waste in, in environs of Delta Primate Research Center, 22:47544
radioactivity content in Hungarian, 22:48946
radioactivity content of, in Minnesota during 1966, 22:28506
radioactivity content of, in North and South America during 1966, 22:25850
radioactivity content of, in North and South America during 1966, gross, 22:23522

radioactivity content of, in North and South America during 1966, 22:28495
radioactivity content of, in North and South America during 1966, 22:28502
radioactivity content of, in U. S. during 1966, 22:28517
radioactivity content of, in U. S. during 1966, 22:28519
radioactivity content of, in U. S. during 1966, total, 22:23520
radioactivity content of, in United States during 1965, 22:28458
radioactivity content of, in United States during 1965, β, 22:36257
radioactivity content of, in United States during 1966, 22:28526
radioactivity content of, in United States during 1966, 22:28522
radioactivity content of, in United States during 1966, gross, 22:23518
radioactivity content of, in United States during 1967, alpha and beta, 22:28506
radioactivity content of, in United States during December 1966, 22:40697
radioactivity content of, in United States during February 1967, 22:40693
radioactivity content of, in United States during March 1967, 22:23515
radioactivity content of, in United States during November 1966, 22:40690
radioactivity content of, in US during 1966, 22:28508
radioactivity content of, in Washington during 1964 to 1965, 22:28458
radioactivity content of, in Washington during 1965 to 1966, 22:28510
radioactivity content of, in Washington during July 1965 to June 1966, 22:40693
radioactivity in Central Florida, measurement of natural, 22:40209 (SC-RR-68-196)
radioactivity in Nagasaki, analysis of residual, 22:10770
radioactivity in, near Ames Research Reactor, 1962 to 1968, 22:25532 (IS-1776)
radioactivity measurements in, of Euratom countries, 1966, 22:8221 (EUR-3602)
radioactivity of Savannah River Plant site, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
radioactivity release to Nitelva River at Kjeller, Norway, 1966, 22:16356 (KR-116)
radioactivity transport in rivers, 22:35924 (ORO-490-15)
radiochemical analysis of samples of, development of standards for, 22:19351
radioisotope content in, use of underwater γ spectrometer to measure, 22:10373
radioisotope content of fish in, in Germany during 1964, 22:31076
radioisotope content of Rhine, 22:23138
radioisotope content of, cerium-144, cesium-137, radium-226, strontium-90, zirconium-95, 22:25800 (UCLA-12-668, pp 37-58)
radioisotope content of, in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
radioisotope content of, in Italy during 1966, cesium-137 and strontium-90, 22:49327 (PROT-SAN.-01/67)
radioisotope content of, in United States during 1966 to 1967, 22:28514
radioisotope content of, in United States during Feb. 1967, 22:28510
radioisotope content of, state and territorial regulations and standards for, 22:28504
radioisotope distribution in ecocystems of, bibliographies on, 22:33777 (TID-3910(Suppl.5))
radioisotope distribution in Florida, 22:2204
radioisotope distribution in, near nuclear craters, development of model for prediction of, 22:21226 (NVO-1229-87)
radioisotope transport in, development of model to study, 22:10356 (ORO-490-12)
radioisotope transport in, effects of organic pollution on, 22:42849 (ORO-490-16)
radioisotope transport with suspended sediments in estuarine, 22:4272 (TID-24140)
radioisotopes content in, monitoring methods for reactor sites, 22:30708
radioprotective effects of bathing in thermal springs of, on rabbits, γ, 22:8641
radium content in Estonian, 22:25509
radium content in, from uranium ore processing plant, effects of pH on, 22:25477
radium content in, from uranium ore processing plant, effects of various inorganic salts on, 22:25478
radium content of Japanese, 22:2206
sand movements in Seine estuary, use of gold-198 and iridium-192 as tracers to measure, 22:48942
sediment content in, performance of radiometric gages for measurement of, 22:19178
sediment movement in, kinetic characteristics of, (E/T), 22:18996
sediment movement studies in, use of radioactive tracer techniques for, 22:19064
sediment movements in, use of radioactive tracers for measurement of, 22:19058
sediment transport in, radioisotope tracer studies of, 22:42975(T) (ORNL-tr-1805)
sedimentation rates in, use of carbon-14 to measure, 22:6490
sediments from eastern and southern US, thorium and uranium contents in, 22:33557
sediments in, iodine-131 content of suspended, 22:40219
sediments of, sorption and transport of strontium-85 by, 22:37876 (ORO-490-12-a)
silicon dioxide content in sediments of, x-ray diffraction method for estimation of, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
silt movement in, development of tracer method to measure, 22:30775 (PAEC/Chem/Misc-2)
strontium-85 transport in turbid, effects of induced clay suspensions on, 22:21186 (ORO-490-13)
strontium-85 transport in, mathematical model for calculation of effects of uptake by aquatic plants on, 22:33815(R) (ORO-490-14)
strontium-90 content in Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
strontium-90 content in Meuse River, 1966, 22:21192
strontium-90 content of, in British Isles during 1961 to 1966, effects of calcium content on, 22:28460
strontium-90 content of, in Finland during 1966, 22:10764 (SFL-A-8)
strontium-90 content of, in New York during 1966, 22:23515
strontium-90 content of, in United States during 1965 to 1966, 22:28510
strontium-90 content of, in United States during October 1965 to June 1966, 22:40693
strontium-90 equilibrium in, effect of yttrium-90 content in bottom silts on, (E), 22:12431(T) (MLM-1470(tr))
strontium-90 uptake by plankton in lake, effects of calcium content on, 22:47500
temperature changes in Columbia River, effects of dams, reservoirs, and increased water usage on, 22:2190 (BNWL-SA-1457)
temperature of Deerfield River, mathematical simulation of, 22:8205 (BNWL-628)
temperature of Illinois River, development of simulation system to predict, 22:30689 (BNWL-728)
temperature of St. Lawrence seaway, use of waste reactor heat to maintain above-freezing, 22:30770
thermal effects on Blackwater Estuary, from Bradwell Reactor cooling water discharge, 22:37471
thermal modification of river water quality due to hydraulic power dams, 22:30405 (BNWL-719)
thermal pollution of rivers, computer program for determining power reactor effects on, 22:18467
thorium content in Estonian, 22:25509
thorium content in Japanese, 22:2206
trace element concentration and distribution in Wisconsin, measurement of, 22:16697(R) (COO-1281-9)
tritium activity in southwestern France, measurement of, 22:18936
tritium content in French, measurement of, 22:18934
tritium content in German, effects on tritium content in wines, (E), 22:18928
tritium content in Icelandic, measurement of, 22:18933
tritium content in New Zealand, measurement of, 22:18935
tritium content of, in United States during 1964 to 1965, 22:28527
uranium content in Estonian, 22:25509
uranium content in Japanese, 22:2206
uses of, effects on power reactor siting of, 22:18466
velocity of river, effect on transport of radioisotopes, (E), 22:10356 (ORO-490-12)
yttrium-90 equilibrium in, effect of yttrium-90 content in bottom silts on, (E), 22:12431(T) (MLM-1470(tr))
zinc content in Par Pond, of Savannah River Plant, 22:37875 (DP-MS-66-81)

SURFACES
  adhesion of glass particles to solid, 22:23542
  aerosol deposition on vertical, measurement of micron-sized, 22:43315 (RMRC/P-17)
  contamination control at Los Alamos, 22:36254 (LA-DC-9005)
  contamination of, device for sampling, 22:10665(P)
  contamination on, instrumentation for measuring, 22:21387 (SC-M-68-94)
  contour mapping of thin-film, design of optical system for, 22:12183 (SC-CR-67-2509)
  crystal lattice measurements on, feasibility study of, 22:9420(R) (COO-623-127)
  decontamination of, efficiency of water vapor jet for, 22:31114
  decontamination of, standard test for comparing, 22:30666
  filament winding on, of revolution, 22:14397 (SCL-DR-65-102)
  fission product deposition on, development of models to describe, 22:16721
  gas interactions with, review of modulated-beam techniques for study of, 22:930 (AGARD-CP-12(Vol.1), pp 191-216)
  heat transfer at unwettable, mechanisms of, 22:2303
  helium-3 atom interactions with container, effects on nuclear spin relaxation times in gaseous helium-3, (E), 22:1009
  iodine deposition on painted, 22:5962
  ion reactions with gas-coated, model for electron

ejection in, 22:11560
leakage between, in elastic contact, (T), 22:8276
measurement of strontium-90 contamination of, efficiency of wipe test for, 22:19346
mechanical treatments of stainless steels, burnishing, explosive hardening, and planishing, 22:19477 (NASA-SP-5090)
Moessbauer effect study of properties of, 22:39199
molecular beam reactions with, energy and momentum transfer in, (T), 22:19770
neutron scattering studies on, review on thermal, 22:50955
oxidation of contacting metal, effect on heat transfer, 22:16759
particle deposition on natural, factors affecting, 22:10771
particle deposition on vertical, effect of roughness on small, 22:16717
properties of, chemical and physical, 22:36465
radiation dosimetry at interfaces of bone and tissue, 22:38308
radiation dosimetry at interfaces of heterogeneous, ion-dose curve for γ and x, 22:38313
radiation effects on reactions of solid, with adsorbed phases in heterogeneous systems, 22:21136
radioactive contamination of foliar, non-porous, and porous, methods for removal of, 22:23558
radioactive contamination of lacquer or plastic, development of solution for removing, 22:38289
radioactive contamination of, at A.W.R.E., standards for, 22:23554
radioactive contamination of, at HASL in relation to air-dust content, 22:23546
radioactive contamination of, by glass particles, methods for removal of, 22:23542
radioactive contamination of, conference on, 22:23541
radioactive contamination of, determination of limits for, 22:23545
radioactive contamination of, determination of maximum permissible levels for, 22:23548
radioactive contamination of, determination of permissible contamination limits for, 22:23544
radioactive contamination of, development of coating materials for protection against, 22:15003(T) (AD-662586)
radioactive contamination of, methods for measuring, 22:23549
radioactive contamination of, methods used at Saclay Center of Nuclear Studies for removal of, 22:23557
radioactive contamination of, system for monitoring, 22:45272 (AAEC/M-84)
radioactive contamination of, use of liquid scintillation counters for determining β, 22:23547
radioactive contamination on, regulations for determination of, 22:45509 (SZS-7/68)
radioactive dusts removal from, using synthetic cleaning solutions, 22:51591
radioactivity of curved, equipment and methods for autoradiographic analysis of, review of, 22:51417
roughness effects on friction characteristics of graphite and graphite--metal combinations, 22:8751
roughness effects on gamma doses, 22:38248 (AD-664759)
roughness of boiler wall, effect on vaporization of mercury and water, (E), 22:10485(R) (SAN-677-15)
roughness of contacting metal, effect on heat transfer, 22:16760
roughness of Zehender technique for measuring, 22:39966 (RFP-1040)
safety evaluation of flooring and walkway, 22:2278 (UCRL-70720)
scattering from conical and plane, SURF program for calculating γ and neutron, 22:17714 (GEMP-582)
thickness of contacting solid, effect on heat transfer, 22:16757
transfer of lead-212 vapor and tritium-labeled water vapor to rough, effects of molecular diffusivity on, 22:43300 (AERE-PR/HPM-12)
tritium absorption on metal, percutaneous transfer, removal, and smear sampling of, 22:43300 (AERE-PR/HPM-12)
tritium content on, equipment for measuring, 22:23262 (CEA-R-3350)

SURFSIDE REACTOR
design parameters for, 22:22712 (STI/PUB-174)

SURGERY
effects on β-radiosensitivity of ophthalmopathy associated with Graves disease in man, 22:49626
effects on carcinoma of colon of rabbits, combined effects of x-radiotherapy on, 22:10798
effects on chromophobe adenomas in pituitary of man, combined effects of radiation on, 22:12876
effects on electron beam-radiosensitivity of carcinomas of larynx in man, 22:10803
effects on electron-therapy of sympathogoniomas in human children, 22:51711
effects on fast electron-radiotherapy of thyroid tumors in man, 22:51729
effects on fast electron-therapy of malignant melanomas in man, 22:51747
effects on γ-radiosensitivity of rabbits, 22:6892
effects on high-energy electron-irradiated tumors in man, 22:51707
effects on high-energy electron-radiotherapy of ethmoid and maxillary sinus tumors, 22:51739
effects on high-energy electron-radiotherapy of human laryngeal tumors, treatment planning for combined, 22:51705
effects on high-energy electron-therapy of cervical carcinomas in pregnant man, 22:51718
effects on high-energy electron-therapy of vulvar carcinomas in man, 22:51719
effects on human brain tumors, combined effects of radiotherapy on, 22:38391
effects on incidence of chromosome aberrations in man, 22:33955
effects on kidney functioning in x-irradiated dogs, 22:21435
effects on malignant tumors in man, biologic basis for effects of preoperative radiotherapy on, 22:38381
effects on malignant tumors, combined effects of radiation dose and schedule on, 22:47550
effects on mammary cancer, combined effects of radiotherapy on, 22:6913
induced lesions in human brain during stereotaxic, for Parkinson's disease, radiofrequency, 22:28567
inhibition of cortical activity by, effects of, on γ-radioprotective effects of methenamine and mexamine on mice, 22:43366
performance for removal of plutonium-239-contaminated tissue following accidental injection, 22:21552
performance for repair of radioinduced stricture of rectum, 22:19444
performance for treatment of radiation injury to jaw of man, 22:10799
performance of lasers for craniotomy, 22:8631
plastic, for treatment of skin injuries induced by radiotherapy of basal cell carcinomas, 22:28557
radiation effects on effectiveness of mammary carcinoma, in man, electron, 22:10793
radiation effects on hazards of, to man following therapy, 22:45705
radiation effects on healing of anastomoses in intestine of dogs following, histological study of x, 22:38472
radiation effects on incidence of complications following head and neck, therapeutic x, 22:28690
radiation effects on response of man to, for laryngeal carcinoma, review of therapeutic x, 22:28692
radiation effects on tissue regeneration following, review of therapeutic x, 22:51893
radiosterilization of drugs, saline, and surgical dressings for use during, γ, 22:52103
reduced bladder functions following, for carcinomas of uterus of man, comparison with x and for radium γ therapy, 22:28569
removal of pericardium by, following x-radioinduced pericarditis in man, 22:31141
removal of pituitary gland by, for treatment of diabetic retinitis, comparison of, with proton therapy, 22:31150
removal of rat adrenal glands by, effects of, on x-radiosensitivity of chromosomes in cornea, 22:4596
treatment of carcinomas of larynx of man, effectiveness of, in comparison to x radiotherapy, 22:36385
treatment of hyperthyroidism in man, development of myxedema following, in comparison to iodine-131 therapy, 22:38445
treatment of radiation injuries to distal ureters of man following therapy, 22:47605
treatment of radiation injuries with plastic, evaluation of, 22:47607
treatment of thyroid carcinoma as related to incidence of thyroid disease, 22:23599 (UCRL-50376)
use for prevention of osteonecrosis of mandibles of man following radiotherapy of cancer in oral region, 22:47613
use for repair of radioinduced injuries to human skin following therapy for malignant tumors of cervicofacial area, 22:47598
use for repair of radioinduced skin lesions of neck in human patients following radium therapy of neoplasms of larynx, 22:49525
use for repair of x-radioinduced injuries of human bladder, 22:49434
use for therapy of hyperthyroidism in comparison to iodine-131, 22:17048
use for therapy of hyperthyroidism, incidence of leukemia following, 22:51969
use for treating plutonium wounds in man, 22:21544
use for treatment of adenoid cystic carcinomas in man, combined effects of cobalt-60 or radium γ therapy on, 22:8587
use for treatment of beryllium-induced granulomas of human hand, 22:49260
use for treatment of complications following x-radiotherapy of carcinomas in bladder of man, 22:47612
use for treatment of malignancies, development of edema of extremities following, 22:40922
use for treatment of malignant tumors in man and mice, review of effects of time of administration of radiotherapy on, 22:47564
use for treatment of man following thermonuclear warfare, planning of, 22:31126
use for treatment of proctosigmoid injuries following

radiotherapy of cervical cancer, 22:45619

- use for treatment of radiation injuries to man, 22:47601
- use for treatment of radioinduced injuries to bowel of man following therapy of carcinomas of cervix and endometrium, 22:51766
- use for treatment of toxic adenoma of thyroid gland, 22:2523
- use for treatment of x-radioinduced exostoses on human hand, 22:49591
- use in combination with low dose radiotherapy, review of, 22:47551
- use in combination with radium for therapy of hemangiopericytomas in lungs of men, 22:28545
- use of biologic excision procedure in, for treatment of radionecrotic areas in man, 22:51780
- use of plastic, for treatment of radiation injuries to man following radium therapy for facial hypertricosis, 22:31160
- use of plastic, for treatment of x-radioinduced injuries to face of man, 22:31200
- use of plastic, in combination with radiotherapy for treatment of recurrent skin diseases, 22:31142
- use of plastic, to repair radioinduced injuries to human skin following therapy for melanomas and spinaliomas, 22:31195
- use of radiation in replacement of, 22:33908

SURRY POWER REACTOR, UNIT 1

- accidents in, detailed safety analysis of hypothetical, 22:18386 (DOCKET-50280-12)
- component cooling systems for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- containment spray system for, safety analysis of efficiency of, 22:18388 (DOCKET-50280-14)
- containment structure for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- containment structure for, earthquake response spectra for, 22:18389 (DOCKET-50280-15)
- containment system for, heat and energy transfer in, 22:18378 (DOCKET-50280-4)
- containment system for, safety analysis of, 22:18382 (DOCKET-50280-8)
- containment systems for, preliminary safety analyses for, 22:18384 (DOCKET-50280-10)
- containment vessel liner for, effects on containment pressure transients of increasing thickness of, 22:18380 (DOCKET-50280-6)
- control systems and instrumentation for, 22:22675 (DOCKET-50280-16)
- control systems and instrumentation for, preliminary safety analyses of, 22:18384 (DOCKET-50280-10)
- coolant loss accidents in, safety analysis of, 22:18378 (DOCKET-50280-4)
- coolant loss incident in, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- coolant losses from, safety analysis of piping breaks causing, 22:18388 (DOCKET-50280-14)
- cooling system for, fission product inventory in, 22:18382 (DOCKET-50280-8)
- cooling systems for, preliminary safety analyses of design of, 22:18384 (DOCKET-50280-10)
- core for, analysis of flux peaking and hot spots in, 22:18378 (DOCKET-50280-4)
- cores for, preliminary safety analysis for design of, 22:18383 (DOCKET-50280-9)
- electrical systems for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- electrical systems for, preliminary safety analysis of, 22:18384 (DOCKET-50280-10)
- emergency and auxiliary systems for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- engineered safeguards for, preliminary safety analysis of, 22:18384 (DOCKET-50280-10)
- hurricane effects on, safety analysis of, 22:18388 (DOCKET-50280-14)
- in-core transients in, safety analysis of, 22:18382 (DOCKET-50280-8)
- incidents in, effects of containment leakage during, 22:18380 (DOCKET-50280-6)
- ionization chambers in, evaluation of use of external, 22:18380 (DOCKET-50280-6)
- organization and training for, preliminary safety analysis report on, 22:18385 (DOCKET-50280-11)
- pressure vessel for, safety analysis on internals of, 22:18382 (DOCKET-50280-8)
- radiation environment surveillance in, use of activation detectors for, 22:18378 (DOCKET-50280-4)
- radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- regulatory action on, AEC, 22:44854
- safety evaluation of, AEC Division of Reactor Licensing, 22:32749 (DOCKET-50280-17)
- site for, analysis of foundation dynamics of, 22:18378 (DOCKET-50280-4)
- site for, earthquake amplification factors for, 22:18379 (DOCKET-50280-5)
- site for, earthquake response spectra for buildings on, 22:18389 (DOCKET-50280-15)
- site for, field studies for geologic and hydrologic characteristics of, 22:18377 (DOCKET-50280-3)
- site for, physical characteristics of soils at, 22:18377 (DOCKET-50280-3)
- site for, piling load tests for, 22:18376 (DOCKET-50280-2)
- site for, preliminary safety analysis of, 22:18383 (DOCKET-50280-9)
- site for, safety analysis of earthquake effects at, 22:18381 (DOCKET-50280-7)
- site for, seismicity analysis for, 22:18375 (DOCKET-50280-1)
- site for, soil density data for, 22:18379 (DOCKET-50280-5)
- site for, use of piezometers for water table determination at, 22:18379 (DOCKET-50280-5)
- siting of, preliminary safety analyses of various aspects of, 22:18387 (DOCKET-50280-13)
- steam and power conversion systems for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- transient analyses for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- turbines for, safety analysis of, 22:18382 (DOCKET-50280-8)

SURRY POWER REACTOR, UNIT 2

- accidents in, detailed safety analysis of hypothetical, 22:18386 (DOCKET-50280-12)
- component cooling systems for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- containment spray system for, safety analysis of efficiency of, 22:18388 (DOCKET-50280-14)
- containment structure for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- containment structure for, earthquake response spectra for, 22:18389 (DOCKET-50280-15)
- containment system for, heat and energy transfer in, 22:18378 (DOCKET-50280-4)
- containment system for, safety analysis of, 22:18382 (DOCKET-50280-8)
- containment systems for, preliminary safety analyses for, 22:18384 (DOCKET-50280-10)
- containment vessel liner for, effects on containment pressure transients of increasing thickness of, 22:18380 (DOCKET-50280-6)
- control systems and instrumentation for, 22:22675 (DOCKET-50280-16)
- control systems and instrumentation for, preliminary safety analyses of, 22:18384 (DOCKET-50280-10)
- coolant loss accidents in, safety analysis of, 22:18378 (DOCKET-50280-4)
- coolant loss incident in, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- coolant losses from, safety analysis of piping breaks causing, 22:18388 (DOCKET-50280-14)
- cooling system for, fission product inventory in, 22:18382 (DOCKET-50280-8)
- cooling systems for, preliminary safety analyses of design of, 22:18384 (DOCKET-50280-10)
- core for, analysis of flux peaking and hot spots in, 22:18378 (DOCKET-50280-4)
- cores for, preliminary safety analysis for design of, 22:18383 (DOCKET-50280-9)
- electrical systems for, detailed preliminary safety analysis of, 22:18386 (DOCKET-50280-12)
- electrical systems for, preliminary safety analysis of, 22:18384 (DOCKET-50280-10)
- emergency and auxiliary systems for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- engineered safeguards for, preliminary safety analysis of, 22:18384 (DOCKET-50280-10)
- hurricane effects on, safety analysis of, 22:18388 (DOCKET-50280-14)
- in-core transients in, safety analysis of, 22:18382 (DOCKET-50280-8)
- incidents in, effects of containment leakage during, 22:18380 (DOCKET-50280-6)
- ionization chambers in, evaluation of use of external, 22:18380 (DOCKET-50280-6)
- organization and training for, preliminary safety analysis report on, 22:18385 (DOCKET-50280-11)
- pressure vessel for, safety analysis on internals of, 22:18382 (DOCKET-50280-8)
- radiation environment surveillance in, use of activation detectors for, 22:18378 (DOCKET-50280-4)
- radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
- regulatory action on, AEC, 22:44854
- safety evaluation of, AEC Division of Reactor Licensing, 22:32749 (DOCKET-50280-17)
- site for, analysis of foundation dynamics of, 22:18378 (DOCKET-50280-4)
- site for, earthquake amplification factors for, 22:18379 (DOCKET-50280-5)
- site for, earthquake response spectra for buildings on, 22:18389 (DOCKET-50280-15)
- site for, field studies for geologic and hydrologic characteristics of, 22:18377 (DOCKET-50280-3)
- site for, physical characteristics of soils at, 22:18377 (DOCKET-50280-3)
- site for, piling load tests for, 22:18376 (DOCKET-50280-2)
- site for, preliminary safety analysis of, 22:18383 (DOCKET-50280-9)
- site for, safety analysis of earthquake effects at,

    22:18381 (DOCKET-50280-7)
  site for, seismicity analysis for, 22:18375 (DOCKET-50280-1)
  site for, soil density data for, 22:18379 (DOCKET-50280-5)
  site for, use of piezometers for water table determination at, 22:18379 (DOCKET-50280-5)
  siting of, preliminary safety analyses of various aspects of, 22:18387 (DOCKET-50280-13)
  steam and power conversion systems for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
  transient analyses for, preliminary safety analysis of, 22:18385 (DOCKET-50280-11)
  turbines for, safety analysis of, 22:18382 (DOCKET-50280-8)
Surrey Project
    see Plowshare Project
SURVEYING
    see also Aerial Surveying
  markers for topographical, use of radioactive monazite technique for locating, 22:48931
  procedures for 300-GeV proton synchrotron, 22:1521 (CERN-563(Vol.1))
SURVIVAL
    see also Death
    see also Life Spans
    see also Mortality
  inhibition by EMS in maize plants, effects of water on, 22:7935 (BNL-11716)
  light effects on yeasts, dark repair of fluorescent, 22:28412
  measurement of erythrocyte, in man, 22:33894
  model for cell, for use in determination of acute radiation effects on hematopoietic system in mammals, 22:14906 (BNL-50057, pp 123-37)
  oxygen effects on, in erythrocyte-depleted dogs, 22:15040
  radiation effects on cell, in relation to dose, model for, 22:28662
  radiation effects on individual cell, model for predicting, 22:51926
  radiation effects on intrauterine, of embryos of mice following injection of phosphorus-32 into male parents, β, 22:36386
  radiation effects on lymphocyte, in mice, x, 22:49574
  radiation effects on pre-weaning, of beagle dogs, effects of exposure during gestation and lactation on β, 22:10827(R) (UCD-472-114)
  radiation effects on rate of, in Chlorella, combined effects of gravity and vibration on, 22:17057
  radiation effects on, following therapy for human brain tumors, γ, 22:31192
  radiation effects on, of Achromobacter sp., γ, 22:52039
  radiation effects on, of adult locusts, γ, 22:40868
  radiation effects on, of albino rats, combined effects of heat treatment on ionizing, 22:10883
  radiation effects on, of algae, earthworms, and rotifers, effects of dose on γ, 22:31205 (TID-23280)
  radiation effects on, of amoeba, x, 22:45682
  radiation effects on, of Anacystis nidulans, effects of acriflavine on uv, 22:52028
  radiation effects on, of animal cells, effects of LET on electron, 22:31274
  radiation effects on, of animals, combined effects of adrenalectomy and dose on, 22:33842
  radiation effects on, of animals, effects of dose on, 22:47569
  radiation effects on, of animals, protective effects of preirradiation against x, 22:15083
  radiation effects on, of Arabidopsis thaliana, γ, 22:47637
  radiation effects on, of ascites tumor cells following transplantation in irradiated mice, in vitro or in vivo ionizing, 22:38495
  radiation effects on, of Aspergillus niger, uv, 22:6782
  radiation effects on, of Aspergillus spores, γ, 22:52044
  radiation effects on, of Azotobacter, γ, 22:21428
  radiation effects on, of Bacillus megaterium spores, uv, 22:28288 (ORNL-4100, pp 166-77)
  radiation effects on, of Bacillus pumilus in hydrocortisone ointments, γ, 22:52101
  radiation effects on, of Bacillus, x, 22:52076
  radiation effects on, of bacteria and viruses in lyophilized human blood plasma, γ, 22:52094
  radiation effects on, of bacteria and yeasts, RBE for 20-MeV electron, γ, and 20-MV photon, 22:38503
  radiation effects on, of bacteria on catgut surgical sutures, γ, 22:52088
  radiation effects on, of bacteria on surgical sutures, γ, 22:52090
  radiation effects on, of bacteria on thyroid transplants, γ, 22:52098
  radiation effects on, of bacteria, effects of dose rate and irradiation time on γ, 22:23685
  radiation effects on, of bacteria, γ and x, 22:52042
  radiation effects on, of bacterial cells and cultured mammalian cells, effects of ultra-high dose rate on RBE for electron, 22:45729 (UCSF-10-P-2-52)
  radiation effects on, of barley seedlings, effects of boron content of seed and seed exposure on thermal neutron, 22:12943
  radiation effects on, of bone marrow stem cells of dogs and rats, γ and x, 22:49581
  radiation effects on, of burros following exposure to atomic explosion, γ and neutron, 22:40829 (ORO-657, pp 18-34)
  radiation effects on, of burros, combined effects of prompt neutrons on whole-body γ, 22:38427(R) (ORO-659)
  radiation effects on, of burros, effects of dose fractionation on γ, 22:38427(R) (ORO-659)
  radiation effects on, of burros, whole-body cobalt-60 γ, 22:40829 (ORO-657, pp 18-34)
  radiation effects on, of butterflies, γ, 22:31269
  radiation effects on, of cartilage cells in rats, effects of anoxia on x, 22:23637
  radiation effects on, of caterpillars, effects of nuclear-polyhedrosis virus infection on γ, 22:6906
  radiation effects on, of cells and viruses, effects of LET on electron, γ, and heavy ion, 22:47647
  radiation effects on, of cells at bone-tissue interface, fast neutron and x, 22:38314
  radiation effects on, of cells in intestine and melanomas in mice, whole-body x, 22:49219
  radiation effects on, of cells of skin and tumors in man, computer method for comparison of x, 22:43458
  radiation effects on, of chicken embryos, effects of dose on cobalt-60 γ, 22:31235
  radiation effects on, of chicken embryos, protective effects of hypothermia against x, 22:10789
  radiation effects on, of chickens, effects of Plasmodium gallinaceum infection on whole-body x, 22:45676
  radiation effects on, of Chinese hamster cells in comparison to actinomycin, 22:49508
  radiation effects on, of Chinese hamster cells, effects of dose fractionation on γ, 22:2497
  radiation effects on, of Chinese hamster cells, effects of age on x, 22:25786
  radiation effects on, of Chinese hamster cells, heavy particle and x, 22:12837
  radiation effects on, of Chinook salmon, γ, 22:10740 (BNWL-480, pp 153-93)
  radiation effects on, of chinook salmon, low-dose chronic γ, 22:49489(R) (RLO-2056-3)
  radiation effects on, of Chlamydomonas reinhardti, effects of iodoacetamide on sub-lethal x, 22:40963
  radiation effects on, of Chlorella, x, 22:21474
  radiation effects on, of Clostridium perfringens, Mycobacterium tuberculosis, and influenza viruses, effects of dose on γ, 22:52083
  radiation effects on, of conventional and germ-free mice, x, 22:49541
  radiation effects on, of Cordylophora caspia, protective effects of cysteamine against x, 22:51913
  radiation effects on, of corn plants, effects of seed exposure on fast neutron and γ, 22:33980
  radiation effects on, of cotton rats, effects of dose on cobalt-60 γ, 22:49518
  radiation effects on, of crabs, effects of dose rate on γ, 22:19418
  radiation effects on, of cultured cells of Haplopappus gracilis, uv and x, 22:19457
  radiation effects on, of cultured cells, effects of LET on charged-particle, 22:6870(T) (NP-tr-1561)
  radiation effects on, of cultured cells, review of x, 22:38239
  radiation effects on, of cultured Chinese hamster cells, effects of cell phase and temperature on x, 22:40892
  radiation effects on, of cultured Chinese hamster cells, effects of culture media and temperature on x, 22:49631
  radiation effects on, of cultured Chinese hamster cells, uv, 22:36361
  radiation effects on, of cultured Chinese hamster cells, repair of sublethal x, 22:49633
  radiation effects on, of cultured Chinese hamster cells, effects of cell phase on x, 22:28355
  radiation effects on, of cultured mammalian cells, comparison of techniques for determining x, 22:43402
  radiation effects on, of cultured sarcoma cells from rats, x, 22:25984
  radiation effects on, of cultured thymocytes from rats, effects of dose on γ and x, 22:40883
  radiation effects on, of Dahlbominus, effects of acute and chronic doses on γ, 22:33779 (AECL-2791)
  radiation effects on, of dogs and rats, effects of glycoprotein content of blood on ionizing, 22:52004
  radiation effects on, of dogs following therapy for mastocytomas, effects of dose fractionation on x, 22:33910
  radiation effects on, of dogs, effects of diversion of intestinal contents on x, 22:47557
  radiation effects on, of dogs, effects of dose on cesium-137 and cobalt-60 γ, 22:28622 (ANL-7278, pp 95-131)
  radiation effects on, of dogs, effects of dose-rate on x, 22:40884
  radiation effects on, of dogs, effects of unilateral nephrectomy on x, 22:21435
  radiation effects on, of dogs, mice, and rats, 22:23670
  radiation effects on, of dogs, protective effects of typhoid-paratyphoid vaccine against x, 22:40889
  radiation effects on, of dogs, protective effects of bone marrow transplants against γ, 22:49437
  radiation effects on, of dogs, protective effects of

typhoid vaccine against x, 22:4631 (USNRDL-TR-67-87)
radiation effects on, of Drosophila populations, effects of temperature on x, 22:21611
radiation effects on, of ducks, 22:19420
radiation effects on, of duckweed, fast neutron and γ, 22:47636
radiation effects on, of Ehrlich ascites tumor cells in vitro, x, 22:49294
radiation effects on, of embryos of man, x, 22:15096
radiation effects on, of embryos of toads, cesium-137 and strontium-90 β, 22:10875
radiation effects on, of endogenous spleen cells following transplantation in mice, x, 22:28697
radiation effects on, of epidermoid carcinomas in mice, x, 22:23606
radiation effects on, of erythrocyte-depleted dogs, gold-198 β and γ, 22:15040
radiation effects on, of Escherichia coli and Tetrahymena pyriformis, uv and x, 22:36421
radiation effects on, of Escherichia coli C and Schizosaccharomyces pombe, effects of holding in buffer solution on uv, 22:49457
radiation effects on, of Escherichia coli in pharmaceutical powders, effects of dose on γ, 22:52077
radiation effects on, of Escherichia coli, combined effects of hydrogen peroxide on uv, 22:49644(R) (NYO-3893-1)
radiation effects on, of Escherichia coli, effects of 5-fluorouracil and uracil starvation on uv, 22:51683
radiation effects on, of Escherichia coli, effects of energy level on x, 22:38502
radiation effects on, of Escherichia coli, effects of dose fractionation on uv, 22:36416
radiation effects on, of Escherichia coli, effects of oxygen on acute pulsed electron, 22:49462
radiation effects on, of Escherichia coli, mechanisms for synergistic uv and x, 22:43485
radiation effects on, of Escherichia coli, methods for estimating γ, 22:26012
radiation effects on, of Escherichia coli, photoreversal of uv, 22:49644(R) (NYO-3893-1)
radiation effects on, of Escherichia coli, protective effects of culture media against γ, 22:40971
radiation effects on, of Escherichia coli, relation of single-strand breaks of DNA to x, 22:49231
radiation effects on, of Escherichia coli, review of mechanisms for and repair of, 22:40622
radiation effects on, of Eudorina elegans, γ and uv, 22:38241
radiation effects on, of European chafer, milkweed bug, and plum curculio, 22:23699
radiation effects on, of female beagle dogs, fractionated whole-body x, 22:49475 (CONF-680410-, pp 11.1-14)
radiation effects on, of fetuses and newborn rats, x, 22:49629
radiation effects on, of fetuses in rats, effects of progesterone treatment on x, 22:38350
radiation effects on, of fish embryos, effects of dose on strontium-90 and yttrium-90 β and external γ, 22:51954
radiation effects on, of fish, effects of sodium halides on γ, 22:33898(R) (COO-1421-3)
radiation effects on, of fruit fly larvae, effects of space flight on γ, 22:47628
radiation effects on, of goats, effects of dose on γ, 22:45656
radiation effects on, of ground squirrels, protective effects of hibernation against γ, 22:19367
radiation effects on, of guinea pigs, 22:47595
radiation effects on, of guinea pigs following inoculation with Coxiella burnetii and administration of Q fever vaccine, x, 22:51469
radiation effects on, of guinea pigs, acute fission neutron and x, 22:49553
radiation effects on, of guinea pigs, combined effects of vibrations on γ, 22:12758(T) (NASA-TT-F-413, pp 212-28)
radiation effects on, of guinea pigs, protective effects of gibberellic acid against x, 22:51843
radiation effects on, of hamster cells in vitro, x, 22:38489
radiation effects on, of hamster cells, effects of anoxia on x, 22:40836
radiation effects on, of hamsters, x, 22:25995
radiation effects on, of Hartmannellid amoeba, effects of dose on γ, 22:40914
radiation effects on, of HeLa and L cells, combined effects of heat treatment on x, 22:10884
radiation effects on, of HeLa cell cultures, effects of cell stage on uv, 22:6753
radiation effects on, of HeLa cells in polystyrene phantom, effects of depth on biological 20-MeV electron, 22:28380
radiation effects on, of HeLa cells, analysis of x, 22:47630
radiation effects on, of HeLa cells, effects of cell cycle on x, 22:28410
radiation effects on, of HeLa cells, effects of DNA synthesis on, 22:40603
radiation effects on, of HeLa cells, electron, 22:375(R) (NYO-3510-3)
radiation effects on, of hemopoietic stem cells in mice, effects of age on, 22:45716
radiation effects on, of hetero- and homozygous Drosophila, 22:33788
radiation effects on, of insects, cobalt-60 γ, 22:28691
radiation effects on, of invertebrates and vertebrates, effects of high natural background radiation on x, 22:21464
radiation effects on, of L cells, x, 22:43423
radiation effects on, of living systems, amelioration of, with nucleic acids, 22:40766
radiation effects on, of lymphocytes following injection into homologous mice, x, 22:36359
radiation effects on, of lymphocytes in beagle dogs, x, 22:10827(R) (UCD-472-114)
radiation effects on, of male Ascardidia galli, x, 22:40898
radiation effects on, of male mice, effects of dose fractionation and maternal exposure on x, 22:15074
radiation effects on, of mammalian cells and mammals, dose rate calculations for ionizing, 22:38418 (BNL-12581)
radiation effects on, of mammalian cells, effects of age on x, 22:28676
radiation effects on, of mammalian cells, in vitro, γ and x, 22:38488
radiation effects on, of mammals, effects of sex, species, and strain on single-dose, 22:38431 (UR-49-934)
radiation effects on, of man following ingestion of uranium, 22:12907
radiation effects on, of man following preoperative supervoltage therapy for malignant tumors, x, 22:28593
radiation effects on, of man following therapy for nasopharyngeal cancer in man, gold-198, iodine-125, iridium-192, radon-222, and x, 22:49430
radiation effects on, of man following therapy of esophageal carcinomas, x, 22:45597
radiation effects on, of man following therapy of polycythemia, phosphorus-32 β and x, 22:51830
radiation effects on, of man, postmortem analysis of γ, 22:4686
radiation effects on, of metamorphic stages of grain mite, effects of mobility and relative humidity on γ, 22:43466
radiation effects on, of mice and rabbits, protective effects of glutathione against chronic x, 22:49464
radiation effects on, of mice and rats, effects of dose and skin wounds on x, 22:21596
radiation effects on, of mice and rats, effects of age and dose fractionation on γ, neutron, and x, 22:8645
radiation effects on, of mice with tapeworm infections, protective effects of streptomycin against x, 22:38207
radiation effects on, of mice, combined effects of virus infections on x, 22:51999
radiation effects on, of mice, combined effects of ozone on x, 22:40751
radiation effects on, of mice, combined protective effects of autologous bone marrow transplants and streptomycin against γ, 22:40787
radiation effects on, of mice, continuous γ, 22:40942
radiation effects on, of mice, effects of acetylcholine and histamine on, 22:51968
radiation effects on, of mice, effects of age, dose, and strain on x, 22:28648
radiation effects on, of mice, effects of age, dose rate, and strain on neutron, 22:45684
radiation effects on, of mice, effects of bone marrow and spleen cell transplants on x, 22:51989
radiation effects on, of mice, effects of bone marrow transplants and spleen shielding on whole-body x, 22:31228
radiation effects on, of mice, effects of bone marrow injections on, 22:51987
radiation effects on, of mice, effects of circadian clock on cobalt-60 γ, 22:23641
radiation effects on, of mice, effects of dietary supplements, germfree state, and strain on x, 22:47619
radiation effects on, of mice, effects of dose fractionation on, 22:40919
radiation effects on, of mice, effects of dose rate and tissue type on cobalt-60 γ, 22:12911
radiation effects on, of mice, effects of dose rate on γ, 22:23664
radiation effects on, of mice, effects of epsilon aminocaproic acid on x, 22:43350
radiation effects on, of mice, effects of erythropoiesis on x, 22:36344
radiation effects on, of mice, effects of hyperbaric oxygen on, 22:33880
radiation effects on, of mice, effects of immune state on combined uv and x, 22:43445
radiation effects on, of mice, effects of ingestion of cesium-137 and strontium-90 on x, 22:12912
radiation effects on, of mice, effects of radioprotective compounds on repeated, 22:25899
radiation effects on, of mice, effects of splenectomy on x, 22:47632
radiation effects on, of mice, effects of taurine administration on x, 22:36314
radiation effects on, of mice, effects of temperature on γ, 22:52015
radiation effects on, of mice, mathematical model for

relation of dose to x, 22:40839
radiation effects on, of mice, neutron, 22:4635
radiation effects on, of mice, protective effects of 5-hydroxytryptophan against x, 22:43372
radiation effects on, of mice, protective effects of derivatives of 3',3-dimercaptoacrylonitrile against x, 22:51860
radiation effects on, of mice, protective effects of AET, MEA, and PAPP against whole-body x, 22:43367
radiation effects on, of mice, protective effects of india ink-adsorbed cystamine against x, 22:8565
radiation effects on, of mice, protective effects of injections of fetal liver or isogenic bone marrow against x, 22:51768
radiation effects on, of mice, protective effects of magnesium pemoline against x, 22:40754
radiation effects on, of mice, protective effects of propolis against, 22:10791
radiation effects on, of mice, protective effects of thiophosphoryl compounds against whole-body x, 22:533
radiation effects on, of mice, protective effects of topically applied dimethyl sulfoxide against whole-body x, 22:40755
radiation effects on, of mice, protective effects of serotonin against x, 22:31011
radiation effects on, of mice, protective effects of marinamycin against γ, 22:31166
radiation effects on, of mice, protective effects of magnesium pemoline against x, 22:25921
radiation effects on, of mice, protective effects of dimethyl sulfoxide and nembutal vapor against x, 22:31252
radiation effects on, of mice, protective effects of isotonic exercise on microwave, 22:584
radiation effects on, of mice, protective effects of endotoxins against x, 22:17028
radiation effects on, of mice, protective effects of mexamine against lethal cobalt-60 γ, 22:31193
radiation effects on, of mice, protective effects of anticancer agents against cobalt-60 γ, fast neutron, and x, 22:31188
radiation effects on, of mice, protective effects of ATP against x, 22:49381
radiation effects on, of mice, protective effects of bone marrow or spleen transplants against x, 22:12865
radiation effects on, of mice, protective effects of vinblastine and vincristine against γ, 22:8566
radiation effects on, of mice, protective effects of cystamine and mexamine against γ, 22:21567
radiation effects on, of mice, protective effects of cystamine and cysteamine against x, 22:40798
radiation effects on, of mice, protective effects of drugs and vitamins against γ, 22:38415
radiation effects on, of mice, protective effects of histamine against x, 22:40740
radiation effects on, of mice, protective effects of infrared irradiation of adrenal glands against γ, 22:38414
radiation effects on, of mice, protective effects of magnesium pemoline against x, 22:40746
radiation effects on, of mice, protective effects of sensitized plague vaccine against, 22:49392
radiation effects on, of mice, RBE of electron and photon, 22:38277
radiation effects on, of mice, role of intestinal injury in acute electron, 22:49538
radiation effects on, of microorganisms in soils, γ, 22:52038
radiation effects on, of microorganisms on foods, γ, uv, and x, 22:43515
radiation effects on, of microorganisms, space flight uv, 22:33988
radiation effects on, of monkeys, combined pulsed γ and neutron, 22:43393 (AFRRI-SR-68-5)
radiation effects on, of monkeys, γ, 22:23669
radiation effects on, of mutants of Micrococcus radiodurans, cobalt-60 γ and uv, 22:49309
radiation effects on, of mycoplasma, uv and x, 22:49649
radiation effects on, of Necturus maculosus, x, 22:49555
radiation effects on, of Netrium, light and uv, 22:52023
radiation effects on, of neurons in rat brain, deuteron, 22:49421
radiation effects on, of new-born mice, effects of thymus shielding or thymus transplants on x, 22:36358
radiation effects on, of oocytes in frog embryos, x, 22:40899
radiation effects on, of Paramecium caudatum, x, 22:21607
radiation effects on, of patients following therapy of neoplasms of lungs, γ and supervoltage x, 22:38411
radiation effects on, of patients following therapy of lung carcinomas, supervoltage x, 22:38412
radiation effects on, of pines and spruces following treatment of seed, effects of dose on γ, 22:33976
radiation effects on, of planarians, role of stem cells in x, 22:49517
radiation effects on, of plants, relation of, to phylogenetic position, 22:23682
radiation effects on, of potato seedlings, comparison of fast neutron and γ, 22:19317
radiation effects on, of progeny of whole-body irradiated cattle, γ, 22:40828 (ORO-657, pp 11-17)
radiation effects on, of protozoa, comparison of γ and uv, 22:21619
radiation effects on, of protozoa, effects of actinomycin D on, 22:28537 (ANL-7278, pp 170-84)
radiation effects on, of Pteris longifolia following spore exposure, effects of sowing time on x, 22:47638
radiation effects on, of rabbits in relation to body weight and blood changes, x, 22:21578
radiation effects on, of rabbits with intestinal carcinoma, preoperative x, 22:10798
radiation effects on, of rabbits, effects of inner ear surgery on γ, 22:6892
radiation effects on, of rabbits, effects of postirradiation blood transfusions on x, 22:31201
radiation effects on, of rabbits, γ, 22:49484(T) (JPRS-39515, pp 1-13)
radiation effects on, of rat embryos, protective effects of cysteamine against x, 22:47635
radiation effects on, of rats following exposure of females for nine generations, cumulative x, 22:40652
radiation effects on, of rats following inhalation of plutonium-238 and plutonium-239 α, 22:10825 (BNWL-480, pp 55-83)
radiation effects on, of rats following injection of strontium-90, combined effects of injected cesium-137 on β, 22:23405 (LF-38, pp 79-87)
radiation effects on, of rats following injection of cesium-137, combined effects of injected strontium-90 on β and γ, 22:23405 (LF-38, pp 79-87)
radiation effects on, of rats following pre-fertilization maternal exposure, x, 22:40644
radiation effects on, of rats in relation to mercapto group content of bone marrow, x, 22:19393
radiation effects on, of rats, calculation of dose for polonium-210 α and γ, 22:49502
radiation effects on, of rats, combined effects of diet and fecal microflora on whole-body x, 22:557
radiation effects on, of rats, effects of beam orientation on fast neutron, 22:40822(T) (JPRS-44070, pp 1-9)
radiation effects on, of rats, effects of bone marrow transplants on lethal x, 22:49491 (UCSF-10-P-2-40)
radiation effects on, of rats, effects of dose and strain on, 22:23659
radiation effects on, of rats, effects of dose on strontium-90 β, 22:51967
radiation effects on, of rats, effects of dose on 120 MeV proton, 22:23668
radiation effects on, of rats, effects of dose on x, 22:49521
radiation effects on, of rats, effects of oxygen uptake on, 22:47547
radiation effects on, of rats, effects of secretion of adrenal cortical hormones on x, 22:45709
radiation effects on, of rats, effects of shock on x, 22:40846
radiation effects on, of rats, effects of spatial distribution of tissue dose on γ and x, 22:51951
radiation effects on, of rats, effects of time of day on, 22:38449
radiation effects on, of rats, internal β, 22:51377
radiation effects on, of rats, internal strontium-90 β and external proton, 22:51992
radiation effects on, of rats, protective effects of serotonin against x, 22:31261
radiation effects on, of rats, protective effects of amygdalin and cystamine against γ, 22:51946
radiation effects on, of rats, protective effects of shielding of bone marrow against, 22:49368
radiation effects on, of rats, protective effects of Shir-Khecht against γ, 22:49376 (CEA-R-3412)
radiation effects on, of rats, protective effects of AET, antibiotics, bone marrow, MET, serotonin, and vitamin B_{12} against lethal ionizing, 22:31157
radiation effects on, of rats, protective effects of injections of heterologous DNA against γ, 22:36328
radiation effects on, of rats, protective effects of methandrostenolone against x, 22:45627
radiation effects on, of rats, protective effects of intravenous pyridoxal-5-phosphate against whole-body x, 22:31137
radiation effects on, of rats, whole-body γ, 22:49534
radiation effects on, of rats, x, 22:36398
radiation effects on, of Saccharomyces vini, γ, 22:52032
radiation effects on, of Salamander larvae, effects of age and dose on x, 22:38479
radiation effects on, of Salmonella in relation to dehydrogenase inactivation, γ, 22:43239
radiation effects on, of sarcoma KHT cells in mice, effects of anoxia on x, 22:31161
radiation effects on, of Schizosaccharomyces pombe, combined effects of caffeine on uv, 22:28416
radiation effects on, of seeds of box-elder, γ and x, 22:40624
radiation effects on, of several mammals, relation of hematological responses to γ and x, 22:49578
radiation effects on, of silkworm embryos, γ, 22:40931
radiation effects on, of skin and tumor cells in man, computer analysis of fractionated x, 22:43459
radiation effects on, of skin cells in guinea pigs, β, 22:6757

  radiation effects on, of spores of Bacillus megaterium, uv, 22:49656
  radiation effects on, of Streptomyces sp., effects of inorganic salts on uv, 22:23690
  radiation effects on, of swine, combined effects of prompt neutrons on whole-body γ, 22:38427(R) (ORO-659)
  radiation effects on, of swine, effects of dose on x, 22:38438
  radiation effects on, of tadpoles, effects of dose fractionation on γ and x, 22:28663
  radiation effects on, of transplanted bone marrow cells in mice, effects of hypoxia on fractionated γ, 22:51786
  radiation effects on, of transplanted tumor cells in rats, effects of oxygen on x, 22:10797
  radiation effects on, of Tribolium confusum, γ, 22:51962
  radiation effects on, of tritium-labeled lymphoma cells from mice, β, 22:6719 (UCSF-10-P-2-33)
  radiation effects on, of uv-irradiated ascites tumor cells, effects of dose on x, 22:443
  radiation effects on, of wasps during simulated space flight, β, 22:28406 (ORNL-4100, pp 202-6)
  radiation effects on, of wheat seeds, effects of dose volume of interphase chromosomes on, 22:52031
  radiation effects on, of wheat, effects of seed exposure on fast neutron and γ, 22:17012
  radiation effects on, of woody plants, effects of dose on γ, 22:45482
  radiation effects on, of yeast cells, γ and x, 22:21475
  radiation effects on, of yeast, protective effects of aqueous sodium chloride solutions against γ, 22:25891
  radiation effects on, of yeasts, β and γ, 22:45723
  radiation effects on, of yeasts, dark repair of uv, 22:28412
  radiation effects on, of yeasts, effects of dose fractionation on uv, 22:36403
  radiation effects on, of yeasts, uv, 22:40973
  radiation effects on, of yeasts, x, 22:586
  radiation effects on, of yeasts, x, 22:40972
  radiation effects on, of yellow mealworm larvae, in relation to body temperature, radio wave, 22:8607
  radiation effects on, protective effects of carbon monoxide against, 22:19374
  radiation effects on, relation of radiation effects on intestines to, 22:23666
  radiation effects on, role of DNA photoproducts in uv, 22:25792
  radiodiagnosis of pedicle skin graft, in man, use of technetium-99 for, 22:40763
  repair of sublethal effects of mustard gas on, of cultured Chinese hamster cells, 22:49633

SUSPENSIONS
    (See also as main headings by name of material suspended.)
    see also Colloids
    see also Slurries
  atomic motion in, research using Moessbauer effect, (E/T), 22:53169(R) (PPAD-647-D)
  electric properties of gas—powder, analysis, 22:47877
  heat transfer measurements in liquid—solid and air—solid, in turbulent pipe flow, 22:45242 (ORNL-TM-2124)
  production methods and properties of, review of, 22:40259 (CONF-671214)
  radium content in Indian Ocean, 22:10406
  separation from liquids by electrostatic means, 22:19228(P)
  uranium content in oceanic, relation of calcium carbonate, 22:10405
  use of gas-solids, as nuclear reactor coolants, 22:7836
  use of uranium oxide (UO_2) and thorium oxide (ThO_2)—uranium oxide (UO_2) aqueous, for fuel in exponential piles, 22:25107

SWAGING
  equipment design for metal, 22:6521(P)
  equipment for, design of planetary ball, 22:30761
  fabrication technique for ATR and HFIR fuel elements, description of, 22:37541 (ORNL-TM-2197)
  method for producing fuel elements, bibliography on, 22:28893

Sweet Gum Trees (Liquidambar)
    see Liquidambar under Angiospermidae

SWEDEN
  building materials in, measurement of radioactivity in, 22:12429 (NP-17230)
  carbon-14 activity at Abisko, summer 1965, 22:6494
  developments in natural science in, 22:14468
  dosimetry of personnel at AB Atomenergi in, during 1966, 22:31057 (AE-312)
  fallout monitoring in, 1961 to 1967, 22:10374 (FOA-4-4495-28)
  fallout monitoring in, following June 1967 Chinese nuclear explosion, 22:51094 (FOA-4-4369)
  fallout monitoring in, from Dec. 18, 1966, Soviet Union underground nuclear explosion, 22:6482 (FOA-4-4296-23)
  fallout monitoring in, from Dec. 1966 USSR underground nuclear explosion, 22:12441 (FOA-4-4494-28)
  power demand and supply estimation for 1955—1985, 22:10009 (NP-17084)
  radiation processing of foodstuffs in, program of γ, 22:43511
  radiation protection of human population in, development of institute for, 22:40728
  radiation protection program in, 22:21517
  radioisotope content of crops and milk in, calculation of predicted cesium-137 and strontium-90, 22:38256 (FOA-4-4354-28)
  radioisotope content of meat and milk in, cesium-137 and strontium-90, 22:28469
  radioisotope monitoring of human population, lichens, moss, and reindeer meat in, from 1956 to 1966, cesium-134 and cesium-137, 22:28482
  radioisotope uptake by pasture plants in, effects of fertilizers and lime on cesium-137 and strontium-90, 22:51565 (FOA-4-4322)
  reactor fuel burnup calculation methods used in, 22:22736
  research and research resources at Studsvik, 22:33399
  research at Swedish Research Council's Laboratory, 22:14525
  strontium-90 content of foods in, 22:31077
  uranium ore mining and processing in, status of, 22:18988
  uranium ore processing plant at Ranstad, design and operation of, 22:18898
  uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)

Swedish Reactors (FR-0)
    see Critical Assemblies

Swedish Reactors (Oskarshamn)
    see Oskarshamn Power Reactor

SWEDISH REACTORS (R-0)
  neutron spectral indices in heavy water lattices in, epithermal and thermal, (E/T), 22:14270

Swedish Reactors (R-1)
    see SLEEP Reactor

SWEDISH REACTORS (R-2)
  fuel element failure in, scintillation and Cherenkov detectors for monitoring, 22:16863
  neutron spectrometers for, description of beryllium filter narrow chopper, 22:12131
  radiation testing of Marviken superheater fuel elements in steam loop of, 22:14243 (AE-308)

SWEDISH REACTORS (R-3)
  burnup measurements for, analysis of computer programs for calculating, 22:22766
  fuel element failure in, Cherenkov detector for monitoring, 22:16863
  fuel elements for, epithermal-to-thermal neutron capture rate measurements in, 22:3807 (AE-299)
  inspection tubes for, intercrystalline stress corrosion cracking of Inconel 600, 22:14154
  operational experience during 1963 to 1967, description of, 22:30225
  physics measurements for, analysis of computer programs for calculating, 22:22766
  pressure vessel for, radiation effects on strength of, 22:47692
  shielding for, measurement on γ and neutron, (E/T), 22:44805 (AE-325)

SWEDISH REACTORS (R-4)
  construction of, description of, 22:30227
  cooling system performance of, analysis of heat transfer of, (E), 22:30227
  description of, 22:46946
  description of, 22:30171
  design parameters for, 22:22712 (STI/PUB-174)
  fuel element assembly simulation for, burnout and stability testing in FRIGG, 22:1760 (FRIGG-1)
  fuel element for, heat transfer and hydrodynamic measurements on simulated 36-rod, 22:48643 (FRIGG-2)
  fuel elements for, radiation testing of superheater, 22:14243 (AE-308)
  loading system for, description of on-power, 22:46921 (TID-24679(Vol.2))
  loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
  neutron flux distribution in, comparison of neutron cross section variation effects on, (T), 22:50745 (ZJE-24(Pt.1))
  physics measurements in, description of reactor core, (E/T), 22:30256
  pressure vessel of, radiation effects on, 22:19598

Swimming-Pool Reactors
    see Reactors, Swimming-Pool

SWINE
  body composition of, relation of potassium to, 22:21460(R) (COO-1171-82)
  body composition of, use of potassium-40 for determining, 22:21460(R) (COO-1171-82)
  cesium-137 uptake by, from meat-bone meal feed, 22:21502
  development of ovaries in fetuses and infants of, 22:38427(R) (ORO-659)
  growth of, effects of strontium-90 decontaminated milk on, 22:15008
  immune reactions to Leptospira pomona vaccines in, 22:25732
  immunologic competence in, development of, 22:20983 (COO-1628-5)
  iodine content of thyroglobulin of, method for determining, 22:51434
  iodine-125 uptake by fetuses of, 22:38427(R) (ORO-659)
  iodine-131 uptake by fetuses of, 22:38427(R) (ORO-659)
  iron-59 retention by miniature, effect of administration

route on, 22:38220
iron-59 retention by miniature, use of whole-body counting to measure, 22:38220
localization of acid mucopolysaccharides in cells of intestines in miniature, use of thorium-containing stains for, 22:10824 (BNWL-480, pp 1-19)
measurement of passage time of PuO_2 through gastrointestinal track of, 22:49536
metabolism of iodine-131-labeled thyroid hormones in, 22:51298(R) (COO-1484-3)
molybdenum-99 metabolism in, 22:38427(R) (ORO-659)
plutonium contamination on hair and skin of, autoradiographic analysis of, 22:23539
plutonium metabolism in bones and liver of, 22:2479 (BNWL-SA-1252)
plutonium-238 sorption from intestines of miniature, effects of plutonium oxide particle size on, 22:10676 (BNWL-480, pp 85-97)
plutonium-239 metabolism by, 22:14925
plutonium-239 metabolism in, effects of administration route on, 22:47468
plutonium-239 sorption by tissues of skin in, 22:14925
production of retinal burns in, following exposure to xenon lamp, 22:49573
radiation dose distribution in recumbent and seated, thermoluminescent dosimeter measurements of x, 22:51575
radiation dosimetry in, performance of thermoluminescent dosimeters for x, 22:23532
radiation effects on bones of, following exposure in utero, whole-body cobalt-60 γ, 22:40827 (ORO-657, pp 3-10)
radiation effects on content of administered antibodies in, effects of dose fractionation on whole-body γ, 22:51479
radiation effects on development of fetuses of, following whole-body exposure of mother, γ, 22:38427(R) (ORO-659)
radiation effects on development of follicles in ovaries of pre-puberal, γ, 22:19417
radiation effects on development of follicles in ovaries of miniature, cesium-137 γ, 22:40828 (ORO-657, pp 11-17)
radiation effects on distribution of microorganisms in organs of, 22:33914
radiation effects on gastrointestinal tract of, plutonium-238 α and γ, 22:49536
radiation effects on growth and zinc metabolism in, effects of dietary calcium and zinc on neutron, 22:51963
radiation effects on hair color and organ weight of, unilateral fast neutron, 22:38427(R) (ORO-659)
radiation effects on hematopoiesis and survival of, effects of dose on γ and x, 22:49578
radiation effects on hematopoiesis and survival of, effects of dose on x, 22:38438
radiation effects on hematopoiesis in, strontium-90 β, 22:10675 (BNWL-480, pp 21-54)
radiation effects on intestinal mucosa of, combined effects of bile on x, 22:49561
radiation effects on intestines of miniature, effects of size of ingested plutonium oxide microsphere on α, 22:10676 (BNWL-480, pp 85-97)
radiation effects on metabolism of calcium-45 and strontium-89 in, whole-body γ, 22:38427(R) (ORO-659)
radiation effects on pituitary of, stereotaxic method for introducing strontium-90 source for β, 22:36365
radiation effects on replication of DNA in cultured leukocytes from, γ, 22:40830 (ORO-657, pp 35-45)
radiation effects on serological properties of trypsin from, γ and uv, 22:36159
radiation effects on serotonin-secreting cells in intestine of, γ, 22:49539
radiation effects on skin of, effects of dose fractionation on fast neutron and x, 22:572
radiation effects on skin of, effects of dose fractionation on neutron and x, 22:49480 (CONF-680410-, pp 21.1-25)
radiation effects on skin of, effects of pigment on pathological laser, 22:567
radiation effects on skin of, protective effects of β-methasone-17-valerate against x, 22:33852
radiation effects on skin of, RBE of α, deuteron, fast neutron, and x for, 22:8596 (CONF-670305-, pp 128-42)
radiation effects on spermatogonia of, effects of, on weight and depth of fat in offspring, x, 22:33970
radiation effects on spermatogonia of, effects of, on birth weight of progeny, x, 22:10869
radiation effects on survival of, combined effects of prompt neutrons on whole-body γ, 22:38427(R) (ORO-659)
radiation effects on survival of, effects of dose-rate on γ, 22:49471 (CONF-680410-, pp 5.1-16)
radiation effects on survival of, review of effects of dose-protraction on, 22:49476 (CONF-680410-, pp 12.1-23)
radiation effects on tattooed skin of laser, 22:25989
radiation effects on toxicity of fruit juices for miniature, γ, 22:40978(R) (NP-17182)
radiation effects on uptake and retention of calcium-45, molybdenum-99, and strontium-89 in, β and γ, 22:40831 (ORO-657, pp 46-64)
radiation effects on Vietnamese, protective effects of vitamin B_{12} against x, 22:47549
radiation effects on, effects of dose on clinical manifestations of γ, 22:25968
radiation effects on, effects of dose-rate on severity and recovery from γ, 22:49470 (CONF-680410-, pp 4.1-21)
radiation effects on, protective effects of barium sulfate diet against γ, 22:51839
radioinduced aberrations of chromosomes in leukocytes o miniature, strontium-90 β, 22:10675 (BNWL-480, pp 21-54)
radioinduced bone and hematopoietic neoplasms in miniature, strontium-90 β, 22:10675 (BNWL-480, pp 21-54)
radioinduced bone neoplasms and myelo-lymphoproliferati disorders in, following chronic ingestion of strontiu 90, β, 22:6865 (BNWL-SA-1418)
radioinduced increase of weight gain in, uv, 22:8603
radioinduced leukemia in, strontium-90 β, 22:12853
radioinduced neoplasms in thyroid of miniature, iodine-131 β and γ, 22:10675 (BNWL-480, pp 21-54)
radioinduced tumors in uterus of, following exposure to atomic explosion, whole-body γ and neutron, 22:40829 (ORO-657, pp 18-34)
radiosensitivity of, effects of semiquinoid free radical on, 22:47570
sorption of plutonium nitrate by tissues of, effects of chilling and tourniquets on, 22:10677 (BNWL-480, pp 99-106)
strontium-85 metabolism by infant, following intravenous injection, 22:51424
strontium-85 retention in, effects of age, dietary calcium to phosphorus ratios, and genetics on, 22:420 (COO-1339-16)
strontium-90 solubility in gastrointestinal tract of, relation of calcium content of food to, 22:51373
strontium-90 uptake by miniature, effects of, on hematopoetic tissue, 22:45406
strontium-90 uptake by, from meat-bone meal feed, 22:21502
toxicity of DTPA-uranium complexes in, 22:10677 (BNWL-480, pp 99-106)
toxicity of irradiated food to, 22:21642
toxicity of irradiated foods for, following ingestion, 22:47659
toxicity of irradiated glucose to miniature, 22:52123
uranium distribution in tissues of, following sorption through skin, relation of, to toxicity, 22:49242
use of miniature, for gerontologic research, 22:18671 (UCD-472-212)
zinc-65 metabolism in, effects of content of calcium and zinc in diet on, 22:38427(R) (ORO-659)
SWITCHES
behavior of electric, effect of chatter on dynamic, 22:6227 (SC-TM-67-867)
book: Powder Metallurgy of Electrical Contacts, 22:4970
configuration of safety multiple delay electric, for continuous push-button-activated control rod drive system, 22:50855(P)
connector for fluid powered, design of multiport fluid, 22:47435
contact surface resistance at 4.2°K, 22:45230
crowbar system in Isar I, 22:45217 (IPP-4/59)
design and performance of 100-kV ignitron, 22:26351 (MATT-477)
design and properties of trigatrons for high-current pulse generators, review of, 22:47429
design for inductive circuits, 22:23360 (MATT-Q-25, pp 341-6)
design for short-circuiting of MHD magnet coil, 22:4523
design for starting and crowbarring a turbulent heating experiment, 22:46103 (IPP-4/52)
design of automatic range, for reactor control, 22:3368 (LFEN-NI.-30-B)
design of automatic superconducting, 22:29388
design of electromechanical, for remote control of high-voltage equipment within Cockroft--Walton and Van de Graaff accelerators, 22:11765
design of electronically-pulsed relay driver, for half-life measurements in ms range, 22:19206
design of fast exploding foil, for plasma experiments, 22:28249
design of fast metallic contact solid dielectric, for plasma experiments, 22:47440
design of flash x-ray actuated trigger, for flash radiography, 22:28247
design of high-current exploding foil, for plasma physic experiments, 22:45352 (JUL-539-PP)
design of ignitron, for inductive energy storage system, 22:2474
design of low-jitter electric, to carry 100 kA and 20 C, 22:6254(P)
design of magnetic reed, for use in reactor control systems, 22:3961(P)
design of magnetic, using magnetic reed devices, 22:43180(P)
design of mechanical semi-persistent, for superconductin solenoids, 22:47278
design of mechanical, with close time of 100 µs, 22:4557(P)
design of mechanical, with close time of 40 µs,

22:4558(P)
design of pressure-sensitive electrical, 22:6252(P)
design of radiation-resistant circuit for 250-W power, 22:12735
design of superconducting, for cryogenic applications, 22:52182
development of low-level multiplexers, 22:50882 (BNWL-838)
fabrication of coaxial shock-sensitive, 22:7946 (LA-3759)
performance of magnetic amplifier, for S8DR coolant temperature monitoring, 22:32934 (NAA-SR-12038)
properties of ignitrons for 20 kV capacitor discharge circuits, 22:45214 (IPP-4/44)
radiation damage effects on performance of p--n--p--n and transistor, 22:2478
radiation effects on dielectric, ionizing, 22:12732
Switchgear
see Switches
SWITZERLAND
cesium-137 content of man in, during 1964, 22:21500
coal from Valais, distribution of radioactivity in, (E), 22:10387
manufacture of steel structures for nuclear power stations, industry capability for, 22:37456
nuclear energy research in, 22:30424
potassium-40 content of man in, during 1964, 22:21500
radiation monitoring of environment in, data tabulations on, 1964, 22:25543
radiation monitoring of environment in, data tabulations on, 1965, 22:25544
radiation processing of foodstuffs in, program of γ, 22:43511
radiation protection standards for industry in, legislation for, 22:36266
radioactivity distribution in coal from Dorenaz, optical studies on, 22:10388
radium-226 content of man in, during 1964, 22:21500
uranium reserves in, estimates of, 22:30733
Syenites
see Nepheline Syenites
Sylphons
see Bellows
SYMMETRY GROUPS
see also Group Theory
[SU(2)/sub I/ x SU(2)/sub J/] x T_9 algebra, relation between superconvergence sum rules and, 22:39463
[U(6) x U(6)]/sub β/ scheme for scale of meson and baryon couplings, universality of factorized residues in, 22:37181
O(1,9), elementary particle isotopic and space--time properties in, joint description of, 22:26587
O(3), scattering in group space of, potential, 22:35133
O(4), energy levels of atomic hydrogen in, 22:19735 (INP-555/PH, pp 99-105)
O(4), scattering amplitudes for spinless particles in, Freedman--Wang, 22:5676
O(5), lepton electromagnetic and weak interactions in, 22:9651
algebra for classification of Regge poles, 22:15832
B(3), elementary particle theory in, 22:15824
B(3), mass difference of $(K^+ - \pi^+)$ in, 22:15824
baryon resonances in, bound-state quark model for, 22:15786 (CONF-670414-7)
book: Applied Group Theory, 22:39437
book: Lagrangian Formalism and Symmetry Laws, 22:29730
book: Lessons on Group Theory and Elementary Particle Symmetries, 22:35034
book: The Application of Group Theory in Physics, 22:39448
breakdown in quantum electrodynamics with zero-mass states, spontaneous, 22:3512
breaking by vacuum in elementary particle physics, 22:18007
breaking for dilatations in space--time, 22:29750
breaking for fermion fields, condition for, 22:50439
breaking in axiomatic field theory, Goldstone theorem and spontaneous, 22:17981
breaking in calculation of decuplet $3/2^+$ baryon masses, 22:29740
breaking in quantum electrodynamics with zero bare mass, spontaneous, 22:3480
breaking in strong-coupling limit for mass splittings of baryons, 22:9668
breaking of chiral, in Lagrangian equation, 22:50425
breaking of internal, S-matrix formulation for, 22:50427
breaking of, existence of massless particles following, 22:17984
breaking of, in theory of currents, 22:50315
chiral dynamics for low-energy π + N interactions, 22:9667
chiral transformations for mesons, 22:22435
classification of particle multiplets, extension of G by CPT and parity operators for, 22:11696
Clebsch--Gordan coefficients in, negative quasibinomial representations of, 22:48338
Clebsch--Gordan coefficients in, square symbol for quasibinomial representations of, 22:48337
coupling constant of weak vector currents in broken, renormalization of, 22:15826
couplings in eight-fold way, multilinear, 22:17986
crossing matrices for arbitrary compact internal, 22:50424
crossing symmetry and infinite multiplets in, 22:5646
E(2), for partial wave expansion of scattering amplitude, 22:41830
E(2), integrals of motion and quantum numbers in, 22:20282
electron motion in electric field with two Coulomb centers in dynamic, 22:9647
elementary particle classification using quark model in, 22:5617
elementary particle extended conform invariant model in global dynamical, free, 22:26674 (JINR-P2-3590, pp 198-200)
elementary particle interactions in extended model in, complex unitary spins in, 22:20292
elementary particle interactions in, review of, 22:13798
elementary particle internal space dynamics in, 22:11701
elementary particle theory in, 22:22420 (PUC-937-304)
elementary particle theory in, lectures on, 22:13689
elementary particle theory in, review of quark model relation with, 22:37093 (PUC-937-324)
expansions of finite, for particle strong interactions, 22:9658
field theory for, infinite-component, 22:39476
fields in spontaneously broken, Zachariasen--Thirring--Licht model for, 22:32181
for radial motion of spherical oscillator, 22:44289
formalism for elementary particles, higher-dimensional aspects of, 22:29731
formulation for conspiracy problem in Regge pole theory, 22:48379
G(2), Clebsch--Gordan series for, 22:17985
G(2), elementary particle theory in, 22:15824
G(2), multiplicity structure and Clebsch--Gordan series for, 22:20293
G(2), weight diagrams for, construction of, 22:35031
$G_0(8)$ x SU(3), for scalar SU(3)-symmetric strong coupling theory, 22:29741
G_2, from crossing-symmetric dynamical model for interactions of pseudoscalar mesons, 22:3497
geometrical structure in dynamical, 22:13236
Goldstone theorem in models of broken, 22:17980
hadron classification in supermultiplets of higher, 22:9664
hadron classification in, internal dynamics for, 22:13803
hadron decay in discrete, minimal Hamiltonian for electromagnetic and weak, 22:20301
hadron theory in, quark model for, 22:13822 (PUC-937-285)
hyperon nonleptonic decays in higher, effect of mass-splitting interaction on sum rules for, 22:15827
internal symmetries in S-matrix theory, 22:46480
invariance and noninvariance groups for strongly interacting particles, dynamical models for, 22:39458
invariance groups in quantum mechanics, dynamic, 22:9630
IO(2), impact-parameter representation of two spinless hadron elastic interactions at high energies from O(3) contraction to, 22:7545
irreducible representations of semidirect-product group K/sub n/ = A/sub /:S/sub n/, 22:44783
isospin multiplets in, C, P, and T transformations in local field theory for, 22:13791
lectures on invariance and non-invariance dynamic, in classical and quantum mechanics, 22:46476
lepton currents in, current algebra for, 22:9564
Lie algebra A(P,S), representation of infinite-dimensional, 22:9644
Lie algebra representations, hadron mass splitting theorem for translationally invariant noninvariant, 22:11709
Lie algebraic formulation for electromagnetic current in strong-coupling theory, 22:5645
Lie group of strong coupling theory, 22:3368
Lie group representations of strong-coupling theory, procedure of contraction for obtaining, 22:20307
Lorentz and Poincare invariant expansions of scattering amplitudes, 22:18042
Lorentz and rotation group over finite field, Dirac spinors and covariant currents from extension of proper, 22:32179
Lorentz group for relativistic S-matrix, representation theory of, 22:22474
Lorentz group representation for convergent relativistic model theory of interacting particles, inhomogeneous, 22:41797
Lorentz group representation in perturbative approach to superconvergence relations and current algebra, 22:26599
Lorentz group representations for free massless fields, 22:26706
Lorentz group, matrix elements of unitary representation in, 22:13794
Lorentz, group representations for relativistic quasi-potential scattering, expansion of, 22:32220
mass spectra in model with infinite-component fields in, 22:7531 (NP-17151)
model of broken, for meson interactions, 22:50438
multiplets and supermultiplets in, review of, 22:17884
multiplets of particles of different mass in, (T), 22:52997

O(2,1), integrals of motion and quantum numbers in, 22:20282
O(2,1), matrix elements in continuous basis for, 22:35039
O(2,1), representations of, reduction of unitary, 22:35037
O(2,1), transformation from O(3) bases in SL(2,C), 22:15831
O(3) contraction to IO(2), impact-parameter representation of two spinless hadron elastic interactions at high energies from, 22:7545
O(3), integrals of motion and quantum numbers in, 22:20282
O(3), scattering in, general method for solving potential, 22:24698
O(3), transformation to O(2,1) bases in SL(2,C), 22:15831
O(3,1) and Lorentz states of exchanged trajectories for 0 + 1/2 → 1 + 3/2 spin processes, 22:34985
O(3,1) for analysis of π + N → eta + Δ(1236) interactions, 22:24710
O(3,1) for anti N + N → Y + anti Y interactions at high energies, 22:34975
O(3,1) symmetry of Regge trajectories for high-energy forward scattering, 22:22470
O(3,1) theory for forward Compton γ + N interactions at high energies, 22:24705
O(3,1) x SU(3), particle interactions in, 22:46474
O(3,1), coupling of pseudoscalar mesons in, 22:37173
O(3,1), Majorana representation for, extension theorem for, 22:3479
O(3,1), particle interactions in, 22:46474
O(3,1), Poincare group zero-mass representations in basis of, 22:44463
O(3,1), Regge residues in expansion of forward scattering amplitude, zeros in, 22:39461
O(3,1), representations for two-dimensional expansions of relativistic binary scattering amplitudes in, 22:39492 (JINR-E2-3841)
O(3,1), representations of, reduction of unitary, 22:35037
O(3,1), unitary representations for Regge daughter poles, 22:17998
O(3,2) and O(4,2) mass spectrum and magnetic moments of hadrons from current conservation in relativistic, 22:22427
O(3,3) for relativistic deformable model with internal motion, wave equation in, 22:9632
O(4) composite model in, mass formulas in, 22:53011
O(4) for strong interactions, 22:17933
O(4) formalism for off-shell anti N + N interactions and massless π, 22:46408
O(4), for hydrogen atoms, dynamical aspects of, 22:9032
O(4), for partial-wave analysis of π^+ + p → π^0 + Δ^{++}(1236) interactions, 22:41813
O(4), in Feynman amplitudes of pole diagrams, 22:50426
O(4), interactions N + N in, Regge poles in, 22:39464
O(4), Regge-pole conspiracy in γ + N → π + N interactions in, 22:3336
O(4), structure for hydrogen atom, relation to SU(3), 22:11697
O(4,1) algebra for constructing generalized second-order wave equations, 22:50420
O(4,1) for hydrogen atom, generators of, 22:35048
O(4,2) model for radiative decay of higher-spin meson resonances, 22:50434
O(4,2) model of baryons for p + p interactions at high energies and nucleon electromagnetic form factor, 22:46466
O(4,2), baryon resonance decay in, higher-spin, 22:1471
O(4,2), coupling in photon interactions with baryons in, 22:37173
O(4,2), electron Dirac theory reformulation in, 22:24700
O(4,2), form factors, magnetic moments, and mass spectrum of baryons in relativistic, 22:11704
O(4,2), hadron level assignments in, 22:26682
O(4,2), isoscalar nucleon form factors from dynamics of, 22:5625
O(4,2), mass spectra of bosons and π form factor in, 22:24706
O(4,2), mass spectrum and strong decays of 1^+ mesons in, 22:37182
O(4,2), particle interactions in, 22:46474
O(5), polynomial bases for, 22:41838
O(6), three-quark model for mesons and baryons in, 22:9574
P(1,4) invariant equations for variable-mass particles, 22:48334
P(u), 36-plet meson mass in, 22:24711
particle strong interactions in, review of, 22:41801
Poincare group, reduced wave equation with infinite components from Casimir operator of, 22:35047
Poincare group, relativistic wave equation for arbitrary spin from Casimir operator of, 22:35046
Poincare representations, Majorana equation from irreducible, 22:46481
predictions for strong interactions, review of, 22:9659
quantum field theory for chiral, 22:44481
R(11), elementary particles in, as alternate to SU(6), 22:24697
R(11), multiplet structure of, 22:13805
R(3), infinite-dimensional representations of, 22:13796
R(3), representations for angular momentum operators of Lie algebra of, 22:13806
R(5), decomposition of irreducible representations of, into irreducible representations of R(3), 22:53234
R(5), matrix elements for generators of, in arbitrary irreducible representation, 22:53233
Racah coefficients for compact, graphical formulation fo calculating, 22:48332
recoupling coefficients of S(n), for shell and cluster nuclear model configurations, (T), 22:50685
representation of inner degree of freedom of isospin and strangeness type in, parafields, 22:13783 (JINR-P4-3602)
representations for particle decays into baryon + pseudoscalar meson, 22:5629
representations of charge density algebras in one-particle spaces, 22:9628
representations of compact and noncompact Lie algebras and groups, unified algebraic construction of, 22:13799
representations of gauge group from, for infinite multiplets of hadrons, 22:50433
representations of infinite-dimensional Lie algebra, mass formulas from one-particle, 22:1462
representations of Lorentz algebra, wave equations in models of nonunitary and unitary, 22:50423
representations of noncompact, 22:39459
representations of Poincare, for crossed partial-wave analysis of scattering amplitude, 22:24693
representations of strong coupling group, 22:5627
representations of strong-coupling group of pseudoscalar meson theory, 22:26680
representations of, real Lie algebra inhomogenizations for complex, 22:44461
research at Purdue University, 22:41752(R) (COO-1428-64)
research on, index for, 22:22327 (AED-C-23-23)
research on, index for, 22:15693 (AED-C-23-20)
research on, index of, 22:20153 (AED-C-23-22)
research on, index of, 22:24567 (AED-C-23-24)
research on, review of, 22:15696 (NP-17252)
scattering invariant under Lie, in first-approximation S-matrix theory, 22:5631
selection rules from decomposition of Kronecker square for irreducible representations of rotation and sympletic, 22:20287
SL(2,C) x SL(6,C) trajectory generating algebra for mesons, 22:53009 (KFKI-17/1968)
SL(2,C) x SU(2), Coulomb scattering in dynamic, with continuous spectrum, 22:44471
SL(2,C), decay widths of N* resonance in broken Regge pole model, elastic, (T), 22:50389 (KFKI-21/1968)
SL(2,C), for decay widths of K resonances from relativistic quark model, 22:34961
SL(2,C), form factor calculation from infinite-momentum E(2) subgroup of, 22:35032
SL(2,C), interactions of baryons with mesons in, electromagnetic form factors for, 22:20298
SL(2,C), masses of N and Δ in broken, formula for Regge trajectories for, 22:29737 (KFKI-5/1968)
SL(2,C), nucleon-nucleon and meson--nucleon interactions in, Feynman diagrams for unitary representations of, 22:20284
SL(2,C), propagators in infinite-dimensional representations for Regge trajectories, 22:1513
SL(2,C), Regge trajectories for mass formula in, 22:17996 (KFKI-1/1968)
SL(2,c), spacelike solutions of infinite-component wave functions in, 22:37096
SL(2,C), transformation from O(3) to O(2,1) bases in, 22:15831
SL(2,C), transformations between basis vectors of unitary representations of, 22:9631
SL(2,C), wave equation with generators of, for all spins and multiplets, 22:39441
SL(4,C) and SL(12,C), interactions π + N in nonlinear Lagrangian models invariant under generalized chiral, 22:22425
SL(6), covariant generalization of SU(6) in inhomogeneous, 22:13784
SL(6), theory with expanded subgroup of translations for inhomogeneous, 22:13786
SL(6,C), baryon--baryon--meson vertex and kinematic form factors in relativistic, 22:35006
SL(6,C), interactions of octet baryons with pseudoscalar and vector mesons in, 22:20304
SL(6,C), Weinberg formalism for spin-s particles in, combined Lorentz and SU(3) symmetry in, 22:15830
SL(n,C), Clebsch--Gordan coefficients for coupling of degenerate representations of, 22:7546
SL(n,C), matrix elements of operators of class-I representations of, 22:44470
SL(n,C), representations of, method for analysis of unitary, 22:20289
SL(n,C), unitary representations of, 22:9637
SO(2), theory for three-body states, Green function in, 22:13871
SO(2,4), equivalence of conformal group with, 22:13789
SO(24) scheme with integral-charge triplets, electromagnetic properties of baryons and mesons in, 22:24701
SO(3) x SO(2,1) representations for dynamical systems,

energy spectrum from, 22:29722
SO(3), theory for three-body states, Green function in, 22:13871
SO(3,1) representations for elastic forward scattering amplitude, partial-wave analysis in, 22:11736
SO(3,2), angular momentum in, Dirac Bracket for Schwinger calculus for, 22:39299 (IPNO/TH-123)
SO(4), amplitude for π + N interactions at vanishing momentum transfer in, 22:44434
SO(4), Clebsch--Gordan series for, 22:17985
SO(4,1), representation theory of, master analytic representations for unified, 22:35041
SO(4,2), hadron properties from noncompact dynamic, 22:17997
SO(4,2), Kepler equation in, 22:15377
SO(4,2), similarity transform from Lie algebra of, 22:50423
SO(5), Clebsch--Gordan series for, 22:17985
SO(5), representation theory of, master analytic representations for unified, 22:35041
SO(5), weight diagrams for, construction of, 22:35031
SO(5,1), representation theory of, master analytic representations for unified, 22:35041
SO(6), interactions of hadrons in relativistic trion model in, 22:24709
SO(6), representation theory of, master analytic representations for unified, 22:35041
SO(6), theory for three-body states, Green function in, 22:13871
SO(n), field equations satisfying irreducible representations of, 22:44490
SO(n), mass spectra in broken, 22:20285
SO(p,q) representations, derivation of, 22:53003
SO$_0$(4,2) for elementary particle physics, 22:24695
SO$_0$(4,2), causality and conformed invariance for, 22:32184
SO$_0$(N,1), representations of, classification of unitary irreducible, 22:35040
Sp(4), Clebsch--Gordan series for, 22:17985
Sp(4), weight diagrams for, construction of, 22:35031
Sp(6), for strong interactions, 22:1470
Sp(n), degenerate representations of, 22:48340
structure and representations for strongly interacting particles, 22:41840
structures with intrinsic mass splitting in, 22:9642
SU, lepton classification in, 22:17993
SU(1,1) quasi-spin formalism for many-boson system in spherical field, 22:48333
SU(1,1), scattering at high energies in, charge invariance and group-transformation properties in dynamical model for, 22:3543
SU(1,1), Wigner coefficients for, 22:35030
SU(1,1), Wigner coefficients of, 22:39436 (AD-664307)
SU(18), predictions of representation 816, baryon resonances in, 22:20308
SU(2) at infinite four-momentum, canonical commutation relations in field theory for exact, 22:11698
SU(2) bootstrap model containing N,Δ(1236), and π, effect of electromagnetism on, 22:11648
SU(2) chiral transformation for weak interactions, 22:13817
SU(2) strong-coupling model for π + N interactions, 22:37152
SU(2) x O(3) bootstrap model of positive-parity baryons, 22:26653
SU(2) x SU(2) chiral symmetry breaking for π--π scattering lengths, 22:20305
SU(2) x SU(2) chiral symmetry for mesons and nucleons, Lagrangian method for, 22:5558
SU(2) x SU(2) chiral symmetry for superconvergence sum rules for scattering amplitudes, 22:22434
SU(2) x SU(2) chiral, for eta decay rate and π mass difference, 22:29736
SU(2) x SU(2) chiral, incompatibility with nonzero π mass, 22:39453
SU(2) x SU(2) for A_1 $\to$ rho + π decay rate, asymptotic chiral, 22:50436
SU(2) x SU(2) for hadrons, asymptotic chiral, 22:24713
SU(2) x SU(2) for hard-pion calculations, validity of Weinberg second sum rule in chiral, 22:35057
SU(2) x SU(2) for N + N interactions at high energies with large momentum transfer, chiral, 22:35015
SU(2) x SU(2) for π + N interactions, field theory of chiral, 22:5628
SU(2) x SU(2) predictions for rho$\pi\pi$ coupling from $e^+ + e^- \to \pi^+ + \pi^-$ interactions and rho photoproduction on carbon, (E/T), 22:35055
SU(2) x SU(2), calculations for vector and axial vector current three-point functions of, using current algebra, (T), 22:50419 (DESY-68/39)
SU(2) x SU(2), superconvergent relations for d-wave coupling for A_1 $\to$ rho + π decay in, 22:7495
SU(2) x SU(3) x T$_{24}$, commutation relations of field algebra for states of particles at rest in, 22:41829 (JINR-P2-3858)
SU(2), breaking in, subtractions in dispersive approach to, 22:9633
SU(2), Clebsch -- Gordan coefficients for, 22:24694
SU(2), crossing matrices and Racah coefficients for, 22:50424
SU(2), decays of phi in asymptotic, 22:37138
SU(2), dimension relation with weight multiplicity of SU(3) symmetry, 22:35031
SU(2), elementary particle interactions and classification in, 22:13810
SU(2), elementary particle theory in, 22:1461
SU(2), elementary particles in, second quantization process for arbitrary-spin, 22:44460
SU(2), from crossing-symmetric dynamical model for interactions of pseudoscalar mesons, 22:3497
SU(2), nucleon magnetic moments from bootstrap calculation in, 22:37115
SU(2), recursion relations for 3-j symbols for bosons in, 22:13782 (JINR-E2-3625)
SU(2), recursion relations for 3-j symbols in, 22:29727
SU(2), Regge symmetries of 3j symbols of, 22:52998
SU(2), representations of, classification of nonlinear, 22:15819 (JINR-P2-3648)
SU(2), scalar product of harmonic functions of, 22:50422
SU(2), unitary irreducible representations of strong coupling, 22:3492
SU(2), vertex functions from chiral, 22:1399
SU(2)/sub J/ x SU(2)/sub I/ x T$_{27}$ group for static multispin meson-source models, 22:15784
SU(2)/sub J/, fibre bundle C(N) relation with Rzewuski model for, 22:13808
SU(2)/sub J/, quasiquarks from cross sections of fibre bundle C(N) relation with, 22:13809
SU(2)/sub W/, Regge trajectories in anti N + N interactions in, confluence of, 22:9660
SU(2,1), irreducible representations of, generating functions and characters of, 22:53000
SU(2,1), representations of, completely irreducible, 22:35043
SU(2,2) degenerate unitary representations for elementary particles, 22:7533
SU(2,2), field theory with infinite multiplets in, 22:20283
SU(2,2), hadron interactions and spectrum in unitary irreducible representations of, 22:35026
SU(2,2), hadron properties from noncompact dynamic, 22:17997
SU(24), reduction scheme for higher orbital states in, 22:1466 (ITF-67-10)
SU(3) irreducible representations in Young diagram for orbital group, U(6), (T), 22:35391
SU(3) x SU(3) breaking by (3,3*) + (3*,3), predictions for pseudoscalar nonet and scalar meson, 22:11707
SU(3) x SU(3) chiral dynamic Lagrangian for calculation of $X^0 \to$ eta + 2π decay, 22:44474
SU(3) x SU(3) current algebra for calculating ($K^+ - K^0$) electromagnetic mass difference, 22:13818
SU(3) x SU(3) for mesons, nonchiral, 22:3501
SU(3) x SU(3) for three-body weak electromagnetic decays of hyperons, 22:37125
SU(3) x SU(3) spectral-function sum rules, use of infinite-momentum technique and PCAC hypothesis for, 22:35033
SU(3) x SU(3) with parity and charge conjugation for strong meson decays, 22:52975
SU(3) x SU(3), current propagators for mesons in, spectra-function sum rules for vector and axial-vector, 22:15768
SU(3) x SU(3), hadron electromagnetic and strong interactions in, 22:9653
SU(3) x SU(3), mass ratios in, spectral function sum rules for, 22:9524
SU(3) x SU(3), meson fields with nonlinear transformation laws under chiral, 22:35103
SU(3) x SU(3), predictions for anti p + p $\to$ 2 mesons interactions, 22:9662
SU(3) x SU(3), pseudoscalar meson interactions with baryons in, vector meson production in, 22:11712
SU(3) x SU(3), s-wave scattering lengths for meson--baryon interactions in chiral, 22:5583
SU(3) x SU(3), use of chiral, with superconductivity model for strong interactions for $K \to \mu + \nu$, $\pi \to \mu + \nu$, and $\Lambda \to N + \pi$ decays, 22:17994
SU(3) x SU(3), weak interactions in, review of, 22:3483 (CERN-67-24(Vol.1), Paper 2)
SU(3) x SU(3)-breaking effects on divergences of weak nonleptonic amplitudes, 22:46488
SU(3) x U(3), predictions for backward and forward interactions of spin-1/2 octet baryons in, 22:35065
SU(3)/Z$_3$, theory in four-dimensional space, 22:1458 (NP-17076)
SU(3,1), wave equation for leptons and hadrons in, 22:22421
SU(3,1), wave equation with generators of, for all spins and leptonic multiplets, 22:39441
SU(4), axial vector renormalization constant from current algebra of, 22:29732
SU(4), Clebsch--Gordan series for, 22:17985
SU(4), current algebra for elementary particle models in, 22:3490
SU(4)/sub w/, hadron classification, form factors, and vertex functions in, 22:35060
SU(6) x O(3) for strong decays of higher baryons in quark model, 22:34992
SU(6) x O(3) quark model for three-particle final states, 22:50381
SU(6)(sub W/, hadron scattering in, peripheral, 22:5632
SU(6)/sub W/ bootstrap model for mesons and baryons,

22:3367
SU(6)/sub W/ for asymptotic behavior of electromagnetic form factors, 22:15729
SU(6)/sub W/ in double-Regge-pole model for vector-meson production in pseudoscalar meson--baryon exchange interactions, 22:3436
SU(6)/sub W/ model for anti p + p and anti p + n annihilation at rest, tests of, 22:22390
SU(6)/sub w/ model for strong interactions, fixed-angle dispersion approach, 22:26626
SU(6)/sub W/, baryon octet decay in, currents and current commutators for sum rules for, 22:11706
SU(6)/sub W/, baryon resonance production in e + N interactions, higher, 22:35058
SU(6)/sub W/, current algebra for elementary particle models in, 22:3490
SU(6)/sub w/, decay E(1420) → 28 in, width of, (T), 22:50368 (JINR-P2-4035)
SU(6)/sub W/, E(1420) and eta production in baryon--meson interactions in broken, 22:24708 (JINR-P2-3758)
SU(6)/sub W/, hadron electromagnetic and strong interactions in, 22:9653
SU(6)/sub W/, hyperon nonleptonic decay in, currents and current commutators for amplitudes of, 22:11706
SU(6)/sub W/, mass, parity, and spin of E(1420) in broken, 22:39460
SU(6)/sub W/, predictions for anti p + p → 2 mesons interactions, 22:9662
SU(6)/sub W/, resonance classification in supermultiplets in, 22:9653
SU(6)/sub W/, SU(6)/sub X/ extension for hadron noncollinear interactions, 22:20302 (INP-555/PH, pp 43-71)
SU(6)/sub W/-symmetric bootstrap model for even-parity meson resonances, 22:15833
SU(6)/sub X/, hadron noncollinear interactions in SU(6)/sub W/ extension in, 22:20302 (INP-555/PH, pp 43-71)
SU(8), embedding of SU(3) in, 22:44459
SU(9), method of contraction on, 22:26680
SU(n + 1), SO(2n + 1), Sp(2n), SO(2n), and G_2, relations between inner and outer multiplicities for, 22:53001
SU(n) and O(n + 1) symmetry for degenerate bounded classical system, 22:3475
SU(n) and O(n + 1), for n-dimensional harmonic oscillator, 22:9629
SU(n) representations for interactions of even-parity and odd parity mesons, 22:44417
SU(n), Clebsch--Gordan coefficients of, calculation formulas and graphic technique for, 22:39449
SU(N), fibre bundle C(N) relation with Rzewuski model for, 22:13808
SU(n), matrix products and explicit 3-, 6-, 9-, and 12-j coefficients of regular representations of, 22:17982
SU(n), oscillators in, nonisotropic, 22:20286
SU(N), quasiquarks from cross sections of fibre bundle C(N) relation with, 22:13809
SU(n), representation of, method for reduction of, 22:20289
SU(n), representations of, Clebsch--Gordan coefficients of, 22:17979
SU(n), representations of, state labeling of irreducible, 22:35036
SU/sub W/(6), mass determination of ninth pseudoscalar meson in, 22:9692
supermultiplet states in, exact determination of Gamow--Teller matrix elements for, 22:13797
tensor decomposition of transition operator for compact, 22:46540
testing for internal, in electromagnetic interactions, 22:1406
theories for, review of, 22:39310
theory for C, P, and T symmetries, 22:9639
theory for elementary particles, 22:7532 (NP-17185)
theory for elementary particles, 22:3304
theory for extended, Fermi statistics and unitarity relation with, 22:9636
theory for hadron masses, review of, 22:11700
theory for intermediate boson field and electromagnetic field, 22:44486
theory for weak interactions, 22:50431
theory for, book on, 22:9684
theory for, conference on, 22:15708
theory for, conference on, 22:39440
theory for, index on, 22:37092 (AED-C-23-26)
theory for, index on, 22:37091 (AED-C-23-25)
theory for, lectures on, 22:13685
theory for, lectures on, 22:9635
theory for, review of, 22:15709
theory for, review of, 22:39445
theory of higher, for hadrons, 22:50432
theory of noncompatible, for elementary particles, 22:52996 (BMwF-FBK-68-15)
theory of unitary, 22:3473
theory of unitary, for elementary particles, 22:17991
transformations for internal, Poincare group extensions for, 22:1467
U(12), representation mixing for meson--baryon and baryon--interactions, 22:48296
U(2,2) algebra, ladder representations of, 22:9643
U(3) x U(3) representations for electric dipole operators, model of mixed, 22:24704
U(3) x U(3), hadron interactions in, formulation of current algebra for, 22:39443
U(3) x U(3), meson chiral dynamics in, pseudoscalar, 22:7543 (JINR-P2-3554)
U(3) x U(3), meson masses and decay coupling constants from spectral-function sum rules for chiral, 22:46487
U(3) x U(3), SU(3) symmetry for cross section relations for baryon--meson interactions in, 22:44475
U(3), solid harmonics for, normalization of, 22:32182
U(3,1), nonanalyticity of scattering amplitude at U = 0 in relativistic harmonic-oscillator model based on, 22:34997
U(3,1), wave equations with broken, 22:44458
U(3,3) algebra, ladder representations and mass formulas in, 22:9643
U(4) model for s-wave and p-wave hyperon nonleptonic decay amplitudes, 22:46483
U(6) for vector-meson--baryon coupling, superconvergence relations for, 22:5588
U(6) x U(6) for particle classification, Reggeization of, 22:46395
U(6) x U(6) scheme of meson--baryon interactions, SU-6 representation mixing in covariant chiral, 22:32192
U(6) x U(6) x O(3), saturation of superconvergence relations for interactions between pseudoscalar and vector mesons, 22:11708
U(6) x U(6), baryon interactions with mesons and baryons at high energies in Reggeized, 22:39456 (IC-68/43)
U(6) x U(6), hadrons in, 22:13824
U(6) x U(6), hadrons in, experimental data for quark model in, 22:13787
U(6) x U(6), Reggeization of meson and baryon supermultiplets in, 22:37183
U(6), baryon resonances in, composite model for, 22:1468
U(6,6) representation mixing for baryons, 22:9665
U(6,6) symmetry for anti p + p → hyperon + anti hyperon interactions, 22:20230
U(6,6), coupling of ladders for, limitations on, 22:15822
U(6,6), hadron classification in, 22:9640
U(6,6), hadron mass spectra in, 22:9657
U(6,6), hadrons in, 22:13823
U(6,6), interactions of mesons with baryons in broken, N/D calculation for mass splitting for, 22:32193
U(6,6), sum rules for meson--baryon interactions in, superconvergent, 22:3430
U(n) and U(p,n-p), irreducible representations of Lie algebra of, 22:35042
U(n), amplitudes of elementary particle interactions, Weyl coefficients for, 22:37174
U(n), operators in, pattern calculus for tensor, 22:29725
U(N,N) algebras, ladder representations of, 22:9643
U(p,q), coupling of ladders for, limitations for, 22:15822
U(p,q), coupling problem for ladder representations of, 22:17990
U(p,q), representations of, algebra for Lie group, 22:9638
U(p,q), unitary representations of, 22:9637
unitary model of gravitational interaction, 22:1488
unitary restrictions on dynamical, for anti N + N and π + N → N interactions, 22:13829
use for elementary particle interactions, review of research on, 22:5519 (NYO-3399-140)
use for infinite multiplets in particle theory, 22:7541 (COO-264-403)
use of noncompact and dynamic, for elementary particle interactions, 22:9640
use of noninvariance, for interactions and properties of hadrons, 22:3481
use with independent quark model for mesons and baryons, 22:9576
Wigner 9j symbols for, relations among, 22:35038

SYMMETRY GROUPS SU(3)
amplitude of meson + baryon → 2 mesons + hyperon interactions in, 22:3502
amplitudes for pseudoscalar meson interactions with baryons, test of, 22:46490
amplitudes of meson--baryon interactions at low energies in exact, saturation of superconvergence relations in, 22:32153
baryon beta decay with change in strangeness in, properties of vector constants for, 22:13815
baryon classification in, review of, 22:32076
baryon interaction cross section relations in, 22:3493
baryon interactions in, amplitude relations for nonleptonic four-fermion, 22:26678
baryon interactions with pseudoscalar mesons at high energies in quark model in, calculations for, 22:22436
baryon magnetic moments in broken, 22:46486
baryon magnetic moments in, Bargman--Wigner-type equations for octet-$1/2^+$, 22:48318
baryon mass relations in, method for deriving, 22:50430
baryon resonance assignments in multiplets of, mass formulas for, 22:22393 (UCRL-17385)
baryon resonance couplings to baryons and pseudoscalar mesons in broken, 22:5586
baryon resonance decays in, $3/2^-$, 22:24712
baryon resonance structure in 27-plet of, J/sup P/ = $3/2^-$, 22:3496

baryon resonances in, 22:48313 (CERN-68-23(Vol.2), pp 431-96)
baryon spectra in, review of, 22:37178 (CONF-670725-, pp 39-55)
baryon--antibaryon on enhancements in 10, 10*, and 27 representations of, 22:48306
baryon--meson inelastic interactions in, 22:1439
baryon--meson interactions in broken, 22:1434 (AD-646614)
book: Symmetries and Elementary Particles, 22:35064
boson mass formulas and decay rates in, 22:35051 (NP-17486)
breaking and mixing for vector and tensor meson nonets, restrictions on, 22:48311
breaking by Coleman--Glashow magnetic moment formulas, corrections to, 22:3489
breaking by vector octet masses and coupling constants due to mass splitting of pseudoscalar octet, 22:3498
breaking effect in K and π leptonic decays, spectral-function sum rules and coupling constant ratio for, 22:46485
breaking for elementary particle leptonic and semileptonic weak interactions, 22:5621
breaking for nonleptonic, photonic, and semileptonic decays of hyperons, sum rules from, 22:26677
breaking in axial-vector spectral-function sum rules, 22:17995
breaking in Bethe--Salpeter bootstrap model, 22:46492
breaking in chiral dynamics for baryon--meson interactions and spin-1 meson mass difference, 22:46489
breaking in electromagnetic, weak, and medium-strong interactions, enhancement theory of, 22:44464
breaking in field theoretic model, 22:3478
breaking in hyperon and $K_1^0 \to 2\pi$ decays, 22:3355
breaking in strong interactions, origin of, 22:50437
breaking in vector--pseudoscalar--pseudoscalar meson coupling constants in field theory of vector mesons, 22:35059
breaking in, subtractions in dispersive approach to, 22:9633
breaking of chiral and, spectral representations for parameters of, 22:46479
breaking of Σ^+ magnetic moment, vector-current sum rule in model of, 22:29734
breaking of, structure of internal space of hadrons for properties of dynamical, 22:39462
C, P, and T operations in ordinary space and space of, 22:35029
chiral dynamics in, construction of, 22:13793
classification of 0^-, 1^-, and 2^+ nonets of mesons, 22:46412
classification of conspirator trajectory families with exchange-degenerate Lorentz poles, 22:29680
classification of N(1400) in multiplet of broken, from π + N interactions, 22:37179
Clebsch--Gordan coefficients for, FORTRAN computer calculation of, 22:35049
Clebsch--Gordan coefficients for, method for determining, 22:29723
Clebsch--Gordan coefficients of, calculation formulas and graphic technique for, 22:39449
Clebsch--Gordan series for, 22:17985
Clebsch--Gordon coefficients and projection operators for, 22:24696
Clebsch--Gordon coefficients for, use of normalized solid harmonics for, 22:32183
coupling constant for $\Xi^0 \to \Sigma^+ + e^- +$ anti ν decay in broken, relation between vector and axial-vector Cabibbo angles from, 22:15746
coupling of vector mesons with two pseudoscalar mesons in broken, PCAC for, 22:34960
couplings in particle interactions in, conference on, 22:37170 (CONF-670725)
cross section relations for baryon--meson interactions in, 22:44475
crossing matrix of, 22:26676
current commutators in broken, mass formula for vector mesons from, 22:35066
decay $K \to l + \pi + \nu$ form factors from chiral algebra of, 22:39454
decay of pseudoscalar mesons in, three-body leptonic, 22:5622
dispersion sum rules for electromagnetic and strong particle interactions, 22:11644 (ITF-67-13)
effect on meson production in anti p + p interactions at 1.88 to 3.00 GeV, 22:11654
elementary particle classification in, 22:15796
elementary particle classification in, review of, 22:35045
elementary particle interactions and classification in, 22:13810
elementary particle interactions in, review of, 22:37171 (CONF-670725-, pp 4-16)
elementary particle interactions in, review of strong, 22:1469
elementary particle internal space dynamics in, 22:11701
elementary particle multiplet structure in, Gell--Mann--Nishijima relation for, 22:13788
elementary particle theory in, 22:15824
elementary particles in, second quantization process for arbitrary-spin, 22:44460
embedding in SU(8), 22:44459
form factor for K three-body leptonic decay in broken, 22:20300
form factors for $K \to \pi + l + \nu$ and $\pi \to \pi^0 + e + \nu$ decays in, 22:48288
formalism from crossing-symmetric dynamical model for interactions of pseudoscalar mesons, 22:3497
$G_0(8)$ x SU(3), for scalar SU(3)-symmetric strong coupling theory, 22:29741
hadron decay in, minimal Hamiltonian for electromagnetic and weak, 22:20301
hadron interactions in, formulation of current algebra for, 22:39443
hadron interactions in, review of total cross section near forward direction of elastic, 22:39355 (CERN-68-7(Vol.1), pp 3-59)
hadron interactions in, universality and degeneracy of Regge poles for ratios between total cross sections of, 22:24624
hadron structure in, spinor space for, 22:53010
hadron theory in, experimental review of, 22:13801
hadron theory in, quark model for, 22:13822 (PUC-937-285)
hyperon $(\Omega)^-$ kinetics from phase shifts for Ξ + anti K interactions in, 22:3502
hyperon nonleptonic decays in, parity-conserving, 22:44473
interactions $\nu + n \to \mu^- + p$ and anti $\nu + p \to \mu^+ + n(\Lambda)$ at high energies in nuclei in, 22:29669
invariance group for motion of dipole-quadrupole system, 22:34881
irreducible representations of, generating functions and characters of, 22:53000
lifetime of kappa in model for simultaneous breaking of, 22:35052
mass formula for meson resonances using harmonics of, 22:9666
mass formulas in, geometric derivation of, 22:9661
mass of D(1285) and E(1420) mesons under asymptotic, 22:3495
mass relations for arbitrary-spin particles in, 22:46477
mass spectra in broken, 22:20285
mass splitting interaction in, effect on nonleptonic decays in higher symmetries, 22:15827
meson bootstrap in antibaryon--baryon interactions in, vector, 22:15834
meson chiral dynamics in, pseudoscalar, 22:7543 (JINR-P2-3554)
meson classification in, review of, 22:37177 (CONF-670725-, pp 17-38)
meson decay in, review of pseudoscalar and vector, 22:3486
meson decays in broken, 22:15773
meson leptonic decay amplitudes in broken, renormalization of, 22:17949
meson mass spectra and decay rates in model of, 27-plet, 22:32194
meson octet interactions for dynamic approach to, 22:44422
meson production in γ + N interactions in, 22:48347
meson radiative decay in broken, rate of pseudoscalar and vector, 22:46446
meson resonance assignments in 189 and 405 representations of SU(6) symmetry on basis of, 22:39457 (ITF-68-12)
meson resonances in J/sup P/ = 1^+ octodecimet in, 22:7542 (ISS-67/36)
meson three-body leptonic decays in, 22:5620
meson--baryon coupling in strong coupling theory in, 22:11684
meson--baryon interactions in broken, field theoretic methods for sum rules for coupling constants for, 22:20243
model for anti p + p and anti p + n annihilation at rest, tests of, 22:22390
model for multiple particle production in anti p + p and anti p + n interactions at rest, and $\pi^- + p$ and $\pi^+ + p$ interactions above 1 GeV, 22:41805 (JINR-P2-3879)
model for parity-violating hyperon decays, 22:35054
model for zero triality and internal freedom of hadrons, 22:32195
model in strong coupling theory, dynamic group of, 22:26681
model of broken, for pseudoscalar-meson--baryon interactions, 22:48315
multiplet for baryon resonances, existence of 27-dimensional, 22:35063
multiplets in, mass operator for, 22:20290
neon-20 energy levels in, core excitation of, 22:3502
nucleon pair interactions in nuclei, matrix elements of, 22:26679 (NP-17357)
octet dominance in weak, electromagnetic, and strong interactions, 22:5609
particle interactions in, 22:46474
pole model for weak baryon decays, 22:11705
Pomeranchon assignment for K + N and π + N interaction total cross sections in, 22:24653
predictions for classification and baryon resonance electromagnetic couplings from resonance production in $K^- + p \to \gamma + \Lambda$ and $\pi^- + p \to \gamma + n$ interactions, 22:1405 (TH-210)

  predictions for electromagnetic interactions, review of experimental evidence for, 22:37175 (CONF-670725-, pp 56-73)
  predictions for electromagnetic interactions, review of, 22:7539 (SLAC-PUB-349)
  predictions for elementary particle interactions, review of, 22:37185 (CONF-670725-, pp 74-104)
  predictions for $f^0 \to 2\gamma/A_2^0 \to 2\gamma$ decay amplitude ratio, 22:48266
  predictions for K → 2π decay, violation of ΔT = 1/2 rule in, 22:32189
  predictions for K + n, K + p, and π + p interactions, (T), 22:7544 (ORO-2504-112)
  predictions for K^+ + N interactions from K^+ + p, π^+ + p, and π^- + p backward interactions in, 22:20142
  predictions for meson decay rates in, review of, 22:37177 (CONF-670725-, pp 17-38)
  properties for weak interactions, 22:11702
  properties of vector mesons in asymptotic, 22:3485
  proton electromagnetic form factor in, formula for, 22:32087
  quark model for strong interactions in, 22:9663
  Regge residues in three-body vertices in amplitudes of four-body particle interactions in, review of experimental tests of, 22:37172 (CONF-670725-, pp 105-42)
  relations between scattering amplitudes for meson--baryon interactions, effect of mass differences on, 22:3442
  representation for 2^+ meson exchange in hadron interactions in, 36-dimensional reducible, 22:5626
  representation mixing for classification of baryon resonances, 22:50435
  representation parameters of, substitution group of, 22:50428
  representations in statistical model for multiple particle production, 22:32139
  representations of, Clebsch--Gordon series of SU(2) for study of, 22:13792
  representations of, derivation of irreducible, 22:46478
  representations of, properties of irreducible, 22:24694
  representations of, SU(6,6) selection rules and production processes for resonances in high-dimensional, 22:35061
  Sakata triplets (p, n, Λ) and (π, K, eta) in, Lagrangian in theory for, 22:17994
  strong-coupling theory for broken, mass formulas in, 22:37180
  structure for hydrogen atom, relation to O(4), 22:11697
  substitution group and mirror reflection symmetry in, 22:17983
  sum rule from ω--phi mixing for asymptotic validity of, 22:3472
  sum rules for meson--meson and meson--baryon interactions in exact and broken, decuplet, 22:37136
  sum rules for strong- and weak-interaction coupling constants, current-algebra methods for deriving broken, 22:3500
  sum rules for vector meson → l + anti l decay in broken, 22:44416
  sum rules from asymptotic, for K(1320) → K^* + π and K(1320) → rho + K decay widths, 22:20306
  symmetry of, geometrical interpretation of mirror reflection, 22:50428
  test from cross section relations for $K^+ + n \to K^0 + p$ interactions, 22:24655
  test from determination of transition amplitudes of Ξ → Σ + π decay from Ξ → Λ + π + γ decay, 22:44465 (ITEF-560)
  test of, from pseudoscalar meson interactions with baryons at high energies, 22:29739
  testing for internal, in electromagnetic interactions, 22:1406
  theory and use for particle interactions, 22:48331 (CERN-68-23(Vol.1), pp 235-364)
  theory for elementary particles, 22:17991
  theory for elementary particles, 22:7532 (NP-17185)
  theory for fundamental triplet in, crossing matrices for, 22:20291
  theory for high-energy, survey of quark models in, 22:22432 (PUC-937-294)
  theory for hyperon nonleptonic decays, 22:34999
  theory for weak interactions, 22:11703
  theory for weak interactions, 22:46385
  theory for, extension of Kramers symbolic method for elementary particles in, 22:7530 (NP-17138)
  theory for, quark model in, 22:9656
  theory for, review of experimental results for verification of, 22:13826
  use for analysis of J/sup P/ = 1^+ octodecimet of meson resonances, 22:13827
  use for $\pi^- + p \to \pi^0 + n$ and $\pi^- + p \to \pi^- + p$ interactions at high energies, 22:15796
  use in statistical model of multiple particle production, 22:22433
  use of asymptotic, for dispersion sum rules for form factors of weak baryon current, 22:7502 (JINR-P2-3555)
  use of broken, for K^* and K^{**} Regge parameters from K + p and π + p interactions, 22:17969
  violations in calculations of decuplet $3/2^+$ baryon masses, 22:29740
  weight multiplicity relation with dimensions of SU(2) symmetry, 22:35031
  Weyl group of, matrix formalism for, 22:41840
  Wigner coefficients for, 22:3476
  Wigner coefficients for, 22:1460
SYMMETRY GROUPS SU(6)
  amplitude for nonleptonic hyperon decays, equivalence of vector-meson dominance with current algebra and, 22:34933
  amplitudes of Λ + p → p + n interactions in, 22:48279
  baryon and meson resonance substructure in, quark model for, 22:3370
  baryon electromagnetic mass differences in bootstrap model in, 22:37107
  baryon interaction cross section relations in, 22:3493
  baryon mass spectra in dynamical S-wave model in, 22:3503
  baryon mass splitting in quark--diquark model in, 22:22383
  current algebra for elementary particle models in, 22:3490
  elementary particle interactions and classification in, 22:13810
  elementary particle interactions in, review of strong, 22:1469
  formalism for processes with vanishing static limit, fundamental substitution in, 22:46491
  formalism for, compound fields of infinite multiplets, (T), 22:50441
  formulation from algebra of spin currents, relativistic, 22:11699
  hadron interactions in, formulation of current algebra for, 22:39443
  hadrons in, experimental data for, 22:13787
  hadrons in, review of, 22:13825
  hyperfragment nonmesonic decay in, light, 22:48279
  hyperon nonleptonic S-wave decay and mass splitting in, 22:13819
  invariance model for s-wave resonances in meson--baryon interactions, 22:34994
  meson (K) nonleptonic S-wave decay and mass splitting in, 22:13819
  meson (π) coupling constants in, four-body, 22:9584
  meson mass spectra and decay rates in model of, 27-plet, 22:32194
  meson resonance classification in 405-plet of, 22:35067
  meson resonance widths in 405-plet of, J/sup P/ = 2^+, 22:35067
  meson weak interactions in, 22:3486
  meson--meson and meson--baryon interactions in, quark-model solution to superconvergence relations for, 22:20216
  model for nonleptonic hyperon decay, 22:9567
  multiplet structure and mass sum rules in, 22:15829
  pole model for weak baryon decays, 22:11705
  predictions for hadron electromagnetic interactions, 22:9652
  quark model for baryon resonances for $(56,0^+)$, $(70,1^-)$, and $(20,1^+)$ supermultiplets in, 22:5630
  quark model for strong interactions in, 22:9663
  representation mixing in covariant chiral U(6) x U(6) scheme of meson--baryon interactions, 22:32192
  representations of, branching rules for, 22:17989
  representations of, meson decay $2^+ \to 0^- + 0^-$ and resonance assignments in 189 and 405, 22:39457 (ITF-68-12)
  S-matrix in relativistic, unitary, 22:9703
  SU(6)/sub W/, hadron interactions in, composite models for, 22:13828
  supermultiplets for baryon resonances in, symmetric quark model for, 22:7540 (CONF-670414-6)
  theory for elementary particles, 22:17991
  theory for elementary particles, 22:7532 (NP-17185)
  theory for, inhomogeneous SL(6) group as covariant generalization in, 22:13784
  theory of exact relativistic, properties of, 22:39444
  theory of relativistic, incompatibility with unitarity of, 22:13785
SYNCHROCYCLOTRONS
  accelerating gaps of, potential distribution in two-dimensional model of, 22:15877 (JINR-P9-3639)
  beam currents in JINR, effects of space charge on, 22:46562(T) (ANL-Trans-646)
  beam depolarization in proton, (T), 22:39529
  beam depolarization in, proton, 22:9739
  beam experiments on electron, at Lebedev Physical Institute, 22:32303 (CEAL-2000, pp 419-22)
  beam extraction from CERN, bibliography on, 22:22487 (NP-17329)
  beam extraction system for 180 cm, description of modified regenerative, 22:20383
  beam extraction systems of Buenos Aires 180-cm, 22:44558
  beam injection in FIAN electron, 22:32410
  beam injector for proton, beam injection in linear accelerator used as, 22:15901
  beam losses in 680-MeV, correction of accelerating voltage amplitude for reducing, 22:39503 (JINR-P9-3805)
  beam monitoring system for FIAN electron, design of scintillation detector, 22:32409
  beam properties of CERN 600-MeV proton, primary and secondary, 22:39536
  beam regenerative extractor of Berkeley 184-inch,

- 22:44543 (UCRL-18211)
- beam stability in FIAN, criteria for longitudinal, 22:48395
- beam uniformity at NASA proton, for space radiation simulation, 22:37231 (N-68-16785)
- betatron cores for FIAN electron, 22:32414
- betatron oscillations in JINR 680-MeV, calculation of, 22:48389 (JINR-P9-3968)
- design and performance of 600-MeV CERN, (E), 22:18310
- design characteristics and beam parameters of FIAN electron, 22:32384
- design modification of Dubna 700-MeV proton, for production of mesons, 22:32281 (CEAL-2000, pp 303-14)
- development at CERN, 1967, 22:50491(R) (NP-17628)
- electric field distribution in central region of, 22:3558 (JINR-P9-3497)
- electromagnet blocks for FIAN electron, geodesic positioning of, 22:32407
- frequency--amplitude characteristics of 680-MeV, measurement of optimum, 22:46570 (JINR-P9-3969)
- frequency-amplitude characteristics of, measurement of, 22:46571 (JINR-P9-3970)
- magnet design for FIAN electron, 22:32412
- magnet power supply for FIAN electron, 22:32411
- magnetic field measurements for FIAN electron, 22:32406
- magnetic field values in FIAN, tolerable deviations in, 22:32413
- neutron spectra from moderated and unmoderated proton beam targets, (E), 22:35285(R) (AERE-PR/NP-13)
- neutron spectra near, use of nuclear emulsions for measuring scattered, 22:33653
- operation of FIAN electron, 22:32413
- operation of FIAN electron, procedures for starting, 22:32405
- particle phase motion in, space-charge effects on, 22:29814
- radiation monitoring near CERN 600-MeV, evaluation of detectors for, 22:22534
- radiation monitoring near CERN, evaluation of detectors for, 22:21529
- radiofrequency cooling system at CERN 600-MeV, copper(II) ion production by radiolytic corrosion in, 22:18043 (CERN-68-2)
- radiofrequency system for proton, programming accelerating voltage amplitude of model of, 22:3581
- radiofrequency system of FIAN electron, 22:32408
- radiofrequency systems for, thyratron trigger with nonlinear asymmetrical loading in, 22:16931 (JINR-P9-3675)
- radioisotope production and analysis at JINR proton, equipment for, 22:26736 (JINR-P6-3773)
- shielding requirements for stray radiation from JINR, approximate method for calculating, 22:37232(T) (ORNL-tr-1916)
- shielding requirements for stray radiation from JINR, approximate method for calculating, 22:9718 (JINR-P16-3591)
- sources for Lyon, development of polarized deuteron, 22:26737 (LYCEN-6802)
- target positioning and removal in Lyon, pneumatic tube system for, 22:29809
- targets for CERN 600-MeV proton, 22:29803
- use as source of negative pions for radiobiology research, 22:33905 (ORO-3343-1, Paper 5)
- use of 910-MeV helium ion, for simulation of solar flare irradiation of animals, 22:30868 (UCRL-17751, pp 53-80)
- vacuum chamber for FIAN electron, design of 400-liter, 22:32409

Synchrometers
- see Mass Spectrometers

Synchrophaseotron (proton synchrotron)
- see Synchrotrons

Synchroscopes
- see Oscillographs

SYNCHROTRON RADIATION
- see also Cyclotron Radiation
- amplification of, from highly relativistic plasma, (T), 22:29138
- applications of, astrophysical, (T), 22:29103
- astrophysical implications of, (T), 22:29102
- characteristics of, from INS electron synchrotron, 22:24774
- collimation of, test of relation with axial dimensions of electron bunch, (E), 22:9541
- effect of ionized medium on, of intermediate-energy electrons, (T), 22:31551
- effects on diffuse cosmic background of x rays, (T), 22:29308
- effects on hard x-ray production in solar flares, (T), 22:820
- effects on multicycle positron beam injection in Cambridge Synchrotron for colliding beam experiments, 22:32261 (CEAL-2000, pp 148-9)
- emission and reabsorption from relativistic plasmas, (T), 22:23912(T) (NASA-TT-F-521)
- emission from 3C 273B and eta Carinae, (T), 22:5032
- emission from cosmic radio sources, (T), 22:47765
- emission from electrons in helical orbits, (T), 22:5469
- emission from electrons in solar-active region, (T), 22:52442
- emission from electrons trapped in radiation belts, (T), 22:26317
- emission from helically moving relativistic electrons, corrections for, (T), 22:34160
- emission from relativistic electrons in magnetic fields, elliptical polarization of, (E), 22:41317
- emission from relativistic protons in compact radio sources, (T), 22:41197
- emission from, time variation of spectrum of gyro-, (T), 22:34234
- emission in electron interactions in magnetic field, expression for single photon, 22:44373
- emission of continuum, from quasars, (T), 22:34139 (AD-664692)
- emission of, magnetic fields required in galaxies for, (T), 22:52386
- emission, formulae for, 22:19694
- excitation of plasma resonance in aluminum, (E), 22:41621 (DESY-68/27)
- magnetic-field energy conversion to, (T), 22:36692
- negative absorption in noncollective plasma, (T), 22:4936
- polarization, 22:9740
- polarization of extreme uv, measurement with reflecting polarimeter, 22:52527
- polarization of galactic, at 1.21m, (E), 22:17297
- polarization of ultraviolet, reflecting polarimeter for measuring, 22:28202 (DESY-68/12)
- polarization of, (T), 22:52907
- polarization of, maximum, (T), 22:5476
- production by relativistic protons in quasars, (T), 22:2740
- production of high-energy, description of Megagauss Cnare targets for, 22:22516
- production of, laser action of relativistic electron ensemble for, (T), 22:34278
- production of, with visible spectra, use of storage rings for, 22:11836
- properties of induced, dependence on properties of external radiation, (T), 22:24585
- quantum fluctuations in, effects on beam transverse dimension in 1.5-GeV electron synchrotron, 22:29797
- reactions with lithium halides near lithium K edge, fine structure from, (E), 22:15326 (DESY-67/42)
- reflection and transmission in thin aluminum films, (E), 22:15325 (DESY-67/33)
- scattering on relativistic electrons in radio sources, (T), 22:17303
- spectra associated with hard electron spectra from Sco X-1, (T), 22:43688
- spectrum of solar-flare emitted, (T), 22:17341
- stability of, from relativistic electrons imbedded in plasma, (T), 22:36921
- theory for, review of classical and quantum, 22:11624
- theory of, 22:49964
- thermal instability in strong cosmic radio sources from, (T), 22:858
- use as continuum background source for alkali chloride absorption spectra, (E), 22:46228
- use with ultrahigh vacuum reflectometer for measurements of reflectance, transmittance, and photoemission on samples evaporated in situ, 22:40482 (DESY-68/26)

SYNCHROTRONS
- (Varying magnetic-field particle accelerators.)
- see also Argonne Synchrotron
- see also Bevatron
- see also Brookhaven Alternating-Gradient Synchrotron
- see also Brookhaven Synchrotron
- see also Cambridge Synchrotron
- see also CERN Synchrotron
- see also Frascati Synchrotron
- see also Hamburg Electron Synchrotron
- see also Harwell Synchrotron
- see also Omnitron Synchrotron
- see also Princeton Synchrotron
- see also Saclay Proton Synchrotron
- accelerating systems for, development of, 22:9732
- acceleration system for 1000-GeV proton, design of traveling-wave, 22:32346 (CEAL-2000, pp A125-6)
- beam behavior in, longitudinal and transverse space charge effects on, 22:20373 (PPAD-637-D)
- beam bypass for CERN 300-GeV proton, 22:32242 (CEAL-2000, pp 40-5)
- beam coherent oscillations in, in presence of space charge, 22:46649
- beam control systems for, analysis of phase-lock rf, 22:44531 (CERN-68-27)
- beam dimension in 1.5-GeV electron, effects of quantum fluctuations in synchrotron radiation on transverse, 22:29797
- beam emittance of Serpukhov 70-GeV proton, system for measuring, 22:46663
- beam extraction and transport system for proton, design of alternating-gradient magnets for, 22:11777
- beam extraction from CERN 300-GeV, bibliography on, 22:22487 (NP-17329)
- beam extraction from ideal circular weak-focusing, resonant, 22:37269
- beam extraction from INS electron, resonance method for, 22:24758
- beam extraction from Japanese 1.3-GeV electron, one-third resonance, 22:50497

beam extraction from JINR proton, resonant method for, 22:32287 (CEAL-2000, pp 336-42)
beam extraction from, control of field homogeneity for electron, 22:53051
beam extraction from, reduction of emittance in resonant, 22:32288 (CEAL-2000, pp 347-51)
beam extraction in, design of magnets for, 22:48407(P)
beam injection in 200-GeV NAL proton, storage ring for, 22:44539 (NAL-11-0100)
beam injection in AG, use of separated-orbit cyclotron for, 22:41905 (RHEL/M-124, pp 249-67)
beam injection in BSB iron-free, system for single-turn, 22:18045 (NP-17324)
beam injection in strong-focusing, multiturn vertical and radial resonance, 22:11749 (IFVE-SKU-67-19-k)
beam injection in, alternating-gradient electrostatic beam deflector for, 22:15870 (AERE-GP/R-2379)
beam injection in, controlling magnetic fields during, 22:15907
beam injector design study for European 300-GeV proton, analysis of TART insertion in, 22:32283 (CEAL-2000, pp 320-2)
beam injector for 1000-GeV cybernetic proton, design of 18-GeV synchrotron for use as, 22:32343 (CEAL-2000, pp A115-16)
beam injector for 1000-GeV cybernetic proton, design of 800-MeV linear accelerator for use as, 22:32322 (CEAL-2000, pp A52-3)
beam injector for 7-GeV, design parameters for 25-MeV linear accelerator I-2, 22:32395
beam injector for large proton, design of twin booster, 22:32284 (CEAL-2000, pp 323-4)
beam injector for proton, beam and operation parameters of I-2 linear accelerator used as, 22:32312 (CEAL-2000, pp A1-7)
beam injector for Serpukhov 70-GeV proton, starting procedures and performance of 100-MeV linear accelerator, 22:32274 (CEAL-2000, pp 255-60)
beam instabilities in, control system for damping axial coherent, 22:22518(P)
beam intensity and position in electron, design of multipurpose rf pickup monitor for measuring, 22:32353 (CEAL-2000, pp A152-7)
beam intensity in ITEP proton, design and performance of demonochromator for increasing, 22:32344 (CEAL-2000, pp A117-19)
beam intensity of secondary particles from JINR proton, device for determining, 22:44568
beam measurement apparatus for Erevan 6-GeV, design of magnetic pickup, 22:32291 (CEAL-2000, pp 360-2)
beam monitoring at Bonn 2.5-GeV electron, quantameter for, 22:46689
beam monitoring at Nina 5-GeV electron, rf cavity and toroid systems for, 22:46661
beam monitoring at N'na electron, design of Faraday cup for, 22:46681
beam monitoring at Nina, secondary emission quantameter for, 22:46667
beam monitoring at Tokyo 1.3-GeV electron, calibration of secondary emission monitor for, 22:46685
beam monitoring systems at Cornell 10-GeV electron, description of, 22:46674
beam oscillation frequency of, space-charge effects on, 22:48405
beam oscillations in, effects on space-charge intensity limits, 22:32262 (CEAL-2000, pp 150-2)
beam polarization in strong-focusing high-energy, resonance depolarization effects on, 22:15892
beam profile analyzer for proton, using proportional multiwire chamber, 22:45276 (CERN-68-33)
beam stacking in 280 MeV, electron and positron, 22:18056
beam transport for 200-GeV, superconducting magnets for, 22:46641 (UCRL-18382)
beam transport systems for proposed 300-GeV proton, 22:48388 (CERN/ECFA-67/16(Vol.2))
beam-control corrections in, design of magnet--displacement system for, 22:3563 (UCRL-17796)
betatron oscillation parameters in strong-focusing proton, method for estimating, 22:32348 (CEAL-2000, pp A129-32)
betatron oscillation resonances in electron, third-order nonlinear, 22:32325 (CEAL-2000, pp A59-62)
betatron oscillation resonances in weak-focusing 680-MeV, 22:37264
betatron oscillations in electron, method for measuring frequency of, 22:11756
betatron oscillations in Serpukhov 70-GeV proton, in crossing of half-integral resonance, 22:44535 (IFVE-SKU-67-35-K)
betatron oscillations in, Soviet formalism for, 22:32360 (CERN-68-12)
book: Waveguide Synchrotrons, 22:32393
bremsstrahlung production at Braunschweig 140-MeV electron, 22:39523
cavity resonators for fast-cycling booster, design of high-power models of mechanically-tuned, 22:32309 (CEAL-2000, pp 463-5)
cavity resonators for, methods for studying electrodynamics of post-type, (E), 22:3582
circuits in high-energy, use of modulator, 22:44527 (BNL-12493)
description of electron, for x-ray production, 22:20400(P)
description of proposed Weston 200- to 400-GeV proton, 22:24755
description of Serpukov 70-GeV proton, 22:53056
design and construction of 6-GeV electron, 22:9734
design and operation of 2.3-GeV electron, at Bonn, 22:32347 (CEAL-2000, pp A127-8)
design and performance of 70-GeV proton, 22:9735
design and utilization of 300-GeV proton, 22:48386 (CERN/ECFA-67/13(Rev.2))
design modifications for ITEP proton, 22:32333 (CEAL-2000, pp A88-90)
design of 10- to 20-GeV Cornell electron, 22:7574 (NP-17179)
design of 10-GeV Cornell electron, 22:50500
design of 18-GeV proton, for use as injector for 1000-Ge cybernetic synchrotron, 22:32343 (CEAL-2000, pp A115-16)
design of French 23- to 45-GeV proton, economic and technological aspects of, 22:32240 (CEAL-2000, pp 14-17)
design of Midlands 150-GeV alternating-gradient proton, 22:32336 (CEAL-2000, pp A96-7)
design of proton, with superconducting guide field, economic aspects of, 22:50493 (UCRL-18186)
design parameters for German 40-GeV proton, 22:32245 (CEAL-2000, pp 54-7)
design parameters of Japanese 42-GeV proton, 22:32239 (CEAL-2000, pp 9-13)
design parameters of major high-energy electron and proton, 22:7575 (ORNL-AIC-1)
design studies for German 40-GeV proton, 22:20371 (NP-17274)
design study for 1000-GeV cybernetic proton, 22:32238 (CEAL-2000, pp 4-8)
design study for 300-GeV proton, 22:22482 (CERN-563(Add.))
design study for 800 MeV booster, for Cern proton synchrotron, 22:50489 (MPS/Int.DL/B-67-19)
design study of 300-GeV proton, 22:1523 (CERN-702)
design study of 300-GeV proton, 22:1521 (CERN-563(Vol.1))
design study of 300-GeV proton, 22:1522 (CERN-563(Vol.2))
design using separated function magnet lattice, 22:3224 (CEAL-2000, pp 49-53)
design without alternating-gradient focusing, for obtaining small beam size, 22:32285 (CEAL-2000, pp 325-30)
design, construction, and operation of Bonn 2.5-GeV electron, 22:24780
design, operation, and performance of, 22:24782
development of 200-GeV NAL proton synchrotron, historica review of, 22:44540 (NAL-12-0100)
development of 200-GeV proton, economic and technologica aspects of, 22:3573
development of 300-GeV, at CERN, 22:9731
development of 300-GeV, UK participation in, 22:13891
development of European 300-GeV proton, 22:32271 (CEAL-2000, pp 199-209)
development of European 300-GeV proton, status of, 22:32380
development of NAL 200-GeV proton, 22:32272 (CEAL-2000, pp 210-20)
development of Sirius electron, 22:41915
development of super-energy, 22:15873 (BNL-50057, pp 37-53)
development status of Erevan 6-GeV electron, 22:32299 (CEAL-2000, pp 401-3)
development status of Russian cybernetic 1-GeV proton, 22:32289 (CEAL-2000, pp 352-5)
development status of Serpukhov 70-GeV proton, 22:32273 (CEAL-2000, pp 248-54)
experimental facilities for cybernetic 1.0 TeV proton, design of rf separators for, 22:32270 (CEAL-2000, pp 197-8)
experimental facilities for electron, for studying photodisintegration of helium, 22:35217
experimental facilities for French 45-GeV proton, 22:32267 (CEAL-2000, pp 179-82)
experimental facilities for NINA 4-GeV electron, 22:18058
experimental facilities of 300-GeV proton, design of target station, 22:32268 (CEAL-2000, pp 183-9)
injector for 1.5-GeV, parameters for microtron, 22:9727
injector systems for 200-GeV proton, 22:1534 (UCRL-17798)
irradiation facility for charged-particle activation analysis at Lyon, 22:1997
linear accelerator for 7-GeV proton, design, construction, and adjustment of 25-MeV, 22:32316 (CEAL-2000, pp A30-1)
magnet alignment and support for French 45-GeV proton, 22:32328 (CEAL-2000, A70-5)
magnet design for Bonn 2.3-GeV electron, using relaxatio method, 22:11781
magnet power supplies for NINA electron, stabilization of, 22:11791
magnet power supply system of fast cycling electron, excitation and elimination of delay line modes of

resonance in, 22:11792
magnetic field gradient stopband crossing in, with high space-charge density, 22:32342 (CEAL-2000, pp A111-14)
magnetic field measurements for Serpukhov 70-GeV proton, 22:46567(T) (CERN-Trans-68-7)
magnetic field measurements in 70-GeV synchrophasotron, 22:1549
magnetic field nonlinear correction in cybernetic 1-GeV proton, 22:32338 (CEAL-2000, pp A100-2)
magnetic field of Serpukhov 70-GeV proton, topography in open and closed units for, 22:44536 (IFVE-SKU-67-44-K)
magnetic field of strong-focusing, correction of azimuthal gradient of, 22:44525(T) (ANL-Trans-647)
magnets for proton, design of pulsed superconducting, 22:11798
magnets for, development of superconducting, 22:50486 (BNL-12832)
magnets for, development of superconducting or cryogenic, 22:50485 (BNL-12831)
meson (μ) transport and backstop calculations for 200-GeV, 22:32378
operation as storage ring, characteristics of, 22:11811
operation of Cornell 10-GeV electron, 22:32298 (CEAL-2000, pp 397-400)
operation of ITEP proton, status of, 22:32308 (CEAL-2000, pp 460-2)
operation of NINA 4-GeV electron, 22:32300 (CEAL-2000, pp 404-7)
particle capture efficiency in ITEP proton, use of nonsinusoidal shaped accelerating voltage to increase, 22:32334 (CEAL-2000, pp A91-3)
particle kinematics for 300-GeV proton, 22:48314 (CERN/ECFA-67/16(Vol.3))
particle motion in presence of beam control system in, effect of resonant magnetic field harmonic on, 22:32341 (CEAL-2000, pp A109-10)
power supply for proton, use of superconducting storage coils for, 22:11797
power supply system for NINA 4-GeV electron, 22:12653
radiation problems associated with 200-GeV, strong-focusing proton, shielding experiments at CERN synchrotron for evaluation of, 22:1533 (UCRL-17797)
radiation problems associated with NAL 200- to 500-GeV, 22:32373
radiofrequency control in beam loaded proton, 22:20375 (RHEL/R-158)
radiofrequency system of Russian 70-GeV proton, 22:32345 (CEAL-2000, pp A120-4)
research on 200-GeV, 22:24570(R) (UCRL-17876)
research program of 10-GeV Cornell electron, outline of future, 22:50500
research using 300-GeV proton, proposed, 22:48387 (CERN/ECFA-67/16(Vol.1))
shielding calculations for 0.5-TeV proton, neutron flux and dose-equivalent rate, 22:46568 (HASL-199)
shielding calculations for proposed 300-GeV proton, 22:48388 (CERN/ECFA-67/16(Vol.2))
shielding for 25- to 300-GeV proton, meson (μ), 22:50502
shielding of proton, use of hard meson(μ) component of cosmic radiation for estimating effectiveness of, 22:37258
shielding requirements for proton, Monte Carlo nucleon--meson cascade calculations for determining, 22:32379
space-charge density in, use of displacement of betatron frequency to resonance value for measuring, 22:44569
space-charge density variations in weak- and strong-focusing, at transversal frequencies approaching resonance values, 22:32337 (CEAL-2000, pp A98-9)
storage ring for NAL 200-GeV, description of bypass, 22:15891
synchrotron radiation frequency and stability limits in electron, calculation of, 22:15875 (DESY-67/39)
synchrotron radiation from INS electron, characteristics of, 22:24774
target for proton, for production of short-lived radioisotopes, design of circulating liquid metal, 22:30115
targets for alternating-gradient proton, efficiency of thick internal, 22:32340 (CEAL-2000, pp A106-8)
use for production of proton beams, 22:51935
use of 200-GeV proton, 22:7577 (UCRL-17939)
use of cascade, for beam storage, 22:32327 (CEAL-2000, pp A66-9)
use of NINA electron, as injector for high-energy synchrotron, 22:32329 (CEAL-2000, pp A76-8)
use of proton, for accelerating charged particles heavier than protons, 22:20399(P)
vacuum chamber for NINA 4-GeV electron, 22:12653
waveguide for 200-GeV, expansion to 400 GeV by construction of superconducting, 22:5687 (UCRL-17862)
waveguide for, H-shaped retarding system in, 22:53061

Synecology
see Ecosystems

Synephrine (R)
see Benzyl Alcohol, p-Hydroxy-α-(methylaminomethyl)-

SYNOVIAL FLUID
radiotherapy of diseases of, of man, β, 22:49407

Syntheses
see Organic Syntheses

Synthetic Rubber
see Elastomers

Syringes
see Medical Supplies

SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP)
(USAEC program for developing reactor (even numbers) and radioisotope (odd numbers) power sources for space, terrestrial, and underwater application.)
burnable poisons for uranium--zirconium-fueled beryllium-reflected, measurement of neutron absorption and scatter cross sections of, 22:37509 (AI-AEC-Memo-12673)
cost, characteristics, and performance of, review of, 22:8307
design for intact reentry, environmental effects on, 22:42978 (SC-RR-68-351)
design of milliwatt radioisotope thermoelectric generator, 22:47869(P)
development of radioisotope and reactor, for space missions, 22:42340 (AI-Memo-7585)
development of radioisotope thermoelectric generators for, review of, 22:12547
development of reactor systems, review of, 22:16259
development of space, review of, 22:42348
development program for US space, description of, 22:32944
failure during launch abort, downwind radiation dosages from, 22:40236 (AECL-2787, pp 307-19)
fuel capsules for, effect of impact shock on cracks in, (T), 22:10439 (SC-CR-67-2627)
fuel capsules for, emittance under reentry conditions of Haynes 25, 22:235 (SC-RR-66-576)
fuel capsules for, ultrasonic equipment and method for nondestructive testing of, 22:25624 (BNWL-649)
fuel materials for, thermophysical properties of uranium--zirconium, 22:656 (NAA-SR-11959)
ground impact of, radioactive contamination of ground waters from accidental, 22:12430(R) (SC-CR-67-2708)
heat source development for, 22:4355(R) (NAA-SR-12578)
heat source for, radiological hazards to man from burnup of, 22:12535 (SC-CR-67-2792)
heat sources for space and terrestrial, development and performance of radioisotope, 22:37939 (WASH-1095)
heat sources for, failure-resistance testing of plutonium-238-containing plutonium dioxide fuel microspheres for, 22:47304 (SC-CR-68-3640)
instrumentation for, summary of experience with, 22:14236 (ANL-7380, pp 37-9)
insulation for, development of fibrous-type thermal, 22:25613(R) (ALO-3633-8)
insulation for, development of vacuum foil-type thermal, 22:28008(R) (ALO-3634-8)
insulation for, development of vacuum-foil thermal, 22:8301(R) (ALO-3634-7)
isotopic fuel production for, at Richland, Washington, 22:8260
performance of space systems, analysis of, 22:25071
photoneutron decay measurements in reactors, 22:16251
power source ablation during reentry, development of Lidar system to detect radioactive cloud formation from, 22:16739 (SC-DR-67-115)
power sources for, performance characteristics of, 22:19051
power system electrical component technology for 0.25 to 10 MW(e) potassium Rankine cycle plants, 22:37552 (CONF-680802-1)
radiation dose to man from dispersed and intact re-entry of radioisotope-fueled, 22:23509(R) (SC-CR-67-2729)
radioactivity from ocean-located, prediction of dispersion of, 22:18995 (NYO-3109-26)
reactor calculations for, transport theory angular quadrature coefficients for, 22:12077 (NAA-SR-Memo-12592)
reactor subcriticality studies for, gadolinium-155 neutron cross sections and resonance parameters for, (T), 22:32575 (NAA-SR-Memo-12487)
reactors for, evaluation of techniques for disposal of, 22:6076
reactors for, use of gadolinium for water-immersion accident prevention for, 22:6080
reentry of radioisotope heat sources after mission aborts, environmental effects on intact, 22:42976 (SC-DC-68-2161)
shielding for, calculations of gamma transport in, 22:5396 (K-DP-2623)
shielding, secondary γ transport in, 22:5402
thermal insulation for, development and testing of vacuum foil-type, 22:51177(R) (ALO-3634-10)
thermal insulation for, development of vacuum foil-type, 22:42970(R) (ALO-3634-9)
thermocouples for, performance history of, 22:14236 (ANL-7380, pp 37-9)
thermometers for, drift rate measurements of high temperature platinum resistance, 22:14237 (ANL-7380, pp 47-51)
turboalternators for, development of centrifugal and dynamic seals for, 22:27958

SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-2)
boiler component development for, review of mercury, 22:35573 (TRW-690-32)
development during April to June 1962, administrative progress report on, 22:12075(R) (NAA-SR-7496)
development during January to March 1962, administrative progress report on, 22:12074(R) (NAA-SR-7196)

  development of Mercury Rankine powerplant system, review of status of, 22:7884
  heat loss prior to orbital startup, (T), 22:12076 (NAA-SR-Memo-8844)
  performance testing of Developmental Reactor Mockup No. 1, results of thermal-vacuum, 22:37517 (NAA-SR-12186)
  power conversion system for, corrosion product deposition in CRU V, (E), 22:37518 (TRW-690-33)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-3)
  development and performance of, review of, 22:14676 (SC-DC-67-2119)
  development of, 22:1029
  fuel capsule material requirements for, 22:45766 (SC-DC-68-2385)
  generator for, testing of thermoelectric, 22:10436 (MND-P-2173(Rev.2))
  operation and performance testing of thermoelectric generator in acceleration, shock, and vibration fields, 22:47293 (MND-P-2368)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-8)
  alternators for, design and testing of noncontacting dynamic seals for, 22:8280
  bearings for, effects of 1150°F in 1 x 10^{-5} and 1 x 10^{-9} torr environment on development of, 22:3883
  components for high-temperature service in, design data for chromium—molybdenum steel, 22:655 (N-67-22893)
  components of, evaluation and testing of materials for, 22:247(R) (N-67-18969)
  control actuators for S8DR, design of, 22:16250 (NAA-SR-12605)
  control drum requirements for S8DR, 22:16250 (NAA-SR-12605)
  coolant flow in, measurement using noise analysis, 22:4345
  coolant loops for, instrumentation performance in simulator facility for, 22:39864 (N-68-19001)
  coolant loops for, mechanical design of simulator facility for, 22:39863 (N-68-18460)
  coolant temperature monitoring in S8DR, magnetic amplifier switch performance for, 22:32934 (NAA-SR-12038)
  cooling system of, radiation monitoring of potassium—sodium, 22:18543 (NAA-SR-Memo-11131)
  development during April to June 1962, administrative progress report on, 22:12075(R) (NAA-SR-7496)
  development during January to March 1962, administrative progress report on, 22:12074(R) (NAA-SR-7196)
  development for space applications, review of status of, 22:7879
  electric system of, cold welding aluminum—copper terminals for, 22:630 (N-67-22856)
  fuel cladding for, testing Hastelloy N, 22:10946 (NAA-SR-Memo-12590)
  fuel element cladding assemblies for, effects of 1200 to 1600°F on hydrogen diffusion through, 22:27453 (NAA-SR-Memo-12425)
  fuel element cladding, properties of Hastelloy N for, 22:8743 (ORNL-4170, pp 160-1)
  fuel elements for, ablation testing of zirconium—uranium hydride, 22:6078
  power generation system development for, review of status of, 22:7881
  reactor for, effects of simulated atmospheric reentry conditions on heat-flux measurements in, 22:6077
  reactor power for, effects of fuel element disintegration on, 22:6079
  startup of mockup of Rankine-cycle, analysis of transients in, 22:37516 (N-68-22257)
  use in large manned space laboratory, evaluation of, 22:7877
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-9)
  development and performance of 9A, review of, 22:14676 (SC-DC-67-2119)
  development of, 22:1029
  development of 9A, summary of, 22:6539
  failure data for use in evaluation of reentry burnup, 22:35943(R) (TLW-3803-1)
  plutonium-238 release by re-entry burnup of, 22:21200 (HASL-184, pp I.2-10)
  reentry burnup of, stratospheric inventory of plutonium-238 from, 22:4362
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-10)
  (Including SNAP-10A.)
  coolant pump calibration as flowmeter, 22:23197 (ORNL-TM-2073)
  coolant pump calibration as flowmeter, 22:52126 (BNL-50127)
  description of test assembly for .42 MW(t) operation, 22:3880 (NAA-SR-12504)
  development during April to June 1962, administrative progress report on, 22:12075(R) (NAA-SR-7496)
  development during January to March 1962, administrative progress report on, 22:12074(R) (NAA-SR-7196)
  development of 10A, review of status of, 22:7885
  development of 10A/2 for space applications, review of status of, 22:7879
  disassembly procedure after 10,000 hr at 900°F operation, 22:3880 (NAA-SR-12504)
  fuel elements for, ablation testing of zirconium—uranium hydride, 22:6078
  reactor for, effects of simulated atmospheric reentry conditions on heat-flux measurements in, 22:6077
  reactor power for, effects of fuel element disintegratio on, 22:6079
  shield configurations for, effects of neutron energy on gamma dose rate from neutron capture in, 22:36962 (ORNL-TM-2209)
  shielding optimization for 10A, 22:27454
  thermoelectric generator development for 10 and 10A, 22:1029
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-13)
  development program for, 22:6540
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-15)
  fuel capsules for, ultrasonic inspection of welds on, 22:10499 (BNWL-529)
  thermocouples for, development of ML and A.I. 220 insulation for, 22:37936 (GA-7976)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-19)
  development and performance of 19B, review of, 22:14676 (SC-DC-67-2119)
  eject mechanism for, evaluation of cold welding method for, 22:10435 (MND-3169-66)
  fuel capsules for, neutron and γ radiation energy measurements from, 22:10502 (MND-3607-173)
  generator for, temperature after ocean recovery of drum-enclosed, 22:42977(R) (SC-PR-68-451)
  heat sources for, performance and safety of plutonium-238, 22:2307 (MLM-1416(DEL-1))
  power supply system for, design, development, and testin of, 22:40325 (MND-3607-239-1)
  power supply system for, design, development, and testin of, 22:40326 (MND-3607-239-3)
  radioisotope power supply for, operation and field maintenance manual for, 22:4354 (MND-3607-80)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-21)
  component development for, 22:28015(R) (MND-3322-13)
  development of 10W, for deep sea applications, 22:28014(R) (MND-3322-7)
  development of/power conversion system for, status of, 22:23223 (MND-3322-25(Vol.2))
  development of power conversion system for, status of, 22:23222(R) (MND-3322-25(Vol.1))
  heat sources for, nondestructive testing of capsule weld for, 22:12557 (BNWL-528)
  materials for, corrosion by seawater at ambient temperature of galvanically coupled, 22:28737 (USNRDL-TR-68-26)
  operation, performance, and testing of model of, 22:23222(R) (MND-3322-25(Vol.1))
  performance and operating characteristics of, for deep sea applications, 22:28014(R) (MND-3322-7)
  power supply development for, 22:28016(R) (MND-3322-19)
  power supply for, design of, 22:28015(R) (MND-3322-13)
  power supply system for, design and testing of, 22:2309(R) (MMM-3691-23)
  power supply system for, design and testing of, 22:19045(R) (MMM-3691-26)
  power supply system for, design and testing of, 22:36000(R) (MMM-3691-30)
  power supply system for, design and testing of, 22:42973(R) (MMM-3691-35)
  pressure vessel for, hydrostatic testing of, 22:28016(R (MND-3322-19)
  thermoelectric generator for, component performance testing of, 22:28016(R) (MND-3322-19)
  thermoelectric generator for, development of, 22:28015(R) (MND-3322-13)
  thermoelectric generator for, shock and vibration testin of, 22:36000(R) (MMM-3691-30)
  thermoelectric generator for, shock and vibration testin of, 22:19045(R) (MMM-3691-26)
  thermoelectric generator for, shock testing of, 22:2309(R) (MMM-3691-23)
  thermoelectric materials development for, 22:45248 (MMM-3691-37)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-23)
  design and development of, 22:30785
  heat source design and testing for SNAP-23A, 22:12536(R (WANL-3800-4)
  heat sources for, nondestructive testing of capsule weld for, 22:12557 (BNWL-528)
  safety analysis of SNAP-23A, 22:12536(R) (WANL-3800-4)
  thermoelectric converter for 23A, design, fabrication, and testing of, 22:14673(R) (MMM-3824-0013)
  thermoelectric converter for 23A, materials and componen testing and systems design and development for, 22:45249(R) (WANL-3800-16)
  thermoelectric converter for 23A, materials and componen testing and systems design and development for, 22:33605(R) (WANL-3800-12)
  thermoelectric converter for 23A, materials and componen testing and systems design and development for, 22:14679(R) (WANL-3800-9)
  thermoelectric converter for 23A, safety analysis of, 22:14679(R) (WANL-3800-9)
  thermoelectric converter for 23A, safety analysis of, 22:33605(R) (WANL-3800-12)
  thermoelectric converter for 23A, safety analysis of, 22:45249(R) (WANL-3800-16)
  thermoelectric converter for, analysis and testing of, 22:6537 (MMM-3824-0002(Vol.1))
  thermoelectric converter for, analysis of test results for, 22:6538 (MMM-3824-0002(Vol.2))

  thermoelectric converter for, design, development, and performance of 60W, 22:51180(R) (MMM-3824-23)
  thermoelectric converter for, design, development, and performance of 60 W, 22:36001(R) (MMM-3824-0020)
  thermoelectric converter for, final assembly and testing, 22:17435(R) (MMM-3824-0017)
  thermoelectric materials development for, 22:45248 (MMM-3691-37)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-27)
  development and performance of, review of, 22:14676 (SC-DC-67-2119)
  development of, 22:37937(R) (GEMS-400)
  fuel capsule and mounting hardware for, analysis of aerodynamic heating during reentry from lunar flight, 22:25610 (SC-RR-67-2961)
  fuel capsule soil-burial safety analysis for, 22:37937(R) (GEMS-400)
  performance of thermoelectric generator for, methods and plans for measurement of, 22:40319 (ANSE-6300-014)
  testing of simulated capsules for, soil burial, 22:8303 (SC-DR-67-716)
  testing program for safety of, 22:42977(R) (SC-PR-68-451)
  thermoelectric generator handling, storage, and transport for, emergency procedures applicable to radiological accidents during, 22:49027 (NUS-301(Vol.2))
  thermoelectric generator handling, storage, and transport for, radiological control procedures for, 22:49026 (NUS-301(Vol.1))
  thermoelectric leg testing specifications for, 22:40322 (MMM-8406-1757(Vol.1)(Pt.1))
  thermoelectric leg testing specifications for, long-term, 22:40323 (MMM-8406-1757(Vol.1)(Pt.2))
  thermoelectric legs for, specifications for P- and N-type, 22:40324 (MMM-8406-1757(Vol.2))
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-29)
  development and performance of, review of, 22:14676 (SC-DC-67-2119)
  testing program for safety of, 22:42977(R) (SC-PR-68-451)
SYSTEMS FOR NUCLEAR AUXILIARY POWER (SNAP-50)
  containment of SNAP-50/SPUR test facility, description of, 22:6070 (CNLM-5931)
  design studies for, 22:647(R) (BNL-50077)
  development of SNAP-50/SPUR powerplant, review of status of, 22:7883
SZILARD-CHALMERS REACTIONS
  activity yield in, differential equations for time dependence of, 22:33429
  effects of thermal annealing on exchange reactions of chromium-51 recoil ions in chromium complexes with 2,4-pentanedione, 22:30597
  effects on recombination in dichlorodicyclopentadienyl compounds with hafnium and zirconium in liquid and solid states, 22:37776 (BNL-50082, pp 79-92)
  kinetics in solids, 22:4228
  measurement of enrichment factors and specific activities in, review on methods for, 22:27809
  mechanism of, in chlorodiphenyl- and dichlorotriphenylbismuthine and chlorodiphenylthallium, 22:40138
  mechanisms in organic compounds, research progress on, 22:25376(R) (PRNC-114)

T

T-111 (TANTALUM ALLOY)
  arc melting and extrusion of, 22:8737 (ORNL-4170, pp 65-79)
  cavitation effects of lead--bismuth alloys at 500 and 1500°F, 22:2586
  cavitation effects of lithium at 500 and 1500°F, 22:2586
  cavitation effects of mercury at 500°F, 22:2586
  cavitation effects of water at 70°F, 22:2586
  coating with aluminum oxide, chemical vapor deposition method for, 22:33601 (AI-AEC-12643)
  coating with aluminum oxide, methods for, 22:4355(R) (NAA-SR-12578)
  compatibility testing of, for large radioisotope heat source capsules, 22:51175 (AI-AEC-12739)
  compatibility with iron titanates in heat source capsules, 22:23216(R) (AI-AEC-12642)
  corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
  corrosion by liquid potassium at 400 to 1300°F, 22:647(R) (BNL-50077)
  corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
  corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
  corrosion by potassium, stress, 22:38535(R) (N-68-11650)
  creep at high temperatures, 22:41057
  creep in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
  creep of, biaxial, 22:38535(R) (N-68-11650)
  creep of, effect of temperature on, 22:38537 (N-68-17372)
  creep rupture of, 22:8737 (ORNL-4170, pp 65-79)
  creep rupture properties of, at 1000 to 1650°C, 22:38543
  creep testing at high temperatures, 22:43568 (N-68-13631)
  creep-rupture at high temperatures, 22:8747 (ORNL-TM-1994)
  ductility, weldability, and workability of, 22:8747 (ORNL-TM-1994)
  emittance at 500 to 800°C, total hemispherical, 22:8737 (ORNL-4170, pp 65-79)
  erosion by potassium, effects of temperature on cavitation-type, 22:52126 (BNL-50127)
  fabrication and properties of, for large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
  fabrication for large radioisotope heat source capsules, deep drawing method for, 22:47289 (AI-AEC-12712)
  fabrication for large radioisotope heat source capsules, deep drawing method for, 22:47290(R) (AI-AEC-12713)
  fabrication for structural and heat-shield panels, 22:41057
  physical properties at 100 to 1400°C, 22:8737 (ORNL-4170, pp 65-79)
  properties for use in SNAP-3 fuel capsule fabrication, 22:45766 (SC-DC-68-2385)
  tensile properties of welds of oxygen-contaminated, 22:36474
  testing for use as fuel capsule shell, 22:4355(R) (NAA-SR-12578)
  welding of foils of, electron beam and Tig fusion, 22:23785
T-222 (TANTALUM ALLOY)
  cavitation effects of lead--bismuth alloys at 500 and 1500°F on T-222(A), 22:2586
  cavitation effects of lithium at 500 and 1500°F on T-222(A), 22:2586
  cavitation effects of mercury at 500°F on T-222(A), 22:2586
  cavitation effects of water at 70°F on T-222(A), 22:2586
  corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
  corrosion protection by silicide coatings, 22:41007
  creep at high temperatures, 22:41057
  creep in vacuum/at 2000 to 2600°F, 22:49716 (N-68-24111)
  creep rupture of, 22:8737 (ORNL-4170, pp 65-79)
  creep rupture properties of, at 1000 to 1650°C, 22:38543
  fabrication for structural and heat-shield panels, 22:41057
  oxidation protection of, development of electrophoretic silicide coating for, 22:40998(R) (N-68-19623)
  tensile properties of welds of oxygen-contaminated, 22:36474
Table Top
  see Magnetic Mirror Machines
Tables of Data
  see Data Tabulations
TACE
  see Hormones, Sex--chlorotrianisene
TACHOMETERS
  design of radiometric, for gas turbine engines, 22:38121(P)
TALCS
  see also Steatites
TANKS
  see also Dewar Vessels
  see also Dissolvers
  see also Pressure Vessels
  see also Vessels
  corrosion cracking by radioactive waste of steel, methods of retarding stress, 22:36437
  design for conversion of uranium nitrate to uranium oxide, engineering drawings for, 22:14643
  fabrication of radioactive waste storage, 22:33623 (SZS-1/68)
  fuel element assembly, for prevention of fuel--moderator mixing, 22:25197(P)
  materials for radioactive waste storage, properties of Kaolite-20 for structural, 22:43013 (BNWL-797)
  pressure suppression, description of reactor containment structure, 22:33119(P)
Tannic Acid
  see Tannins
TANNINS
  effects on Thorotrast-sensitivity of thrombohemorrhagic phenomena in rats, 22:10817
  use in determination of uranium, 22:30488
TANTALATES
  see also Barium Tantalates
  see also Calcium Tantalates
  see also Lanthanum Tantalates
  see also Lithium Tantalates
  see also Lutetium Tantalates
  see also Potassium Tantalates
  see also Strontium Tantalates
  see also Uranium Tantalates
  see also Yttrium Tantalates
Tantaloy
  see Tantalum Carbides
TANTALUM
  alpha inelastic scattering at 42, 50, 65, and 90 MeV, α evaporation spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
  aluminum film growth on (110) surfaces of, (E), 22:7368
  analysis for calcium and magnesium impurities, spectroscopic, 22:35753
  analysis for impurities, 22:1981
  analysis for impurities, manual on, 22:48820 (NP-17627)
  analysis for impurities, review of methods for, 22:2012

analysis for niobium by neutron activation methods, 22:50933
analysis for niobium, spectrophotometric, 22:22971
analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
analysis for trace amounts of chromium, spectrophotometric, 22:33236
analysis for trace amounts of molybdenum and tungsten by dithiol method, 22:48837
analysis of Frascati synchrotron converter of, for nuclides of long half-life, 22:25276
annealing spectrum of electron irradiated, 22:11017
anodic oxide film growth on, at constant rate of voltage increase, (E/T), 22:15604
argon ion reactions at 200 eV to 4 keV with surfaces of, electron emission in, (E), 22:7352 (RT/EL-(67)8)
argon ion reactions at 40 keV with, energy and mass analysis of positive ions from, (E), 22:26227
argon-40 ion reactions at 2 to 75 keV for production of gas targets for nuclear reaction studies, 22:1552
argon-ion scattering at 2 keV on target electrodes of, currents produced in, 22:52546
atomic weight of, based on carbon-12 = 12, 22:42698
bibliography on, 22:49681
bonding to boron nitride by flash evaporation of aluminum, 22:23745(P)
book: Analytical Chemistry of Niobium and Tantalum, in Russian, 22:2012
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
book: High Temperature Materials, 22:31360
book: The Chemistry of Niobium and Tantalum, 22:4150
book: Uncommon Metals, 22:10981
bremsstrahlung spectra from beta-excited, (E), 22:13248
carbon diffusion in, at 1200 to 2800°C, 22:729 (LA-DC-8803)
cladding steel with, explosive method for, 22:19504
cleaning for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
coating for oxidation protection, using molybdenum disilicide or niobium disilicide, 22:34107
coating of sintered, method for, 22:6946
coating of, method for electrodeposition of wear-resistant composite, 22:2590
coating with thorium layers, low-energy electron diffraction studies of structure in, 22:26057 (NYO-3830-5, Paper 3)
coatings of aluminum on, deposition for thin-film oxidation studies, 22:28744
compatibility with uranium phosphide at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
complexes with 3,3',4',5,7-pentahydroxyflavone, spectral studies on, 22:27680
complexes with 8-quinolinol, preparation and properties of, 22:50959
complexes with Alizarin Red S, composition, stability, and spectral characteristics of, 22:50918
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
contamination of high-purity niobium by, during electron-beam melting, 22:36442 (ORNL-TM-2208)
contamination of thin foils of, by heat treatment in vacuum, 22:43572 (UCRL-71029)
content in igneous rock samples from Pennsylvania and Tasmania, 22:48959
corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
corrosion by chromium--uranium eutectics, 22:2560(R) (IS-RD-11)
corrosion by gases in ATR model loop at 2100°F, 22:43615(R) (BNWL-710)
corrosion by helium in ATR model gas loop, 22:13036 (BNWL-473, pp 7.1-71)
corrosion by liquid lithium at 1200°C, effect of iridium inhibitor on, 22:24925(R) (ANL-7427)
corrosion by lithium at 1200°C, effects of silicon additions on, 22:43527 (ANL-7299, pp 150-72)
corrosion by lithium, effects of carbon on, 22:6936
corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
corrosion by oxygen--potassium systems at 1800°F, 22:23719
corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
corrosion by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
cost, production, and uses of, review of 1967, 22:31318
creep mechanisms at low temperatures, 22:41055
creep of, relation with grain size and strain rate, 22:23792
creep rupture properties of, at 1000 to 1650°C, 22:38543
creep-rupture of unalloyed at 1200 to 1650°C, 22:8747 (ORNL-TM-1994)
cross sections of, effects on space power reactor reactivity of uncertainties in, 22:20899 (UCRL-70797)
crystal stacking fault energies at 300°K, 22:38570
crystal structure of sputtered films of, 22:8777
crystal structure of vapor-deposited films of, electron-diffraction and microscopic studies of, 22:31405
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
crystallization behavior at 800 to 2200°C, effects of deformation on, 22:49763
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deformation characteristics, 22:2639
deformation of surface layers of drawn wires of, x-ray-diffraction analysis of, 22:23772
deposition from molten salts, electro-, 22:23003 (IA-1128, pp 97-146)
deposition of thorium at 950°C on, LEED pattern of atom arrangement in, 22:45780 (NYO-3830-6)
deposition on superalloys and TD-nickel, vacuum-pack and slurry processes for, 22:49698
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination as trace impurity in glass fragments by activation methods, 22:33205 (AWRE-O-3/68)
determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination in boron, spectrochemical, 22:22930(R) (NBL-242)
determination in chromium by activation methods using γ-spectrometry after ion exchange, 22:33245
determination in high-purity niobium, 22:1981
determination in industrial and natural waste waters, extraction-photometric, 22:22967
determination in iron ores, spectrochemical, 22:27615
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in minerals and rocks by cation exchange and neutron activation, 22:50922
determination in molybdenum and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in molybdenum or tungsten by neutron activation method, 22:50910
determination in niobium alloys, ion-exchange separation in, 22:48838
determination in niobium by neutron activation methods, 22:50933
determination in niobium pentoxide using methyl violet, photometric, 22:1995
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in silicates by neutron activation methods, 22:44985
determination in silver by solvent extraction and x-ray spectrometry, 22:22984
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of, review of methods for, 22:48827
determination of, review of methods for, 22:18728
determination of, review of methods for, 22:2012
determination using Alizarin Red S, 22:50918
determination using methyl violet, spectrophotometric, 22:27614
determination using trihydroxychalcone, gravimetric, 22:33285
deuteron reactions at 160 MeV, cross sections for inelastic, (E), 22:44650
deuteron reactions at 190 MeV, width of neutron angular distribution in, (E), 22:44650
diffusion in liquid tin at 400 to 1100°C, determination by tantalum-182 tracer, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
diffusion of oxygen in, at 2000 to 2800°C, 22:45815 (GEMP-439)
diffusion of, dependence on temperature of self, 22:686
dislocation relaxations of, thermally activated, 22:17107 (GA-7978, pp 119-23)
dissociation of hydrogen on, molecular-beam mass spectrometric studies on kinetics of, 22:45029 (UCRL-18043, pp 7-105)
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution of krypton at 1700°C in, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
ductility of, oscillating stress amplitude measurement of, 22:17106 (GA-7978, pp 95-117)
effects as additive on tungsten corrosion at high temperatures, 22:43537
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on ductility of electron beam-melted molybdenum, (E), 22:31368
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in

plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of niobium in steel, 22:25283
effects on superconductivity and transition temperatures of intermetallic Nb_3Sn, 22:6984(T) (CONF-640310-1)
elastic properties at 20 to 1800°C, 22:34056
electric conductivity at 1500 to 2800°K, 22:52195
electric conductivity at 2 to 300°K, 22:31375
electric conductivity at 300 to 800°K, effect of nitrogen on, 22:34062
electrocrystallization from potassium fluoride--potassium fluorotantalate mixtures, 22:45056
electron reflection at 600 to 1200 keV, 22:45965
electron tunneling in superconducting thin-film junctions with oxides, (T), 22:46056
electron tunneling into oxide in annealed capacitors, (T), 22:15632
electronic structure of, x-ray isochromat spectral study of, 22:17747
emission at 1520°K by single-crystal, effects of Schottky defects on, 22:28841
emission spectra excitation in, by β particles of carbon-14 or promethium-147, 22:27844
enthalpy, 22:28780 (TID-24314(PT.1))
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
erosion by microsecond temperature rise, spall threshold temperature determination from tests of, 22:52131 (BNWL-756)
fabrication and pressure treatment of, 22:12997
fabrication of porous, by plasma arc spraying powders, 22:17084 (66-C-318)
fabrication of powder shapes of, by molding and sintering, 22:638(P)
gamma differential elastic scattering cross section at 1.33 MeV, (E), 22:32647
gamma reactions at 280 keV, photoelectric cross sections for, 22:47796
gamma scattering at 1002 keV by K-shell electrons of, incoherent, (E), 22:43901
hardness at 25 to 1200°C of, 22:15225 (GEMP-1002, pp 38-64)
hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
heat transfer properties of thorium dioxide-coated multifoil layers of, at 800 to 1800°C, 22:51177(R) (ALO-3634-10)
heat treatment for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
helium ion reactions at 200 eV to 4 keV with surfaces of, electron emission in, (E), 22:7352 (RT/EL-(67)8)
hydrogen dissociation on, using molecular beam technique, 22:28816
hydrogen ion scattering by targets of, luminescence from, 22:41299
hydrogen--ion reactions at 3 to 30 keV, trapping in, 22:1005
hydrogen-ion reactions at 1 to 10 keV, effects of hydrogen on secondary electron emission from, 22:9043
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
joining by soft soldering, diode ion plating coating techniques in, 22:33208(R) (MLM-1456)
joining to graphite as transition metal bond between graphite shapes, 22:43632 (LA-3960)
joining to low-carbon steels, explosive method for, 22:38528
joints with different materials, metallography of, 22:43553
krypton ion reactions at 200 eV to 4 keV with surfaces of, electrom emission in, (E), 22:7352 (RT/EL-(67)8)
machining and properties of, 22:8750(T) (AD-658385)
machining of, 22:8750(T) (AD-658385)
mass transfer in cerium--cobalt--plutonium melts, 22:10918
mechanical and sorptive properties of, effects of high-temperature gases in ATR model loop on, 22:13036 (BNWL-473, pp 7.1-71)
mechanical properties of floating-zone melted, 22:10970
mechanical properties of, review, 22:52189
mechanical relaxation in polycrystalline, at high temperatures and low frequencies, 22:38544
melting and casting using plasma electron beam, 22:6941
melting in electron beam furnace, 22:23734
melting of, use of point-focus electron beams for floating-zone, 22:663
meson (π) reactions with, 5g--4f x rays from, 22:47838
metallurgy of, review of, 22:12957
microstructure of thin foils of bcc, electron metallographic, 22:2661
neon-22 ion reactions at 2 to 75 keV for production of gas targets for nuclear reaction studies, 22:1552
neutron absorption resonance integrals for, measurements using pile oscillator method, (E), 22:50603
neutron capture at 10 to 150 keV, cross section for, (E), 22:35346
neutron capture at 10 to 150 keV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron capture by, measurements of γ spectra using lead spectrometers, (E), 22:32628
neutron capture cross section at 10 to 150 keV, (E), 22:3687 (EURFNR-404)
neutron capture measurements below 30 keV for, effects on Doppler-effects of energy- and temperature-dependent, (E/T), 22:35626
neutron capture rates at 0.2 to 30 keV, temperature-dependent, (E), 22:5811 (EURFNR-400)
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
neutron differential elastic and inelastic scattering cross sections for, angular distributions for fast, (E), 22:20578 (WASH-1079)
neutron differential elastic and inelastic scattering cross sections at 0.3 to 1.5 MeV, angular distributions for, (E/T), 22:5810 (ANL-7363)
neutron elastic and inelastic scattering at 0.3 to 1.5 MeV, angular distributions for, (E), 22:27109
neutron elastic scattering differential cross sections for, measurement of fast, 22:32959 (ANL-7310, pp 1-30)
neutron inelastic excitation cross sections for, measurement of fast, 22:32959 (ANL-7310, pp 1-30)
neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
neutron resonance absorption by, Doppler coefficient for, (E), 22:5743
neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 0.1 to 0.7 MeV, (E), 22:5810 (ANL-7363)
neutron total cross section at 14 MeV, (E), 22:35338
neutron total cross section at 2.5 to 4.5 MeV, fluctuations in, (E), 22:20537
neutron total cross section for, 22:32959 (ANL-7310, pp 1-30)
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
neutron total cross sections for, measurement of fast, 22:32959 (ANL-7310, pp 1-30)
nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104
optical constants at 537 to 5770 A, measurement by reflectance vs angle of incidence method, 22:13556
oxidation at 500°C, oxide plate growth and morphology of, (E), 22:28746
oxidation at high temperatures, effects on stresses, 22:47662
oxidation behavior at 500 to 625°C, effect of phosphoric acid on, 22:48788
oxidation by fused alkali nitrate mixtures above 300°C, 22:23003 (IA-1128, pp 97-146)
oxidation in gas phase, anodic, 22:621
oxidation in liquid sodium, 22:10910 (ANL-7335)
oxidation model of, 22:8735 (ORNL-4170, pp 51-3)
oxidation of, crystallographic analysis of oxide plates formed in, 22:28745
oxidation of, effects of anodic oxide films containing phosphorus on gaseous, 22:4735
oxidation of, effects of lithium oxide additions on, 22:49689
oxidation of, tracer studies of ionic mobilities in anodic, 22:11026
oxidation protection at high temperatures by silicide coatings, 22:2571
oxidation protection by silicides, research program on, 22:52133(R) (N-68-23469)
oxidation to form tantalum dioxides, model for, 22:13046
performance as capsule for liquid plutonium alloy fuel, effects of carburization on, 22:4730 (LA-3766)
perturbations in BN-350 type critical assembly from, analysis of, 22:18570
photo reactions with, scattering cross sections for, (E/T), 22:36701 (AD-663424)
photofission at 300 to 1600 MeV, cross sections and fragment yields for, (E/T), 22:5856
photofission cross section at 0.2 to 1.2 GeV, (E), 22:22586 (NP-17325)
photon reactions (γ,n) at 30 MeV, cross sections for, (E), 22:11921
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
photon scattering at 662 keV by, Compton effect deviation for K-shell electrons in, (E), 22:36701 (AD-663424)
plastic deformation of single crystals of, in compression and in tension, 22:13027
plastic flow of, internal friction technique to indicate initial, 22:17109 (GA-7978, pp 151-3)
positron annihilation in, total cross sections for single-quantum, (E), 22:36723
precipitation from boiling acid solutions by phytin, 22:33319
preparation, 22:36471
preparation and properties of composites with fibrous refractory oxides, 22:41018
preparation of coatings by reduction of pentachloride by cadmium or zinc, 22:43549
preparation of compact deposits of, by electrocrystallization, 22:27619 (CEA-N-816, pp 90-101)
preparation of metallic, by aluminum reduction of tantalum oxide, 22:2560(R) (IS-RD-11)
preparation of powdered, by calciothermic reduction of

tantalum pentoxide, 22:52146
production and uses of, 22:36445
production by alumino-thermic reduction of tantalum pentoxide using calcium and sulfur for triggering, 22:28763
properties and uses of, review of, 22:15182 (IS-1757)
properties for use in vacuum systems, 22:16828
properties of powder compacts of, prepared by high-velocity impact, 22:43562
proton reactions at 10 MeV, production of short-lived tungsten-180 isomer by, (E), 22:24874
proton reactions at 10.5 GeV, cross sections for production of sodium isotopes by, (E), 22:24864
proton reactions at 3, 10, and 30 GeV, cross sections for formation of beryllium-7, sodium-22, and sodium-24 in, (E), 22:42032
proton reactions at 63 MeV in thick targets, neutron angular distribution, energy, and yield from, (E), 22:33822
proton reactions at 63 MeV with, angular distributions, energy, and yield of neutrons produced by, 22:6652 (ORNL-4168, pp 183-230)
proton reactions at 660 MeV, production of dysprosium, europium, gadolinium, and terbium isotopes by, (E), 22:35354
proton spallation at 10.5 GeV, cross sections for production of cesium isotopes and rubidium isotopes by, (E), 22:24879
radiation effects on corrosion of electrodes of, in acid and basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on properties of boride coatings on, neutron, 22:34127
radiation effects on properties of, neutron, 22:21746
radiation effects on thin film resistors of, fast neutron, 22:33704
radiation effects on, electron and neutron, 22:11017
radiation emission at 1500 to 2800°K, total hemispherical, 22:52195
radiation emission spectrum at 1423°K, infrared, 22:52194
radiation from x-ray anodes of, continuum, (E), 22:17395
reactions in vacuum at 1200 to 2000°C with silicon monocarbide, 22:52231
reactions with aluminum in hydrogen--oxygen flames, 22:19478 (SC-CR-67-2830)
reactions with carbon at 1500 to 2200°C, phase studies of, 22:31506
reactions with lithium and oxygen, vacuum distillation technique for recovery of products from, 22:25342
reactions with magnesium in hydrogen--oxygen and methane--oxygen flames, 22:19478 (SC-CR-67-2830)
reactions with nitrogen plasma for production of tantalum nitride, 22:15237(T) (MLM-1475(tr))
reactions with oxygen and potassium, vacuum distillation technique for recovery of products from, 22:25342
reactions with oxygen, kinetics and structure of suboxides formed by, 22:17181
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity worth as a function of size, 22:12006(R) (ANL-7399)
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reactivity worth of, measurement in ZPR-3 of, 22:30118 (ANL-7438)
reactivity worth, effects of surface-to-mass ratio on fast neutron, (E/T), 22:35667 (NAA-SR-Memo-12288)
recovery of defects after irradiation and cold work, review, 22:24375 (BLG-424)
relaxation peak in polycrystal, at 10 to 60 megahertz frequency, 22:15214
relaxation spectrum of monocrystal of, 22:17107 (GA-7978, pp 119-23)
separation by solvent extraction using dioctyl ester of methylenediphosphonic acid, 22:42833
separation from acid solutions by solvent extraction using amine-type and phosphoryl reagents, studies on distribution ratios and molecular structure in, 22:6411
separation from acid solutions by solvent extraction using 4-methyl-2-pentanone, 22:22984
separation from aqueous solutions by solvent extraction using amines, 22:18903
separation from chloride nitrate, and sulfate solutions by solvent extraction using phosphoryl compounds, 22:6403
separation from columbite by ion exchange and solvent extraction, economics of, 22:6940
separation from hydrofluoric acid solutions by solvent extraction using 2-(dioctylamino)ethanol and 3-(dioctylamino)propanol, 22:51080
separation from intermediate products of tin and tungsten production, 22:45175
separation from iron by anion exchange, 22:10328
separation from lead by hydrolysis method using sodium sulfite and tannic acid, 22:4024
separation from mixtures of niobium pentachloride and tantalum pentachloride by calcium fluoride--calcium oxide reactions, 22:23864
separation from molybdenum, niobium, and tungsten by column chromatography using methyl isobutyl ketone, 22:8190
separation from molybdenum, titanium, tungsten, and zirconium, 22:2012
separation from niobium and titanium in hydrochloric acid solutions by solvent extraction using TBP, 22:27888
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from ores, 22:40191
separation from other metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from plutonium by fluoride volatility process, 22:48900 (RFP-1052)
separation from reaction products of tantalum chloride with calcium fluoride or calcium oxide using phosgene, 22:23098 (IS-1799)
separation from sulfuric acid solutions by solvent extraction using TBP, 22:23119
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
separation from uranium hexafluoride by selective sorption techniques, 22:4240
separation of niobium from, by precipitation by oxine, 22:4038
separation of protactinium from, by precipitation using hydrogen peroxide, 22:37849
Snoek damping in, effects of nitrogen content on, 22:13567
solubility in liquid plutonium, enthalpy of, 22:40053 (LA-3951)
solubility in liquid tin, 22:43527 (ANL-7299, pp 150-72)
solubility in mercury at 500 to 750°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
solvent distribution between di-n-butyl thiophosphate in carbon tetrachloride and hydrochloride acid solutions, 22:1969
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
solvent properties for nitrogen at 1600 to 2300°K, 22:13019
solvent properties for oxygen, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
sorption by manganese dioxide from nitric acid, 22:157
sorptive properties for hydrogen, use of uranium or titanium hydrides to increase, 22:13005(T) (UCRL-Trans-10180)
sorptive properties for oxygen at 1100 to 2000°C, kinetics, (E), 22:29557
specific heat of, measurement to melting point, 22:4766 (CEA-R-3287)
sputtering by gadolinium, krypton, and magnesium ions at 40 keV, angular distributions from, (E), 22:26229
sputtering yields of argon ion bombarded, 22:2587 (BNWL-553)
strain release of, effects of temperature on, 22:17112 (GA-7978, pp 173-7)
strain-aging kinetics of oxygen-doped, 22:23838
strength at high temperatures, carburization effects on, 22:2642
stress in single-crystals of, effects of orientation on yield, 22:13027
superconducting energy gaps in thick films of, measurement using far-infrared absorption spectra, 22:17549
superconducting transition temperature of, effects of pressure up to 45 kbar on, (E), 22:7232
superconductivity above thermodynamic critical field in, (E/T), 22:41522
tensile properties at room temperature, effects of impurities on, 22:49723
tensile properties of sheet-welded, analysis of, 22:48787
testing for isotope capsule material, ultrasonic, 22:2607 (BNWL-547)
thermal capacity, 22:28780 (TID-24314(PT.1))
thermal conductivity above 1500°K, review, 22:28781 (TID-24314(Pt.2))
thermal conductivity at room temperature, 22:679
thermal conductivity of, below 1°K, 22:1122
thermodynamics, 22:36541
thermodynamics of surface alloying of, with silicon--tungsten, 22:30575
thorium crystal growth on (100), LEED study of epitaxy in, 22:41687
use as diffusion barrier in SNAP-23A, 22:12536(R) (WANL-3800-4)
use as intermediate layer in welding graphite, 22:15242
use in superconducting switch coils for cryogenic applications, 22:52182
welding by laser beam techniques, 22:19497

welding method for, using liquid nitrogen cooled electrodes, 22:41015
welding to boron carbonitrides, diffusion, 22:6943
welding to copper, electron beam, 22:41020
x-ray absorption in, photoionization cross sections for ultrasoft, (E/T), 22:24475
x-ray fluorescence spectra of, semiconductor detectors for measuring, 22:19096 (INR-820/II/PS)
x-ray spectra from beta-excited, (E), 22:13248
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640
x-ray spectra of π-mesic atoms of, (E), 22:30017
xenon ion range distribution at 40 keV in single crystals of, effects of crystal properties on, (E), 22:26479
zero point energy of crystals of, 22:20051
TANTALUM ALLOYS AND SYSTEMS
see also Cb-132 (Niobium Alloy)
see also Cb-132M (Niobium Alloy)
see also FS-85 (Niobium Alloy)
see also Inconel 625
see also T-111 (Tantalum Alloy)
see also T-222 (Tantalum Alloy)
cleaning for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
coating with silicides, 22:49697
coatings for oxidation protection of, review, 22:41002
coatings for, development of high-temperature, 22:7030
corrosion protection by coating with aluminum tantalum silicides, 22:34014(P)
corrosion protection by silicide coatings, 22:41007
development and properties of, review on, 22:4751 (NP-17109)
development with improved high-temperature properties, 22:23706 (BM-RI-7116)
fabrication and pressure treatment of, 22:12997
fabrication and properties of, for large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
fabrication for structural and heat-shield panels, 22:41057
heat treatment for use in large radioisotope heat source fuel capsules, specifications for, 22:33603 (AI-AEC-12677)
machining of, 22:8750(T) (AD-658385)
mechanical properties and fabrication of, review, 22:52189
oxidation at 550 to 1050°C, kinetics and oxide films of, (E), 22:31329
oxidation at high temperature and low pressure, 22:2568(R) (N-67-16673)
oxidation protection using aluminum--molybdenum--tin alloy coatings, 22:19482
preparation by vacuum melting, addition agents for, 22:28759
production and uses of, 22:36445
properties for use in vacuum systems, 22:16828
radiation effects on properties of, neutron, 22:21746
tensile properties, review, 22:21651
Al--Co--Ta, phase studies, 22:49766
Al--Cr--Co--Mo--Ni-base--Ta--Ti, fabrication of B-1900 alloy, methods for powder metallurgy, 22:10978
Al--Fe--Ta, phase studies, 22:49766
Al--Mo--Nb--Ta--Ti-base, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Nb--Ta--Ti-base, corrosion by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
Al--Nb--Ta--Ti-base, corrosion cracking plates and weldments of, stress, 22:2619
Al--Nb--Ta--Ti-base, mechanical properties of plates and weldments of, 22:2619
Al--Ni--Ta, phase studies, 22:49766
Al--Ta, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Al--Ta, deposition on copper from organic metal compounds, 22:6963
Au--Ta, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Au--Ta--V, magnetic properties of, atomic environment effects on, (T), 22:7374
Au--Ta--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
B--Mo--Ta, phase studies of, 22:23900
B--Ta--Ti, phase studies of, 22:23900
B--Ta--Zr, phase diagram, 22:19551
Be--Ta, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
Be--Ta, properties of intermetallic Ta_2Be_{17} and $TaBe_{12}$ at low temperatures, (E), 22:36985
C--Cr--Ta, phase equilibria, (E), 22:28950
C--Cr--Ta--V-base--Zr, fabrication of Vanstar-8 for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, mechanical properties of Vanstar-8, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, preparation and structure, 22:8710(R) (WCAP-3791-9)
C--Cr--Ta--V-base--Zr, radiation effects on mechanical properties of Vanstar-8, in-pile, 22:34046(R) (WARD-3791-17)
C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38523(R) (N-68-13630)
C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38522(R) (N-68-13625)
C--Hf--Re--Ta-base--W, creep of ASTAR 811C, at high temperatures, 22:41057
C--Hf--Re--Ta-base--W, creep properties of dispersion strengthened, effect of grain size on, 22:38524(R) (N-68-18131)
C--Hf--Re--Ta-base--W, creep properties of, effect of grain size and annealing temperatures on, 22:38523(R) (N-68-13630)
C--Mo--Ta, phase studies at high temperatures, 22:31516
C--O--Ta phase studies, 22:10999
C--O--Ta, phase studies of alpha solid solutions in, 22:41100(T) (ORNL-tr-1942)
C--Ta, phase diagram, 22:49826
C--Ta, phase diagrams, 22:36548
C--Ta, thermodynamic properties of solid-solution, 22:653(R) (N-67-22439)
C--Ta--V-base--Zr, preparation and properties of Vanstar-8, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--Ta--W, phase diagram of isothermal section at 2300°C, 22:36470
Co--Ta, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Ta, crystal structure at 750°C during solid-solution decomposition, 22:15210
Co--Ta, crystal structure of intermetallic W_6Fe_7-type compounds in, (E), 22:22253
Co--Ta, phase studies, 22:31411
Co--Ta--Y, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Ta--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Fe--Mo--Nb--Ni-base--Ta--Ti, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Cu--Nb--Ta, phase studies at 1100 to 2100°C, 22:23831
Fe--Ta, crystal structure of intermetallic W_6Fe_7-type compounds in, (E), 22:22253
Ga--Ta--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Gd--Po--Ta, properties of, data sheets on, 22:8724 (MLM-1441)
graphite--Hf--Ta, corrosion by air at 3200 to 3900°F, 22:12982
graphite--Hf--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
graphite--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Mo--Ta, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Re--Ta-base--W, creep of dispersion strengthened, effects of grain size on, 22:38524(R) (N-68-18131)
Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38523(R) (N-68-13630)
Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38522(R) (N-68-13625)
Hf--Ta, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Ta, phase diagram, 22:12958
Hf--Ta, properties at very high temperatures, 22:31321
Hf--Ta, properties for oxidation resistant coatings, review of, 22:52161 (N-68-23247)
Hf--Ta, use as brazing alloy, 22:31321
Hf--Ta--W, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Hf--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Ta--W, corrosion of oxygen contaminated, by reflux-boiling sodium at 1095°C, 22:33152
Hf--Ta--W, extrusion methods for, description of, 22:30389
Hf--Ta--W--Y, properties, 22:31323
Hf--Ta-base, properties, 22:31323
Hf--Ta-base--W, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
La--Pd--Re--Ta--Ti-base, production and tensile properties at -196 to +800°C, 22:4789
Mo--Nb--Ni--Ta--TiC, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Mo--Ta, brittleness at liquid hydrogen temperatures, 22:41069
Mo--Ta, deformation of monocrystals of, at 77 to 623°K, 22:28811
Mo--Ta, mechanical and physical properties of, effects of composition on, 22:684
Mo--Ta-base, deformation of single crystals of, effects of molybdenum content on stress--strain curves for, 22:23795
N--Nb--Ta, preparation and superconducting properties of wires of, (E), 22:17559
N--Ta, thermodynamics of interstitial, 22:10984 (COO-1676-3)
Nb--Ta, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Nb--Ta, coatings for, preparation of oxidation-resistant, 22:43536
Nb--Ta, creep mechanisms at low temperatures, 22:41055
Nb--Ta, current transport properties of superconducting, 22:11358
Nb--Ta, deformation twinning of, effects of stress on, 22:21717 (COO-916-13)
Nb--Ta, magnetic properties of superconducting, reversible and irreversible, (E), 22:11402

Nb--Ta, mechanical and physical properties of, effects of composition on, 22:684
Nb--Ta, melting of, electron beam, 22:15157
Nb--Ta, oxidation model, 22:8735 (ORNL-4170, pp 51-3)
Nb--Ta, superconducting Ginzburg-Landau parameters of, temperature dependence of, (E), 22:44028
Nb--Ta, superconducting transitions in, kappa$_1$ and kappa$_2$, (E), 22:29429
Nb--Ta, superconducting transport current distribution in sheets of, (E), 22:5293
Nb--Ta--Ti, critical fields and critical temperatures of solid-solution, effects of composition on, 22:45745 (UCRL-18043, pp 107-53)
Nb--Ta--Ti, superconducting properties of wires of, (E), 22:7230
Nb--Ta--V, phase diagrams for, analysis of high-temperature equilibrium, 22:52202
Nb--Ta--W, creep strength of, effects of metallic borides and carbides on, 22:26049
Nb--Ta-base, deformation of single crystals of, effects of niobium content on stress--strain curves for, 22:23795
Nb--Ta-base, superconductivity of, 22:13021
NbC--Ta, welding of, method for diffusion, 22:6943
Ni--Ta, phase studies of hexagonal close-packed structures in, 22:4805
Ni-base--Ta, galvanomagnetic effect, (E), 22:48171
Ni-base--Ta--Ti--W, corrosion by air at 2100°F, 22:15150
O--Ta, thermodynamics of interstitial, 22:10984 (COO-1676-3)
Pu--Ta, phase diagrams and properties, 22:36495
Pu--Ta, phase studies of, 22:2655
Re--Ta, deformation of monocrystals of, at 77 to 623°K, 22:28811
Re--Ta, deformation of single crystals of, at low temperatures, 22:31408
Re--Ta, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Re--Ta, phase studies at 2500°C, 22:4809
Re--Ta, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Re--Ta, thermoelectron emission properties of, 22:4782
Re--Ta--W, phase studies at 2500°C, 22:4809
Re--Ta-base--W, creep of Astar 811C, in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
Re--Ta-base--W, creep testing of Astar 811C, at high temperatures, 22:43568 (N-68-13631)
Sc_2O_3--Ta, compatibility at 500 to 2000°K, 22:23717
Sc_2O_3--Ta--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Ta--Ta_2O_5, crystal structure and thermodynamics of, effects of electronic bonding on, 22:17182
Ta--TaC, welding of, method for diffusion, 22:6943
Ta--$TaSi_2$, phase growth in, inter-, 22:52133(R) (N-68-23469)
Ta--ThO_2, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Ta--ThO_2, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
Ta--UO_2, preparation of cermets of, by hot pressing and vapor deposition, 22:26076
Ta--V--W, crystal structure of intermetallic compound TaV_2 in, 22:45788
Ta--V--Zr, phase diagrams of, 22:17144
Ta--V--Zr, properties of, effects of composition on corrosion and tensile, 22:52186
Ta--W, carburization effects on plutonium alloy fuel capsules of, 22:4730 (LA-3766)
Ta--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Ta--W, deformation of monocrystals of, at 77 to 623°K, 22:28811
Ta--W, development, properties, and uses of, review of, 22:52179
Ta--W, diffusion at 2000°C in, 22:43582
Ta--W, diffusion of carbon in, effects on carbide surface formation, 22:729 (LA-DC-8803)
Ta--W, electric conductivity at 300 to 2400°K, effects of composition on, 22:19540
Ta--W, hardness at 25 to 1200°C, 22:15225 (GEMP-1002, pp 38-64)
Ta--W, machining of, thermal expansion and reduced tool life in hot-, 22:21678
Ta--W, phase studies at 2500°C, 22:4809
Ta--W, spectral emissivity at 2000, 2200, and 2400°K, (E), 22:41342
Ta--W, testing for use as fuel capsule liner, 22:4355(R) (NAA-SR-12578)
Ta--W-base, cesium sorption by, at 800°C, 22:38533 (GA-8574)
Ta--W-base, dislocation structures in polycrystalline, 22:38586
Ta--Y_2O_3, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Ta--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ta--Zr, transition temperature of superconducting, increase in, 22:26347
Ta--ZrC, welding of, method for diffusion, 22:6943
Ta-base--W, compatibility testing of, for large radioisotope heat source capsules, 22:51175 (AI-AEC-12739)
Ta-base--W, compatibility with iron titanates in heat source capsules, 22:23216(R) (AI-AEC-12642)
Ta-base--W, creep rupture of, 22:8737 (ORNL-4170, pp 65-79)
Ta-base--W, creep rupture properties of, at 1000 to 1650°C, 22:38543
Ta-base--W, creep-rupture at 1200 to 1650°C, 22:8747 (ORNL-TM-1994)
Ta-base--W, fabrication for large radioisotope heat source capsule inner liner, 22:47290(R) (AI-AEC-12713)
Ta-base--W, fabrication of large radioisotope heat source capsules of, 22:23216(R) (AI-AEC-12642)
Ta-base--W, fuel capsules of, pressure testing of SNAP-21A, 22:28014(R) (MND-3322-7)
Ta-base--W, hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
Ta-base--W, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
Ta-base--W, properties for use in SNAP-3 fuel capsule fabrication, 22:45766 (SC-DC-68-2385)
Ta-base--W, tensile properties of, 22:49760

TANTALUM BORIDES
chemical and crystallographic properties of plasma-sprayed, 22:47704
crystal and electronic structure of, determination by x-ray diffraction, 22:38640
electron- and ion-emission by, in cesium vapor, (E), 22:24454
enthalpy of formation of, fluorine bomb calorimetry measurements on, 22:2053
mechanical properties of plasma-sprayed, 22:47704
preparation of TaB_2, from tantalum pentoxide by boron reduction, 22:36528
reactions with tungsten at 2500°C, 22:4894
sintering at 1100 to 2100°C of TaB_2 shrinkage during vacuum, 22:31494
thermal conductivity at room temperature, 22:679
TaB_2--UO_2, reactions with steam at high temperatures, 22:17173

TANTALUM CARBIDE OXIDES
thermodynamics of alpha-solid solutions of, 22:11061

TANTALUM CARBIDES
book: Strength of Hard Alloys, 22:34115
carbon content of nonstoichiometric, effects of carbon activity and temperature on, 22:612(R) (GEMP-69)
carbon-13 exchange between carbon monoxide and carbon-12-labeled, at 295 to 2000°K, 22:45070
characteristics of powders of, effects of morphology on, 22:23764 (LA-DC-8964)
chemical analysis, density, and structure morphology of commercial-grade powdered, 22:751 (LA-3653)
diffusion of carbon in, at 2100 to 2650°C, 22:28956
effects on hardness and porosity of sintered nickel, 22:23774
elastic constants of, measurement by ultrasonic pulse propagation of, (E), 22:7365
elastic properties of TaC, determination by sound velocity, 22:49830
electric conductivity at 1200 to 3500°K, (E), 22:26084
electric conductivity at 2 to 300°K, 22:31375
electric conductivity of, temperature coefficient, (E), 22:28932
emissivity at 1200 to 3500°K, total hemispherical and spectral, (E), 22:26084
enthalpy and entropy of TaC, at 298.15°K to melting point, 22:11056
evaporation in vacuum at 2500 to 3400°K, 22:28920
evaporation rates in vacuum, 22:28918
fabrication and properties of, 22:2560(R) (IS-RD-11)
grain growth during hot-pressing of manganese-containing, (E), 22:28894
Hall effect and electric conductivity of substoichiometric, at room temperature and -196°C, (E), 22:24453
hardness of, effects of high pressure and high temperature on, 22:52272
linear expansion coefficients for, 22:32735 (ANL-7310, pp 249-375)
mechanical and thermodynamic properties, analysis of, 22:49836
mechanical behavior of, review of, 22:49826
mechanical properties and microstructure of hot-pressed, 22:38603 (N-68-10078)
mechanical properties at high temperatures, 22:31484
mechanical properties of impregnated, 22:19627(T) (LA-tr-67-112)
particle size distribution in commercial-grade powdered, use in characterization, 22:751 (LA-3653)
phase studies of alpha solid solutions of, 22:41100(T) (ORNL-tr-1942)
polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
preparation and properties, 22:612(R) (GEMP-69)
preparation and properties of 100 to 1000 A particles of, 22:38604(T) (SC-T-68-1535)
preparation of impregnated, 22:19627(T) (LA-tr-67-112)
production of hard, wear-resisting coatings of, by chemical vapor deposition, 22:6966
production on tantalum surfaces, measurement of carbon diffusion-induced, 22:729 (LA-DC-8803)
properties and uses, 22:52275

properties of, analysis of physico-mechanical, 22:52271
properties of, used for electrodeposited coatings on metals, 22:2590
radiation effects at 300 to 700ºC, fast-neutron, 22:21779
radiation effects on gross volume gain of, analysis of fast neutron, 22:48788
radiation effects on TaC, effects of dose on fast neutron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
superconducting properties of, 22:24209
superconducting transition temperature, 22:48034(T) (LA-tr-68-31)
superconductivity in interstitial, 22:22117
tensile properties at room temperature of polycrystalline, 22:38625 (N-68-11625)
thermal capacities of superconducting TaC/sub 1-x/ and Ta_2C at 1.5 to 18ºK, (E), 22:44038
thermodynamic behavior of nonstoichiometric, determination by carbon activity, 22:31450
thermodynamic properties at 298 to 2500ºK, (E), 22:31486
thermodynamic properties of, 22:28920
thermodynamic properties of TaC, 22:11056
thermodynamics, 22:36541
thermodynamics of alpha-solid solutions of, 22:11061
wettability by copper at 1100, 1175, and 1250ºC, 22:23752 (AERE-M/R-1746)
Co--Mo--TaC--TiC--WC, properties for cutting tools, 22:8719
Co--NbC--TaC--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
Co--NbC--TaC--WC-base, phase studies using microprobe and acid etching, 22:34117
Co--TaC, cracks and microhardness of, effects of lapping on, 22:19634
Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:17163
Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:4861
Co--TaC--TiC--WC-base, preparation and properties of, effect of copper on, 22:43645
Co--TaC--WC, mechanical properties of, effects of carbon content on, 22:30388
Co--TaC--WC, phase diagrams and properties of, 22:17183
Co--TaC--WC, wear of sintered, effects of cobalt content, hardness, and tungsten carbide grain size on, 22:19635
Cr--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
graphite--HfC--TaC, corrosion by air at 3200 to 3900ºF, 22:12982
graphite--NbC--TaC, elastic properties of die-pressed composites of, (E), 22:34109
graphite--NbC--TaC, polishing of, electro-mechanical, 22:36525 (LA-DC-9602)
HfC--TaC, crystal structure and melting point of, 22:15208 (IS-T-219)
HfC--TaC, single crystal growth parameters for, 22:730(R) (N-67-18983)
HfC--TaC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
LaC--VC, miscibility at 1200ºC to critical point, 22:43653
Mo--TaC, welding of, method for diffusion, 22:6943
MoC--TaC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
Nb--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
Nb--TaC, welding of, method for diffusion, 22:6943
NbC--TaC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
NbC--TaC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
PuC--TaC, phase relations and properties of, 22:2699
Ta_2C--V_2C, thermodynamics of, 22:28943
Ta--TaC, welding of, method for diffusion, 22:6943
TaC--TiC--WC-base, preparation and properties, 22:19614
TaC--UC, fabrication by powder metallurgy of fully dense, 22:36523 (BMI-1840)
TaC--UC, thermal stability of compounds in, 22:36523 (BMI-1840)
TaC--W, welding of, method for diffusion, 22:6943
TaC--WC, preparation and properties of, 22:38629
TaC--WC, production on tantalum--tungsten alloys, measurement of carbon diffusion-induced, 22:729 (LA-DC-8803)
TaC--ZrC, crystal structure and melting point of, 22:15208 (IS-T-219)
TaC--ZrC, effects on hardness and porosity of sintered nickel, 22:23774
TaC--ZrC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
TANTALUM CHLORIDES
reactions with calcium fluoride or oxide, separation of tantalum from products of, using phosgene, 22:23098 (IS-1799)
reduction by niobium metal, 22:47063 (IS-T-263)
reduction of $TaCl_5$, by cadmium or zinc for vapor deposition, 22:43549
$AlCl_3$--KCl--NaCl--$TaCl_5$, phase diagrams of, 22:12307
TANTALUM COUPLES
thermoelectric properties for ultrasonic thermometry from 2000 to 5000ºF, analysis of, 22:14139(R) (NYO-3906-1)
TANTALUM HYDRIDES
compatibility with uranium dioxide at 650 to 700ºC, 22:11066
solvent properties for hydrogen, 22:13033
TANTALUM ISOTOPES
energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:27109
separation from rhenium and tungsten isotopes by coprecipitation with iron hydroxide, effects of pH on, 22:45168
TANTALUM ISOTOPES Ta-173
nuclear spectroscopy, 22:14433 (ORNL-4196, pp 66-89)
TANTALUM ISOTOPES Ta-175
energy levels of, lifetimes of, (E), 22:27180
half-life of isomeric, (E), 22:27180
TANTALUM ISOTOPES Ta-176
energy levels from tungsten-176 decay, lifetimes of, (E), 22:24867
energy-level transitions in, E1, (E/T), 22:44699
TANTALUM ISOTOPES Ta-177
energy levels from tungsten-177 decay, lifetimes of, (E), 22:27180
half-life of isomeric, (E), 22:27180
TANTALUM ISOTOPES Ta-178
beta and electron-capture decay of, γ-γ angular and linear polarization correlations in, (E), 22:48509(R) (BMwF-FBK-68-22)
beta transitions to hafnium-178 collective states, effect of spin-quadrupole force on, (T), 22:7752
TANTALUM ISOTOPES Ta-179
energy levels of, search for high-spin 3-quasiparticle, (E), 22:16047
energy-level transitions in, calculations using anisotropic Saxon--Woods potential, (T), 22:22630
gyromagnetic ratio of, calculation of collective, (T), 22:20684
TANTALUM ISOTOPES Ta-181
alpha fission of, fission-fragment cross sections and mass distribution curves for, (E), 22:46770(R) (RLO-1759-14)
alpha reactions (α,2n), (α,3n), and (α,4n) at 30, 38, and 42 MeV, γ spectra for, (E), 22:27164
alpha reactions (α,2nγ) at 19.8 to 38 MeV, rhenium-183 energy levels from, (E), 22:16036
alpha reactions (α,xn) at 10 to 44 MeV, cross sections for, (E), 22:53179
boron-11 reactions (B-11,4n) with, conversion-electron and gamma spectra from, (E), 22:30027
carbon-12 reactions (C-12,4n) at 60 to 80 MeV, production of gold-189 isomer by, (E), 22:30007
carbon-12 reactions (C-12,5n) at 75 to 80 MeV, production of gold-188 isomer by, (E), 22:30007
carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
electron fission at 250 and 500 MeV, cross section and fission-fragment angular distributions for, (E), 22:27112
energy level at 480 keV, g-factor measurement using perturbed angular correlations, (E), 22:24835(R) (BARC-305)
energy level at 482 keV, half-life for, (E), 22:53215
energy levels at 6.2 keV, magnetic moment of, (E), 22:48553
energy levels from fast neutron inelastic scattering, spin-parity assignments for, (E), 22:27158
energy levels from hafnium-180 proton elastic and inelastic scattering, isobaric analog, (E), 22:35299
energy levels from neutron inelastic scattering at 0.3 to 1.5 MeV, (E), 22:5810 (ANL-7363)
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level parity admixtures in, from γ circular polarization, (E), 22:16026
energy-level transition from meson (π) capture, (E), 22:30017
energy-level transitions from rotational states, isomer shift from μ-mesic gamma spectra, (E), 22:46776
energy-level transitions in, calculations using anisotropic Saxon--Woods potential, (T), 22:22630
gamma angular correlations in hafnium, parity test from perturbed, (T), 22:32663
gamma circular polarization from, parity nonconservation from, 22:35380
gamma circular polarization from, testing parity nonconservation of nuclear forces by, (E), 22:27382
gamma spectra of μ-mesic, isomer shift in, (E), 22:46776
gamma spectra of, excited by 11-MeV alpha particles, 22:26739(R) (NP-17423)
gyromagnetic ratio of, calculation of collective, (T), 22:20684
helium-3 reactions (He,3,xn) and (He-3,xnyp) at 10 to 33 MeV, cross sections for, (E), 22:53179
hyperfine magnetic field at nuclei in nickel, measurement

using time-differential precession method, (E), 22:46265
Moessbauer effect for 6.2-keV transition in, in tantalum and tungsten, (E), 22:48553
neon-20 reactions with, nucleon transfer in, (E), 22:27197
neutron capture by, conversion-electron spectra from thermal, (E), 22:35287(T) (BNL-tr-215)
neutron capture by, γ spectra from thermal, (E), 22:9921 (JUL-Conf-1)
neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
neutron capture by, γ spectra from, (E), 22:20578 (WASH-1079)
neutron cross sections at 0.0001 eV to 15 MeV, data file for, 22:20561 (AHSB(S)R-141)
neutron inelastic scattering at 1 to 2 MeV, γ spectra from, (E), 22:27158
neutron reactions (n,2n) at 12.6 to 19.6 MeV, excitation function for, (E), 22:42006
neutron reactions (n,2n) at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,2n) at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron resonance parameters for, measurement using slowing-down-time lead spectrometer, 22:14828
neutron total cross section at 0.6 to 25 MeV, effects of deformations on, (E/T), 22:32648
neutron total cross section at 2 keV and 0 to 600ºC, (E), 22:20578 (WASH-1079)
neutron total cross section at 2 keV, transmission measurements of temperature dependence of, (E), 22:32588
nitrogen-14 reactions (N-14,5n) with, conversion-electron and gamma spectra from, (E), 22:30027
nitrogen-14 reactions (N-14,N-16) and (N-14,N-17) with, differential cross sections for, (E), 22:27196
nitrogen-15 reactions (N-15,N-16) and (N-15,N-17) with, differential cross sections for, (E), 22:27196
nuclear properties in shell and unified models, (E/T), 22:1624
nuclear quadrupole moment, (E/T), 22:11957
photon reactions (γ,n) at 60 MeV, neutron time-of-flight spectra and yields from, (E), 22:20475
photon reactions (γ,n), (γ,2n), (γ,3n), and (γ,4n) at 14 to 18 MeV, mechanisms and cross sections for, (E), 22:48547
proton fission at 156 MeV, cross sections and fission-fragment angular and energy distributions for, (E), 22:9900
proton reactions (p,2n) at 17.5 MeV, production of isomeric tungsten-180 by, (E), 22:1676
proton reactions (p,2n) with, production of isomeric tungsten-180 in, (E), 22:25664
proton reactions (p,n) at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952

TANTALUM ISOTOPES Ta-182
beta decay of isomeric, conversion-electron and γ spectra for, (E), 22:18263
beta decay of, anisotropy coefficients for γ-γ directional correlations in, (E), 22:26929(R) (COO-1420-139)
beta decay of, γ spectra from, (E), 22:27171
beta decay scheme of, γ spectra for, (E), 22:18245
beta decay scheme of, γ spectra for, (E), 22:35334
beta emission by, effects of, on brain tissues of man following use for pituitary gland surgery, 22:15031
beta emission by, for therapy of tumors, performance of platinum shielded wire for, 22:47540
beta emission by, use of, for radiotherapy of prostate neoplasms in dogs and man, 22:15030
distribution of neutron-induced, in metal and oxide phases of carbon dioxide oxidized stainless steel, 22:19593
energy levels from hafnium-182 decay and tantalum-181 neutron capture, (E), 22:20578 (WASH-1079)
energy levels from tantalum-181 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
energy levels from tantalum-181 thermal neutron capture, spin-parity assignments and transition multipolarities for, (E), 22:35287(T) (BNL-tr-215)
gamma emission by, use of, for radiotherapy of prostate neoplasms in dogs and man, 22:15030
incorporation in mice for determining behavior in field enclosure, 22:14979(R) (COO-1406-2)
isomeric transition in, half-life and multipolarity of, (E), 22:48541
neutron resonance parameters at 0 to 33 eV, (E), 22:37372
neutron total cross section, absorption resonance integral, and s-wave strength function at 0.01 to 1000 eV, (E), 22:37372
neutron total cross sections and resonance parameters at 5 to 1000 eV, (E), 22:20578 (WASH-1079)
radioapplicator for use in interstitial therapy, design of wire, 22:12890
separation from hafnium-175 by coprecipitation with iron hydroxide, effects of pH on, 22:45167
uptake by marine algae, 22:43311(R) (PRNC-85)
use in determination of fluoride by radio-release method, 22:16421
yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

TANTALUM ISOTOPES Ta-183
energy-level spins and transitions from hafnium-183 decay, (E), 22:13999 (NP-17219)
maximum permissible dose for internal exposure of man to, 22:51567(R) (IN-1205)
metabolism in man following inhalation in small tantalum oxide particles, 22:51567(R) (IN-1205)

TANTALUM ISOTOPES Ta-186
beta decay scheme of, β and γ spectra for, (E), 22:18301

TANTALUM NITRIDES
chemical and crystallographic properties of plasma-sprayed, 22:47704
density of plasma-sprayed, 22:47704
mechanical properties of plasma-sprayed, 22:47704
oxidation resistance of plasma-sprayed, 22:47704
phase studies of alpha solid solutions of, 22:41100(T) (ORNL-tr-1942)
physical properties of, 22:4078
preparation and properties of 100 to 1000 A particles of, 22:38604(T) (SC-T-68-1535)
preparation of, use of nitrogen plasma jet for, 22:15237(T) (MLM-1475(tr))
radiation effects at 150ºC on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
thermodynamics of alpha-solid solutions of, 22:11061

TANTALUM OXIDES
aluminum reduction for preparation of metal, 22:2560(R) (IS-RD-11)
analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
analysis for oxygen by neutron activation, 22:30457
analysis of capacitor films of, for molybdenum additive by mass spectrographic technique, 22:42615
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
chlorination in presence of graphite powder, kinetics of, 22:43556
crystal defect structure of Ta_2O_5, 22:11084
crystal structure, 22:4801
crystal structure of thin-film TaO_2, electron-diffraction study of, 22:31520
crystal superstructure of Ta_2O_5 films, high-resolution electron microscopic study of, 22:45783
crystallographic analysis of plates of, formed on tantalum, 22:28745
determination in niobium—tantalum minerals, gravimetric, 22:16451
electric conductivity of heat-treated anodic films of, activation energy and stoichiometry in, (E), 22:15607
electrolytic rectification in anodic films of, correlation of capacitance change and current flow in, (E), 22:15605
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
electron tunneling from tantalum metal into, in annealed capacitors, (T), 22:15632
electron tunneling in superconducting thin-film junctions with tantalum and niobium, (T), 22:46056
equilibrium pressures over oxygen—tantalum solid solutions as function of temperature, 22:41100(T) (ORNL-tr-1942)
europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
formation by oxidation of tantalum, 22:13046
formation of substoichiometric, kinetics of, 22:17181
growth of anodic films of, at constant rate of voltage increase, (E/T), 22:15604
microstructure of plates formed on tantalum by 500ºC oxidation, (E), 22:28746
molecular configuration of, polarity in, 22:4873
phase studies of alpha solid solutions of, 22:41100(T) (ORNL-tr-1942)
preparation and properties of oxygen-deficient Ta_2O_5, 22:4886
properties of hydrated, as ion-exchange material for deionization of heated waters, 22:21173(P)
radioinduced crystallization of amorphous films of, fast-neutron, 22:33446
reactions with americium oxides, solid-state, 22:30548
reduction of Ta_2O_5 by aluminum, production of tantalum by, 22:28763
reduction of Ta_2O_5, production of metal powder by calciothermic, 22:52146
reduction using carbon monoxide or hydrogen, yields in, 22:45085
separation from columbite by ion exchange and solvent extraction, economics of, 22:6940
thermodynamic properties of, 22:45088
thermodynamics of alpha-solid solutions of, 22:11061
thermodynamics of formation of, 22:31447
Ag_2O--Ta_2O_5, formation of silver metatantalates in, activation heat and reaction constants for, 22:33358
Au--TaO_2, production of thin-film, by sputtering, 22:722(R) (AD-648018)
Eu_2O_3--Ta_2O_5, phase studies on polytantalate-containing, 22:4098
HF--H_2O--Ta_2O_5, complexing in, solubility studies on, 22:45071

  Pt--TaO$_2$, production of thin-film, by sputtering, 22:722(R) (AD-648018)
  rare earth oxides--Ta$_2$O$_5$, phase studies of, 22:4895
  Ta$_2$O$_3$--TiO$_2$, phase diagrams, 22:36544
  Ta$_2$O$_5$--ZnO, phase diagrams of, effects of cobalt, copper, nickel substitution for zinc on, 22:19655
  Ta--Ta$_2$O$_5$, crystal structure and thermodynamics of, effects of electronic bonding on, 22:17182
TANTALUM PHOSPHIDES
  electron band structure of, magnetic susceptibility and NMR studies of, 22:17807
TANTALUM SILICIDES
  electron- and ion-emission by, in cesium vapor, (E), 22:24454
  production by auxiliary metal bath procedure, 22:38614
  radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
  use in oxidation protection of tantalum, 22:52133(R) (N-68-23469)
  Ta--TaSi$_2$, phase growth in, inter-, 22:52133(R) (N-68-23469)
Tape Recorders
    see Magnetic Recording Systems
Tapeworms (Hymenolepis)
    see Hymenolepis under Platyhelminthes
TAPIRO
    see Reactors, Research
Tappets
    see Mechanical Drives
Targets
    see Radiation Targets
TARS
  analysis by neutron activation, technique development for on-line process control, 22:21236 (ORO-2980-16)
  microstructure of carbonized pitch-type, from coal, (E), 22:11107
  radioinduced removal of phenol odor from wood, used for smoke flavor, 22:8160(P)
TARTARIC ACID
  complexes with lanthanum, thermometric measurements on, 22:4079
  complexes with neptunium, kinetic studies of, 22:27893
  complexes with polonium, solvent extraction studies on stability constants of, 22:6389
  complexes with uranium, polarographic and potentiometric studies on stability of, 22:14490
  structure of d-, x-ray and neutron diffraction studies of, 22:29545(R) (PRNC-84)
  HCl--tartaric acid, separation of molybdenum, rhenium, and tungsten from, by solvent extraction, method for chromatographic, 22:4246
TARTRATES
    see also Sodium Tartrates
  effects on photometric determination of indium, 22:2007
  effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
  effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
  effects on spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
  (ethylenedinitrilo)tetraacetic acid--tartrates, effects on spectrophotometric determination of trace amounts of niobium in metals using 4-(2-pyridylazo)resorcinol, 22:25268
TASTE
    see also Odor
  effect of radiation on seafood, 22:210(R) (TID-24016)
  radiation effects on, of beef steaks, effects of dose and temperature on γ, 22:8674
  radiation effects on, of beef, γ, 22:8672
  radiation effects on, of bread, combined effects of chemicals and temperature on γ, 22:52063(T) (ORNL-IIC-15)
  radiation effects on, of canned pineapple, γ, 22:31308
  radiation effects on, of clam and haddock, determination of, by chemical analysis, 22:17066
  radiation effects on, of dehydrated potatoes, effects of dose and temperature on β and γ, 22:12950(P)
  radiation effects on, of fillets of Bombay duck, effects of dose on, 22:4722
  radiation effects on, of fish, effects of inosine monophosphates on γ, 22:49668
  radiation effects on, of fish, γ, 22:6931
  radiation effects on, of foods, fast electron, γ and x, 22:15126
  radiation effects on, of guavas, γ, 22:43503
  radiation effects on, of mangoes, effects of dose on cobalt-60 γ, 22:52120
  radiation effects on, of meats following processing, effects of content of hydrocarbons on γ, 22:26016 (NYO-3499-3)
  radiation effects on, of milk, γ and x, 22:12772
  radiation effects on, of peaches, effects of ripeness on γ, 22:52118
  radiation effects on, of potatoes following storage, effects of temperature on γ, 22:21641 (RISO-163)
  radiation effects on, of seafoods, effects of IMP and sodium polyphosphates treatment on γ, 22:26017(R) (TID-23835)
  radiation effects on, of seafoods, effects of packaging and post-irradiation temperature on, 22:17064
TAURINE
  content of urine in rats, effects of cortisone and methotrexate on, 22:10825 (BNWL-480, pp 55-83)
  effects on leukocytes and survival of x-irradiated mice, 22:36314
  origin of, excreted in urine of γ-irradiated rats, 22:36181
  radiation effects on content of, in urine of beagle dogs, effects of plutonium-239 inhalation on α, 22:10825 (BNWL-480, pp 55-83)
  radiation effects on content of, in urine of man following extracorporeal lymphocyte therapy, x, 22:10825 (BNWL-480, pp 55-83)
  radiation effects on content of, in urine of rats, 22:28374
  radiation effects on content of, in urine of rats, 22:31264
  radiation effects on content of, in urine of rats, γ, 22:36181
  radiation effects on excretion of, by mice, measurement of acute x, 22:45689
  radiation effects on excretion of, in urine of mice, x, 22:36314
  radiation effects on metabolism of, in rats, ionizing, 22:51485
  radiation effects on urinary excretion of, in man and rats, use of, for indication of radiation injury, 22:49492
  radioprotective effects of, on mice, acute, 22:49383
  reactions with hydrogen peroxide and titanium trichloride, ESR spectral studies on free radicals produced by, 22:2147
TAURINE, N-(2,4-DIHYDROXY-3,3-DIMETHYLBUTYRYL)-
  effects on metabolism of calcium and strontium in Tetrahymena, 22:40515 (NYO-1822-25)
TAUROCHOLIC ACID
  effects on electrolyte transport in intestines of rats, 22:10824 (BNWL-480, pp 1-19)
  effects on x-radiosensitivity of capillary permeability in epithelium of intestine in mice, 22:14910(R) (COO-1244-12)
TBP (Tributyl Phosphate)
    see Phosphoric Acid, Tributyl Ester
TBP PROCESS
    (For the Canadian TBP process, which is not related, see Tributyl Phosphate Process (Canada).)
  applicability to fuel elements of natural uranium, enriched uranium oxides, uranium dioxide--plutonium dioxide, and aluminum--uranium, uranium--zirconium alloys, 22:47223
  chemistry of ruthenium, niobium, and zirconium in, 22:40052 (KR-126, pp 101-19)
  efficiency of, effects of solvent and diluent radiolytic degradation on, 22:40167 (KR-126, pp 120-42)
  separation of plutonium from butyl phosphate in, 22:6433(P)
TBPO
    see Phosphine Oxide, Tributyl-
TDI
    see 2-Indolinone, 1-Acetyl-3,3-Bis(p-Hydroxyphenyl)-, Diacetate
TD-NICKEL
    (Ni - ThO$_2$ dispersion)
  coating of, vacuum-pack and slurry processes for, 22:49698
  diffusion of cobalt-60 in, at 1000°C, 22:19043(R) (DP-1143-1)
  forging of, for gas turbine components, 22:10978
  fuel capsules of, cobalt-60 diffusion along grain boundaries of, 22:2306(R) (DP-1129-1)
  fuel capsules of, diffusion of cobalt-60 along grain boundaries of, 22:2306(R) (DP-1129-1)
  heating tests of, for cobalt-60 encapsulation, 22:2306(R) (DP-1129-1)
  joints with different materials, metallography of, 22:43553
  oxidation rate at 1000°C, 22:30773(R) (DP-1155-1)
  oxidation rate at 1000°C, 22:19043(R) (DP-1143-1)
  properties for use as encapsulating material for cobalt-60 power sources, 22:16780
  properties of chromium-containing, for use as encapsulating material for cobalt-60 power sources, 22:16780
  recrystallization of, effects of selenium and sulfur on, 22:38583
  testing for use in encapsulation of cobalt-60, 22:10929
  Cr--TD Nickel, forging of, for gas turbine components, 22:10978
  Cr--TD nickel, oxidation rate at 1000°C, 22:30773(R) (DP-1155-1)
  Cr--TD Nickel, oxidation rate at 1000°C, 22:19043(R) (DP-1143-1)
  Cr--TD Nickel, preparation of dispersion-strengthened, 22:34005
  Cr--TD-Nickel, tensile properties for cobalt-60 heat source capsules, 22:10500 (DP-1096)
TD-NICKEL CHROMIUM
  fracture mechanisms of, 22:49765
Teapot Reactor
    see Reactors, Boiling
TECHNETATES

- see also Bromotechnetates
- see also Pertechnetates
- complexes with halogens, polarographic behavior of, 22:1951 (JUL-465-RC)
- decomposition during storage, effects of, on uptake by thyroid gland, 22:23583
- formation in solid-state reactions of alkaline earths with technetium oxide, 22:8044(T) (ANL-Trans-546)
- labeling with technetium-99, 22:25934
- metabolism in man, 22:25919
- use of technetium-99-labeled, for brain scanning, 22:51806
- use of technetium-99-labeled, for scanning human thyroid, 22:51858

- TECHNETIUM
  - abundance in HR 1105, 22:29117
  - complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  - complexes with thiourea in hydrochloric and nitric acid solutions, chemistry of, 22:50954
  - compounds with 2,2'-dipydryl and 1,10-phenanthroline, preparation and properties of, 22:45032
  - deposition of, electrolyte for, 22:21680(P)
  - determination in alkaline solution by inverse polarography, 22:40039
  - determination in irradiated uranium dioxide fuel pins, electron probe, 22:25321 (ANL-7375, pp 95-134)
  - determination of, polarographic, 22:1951 (JUL-465-RC)
  - gamma spectra of fission-product, 22:20975(R) (BMwF-FBK-67-89)
  - metallurgy of, review of, 22:52161 (N-68-23247)
  - polarographic behavior of, 22:1951 (JUL-465-RC)
  - polarographic behavior of, effects of pH on inverse, 22:40039
  - properties as burnup monitor for oxide fuels, 22:39976 (ANL-7450, pp 108-11)
  - properties of, chemical and physical, 22:2025 (EUR-3641)
  - separation from dilute organic solutions, process for, 22:10351(P)
  - separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
  - separation from irradiated fuels by fluidized-bed volatility process, 22:8181
  - separation from molybdenum by ring-oven techniques, 22:14572
  - separation from molybdenum by solvent extraction using tetraalkylammonium iodides, 22:35885
  - separation from molybdenum by sorption on magnesium dioxide, 22:157
  - separation from molybdenum in hydrochloric acid--tartaric acid solutions, distribution-chromatographic method for, 22:4246
  - sorption by manganese dioxide from nitric acid, 22:157
  - spectra of Tc I and Tc II at 2000 to 9000 A, (E), 22:26248
  - superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
  - superconducting transition temperature of, pressure effects on, (E), 22:29391
  - tensile properties of pure, effects of heat treatments on, 22:52144 (BNWL-865)
  - uptake by thyroid gland in man, effects of thyroid function on, 22:25935

- TECHNETIUM ALLOYS AND SYSTEMS
  - Ag--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - Ag--Tc, phase studies of, 22:4807
  - Au--Tc, phase studies of, 22:4807
  - Cs--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - Cu--Tc, phase studies of, 22:4807
  - Fe--Tc, magnetic properties at 0°K, 22:43594 (ANL-7299, pp 251-64)
  - K--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - Li--O--Tc, preparation and phase studies of compounds in, 22:4071(T) (ANL-Trans-539)
  - Mo--Pd--Rh--Ru--Tc, fission-induced inclusions of, in plutonium dioxide--uranium dioxide fuels, 22:17152
  - Mo--Tc, phase studies of, 22:4807
  - Na--O--Tc, preparation and phase studies of compounds in, 22:4071(T) (ANL-Trans-539)
  - NH_3--O--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - O--Rb--Tc, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - O--Tc--Tl, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  - Os--Tc, phase studies of, 22:4807
  - Pd--Tc, phase studies of, 22:4807
  - Pt--Tc, phase studies of, 22:4807
  - Re--Tc, phase studies of, 22:4807
  - Rh--Tc, phase studies of, 22:4807
  - Ru--Tc, phase studies of, 22:4807
  - Tc--V, crystal structure of phases in, 22:31400
  - Tc--V, phase diagram of, 22:31400
  - Tc--V, superconducting properties of, 22:1079
  - Tc--V, superconductivity of, 22:8734 (ORNL-4170, pp 49-50)
  - Tc--V, superconductivity of, 22:31400
  - Tc--W, fabrication of, description of methods for, 22:52144 (BNWL-865)
  - Tc--W, phase studies of, 22:4807
  - Tc--W, tensile properties of, effects of temperature on, 22:52144 (BNWL-865)
  - Tc--Y, phase diagram of, statistical prediction of, 22:31396
  - Te--W, production by hydrogen reduction of fluorides in flame processes, 22:6965

- TECHNETIUM CHLORIDES
  - photolysis of hydrochloric acid solutions of, spectral studies on, 22:8116
  - structure of cluster, 22:27517(R) (MIT-1965-63)

- TECHNETIUM FLUORIDES
  - properties of, chemical and structural, 22:53169(R) (PPAD-647-D)
  - reactions with nitric oxide, magnetic properties and infrared spectra of compounds from, 22:16419
  - reactions with nitrosyl fluoride, magnetic properties and infrared spectra of compounds from, 22:16419
  - reactions with nitryl fluorides, magnetic properties and infrared spectra of compounds from, 22:16419
  - sorption by magnesium and sodium fluorides, 22:21078

- TECHNETIUM ISOTOPES
  - yields from fission of uranium-235, 22:40054(R) (NYO-2269-12)

- TECHNETIUM ISOTOPES Tc-92
  - beta decay of, γ spectra from, (E), 22:27167

- TECHNETIUM ISOTOPES Tc-93
  - energy levels from molybdenum-92 (d,np) reactions, isobaric analog, (E), 22:1681
  - energy levels from niobium-93 (He-3,d) reactions, spectroscopic factors for, (E), 22:27141
  - energy levels of, calculations using independent quasi particle model, (T), 22:1734
  - energy-level transitions from molybdenum-92 (He-3,d) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
  - proton decay from isobaric analog states in molybdenum-92 (d,np) reactions, (E), 22:11949(R) (ORO-2972-47)
  - proton decay of isobaric analog states in molybdenum-92 (d,n) reactions, (E), 22:53164

- TECHNETIUM ISOTOPES Tc-94
  - beta and electron-capture decay scheme of, γ single and coincidence spectra for, (E), 22:27096
  - energy levels from molybdenum-92 (d,pn) reactions, isobaric analog, 22:20578 (WASH-1079)

- TECHNETIUM ISOTOPES Tc-95
  - content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
  - energy levels from ruthenium-95 decay, (E), 22:35307
  - energy levels, (E), 22:5809(R) (ANL-7354)
  - proton decay of isobaric analog states in molybdenum-94 (d,n) reactions, (E), 22:53164

- TECHNETIUM ISOTOPES Tc-96
  - preparation of carrier-free, from proton-irradiated targets, 22:50994

- TECHNETIUM ISOTOPES Tc-97
  - energy levels, (E), 22:5809(R) (ANL-7354)
  - production in red giants, (T), 22:31586

- TECHNETIUM ISOTOPES Tc-99
  - beta decay of, K ionization probability in, (E/T), 22:9973
  - beta emission by, dosimetry of, in liver during scintigraphy, 22:17033
  - bibliography on use of, in radiodiagnosis, 22:15019 (ORNL-TM-2091)
  - content of gastric juice and saliva in relation to content of plasma, 22:40600
  - content of human thyroids, determination of, 22:51643
  - content of human tissues and tumors following use for brain scanning, 22:49447
  - content of human tissues, method for high resolution, autoradiography of, 22:45451
  - defects in liver phantom containing, use of rectinlinear scanner and scintillation camera to determine, 22:6859
  - development of generator for, 22:23399 (IA-1128, pp 213-19)
  - diffusion from irradiated uranium dioxide, 22:19680
  - distribution following intravenous injection, 22:38334(R) (COO-1653-45)
  - dosimetry and performance of pertechnetate-incorporated, in diagnosis of diseases of human salivary glands, 22:51778
  - energy level at 140 keV, lifetime measurement using Moessbauer effect, (E), 22:46796
  - energy level at 140 keV, lifetime of, (E), 22:46777
  - energy levels at 181 and 920 keV, half-lives of, (E), 22:18237
  - energy levels from molybdenum-99 β decay, (E), 22:32645
  - energy levels from molybdenum-99 decay, spin assignments and multipole mixing ratios for, (E), 22:46777
  - energy levels of, description with quasiparticle coupling to quadrupole moment of 2^+ phonon, (T), 22:18240
  - energy levels of, lifetime measurements using delayed coincidence method, (E), 22:32643
  - energy levels, (E), 22:5809(R) (ANL-7354)
  - evaluation of cystine, methionine, and polypeptide-incorporated, for scanning of pancreas, 22:4630 (UCLA-34-P-119-16)
  - evaluation of pertechnetate-incorporated, for scanning brain tumors, 22:38361
  - gamma emission by, dose to human patients and medical personnel during scanning, 22:25932

gamma emission by, effects of energy levels of, on performance for scintiscanning, 22:38337
gamma emission by, effects of energy of, on quality of scans, 22:36324
gamma emission by, effects of, on counting rates during use for brain scanning, 22:25933
gamma emission by, effects of, on dose to man during radiodiagnosis, 22:25919
gamma--gamma angular correlations in, (E), 22:24835(R) (BARC-305)
half-life and type of decay of, 22:42698
incorporation and uses of, in human serum albumin and organic compounds, 22:37776 (BNL-50082, pp 79-92)
incorporation in albumin aggregates for use in lung scintigraphy in man, 22:8453
incorporation in albumin for assessment of cerebral hemodynamics, 22:25859 (UCLA-12-668, pp 1-28)
incorporation in colloids, optimum conditions for, 22:37776 (BNL-50082, pp 79-92)
incorporation in compounds for biological applications, 22:27742 (BNL-12405)
incorporation in diethylenetriaminepentaacetic acid, 22:8432 (BNL-11831)
incorporation in human serum albumin, method for, 22:8432 (BNL-11831)
incorporation in technetates, 22:25934
incorporation in trisodium salt of DTPA, method for, 22:37776 (BNL-50082, pp 79-92)
incorporation into human serum albumin, 22:25936
incorporation into human serum albumin, 22:49427
internal conversion in isomeric, (E), 22:46729(R) (AECL-3157)
isomeric transition in, multipolarity of, (E), 22:32512(R) (AECL-3108)
localization in human brain during scanning for cerebral infarction, 22:16982
metabolism of pertechnetate-incorporated, in thyroid of rats, comparison of, with iodine-131, 22:14961
preparation in molybdenum-99 generator, 22:51065
preparation of isomeric, by neutron irradiation of molybdenum and anion exchange separation, 22:35857(P)
preparation of isomeric, for scanning of thyroid gland, 22:51779
production by US power reactors through 1990, 22:45245 (BNWL-716)
production for clinical use by molybdenum-99 generator, 22:25932
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in red giants, (T), 22:31586
production of isomeric, at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
production of isomeric, for clinical uses, generator for, 22:245 (BNL-11435)
production of isomeric, in Australia, 22:42761
production of isomeric, in molybdenum-99-containing ammonium molybdatophosphate, 22:2135
production of isomeric, isotope generator for, 22:33611
production of isomeric, method for, 22:27808
production of isomeric, milking system for, 22:2091 (BNL-11849)
production of isomeric, using manganese dioxide for separation from molybdenum-99, 22:16786
proton decay of isobaric analog in molybdenum-98 (d,n) reactions, 22:53164
scanning of sodium pertechnetate-incorporated, in human brain by scintillation cameras, 22:25905
separation from molybdenum-99--technetium-99 generator, 22:51065
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
separation of isomeric, from molybdenum-99 by column chromatography using aluminum oxide and various mineral acids, 22:27808
shipments by BNL during 1965 and 1966, 22:37776 (BNL-50082, pp 79-92)
uptake by brain tissues in man, effects of potassium perchlorates on, 22:36325
uptake by choroid plexus of brain in man, effects of potassium perchlorates on, 22:36325
uptake by choroid plexus of human brain, diagnostic importance of, 22:43387
uptake by thyroid gland in man, effects of potassium perchlorates on, 22:36325
use as gamma source in scintiscanning, 22:530
use as tracer for scintiscanning, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)
use for brain scanning, 22:40817
use for brain scanning, 22:28582
use for determination of cardiac output of dogs, 22:40786
use for diagnosis of subdural hematoma, 22:45609
use for kidney scanning, 22:518 (UCLA-12-655)
use for localization of human placentas, 22:31169
use for lung scanning, comparison of, with iodine-131, 22:51805
use for perfusion scanning of lungs, 22:40784
use for radiodiagnosis of thyroid of man, 22:19386
use for renal scintigraphy in animals and man, complex of iron with, 22:33888
use for scanning blood circulation in human heart, 22:25937
use for scanning brain, 22:49399
use for scanning brain, blood circulation in heart, salivary glands, and stomach, 22:25941
use for scanning brain, salivary glands, and thyroid gland of man, review of, 22:31194
use for scanning human brain, 22:49460
use for scanning human brain, 22:38397
use for scanning of blood pool, bone marrow, brain, kidneys, liver, lungs, placenta, and spleen of man, 22:25940
use for scanning of brain, 22:31134
use for scanning of brain of man, 22:2531
use for scanning of human kidneys, 22:25859 (UCLA-12-668, pp 1-28)
use for scanning of human liver, 22:45607
use for scanning of human lungs, 22:47552
use for scanning of thyroid gland, 22:28582
use for scanning thyroid gland, 22:25935
use for scanning thyroid gland, 22:25922
use for scintiscanning of brain tumors, phantom tests on, 22:49417
use for scintiscanning, development of computer data storage and display system for, 22:49405
use for study of function and morphology of salivary glands, 22:36292
use for study of gastric function in man, evaluation of, 22:36306
use for testing resolution of spectrometers for scanning, 22:51812
use for thyroid scanning, 22:51818
use in brain scanning, efficiency of, 22:47556
use in generators for radiography, 22:38390
use in radiodiagnosis, methods for protection during, 22:49389
use of aerosol-incorporated, for scanning of lungs of dogs and man, 22:38399
use of albumin-incorporated, for diagnosis of placenta praevia, 22:40795
use of albumin-incorporated, for scanning human placenta, 22:49398
use of albumin-incorporated, for scintiscanning of lung capillaries, 22:23566
use of colloidal sulfur-incorporated, to study reflux of ureter in dogs and rats, 22:28330
use of dextran-incorporated, for scanning liver, lungs, and kidneys, 22:33892
use of erythrocyte-incorporated, for scanning spleen, 22:40748
use of human serum albumin-incorporated, for localization of human placenta by scanning, 22:25936
use of human serum albumin-incorporated, for scanning cerebrospinal fluid leakage in human brain, 22:49427
use of iron-ascorbic acid-glucose complex with, for kidney scanning in dogs, 22:45633
use of pertechnetate-incorporated, for brain scanning, comparison of mercury-197-labeled chlormerodrin to, 22:28562
use of pertechnetate-incorporated, for brain scanning, 22:51806
use of pertechnetate-incorporated, for brain scanning, 22:40761
use of pertechnetate-incorporated, for diagnosis of brain tumors, review of, 22:21546
use of pertechnetate-incorporated, for scanning human placenta, 22:38359
use of pertechnetate-incorporated, for scanning human brain, 22:25934
use of pertechnetate-incorporated, for scanning human thyroid, 22:51858
use of pertechnetate-incorporated, for scanning of human salivary glands, 22:31183
use of pertechnetate-incorporated, for stomach scanning, evaluation of, 22:10786
use of serum albumin-incorporated, for human placentography, 22:28577
use of serum albumin-incorporated, for localization of placenta in pregnant women, effects on mother and fetus following, 22:51799
use of serum albumin-incorporated, for scanning of blood output from human heart, 22:36294
use of sodium pertechnetate incorporated, for scanning human stomachs, 22:31162
use of sodium pertechnetate incorporated, in combination with mercury-203-labeled chlormerodrin to distinguish cysts and tumors in human kidneys, 22:36338
use of sodium pertechnetate-incorporated, for brain scanning, 22:25714 (COO-78-163, pp 126-36)
use of sulfur colloid-incorporated, for diagnosis of disorders of human liver, review of, 22:28607
use of sulfur colloid-incorporated, for scintiscanning, 22:4645
use of technetium oxide-incorporated, for brain scanning, 22:36325
use of technetium oxide-incorporated, for brain scanning, 22:36323
use of technetium pertechnetate-incorporated for scanning of blood circulation in brain, 22:28614
use of technetium-ferric pertectnetate-incorporated, for scanning of human brain for localization of intracranial neoplasms, 22:31198
use to determine pedicle skin graft survival, method for,

22:40763
use with iron for scanning of human kidneys, 22:14959
yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)

TECHNETIUM ISOTOPES Tc-100
production and properties of short-lived isomeric, by proton reactions with molybdenum at 10 MeV, (E), 22:24874

TECHNETIUM ISOTOPES Tc-101
energy levels of, calculation of quadrupole, (T), 22:16041
energy levels, (E), 22:5809(R) (ANL-7354)

TECHNETIUM OXIDES
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
labeling with technetium-99 for clinical use, 22:25932
BaO--Li$_2$O--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
BaO--Na$_2$O--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
BaO--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
BaO--TcO$_2$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
CaO--Li$_2$O--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
CaO--Na$_2$O--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
CaO--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
CaO--TcO$_2$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
Li$_2$O--SrO--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
Na$_2$O--SrO--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
SrO--Tc$_2$O$_7$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)
SrO--TcO$_2$, compound formation in solid-state reactions in, 22:8044(T) (ANL-Trans-546)

Teepol (R)
see Detergents

TEETH
analysis for arsenic by neutron activation methods, 22:25254
analysis for trace elements by activation methods, 22:14525
analysis of filled, for mercury, silver, and tin by neutron activation methods, 22:25254
analysis of fossil, for nitrogen to fluorine ratio by photon activation methods, 22:27592
calcium-45 distribution in developing, of rats, 22:40549
distribution of tetracycline in developing, of rats, 22:40549
extraction of human, effects of previous radiotherapy on, 22:51960
fitting of replacement, in man following radiotherapy of head and neck, problems in, 22:51917
polonium-210 content in human, in New England, 22:2220
radiation dose to human, during dental radiography, use of thermoluminescent microdosimeters for determination of x, 22:28622 (ANL-7278, pp 95-131)
radiation dose to, electron spin resonance spectroscopy measurement of γ and x, 22:47531
radiation effects on dentine in, of rats, γ, 22:23625
radiation effects on developing, in human children, x, 22:28674
radiation effects on development of rat, histological study of x, 22:45697
radiation effects on development of, of rats, neonatal x, 22:4696
radiation effects on development of, prevention and treatment of pathological, 22:10844
radiation effects on enamel of human, effects of energy level on pulsed laser, 22:31225
radiation effects on extracted human, pulsed laser, 22:40938
radiation effects on growth of incisor, in rats, effects of dose on x, 22:15095
radiation effects on hard substance of, in man, 22:561
radiation effects on incisor, of mice, histological analysis of whole-body γ, 22:15091
radiation effects on incisor, of rats, histologic study of x, 22:51895
radiation effects on rodent, of rats, x, 22:15111
radiation effects on root formation of, in rats, x, 22:52012
radiation effects on tissues of, laser, 22:47465
radiation effects on, in man, 22:51942
radiation effects on, of hamsters, laser, 22:45679
radiation protection during radiography of, 22:19334
radiodiagnosis of human, measurement of scattered radiation dose during x, 22:38299
radiography of human, assay of film developer activity for x, 22:40785
radiography of human, dose to mouth and thyroid from x, 22:12870
radiography of human, effects of intraoral shielding and rectangular collimation on absorbed dose during x, 22:51811
radiography of human, protection of patients and personnel during x, 22:31178
radiography of human, protection of patients and personnel during x, 22:31175
radiography of human, protection of patients and personnel during x, 22:10807
radiography of human, radiation scattering by building materials during x, 22:40724
radiography of human, standards for protection during, 22:4615
radiography of, protection during, 22:15009
radiography of, radiation dose from x, 22:28486
radiography of, survey of methods of protection against hazards from, in New Zealand, 22:40683
radioinduced damage to human, following therapy of tumors of maxillofacial region, effects of dose on interstitial γ, telegamma, and x, 22:31197
radioinduced decay of human, following therapy for transitional cell carcinomas of nasopharynx, effects of restorative treatment on, 22:31174
radioinduced thermoluminescence of, use of, for dosimetry, γ, 22:45530
radioisotope content of human, as measure of content of bones, lead-210 and radium-226, 22:51627
radiotherapy of carcinomas in roots of, effects of dosage on development of necrosis of mandibles following, 22:40803
radium-224 content in human, in New England, 22:2220
radium-226 content in human, in New England, 22:2220
radium-226 content of human, scintillation detector for determining, 22:2377
radium-226 uptake and retention by human, effects of age and fluoride content of drinking water on, 22:8465
raiation effects on development of, in mice, x, 22:10845
separation of trace metals from calcium phosphate matrix of, 22:2506(R) (NYO-3086-7)
strontium-90 content of human deciduous, effects of caries on, 22:51584
strontium-90 content of human, effects of year of birth on, 22:28307
strontium-90 content of human, in Soviet Union during 1964, 22:49177 (NP-16519)
strontium-90 content of mule deer, in California during 1958-1961, 22:36283
strontium-90 content of, in Japan during 1966, 22:4605 (NP-17083)
strontium-90 content of, of human fetuses in relation to content of diet of mother, 22:38292
treatment of caries in human, following radiotherapy of cancer of head or neck, methods for, 22:47613

TEFLON
see also Ethylene, Tetrafluoro-, Polymers
air--Teflon, electric conductivity of shock-heated, (E), 22:1208
analysis of, x-ray fluorescence method for, 22:39986(R) (ORO-3561-1)
coating of metallic molds with film-fused, effect on release capability of, (E), 22:2714 (R-67-ND-6)
coatings in thermoluminescent probe for use in radiodiagnosis, 22:8547
effects on criticality of enriched uranium assembly of moderator and reflector of, 22:16289 (ORNL-TM-2082)
fiber beds of, efficiency for removing aerosol particles from gas streams, (E), 22:25567 (BNWL-481-3, pp 94-6)
heat transfer from surfaces of, effects of improved liquid wetting angle on, 22:10495(P)
positron annihilation in, (E), 22:26207
radiation effects on creep of, 22:19682(R) (UCRL-13328)
radiation effects on electric conductivity of, electrons and x, 22:12721
radiation mass stopping power of, gamma, (E/T), 22:50042
radioinduced free radicals in, ESR studies of pulsed electron, 22:34130 (NP-17353)
reactivity coefficient for, measurement in AARR thermal column of, 22:32960 (ANL-7310, pp 31-135)
use of lithium fluoride-incorporated, for thermoluminescent dosimetry, 22:33669 (BNWL-741)
x ray yields of thick targets of, 22:249(R) (NYO-3491-2)

Tektites
see Meteorites

TELEMETERING SYSTEMS
conference on, 22:51292
design and performance for well logging, 22:12662(T) (AD-662764)
design for collection of behavioral, ecological, and physiological data on bears and elks, 22:14391(R) (RLO-1929-6)
design for remote gamma spectroscopy at high altitudes, 22:28142
design of AN/GKQ-4 detector--telemetry system for monitoring fallout, 22:33633 (AD-666659)
design of automatic, for meteorological and radiation data, 22:397
design of fixed radiation monitoring, 22:8337 (DUN-SA-50)
design of subminiature, for upper atmosphere sampling rocket system, engineering drawings for, 22:47431
design techniques for developing, review of, 22:204(R) (N-67-18419)
development of laser, for nuclear experiments, 22:47404 (UCRL-50457)
development of physiological, for determining radiation effects on beagle dogs, 22:28622 (ANL-7278, pp 95-131)

failure of spacecraft, effects of radiation on, 22:205 (N-67-18431)
Telescopes (Cosmic Ray)
see Cosmic Ray Telescopes
Telescopes (Radio Astronomy)
see Radio Telescopes
TELEVISION EQUIPMENT
characteristics of LI-415 vidicon, for automatic spark chamber data readout, 22:49123
description for analyzing particle tracks in bubble chamber photographs, 22:10598
description of, used at Nevada Test Site, 22:45353 (LA-3957)
design and performance of vidicon, for recording particle tracks in spark chambers, 22:36105
design for monitoring remote sampling of reactor graphite, 22:6525(P)
design for particle track analysis in bubble chamber photographs, 22:4474 (ORO-2504-110)
development of closed-circuit, for viewing maintenance operations at HRT and MSRE, 22:43157 (ORNL-TM-2032)
operation of Molten Salt Reactor Experiment closed-circuit, description of, 22:32782 (ORNL-TM-910)
use in thermal neutron radiography, 22:35984
use with image intensifiers for recording x-ray diffraction patterns, 22:40503
TELLURATES
see also Sodium Tellurates
radiolysis of frozen aqueous solutions of, 22:14514 (COO-1528-18)
TELLURIC ACID
recovery from waste solutions from iodine-131 production, 22:37869
tellurium-125m Moessbauer spectra in H_6TeO_6, 22:52895
TELLURIC(IV) ACID
radiolysis of oxygenated sulfuric acid solution of, effects of solute concentration on γ, 22:2165
TELLURIDES
see also Antimony Tellurides
see also Bismuth Tellurides
see also Butyl Telluride
see also Cadmium Tellurides
see also Cerium Tellurides
see also Cesium Tellurides
see also Chromium Tellurides
see also Dysprosium Tellurides
see also Ethyl Telluride
see also Gadolinium Tellurides
see also Germanium Tellurides
see also Indium Tellurides
see also Lanthanum Tellurides
see also Lead Tellurides
see also Lead Tin Tellurides
see also Manganese Tellurides
see also Mercury Tellurides
see also Neodymium Tellurides
see also Plutonium Tellurides
see also Rare Earth Tellurides
see also Rhenium Tellurides
see also Samarium Tellurides
see also Thorium Tellurides
see also Tin Tellurides
see also Uranium Tellurides
see also Ytterbium Tellurides
see also Zinc Tellurides
TELLURITES
determination in bacteria, neutron activation, 22:50915
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
TELLURIUM
abundance in chondrites, 22:2727
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
atomic weight of, based on carbon-12 = 12, 22:42698
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
book: Uncommon Metals, 22:10981
compatibility testing with potential cell materials at 400 and 500°C, 22:52556 (ANL-7425, pp 172-89)
compounds with thorium or uranium and antimony, arsenic, bismuth, or phosphorus, preparation and structure of, 22:47118
condensation in meteorites, (T), 22:5023
content in meteorites, 22:6462
crystal lattice dynamics at 296°K, (E), 22:46729(R) (AECL-3157)
crystal structure of, research using cold neutron scattering, (E), 22:9921 (JUL-Conf-1)
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deposition on prefilmed Zircaloy-2, (E), 22:42161(R) (BMI-X-10237)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic-fluorescence spectroscopy, 22:30482
determination by mass spectrometry using negative surface ionization method, 22:6265
determination by spectrophotometry using high-frequency excitation tubes without electrodes, 22:30494
determination by volumetric methods, 22:7999
determination in arsenic, gallium, and gallium arsenide by neutron activation techniques, 22:48840
determination in bismuth--tellurium ore, 22:18721
determination in electrolytic zinc sulfate solution by neutron activation methods, 22:25277
determination in lead concentrate and sulfur using 2-mercapto-4-(2-naphthyl)-Δ^2-1,3,4-thiadiazoline-5-thione, extraction-photometric, 22:16428
determination in lead telluride and tin telluride by automatic titration, 22:35755
determination in meteorites by neutron activation techniques, 22:10195
determination in meteorites, activation, 22:20
determination in minerals by chromatographic separation and photometry, 22:33234
determination in neodymium--tellurium alloys, complexometric, 22:12244
determination in rocks and soils by atomic absorption spectrophotometry, 22:27550
determination in selenium, by neutron activation methods, 22:16441
determination in silver chloride and uranium compounds, spectrophotometric, 22:48818 (NIM-244)
determination in silver chloride and uranium oxide, spectrophotometric, 22:42
determination in thin films of tellurides by single-sweep polarography, 22:33283
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination of extractable complexes of, with amines by paper chromatography, 22:14569
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination using (n,2n) reaction for activation, 22:39671
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on properties of copper--zirconium alloys, 22:6987
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
electric cells with lithium, performance with liquid and paste electrolytes, 22:36774 (ANL-7450, pp 90-104)
fission-fragment effects on low-angle subgrain boundaries in, (E), 22:7367
gamma elastic and inelastic scattering by, γ spectra for, 22:27079
gamma resonance scattering using neutron capture beams, spectra for, (E), 22:48510 (IA-1097)
gamma resonance scattering using neutron capture γ rays, (E), 22:24854 (IA-1128, pp 12-20)
hydrolysis in presence of sodium perchlorate, solvent extraction studies on, 22:6390
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
iodine-131 production from pile-irradiated, method for, 22:10289
iodine-131 specific activity in neutron-irradiated, method for determining, 22:21150
metabolism in tissues of rats, 22:6720(T) (TT-1283)
Moessbauer effect studies of, 22:18735
neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
neutron scattering by, (E), 22:11874(R) (JUL-463-NP)
neutron scattering resonances in, intermediate, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross sections at 6 eV to 250 keV, (E), 22:18225
optical properties of vacuum-evaporated films of, 22:9424 (ORNL-TM-2023)
photoeffect quantum yields from, (E), 22:38799
polarographic behavior of tetravalent, 22:50985
positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
positron annihilation in, angular distribution of photons from, (E), 22:11508
radiation effects on allotropic changes of, 22:4135
radiation effects on electric conductivity of thin films of, gas desorption study of electron, 22:45797
radiation effects on electric conductivity of, neutron, (E), 22:29555
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
separation from acid solutions by sorption on Wofatit--SBW, 22:16661
separation from actinides, 22:37809(P)
separation from actinides, methods for, 22:25455 (CEA-N-616, pp 295-368)

  separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
  separation from arsenic, bismuth, and cadmium in hydrochloric acid solution, ion exchange, 22:40192
  separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
  separation from gaseous effluents using fluidized bed, method for, 22:25454 (CEA-N-616, pp 246-94)
  separation from germanium or selenium in hydrochloric acid solution, ion exchange, 22:40192
  separation from irradiated fuels by fluidized-bed volatility process, 22:8181
  separation from mixture of metals by ring-oven method, 22:18880
  separation from neutron-irradiated uranium dioxide by volatilization, 22:25476
  separation from polonium in nitric acid solutions by paper chromatography, 22:30677
  separation from products of cerium spallation, 22:42829
  separation from selenium by sorption on Wofatit--SBW, 22:16661
  separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
  separation from tin by vaporization, 22:14573
  separation from titanium by paper chromatography, 22:25257
  separation from tungsten by paper chromatography, 22:25257
  solvent distribution between di-n-butyl thiophosphate in carbon tetrachloride and hydrochloride acid solutions, 22:1969
  sorption by manganese dioxide from nitric acid, 22:157
  structure from Moessbauer effect, 22:1349
  toxicity to rats following inhalation or oral administration, 22:6720(T) (TT-1283)
  use in production of iodine-131, 22:23399 (IA-1128, pp 213-19)
  use of neutron-irradiated, in production of iodine isotopes by temperature-gradient chromatography, 22:8158(P)

TELLURIUM, DIIODODIMETHYL-
  tellurium-127 and -129 isomer separation in, 22:33485 (IAN-Q-7)

TELLURIUM FLUORIDES
  binding energies of, 22:52257 (ANL-7425, pp 94-129)
  binding energies of, molecular orbital calculations of, 22:36543 (ANL-7450, pp 39-74)
  determination of volatile radioactive, method for, 22:25454 (CEA-N-616, pp 246-94)
  separation from fluoride volatility process streams, 22:7788(R) (ANL-7382)
  separation from gaseous systems by sorption on solids, 22:47219
  sorption by activated alumina, 22:25443 (ANL-7375, pp 46-94)
  sorption on charcoal or activated alumina, 22:51045 (ANL-7425, pp 42-93)

TELLURIUM IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  radii in alkaline earth chalcogenide ionic crystals, 22:52287

TELLURIUM ISOTOPES
  alpha reactions (α,2n) and (α,3n) with, γ angular distributions and spectra for, (E), 22:27160
  argon-40 reactions (Ar-40,xn) with, cross sections and γ spectra for, (E), 22:27163
  determination of fallout, in water by sequential separation and β counting, 22:12248
  diffusion of fission product, from uranium dioxide fuel elements, 22:2709 (RT/FIMA-(67)2)
  energy levels from xenon isotope (n,α) reactions, (E), 22:3713
  energy levels of, calculations using extended random phase approximation for rotational, (T), 22:48577 (JAERI-1158, pp 84-9)
  excitation of even, oxygen-16 ions in ferromagnetic media, (E), 22:29241
  nucleon pairing energies for, (E), 22:11983
  production of radioactive, by irradiation of actinides, 22:37809(P)

TELLURIUM ISOTOPES Te-107
  alpha and delayed proton spectra of, (E), 22:30026

TELLURIUM ISOTOPES Te-108
  decay scheme and alpha and delayed proton spectra of, (E), 22:30026

TELLURIUM ISOTOPES Te-110
  delayed proton spectrum of, (E), 22:30026

TELLURIUM ISOTOPES Te-111
  beta decay of isomeric, following palladium-102 (C-12,3n) reactions, β^+-p coincidence spectra from delayed proton emission in, (E), 22:1651 (JINR-P6-3494)
  proton decay following carbon-12 reactions with palladium-102, delayed, (E), 22:14021
  proton decay following carbon-12 reactions with palladium-102, (E), 22:14059

TELLURIUM ISOTOPES Te-114
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160

TELLURIUM ISOTOPES Te-116
  beta and electron-capture decay of, γ spectra from, (E), 22:50638
  energy levels from iodine-116 decay, (E), 22:53169(R) (PPAD-647-D)

TELLURIUM ISOTOPES Te-117
  beta and electron-capture decay of, antimony-117 energy levels from, (E), 22:3729
  beta decay of, gamma spectra for, (E), 22:46811

TELLURIUM ISOTOPES Te-118
  beta decay of normal and isomeric, effect of annihilation radiation on γ-γ angular correlations in, (E), 22:20601
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy levels from iodine-118 decay, (E), 22:53169(R) (PPAD-647-D)
  energy-level spins and transitions from iodine-118 decay, (E), 22:7711

TELLURIUM ISOTOPES Te-119
  beta and electron-capture decay, 22:18260
  beta and electron-capture decay of, angular correlations of gamma cascades in, (E), 22:3730
  beta and electron-capture decay scheme of isomeric, branching ratios and log-ft values for, (E), 22:35327
  electron-capture decay scheme of isomeric, conversion-electron and γ spectra for, (E), 22:20652
  energy levels from iodine-119 decay, (E), 22:32595
  energy levels from iodine-119 decay, (E), 22:53169(R) (PPAD-647-D)
  recoil properties of isomeric, from proton fission of bismuth and uranium, (E), 22:12338(R) (COO-1167-3)

TELLURIUM ISOTOPES Te-120
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy levels from iodine-120 decay, (E), 22:53169(R) (PPAD-647-D)
  energy-level spins and transitions from iodine-120 decay, (E), 22:7711
  neutron reactions (n,2n) at 14.8 MeV, isomeric cross-section ratio for, (E), 22:42058
  nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803

TELLURIUM ISOTOPES Te-121
  beta decay of, gamma spectra and conversion electron spectra from, (E), 22:14831
  electron-capture decay of isomeric, γ spectra from, (E), 22:32641
  energy levels from iodine-121 decay, (E), 22:32658
  energy levels from iodine-121 decay, (E), 22:53169(R) (PPAD-647-D)
  yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

TELLURIUM ISOTOPES Te-122
  argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy levels from beta decay of antimony-122, spin--parity assignments for, (E), 22:48548
  energy levels from iodine-122 decay, (E), 22:53169(R) (PPAD-647-D)
  energy levels of, calculations using shell model with modified delta-function effective residual interaction, (T), 22:18239
  energy levels of, magnetic moment of first 2^+ collective, (E), 22:13994 (JINR-P4-3611)
  energy-level spins and transition from decay of antimony-122 and iodine-122, (E), 22:7711
  energy-level transitions in, E2/M1 mixing ratios of $2^+ \to 2^+$, (E), 22:1702
  gamma angular correlations in iron, hyperfine interaction studies using perturbed, (E), 22:9107
  neutron reactions (n,2n) at 14.8 MeV, isomeric cross-section ratio for, (E), 22:42058
  neutron reactions (n,α) at 14 MeV, α spectra from, (E), 22:3692 (INR-814/I/PL)
  neutron reactions (n,α) at 14.2 MeV, energy spectra of alpha particles from, (E), 22:20619
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  neutron-capture cross section at stellar temperatures, (T), 22:4976
  nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
  nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803

TELLURIUM ISOTOPES Te-123
  energy level at 159 keV, lifetime and E2 transition probability for, (E), 22:14038
  energy levels from electron-capture decay of 13-h iodine-

123, (E), 22:29983 (MIT-905-108, pp 1-32)
- energy levels from iodine-123 decay, (E), 22:53169(R) (PPAD-647-D)
- energy levels from iodine-123 decay, spin--parity assignments for, (E), 22:44686
- energy-level transition probabilities for, l-forbidden M1, (T), 22:39708
- neutron capture by, γ spectra for, (E), 22:20578 (WASH-1079)
- neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
- neutron-capture cross section at stellar temperatures, (T), 22:4976
- nuclear magnetic moment of ground state of, (T), 22:39708
- nuclear magnetic resonance spectra in copper chromium tellurides, (E), 22:26502
- proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)
- use of isomeric, as long-lived assay standard in production of iodine-123, 22:23045

TELLURIUM ISOTOPES Te-124
- argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
- energy level at 603 keV, g-factor measurement using sum-coincidence technique, (E), 22:9848 (INP-569/PL)
- energy level at 603 keV, g-factor measurement using perturbed γ-γ angular correlations in internal magnetic fields, (E), 22:46779
- energy level at 603 keV, lifetime measurement using γ resonance fluorescence, (E), 22:7661(R) (NYO-3525-26)
- energy level at 603 keV, lifetime of, (E), 22:42025
- energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
- energy levels from antimony-124 decay, spin-parity assignments for, (E), 22:27102
- energy levels from beta decay of 1.5-min antimony-124, (E), 22:29983 (MIT-905-108, pp 1-32)
- energy levels from tellurium-123 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
- energy levels of, magnetic moment of first 2^+ collective, (E), 22:13994 (JINR-P4-3611)
- energy levels of, sum-coincidence measurement of g-factor of 603-keV, 22:10580
- energy levels of, testing nuclear models by, (E/T), 22:30063
- energy-level spins and transitions from antimony-124 decay, (E), 22:7711
- energy-level transitions from antimony-124 decay, (E), 22:35334
- energy-level transitions from tellurium-123 neutron capture, (E), 22:20578 (WASH-1079)
- neutron binding energy from tellurium-123 neutron capture, (E), 22:20578 (WASH-1079)
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- neutron-capture cross section at stellar temperatures, (T), 22:4976
- nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
- nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
- nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803

TELLURIUM ISOTOPES Te-125
- energy level at 321 keV, half-life and M1 and E2 transition probabilities of, (E), 22:32600
- energy level at 322.2 keV from antimony-125 decay, three-quasiparticle, (E), 22:44730
- energy levels from antimony-125 decay, spin-parity assignments for, (E), 22:44730
- energy levels from antimony-125 decay, spins and multipole mixing ratios for, (E), 22:30016
- energy levels of, half-life of first excited, (E), 22:16033
- energy-level transitions from antimony-125 beta decay, conversion coefficients and multipolarities of, (E), 22:14006
- energy-level transitions in, conversion coefficients and multipolarities of, (E/T), 22:27174
- hyperfine magnetic field at 1.4°K, (E), 22:26502
- hyperfine structure of, (E), 22:26206
- Moessbauer effect in compounds of, 22:1349
- Moessbauer effect in copper chromium tellurides, magnetic hyperfine structure from, 22:9455
- Moessbauer effect in SnTe, Debye temperature determination from, (E), 22:41671
- Moessbauer effect in tellurium compounds, radiation effects and magnetic hyperfine interactions from, 22:31960
- Moessbauer spectra of metastable isomer of, in tellurium compounds, 22:52895
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- neutron-capture cross section at stellar temperatures, (T), 22:4976
- nuclear magnetic moment of first excited state, (E), 22:26206
- nuclear magnetic resonance spectra in copper chromium tellurides, (E), 22:26502
- preparation of 58-day isomeric, 22:27742 (BNL-12405)
- proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)
- separation from antimony-125 and tin-124 and -125 by electroplating, 22:37776 (BNL-50082, pp 79-92)
- separation of isomeric, from neutron-irradiated tin by vaporization, 22:14573
- use of isomeric, in biology and medicine, 22:27742 (BNL-12405)

TELLURIUM ISOTOPES Te-126
- argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
- deuteron reactions (d,He-3) at 34 MeV, angular distributions for, (E), 22:44689
- deuteron reactions (d,He-3) at 34 MeV, helium-3 spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels from iodine-127 (d,He-3) reactions, spin--parity assignments for, (E), 22:50584
- energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
- energy-level spins and transitions from iodine-126 decay, (E), 22:7711
- helium-3 reactions (He-3,d) at 25 MeV, angular distributions for, (E), 22:30010
- helium-3 reactions (He-3,d) at 25 MeV, deuteron spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- neutron reactions (n,p) and (n,α) at 14.8 MeV, isomeric cross-section ratios for, (E), 22:42058
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- neutron-capture cross section at stellar temperatures, (T), 22:4976
- nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
- nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
- nuclear hyperfine interaction in iron, measurements using Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
- proton configuration in ground state of, (E), 22:35292 (ORNL-4217, pp 1-81)
- proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196

TELLURIUM ISOTOPES Te-127
- distribution in adult, fetal, and neonatal tissues of rats, 22:49209
- metabolism in tissues of rats, 22:6720(T) (TT-1283)
- production by cosmic ray reactions with potassium iodide, 22:40107
- separation of cosmic-ray-produced, from potassium iodide, 22:40107
- separation of isomers of, carrier-free, 22:25475
- separation of isomers of, in diiododimethyltellurium and dimethyltellurium picrate, 22:33485 (IAN-Q-7)

TELLURIUM ISOTOPES Te-128
- argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
- beta decay induced by superweak interactions, search for neutrinoless double, 22:26623
- carbon-12 reactions (C-12,3n) at 50 MeV, isomeric cross-section ratio for cerium-137 production in, (E), 22:50609
- carbon-12 reactions (C-12,3n) with, cross-section ratio for formation of cerium-137 isomers by, (E), 22:50609
- deuteron reactions (d,He-3) at 34 MeV, angular distributions for, (E), 22:44689
- deuteron reactions (d,He-3) at 34 MeV, helium-3 spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- deuteron reactions (d,p) at 13 MeV, angular distributions for, (E), 22:35285(R) (AERE-PR/NP-13)
- deuteron reactions (d,p) at 7.5 MeV, energy levels of tellurium-129 from, (E), 22:3732
- energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
- energy-level transitions in, interpretation of, (T), 22:48516 (JAERI-1158, pp 31-8)
- helium-3 reactions (He-3,d) at 25 MeV, angular distributions for, (E), 22:30010
- helium-3 reactions (He-3,d) at 25 MeV, deuteron spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- neutron capture with isomeric excitation, activation cross sections and resonance integrals for thermal, (E), 22:32585
- neutron reactions (n,2n) at 14.8 MeV, isomeric cross-section ratio for, (E), 22:42058
- neutron reactions (n,p) and (n,α) at 14.8 MeV, isomeric cross-section ratios for, (E), 22:42058
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- neutron-capture cross section at stellar temperatures, (T), 22:4976
- nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
- nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
- nuclear hyperfine interaction in iron, measurements using

Coulomb excitation with recoil implantation and perturbed γ-γ angular correlation technique, (E), 22:46803
  proton configuration in ground state of, (E), 22:35292 (ORNL-4217, pp 1-81)
  proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
TELLURIUM ISOTOPES Te-129
  beta decay of isomers of, angular correlation studies of gamma rays from, (E), 22:29983 (MIT-905-108, pp 1-32)
  beta decay of, Moessbauer experiment on parity nonconservation in, (E), 22:46795
  decay of isomer of, 22:37776 (BNL-50082, pp 79-92)
  diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
  energy levels from tellurium-128 (d,p) reactions at 7.5 MeV, (E), 22:3732
  Moessbauer effect in compounds of, 22:1349
  separation of isomers of, carrier-free, 22:25475
  separation of isomers of, in diiododimethyltellurium and dimethyltellurium picrate, 22:33485 (IAN-Q-7)
  yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
TELLURIUM ISOTOPES Te-130
  argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
  beta decay of, half life for double, (E), 22:32655
  deuteron inelastic scattering at 7.5 MeV, angular distribution for, (E), 22:35310
  deuteron reactions (d,He-3) at 34 MeV, angular distributions and Q-value for, (E), 22:44689
  deuteron reactions (d,He-3) at 34 MeV, helium-3 spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
  deuteron reactions (d,n), (d,p), and (d,2n) at 6.5 to 14.1 MeV, cross sections for, (E), 22:7701 (OULNS-67-10)
  deuteron reactions (d,p), (d,n), and (d,2n) up to 14.1 MeV, excitation functions for, (E), 22:15996
  energy level at 839 keV from deuteron inelastic scattering, quadrupole deformation parameter and E2 transition probability for vibrational, (E), 22:35310
  energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
  energy-level transitions from γ inelastic scattering, (E), 22:27079
  half-life for double β decay of, 22:18721
  helium-3 reactions (He-3,d) at 25 MeV, angular distributions for, (E), 22:30010
  helium-3 reactions (He-3,d) at 25 MeV, deuteron spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
  neutron capture at 24 keV, isomeric cross-section ratio for, (T), 22:32537
  neutron capture at 24 keV, isomeric cross-section ratios and spin-cutoff parameter for, (E/T), 22:48498
  neutron reactions (n,2n) at 14 MeV, γ spectra from, (E), 22:39671
  neutron reactions (n,2n) at 14.8 MeV, isomeric cross-section ratio for, (E), 22:42058
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  neutron-capture cross section at stellar temperatures, (T), 22:4976
  nuclear electric quadrupole moment of, calculations with anharmonic corrections to method of approximate second quantization, (T), 22:35411
  proton configuration in ground state of, (E), 22:35292 (ORNL-4217, pp 1-81)
  proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
  proton reactions (p,γ) with, cross section for, (T), 22:42132
TELLURIUM ISOTOPES Te-131
  beta decay in hydrocarbon solutions of organotellurides, chemical effects of, 22:37822
  beta decay of 1.2-d isomer of, iodine-131 energy levels from, (E), 22:29983 (MIT-905-108, pp 1-32)
  beta decay of isomers of, angular correlation studies of gamma rays from, (E), 22:29983 (MIT-905-108, pp 1-32)
  beta decay of, conversion-electron spectrum following, (E), 22:3731
  beta decay of, gamma spectrum from, (E), 22:18200
  nuclear level density parameter for, calculation from isomeric cross-section ratio for neutron capture, (T), 22:32537
  recoil properties of isomeric, from proton fission of bismuth and uranium, (E), 22:12338(R) (COO-1167-3)
TELLURIUM ISOTOPES Te-132
  content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
  decay of, effects on iodine oxidation, 22:15141 (BNL-50057, pp 79-100)
  distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
  fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
  fission product monitoring using γ spectrometers in CANDU-type reactor coolant channels, 22:9984 (AECL-2786)
  measurement in PRTR plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
  production using generators, standards for safety of personnel during, 22:40720
  shipments by BNL during 1965 and 1966, 22:37776 (BNL-50082, pp 79-92)
  spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
  translocation in man following ingestion, determination of, by analog computer model, 22:23502 (BNWL-SA-683)
  yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
TELLURIUM ISOTOPES Te-133
  beta decay of isomeric, γ spectra and log-ft values for, (E), 22:44731
  beta decay scheme of isomeric, γ spectra for, (E), 22:20592
  containment of rocket reactor exhaust, performance of water scrubbing system for, 22:35567 (LA-DC-9555)
TELLURIUM ISOTOPES Te-134
  neutron emission following antimony-134 beta decay, delayed, (E), 22:5852
  yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
TELLURIUM ISOTOPES Te-135
  gamma spectra, (T), 22:7706
TELLURIUM ISOTOPES Te-136
  neutron emission probability for, (E/T), 22:29994
TELLURIUM ISOTOPES Te-137
  neutron emission probability for, (E/T), 22:29994
TELLURIUM NITRATES
  structure from Moessbauer effect, 22:1349
TELLURIUM ORES
  analysis for stable rare gas isotopes and various other elements, 22:18721
TELLURIUM OXIDES
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  sorption by clay loam and calcium ferrite at 900 to 1500°C, 22:38617 (AD-663267)
  structure from Moessbauer effect, 22:1349
  sublimation of TeO_2, (T), 22:49818 (ORNL-4300)
  tellurium-125m Moessbauer spectra in β-TeO_3 and TeO_2, 22:52895
  thermodynamic characteristics of TeO_2, (T), 22:49818 (ORNL-4300)
  toxicity to rats following inhalation or oral administration, 22:6720(T) (TT-1283)
  transport of TeO_2, (T), 22:49818 (ORNL-4300)
  vapor pressure of TeO_2, (T), 22:49818 (ORNL-4300)
  volatility of, effects of water vapor on, 22:25333 (ORNL-4229, pp 162-79)
TELLURIUM PICRATE, DIMETHYL-
  tellurium-127 and -129 isomer separation in, 22:33485 (IAN-Q-7)
TELLURIUM SYSTEMS
  As--Ge--S--Se--Te, use of liquid, for resistance thermometry in reactors, 22:28260
  Bi--Sb--Te, radiation effects on electric conductivity of semiconductors of, neutron, 22:20086
  Bi--Se--Te, radiation effects on electric conductivity of semiconductors of, neutron, 22:20086
  Bi--Te, densities, phase equilibria, and specific volumes of liquid, 22:10948 (NYO-2731-4)
  Ce--Te, phase studies on compounds in, 22:4100
  GeTe--PbTe, development of, for thermoelectric power generation, (E), 22:24091(R) (NYO-3886-1)
  In--Te, phase diagrams and thermodynamic properties of, 22:4803
  Li--Te, electromotive force in fused-salt cell at 400 to 570°C, 22:52556 (ANL-7425, pp 172-89)
  Mo-base--Te, crystal lattice constants and thermal expansion coefficients at 1100°C, 22:41073
  Nd--Te, analysis for neodymium and tellurium, 22:12244
  PbSe--PbTe, development of, for thermoelectric power generation, (E), 22:24091(R) (NYO-3886-1)
  Se--Te, positron annihilation in, angular distribution of photons from, (E), 22:11508
  Se--Te, tin-119 Moessbauer effect in semiconducting solid solutions of, isomer shift in, (E), 22:26506
  SnTe, Te-125 Moessbauer effect determination of Debye temperature in, (E), 22:41671
  Te--Tl, electric conductivity in γ phase in superconducting, (E/T), 22:36872
  Te--Tl, Hall measurements and thermoelectric properties, 22:10142(R) (RLO-1922-7)
  Te--U, phase diagrams, 22:8842
  Te--U, phase studies of, 22:33299
TEMPERATURE
    see also Temperature Control
    see also Thermometry
    see also Transformation Temperatures
  adaptation in Paramecium caudatum, effects of, on x-radiosensitivity of DNA synthesis in macronucleus, 22:21608
  adaptation in rainbow trout, effects of, on acid phosphatase content of liver, 22:10740 (BNWL-480, pp 153-93)
  adaptation in rainbow trout, effects of, on metabolism of

acetate and palmitate, 22:10740 (BNWL-480, pp 153-93)
calculation for dual-layered plates subjected to nuclear explosion thermal pulses, computer technique for, 22:2259(R) (AD-646858)
calculation for surface of heat-producing spheres, iterative perturbation method for, 22:49018
calculation of earth's upper mantle, effect of radioactive meteorites on, (T), 22:47236
calculation of radioactive waste steady-state, code for, 22:19032 (BNWL-616)
calculation of reentry, of low heat capacity structures, 22:2299 (SC-RR-67-232)
calculation of steady-state, in pressurized water loop, LUPO computer program for, 22:10482 (EUR-3643)
changes in Columbia River, effects of dams, reservoirs, and increased water usage on, 22:2190 (BNWL-SA-1457)
control in low-temperature condensation trap, use of resistance thermometer for, 22:2277 (UCRL-50318)
control system for irradiation facilities with loops containing liquified gases carrying specimens, 22:44908(P)
determination of tube wall, in heat exchangers, 22:233 (NP-17095)
distribution calculations for reactor fuel elements, FRG-code for, 22:35673 (RT/ING-(67)11)
distribution in Atlantic Ocean water along continental slope of U.S, 22:25616 (NYO-3109-32)
distribution in cylindrical fuel element cladding, differential equations for solving, 22:1890
distribution in multidimensional systems, computer program for calculating transient and steady state, 22:37930 (UCRL-14754(Rev.1))
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14594 (RLO-1725-85)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14596 (RLO-1725-87)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14595 (RLO-1725-86)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14598 (RLO-1725-92)
distribution in northeast Pacific Ocean from Columbia River effluent, 22:14597 (RLO-1725-91)
distribution in seawater due to heat rejection from marine nuclear power plants, 22:18995 (NYO-3109-26)
distribution of, computer program for solving transient and steady-state, 22:42961 (KAPL-M-6532(Add.))
effect of environmental, on deformation behavior of structural concrete, (E), 22:18679(T) (ORNL-tr-1792)
effect of fluid, on startup behavior of heat pipes, (T), 22:23208 (LA-DC-9026)
effect of ocean, on atmospheric carbon-14 distribution, analytic model for describing, 22:6495
effect on foam pressure during foaming of polyurethane resin, 22:3979 (R-67-ND-8)
effect on friction and wear properties of bearing materials in liquid potassium and high vacuum, 22:8826
effect on friction characteristics of graphite and graphite--metal combinations, (E), 22:8751
effect on heat transfer through carbon felts, (E/T), 22:2295 (KFK-638)
effect on lubricating properties of irradiated and unirradiated halide-combined graphites, (E), 22:8827
effect on radon loss from radioactive minerals, 22:6438
effect on wear in self-lubricating bearing cage materials, 22:8268
effects at 4 to 813°K, on plastic deformation of zirconium, (E), 22:21697(R) (ORO-3262-5)
effects at 77 to 1133°K, on plastic deformation of titanium, (E), 22:21697(R) (ORO-3262-5)
effects at 77 to 900°K, on plastic deformation of Zircaloy-2, (E), 22:21697(R) (ORO-3262-5)
effects of 400 to 1600°C, on phase transformations in uranium tetrafluoride, 22:15269
effects of air and water, on atmospheric diffusion and transport at coastal sites, 22:40230 (AECL-2787, pp 229-40)
effects of atmospheric, on behavior of smoke stack plumes, (E), 22:47240 (NYO-3685-14)
effects of atmospheric, on stream flow through reservoirs, (E), 22:18940
effects of cryogenic, on electric conductivity of pure tungsten, (E/T), 22:34567
effects of heat pipe fluid, on heat transfer rates, 22:23209 (LA-DC-9027)
effects of high, on materials, components, and assemblies, design of laboratory equipment to study, 22:14655
effects of liquid sodium, on corrosion of austenitic steels, 22:23768
effects of tempering, on properties of uranium alloys, 22:2618
effects on ability of grasshopper embryos to hatch, 22:49178(R) (ORO-3546-6)
effects on activity of bacteriophages, low, 22:30412 (ORNL-4100, pp 141-5)
effects on atmospheric turbulence over land, 22:40240 (AECL-2787, pp 399-405)
effects on α- and x-radiosensitivity of Escherichia coli, 22:25874
effects on behavior of partially confined nonmetallic fluids in rapidly heated tubes, (E), 22:8293 (ANL-7337)
effects on β- and γ-radiosensitivity of dehydrated potatoes, 22:12950(P)
effects on β-radiosensitivity of survival of mammalian cells following uptake of tritium-labeled thymidine or uridine, 22:45382 (EUR-3290f-e, pp 73-7)
effects on calcium and strontium uptake by Daphnia, 22:45420
effects on calcium-45 clearance from auricles of heart in guinea pigs, 22:10696
effects on cesium-134 metabolism in isopods, 22:6759
effects on cesium-137 metabolism in oriental cockroach, low, 22:28327
effects on cesium-137 retention by rats, 22:10675 (BNWL-480, pp 21-54)
effects on chromosomes in oocytes of Drosophila, 22:28401 (ORNL-4100, pp 54-61)
effects on chromosomes in x-irradiated Drosophila, aberrant, 22:31029
effects on cobalt-60 γ-radiosensitivity of Salmonella contamination of fishmeal feeds, 22:28726
effects on conformation of DNA, 22:14905 (BNL-50057, pp 111-22)
effects on content of chloroplast pigments in barley seedlings, 22:25801(R) (COO-332-2)
effects on content of sugars in irradiated peaches, storage, 22:49662(R) (ORO-3097-17)
effects on content of type E botulinum toxin in irradiated cod, storage, 22:49660(R) (COO-1183-26)
effects on crystallization of titanium--aluminum--tin alloys, 22:21711
effects on crystallization of titanium--aluminum--chromium--vanadium alloys, 22:21711
effects on crystallization of Types I and II titanium, 22:21711
effects on crystallization of Zircaloy-2, 22:21711
effects on deep drawing properties of molybdenum sheet, 22:43559
effects on deformation of salt structures in radioactive waste disposal sites, (E), 22:16792 (ORNL-TM-2102)
effects on deuteron-radiosensitivity of mice, 22:12919
effects on development of x-irradiated fish, 22:40832(R) (RLO-2049-1)
effects on dominant lethality in x-irradiated Drosophila virilis, 22:47526
effects on effectiveness of radiation processing of cod, 22:6930(R) (COO-1183-24)
effects on electron- and γ-radiosensitivity of activity of peroxidase in horseradish and turnip, 22:30973
effects on electron-sensitivity of thiols in cellular organelles from liver of rats, 22:19247
effects on energy storage in algae, 22:28285 (ORNL-4100, pp 135-40)
effects on enzymes, effects of photodynamic inactivation on, 22:14907 (COO-875-80)
effects on ESR spectra of free radicals in x-irradiated valine, 22:45462
effects on explants of gastric mucosa, protective effects of skin covering against, 22:528
effects on extent of skin injury in irradiated citrus fruits, storage, 22:49662(R) (ORO-3097-17)
effects on fallout deposition on mountainous area of Colorado, 22:40269
effects on fluorescence of uv-irradiated carotenes and carotenoids, 22:43205(R) (COO-894-30)
effects on fluorescence quenching from indole exciplexes, kinetics of, 22:43205(R) (COO-894-30)
effects on formation of thymine photoproducts in uv-irradiated Escherichia coli DNA, 22:51447
effects on free radical formation following radiolysis of amino acids and peptides, 22:28364
effects on germination and metabolism of x-irradiated potato tubers, 22:49188
effects on germination of Salsola kali seeds, 22:40957
effects on growth and toxin production by Clostridium botulinum type F, 22:33986(R) (ORO-3347-5)
effects on growth of roots of dormant woody plants, 22:33812(R) (NYO-2598-36)
effects on γ radiation processing of potatoes, 22:34000
effects on γ- and fast neutron-radiosensitivity of mutations for chlorophyll in barley, 22:19321
effects on γ- and proton-radiosensitivity of RNAase, 22:45424
effects on γ- and x-radioinduced luminescence in solutions of polymers and proteins, 22:28302
effects on γ- and x-radiosensitivity of survival of tadpoles, 22:28663
effects on γ- and x-radiosensitivity of survival of fish, 22:15070
effects on γ-irradiated RNA from Euglena, 22:33771
effects on γ-irradiated spores of Bacillus subtilis, effects of chlorocresol on, 22:43488
effects on γ-radioinduced formation of free radicals in corn starch, 22:45466
effects on γ-radioinduced production of gases in packaged foods, 22:601
effects on γ-radioinduced replication of DNA in E. coli mutant, 22:23455
effects on γ-radioprotective effects of chlorpromazine in mice, 22:8575
effects on γ-radiosensitivity of amino acids, EPR study of, 22:28365

effects on γ-radiosensitivity of Arabidopsis thaliana, 22:52030
effects on γ-radiosensitivity of beef steaks, effects of dose on, 22:8674
effects on γ-radiosensitivity of conidia of Botrytis cinerea in strawberry fruits, 22:4715(R) (UCD-34-P-73-20)
effects on γ-radiosensitivity of DNA from salmon sperm, 22:2525
effects on γ-radiosensitivity of Escherichia coli, 22:21569
effects on γ-radiosensitivity of fungi and yeast in fruit juices, sterilizing, 22:40978(R) (NP-17182)
effects on γ-radiosensitivity of fungi in foods, 22:23695(R) (UCD-34-P-80-5)
effects on γ-radiosensitivity of glycolysis in erythrocytes, 22:8489
effects on γ-radiosensitivity of growth and reporduction of mice, 22:19300(R) (ORO-2975-5)
effects on γ-radiosensitivity of growth of bacteria in crab and fish, 22:15125(R) (RLO-1730-2)
effects on γ-radiosensitivity of locust eggs, 22:31243
effects on γ-radiosensitivity of market disease fungus of stone fruits, 22:4715(R) (UCD-34-P-73-20)
effects on γ-radiosensitivity of mice, 22:52015
effects on γ-radiosensitivity of RNAase, 22:45423
effects on γ-radiosensitivity of soil microorganisms, 22:45730
effects on γ-radiosensitivity of spore germination in Rhizopus stolonifer, 22:4715(R) (UCD-34-P-73-20)
effects on γ-radiosensitivity of Staphylococcus aureus, 22:15125(R) (RLO-1730-2)
effects on γ-radiosensitivity of storage-life and wholesomeness of potatoes, 22:21641 (RISO-163)
effects on γ-radiosensitivity of strawberries, 22:8667
effects on γ-radiosensitivity of toxin production in fish, 22:17062(R) (MIT-3343-28)
effects on γ-radiosensitivity of yeast cells, 22:10888
effects on hatching of embryos of fairy shrimp, 22:10740 (BNWL-480, pp 153-93)
effects on hepatic phagocytosis of colloidal gold-198 and iodine-131-labeled serum albumin and triolein in vitro, 22:10693
effects on human kidney cells and rat thymocytes, use of chromium-51 binding for assessing, 22:51995
effects on incidence of polyhedrosis in silkworms, 22:36423
effects on incubation period of γ-irradiated fungi in stored melons, 22:43482
effects on interactions of adenine oligonucleotides with polyuridylic acid, 22:30413 (ORNL-4100, pp 146-7)
effects on intermediate products of glycolysis in yeasts, 22:4711
effects on iodide process for refining thorium, 22:23733
effects on irradiated canned shrimp, storage, 22:49663(R) (ORO-3698-2)
effects on irradiated grapefruit and oranges, 22:23694 (IA-1128, pp 168-84)
effects on laser radiosensitivity of biological materials, 22:43409
effects on laser-induced coagulation of retina of eye, 22:40940
effects on leaching of carbohydrates from plants, 22:33812(R) (NYO-2598-36)
effects on light-scattering properties of substances with mesomorphic states, 22:30937 (UCRL-17751, pp 1-26)
effects on locomotion of trout, seasonal variation in, 22:2556
effects on loss of sulfhydryl groups from membranes of x-irradiated erythrocytes, 22:23451
effects on lubricating properties of irradiated and unirradiated polyphenyl ether in high-speed bearings, 22:8849
effects on maize seeds treated with EMS, 22:7935 (BNL-11716)
effects on metabolism of sulfur-35-labeled thiols by cultured mammalian cells, 22:40771
effects on metals, ASTM standards for determination of, 22:40332
effects on microwave-radiosensitivity of Bacillus subtilis and Escherichia coli, 22:8662
effects on microwave-radiosensitivity of mammals, environmental, 22:554(R) (UR-49-810)
effects on mineral content of calcarcous skeletons, 22:30421
effects on mortality of x-irradiated mice, 22:28621 (ANL-7278, pp 1-94)
effects on mutagenic action of γ rays on pea seeds, 22:28443
effects on nitrogen mustard- and x-ray sensitivity of cultured Chinese hamster cells, 22:49631
effects on organoleptic properties of γ-irradiated strawberries, storage, 22:36426
effects on oxygen diffusion in yttrium oxide and rare earth oxides, 22:2560(R) (IS-RD-11)
effects on pepsin and trypsin susceptibility of heat-coagulated egg white proteins, high, 22:28306
effects on performance of food irradiation facility, 22:8676
effects on phage reproduction in lysogenic Escherichia coli, effects of, on activity of RNA methyltransferases, 22:38214
effects on phosphorus-32 incorporation into nucleotides of pea leaves, 22:43258
effects on photodynamic inactivation of enzymes, 22:25795
effects on photoreactivation of uv-irradiated Escherichi coli, 22:28288 (ORNL-4100, pp 166-77)
effects on photoreactivation of uv-irradiated spores of Bacillus stearothermophilus, 22:47643
effects on pigment dispersal in fish scale melanocytes treated with D_2O, 22:19273
effects on pitting corrosion of stainless steels, 22:31332
effects on plutonium nitrate sorption by tissues of swine, 22:10677 (BNWL-480, pp 99-106)
effects on properties of hot pressed steatite bodies, (E), 22:34098 (JEN-190-DMe/1-18)
effects on properties of nucleosides, 22:12202 (UCRL-17966)
effects on proton-radioinduced radical formation in lysozyme and RNAase, 22:12820
effects on quadrupole splitting of tris dithiocarbamate iron compounds, 22:25717(R) (NYO-3859-1)
effects on radial exchange of water in roots of corn, tritium tracer study of, 22:40597
effects on radiation processing of fruit, 22:8681
effects on radioinduced chemical changes in meat fats, 22:47491
effects on radioinduced formation of radicals in aqueous solutions of DNA, 22:47480
effects on radioinduced lethal mutations in Drosophila melanogaster, 22:31032
effects on radioinduced stacking faults in thin films of copper, 22:23851
effects on radioisotope sorption by blue-green algae of Savannah River, 22:38191 (DP-MS-66-88)
effects on radioisotope uptake by Chinook salmon, 22:10740 (BNWL-480, pp 153-93)
effects on radiopreservation of fish, 22:2559
effects on radioprotective effectiveness of MEA and sodium thioglycolate on ascites carcinoma cells, 22:28617
effects on radioprotective extract of calf spleen, 22:33873
effects on radiosensitivity of antigenicity of Ehrlich ascites tumor cells, 22:33750
effects on radiosensitivity of cells and man, review of, 22:12786
effects on radiosensitivity of Clostridium botulinum growing on fish, 22:4714(R) (COO-1183-23)
effects on radiosensitivity of lysozyme, 22:30930(R) (COO-690-29)
effects on radiosensitivity of mammals in relation to carbohydrate metabolism and fat consumption, 22:38409
effects on radiosensitivity of organisms, 22:25861(T) (JPRS-39391)
effects on radiosensitivity of pepsin, EPR study of, 22:28367
effects on radiosensitivity of physiology and survival of albino rats, 22:10883
effects on radiosensitivity of seeds, 22:17004 (RLO-353-15)
effects on radiosensitivity of space flight personnel, 22:6922
effects on radiosensitivity of storage life, taste, and wholesomeness of seafoods, post-irradiation, 22:17064
effects on radiosensitivity of trypsin, effects of LET on, 22:12819
effects on rate of destruction of free radicals in DNA, 22:28292
effects on rate of oxidation in sample during dry ashing, 22:43301 (AERE-R-5474)
effects on rate of secretion of thyroid hormones in mammals, 22:21404 (COO-301-150)
effects on reactions of hydrated electrons with proteins, 22:30996
effects on recombination of unpaired electrons in γ- and uv-irradiated polypeptides and proteins, 22:49176(T) (JPRS-43645, pp 95-7)
effects on recovery of γ-irradiated Saccharomyces vini, 22:52032
effects on rejoining of fast neutron- and x-radioinduced chromosome breaks in barley, 22:14984
effects on repair of radioinduced sublethal damage in Chinese hamster cells, 22:25785
effects on repair of uv-irradiated DNA, 22:19309(R) (SU-326-P-7-194)
effects on repressors of bacteriophage, 22:28288 (ORNL-4100, pp 166-77)
effects on respiration of γ-irradiated spores of Bacillu cereus, 22:49235
effects on respiration of Streptococcus lactis, 22:4056
effects on respiration rate in cotton rats, 22:14914 (ORNL-TM-2069)
effects on ribosomes from rat liver, 22:7953(R) (NYO-910-61)
effects on rubidium-86 uptake by corn root segments, 22:33775
effects on self-diffusion of carbon and uranium in uranium carbide, 22:47701 (AI-AEC-12726)
effects on separation of trace amounts of alkali metals or rare earths, by ion exchange chromatography, 22:14

effects on spores of Bacillus cereus, effects of β-2-thienylalamine on, 22:10896
effects on sprouting of irradiated potatoes, 22:23694 (IA-1128, pp 168-84)
effects on storage life of γ-irradiated wheat flour, 22:43500
effects on storage life of irradiated seafood, 22:17066
effects on storage life of radiation processed haddock fillets, 22:26020
effects on storage life of radiation processed seafoods, 22:26017(R) (TID-23835)
effects on strontium content of shells of marine mollusks, 22:43212
effects on sulfur radical formation in x-irradiated penicillamine-sephadex mixture, 22:6734
effects on survival of Escherichia coli, 22:30412 (ORNL-4100, pp 141-5)
effects on survival of thyroidectomized newts, 22:19239(R) (ORO-3564-3)
effects on survival of yeasts, supercool, 22:30412 (ORNL-4100, pp 141-5)
effects on tensile properties of irradiated vanadium alloys, (E), 22:19573 (BNWL-455, Paper 3.1-8)
effects on thermal conductivity of uranium dioxide, 22:15190(T) (EURFNR-382)
effects on toxicity of irradiated cod and flounder, 22:52061 (CONF-670945)
effects on toxin production by Clostridium botulinum type E γ-irradiated in oysters and shrimp, 22:49667
effects on transport of carbon-14-labeled auxin by seedlings of maize, 22:28700 (ANL-7278, pp 283-96)
effects on uv-absorbance of polyuridylic acid complexes, 22:10727
effects on uv-irradiated RNAase, 22:51352
effects on uv-radioinduced luminescence in serum albumin solutions, 22:28372
effects on uv-radiosensitivity of bacteriophage Kappa and Serratia marcescens, 22:589
effects on uv-radiosensitivity of cultured Chinese hamster cells, 22:36361
effects on uv-radiosensitivity of DNA in E. coli, 22:23457
effects on uv-radiosensitivity of Escherichia coli mutants, 22:17015
effects on uv-radiosensitivity of mutagenesis in Escherichia coli, 22:28722
effects on uv-radiosensitivity of mutagenesis in Escherichia coli, low, 22:483
effects on uv-radiosensitivity of solutions of trypsin, 22:28344
effects on uv-radiosensitivity of spores of Bacillus megaterium, 22:49656
effects on uv-sensitivity of bacteria, 22:33972
effects on viscosity of alkali metals, 22:8753
effects on X chromosomes of Drosophila melanogaster in comparison to x-ray effects, aberrant, 22:28415
effects on x-radioinduced formation of amino acids, 22:45443
effects on x-radioinduced intestinal damage in Carassium auratus, 22:49540
effects on x-radiosensitivity of bladder carcinomas in dogs, low, 22:4660
effects on x-radiosensitivity of bone marrow cells of mice in vitro, 22:36373
effects on x-radiosensitivity of bradykinin in aqueous solution, 22:47466
effects on x-radiosensitivity of chemiluminescence of oleic acid, 22:28343
effects on x-radiosensitivity of chromosomes in Drosophila, 22:21484
effects on x-radiosensitivity of crossing-over in Megaselia scalaris, 22:2495
effects on x-radiosensitivity of DNA synthesis in cells of epithelium in intestine of silver salmon, 22:10740 (BNWL-480, pp 153-93)
effects on x-radiosensitivity of dry bovine hyaluronate lyase, 22:452
effects on x-radiosensitivity of flour beetle larvae, 22:45672
effects on x-radiosensitivity of flour beetles, 22:4664 (BNWL-SA-571)
effects on x-radiosensitivity of glycine, EPR spectrum of, 22:30970
effects on x-radiosensitivity of HeLa and L cells, 22:10884
effects on x-radiosensitivity of morphogenesis of ear of Ambystoma maculatum, 22:40921
effects on x-radiosensitivity of populations of Drosophila melanogaster, 22:21611
effects on x-radiosensitivity of skin of rabbits, 22:43403
effects on x-radiosensitivity of snails, 22:6885
effects on x-radiosensitivity of spores of Bacillus megaterium, 22:38507
effects on x-radiosensitivity of survival in cultured Chinese hamster cells, 22:40892
effects on x-radiosensitivity of survival of hemopoietic cells of mice, 22:36348
effects on x-radiosensitivity of trypsin, 22:45425
effects on x-sensitivity of DNA in lambda bacteriophage, 22:23476
effects on yield of hydrocarbons from γ-irradiated beef, fish, and pork, 22:26016 (NYO-3499-3)
effects on zinc-65 uptake and distribution by salmon eggs, 22:51334
gradients of, sketching techniques for, 22:7570 (INFN/AE-66/6, pp 102-16)
inversions in ground-level atmosphere, effects on natural radioactivity of, 22:40210
measurement above 1500°C, bibliography on devices for, 22:5418 (NP-17141)
measurement at 2 to 300°K, design and performance of cryostat for, 22:19910
measurement at 200 to 1000°C, equipment and methods for, 22:43177(P)
measurement in reactors, development of microwave techniques for, 22:390 (BNWL-SA-1314)
measurement in soils near buried solid radioactive wastes, 22:2330(T) (JPRS-42565, pp 36-55)
measurement of 2° to 300°K, design of calorimeter for, 22:19024
measurement of Deerfield River water, test simulation method for, 22:8205 (BNWL-628)
measurement of fuel rod centerline, instrumentation for HWOCR in-pile, 22:627 (AI-CE-72)
measurement of high plasma, optical-spectroscopic method for, 22:34595
measurement of molten metal, radiometric method for, 22:16778
measurement of potassium--sodium, flowing in loops, design of device for, 22:12481
measurement of small changes in, for superconductor immersed in liquid helium, 22:29414
measurement of surface, manual on use of thermocouples for, 22:25563 (AECL-3062)
measurement of surface, of cobalt-60 fuel capsules, 22:30773(R) (DP-1155-1)
measurement of surface, use of kryptonate tracer technique for, 22:14685
measurement of undisturbed transient, using thermocouples embedded in solids, 22:28001
measurement of wall, in heat transfer test section carrying water at 140 to 250 bars pressure, 22:12519 (EUR-3658)
measurement of water heat pipe, in space environment, 22:23210 (LA-DC-9028)
measurement of, at 12 to 297°K, nuclear quadrupole resonance technique using chlorine-35 in potassium chlorate for, 22:23382
measurement of, methods for, 22:23384
measurement of, research on, (R), 22:5416(R) (NP-17117)
measurements in underground nuclear explosion cavities, 22:200
measurements of ANL atmospheric, fifteen-year data compilation of, 22:40256 (ANL-7084, pp 275-497)
measurements of ANL atmospheric, fifteen-year data compilation of, 22:40255 (ANL-7084, pp 31-274)
measurements of ANL atmospheric, in relation to Chicago Midway and O'Hare International Airports, fifteen-year data compilation of, 22:40257 (ANL-7084, pp 499-671)
measurements of ANL soil, fifteen-year data compilation of, 22:40256 (ANL-7084, pp 275-497)
measurements of ANL soil, fifteen-year data compilation of, 22:40255 (ANL-7084, pp 31-274)
measurements of, equipment calibration standards for, 22:40332
production of greater than 1500°C, bibliography on devices for, 22:5418 (NP-17141)
profiles in fluidized beds, 22:21270 (EURAEC-1988)
profiles in solids, use in calculating surface heat flux, 22:28005
radiation effects on body of mammals, effects of drugs and hydration on microwave, 22:554(R) (UR-49-810)
radiation effects on body, of dogs and monkeys, γ, 22:23669
radiation effects on body, of dogs, x, 22:43449
radiation effects on body, of mice, effects of circadian clock on x, 22:49220
radiation effects on human body, following therapy for bladder tumors, radium, 22:31152
radiation effects on melting, of DNA, effects of binding with normal aliphatic diamines, cystamine, and β,β'-diaminodiethylsulfide on x, 22:38379
radiation effects on reaction causing rise in body, of rabbits, 22:49511
radiation effects on rectal, of rabbits, x, 22:33920
radiation effects on resistance of rats to low, effects of dose on whole-body x, 22:43392 (AD-665664)
radiation effects on, of phantom tissues, effects of metal implant on IFR, 22:43343
radioinduced elevation of, effects of, along heavy ion tracks, 22:12817
radioinduced increase in body, of yellow mealworm larvae in relation to survival, radio wave, 22:8607
radioinduced mutation for sensitivity of Citrus sp. to cold, horticultural study of x, 22:45473(R) (ORO-2909-7)
radioprotective effects of low, on embryos of chickens, x, 22:10789
radioprotective effects of low, on mammalian cells, γ and x, 22:38407
radioprotective effects of low, on paws of rats, 22:40774

- radioprotective effects of, on wheat seeds, γ, 22:36405
- relations with pressure in uranium phases, (E), 22:2651
- simulation of Illinois River water, development of system for, 22:30689 (BNWL-728)
- soil, effects on vernalization of cheatgrass, 22:10739 (BNWL-480, pp 127-51)
- synkavit, effects on oxygen tension in neoplastic and normal tissues, 22:19382
- variations at surface of strip-heated flat plates, (T), 22:6535
- variations in ancient climatic, determination from carbon-13, carbon-14, and oxygen-18 content in French stalagmites, 22:6455
- variations in atmospheric, meteorological effects from diurnal and seasonal, 22:45192 (TID-24190, pp 13-63)

TEMPERATURE CONTROL

- adiabatic shield for, electronics of, 22:10204(R) (COO-1149-102)
- circuit for, in radiant-heat strain-gage bonding apparatus and biological sample refrigerator, design of thermistor, 22:12687 (Y-1602)
- design of device for, in liquid helium II bath, 22:22074
- equipment for, above 1500°C, bibliography on, 22:5418 (NP-17141)
- equipment for, in 2kW oven at 100 to 1000°C, 22:23358 (IA-1128, pp 185-212)
- equipment in irradiation cans for, at 15 to 196°C, 22:27795
- fluids for in-pile loops, description of gas-filled cooling jacket for heated, 22:37549(P)
- methods for radiation target cans, development of, 22:22850
- system design for constant, from 25 to 600°C, for thermoluminescent studies, 22:4517

TENDONS

- calcium-45 movements in, of frogs, effects of caffeine and quinine on, 22:14970
- determination of fibrillogenesis in regenerating, of guinea pigs, rats, and squirrels using electron microscopy, 22:28272 (ANL-7278, pp 185-218)

TENNESSEE

- see also Oak Ridge Area (Tenn.)
- radioisotope content of milk in, during April to June 1967, 22:28506

Tennessee-Tombigbee Waterway Study

- see Plowshare Project

TENSILE PROPERTIES

- equipment for measuring, in radioactive materials, 22:25577
- measurement in neutron irradiated Incoloy 800 and stainless steels, 22:25083(R) (GEAP-5541)
- measurement in pressure vessel steels, procedures for, 22:19512 (BNWL-455, Paper 8.1-6)
- measurement of low carbon steel pipe joints at 25 and 60°F, 22:15174(R) (GEAP-5554)
- method of estimating materials, statistical, 22:36457 (WAPD-TM-767)
- radiation effects on chromium--nickel steel at 650 to 850°C, 22:2668
- testing of materials for, computer simulation of high-speed, 22:12198 (UCRL-13226)

TENSORS

- see also Mathematics

TEPA

- see Triethylenephosphoramide

TERBIUM

- alpha particle reactions at 54.4 MeV, energy losses, range, and straggling in, (E), 22:26744
- analysis of, 22:27694
- atomic weight of, based on carbon-12 = 12, 22:42698
- cathodoluminescent properties in yttrium oxide, 22:22996 (CONF-670502-, pp 271-82)
- complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
- complexes with 1,3-diphenyl-1,3-propanedione and piperidine, effects of deuterium on luminescence of, 22:18764
- complexes with 1,3-diphenyl-1,3-propanedione, effects of deuterium on luminescence of, 22:18764
- complexes with 2,2,6,6-tetramethyl-3,5-heptanedione, fluorescence of americium-241-doped, 22:42792
- complexes with 2-methyllactic acid in methanol--water mixture, stability constants for, 22:48865
- complexes with adipic, bromo- and chloromandelic, and galactaric acids, preparation and properties of, 22:16554
- complexes with aluminon, structure and stability of, 22:14501
- crystal structure of, comparison of layer stacking sequence with terbium trialuminide, 22:2650
- crystal structure of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
- crystal structure of, relation of temperature dependences of magnetic and, 22:29580
- Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
- detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
- determination as oxide by fast neutron activation, 22:6282
- determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
- determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
- determination by luminescence sensitized by aromatic ketones, 22:16461
- determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
- determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
- determination in monazites by fluorimetry using 1,3-diphenyl-1,3-propanedione, 22:33220
- determination in phosphate rocks by atomic-absorption flame photometry, 22:2001
- determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
- determination in rare earth mixtures by aerosol-spark method, 22:6281
- determination in rock samples by neutron activation methods after chemical group-separation, 22:25286
- determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
- determination in yttrium oxide by fluorimetry using 1,10-phenanthroline, 22:33220
- determination in yttrium oxide by spectrophotoluminescence, 22:8025
- determination in yttrium oxide garnets by neutron activation methods, 22:14438
- determination in yttrium oxide matrix by cathode-ray-excited emission spectroscopy, 22:25270
- determination in zinc sulfide matrix by cathode-ray-excited emission spectroscopy, 22:25270
- determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
- determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
- determination of traces of, in yttrium oxides, spectrographic, 22:22950
- determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
- determination using octamethylpyrophosphoramide, spectrochemical, 22:30468
- distribution in hydrochloric acid, coefficients for, 22:42625
- elastic moduli and ultrasonic attenuation at 4.2 to 300°K, 22:48184
- energy transfer between europium and, in aqueous solutions, 22:47138
- gadolinium ion hyperfine magnetic fields in, at 77°K, (E), 22:46782
- hardening and recrystallization of, effects of impurities on, 22:4756
- hyperfine structure and isotopic displacement in, high resolution spectrometric studies on, 22:25236 (CEA-N-616, pp 20-71)
- ionization potential of, surface ionization comparison measurement of first, 22:24458
- ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
- leaching from borosilicate and phosphate glasses, 22:18906
- luminescence of, effects of aromatic ketones on, 22:16461
- magnetic anisotropy of single-crystal, (E), 22:15624
- magnetic damping in, stress dependence of, 22:41676
- magnetic entropy of, 22:37036
- magnetic hyperfine fields at nuclei of, 22:24025 (CONF-670502-, pp 495-505)
- magnetic moment measurements of single-crystal, at 4.2°K in fields up to 150 kOe, 22:15619
- magnetic ordering of, 22:44220
- magnetic ordering temperature of single-crystal, pressure effects on, (E), 22:20068
- magnetic ordering temperatures of single crystals of, at high pressures, 22:46226
- magnetic ordering temperatures of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
- magnetic properties at pressures up to 6 kbar, neutron-diffraction study of, 22:11554
- magnetic properties in weak fields, effects of hydrostatic pressure on, (E), 22:15620
- magnetization anisotropy and magnetostriction of single crystals of, in pulsed fields up to 150 kOe, (E), 22:37037
- magneto-elastic behavior of single crystal of, anisotropic single-ion properties in, (E/T), 22:41685
- magneto-elastic behavior of single crystals of, exchange properties in, (E/T), 22:41686
- magnetocrystalline anisotropy constants calculated from measurements on gadolinium--terbium alloys, 22:7357
- magnetostriction in single-crystal, field and temperature dependence of forced, (E), 22:15628
- magnon density of states in, calculation of, 22:41668
- magnon dispersion relations and lifetimes in, neutron-scattering measurements of, 22:15583
- magnon dispersion relations in, neutron scattering studies of, 22:24393 (CONF-670502-, pp 307-9)
- magnons in, neutron inelastic scattering study of, 22:36971 (RISO-178)
- neutron critical scattering by, (E/T), 22:24813
- neutron paramagnetic scattering cross section at 0.001 t 0.12 eV, (T), 22:22537

neutron scattering by paramagnetic, at 660°K, energy distributions in, 22:24786 (CONF-670502-, pp 297-306)
neutron total cross section at 30 to 650 keV, (E), 22:20578 (WASH-1079)
neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
nuclear spin relaxation in, estimate of low-temperature indirect, (T), 22:15626
positron annihilation in single crystals of, photon angular distributions from, 22:24024 (CONF-670502-, pp 487-94)
positron annihilation in single-crystal, angular correlation of photons from, (E/T), 22:24436
precipitation with ferric hydroxide, 22:51070
preparation of, procedures and equipment for, 22:27694
reactions with nitrate ions and water, spectral studies on effects of solvents on, 22:45010
separation by extraction using sodium amalgams, 22:37718 (UCRL-17989, pp 181-252)
separation by solvent extraction using 4,4,4-trifluoro-1-phenyl-1,3-butanedione, effects of hexanol, trioctylphosphine oxide, and TBP on, 22:8178
separation by solvent extraction using dioctyl phosphate, effects of diluent on, 22:6400
separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:33542
separation from aqueous solutions by solvent extraction using 2,2,6,6-tetramethyl-3,5-heptanedione, 22:48904
separation from carboxylic acids and mixtures with aminopolyacetic acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from dsyprosium by cation exchange using HEDTA, effects of temperature on, 22:37858
separation from europium by ion exchange, 22:33241
separation from europium by ion exchange chromatography using 2-methyllactic acid in methanol--water mixture, 22:48865
separation from gadolinium by cation exchange using HEDTA, effects of temperature on, 22:37858
separation from gadolinium, chromatographic, 22:18864 (NP-17286)
separation from lanthanum using chloromandelic acid, method for, 22:16554
separation from lutetium and yttrium by electrolysis, quantitative, 22:10332
separation from rare earths and yttrium by complexing with hydrazodiacetic acid and ion exchange, 22:30662
separation from rare earths by electrolysis, quantitative, 22:10332
separation from rare earths by oxalate decomposition, method for, 22:30552
separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
solubility in hydrochloric acid, thermodynamics of, 22:56 (BM-RI-7046)
solvation number of, in solution, equations for calculating, 22:23003 (IA-1128, pp 97-146)
sorption by manganese dioxide from nitric acid, 22:157
sorption on hot polycrystalline tungsten, lifetime of, 22:27709
spectra of Tb I, relative oscillator strengths for lines of, 22:34294
spectra of, new lines in L-emission, (E), 22:45940
spin wave energies in, magnetic-field, magnetoelastic, and thermal effects on, (T), 22:29587
spin wave spectrum of, temperature-dependent crystal field effects in, (T), 22:24467
spin-wave spectrum of, theoretical analysis of neutron-scattering study of, 22:15618
thermal capacity at 0.02 to 0.4°K, (E), 22:11531
thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
thermal capacity at 90°K, calculation of magnetic contribution to, 22:41668
thermal expansion of single-crystal, (E), 22:15628
x-ray emission spectra of, self-absorption effects in soft, 22:7149
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640

TERBIUM ACETATES
  preparation of anhydrous, 22:23000 (CONF-670502-, pp 366-73)

TERBIUM ALLOYS AND SYSTEMS
  Tb--Y, magnetic ordering temperatures of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
  Ag--Tb, magnetic structure of intermetallic TbAg$_2$, (E), 22:31986
  Ag--Tb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
  Ag--Tb, magnetoresistance at 1.1 and 4.2°K, (E), 22:20063
  Al--Dy--Tb, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
  Al--Gd--Tb, magnetic properties of Laves-phase intermetallic compounds of, (E), 22:39163 (NYO-3454-22, Paper 2)
  Al--Tb, crystal structure of intermetallic TbAl$_3$, 22:2650
  Al--Tb, ferromagnetic transition in Tb$_3$Al$_2$, 22:52896
  Al--Tb, magnetic dilution of, 22:9470
  Al--Tb, magnetic properties of TbAl, NMR study, 22:48166
  Al--Tb, magnetic structure of intermetallic TbAl, neutron diffraction study of, 22:34803
  Au--Tb, electric resistivity from 1.3° to 20°K in dilute, (E), 22:37038
  Au--Tb, magnetic structure of intermetallic TbAu$_2$, neutron-powder-diffraction study of, 22:17800
  Au--Tb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
  Ce--Tb, crystal structure and magnetic susceptibility of, 22:36491
  Co--Tb, magnetic and crystallographic properties of TbCo$_{5\cdot1}$, (E), 22:26511
  Co--Tb, magnetic properties of intermetallic TbCo$_2$, TbCo$_3$, and TbCo$_5$, 22:13001 (CONF-661216-2)
  Cu--Tb--Zn, magnetic properties of, (E), 22:20078
  Dy--Tb, hyperfine interactions in, NMR study of, (E), 22:26522
  Fe--Tb, iron-57 Moessbauer effect in cubic Laves intermetallic compounds, (E), 22:52873
  Ga--Ni--Tb, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
  Ga--Tb, crystal structure of intermetallic Tb$_5$Ga$_3$, 22:2649
  Gd--Tb, hyperfine interactions in, NMR study of, (E), 22:26522
  Gd--Tb, magnetocrystalline anisotropy constants of, (E), 22:7357
  Gd--Tb, phase studies of, 22:705
  Hg--Tb, phase diagram, (E), 22:28836
  Ho--Tb, magnon dispersion relations and lifetimes in, neutron-scattering measurements of, 22:15583
  Ho--Tb, magnon dispersion relations in, neutron scattering studies of, 22:24393 (CONF-670502-, pp 307-9)
  Ho--Tb-base, neutron inelastic scattering study of magnons in, 22:36971 (RISO-178)
  Mg--Tb, crystal structure of, x-ray diffraction analysis of, 22:19559
  Ni--Tb, magnetic properties of intermetallic Tb$_2$Ni$_{17}$, (E), 22:46201
  Pr--Tb, crystal structure and magnetic susceptibility of, 22:36491
  Pt--Tb, magnetic properties of intermetallic TbPt$_2$, 22:4778
  Pt--Th, phase studies of, 22:19566
  Re--Tb, crystal structure of intermetallic TbRe$_2$, (E), 22:22254
  Re-base--Tb, work function for, (E), 22:34761
  Sc--Tb, magnetic structure of, oscillatory-ferromagnetic transition in, 22:48185
  Tb--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
  Tb--Th, microstructure and phase diagrams of, 22:10992
  Tb--Y, crystal structure of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
  Tb--Y, effect of dissolving terbium by yttrium on helicoidal structure of, 22:22244

TERBIUM ALUMINATES
  aluminum-27 NMR in, quadrupole splittings and paramagnetic shifts in, 22:24416
  magnetic structure of, research using neutron scattering, (E), 22:9921 (JUL-Conf-1)

TERBIUM BORIDES
  magnetic properties of TbB$_6$, 22:5434

TERBIUM BROMIDES
  preparation of anhydrous, by dehydration of hexahydrates, 22:45046
  structure of anhydrous, crystal and molecular, 22:45046

TERBIUM CARBONATES
  preparation from anhydrous acetates, 22:23000 (CONF-670502-, pp 366-73)

TERBIUM CHLORIDES
  formation of, standard heat of, 22:56 (BM-RI-7046)
  polarographic behavior in lithium chloride--potassium chloride eutectic, 22:27690

TERBIUM HYDROXIDES
  magnetic properties of, (E), 22:15582
  precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6375

TERBIUM IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  fluorescence spectra of phosphors activated by, 22:5448
  interactions in sublattice, calculation of exchange, 22:41668
  radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622

TERBIUM ISOTOPES
  nuclear quadrupole moments, (E/T), 22:11957
  production by proton reactions with erbium and tantalum

at 660 MeV, (E), 22:35354
TERBIUM ISOTOPES Tb-147
energy levels and beta decay scheme of, evaluated data on, (E), 22:22596
TERBIUM ISOTOPES Tb-148
energy levels and beta and electron-capture decay schemes of, evaluated data on, (E), 22:22596
TERBIUM ISOTOPES Tb-149
alpha decay scheme of, α spectra for, (E), 22:35354
alpha spectra in the range 3070 to 3980 keV, (E), 22:18221
half-life, (E), 22:30020
production by proton spallation of gold, cross section and relative abundance of, (E), 22:30020
TERBIUM ISOTOPES Tb-150
alpha spectra in the range 3070 to 3980 keV, (E), 22:18221
TERBIUM ISOTOPES Tb-151
alpha decay scheme of, α spectra for, (E), 22:35354
alpha spectra in the range 3070 to 3980 keV, (E), 22:18221
electron-capture decay of, conversion-electron, gamma, and electron--gamma coincidence spectra in, (E), 22:5853
TERBIUM ISOTOPES Tb-152
beta and electron-capture decay of, γ spectrum from, (E), 22:18223
TERBIUM ISOTOPES Tb-153
electron-capture decay of, conversion-electron and γ spectra for, (E), 22:42081
TERBIUM ISOTOPES Tb-154
electron-capture decay of normal and isomeric, γ spectra from, (E), 22:32580 (UCRL-71049)
TERBIUM ISOTOPES Tb-155
electron-capture decay of, γ spectra for, (E), 22:53215
electron-capture decay of, γ-γ angular correlations in, (E), 22:39631 (JINR-E6-3906)
electron-capture decay scheme of, conversion-electron and γ singles and coincidence spectra for, (E), 22:24856 (JINR-P6-3695)
energy-level transitions and lifetimes, (E), 22:1695
energy-level transitions in, probability of $5/2^-[532] \to 3/2^+[411]$, (E), 22:18220
TERBIUM ISOTOPES Tb-156
beta and electron-capture decay of, coincidence and γ--γ directional correlation measurements on, (E), 22:5845
beta and electron-capture decay scheme of, (E), 22:53095 (BMwF-FBK-68-11)
TERBIUM ISOTOPES Tb-157
energy-level transitions and lifetimes, (E), 22:1695
energy-level transitions in, probability of $5/2^-[532] \to 3/2^+[411]$, (E), 22:18220
nuclear magnetic moment of, from hyperfine structure in EPR spectra, (E), 22:1656 (UCRL-17699)
nuclear magnetic moment of, measurement using electron paramagnetic resonance, (E), 22:37358
TERBIUM ISOTOPES Tb-158
beta and electron-capture decay schemes of, (E), 22:18227
nuclear electric quadrupole moment, (E), 22:1656 (UCRL-17699)
nuclear magnetic moment and spin of, from hyperfine structure in EPR spectra, (E), 22:1656 (UCRL-17699)
nuclear moments and spin of, measurement using electron paramagnetic resonance and nuclear alignment, (E), 22:37358
TERBIUM ISOTOPES Tb-159
boron-11 reactions (B-11,4n) at 56 MeV, conversion-electron spectra from, (E), 22:30027
boron-11 reactions (B-11,6n) at 86 MeV, conversion-electron spectra from, (E), 22:30027
deuteron reactions (d,p), (d,2n), and (d,4n) at 6 to 27 MeV, excitation functions for, (E), 22:24871
energy levels from beta decay of gadolinium-159, (E), 22:27106
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level transitions and lifetimes, (E), 22:1695
energy-level transitions in, probability of $5/2^-[532] \to 3/2^+[411]$, (E), 22:18220
gyromagnetic ratio of, calculation of collective, (T), 22:20684
neon-22 reactions (Ne-22,5n) and (Ne-22,6n) with, production of rhenium-175 and -176 by, (E), 22:9880
neon-22 reactions with, nucleon transfer in, (E), 22:27197
neutron capture by, γ directional correlations and spectra from thermal, (E), 22:32629
neutron reactions (n,2n) at 14.2 MeV, cross sections for, (E), 22:32638
neutron reactions (n,α) at 14.2 MeV, energy spectra of alpha particles from, (E), 22:20619
nuclear magnetic resonance in terbium--dysprosium and terbium--gadolinium alloys, (E), 22:26522
nuclear spin relaxation time at low temperatures in, numerical estimate of, 22:34799
proton reactions (p,n) at 17.5 MeV, production of isomeric dysprosium-159 by, (E), 22:1676
TERBIUM ISOTOPES Tb-160
beta decay of, energy levels from, (E), 22:44682 (JINR-E6-3905)
beta transitions between K-mixed states in, first-forbidden, (T), 22:9976
beta transitions in, anisotropy coefficients for β-γ directional correlations of K-forbidden, (E), 22:26929(R) (COO-1420-139)
beta transitions in, β-γ directional correlations for K-forbidden, (E), 22:46731(R) (COO-1746-8)
decay rate of carrier-containing, 4π β-γ coincidence techniques for determining, 22:45137
energy-level transitions from terbium-159 thermal neutr capture, (E), 22:32629
nuclear electric quadrupole moment, (E), 22:1656 (UCRL-17699)
nuclear magnetic and quadrupole moments of, measurement using electron paramagnetic resonance and nuclear alignment, (E), 22:37358
nuclear magnetic moment of, from hyperfine structure in EPR spectra, (E), 22:1656 (UCRL-17699)
use as tracer to determine sources of impurities during steel production, 22:14713
TERBIUM ISOTOPES Tb-161
energy-level transitions and lifetimes, (E), 22:1695
gyromagnetic ratio of, calculation of collective, (T), 22:20684
separation from neutron-irradiated gadolinium by electrophoresis, 22:42826
TERBIUM ISOTOPES Tb-162
beta decay of, half-life and β and γ spectra of, (E), 22:50650
beta decay scheme, (E), 22:11974
gamma spectra, 22:20975(R) (BMwF-FBK-67-89)
TERBIUM ISOTOPES Tb-164
beta decay of, β endpoint energy and half-life for, (E), 22:50637
beta decay scheme, (E), 22:11974
TERBIUM NITRATES
complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
separation by extraction chromatography using methylenebis[bis(2-ethylhexylphosphine oxide], ir spectral studies on, 22:6402
separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
TERBIUM OXIDES
chemical hysteresis among phases of, 22:31995
phase diagram of, comparison with plutonium oxide, 22:4888 (EUR-3563)
phase studies of, theory of solid-state, 22:31995
precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
solubility in boron oxide--strontium oxide systems at 1100°C, 22:41123
solubility in sodium metaborate, 22:17078
Al_2O_3--Li_2O--SiO_2--TbO_2, preparation of thermoluminescen glass by irradiation of, 22:50997(P)
Al_2O_3--SiO_2--Tb_2O_3, magneto-optical properties at low temperatures of glasses of, from Faraday effect measurements, 22:39197
CeO_2--Tb_2O_3, phase relations in, at 450 to 1100°C, tensimetric studies on, 22:33341
CeO_2--TbO_2, phase studies of, use of isobaric techniques in, 22:23897 (CONF-670502-, pp 200-12)
CeO_2--TbO_2, thermodynamic properties of, tensimetric studies of, 22:23897 (CONF-670502-, pp 200-12)
PrO_2--TbO_2, phase studies of, use of isobaric techniques in, 22:23897 (CONF-670502-, pp 200-12)
Tb_2O_3--ThO_2, phase relations in, at 450 to 1100°C, tensimetric studies on, 22:33341
Th_2O_3--ZrO_2, preparation and structure of, 22:36546
TERBIUM PHOSPHIDES
magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)
TERBIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
TERBIUM VANADATES
crystal structure and preparation, (E), 22:49812
TEREPHTHALIC ACID, ETHYLENE POLYMER ESTERS
degradation of, nature of hydrolytic, oxidative, and thermal, 22:27767
photolysis of, kinetics of, 22:27767
radiation effects on creep of, 22:19682(R) (UCRL-13328)
radiation effects on electric properties of, transient x, (E), 22:39200
radiation effects on strength of, fast- and thermal-neutron, 22:33390
radiation effects on, ESR studies on γ, uv, and x, 22:35870
radioinduced graft polymerization of, with chlorotrifluoroethylene and hexafluoropropene, adhesio properties in γ, 22:10300
radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969)
radiolysis of, kinetics of γ, 22:27767
use for recording fission fragment tracks in fission foi detectors, 22:36071
use in window assembly for radiometric analysis cells, 22:19181(P)
TERPHENYL
analysis of reactor coolants of, 22:12224 (NP-17239)
boiling burnout heat flux for, in subcooled forced-

convection systems, 22:51174
coolant of HB-40, performance analysis of heavy water-moderated organic-cooled 1000 MW(e) power reactor, 22:50741 (WASH-1083)
coolant of HB-40, performance in NRU Reactor of, 22:47003 (AI-CE-75)
coolant of Santowax OM, performance in NRU Reactor of, 22:47003 (AI-CE-75)
corrosive effects on zirconium alloys, effects of surface preoxidation on, 22:19486
effects on physics measurements of thorium oxide (ThO$_2$)--uranium oxide (UO$_2$)-fueled heavy water-moderated 19-element CANDU rod-type assembly, analysis of HB-40, (E--T), 22:44882 (AECL-2779)
effects on radioinduced energy transfer in polymethyl methacrylate containing nonluminescent aromatic molecules or sinks, 22:2094 (COO-1224-14)
electric conductivity of isomeric mixture of, 22:20817 (CONF-660553-4)
electric properties of, effects on fouling deposition, 22:4918 (EUR-3631)
filtration in organic-cooled reactors, effects on metal fouling of, 22:39816(P)
fusion of isomeric mixture of, heat of, 22:20817 (CONF-660553-4)
heat transfer properties in nuclear installation, 22:35792
heat transfer properties of isomeric mixture of, 22:20817 (CONF-660553-4)
oxidation in argon--oxygen mixture at 350 to 620°F, 22:35769 (AI-AEC-Memo-12688)
performance as reactor coolant, review of experimental program on, 22:44923 (MIT-334-55)
physical properties of OM2, instruments for measuring, 22:49140 (CONF-660553-11)
preparation of tritium-labeled, effects of variables on Wilzbach method for, 22:65
properties of mixture of heavy water with, for reactor moderators, 22:20971(P)
purification by circulation through beds of titanium or zirconium or their alloys, 22:30653(P)
radiation effects on monocrystalline, anthracene-containing, scintillation studies on, 22:114
radiation effects on oxidation of, 22:35769 (AI-AEC-Memo-12688)
radiation effects on physical properties of isomers of, 22:8113
radiation effects on physical properties of Santowax OM, measurement at 300 to 427°C of fast neutron and γ, (E/T), 22:42388 (MIT-334-94)
radioinduced fouling of, effects of chlorine and oxygen on in-pile, 22:52303 (CONF-660553-10)
radioinduced luminescence in plastic hosts, γ, 22:4187
radiolysis of commercial mixtures of, yields in electron, 22:48873 (CONF-660553-7)
radiolysis of polystyrene solutions of, spectral studies on electron, 22:10276
radiolysis of Santowax OM, neutron, 22:4172
separation of commercial mixtures of hydrogenated, by gas chromatography, 22:21053 (CONF-660553-5)
spectra of components of commercial mixture of hydrogenated, ir and uv, 22:21053 (CONF-660553-5)
surface tension of isomeric mixture of, 22:20817 (CONF-660553-4)
toxicity to rainbow trout, 22:53490 (AECL-3116)
use of hydrogenated, for transmitting fluid for gas-cooled reactor pressure sensor, 22:22782(P)
viscosity of isomeric mixture of, 22:20817 (CONF-660553-4)
2,2'-p-phenylenebis[5-phenyloxazole]--poly (methylstyrene)--terphenyl, use as scintillator for beta detection, 22:10561
mineral oil--terphenyl, radiation resistance of lubricants of, 22:11108(P)

m-TERPHENYL
production by pyrolysis of biphenyl in loops at 650°F, 22:30768(R) (SAN-651-57)
radiolysis at 100 to 450°C, electron, fast neutron, and γ, 22:51025
radiolysis of, mechanisms of decomposition in electron, 22:16574

o-TERPHENYL
production by pyrolysis of biphenyl in loops at 650°F, 22:30768(R) (SAN-651-57)
radiolysis at 100 to 450°C, fast-neutron and γ, 22:51025

p-TERPHENYL
production by pyrolysis of biphenyl in loops at 650°F, 22:30768(R) (SAN-651-57)
radiation effects on, in cyclohexane, luminescence of ionic processes in x, 22:35872
2,5-diphenyl-1,3,4-oxadiazole--p-terphenyl, radioinduced luminescence in cyclohexane solutions, effects of scavengers on γ, 22:27759

Terramycin (R)
see Oxytetracycline

TESI (Ispra)
see Reactor Safety Experiments

Test Reactors
see Reactors, Test

TESTES
accumulation of iodine-131-labeled diethylstilbestrol diphosphate in, of man, diagnostic use of, 22:10814
calcium content of human, effects of age on, 22:12749 (ORNL-P-3541)
phosphorus content of human, effects of age on, 22:12749 (ORNL-P-3541)
radiation dose to human, during dental radiography, 22:31100
radiation dose to, during dental radiography, standards for control of, 22:4615
radiation dose to, during treatment of neoplasms, γ and x, 22:2544
radiation dose to, of human infants, during therapy for benign diseases of thorax, low-dose x, 22:28556
radiation dose to, of man during diagnosis or therapy, methods for reduction of x, 22:4624
radiation dose to, of man during diagnostic examination, x, 22:2510
radiation dose to, of man, maximum permissible γ and x, 22:6819
radiation effects on activity and localization of acid phosphatase in, of rats, γ, 22:33774
radiation effects on androgen biosynthesis in, of dogs, effects of incubation with NADPH, pregnenolone and progesterone on ionizing, 22:43244
radiation effects on cell morphology and secretion in, of man, x, 22:6877
radiation effects on content of vitamin C in, of rats, γ, 22:25763
radiation effects on development of spermatogonia in, of monkeys, local x, 22:21610
radiation effects on development of, in offspring of mice, prenatal low-dose x, 22:19441
radiation effects on dry and wet weight of, in mice, effects of dose on x, 22:40947
radiation effects on formation of complement-fixing antibodies against, in guinea pigs following injection of Mycobacterium tuberculosis, γ and x, 22:23443
radiation effects on germ epithelium of, in monkeys, latent γ, 22:21609
radiation effects on histochemistry of, in mice, lethal x, 22:12906
radiation effects on human, in relation to genetic effects, 22:40626
radiation effects on lactate dehydrogenase content of, in mice, acute x, 22:49274
radiation effects on regeneration of epithelium of, in mice, combined effects of acute and chronic exposure on γ, 22:23624
radiation effects on weight of, in mice, combined effects of endoxan on x, 22:51734
radiation effects on weight of, in mice, comparison of γ and x, 22:47593
radiation effects on weight of,of Coturnix coturnix, tritium β, 22:25758
radiation effects on, of chickens following destruction of thyroid, effects of pregnant mare serum gonadotropin on iodine-131 β and γ, 22:43453
radiation effects on, of infants, design of shielding for protection against, 22:8534
radiation effects on, of man following iodine-131 therapy of thyroid, β and γ, 22:15105
radiation effects on, of man, pathological microwave, 22:40864
radiation effects on, of mice during embryogenesis, RBE for fast neutron, 22:19429
radiation effects on, of mice, effects of embryo exposure on ionizing, 22:17036
radiation effects on, of mice, fast neutron, γ, proton, and x, 22:19408
radiation effects on, of mice, pathological fast neutron, 22:33940
radiation effects on, of mice, RBE of electron, 22:36400
radiation effects on, of mice, RBE of genetic cobalt-60 γ, proton, and x, 22:51908
radiation effects on, of mice, repopulation of germinal epithelium following x, 22:40616(R) (NYO-1979-26)
radiation effects on, of rats, synthesis of DNA, nucleoprotein, and RNA in germ cells following x, 22:51418
radiation effects on, of turtles, effects of dose on x, 22:4697
radiodiagnosis of tumors of, in man using phosphorus-32, 22:28546
radioinduced aberrations of chromosomes in, of hamsters, comparison of, with bone marrow, γ, 22:28398 (NYO-2147-13, pp 95-102)
radioinduced aberrations of chromosomes in, of mice, effects of dose fractionation on x, 22:21480
radioinduced chromosome aberrations in, of hamsters, effects of dose and time of sampling on cobalt-60 γ, 22:25816
radioinduced chromosome aberrations in, of mice, effects of pronuclear-embryonic exposure on translocation, x, 22:14982
radioinduced injuries in, of mice, effects of period of embryonic development at exposure on x, 22:19429
radioinduced tumors of, in rats, determination of low dose for fast neutron, 22:38483
radioisotope distribution in, of rats, calcium-45 and strontium-89, 22:51465
radioisotope uptake by, of mice and rats, cadmium-109 and zinc-65, 22:51365

radiosensitivity in mice, effects of age and dose on x, 22:19411
radiotherapy of embryomas and seminomas of, development of gastrointestinal, gonadal, neural, and renal complications following x, 22:6851
radiotherapy of sarcomas of, in man following bilateral orchiectomy, iodine-131 β and γ, 22:21558
Testing Methods
see Materials Testing
Testosterone
see Hormones, Sex--testosterone
Tetracene (Hydrocarbon)
see Naphthacene
TETRACOSANE
radioinduced graft polymerization of styrene on, γ, 22:27752
TETRACOSANOIC ACID, LEAD SALT
use of monomolecular layers of, for diffraction analysis of soft x rays, 22:19148
TETRACYCLINE
chelates with chromium-51 for use in diagnosis of brain tumors, 22:4630 (UCLA-34-P-119-16)
distribution in developing teeth of rats in comparison with calcium-45, 22:40549
distribution in mice, 22:10782(R) (UCLA-34-P-119-10)
effects on uv-radiosensitivity of skin, 22:40770
effects on x-radioinduced osteoradionecrosis in rats, 22:40873
heat transfer of moist, effects of pulsating bed on, 22:25601(T) (ANL-Trans-593)
preparation of chromium-51-labeled, 22:10782(R) (UCLA-34-P-119-10)
radiation effects on fluorescence induced by, in tubule cells in kidneys of mice, 22:12816
radiation effects on resistance of coliform bacteria of swine to, whole-body x, 22:43489
radiation effects on transduction of resistance to, in bacteriophages, uv, 22:51551
radiosterilization of, effects of, on biological and chemical activity, γ, 22:52102
resistance of Staphylococcus, use of uv-irradiated transducing phage for mapping of gene loci for, 22:51532
Tetracycline, Chloro-
see Chlortetracycline
Tetracycline, Oxo-
see Oxytetracycline
TETRACYCLO[2.2.1.0^{2} ^{6}.0^{3} ^{5}]HEPTANE
energy level transitions in, forbidden electronic, (E), 22:11193 (CALT-532-20)
TETRAETHYLENE GLYCOL
dimethacrylate, photoinduced polymerization of, effects of uranyl ion on, 22:33333
2-hydroxypropyl acrylate--tetraethylene glycol dimethacrylate, photoinduced polymerization of, effects of uranyl ion on, 22:33333
Tetrahymena
see under Protozoa
Tetrakis(dimethylamino)ethylene
see Ethylenediamine, N,N,N',N'-Tetramethyl-
Tetralin (R)
see Naphthalene, 1,2,3,4-Tetrahydro-
Tetramethylene Oxide
see Furan, Tetrahydro-
TETRANEUTRONS
energy levels of, compilation of data on, (E), 22:18115
existence of, research using meson (π^-) reactions with helium-4, (E), 22:5759
production and properties of, research progress on, (E), 22:11946(R) (COO-1716-4)
production in meson (π^-) absorption by carbon, (E), 22:13951
Tetraphene
see Benzanthracene
1,3,5,7-TETRAZOCINE, OCTAHYDRO-1,3,5,7-TETRANITRO-
radiation effects on surface activity of, mechanism of γ, 22:40111
TETRAZOLIUM COMPOUNDS
triphenyltetrazolium chloride, complexes with various metals and pyrocatechol, 22:48906
5H-Tetrazoloazepine, 6,7,8,9-Tetrahydro-
see Pentylenetetrazole
TETROXANE
radiation effects on, at 77°K, ESR spectral studies on free radicals produced by electron, 22:8129
radiation effects on, at 77°K, ESR studies of free radicals from electron, 22:42714(T) (AEC-tr-6937, pp 117-32)
radioinduced polymerization by contacting with irradiated trioxane, 22:51033
radioinduced polymerization of monocrystals of, electron microscope study of γ, 22:27815
TEXAS
radioactivity content of atmosphere in Galveston, during 1966, 22:28510
radioactivity content of atmosphere, milk, oysters, rain, seawater, and silt in Galveston, during 1965, effects of nuclear powered ship on, 22:28459
radioactivity content of oysters in, during 1965 to 1966, α, β, and γ, 22:28517
radioactivity monitoring of atmosphere, milk, seawater and silt at Galveston, during 1966, 22:40695
radioactivity monitoring of oysters in, during 1965 and 1966, α, β, and γ, 22:40691
radioisotope content of milk in, during 1966, 22:23520
radioisotope content of milk in, during April to June 1967, 22:28506
TEXTILES
see also Clothing
see also Wool
bibliography on tracer techniques for industrial processing of, 22:4727
cleaning effectiveness of water-dissolved detergents for, measurement using tracers, 22:45225
coating with liquid, radiometric process and apparatus for controlling, 22:43133(P)
decontamination using various solvents, 22:6794 (CEA-R-3159)
effects of white, on efficiency of scintillation counting of carbon-14--tritium or tritium solutions, 22:40014
efficiency of natural and synthetic, for protective clothing of personnel in environment contaminated by radioactive aerosols, 22:40677
identification by neutron activation methods, 22:48835
manufacture of Italian, radioactive tracer applications in, 22:8321
manufacture of, use of radiometric thickness gages for, 22:23343
nuclear applications in field of, 22:23042
production of, uses of radioisotopes in, 22:21288 (EUR-3648)
radiation effects on fibers of natural and synthetic, review of γ, 22:4163
radiation effects on grafting of styrene on polynosic rayon, preirradiation, 22:33445
radiation effects on grafting of styrene on rayon, preirradiation, 22:33444
radiation effects on side-chain length of grafted copolymers of cotton, with polyacrylonitrile, 22:25387
radioinduced bleaching process for, 22:6360(P)
radioinduced finishing of, 22:42732
radioinduced graft polymerization of cotton with acrylonitrile, effects of method of preparation on properties of products of γ, 22:37797
radioinduced graft polymerization of cotton, with monomers, electron microscopic studies on products of γ, 22:21114
radioinduced graft polymerization of styrene onto rayon, properties of product of γ, 22:33466
radioinduced molecular grafting sites in natural and synthetic, for enhancement of economic properties, cobalt-60 γ, 22:23692 (AECL-2706, pp 50-9)
radioinduced polymerization of cord with polyester foil and styrene, strength and adhesive properties of copolymers from γ, 22:18808 (INR-841/XVII/C)
radioinduced polymerization of, review on problems in, 22:8091(T) (AEC-tr-6908, pp 18-24)
sliver weight measurements for cotton spinning machine, beta radiometric instruments for, 22:2438
THAILAND
radioactivity in atmosphere of, 1961 to 1963, 22:25539
research on insect eradication using γ rays in, review of, 22:40979 (THAI.-AEC-8)
THALLIUM
abundance in chondrites, 22:2727
analysis for indium by neutron activation methods, 22:47094
analysis for submicrotraces of copper by neutron activation, 22:33231
analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
analysis of, 22:27694
atomic weight of, based on carbon-12 = 12, 22:42698
Auger electron lines in beta spectra of radon-220, detection of very weak, 22:50619
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
book: Uncommon Metals, 22:10981
chromatographic behavior on cerium phosphate paper, 22:153
coatings of, deposition on metal substrates using bias sputtering and ion plating, 22:34042 (MLM-1453)
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with TTA, fractional sublimation of, 22:35911
condensation in meteorites, (T), 22:5023
content in biological materials, determination of, by atomic absorption spectrometry, 22:6216(R) (ORO-3461-9)
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
density at 300 to 400°C, 22:12951 (NYO-2731-3)
detection of, performance of atomic absorption spectrophotometer for, 22:37666
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937

determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by chromatographic separation using ammonium molybdophosphates, spot test for, 22:14
determination by direct compleximetric titration using EDTA and iron--N-phenylbenzohydroxamic acid as indicator, 22:45012
determination by spectrophotometry using high-frequency excitation tubes without electrodes, 22:30494
determination in atmosphere and urine, polarographic, 22:21029 (SC-M-67-3044)
determination in hair by neutron activation methods, 22:48835
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in metallic materials, spectrochemical method for, 22:22963
determination in meteorites by neutron activation methods, 22:47077(R) (NYO-844-75)
determination in sulfuric acid by photometric titration with cerium using manganese as catalyst, 22:8019
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of a visual complexometric, 22:33273
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using rhodizonic acid, 22:7998
dislocations in, effects of elastic anisotropy on, 22:49761
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on gamma-induced absorption spectra of potassium borate glasses, 22:4917
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
effects on titrimetric determination of trace amounts of uranium, 22:22972
elastic constants for hcp crystals of, higher-order, 22:13601
energy levels in superconducting, 22:13395
implantation in silicon, interstitial, 22:24452
internal conversion coefficients for, K-, L-, and M-, (T), 22:35361
ion exchange by polyantimonic acid, 22:18750
isotope shifts in hfs, 22:9101
meson (π) reactions with, 5g--4f x rays from, 22:47838
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
neutron total cross section at 0.3 to 30 MeV, (E), 22:37340(R) (EANDC(E)-89(U))
nuclear magnetic resonance in, anisotropy of, 22:11526
optical properties of, determination by ultraviolet spectroscopy in ultrahigh vacuum, 22:16855
photofission at 300 to 1600 MeV, cross sections and fragment yields for, (E/T), 22:5856
photofission cross section at 0.1 to 1.2 GeV, (E), 22:22586 (NP-17325)
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
preparation of, procedures and equipment for, 22:27694
proton reactions at 10 MeV, production of short-lived lead isomers by, (E), 22:24874
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
separation by ion exchange, role of complexation reactions in, 22:33517
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from arsenic by paper chromatography, 22:25257
separation from chloride solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from gold by precipitation with iron hydroxide, 22:30688
separation from indium and silver by paper chromatography, 22:4248
separation from lanthanum, thorium, uranyl, and zirconium ions by solvent extraction using glycine and phenol in petroleum ether, 22:160
separation from mixture of metals by ring-oven method, 22:18880
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from tungsten by paper chromatography, 22:25257
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of zinc from, by precipitation using sodium benzilate, 22:30660
superconducting critical temperature of, variation with pressure, 22:13395
superconducting density of states and phonon spectrum in, electron tunneling study of, 22:34571
superconducting transition temperature of thin films of, effects of thin germanium coatings on, (E), 22:2975
superconducting transition temperature of, effect of impurities on, 22:46067
superconducting transition temperatures of layers of lead and, as function of lead thickness, (E), 22:13393
surface friction and wear of, effects of crystal structure and properties on, 22:52177
ultrasonic attentuation in high-purity single-crystal normal and superconducting, at 0.5 to 4.2°K, (E), 22:38973
vapor pressure and surface tension of, measurements of, 22:10945 (EUR-3653)

THALLIUM ALLOYS AND SYSTEMS
  Bi--Tl, properties of single-crystal, neutron diffraction determination of, 22:4777
  Bi--Tl, superconducting transition temperatures of metastable eutectic alloys of, pressure effects up to 30 kbar on, (E), 22:34523
  Hg--Tl, densities, phase equilibria, and specific volumes of liquid, 22:10948 (NYO-2731-4)
  Hg--Tl, density isotherm at 44°C, (E), 22:12951 (NYO-2731-3)
  In--Tl, critical field in superconducting, anomalous values of upper, (E/T), 22:50101
  In--Tl, Ginzburg--Landau parameter change under pressure in, (T), 22:24211
  In--Tl, magnetic flux transport noise in superconducting crystal, 22:17599
  In--Tl, nucleation fields in superconducting, anomalous, (T), 22:22106
  In-base--Tl, magnetic properties of superconducting, effects of pressure on, 22:52688
  La--Tl, superconducting properties of $LaTl_3$, effects of praseodymium and thulium on, 22:52689
  La--Tl, superconductivity of intermetallic, with Cu_3Au structure, (E), 22:24223
  O--Tc--Tl, preparation of compounds in, 22:4071(T) (ANL-Trans-539)
  Pb--Tl superconducting transition temperatures of, 22:7215
  Pb--Tl, critical current curves and resistive transitions of superconducting, 22:11399
  Pb--Tl, elastic constants of monocrystals of, at 4.2 to 300°K, 22:19553
  Pb--Tl, electron--phonon coupling and phonon spectra in superconducting, electron tunneling study of, (E), 22:24214
  Pb--Tl, flux flow resistance in superconducting, 22:52716
  Pb--Tl, flux pinning by grain boundaries in superconducting, 22:38968
  Pb--Tl, properties of single-crystal, neutron diffraction determination of, 22:4777
  Pb--Tl, superconducting critical currents as function of applied magnetic field in, 22:34555
  Pb--Tl, surface energy effects in type-II superconducting, calorimetric study of, (E), 22:24230
  Pb-base--Tl, superconducting flux creep in, (E), 22:48036 (NYO-3029-29)
  Pu--Tl, phase studies of, 22:2655
  Te--Tl, electric conductivity in γ phase in superconducting, (E/T), 22:36872
  Te--Tl, Hall measurements and thermoelectric properties, 22:10142(R) (RLO-1922-7)
  Tl--Se, densities, phase equilibria, and specific volumes of liquid, 22:10948 (NYO-2731-4)

THALLIUM BROMIDES
  phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)

THALLIUM CHLORIDES
  analysis for indium by neutron activation methods, 22:47094
  phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
  radiolysis of aqueous solutions of, yields of hydrogen and hydrogen peroxide in, 22:23034 (IA-1128, pp 78-96)

THALLIUM, CHLORODIPHENYL-
  Szilard-Chalmers reactions in, mechanism of, 22:40138

THALLIUM HYDRIDES
  neutron inelastic scattering at 0.1 to 1.0 eV, cross

  sections for, (E), 22:53076
THALLIUM IODIDES
  phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
THALLIUM IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  electrophoretic mobility in acetate buffers, 22:27567
  exchange equilibria of, between molten sodium nitrate and sodium zeolite A, 22:42832
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  implantation in silicon, helium-ion beam analysis of, 22:11536
  reactions of monovalent, with tetravalent cerium in sulfuric acid, effects of catalysts on, 22:8019
THALLIUM ISOTOPES
  abundance ratios in meteorites, 22:47077(R) (NYO-844-75)
THALLIUM ISOTOPES Tl-192
  electron-capture decay of isomeric, conversion-electron and γ spectra for, (E), 22:53197
  electron-capture decay of, conversion-electron and gamma spectra from, (E), 22:30031
  electron-capture decay of, conversion-electron and γ spectra for, (E), 22:7702(R) (PPAD-631-D)
THALLIUM ISOTOPES Tl-194
  electron-capture decay of isomeric, conversion-electron and γ spectra for, (E), 22:53197
  electron-capture decay of, conversion-electron and gamma spectra from, (E), 22:30031
THALLIUM ISOTOPES Tl-196
  electron-capture decay of isomeric, conversion-electron and γ spectra for, (E), 22:53197
  electron-capture decay of, gamma spectra from, (E), 22:30031
THALLIUM ISOTOPES Tl-198
  beta and electron-capture decay of, gamma spectra from, (E), 22:30031
  electron-capture decay of isomeric, conversion-electron and γ spectra for, (E), 22:53197
THALLIUM ISOTOPES Tl-199
  energy-level transitions following gold-197 (α,2n) reactions, gamma angular distributions from, (E), 22:30027
  energy-level transitions in, plot of distribution coefficients for mixed M1-M2, (E), 22:30027
THALLIUM ISOTOPES Tl-200
  beta and electron-capture decay of, γ spectra from, (E), 22:50602 (PPAR-5)
THALLIUM ISOTOPES Tl-201
  fission barrier for, (E/T), 22:30022
THALLIUM ISOTOPES Tl-202
  electron-capture decay of, K x ray-γ directional correlations in, (E), 22:18232
  half-life of isomeric, (E), 22:48545
THALLIUM ISOTOPES Tl-203
  alpha reactions (α,t) at 44 MeV, triton energy and angular distributions from, (E), 22:20614
  energy level at 279 keV, half-life for, (E), 22:53215
  energy levels of, research using neutron capture γ resonance fluorescence, (E), 22:30043
  energy-level parity admixtures in, from γ circular polarization, (E), 22:16026
  energy-level transition in, K-conversion coefficient for 279-keV, (E), 22:16022
  energy-level transitions in, K-conversion coefficients for, (E/T), 22:3770
  gamma spectra of μ-mesic atoms of, hyperfine structure in, (E), 22:50622
  neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
  neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
  neutron reactions (n,2n) at 14 MeV, isomeric cross-section ratio for, (E), 22:48545
  neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:50649
  neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
  oxygen-16 reactions with, production of actinium isotopes by, (E), 22:18253
  proton reactions (p,6n) at 50 and 55 MeV, conversion-electron spectra from, (E), 22:27165
THALLIUM ISOTOPES Tl-204
  absorption in, method for determination of self-, 22:42984
  Auger electron spectrum of, line energies and intensities for, (E), 22:1685
  beta decay of, electron longitudinal polarization in, (E), 22:9849 (INR-798/I/PL)
  beta dosimetry in small body cavities using thermoluminescence, 22:31107
  beta spectra for, endpoint energy of, (E), 22:27122
  beta spectra of, Auger line intensities and end-point energy for, (E), 22:1685
  beta spectra of, efficiency of semiconductor-junction spectrometers for measuring, 22:16894 (CEA-R-3315)
  beta spectra of, measurement with corrections for backscattering, (E), 22:7767
  beta spectra of, use of semiconductor spectrometer for analysis of, 22:14825
  electrolysis of ionic solutions of, precipitation studie on distribution coefficients of, 22:69
  electrolysis of ionic solutions of, precipitation studie on kinetics of, 22:70
  electron-capture decay of, comparison of experimental an theoretical L/K ratios for, (E/T), 22:22631
  half-life of, accurate measurement of, (E), 22:29990
  isomers of, negative results in search for short-lived, (E), 22:20621
  leaching from cements and clay grouts in geologic formations, 22:16824
  radioactivity of, beta counting of, 22:35918
  removal from aluminum, chemical and electrolytic methods for, 22:12422
  separation by amalgam exchange, method for, 22:35918
  separation by isotopic exchange with thallium(III) hydroxide, 22:35918
  separation from solutions by ion exchange, method for, 22:35918
  separation from water by slurrying with Yazoo and Zilpha clays, 22:25482
  sorption on platinum surfaces, effects of passivation on, 22:21072
  use as beta source for measuring tire wear, 22:45251
  use as beta source to excite fluorescence in alloys, 22:50943
  use in determination of dissolved oxygen in fresh and seawater by radio-release method, 22:16421
  yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
THALLIUM ISOTOPES Tl-205
  alpha reactions (α,t) at 44 MeV, triton energy and angular distributions from, (E), 22:20614
  energy level at 205 keV, lifetime of, (E), 22:20604
  gamma spectra of μ-mesic atoms of, hyperfine structure in, (E), 22:50622
  neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
  neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
  neutron reactions (n,α) at 15 MeV, gold-202 production by, (E), 22:11969
  oxygen-16 reactions with, production of actinium isotopes by, (E), 22:18253
  proton reactions (p,6n) at 50 and 55 MeV, conversion-electron spectra from, (E), 22:27165
THALLIUM ISOTOPES Tl-206
  beta decay of, time reversal invariance in, (E/T), 22:3702
  energy levels from mercury-206 decay, spin-parity assignments and conversion coefficients for, (E), 22:44691
THALLIUM ISOTOPES Tl-207
  energy levels from bismuth-211 decay, conversion coefficients, multipole mixing ratios, and spins for, (E), 22:27229
  energy levels from lead-208 (d,He-3) reactions, (E), 22:39639 (UCRL-17989, pp 43-99)
  gamma spectra of, line intensities in, (E), 22:44746
THALLIUM ISOTOPES Tl-208
  energy levels of, effects of angular momentum on, (T), 22:14020
  gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
  half-life, (E), 22:20591
  separation from bismuth-212 and lead-212 by electrolytic chromatography, 22:51074
THALLIUM NITRATES
  analysis for indium by neutron activation methods, 22:47094
  polarographic behavior in nonaqueous solvents, 22:10122 (COO-256-77)
  use in production of thallium oxides, pyrochemical method for, 22:30571
  $NaNO_3$--$TlNO_3$, electric conductivity of, at 180 to 340°C, 22:27619 (CEA-N-816, pp 90-101)
THALLIUM OXIDES
  analysis for indium by neutron activation methods, 22:47094
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  production from thallium nitrates, pyrochemical method for, 22:30571
  reactions with hafnium and zirconium hydroxides at 1000°C, 22:30571
THALLIUM SULFATES
  analysis for indium by neutron activation methods, 22:47094
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  radiolysis of solutions of, yields of hydrogen peroxide in, 22:23034 (IA-1128, pp 78-96)
THALLIUM TUNGSTOSILICATES
  properties for use in paper chromatographic separation o europium, lanthanum, strontium, and yttrium from

uranium, 22:8176
THALLIUM URANIUM FLUORIDES
paramagnetic resonance spectra of TlUF$_6$, 22:18769
THEOPHYLLINE
effects on uv-radiosensitivity of cultured Chinese hamster cells, 22:36361
radiation effects on aqueous solutions of, effects of packaging on γ, 22:40992
radiation effects on stability and viscosity of aqueous solutions of, effects of glass and polyethylene packaging on γ, 22:40599
radiation effects on, evaluation as method of sterilization, γ, 22:27823
Theophylline, 7-[2-Hydroxy-3-[(2-hydroxyethyl)methylamino]propyl]-, Nicotinate
see Xanthinol Niacinate
THERAPY
see also Drugs
see also Iontophoresis
see also Radiotherapy
training of medical and military personnel for, of acute radiation sickness following nuclear warfare, 22:45536
use of orthopedic, for radioinduced osteonecrosis in human pelvis, 22:45611
Thermal Analysis
see Differential Thermal Analysis
THERMAL CAPACITY
see also Specific Heat
Thermal Columns
see Reactor Thermal Columns
THERMAL CONDUCTIVITY
see also Heat Transfer
calculating longitudinally finned rod and tube, method of, 22:2301
calculation and measurement of soil, for use in solid radioactive waste burial, 22:2330(T) (JPRS-42565, pp 36-55)
calculations for pure and monatomic gas mixtures as function of temperature, 22:45243 (TID-24636)
effects of grain structure on carbon and graphite, 22:11045(R) (LA-3758)
measurement in alkali metal vapors, transient hot-wire method for, 22:13002 (CU-2660-37)
measurement in irradiated polycrystalline oxide ceramics, 22:19681
measurement of fibrous-type insulation, for radioisotopic power systems, 22:25613(R) (ALO-3633-8)
measurement of gold, at 325 to 1225°K, 22:2611 (IS-1713)
measurement of reactor materials, equipment for, 22:4867 (EUR-3644)
measurement of uranium dioxide, at 300 to 2000°C and temperature gradients at 30 to 5000°C/cm, 22:15190(T) (EURFNR-382)
measurement of, computer-automated longitudinal-comparison system for, 22:30419 (Y-1607)
measurement using modified electron beam, 22:1956(R) (MLM-1405)
measurements in spray solidified radioactive wastes, 22:21297(R) (BNWL-677)
rates of uranium dioxide, effect of porosity on, 22:2694
use in inspection of pressure vessels, 22:40343
values recommended for 46 gases at atmospheric pressure, 22:25348
THERMAL CONDUCTIVITY CELLS
see also Thermal Conductivity
design for alkali metal vapors, 22:13002 (CU-2660-37)
THERMAL CONDUCTOMETRIC ANALYSIS
see also Thermal Conductivity Cells
Thermal Convection
see Convection
THERMAL CYCLING
effects on dimensional stability of fuel element cladding, 22:3859
effects on grain growth of carbon--uranium alloys, 22:2653
effects on hydrogen distribution in zirconium-based alloys, model for, 22:40999 (WAPD-TM-759)
equipment for testing thermal fatigue of SAP, 22:23758 (EUR-3899)
THERMAL DIFFUSION
column coefficients for separation of nitrogen isotopes, 22:8302 (MLM-1439)
column development for isotope separation by, 22:16783
column performance for isotope separation by, 22:2308(R) (MLM-1419)
column performance for rapid enrichment of tritium and carbon-14 for nuclear age estimation, 22:6480
column performance for tritium enrichment, 22:6541
column performance in, 22:45253
column theory for, neon-20--neon-22 experimental verification of Jones--Furry, 22:12550
effects on constitutional supercooling during solidification of alloys, 22:38571
efficiency of Trennschaukel tube for, 22:49024 (MLM-1495)
equipment for separation of stable gaseous isotopes, 22:8180
isotope separation by, calculation of optimum column parameters for, 22:37942
isotope separation by, theory of, 22:12542(T) (MLM-1478(tr))
isotope separation by, thermodynamics of, 22:4365
measurement in low- and high-temperature Trennschaukel, 22:23221 (MLM-1455)
method for separation of isotopic mixtures of polyatomic gases, 22:28022
method for separation of neon isotopes, 22:28023
process for separation of hafnium and zirconium chlorides, 22:16785
rates in Exp-6 Buckingham model for, effects of shape factors on, 22:19049(T) (MLM-1467(tr))
research progress on, 22:28013 (MLM-1430)
research progress on, 22:49024 (MLM-1495)
transport theory for, 22:28013 (MLM-1430)
use for separation of xenon isotopes, effects of column length on, 22:25471(T) (MLM-1491(tr))
Thermal Diffusivity
see Thermal Conductivity
THERMAL EXPANSION
measurement of epoxy resins at 5 to 300°K, equipment for, 22:28250
Thiodiphenylamine
see Phenothiazine
Thermal Fusion
see Thermonuclear Reactions
Thermal Fusion Bombs
see Thermonuclear Weapons
THERMAL INSULATION
see also Asbestos
see also Ceramic Materials
see also Rock Wool
see also Thermal Radiation Shielding
analysis of MICROTHERM 20 Cr, for radioisotope power systems, 22:12533 (ALO-3633-5)
compatibility with thermoelectric materials, testing equipment and methods for determination of, 22:21285 (ALO-3633-7(Vol.2))
concrete hot-liner pressure vessel, performance of water-cooled reactor, 22:44831(T) (ORNL-tr-1966-d)
configuration of reactor pressure vessel external, description of nonvertically-seamed multiple block, 22:53475(P)
configuration of stainless steel pad--foil sandwich, for prestressed concrete pressure vessels, 22:44830(T) (ORNL-tr-1966-c)
design and development for cryogenic containers, 22:8296 (TRG-Report-1455)
design and testing of Celotex disc, for radioactive material shipping container, 22:25574 (RFP-1042)
design for use in contact with reactor liquids, 22:10496(P)
design, development, and testing of beryllium and silicon dioxide, for SNAP-27, 22:37937(R) (GEMS-400)
development and fabrication of SNAP-21, 22:19045(R) (MMM-3691-26)
development and fabrication of SNAP-21, 22:2309(R) (MMM-3691-23)
development and testing for SNAP-23A, 22:14679(R) (WANL-3800-9)
development and testing for SNAP-23A, 22:33605(R) (WANL-3800-12)
development and testing of 400 to 1800°F fibrous-type, for radioisotope power systems, 22:21284 (ALO-3633-7(Vol.1))
development and testing of fibrous-type, for radioisotope power systems, 22:21285 (ALO-3633-7(Vol.2))
development and testing of glass fiber and metal foil, 22:12555(R) (ALO-3632-23)
development and testing of SNAP-21, 22:42973(R) (MMM-3691-35)
development and testing of SNAP-21, 22:36000(R) (MMM-3691-30)
development and testing of vacuum foil-type, for radioisotope power systems, 22:51177(R) (ALO-3634-10)
development for radioisotope-powered generators, 22:14676 (SC-DC-67-2119)
development for SNAP-23A, 22:12536(R) (WANL-3800-4)
development for thermoelectric cells, 22:51176 (ALO-2510-2)
development for undersea radioisotope thermoelectric generator, 22:23217 (CONF-670445-, pp 18.33-54)
development of fibrous-type, for radioisotope power systems, 22:12533 (ALO-3633-5)
development of laminated, for MSBR, 22:2297 (ORNL-TM-2029)
development of light-weight concrete for, 22:43635(P)
development of prestressed concrete pressure vessel, for power reactors, 22:53303
development of pumice concrete, for gas-cooled reactor systems, 22:7838
development of vacuum foil-type, for radioisotope power system, 22:42970(R) (ALO-3634-9)
development of vacuum foil-type, for radioisotope power system, 22:28008(R) (ALO-3634-8)
development of vacuum foil-type, for radioisotope power systems, 22:8301(R) (ALO-3634-7)
fabrication and testing of SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
fabrication of perlite, method for, 22:19684(P)
heat transfer in, effects of foil and oxide layer thickness on, 22:10481(R) (ALO-3634-6)
materials testing for semi-hot walls in MHD generators, 22:47875

  performance of stainless steel foil, in high pressure gas, 22:7839
  physical properties of MIN-K, for radioisotopic power systems, effect of ALON-C-base material on, 22:25613(R) (ALO-3633-8)
  plutonium recovery from fibrous, 22:12407 (RFP-832)
  pressure tube internal, description of, 22:39915(P)
  pressure vessel, description of boiling reactor water-cooled concrete, 22:37495(P)
  pressure vessel, description of interlocking V-shape seals for multiple metal sheets in, 22:37592(P)
  properties for use in thermoelectric generators, 22:42993
  radiation effects at low pressures on titanium oxide, proton and ultraviolet, 22:17191
  reactor vessel, description of triangular-shaped aluminum- or stainless steel-enclosed spherical, 22:39911(P)
  requirements for safe reentry of space vehicle radioisotope power sources, 22:30791
  testing for SNAP-27 container, 22:42977(R) (SC-PR-68-451)
  testing of cryogenic, for use in radiation environment, 22:781(R) (N-67-19129)
  testing of Min-K-1301, for SNAP-23A, 22:14673(R) (MMM-3824-0013)
  testing of SNAP-21A, 22:23223 (MND-3322-25(Vol.2))
  thermal conductivity of granular mineral, effect of carbon dioxide gas pressure on, 22:7840
  thermal conductivity of Min-K-2000, for SNAP-23A, measurement from 145 to 1200°F, 22:14679(R) (WANL-3800-9)
  use of glass-filled tetrafluoroethylene tapes for insulating superconducting magnet coils for bubble chamber, 22:38999
Thermal Neutron Cross Sections
   see Neutron Cross Sections
Thermal Neutrons
   see Neutrons, Thermal
Thermal Noise
   see Noise
THERMAL PRECIPITATORS
   see also Particle Precipitators
   see also Particles
THERMAL PROPERTIES
   see also Emissivity
  measurements for strontium hafnates and zirconates, 22:669
THERMAL RADIATION
   see also Heat Transfer
   see also Infrared Radiation
  background electromagnetic black-body, relation to cosmological evolution, 22:17339
  energy flux of, in forest ecosystem, 22:6772 (ORNL-4168, pp 61-118)
  measurements in gaseous core rocket reactor, 22:6072
  prediction of natural, using computers to solve partial differential equations, 22:234 (ORNL-TM-1975)
  thulium oxide emittance of, at 2300 to 3000°K, 22:4768 (IS-1688)
THERMAL RADIATION SHIELDING
   see also Thermal Insulation
  design for reactor concrete pressure vessel to prevent overheating, 22:6180(P)
  development of laminated, for MSBR, 22:2297 (ORNL-TM-2029)
  testing of honeycomb, equipment and methods for nondestructive, 22:271 (N-67-19360)
Thermal Reactors
   see Reactors, Thermal
THERMAL RUPTURE
   see also Thermal Shock
  prevention of thermal shock induced reactor containment vessel, use of shock absorbing plates spaced on inner surface for, 22:7870(P)
Thermal Shielding
   see Thermal Radiation Shielding
THERMAL SHOCK
  suppression in coolant flow stream, description of grid accumulator for, 22:16346(P)
Thermal Siphons
   see Siphons
THERMAL STRESSES
  analysis in fuel element cladding, derivation of COMET computer-code for, 22:53458 (EUR-4049)
  analysis in PM reactor core structures, 22:20895 (HIT-3583-88(Add.))
  calculation in pebble-bed reactor spherical fuel, description of axisymmetric heat transfer, (T), 22:32803
  development of transient, from sudden heat generation in segment of circular cylinder, (T), 22:45235 (ANL-7420)
  dynamic effects of heat--generation changes in solids, (T), 22:24925(R) (ANL-7427)
  effects on bowing of rod-type fuel elements of forced convection cooling, analysis of, 22:44925 (TRG-Report-1662)
  effects on creep and plastic deformation in thin tubes, 22:28810
  measurement in ChS Epoxy 110 and ChS Epoxy 12, by photoelastic simulation, 22:783
  testing of Fast Test Reactor fuel elements, analysis of, 22:25076 (BNWL-599)
THERMAL TRANSFER TESTING
  method for determination of thermodynamic properties of Type ATJ graphite, 22:45257
  method for inspection of pressure vessels, 22:40343
  methods for reactor fuel element, theory of emittance difference and dual scan ratio, 22:45256
Thermal Transformation
   see Phase Diagrams
THERMIONIC CELLS
   see also Thermoelectric Cells
  book: An Introduction to Direct Energy Conversion, 22:29324
  cathode cooling in oesium, 22:47865
  configuration of ceramic-centered spring-positioned variable-spaced concentric electrodes for diode-type, description of reactor converter fuel element, 22:39838(P)
  cutoff characteristics of, effect of glass wall potential on, (E), 22:5203
  design, 22:15396(P)
  design and testing of double-diode fueled module, 22:7888
  design of actinium-227 oxide fueled, 22:33616
  design of isotopic, 22:21982 (CEA-R-3418)
  design of out-of-pile 10-kW, using heat pipes, 22:24090 (LA-3813)
  design of radioisotope-heated, 22:41412(P)
  design of single-cell fission powered, 22:30794 (CONF-680508-3)
  design of, with heat pipe, 22:36784(P)
  design with current augmented by self-induced magnetic field, 22:41413(P)
  development and testing molybdenum--uranium dioxide, for reactor core use, 22:23730 (DLR-MITT-66-07, pp 69-72)
  development for space use, review of, 22:29322
  development of isotope-powered, for space power, 22:38843 (N-68-12989)
  development of nuclear, using heat pipes, 22:37907 (N-68-19146)
  development of nuclear-heated cesium diode, 22:24088 (DLR-MITT-66-07, pp 31-47)
  development of radioisotopic-powered, European programs for, 22:49033
  development of reactor-powered, 22:48992
  development of solar, 22:36776(R) (N-68-15766)
  development of solar, 22:36777(R) (N-68-16074)
  development of solar, (E), 22:36778(R) (N-68-22991)
  diffusion theory of, 22:2881 (IAE-1160, pp 3-14)
  discharge neutralization in, (T), 22:3040 (IAE-1160, pp 15-28)
  efficiency of radioisotope-powered, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
  efficiency of, effect of anode emission on, 22:17437
  electric properties of xenon-filled, in reactors, 22:45984
  electron temperature distribution in, (T), 22:34325 (RT/FI-(68)7)
  electron-transport phenomena in plasma in, (E/T), 22:11444
  emitter design for nuclear heated, 22:38848(P)
  emitters and collectors for, properties of, (E), 22:19825
  emitters for, properties of carbide-fueled, 22:24089 (DLR-MITT-66-07, pp 49-67)
  fabrication of multiple serially-connected reactor fuel element, description of, 22:39835(P)
  gamma-heating map for diode, analysis of, (E/T), 22:37539 (N-68-22022)
  heat transfer to, from reactor surfaces, use of heat pipes for simulation of, 22:47282 (BMwF-FBK-68-18)
  insulator materials for, literature survey of radiation effects on oxide ceramic, 22:36553 (N-68-17095)
  ion-current and Schottky effects in, 22:1027
  ionization equilibrium in plasma diode, 22:45997
  ionization equilibrium in plasma diode, (T), 22:2882 (IAE-1160, pp 43-8)
  ionization levels in cesium diode, (E), 22:34333
  life testing of electrically heated Mark VI, out-of-pile, 22:41399 (GA-8900)
  life testing of fission-heated Mark VI, in-pile, 22:41399 (GA-8900)
  materials for, cesium sorption by, 22:38533 (GA-8574)
  operation of cesium diode, effects of nonuniform temperature on, (E), 22:19815
  operation of variable-regime, review of, 22:13289
  performance characteristics of vapor converters, analysi of, (T), 22:24096
  performance evaluation of low-pressure alkali-metal converters for dc and rf power, 22:11292 (ANL-7377)
  performance for space power, review of, 22:29321
  performance of cadmium- and mercury-seeded cesium, 22:36786
  performance of cesium, effects on noble gas additives on, 22:31680
  performance of cesium, with tungsten cathode, 22:43960
  performance of multiple concentric cylinder, from 0.01 t 10 MW(e) at 1400 to 2200°K, 22:30283 (UCRL-70816)
  performance of rhenium emitter--niobium collector, thermal, 22:45983 (N-68-25059)
  performance of rhenium--niobium cylindrical, electrical,

22:41402 (N-68-21766)
performance of yttrium oxide in high-temperature, 22:34095 (LA-3822)
performance of, methods for determining, 22:19824
performance of, SIMCON computer program for, 22:26271 (GESR-2109)
physical processes in, 22:2880 (IAE-1160)
plasma kinetics in, cesium, (E), 22:34324(R) (AD-662636)
plasma kinetics in, exact solutions of Boltzmann--Vlasov equations for, 22:38839 (N-68-11353)
plasma oscillations in low pressure alkali metal vapor, analysis of, 22:33087 (ANL-7310, pp 513-22)
plasma properties in, cesium, (T), 22:47864
plasma properties in, nonequilibrium, (E/T), 22:38838(R) (AD-664494)
plasma sheaths near field-modified emitting electrodes in, analysis of, 22:22170
power flattening in advanced in-core rocket reactor, 22:6073
power source of 0.14 MW(e), description of uranium-233-fueled molybdenum-reflected space, 22:32945
properties of arc-mode, volt--ampere, 22:15388
properties of variable-spaced planar, with tungsten emitter and niobium collector, 22:45982 (N-68-23476)
radiation damage, neutron, 22:7897 (LA-DC-9110)
radiation effects on xenon-filled, in-pile, 22:38841 (N-68-12718)
radioisotope heat sources for, review of, 22:6543
research program on, 22:50068(R) (NP-17604)
review of nuclear, for space propulsion, 22:30284
testing of nuclear, Sirene 302 experiment for in-pile reliability, 22:29319
testing of single-cell fission powered, in-pile, 22:30794 (CONF-680508-3)
testing, for converters and generators, 22:41401 (N-68-21597)
thermodynamics of, review of, 22:19823
use for direct energy conversion in heat-pipe reactor, 22:25046(P)
use in energy conversion, review of present status of, 22:29320
use in nuclear energy, 22:3882
use of heat pipe-connected, in space power reactor design concept, 22:39850 (N-68-12426)
use with reactor fuel elements, theory for, 22:36775 (CONF-680508-4)

hermionic Converter Reactor (Martin Co.)
  see Nuclear Auxiliary Power Systems
hermionic Generator-USAF/GE
  see Nuclear Auxiliary Power Systems
hermistors
  see Resistors
hermobalances
  see Balances
HERMOCOUPLES
  see also Pyrometers
  see also Thermometers
  see also Thermopiles
accuracy for surface temperature measurements, 22:25563 (AECL-3062)
analysis and testing of SNAP-23A, procedures for, 22:6537 (MMM-3824-0002(Vol.1))
analysis of testing of SNAP-23A, procedures for, 22:6538 (MMM-3824-0002(Vol.2))
cable-straightening device for radial splitter fin-type fuel element hot junction, description of, 22:39914(P)
cable-straightening device for radial splitter fin-type fuel element hot junction, description of, 22:48781(P)
calibration data for Garigliano Power Reactor fuel element, 22:48645 (GEAP-5623)
calibration of Alumel--Chromel and constantan--iron, effects of reactor pulsing on, 22:33162
calibration of chromel-alumel/iron-constantan, radiation effects on, 22:16271(R) (BNWL-666)
calibration of Halden Boiling Reactor in-pile, description of, 22:20814 (HPR-79)
calibration of rhenium/tungsten--tungsten, description of static, (E), 22:35596(R) (IDO-17260)
calibration of SEFOR high temperature fuel, radiation effects on, 22:14123 (ANL-7380, pp 15-21)
calibration of uranium dioxide intrinsic, for measuring reactor fuel cell temperatures, 22:51276(R) (IDO-17269)
characteristics of high temperature and ordinary, summary of, 22:48662
circuit protector for, design of, 22:51289
description of NERVA nozzle mounted hot gas, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
description of neutron-sensitive and -insensitive mounted junctions for neutron flux measuring, 22:20974(P)
description of SPERT-4, 22:6095(R) (IDO-17245)
design and performance for temperature measurements in liquid sodium, 22:36453 (LMEC-Memo-68-10)
design and performance of miniaturized ADIT fission, for neutron flux measurements in reactors, 22:30905
design and performance of rhenium--tungsten/rhenium--tungsten, for temperatures up to 2600°C, 22:40295
design and performance of, for plutonium-238-powered cardiac pacemaker, 22:36002(R) (NUMEC-3731-13)
design and testing of SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
design and testing of SNAP-21A, 22:23223 (MND-3322-25(Vol.2))
design and testing of SNAP-23A, 22:12536(R) (WANL-3800-4)
design and use for surface temperature measurements, manual on, 22:25563 (AECL-3062)
design for SNAP-23A, 22:14673(R) (MMM-3824-0013)
design for use in sodium systems at high temperatures, review of, 22:17100 (BNL-50089)
design of alumel--chromal, for VAPOTRON test facility, 22:1759 (EURAEC-1890)
design of fission, for neutron flux and power density measurements in reactors, 22:30838
design, properties, and uses of very small mineral insulated, 22:19015
development and testing for SNAP-23A, 22:36001(R) (MMM-3824-0020)
development and testing for SNAP-23A, 22:51180(R) (MMM-3824-23)
development and testing of, for SNAP-21 thermoelectric generator, 22:42973(R) (MMM-3691-35)
development and testing of, for SNAP-21 thermoelectric generator, 22:2309(R) (MMM-3691-23)
development and testing of, for SNAP-21 thermoelectric generator, 22:19045(R) (MMM-3691-26)
development for heat transfer system, 22:21268 (ENGG/HT-1)
development for high-temperature measurement, review of, 22:17124
development for SNAP-19 power supply, 22:40326 (MND-3607-239-3)
development for use in fuel pins, 22:647(R) (BNL-50077)
development of fission, for neutron flux measurements in reactors at low temperatures, 22:51276(R) (IDO-17269)
development of fuel pin, for FFTR, 22:14244 (ANL-7380, pp 9-14)
development of Halden Boiling Reactor high-temperature, analysis of, 22:53280 (NP-17638)
development of high temperature fuel, 22:16192
evaluation of bare-wire, for LOFT, 22:1766(R) (IDO-17240)
fabrication and installation of, for in-pile instrumentation of fuel element assemblies, 22:8708 (ORNL-4190)
fabrication of fission, for in-core neutron flux measurements, vapor deposition for, 22:38142 (LA-DC-9004)
fabrication of rhenium--tungsten, for SEFOR hexagonal channel plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuel elements, 22:44889(R) (GEAP-5629)
fins on tubular, design of tool for crimping, 22:27983(P)
insulation for cupron and tophel, electric properties of, 22:37936 (GA-7976)
insulator materials for refractory metal, evaluation of, 22:1766(R) (IDO-17240)
performance at 2400°F of, analysis of, 22:25135(R) (SNE-38)
performance of rhenium--tungsten/rhenium--tungsten, for DFR fuel pin center temperature measurement, 22:44811 (CONF-660521-6)
performance of Saxton Power Reactor 3 x 3 fuel assembly, analysis of, (E), 22:35477(R) (WCAP-3696-7)
performance of tungsten/rhenium alloys, for high-temperature measurement in reactors, 22:45347(T) (AERE-Trans-1095)
performance testing in Halden Boiling Reactor, 22:16356 (KR-116)
properties of high temperature, 22:15144 (GEMP-1002, pp 137-42)
radiation damage to plasma, use of critical assembly neutrons to determine, 22:7897 (LA-DC-9110)
radiation effects on, 22:28265
radiation effects on alumel--chromel, neutron, 22:4841
radiation effects on calibration of reactor, gamma, 22:4561
radiation effects on constantan--iron, neutron, 22:4841
radiation effects on decalibration of Alumel/Chromel, measurement of fast neutron, 22:33161
radiation effects on performance of sodium coolant, for Fast Test Reactor, neutron, 22:40508 (BNWL-SA-1857)
radiation effects on, review of, 22:30926
reactions of rhenium--tungsten, with plutonium oxide--thorium oxides and thorium oxide at 2215 to 2290°C, 22:645 (AECL-2768)
reliability of SNAP, 22:14236 (ANL-7380, pp 37-9)
repair of open-circuited, adjustable capacitive discharge welding devices for, 22:40479 (AI-AEC-Memo-12710)
response of NERVA high temperature, effects of time on, 22:14238 (ANL-7380, pp 52-62)
response testing of Fermi Fast Breeder Reactor fuel subassembly outlet, under normal and fuel failure conditions, 22:4508
response time of miniature shielded, 22:14878(T) (ANL-Trans-554)
sealing in clad fuel elements, methods for, 22:12995(P)
seals for NERVA high temperature, leak rate testing of, 22:14238 (ANL-7380, pp 52-62)
temperature measurements from, using correction kernels, 22:28001
testing of materials for SNAP-21A, 22:28014(R) (MND-3322-7)

- use for temperature control of neutron scattering targets, 22:2473
- use in Hallam Power Reactor safety circuits, 22:14126 (ANL-7380, pp 43-6)
- use in measuring mean water velocity in reactors, 22:8282(P)
- use of, with fissionable material replacing oxide insulation, for neutron flux measurements in LMFBR, 22:12571 (ANL-7380, pp 146-7)
- uses of fission, at cryogenic temperatures, 22:38141 (IDO-17268)
- welding to thermocouple sheath, electric resistance method for, 22:4330(P)

THERMODYNAMIC PROPERTIES
- calculation for compounds in any phase state, computer program for, 22:50222 (ORNL-4304)
- calculation for one-phase compounds, computer program for, 22:48851 (ORNL-4307)
- calculation for superheated gas mixtures, method for, 22:48129
- calculation from determination of Debye temperature from x-ray data, 22:7952 (MLM-1396)
- calculation of Debye model parameters and effective temperature for crystalline solids, computer program for, 22:24413 (WANL-TME-1666)
- calculations for alkali-metal plasmas at 2,000 to 25,000°K and 10^{-4} to 100 atm, 22:26411
- conference on, of ceramic systems, London, April 19 to 21, 1966, 22:4848
- data and parameters of semimetallic actinide and lanthanide, 22:31464
- data on condensed media from shock wave studies, compendium of, 22:18741 (UCRL-50108(Vol.1)(Suppl.1))
- data on condensed media from shock wave studies, compendium of, 22:18742 (UCRL-50108(Vol.2)(Suppl.1))
- determination in alloy systems, review of, 22:31361
- determination in fused salt, by microscopy, 22:31448
- determination of magneto-, superconducting magnet for, 22:44044
- effects of pressure and temperature on water density and enthalpy, (T), 22:32768 (KAPL-M-6734)
- equations for niobium oxychloride, empirical, 22:11048
- measurement of fused salts, review of, 22:31499
- measurements in liquid alloys, determination of alloy structure by precise, 22:690 (LA-DC-8804)
- research progress on, 22:10204(R) (COO-1149-102)

THERMODYNAMICS
- see also Differential Thermal Analysis
- see also Physical Chemistry
- see also Physics
- analysis of self-generating Brayton cycle, computer program for performance, 22:19035 (UCRL-70827)
- behavior of carbide, carbonitride, and sulfide phases of niobium in steels, 22:2623
- book: Applications of Fundamental Thermodynamics to Metallurgical Processes, 22:36446
- book: The Characterization of High-Temperature Vapors, 22:30553
- book: Theory of Energy Transfer and Conversion, 22:5486
- burnout simulation of pressurized-water two phase flow, Freon loop for, 22:39733 (AAEC/TM-441)
- calculation of distribution coefficient between liquid and solid phases, 22:38539(T) (ORNL-tr-1797)
- calculation of partial free energies and entropies of interstitial three component phases of carbo- and nitro-hydrides, 22:31507
- conference on nuclear materials, 22:31347 (STI/PUB-162)
- conference on thermophysical properties of gases, liquids, and solids, College Park, Maryland, April 1 to 4, 1968, 22:25611
- effects on neutron thermalization process of non-equilibrium, analysis of, (T), 22:27502
- enthalpy of fusion of uranium dioxide, 22:21710
- equilibria in water reactor pressurizers, 22:4348
- equipment for investigating, of alkali metal mixtures, 22:12271(R) (COO-1707-1)
- Grueneisen ratio calculations for shock phenomena, numerical problems in, 22:26453 (UCRL-70670(Rev.1))
- saturation enthalpy and entropy for liquid or gas, calculation of, (E/T), 22:42344(R) (UCRL-50004-67-3(Pt.1))
- second law of, consequences of time reversal invariance on, 22:39311
- use in analysis of molecular structure of γ-irradiated proteins, 22:28335

THERMOELECTRIC CELLS
- see also Thermocouples
- book: An Introduction to Direct Energy Conversion, 22:29324
- components for SNAP-21, design and development of, 22:36000(R) (MMM-3691-30)
- components for SNAP-21, design and testing of, 22:19045(R) (MMM-3691-26)
- components for SNAP-21, design and testing of, 22:2309(R) (MMM-3691-23)
- components for SNAP-23A, design, development, fabrication, and testing of, 22:14679(R) (WANL-3800-9)
- design and development for plutonium-238-powered cardiac pacemaker, 22:36002(R) (NUMEC-3731-13)
- design and development of 10-W, for SNAP-21A, 22:23222(R) (MND-3322-25(Vol.1))
- design and development of 10-W, for SNAP-21A, 22:23223 (MND-3322-25(Vol.2))
- design and fabrication of 60-W, for SNAP-23A, 22:14673(R) (MMM-3824-0013)
- design and performance of isotopic, 22:42993
- design and testing of SNAP-23A, 22:12536(R) (WANL-3800-4)
- design of, 22:38847(P)
- design of compact, 22:5205(P)
- design of elements for, 22:17443(P)
- design of improved, 22:7192(P)
- design of milliwatt radioisotope-heated generator, 22:47869(P)
- design of radioisotope powered, incorporating bismuth telluride or germanium silicide thermoelements, 22:33616
- design of radioisotope-heated, 22:5204(P)
- design of radioisotope-powered, 22:30781
- design of, for power generation, 22:24098(P)
- design of, for reactors, 22:15394(P)
- design using germanium--silicon thermoelectric materials, 22:51176 (ALO-2510-2)
- design, development and testing of SNAP-19, 22:40325 (MND-3607-239-1)
- design, development, and testing of SNAP-19, 22:40326 (MND-3607-239-3)
- design, development, and testing of SNAP-23A, 22:33605(R) (WANL-3800-12)
- design, development, and testing of SNAP-27, 22:37937(R) (GEMS-400)
- development and economics of radioisotope-fueled, for power generation, 22:10514
- development and testing of, for SNAP-23A, 22:17435(R) (MMM-3824-0017)
- development and uses of isotope-powered, for low wattage generators in UK, 22:2315
- development and uses of RIPPLE, conference on, 22:23227
- development for land and submarine use, 22:42990
- development for RIPPLE, 22:21292
- development for SNAP-3, 22:10436 (MND-P-2173(Rev.2))
- development for space use, review of, 22:29322
- development for undersea operation, 22:23217 (CONF-670445-, pp 18.33-54)
- development for use in marine navigational aids, 22:42991
- development of 10W deep-sea isotopic, for SNAP-21A, 22:28014(R) (MND-3322-7)
- development of radioisotope-powered, for terrestrial uses, 22:30780
- development of radioisotope-powered, RIPPLE program for, 22:8319
- development of radioisotopic-powered, European programs for, 22:49033
- development of RIPPLE, review of program for, 22:33608
- development of solar, 22:38840 (N-68-12252)
- development of solar, 22:38846 (N-68-19707)
- development of, review of, 22:1029
- development, testing, and performance of, for SNAP-23A, 22:36001(R) (MMM-3824-0020)
- development, testing, and performance of, for SNAP-23A, 22:51180(R) (MMM-3824-23)
- efficiency of radioisotope-powered, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
- fabrication of modules for, compatibility tests of lead telluride/boron nitride for gas-pressure sintering cycle in, 22:43634 (WANL-TME-1446)
- handling, storage, and transport of SNAP-27, radiological control procedures for, 22:49027 (NUS-301(Vol.2))
- handling, storage, and transport of SNAP-27, radiological control procedures for, 22:49026 (NUS-301(Vol.1))
- heat transfer apparatus for, 22:17442(P)
- maintenance and operation of SNAP-19, manual for, 22:4354 (MND-3607-80)
- materials for limitations of, 22:19837
- materials for SNAP-21 and SNAP-23, testing of, 22:45248 (MMM-3691-37)
- materials for, development of, 22:24091(R) (NYO-3886-1)
- materials testing for, thermoelement, 22:7187 (EUR-3429f)
- nuclear energy source limitations for, 22:19817
- operation and performance testing of SNAP-3, in acceleration, shock, and vibration fields, 22:47293 (MND-P-2368)
- P- and N-type legs for SNAP-27, specifications for, 22:40324 (MMM-8406-1757(Vol.2))
- performance characteristics of, for electric power generation, 22:12547
- performance in airline communications and navigation systems, 22:42992
- performance of radioisotope-cascaded, 22:38842 (N-68-14585)
- performance of radioisotope-powered, 22:38844 (N-68-14630)
- performance of RIPPLE, 22:45250
- performance of SNAP-27, methods and plans for measuremen of, 22:40319 (ANSE-6300-014)
- performance testing of SNAP-21, 22:42973(R) (MMM-3691-35)
- properties of, review of, 22:15387 (AERE-M-1768)
- radiation effects on operation of cesium diode, fission fragment, 22:43195
- radioisotope heat sources for, review of, 22:6543

  shock and vibration testing of SNAP-21, 22:42973(R) (MMM-3691-35)
  testing of SNAP-23A, analysis of results of, 22:6538 (MMM-3824-0002(Vol.2))
  testing of SNAP-23A, equipment and facilities for, 22:6537 (MMM-3824-0002(Vol.1))
  thermal insulation for radioisotope-fueled, analysis of MICROTHERM 20 Cr for use as, 22:12533 (ALO-3633-5)
  thermal insulation for radioisotope-powered, development and evaluation of fibrous-type, 22:21284 (ALO-3633-7(Vol.1))
  thermodynamics of, (E/T), 22:19836
  thermoelectric leg product specifications for SNAP-27, 22:40322 (MMM-8406-1757(Vol.1)(Pt.1))
  thermoelectric testing of SNAP-27 N- and P-type legs for, specifications for long-term, 22:40323 (MMM-8406-1757(Vol.1)(Pt.2))
  use in energy conversion, review of present status of, 22:29320
  use in power supply design for remote locations, 22:7191(P)
  use of radioisotope-powered, in pacemaker for human heart, 22:30789
THERMOELECTRIC MATERIALS
  compatibility with thermal insulation, testing equipment and methods for determination of, 22:21285 (ALO-3633-7(Vol.2))
  development and testing for direct energy conversion devices, 22:51176 (ALO-2510-2)
  development for radioisotope-powered generators, 22:30781
  electric conductivity and open circuit voltage of, in argon at room temperature and 1000°F, 22:21285 (ALO-3633-7(Vol.2))
  evaluation for SNAP-21A, 22:28014(R) (MND-3322-7)
  evaluation for undersea thermoelectric generator, 22:23217 (CONF-670445-, pp 18.33-54)
  performance and selection of, for nuclear-powered generators, 22:47287 (AERE-R-5500(Vol.2), pp 462-79)
  properties of niobium--titanium and hafnium--niobium alloys as, (E), 22:9430
THERMOELECTRIC PROPERTIES
  review of, 22:15387 (AERE-M-1768)
THERMOLUMINESCENCE
  conference on geological applications of, Spoleto, Italy, Sept. 1966, 22:30704
  decay in building stones, (E), 22:29541 (COO-1057-38)
  determination in gamma irradiated-magnesia doped alumina, 22:4885
  fading in lithium fluoride after gamma doses up to 1000 rad, 22:6660
  glow peaks and decay rates for radioinduced, computer calculations of, 22:47383 (TID-24640)
  history and theory of, review of, 22:16919
  measurement of inorganic and organic material, design of equipment for, 22:2275 (RT/EL-(67)3)
  measurement of plant seed, analysis of, in relation to x-radiosensitivity, 22:31287
  measurement of, design of photon counter for, 22:45341
  properties of, design of controlled-rate heaters by studying, 22:4517
  radiation effects on, in high-molecular-weight organic compounds, 22:25413
  radiation effects on, of amino acids, γ, 22:28299
  radio-, use for studying phase homogeneity of solid crystalline organic compounds, 22:18790
  radioinduced, in teeth, use of, for dosimetry, γ, 22:45530
  radioinduced, in tomato seeds at low temperatures, x, 22:38230
  rate equations for, 22:24408 (IA-1128, pp 21-54)
  readout equipment for measuring, description of, 22:33675
  use for dating of ancient ceramics, 22:6478
  use in radiographic nondestructive materials testing method, 22:4379(P)
  use of natural, in radiation dosimetry of fossil shells, 22:8219
Thermoluminescent Dosimeters
    see Radiation Dosimeters, Thermoluminescent
THERMOMETERS
    see also Balometers
    see also Pyrometers
    see also Resistance Thermometers
    see also Thermocouples
  characteristics and performance of, for nuclear installation site survey, 22:45356 (TID-24190, pp 257-300)
  demagnetization factors and shape corrections for cerous magnesium nitrate low-temperature, 22:34545
  description of neutron flux and heat output combined signal, for instantaneous measurement of output, 22:14358(P)
  design and performance for temperature measurements in liquid sodium, 22:36453 (LMEC-Memo-68-10)
  design and performance of fluidic acoustic resonant, using frequency beating technique, 22:21000 (SAN-639-7)
  design and performance of infrared, for monitoring temperature of stored radioactive waste, 22:38137 (BNWL-773)
  design of gamma, for in-core gamma flux measurements, 22:43055
  design of high temperature gas bulb, using null-balance pressure transducer, 22:35457 (GEAP-5100-6)
  design of resistance, for measurement of ocean temperatures, 22:42901 (CU-2663-9, App.K)
  development of fluidic sonic oscillator, 22:19195 (UCRL-50344)
  development of ultrasonic, for measuring water temperature in fuel element channel, 22:51276(R) (IDO-17269)
THERMOMETRY
  efficiency of vapor-pressure, 22:49024 (MLM-1495)
  ultrasonic, for liquid metal-cooled fast breeder reactors, 22:28209(R) (NYO-3906-2)
  ultrasonics for LMFBR-type reactor, testing system for, 22:53281(R) (NYO-3906-3)
Thermonuclear Devices
    see Thermonuclear Reactors
THERMONUCLEAR EXPLOSIONS
  effects of high altitude, on radio wave absorption on Wake Island, 22:18977
  effects on ecology of old fields, 22:38237 (ORNL-TM-2104)
  fallout from 1961--62 USSR, in California, Lake Michigan, and the polar regions, 22:25536
  fallout from June 1967 Chinese, in Fayetteville, Arkansas, (E), 22:10383
  heavy-element production in Cyclamen test, review of, (E), 22:32619
  radiation dose to man following, methods of estimating, 22:40669 (UCRL-70894)
  radionuclide production by neutrons from underground, calculation method for, 22:21225 (HNS-1229-54)
  use for heavy-element production, (E), 22:29844
  use for production of heavy elements by multiple neutron capture, 22:1654 (LA-3738)
THERMONUCLEAR REACTIONS
    see also Elastic Arcs
  acceleration methods for use of plasma jet, (E), 22:17625
  book: Principles of Stellar Evolution and Nucleosynthesis, 22:47724
  cross section measurements for, 22:38809
  development of controlled, in Japan, 22:18659
  diagnostic use of neutron emission from deuterium, 22:1169
  economic potentials of controlled, 22:25132 (LA-DC-9519)
  effects on plasma stability, 22:11483
  energy production in stars, (T), 22:41272
  in medium and heavy nuclei at high density, (T), 22:15319
  interactions d + t, reaction rate calculation using averages over deformed Maxwellian distributions, 22:36957 (FOA-4-4360-25)
  model for high-energy, in solar flares, (T), 22:19731
  neutron and x-ray production in focused z-pinches in deuterium, 22:34726 (AD-665416)
  neutron emission from plasma focus experiment, 22:1279 (LA-3770, Paper C2)
  production of, laser equipment for, 22:39137(P)
  production of, method and apparatus for, 22:39145(P)
  research, 22:9924(R) (NP-17186)
  research on, 22:44199(R) (NYO-3863-8)
  research on controlled, review of, 22:31882
THERMONUCLEAR REACTORS
    see also High Energy Injection Devices
    see also Magnetic Mirror Machines
    see also Stellarators
  accelerator design for Astron, electron linear, 22:29462 (UCID-5076)
  accelerator design modifications for Astron, electron linear, 22:29463 (UCID-5104)
  current leads for, magnetic shielding of, (E), 22:36886
  design and economics of, 22:9407
  design for confining high-temperature plasma, 22:5312(P)
  design of, 22:13432(P)
  design of spherical multipole Kaktus, 22:50129 (INR-913)
  design of Tokamak TM-3, 22:24251(T) (AD-666156)
  development of Astron, review of, 22:1145 (UCRL-70450)
  development of, review of, 22:13431
  E-layer lifetime in improved Astron facility, (E), 22:22122 (UCID-15294)
  E-layer trapping and behavior in Astron, 22:41541 (UCRL-70933)
  economics for power production, 22:29461 (ORNL-TM-2204)
  economics for power production, 22:24989
  economics of deuterium--deuterium and deuterium--tritium fueled toroidal, 22:19925 (CLM-R-85)
  economics of pulsed, 22:29467
  electromagnetic gas inlet valves for, design and operation of fast-acting, 22:2266 (IPP-1/68)
  electron distribution function in Tokamak, (E), 22:19938(T) (NP-tr-1624)
  electron injection techniques for Astron, 22:19931 (UCRL-5617-T)
  engineering problems in, review of, 22:17622
  feasibility of Astron, report of Ad Hoc Panel on, 22:39034 (TID-24513)
  ion energy distribution in Tokamak, 22:19944
  linear accelerator for Astron, design of 4.23-MeV electron, 22:15880 (UCID-15279)

magnetic field line trajectories for Skornyakov traps, 22:39037
microwave emission spectra from Tokamak, 22:34693
operation characteristics of Astron, for analysis of ring stability in electron-ring accelerators, 22:46632 (UCRL-18103, pp 432-3)
operation of Astron, computer calculation for various parameters, 22:39036 (UCRL-70675)
performance of closed, with adiabatic compression by jacket deformation, (T), 22:17612(T) (MATT-Trans-50)
plasma anomalous resistance in Tokamak TM-3, 22:19934(T) (NP-tr-1617)
plasma confinement and losses from LM-1 quadrupole device, (E), 22:24246 (MATT-Q-25, pp 1-29)
plasma confinement in multipole devices of, properties of, 22:7260
plasma confinement properties in linear multipole and spherator, 22:44069 (MATT-620)
plasma confinement within relativistic proton coils in toroidal, (T), 22:22121 (UCID-15282)
plasma diagnostics in Alpha, microwave probes for turbulent, 22:39043(T) (NP-tr-1676)
plasma diffusion coefficients for Tokamak, (E/T), 22:19937(T) (NP-tr-1622)
plasma equilibrium and stability in axially symmetric toroidal, 22:36954
plasma equilibrium in Tokamak, guiding-center, (T), 22:24247 (MATT-Q-25, pp 201-22)
plasma measurements in Tokamak, existence of closed particles in, 22:46177
plasma oscillations in LM-1, rf-produced, (E), 22:24246 (MATT-Q-25, pp 1-29)
plasma pressure equilibrium distribution in Tokamak, (T), 22:3011
plasma production by fast atom injection in, 22:41622 (IAE-1399)
plasma properties in Tokamak TM-3, 22:24252(T) (NP-tr-1618)
plasma stability and equilibria in Astron E-layer, (T), 22:17708
plasma turbulence measurements in Alfa, by shf probing, 22:46121(T) (MATT-Trans-61)
power supply for, crowbar system in Isar I, 22:45217 (IPP-4/59)
properties of scaled-up Astron, 22:22120 (UCID-15241(Rev.1))
radiation damage in, (E/T), 22:34583 (TID-24491, pp 141-50)
radioactive wastes from, calculation of global, 22:8330
radioactive wastes from, problems in handling and disposal of, 22:49059
research, 22:21017
research at ORNL, 22:19927 (ORNL-TM-2146)
research on, review of, 22:26362
research prospects of various types of, 22:9278
spectral intensity measurements in Tokamak TM-3, hydrogen, 22:3029
stability of E layer and plasma in Astron, 22:36953 (UCRL-70876)
theory of closed spatially periodic magnetic configurations with minimum B, 22:46113(T) (MATT-Trans-58)
vacuum system for Alice, design of liquid helium cryopump for, 22:14652
vacuum system for, design of liquid helium cryopump for, 22:213 (UCRL-70590)
vacuum trapping experiments in Astron with resistors, 22:26354 (UCID-15305)
vacuum trapping of E-layer in Astron, measurement of, 22:39035 (UCID-15346)
x-ray spectra from Tokamak TM-3, (E), 22:22128

THERMONUCLEAR WEAPONS
delivery systems for, recent developments in, 22:27948
design of hydrogen-type, 22:35961(T) (AD-661893)
effects on man, planning of surgical treatment following, 22:31126
testing of first Chinese, stratospheric radioactivity measurements over Berlin from, 22:12445

THERMOPILES
see also Thermocouples
development for measurement of heat effects at planar interfaces, 22:45029 (UCRL-18043, pp 7-105)

THERMOSPHERE
air densities in lower, 22:29330
density during sunspot minimum, (E), 22:29372
hydrogen distribution in, neutral, (E), 22:38957
model of, dynamical, 22:15410 (MIT-2241-35)
neutral-constituent abundance in lower, (E), 22:15422
neutral-gas dynamics in, for small Rossby number motions, (E), 22:36844
temperature of, during sunspot minimum, (E), 22:29372
temperature variations of, contribution of fast neutral atoms to, (T), 22:43723
winds in, during intense magnetic storm, (E/T), 22:41481

THERMOSTATS
see also Cryostats
see also Temperature Control
design of Mark IV intermediate-temperature calorimetric, 22:10204(R) (COO-1149-102)
design of system for NMR spin-echo spectrometer, 22:47419

THETIS Reactor
see Reactors, Research

1,2,5-THIADIAZOLE
spectra of radical anion of, in dimethoxyethane, ESR, 22:37707 (BNL-50082, pp 27-39)

Δ^2-1,3,4-THIADIAZOLINE-5-THIONE, 2-MERCAPTO-4-(2-NAPHTHYL)-
use in extraction-photometric determination of tellurium in lead concentrates and sulfur, 22:16428

THIAMINASE II
radiation effects on activity of, in fish, effects of dose on γ, 22:52116

THIAMINE PYROPHOSPHATE
radiation effects on content of, in starved yeast cells, effects of, on carbon dioxide production, x, 22:51402

THIAZINE DYES
see also Azure A
see also Methylene Blue

THIAZOLE, 2-METHYL-
thermodynamic properties of, 22:10204(R) (COO-1149-102)

2-THIAZOLINE, 2-AMINO-
radioprotective effects of derivatives of, on mice, cobalt-60 γ, 22:45598

THICKNESS GAGES
description of radiometric thin film, based on x-ray analysis after proton bombardment, 22:10616
design and performance of x-ray absorption, for obtaining isodensity curves for graphite, 22:8403
design for aluminum using americium-241, 22:14727
design for aluminum using krypton-85, 22:14727
design for heavy metals using americium-241, 22:14727
design for radiation targets using piezoelectricity of quartz, 22:29805
design of beta-backscatter, 22:36119(P)
design of beta-backscatter, for filament wires, 22:19180(P)
design of beta-backscatter, for metallic layers, 22:4495(P)
design of beta-ray areal-, for control of paper machine, 22:6665
design of radiometric, 22:47389(P)
design of radiometric wall, for hollow articles, 22:4497(P)
design of radiometric, for measuring zinc coating on steel sheets, 22:14868
design of radiometric, for plastic tubes, 22:25690(P)
design of radiometric, using semiconductor detectors, 22:40476(P)
development for radiation targets using Rutherford scattering, 22:44559
development of beta-backscatter, for zinc thickness in galvanizing process, 22:12664
development of gamma-backscatter, 22:43142
development of laser, for thin sections of germanium, 22:28079
development of microbalance, x-ray fluorescence, and Rutherford dispersion techniques for, 22:28208 (NP-17365)
development of radiometric, for controlling and measuring radial clearances in turbines, 22:2287
development of radiometric, for controlling liquid deposition on sheets, 22:43133(P)
development of radiometric, in Italian automotive industry, 22:8323
development of radiometric, using americium-241, europium-155, and thulium-170 sources, 22:256 (ORNL-IIC-10(Vol.2), pp 723-45)
development of ultrasonic, for measuring fuel element coolant channel thickness, 22:51276(R) (IDO-17269)
development of x-ray fluorescent, for measuring thickness of electrolytic deposits, 22:28188 (NP-17351)
efficiency of radiometric, in Hungarian industry, 22:23345
operation of ultrasonic interference, for measuring thickness of tubes in reactors, 22:49153
performance of gamma radiometric, for metals, 22:4491
performance of x-ray absorption, for lead foils and silver layers on x-ray film, 22:43146
radiation monitoring of sealed source radiometric, 22:45559
range of radiometric, development of masking technique for extension of, 22:19081
standardization of beta-absorption, design of automatic system for, 22:21367(P)
use of beta-reflection, for measuring gold coating thickness, effect of silver undercoat on, 22:49136
use of radiometric, in food processing and packaging industries, 22:12665
use of radiometric, in industry, 22:30790
use of radiometric, in textile industry, 22:23343
use of tangential radiographic, for measurement of wall thickness and individual thicknesses in multilayered structures, 22:385 (Y-DA-1583)
uses of radiometric, in industry, 22:33679

THIETHYLPERAZINE
effectiveness as anti-emetic in human patients undergoing radiotherapy of abdomen and pelvis, 22:33893

Thiirane
see Ethylene Sulfide

Thimerosal
see Sodium Salicylates

Thioalcohols
see Thiols

Thio-TEPA
see Triethylenethiophosphoramide
6-Thioctic Acid
see 1,2-Dithiolane-3-valeric Acid
THIOCYANATES
see also Ammonium Chromium Thiocyanates
see also Ammonium Thiocyanates
see also Cobalt Thiocyanates
see also Iron Thiocyanates
see also Manganese Thiocyanates
see also Mercury Thiocyanates
see also Molybdenum Thiocyanates
see also Platinum Thiocyanates
see also Potassium Platinum Thiocyanates
see also Potassium Thiocyanates
see also Sodium Thiocyanates
see also Uranyl Thiocyanates
see also Vanadium Thiocyanates
anation of aquopentamminechromium(III) ion in aqueous acidic sodium chlorate media by ions of, 22:12331
book: Radiolysis of Sulfur Compounds, 22:12394
carbon-14 exchange between cobalt or mercury thiocyanate and ionic, mechanism of, 22:27693
complexes with iodine ions in nitrobenzene, formation of, 22:22962
complexes with molybdenum and niobium, effects of diluents on TBP extraction of, 22:1990
complexes with molybdenum, effects of benzyl alcohol and 1,1-phenanthroline on spot test for, 22:18714
complexes with neptunium, kinetic studies of, 22:27893
complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
complexes with uranium and trioctylamine, spectral studies on structure of, 22:18797
deposition of sulfur-35 labeled, in parotid, submaxillary, and thyroid glands of guinea pigs, 22:12777
determination in uranium solutions, spectrophotometric, 22:27542 (NIM-167)
effects on cementation of europium from aqueous solutions by sodium amalgam, kinetics of, 22:2037
effects on spectrophotometric determination of niobium, kinetics of, 22:40011
effects on thyroxin binding to human plasma albumin, 22:40517(R) (ORO-1643-89)
solvent properties for hafnium and zirconium, 22:23117
uptake of sulfur-35-labeled, by tracheal cells of guinea pigs, use of autoradiography to localize site of, 22:12804
THIOCYANIC ACID
esters of, radioinduced formation of, γ and x, 22:37804
THIOCYANIC ACID, METHYL ESTER
complexes with tetradecylammonium bromide complexes with uranyl bromides, spectral studies on, 22:27681
Thiofuran
see Thiophene
Thioglycolic Acid
see Acetic Acid, Mercapto-
THIOLS
(See also specific compounds.)
see also Cysteine
see also Ethanethiol
book: Radiation and Chemical Protection, 22:47574
book: Radiolysis of Sulfur Compounds, 22:12394
content of disulfides in, of ascites tumor cells and in bovine serum albumin, 22:21565
effects of amino, on content of mercapto group in spleen of mice, radioprotective effects of, 22:25889
metabolism of sulfur-35-labeled, by cultured mammalian cells, effects of concentration, pH, and temperature on, 22:40771
oxidation in animal cells, role of, in radiation lesions, 22:45447
radiation effects on content of, in subcellular fractions isolated from melanomas in mice, uv, 22:36182
radiation effects on, in cellular organelles of rat liver, electron, 22:19247
radioinduced addition to vinyl compounds in liquid and solid state, effects of temperature, composition, and dose on γ, 22:6340
radioinduced formation of, from sulfur amino acids in meat, review of, 22:52111
radiolysis at 77°K, EPR studies of γ, 22:37799
radioprotective effects of amine derivatives of, on oleic acids, 22:28303
radioprotective effects of amino-, design of biological models for analysis of, 22:25900
reactions with sulfenyl chlorides for synthesis of radioprotective compounds, 22:49425
Thionalide
see Acetamide, 2-Mercapto-N,2-naphthyl-
THIONYL CHLORIDE
$SOCl_2$--UCl_5, preparation of, 22:27651
$SOCl_2$--UCl_5, spectra of, ESR and ir, 22:27651
THIOPHENE
deuterium exchange between heavy water and, on Group VIII metal catalysts, 22:50988
deuterium exchange between methyl sulfoxide and, catalytic effects of lithium and potassium tert-butoxide on, 22:45087
effects on intermediates produced by gamma radiolysis of 1,2-dibromo-1,1,2,2-tetrafluoroethane--trichlorofluoromethane mixture, spectral studies on, 22:35831 (PRNC-116)
radiation effects on oxidation of, in oils, γ, 22:37775 (BNL-50082, pp 40-78)
radiolysis in 2-methyltetrahydrofuran glass at 77°K, spectral studies on free radicals produced by γ, 22:27743 (CONF-680423-1)
radiolysis in 3-methylpentane and 2-methyltetrahydrofuran glasses at 77°K, spectral studies on radical ions produced by γ, 22:35831 (PRNC-116)
radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
radiolysis of, radical yields from, 22:33395
THIOPHENE, TETRAHYDRO-, 1,1-DIOXIDE
effects on nitroniumtetrafluoroborate nitration of mixtures of benzene, alkylbenzenes, and halobenzenes, 22:18800
effects on nitroniumtetrafluoroborate nitration of deuterated and normal bromobenzene and chlorobenzene solutions, 22:18800
2-THIOPHENEALANINE
effects on dipicolinic acid content of spores of Bacillus cereus, 22:10896
effects on heat sensitivity of spores of Bacillus cereus, 22:10896
effects on uv-radiosensitivity of spores of Bacillus cereus, 22:10896
2-THIOPHENECARBOXALDEHYDE, 3-BROMO-
nuclear magnetic double-resonance detection of small spin-coupling constants for, field inhomogeneity effects in, 22:7382
THIOPHOSPHORYL CHLORIDE
exchange reactions of carrier-free phosphorus-32 in, 22:18786
β-Thiopropylamine
see 2-Propanethiol, 1-Amino-
THIOPYRAN
effects on dark recovery of uv- and x-irradiated yeasts, 22:45644
THIORIDAZINE
radiation effects on toxicity to, in man, protective effects of aminobenzoic acid and titanium dioxide against uv, 22:33843
THIOSULFATES
see also Sodium Thiosulfates
determination on paper chromatograms, radiometric, 22:10183
effects on radioprotective effects of AET and serotonin in mice, 22:17032
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
radiation effects on, γ, 22:14426 (ORNL-4196, pp 12-15)
radiolysis of spray solutions of, 22:14426 (ORNL-4196, pp 12-15)
reactions at rotating pyrolytic graphite electrode, 22:14426 (ORNL-4196, pp 12-15)
use in photometric determination of molybdenum, 22:2002
THIOSULFURIC ACID
radioprotective effects of derivatives of, on mice, x, 22:45629
2-Thiouracil
see Uracil, 2-Thio-
Thiourea
see Urea, Thio-
Thomas Cyclotron
see Cyclotrons
THORACIC VISCERA
see also Heart
see also Lungs
THORAX
radiation dose to, of rats, changes in electrocardiogram following high γ, 22:45664
radiation effects on incidence of tumors in, of mice, low-dose, 22:45692
radiation effects on muscles of, in goats, whole-body γ, 22:10867
radiation effects on skin of, in man following therapy for epitheliomas, x, 22:25976
radiation effects on, of rabbits, relation between sensitivity and resistance to γ, 22:23658
radiation hazards to, during diagnosis and therapy, x, 22:2539
radiodiagnosis of lesions of human, precautions for fluoroscopic x, 22:38364
radiodiagnosis of malignant tumors of, in man, cobalt-60 γ, 22:28585
radioinduced neoplasms in human, following radium therapy for bronchial asthma, 22:28634
radiotherapy of benign diseases of, in human infants, incidence of interstitial pneumonia following acute x, 22:28556
radiotherapy of human, effects of, on blood clotting, γ, 22:43437
radiotherapy of human, x-ray dose to gonads during betatron x, 22:36395
radiotherapy of tumors of, dosimetry and techniques of γ and x, 22:28466
surgery of human, effects of, on chemotherapy and x radiotherapy of lung carcinoma, 22:19385
uranium content of, in Y-12 personnel, use of in vivo

- spectrometric monitoring to determine, 22:40703

Thorazine (R)
- see Chlorpromazine

Thoria
- see Thorium Oxides

Thorin
- see Benzenearsonic Acid, o-[(2-Hydroxy-3,6-disulfonaphthyl)azo]-, Sodium Salt

THORIUM
- see also Actinides
- abundance in USA and world during 1980 to 2000 of, estimates of, 22:27428
- alpha decay of, recoil of radium-224 and radium-228 from, 22:48895 (CEA-R-3493)
- alpha emission by, determination of activity from, in urine using sorption on glass fiber filter paper, 22:51633
- analysis for cerium and lanthanum, spectrophotometric, 22:42635
- analysis for impurities, spectrographic, 22:1994
- analysis for phosphorus, extraction method for spectrophotometric, 22:4043
- analysis for rare earths by amperometric chelometry, 22:27569
- analysis for uranium by measurements of delayed neutrons following fission, 22:1977
- analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
- analysis of solutions of, for free acid, citrate and iodate methods for, 22:18693 (LA-3876)
- analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
- argon-40 reactions at 240 MeV, alpha angular distributions and spectra for, (E), 22:14062
- atomic weight of, based on carbon-12 = 12, 22:42698
- body burdens in Brazil, 22:6770(R) (NYO-3273-9)
- book: Fabrication of Thorium Fuel Elements, 22:47053
- book: Nuclear Fuel Metallurgy. Uranium, Plutonium, and Thorium: Properties and Technology. (In Russian), 22:43574
- book: Uncommon Metals, 22:10981
- breeding fuel materials from, economic feasibility in Brazil, 22:3818 (DER-7(Rev.))
- chemistry in liquid metal--molten salt systems, 22:151
- chromatographic behavior of, in mixtures of hydrochloric or nitric acids in alcohols, 22:50974
- coating of sintered, method for, 22:6946
- coating with nickel, method for, 22:26035(P)
- complexes of, hydrolysis and olation of, 22:2033(R) (ORO-3621-6)
- complexes with [(carboxymethylimino)bis(ethylenenitrilo)]tetraacetic acid, potentiometric studies on, 22:16537
- complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, potentiometric studies on, 22:16537
- complexes with (ethylenedinitrilo)tetraacetic acid, potentiometric studies on, 22:16537
- complexes with [oxybis(ethylenenitrilo)]tetraacetic acid, potentiometric studies on, 22:16537
- complexes with [thiobis(ethylenenitrilo)]tetraacetic acid, potentiometric studies on, 22:16537
- complexes with (trimethylenedinitrilo)tetraacetic acid, potentiometric studies on, 22:16537
- complexes with 2,3-dimercaptosuccinonitrile, preparation of, 22:30515
- complexes with 2,4-pentanedione, preparation of, for use as secondary standards, 22:45039
- complexes with 2,5-dichloro-3,6-dihydroxy-p-benzoquinone, stability constants for, 22:27626 (MIT-905-108, pp 33-62)
- complexes with 3,3',4',5,7-pentahydroxyflavone, spectral studies on, 22:27680
- complexes with 3-[bis(3-carboxy-4-hydroxyphenyl)methylene]-6-oxo-1,4-cyclohexadiene-1-carboxylic acid, composition and stability of, 22:2081
- complexes with 8-hydroxy-7-iodo-5-quinolinesulfonic acid, ionization and stability constants of, 22:62
- complexes with 8-quinolinol, crystal structure of, 22:42681
- complexes with aromatic and heterocyclic azomethines, preparation and structure of, 22:8076
- complexes with aromatic derivatives of nitrogen, phosphorus, and sulfur, 22:45048
- complexes with Arsenazo IV, spectrophotometric studies on, 22:30549
- complexes with Bromopyrogallol Red, spectrophotometric studies on, 22:16505
- complexes with β-diketones and halogens, preparation and properties of, 22:4153
- complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
- complexes with β-ketoenols, preparation and properties of, review of, 22:2061
- complexes with diethyldithiocarbamate, preparation of, 22:27652
- complexes with diethyldithiocarbamate, spectra of, ir, 22:27652
- complexes with disodium 4,5-dihydroxy-2,7-naphthalenedisulfonate, potentiometric studies on stability of, 22:40064
- complexes with ethyl xanthate, preparation of, 22:30515
- complexes with N,N-diethyldithiocarbamic acid, preparation and infrared spectra of, 22:30515
- complexes with N-cinnamoylphenylhydroxylamine, stability constants for, 22:8077
- complexes with N-phenylbenzohydroxamic acid, distributio of, between aqueous and organic phases, 22:4094
- complexes with N-phenylbenzohydroxamic acid, formation of, 22:33332
- complexes with o-[(1,8-dihydroxy-3,5-disulfo-2-naphthyl)azo]mandelic acid, stability of, 22:8049
- complexes with organic compounds, tables of thermodynami stability constants for, 22:58 (UCRL-50200)
- complexes with phosphinidynetripropionic acid, preparation of, 22:40059
- complexes with pyrocatechol violet, use in determination of sulfates, 22:10198
- complexes with substituted 8-quinolinol, crystal structure of, 22:42681
- complexes with toluene-3,4-dithiol, preparation of, 22:30515
- complexes with tropolone with and without lithium, spectral studies on coordination in, 22:12286
- compounds of, heating aqueous solution of, to prepare sol, 22:14511(P)
- compounds of, magnetic susceptibility of, 22:27669
- compounds of, solubility in solvents containing hydrogen fluoride, 22:10320 (CEA-R-3205)
- compounds of, use in determination of fluoride, 22:1872
- compounds with 8-quinolinol, preparation of, 22:2059
- compounds with Schiff bases, preparation and properties of, 22:48854
- compounds with selenium, sulfur, or tellurium and antimony, arsenic, bismuth, or phosphorus, preparation and structure of, 22:47118
- compounds with thorium-232-incorporated, effects of, cn uptake by liver of rats, 22:51371
- consumption, production, and uses in 1967, review of, 22:30730
- content and distribution in Adams County, Colorado surface soils, 22:27904
- content in Antarctic marine glacial sediments, 22:6498
- content in Australian granitic rocks, 22:25521
- content in carbonaceous chondrites, 22:6461
- content in Caucasus neovolcanic rocks, age determination from, 22:18919
- content in chernozem soils from Romania, 22:30690 (IFA-IS-49)
- content in deposits along Luznice River in Czechoslovakia, 22:30701
- content in Estonian ground and surface waters, 22:25509
- content in Finnish zircons, effects on age estimation, 22:21191
- content in French mineral water springs, 22:48932
- content in granites of French Alps, use in age estimation, 22:6467
- content in granitic rocks of western Aldan shelf, 22:27935
- content in igneous rock samples from Pennsylvania and Tasmania, 22:48959
- content in igneous rocks, determination of, 22:2213
- content in igneous rocks, effects of volcanogenic processes on, 22:25506
- content in Japanese rivers, 22:2206
- content in lavas, 22:42851
- content in marine environments, 22:8232 (ORO-2411-8)
- content in oceanic sediments, determination of sedimentation rate from measurement of, 22:23182
- content in ores and rocks, fission fragment method for determination of, 22:18915
- content in peridotite inclusions and host basalts, neutron activation analysis and gamma spectrometry methods for determination of, 22:27899
- content in phosphate rocks, radiation hazard from, 22:21193
- content in rocks, use of lithium-drifted germanium gamma spectrometers for determining, 22:326
- content in Rotondo granite, radiometric measurements on, 22:10391
- content in sands of upper Arve Valley, France, 22:48962
- content in soils of northeast and east-central Georgia, 22:48939
- content in surface layer of Indian Ocean sediments, 22:25563
- content in terrestrial material, use of gamma spectroscopy for determining, 22:2413
- content in volcanic rock of Oki Island, Japan, 22:51109
- content in zircons from Sandia Mountain granite, use in age estimation, 22:6464
- content in zircons from South African kimberlites and granites, 22:10399
- content of man, methods for estimation of, 22:15000 (NLCO-1007)
- content of nose-blow samples at AERE, method of determining, 22:38249 (BLG-371)
- corrosion by water of, analysis of, 22:53456 (BNWL-861)
- corrosion resistance of nuclear materials containing, 22:31357
- creep at 273 to 473°K of, effect of proton fission on, 22:25133 (NAA-SR-12549)
- creep during proton-induced fission of, 22:15228
- critical experiments using seed-blanket assemblies of, 22:6103

critical field curves for superconducting, with magnetic impurities, (E/T), 22:44019 (IS-T-221)
crystal growth on (100) tantalum, LEED study of epitaxy in, 22:41687
crystal strains in filings and slabs of, effects of cold-work on, 22:19568
crystal structure of layers of, on tantalum, low-energy electron diffraction studies of, 22:26057 (NYO-3830-5, Paper 3)
crystal structure of layers of, on tungsten surfaces, 22:26062
defects in cold-rolled, probability of stacking fault, 22:21716 (BARC-298)
deformation in cold-worked slabs of, effects of stacking faults on plastic, 22:19568
deposition on tantalum substrate at 950ºC, LEED pattern of atom arrangement in, 22:45780 (NYO-3830-6)
deposition on tantalum, low-energy electron diffraction studies of structure in, 22:26057 (NYO-3830-5, Paper 3)
desorption of surface, by emerging high-energy electrons, 22:36731
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination as thiocyanate complex by paper chromatography, 22:21040
determination as trace impurity in glass fragments by activation methods, 22:33205 (AWRE-O-3/68)
determination as trace impurity in iron oxide by solvent extraction and activation, 22:12240
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by amperometric titration using oxalic acid or potassium ferrocyanide, 22:48825
determination by amperometric titration, theoretical corrections for, 22:4037
determination by direct compleximetric titration using EDTA and iron--N-phenylbenzohydroxamic acid as indicator, 22:45012
determination by gravimetry using sodium salt of benzilic acid, 22:4026
determination by high-frequency titration using ammonium molybdate, 22:22959
determination by neutron activation techniques, 22:47079
determination by photometry using 1,2,5,8-tetrahydroxyanthraquinone and butyl cellosolve, 22:40017
determination by quantitative separation from nitrate solutions by ion exchange, 22:16386 (CEA-R-3222)
determination in aqueous solution by x-ray fluorescence methods, 22:1952 (KFK-560)
determination in aqueous solutions by x-ray fluorescence methods, 22:14435(T) (EURFNR-365)
determination in biological materials and chemicals, activation, 22:4042
determination in biological materials, automatic separation system for, 22:8020
determination in bismuth--tellurium ore, 22:18721
determination in carbonaceous rocks and minerals, comparison of colorimetric and radiochemical methods for, 22:25288
determination in cerium nitrate by electrophoretic focusing of ions, activation, 22:4008
determination in cerium--thorium--titanium--zirconium mixtures by ring-oven method, 22:18708
determination in environmental samples by alpha spectroscopy, 22:48839
determination in G-2 granite samples, isotopic-dilution technique for, 22:22957
determination in GSP-1 sample of granodiorites by isotope dilution, 22:22956
determination in iron meteorites, (E), 22:21797
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in minerals and rocks by ion exchange chromatography and colorimetry or isotope dilution, 22:30461
determination in minerals and rocks, gravimetric and photometric, 22:22946
determination in molybdenum or tungsten by neutron activation method, 22:50910
determination in oceanic and continental peridotite nodules by neutron activation, 22:50947
determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in presence of lanthanum and cerium, spectrophotometric, 22:42635
determination in primary-standard-grade ammonium hexanitratocerate, spectrometric, 22:18730
determination in proton-irradiated protactinium-231, 22:16668
determination in rocks by alpha scintillation counting and gamma spectrometry, 22:33209(T) (NSJ-tr-103)
determination in rocks by high-resolution gamma spectroscopy, 22:44980 (NYO-3756-2, Sect. G)
determination in rocks of Canadian Shield, computer pulse analyzer system for analysis of gamma spectra from aerial surveying for, 22:28241
determination in supporting electrolytes containing cupferron by oscillopolarography, 22:33243
determination in thorium dioxide, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in thorium dioxide--tungsten mixtures, 22:30436(R) (UCRL-50006-68-1)
determination in thorium--titanium--uranium--zirconium mixture by ring-oven method, 22:18708
determination in thorium--uranium mixtures by measurements of delayed neutrons following fission, 22:1977
determination in tissues by neutron activation methods, 22:18711
determination in ultrabasic rocks, 22:12338(R) (COO-1167-3)
determination in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in urine by reversed-phase partition chromatography and colorimetry, 22:39989 (RT/PROT-(68)6)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of tetravalent, spectrophotometric method based on extracted methylthymol blue chelate for, 22:42603
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, in hydrochloric acid solutions of rocks, 22:25287
determination of trace amounts of, in minerals and rocks by delayed neutron counting, 22:6272
determination of trace amounts of, in silicate rocks, spectrographic, 22:22951
determination of traces of, in neptunium oxide, colorimetric, 22:25236 (CEA-N-616, pp 20-71)
determination of, effects of rare earths and uranium on photometric, 22:22946
determination of, in field by gamma spectroscopy, 22:2414
determination of, portable gamma spectrometer for surface and subsurface, 22:21337 (RISO-168)
determination using Arsenazo III, 22:10196
determination using molybdophosphoric acid, spectrophotometric, 22:8016
development for reactor fuels, 22:734
development for reactor fuels, review, 22:12954
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in natural waters in hypergenic zone, 22:25517
diffusion in thorium dioxide, coefficients of, 22:28955
dispersion hardening by beryllium, boron, thorium dioxide, and zirconium, 22:8740 (ORNL-4170, pp 105-7)
dissolution in nitric and sulfuric acids, kinetics of, 22:21167
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in Colorado Front Range, 22:2198
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in earth mantle basic rocks, 22:2201
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in Italian volcanic rocks, effect of volcanic processes on, 22:30729
distribution in lungs and pulmonary lymph nodes of dogs, man, and rats following inhalation, 22:21507
distribution in New Hampshire granite, 22:2199
distribution in potassic alkalic rocks, 22:10394
distribution in U.S. Atlantic and Gulf beach sands, 22:2202
Doppler coefficient for, fast reactor temperature and environment effects on, 22:33038
effects of inclusions of, on critical current density of superconducting niobium--titanium alloys containing oxygen, 22:1099
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on colorimetric determination of uranium, 22:33262
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on determination of aluminum in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on determination of molybdenum using aspartic acid, polarographic, 22:12239
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on emission bands of tin-activated calcium oxide, 22:92
effects on hydrolysis of carbohydrate phosphates in acid and alkaline solutions, catalytic, 22:4567
effects on lanthanum determination by flame photometric titration, 22:48836
effects on phosphorescence decay of tin-activated calcium oxide, 22:91

effects on photometric determination of indium, 22:2007
effects on polarographic determination of cerium in yttrium oxide, 22:50929
effects on simultaneous determination of cerium and lanthanum in rare earth oxide by x-ray fluorescence, 22:50928
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of molybdenum, 22:18717
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on spectrophotometric determination of uranium in ores using thiobarbituric acid in ethanol solution, 22:30572
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
effects on titrimetric determination of uranium, 22:22972
electronic structure of, 22:30531
electrophoresis in formic acid solutions, 22:45069
energy level spectra of Th I, analysis of, (E/T), 22:45937
extraction from aqueous aluminum nitrate media using tributyl phosphate, trioctylphosphine oxide, tridodecyl amine, or their mixtures, 22:27873
fabrication of Zircaloy-clad fuel tubes of, 22:12999 (BNWL-473, pp 9.1-18)
fabrication processes for reactor-grade metal, description, 22:53456 (BNWL-861)
fission by 35-MeV protons, creep during, 22:15228
fission by protons at 47 MeV, search for 5.3-hr isomer of molybdenum-103 in, 22:27836
fuel cycle, analysis of optimum breeder reactor, 22:35492
fuel cycles, analysis of economics for pressurized water reactors, 22:32908
fuel economics for heavy water-moderated reactors, 22:3812 (AECL-2947)
fuel elements containing, physics characteristics of PRTR, (T), 22:20905 (BNWL-624, pp 5.1-16)
hydrolysis in perchlorate solutions, 22:30510(T) (UCRL-Trans-10236)
impurities in, use of vacuum spark source mass spectrometer for analysis of, 22:25702
inhalation of, determination of standards for exposure to, 22:15000 (NLCO-1007)
isotopic distribution in soils formed from granitic materials in temperate climates, 22:27911
machining behavior, 22:41028
machining hazards, 22:26032
measurement of activity of, in air and personnel of lamp factory in Brazil, 22:25829 (TID-24488)
metallurgical properties of nuclear materials containing, 22:31357
neon-22 reactions at 115 and 140 MeV, alpha angular distributions and spectra for, (E), 22:14062
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron fission at 15 MeV, fragment spectra from, (E), 22:1665
neutron reactions with, recoil of protactinium-233 from, 22:48895 (CEA-R-3493)
neutron resonance escape probability for, measurements of, 22:1861(R) (TID-24098)
occurence of tetravalent, in Ukrainian shield rocks, 22:10363
occurrence in African carbonatites, 22:18993
occurrence in monazites of southern India, effect on environmental radioactivity, 22:6440
physical properties and thermal treatment of nuclear materials containing, 22:31357
polarographic properties of, effects of acidity on, 22:2078
precipitation from ammonium oxalate--thorium nitrate solutions, 22:27559
precipitation from aqueous sulfuric acid solutions by cupferron, 22:33359
precipitation from aqueous thorium nitrate solutions using sodium fumarate or potassium maleate, 22:18779
precipitation from boiling acid solutions by phytin, 22:33319
precipitation with iron hydroxide in ammonium nitrate--ammonium bicarbonate solutions, effects of pH on, 22:33312
preparation and properties of annealed, rolled, and sintered, 22:38602(T) (JPRS-45339)
preparation and purification of metallic, by electrotransport, 22:2560(R) (IS-RD-11)
preparation by dissociation of thorium iodide, kinetics of, 22:23733
preparation by ion-exchange separation from nitrate solutions, 22:16386 (CEA-R-3222)
preparation of, 22:151
production by reduction of thorium dioxide using calcium 22:4080
production of metallic, methods for, 22:19501
production of sols of, design of Solex equipment for, 22:25585
properties and technology of, review of, 22:43574
properties as reactor fuel, review of, 22:42387 (KR-126 pp 279-97)
properties for nuclear fuels, 22:19645
properties of, data tabulations on irradiation, mechanical, and physical, 22:21695 (ORNL-4218)
properties of, description of mechanical and physical, 22:53456 (BNWL-861)
proton fission at 10.5 GeV, cross sections for productio of rubidium isotopes by, (E), 22:24879
proton reactions at 660 MeV, angular distribution and differential energy spectra of lithium-8 produced in, (E/T), 22:5855
proton reactions at 660 MeV, lithium-8 angular and energ distributions from, (E), 22:27216
radiation effects on mechanical and physical properties of, analysis of thermal neutron, 22:53456 (BNWL-861)
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
reactions with boron at 800 to 2200°C, 22:36545
reactions with oxygen on tungsten surface, low-energy electron diffraction studies of, 22:26028 (NYO-3839-5 Paper 6)
reactions with phosphonazo III, spectral studies on, 22:48867
reactions with potassium chloride melts at 800 to 970°C, equilibrium constant and thermodynamics of, 22:35781
reactions with protactinium in presence of iron surface, 22:25374 (ORNL-4229, pp 22-49)
reactivity worth measurements in fast spectrum reactor, 22:27396(R) (AI-AEC-12638)
reactivity worth, effects of surface-to-mass ratio on fast neutron, (E/T), 22:35667 (NAA-SR-Memo-12288)
refining by electrolysis of fused salts, equipment for, 22:38610(P)
refining of, Egptian research on, 22:8179
reprocessing of reactor fuels containing, aqueous methods for, 22:40173 (KR-126, pp 298-323)
separation by complexing with benzohydroxamic acid and extracting with chloroform, hexanol, or 2-hexanone, 22:45165
separation from actinium, protactinium, and uranium, 22:16668
separation from actinium, radium, and uranium by ion exchange, 22:42019(R) (MLM-1494)
separation from aqueous solutions by extraction and soap formation using monocarboxylic acids, 22:42839
separation from aqueous solutions by solvent extraction, 22:33208(R) (MLM-1456)
separation from aqueous solutions by solvent extraction using alkyl-substituted ammonium salts, 22:6376
separation from aqueous sulfate medium by solvent extraction using secondary amines, 22:35901
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
separation from cerium and minerals by solvent extraction, 22:4247
separation from di- and trivalent cations by ion exchange, 22:142
separation from dilute organic solutions, process for, 22:10351(P)
separation from elements 91 through 96 by paper chromatography in hydrochloric or nitric acid mixtures with alcohols, 22:51060
separation from feed solutions by solvent extraction using tributyl phosphate, 22:21165
separation from graphite-base fuels by solvent extraction, 22:33529
separation from iron by precipitation with iron hydroxides, 22:33312
separation from irradiated fuels by solvent extraction, 22:8185
separation from lanthanum, lutetium, samarium, scandium, uranium, and yttrium by thin-layer chromatography in dioxane--hydrochloric acid, 22:45176
separation from lanthanum, lutetium, scandium, and samarium by thin-layer chromatography in dioxane--nitric acid, 22:45176
separation from lanthanum, samarium, scandium, uranium, ytterbium, or yttrium in hydrochloric acid solution, ion exchange, 22:40192
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from mixture of metals by ring-oven method, 22:18880
separation from nitric acid by solvent extraction using tridodecylamine, effects of plutonium on, 22:37862
separation from nitric acid solutions by solvent extraction using phosphonates and TBP, comparison of, 22:33489
separation from nitric acid solutions by solvent extraction using long-chain alkylammonium nitrates,

22:40188 (KR-128)
separation from nitric acid solutions by solvent extraction using trioctylmethylammonium nitrate, 22:16686
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from ores by liquid-liquid extraction, 22:42836
separation from other actinides in hydrochloric or nitric acid, paper chromatographic and electrophoretic study of, 22:37832 (CEA-R-3411)
separation from other elements by ion exchange using zirconium phosphate ion exchanger, 22:33208(R) (MLM-1456)
separation from plutonium by ion exchange, 22:23103
separation from plutonium by solvent extraction using nitromethane, 22:33521
separation from process waste by solvent cation exchange, 22:33208(R) (MLM-1456)
separation from protactinium, 22:6382
separation from protactinium and uranium by anion exchange, 22:2175 (NP-17077)
separation from radium by residue adsorption, 22:18738(R) (MLM-1417)
separation from rare earths by anion exchange in acetone--hydrochloric acid solutions, 22:14567
separation from rare earths by ion exchange, 22:30672(P)
separation from rare earths by precipitation in hydroxide form, 22:30679
separation from rare earths by process using metallic zinc, 22:42819
separation from rare earths in minerals by ion exchange, 22:33541(P)
separation from rare earths, scandium, and uranium by thin-layer chromatography, 22:51069
separation from rare earths, uranium, and zirconium by solvent extraction, 22:10196
separation from reactor fuel elements, grind-leach method for, 22:16647 (ORNL-4075, pp 24-37)
separation from samarium and uranium in hydrochloric acid solution, ion exchange, 22:40192
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from solutions containing rare earths and trivalent iron by solvent extraction, 22:37873(P)
separation from spent fuel, engineering cost studies of, 22:23191 (CONF-660524-, pp 509-35)
separation from spent pyrolytic-carbon-coated sol-gel oxide fuel, grind-leach process for, 22:18866 (ORNL-4213)
separation from thallium by solvent extraction using glycine and phenol in petroleum ether, 22:160
separation from thorium nitrate--uranium nitrate systems by solvent extraction using tributyl phosphate, 22:14579(P)
separation from titanium by paper chromatography, 22:25257
separation from tungsten by paper chromatography, 22:25257
separation from uranium, 22:33382
separation from uranium by ion exchange, 22:16386 (CEA-R-3222)
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by solvent extraction, 22:18738(R) (MLM-1417)
separation from uranium, solvent extraction process for, 22:10353(P)
separation from waste solutions by solvent extraction, 22:25440(R) (MLM-1443)
separation from zirconium by cation exchange, 22:45069
separation of actinium and radium from irradiated targets of, chromatographic, 22:33516
separation of alkali metals simultaneously from, ion exchange, 22:37866
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of embedded particles of, from graphite, process for, 22:30657(P)
separation of lead, silver, and zinc from, by precipitation using sodium benzilate, 22:30660
separation of plutonium from, by solvent extraction using N-phenylbenzohydroxamic acid, 22:33332
separation of protactinium from irradiated, by sorption by glass, 22:8196
separation of trace amounts of, from rare earths, thin-layer chromatographic, 22:27881
separation of uranium from, ion exchange method for, 22:33550(P)
solubility in molten lithium fluoride--thorium tetrafluoride mixtures, 22:47112 (ORNL-4254, pp 88-173)
solubility in nitrogen oxide--hydrogen fluoride or antimony fluoride--hydrogen fluoride systems, 22:10320 (CEA-R-3205)
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
sorption by cation exchange resin in aqueous formic acid solutions, 22:45069
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorption on tungsten surface, low-energy electron diffraction studies of, 22:26062
sorption on tungsten surfaces, electron diffraction analysis of, 22:15192
spectra in range 4574 to 6676 A, interferometric measurement of 346 lines in, 22:26243
spectra of, electric field splitting of inner atomic levels observed from photoelectron and internal-conversion, (E), 22:52541
spectra of, in 1- to 2.5-μ region, emission, 22:5123
superconducting critical field curves for, (E/T), 22:39017
superconducting properties of, effects of praseodymium and thulium on, 22:52689
temperature coefficient of reactivity for, effects of thermal expansion on, (E/T), 22:32977 (NAA-SR-Memo-12289)
uptake and distribution of decay products of, in guinea pigs following inhalation, 22:40602
uptake by man following inhalation, 22:33715 (SZS-15/67)
use as fuel in ORGEL-type reactors, analysis of, 22:24937 (CONF-660524-, pp 119-28)
use as reactor fuel, evaluation of, 22:12150
use as reactor fuel, potential for, 22:606 (CONF-661011, pp 8-10)
use in determination of fluorides by thermometric titration, 22:4039
use in fuel cycle, 1966 conference on, 22:24934 (CONF-660524)
use in heavy water reactor fuel cycles, economics of, 22:37506
use in separation of protactinium from fused fluoride salts, 22:42828(P)
x-ray reactions at 3.1 to 26 keV, total absorption cross sections for, (E), 22:29208
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640

THORIUM ACETATES
preparation of anhydrous, 22:23000 (CONF-670502-, pp 366-73)
structure of, 22:16543

THORIUM ALLOYS AND SYSTEMS
corrosion by water of, analysis of, 22:53456 (BNWL-861)
fabrication by powder metallurgy, 22:11072 (ORNL-TM-2015)
phase diagrams and structures for binary, data compilation, 22:26054 (IS-1752)
preparation of, 22:151
properties for use in fuels, review, 22:21650
properties of, data tabulations of irradiation, mechanical, and physical, 22:21695 (ORNL-4218)
Th--^{233}U, management efficiency for reactor breeding cycle, 22:20970(P)
use for gettering oxygen from liquid sodium, 22:1749 (AD-648248)
B--P--Th, thorium nitride formation over nitrogen-containing, thermodynamics of, 22:45044
Be--Th, formation of intermetallic ThBe$_{13}$ in hot-pressed beryllium--thoria dispersions, 22:43561
Be--Th, phase diagram, 22:10986(T) (JPRS-43479)
C--Th, phase studies, 22:31471
C--Th, strength of, effects of carbon on, 22:2644
C--Th--U, casting and phase diagrams of, 22:11072 (ORNL-TM-2015)
C--Th--U, crystal structure of, 22:11072 (ORNL-TM-2015)
C--Th--U, hydrolysis of, formation of carbon hydrides by, 22:37710 (CEA-R-3215)
C--Th-base, strength of, effects of carbon on, 22:31482
Ce--Th--Ti--Zr, analysis for individual elements by ring-oven method, 22:18708
Co--Th, magnetic and crystallographic properties of ThCo$_5$, (E), 22:26511
Co-base--Cr--Mo--Ni--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
Co-base--Cr--Mo--Ni--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
Cr--Ni-base--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
Cr-base--Hf--Th--Y, stress rupture rates of warm-rolled at 750°C, 22:612(R) (GEMP-69)
Cr-base--Hf--Th--Y, stress-rupture of, effects of impurities on, 22:15179 (GEMP-1002, pp 83-93)
Cr-base--Hf--Th--Y, stress-rupture rates of warm-rolled, at 750°C, 22:612(R) (GEMP-69)
Er--Th, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
Er--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
Fe--Th, analysis for iron in presence of hydrogen peroixde by high-frequency titration with cupferron, 22:25281
Gd--Th, critical field curves for superconducting, with magnetic impurities, (E/T), 22:44019 (IS-T-221)
Gd--Th, superconducting critical field curves for, (E/T), 22:39017
HNO$_3$--Th, compound formation in, ion exchange studies on stability constants for, 22:35822
Ho--Tb, microstructure and phase diagrams of, 22:10992

- Ho--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
- La--Ru--Th, lanthanum-139 NMR in intermetallic, g shift and Knight shift relation in, (E), 22:9439
- La--Th--W, thermoelectron emission by cathodes of, 22:4781
- Mg-base--Th--Zr, dispersion strengthening and precipitation hardening of, 22:41070
- N--Th--U, crystal structure of, 22:11072 (ORNL-TM-2015)
- N--Th--U, fabrication by powder metallurgy, 22:11072 (ORNL-TM-2015)
- N--Th--U, phase diagram at 1000°C, 22:48790
- Nd--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
- Nd--Th, magnetic properties of solid solutions in, at 85 to 300°K, 22:34067
- Nd--Th, phase equilibria in, 22:34067
- Nichrome--Th, hardening by internal oxidation, 22:8740 (ORNL-4170, pp 105-7)
- P--Th, phase diagrams, 22:36548
- Pr--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
- Pr--Th, magnetic properties of solid solutions in, at 85 to 300°K, 22:34067
- Pr--Th, phase equilibria in, 22:34067
- Pu--Th, hardness of, 22:2632
- Pu--Th, phase diagrams and properties, 22:36495
- Pu--Th, phase studies, 22:43520 (ANL-7299, pp 138-43)
- Pu--Th, phase studies of, 22:2652
- Pu--Th, phase studies of, 22:2655
- Pu--Th, physical properties of, 22:2627
- Pu--Th, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
- Pu--Th, radiation effects on fuels of, review on, 22:8804
- Pu--Th, radiation effects on mechanical and physical properties of, analysis of thermal neutron, 22:53456 (BNWL-861)
- Pu--Th--U, phase studies, 22:43520 (ANL-7299, pp 138-43)
- Pu--Th--U, properties of unclad fuel elements of, 22:5945
- Pu--Th--U, thermal conductivity at 300, 600, and 800°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- Pu--Th-base, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
- Pu--Th-base--U, radioinduced swelling of, effects of cladding on, 22:43520 (ANL-7299, pp 138-43)
- Pu--Th-base--U, thermal conductivity at 100 to 800°C, 22:43520 (ANL-7299, pp 138-43)
- PuO$_2$--Th, processing for production of fuel, PCUT plant capability for, 22:49799
- Sb--Th, crystal structure of intermetallic compounds in, 22:37720
- Sb--Th, preparation, crystal structure, and melting points of, 22:8061
- Tb--Th, magnetic properties of fcc, neutron-diffraction study of, 22:15587
- Tb--Th, microstructure and phase diagrams of, 22:10992
- Th--^{233}U, breeding potential of fast reactor fuels of, analysis of, (E/T), 22:47051
- Th--^{233}U, physics measurements of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
- Th--ThAs, phase diagram, 22:17142
- Th--Ti--U--Zr, analysis for individual elements by ring-oven method, 22:18708
- Th--U, cycle costs as HWOCR fuel, evaluation of, 22:23854 (CONF-660524-, pp 157-84)
- Th--U, deposition of pyrocarbon coating on, method for, 22:21757(P)
- Th--U, dissolution in molten alkali metal salts, 22:33515
- Th--U, fuel elements of Zircaloy 2-clad, fabrication of, 22:53456 (BNWL-861)
- Th--U, fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of, economic and technical analysis of, 22:50741 (WASH-1083)
- Th--U, fuels of enriched, physics parameters of, 22:20807 (DP-1125)
- Th--U, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
- Th--U, radiation effects on mechanical and physical properties of, analysis of thermal neutron, 22:53456 (BNWL-861)
- Th--U--Zr, burnup in fuel elements of, analysis of Zircaloy 2-clad, 22:53456 (BNWL-861)
- Th--U--Zr, radiation effects on fuel elements of, in-pile, 22:2662 (BNWL-479)
- Th--U--Zr, radiation effects on mechanical properties of fuel elements of, analysis of neutron, 22:30386
- Th--U--Zr, radiation effects on Zircaloy clad fuel elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- Th--U--Zr, radioinduced swelling of, effect of temperature on in-pile, 22:12999 (BNWL-473, pp 9.1-18)
- Th--UO$_2$, processing for production of fuel, PCUT plant capability for, 22:49799
- Th--Zr, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
- Th-base--U, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
- Th-base--U, radioinduced swelling of, effects of cladding on, 22:43520 (ANL-7299, pp 138-43)

THORIUM ARSENATES
- precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
- properties as ion-exchange material, 22:33552

THORIUM ARSENIDES
- crystal structure of, 22:37720
- preparation, crystal structure, and melting points of, 22:8061
- Th--ThAs, phase diagram, 22:17142

THORIUM BORATES
- properties as ion-exchange material, 22:33552

THORIUM BORIDES
- crystal structure and electric properties of ThB$_4$ and ThB$_6$, 22:38510 (BNL-50082, pp 93-152)
- electric conductivity of, 22:42688
- electric conductivity of ThB$_4$ at 78 to 700°K, 22:15141 (BNL-50057, pp 79-100)
- Hall coefficient of, 22:42688
- magnetic susceptibility of, 22:42688
- phase studies at 800 to 2200°C, 22:36545
- properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
- thermoelectric power of, 22:42688

THORIUM BROMIDE OXIDES
- crystallographic properties of, 22:16500
- preparation of, 22:16500
- spectra of, infrared, 22:16500

THORIUM BROMIDES
- complexes with aromatic derivatives of nitrogen, phosphorus, and sulfur, 22:45048
- preparation, properties, and structure of ThBr$_3$, 22:23003 (IA-1128, pp 97-146)

THORIUM BROMIDES ThBr$_4$
- reactions of hydrated, with dimethyl sulfoxide, ir absorption spectra of complexes from, 22:33321

THORIUM CARBIDE NITRIDES
- magnetic susceptibility at -190, -76, and 22°, 22:24466

THORIUM CARBIDES
- carbon-13 NMR in, Knight shifts in, (E), 22:31954
- crystal structure at 1430 to 1550°C, 22:49843
- determination of hydrolysis products of, gas chromatographic, 22:33257
- enthalpy of formation at 298.15°K, 22:31453
- extrusion through graphite dies at 1600 to 2400°C, process for, 22:8811(P)
- hydrolysis of, formation of carbon hydrides by, 22:3771 (CEA-R-3215)
- magnetic susceptibility at -190, -76, and 22°, 22:24466
- preparation by reaction of aluminum with thorium halides 22:8817(P)
- preparation by reaction of thorium halides with carbon and reducing metal, 22:23883(P)
- preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
- preparation of spheres of, by sol-gel process, 22:49788
- preparation, crystal structure, and melting points of, 22:8061
- properties of, description of mechanical and physical, 22:53456 (BNWL-861)
- properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
- separation of neodymium from particles of, by volatilization at 2000 to 2800°C, 22:141 (JUL-502-RG-RW)
- sintering process for production of high density compacted, at temperatures below 1700°C, 22:745(P)
- thermodynamics, 22:36541
- Cr--PuC--ThC, fuels of, composition optimization for cladding compatability, 22:19642(P)
- Cr--ThC--UC, fuels of, composition optimization for cladding compatability, 22:19642(P)
- graphite--ThC, production for use in thermal breeder reactor fuel elements, method for, 22:6975(P)
- graphite--ThC, production of high-density fuel elements of, 22:36448(P)
- ThC$_2$--UC$_2$ preparation of spheres of, by the sol-gel process, 22:49788
- ThC$_2$--UC$_2$, burnup characteristics of spherical pellets of, 22:6040
- ThC$_2$--UC$_2$, fabrication of silicon carbide (SiC)-coated and -uncoated Fort St. Vrain Power Reactor proof test element number one of, method of, 22:44818 (GAMD-8552
- ThC$_2$--UC$_2$, fuel pellets of, effects of temperature on uranium contamination in pyrolytic carbon and silicon carbide (SiC) coatings on, 22:39900 (GAMD-8325)
- ThC$_2$--UC$_2$, fuels of, burnup analysis at 1250 to 1400°C for small spheres of, 22:22688 (GA-7549)
- ThC$_2$--UC$_2$, oxidation of pyrolytic-carbon-coated fuel particles of, by helium-water vapor mixtures at 1100 t 1400°C, 22:41084 (ORNL-TM-2199)
- ThC$_2$--UC$_2$, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
- ThC$_2$--UC$_2$, radiation effects on carbon-coated particulate, fast neutron, 22:4915
- ThC--^{233}UC, physics measurements of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
- ThC--ThN, electric properties of solid-solution, at 4 to 500°K, 22:15141 (BNL-50057, pp 79-100)
- ThC--UC, fabrication into pebble-type fuels, program development for, 22:23855 (CONF-660524-, pp 293-8)
- ThC--UC, fuel particles of, development for Dragon project, 22:5932(R) (NP-17118)

ThC--UC, preparation by sol/gel method, 22:28912(P)
ThC--UC, preparation of carbon-coated microspheres of, 22:49789
ThC--UC, radiation effects on carbon-coated microspheres of, in-pile, 22:49789
ThC--UC, radiation effects on silicon carbide-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
ThC--UC, reactions of pyrolytic carbon-coated, with water vapor, 22:11046 (ORNL-TM-2061)

THORIUM CARBONATES
magnetic susceptibility of, 22:27669
preparation from anhydrous acetates, 22:23000 (CONF-670502-, pp 366-73)

Thorium Cesium Formates
see Cesium Thorium Formates

THORIUM CHLORIDE HYDROXIDE SULFITES
complexes with acetone, preparation and properties of hydrates of, 22:10245

THORIUM CHLORIDE OXIDES
crystallographic properties of, 22:16500
preparation of, 22:16500
spectra of, infrared, 22:16500

THORIUM CHLORIDES
complexes with aromatic derivatives of nitrogen, phosphorus, and sulfur, 22:45048
preparation of, 22:33528
stability constants of ions of, in potassium nitrate, sodium perchlorate, and sodium nitrate--sodium perchlorate at 15 to 25°C, 22:33310

THORIUM CHLORIDES $ThCl_4$
complexes with 8-quinolinol, ir spectra of, 22:48857
complexes with dimethyl sulfoxide, stability, properties, and infrared spectra of, 22:16522
complexes with dimethylformamide and methanol in acetone solutions, dissociation constants of, 22:12301
reactions with dimethylformamide and methanol in acetone solutions, complex formation in, 22:12301
reactions with potassium selenocyanate, effects of solvent on complexes formed by, 22:8073

THORIUM CITRATES
preparation and properties of, 22:10229
solubility in perchloric acid and sodium perchlorate, 22:10229

THORIUM DEUTERIDES
see also Thorium Hydrides

THORIUM FLUORIDES
see also Barium Thorium Fluorides
see also Cadmium Thorium Fluorides
see also Potassium Thorium Fluorides
see also Rubidium Thorium Fluorides
compounds with other metal fluorides, preparation of, 22:8186
preparation and properties of electrodes of, for fluoride determination, 22:16439
BeF_2--LiF--ThF_4, separation of protactinium from, by reductive extraction using molten bismuth, 22:25374 (ORNL-4229, pp 22-49)
BeF_3--LiF--ThF_4--UF_4--ZrF_4, corrosive effects on Hastelloy N and type 304L stainless steel at 675 to 705°C, 22:8696 (ORNL-4170, pp 192-205)

THORIUM FLUORIDES ThF_4
complexes with hydrazine or hydroxylamine, thermal decomposition of, 22:45036
enthalpy of formation of, 22:25321 (ANL-7375, pp 95-134)
hydrolysis of hydrates of, in molten alkali metal chlorides at 700°C, 22:37719(T) (UCRL-Trans-10235)
optical properties of vacuum-evaporated films of, 22:14492
precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
preparation of films of, by vacuum evaporation, 22:14492
solubility in potassium fluoroborate, 22:25327 (ORNL-4229, pp 3-21)
solubility in sodium fluoroborates, 22:25327 (ORNL-4229, pp 3-21)
BeF_2--LiF--$NaBF_4$--ThF_4--UF_4, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
BeF_2--LiF--NaF--ThF_4--UF_4, corrosive effects on Hastelloy N at 700°F, 22:30769
BeF_2--LiF--ThF_4, separation of uranium from molten, by reductive extraction using molten beryllium, 22:25374 (ORNL-4229, pp 22-49)
BeF_2--LiF--ThF_4--UF_4, physical properties for use as molten-salt reactor fuel mixtures, evaluation of, 22:44827 (ORNL-TM-2316)
LiF--ThF_4, distributions of protactinium and uranium between liquid bismuth--uranium alloy and molten, 22:25374 (ORNL-4229, pp 22-49)
LiF--ThF_4, iron reduction by hydrogen in molten, 22:2032 (ORNL-TM-2036)
LiF--ThF_4, preparation and structure of, 22:30555
LiF--ThF_4, solvent properties for thorium, 22:47112 (ORNL-4254, pp 88-173)
NaF--ThF_4, preparation and structure of, 22:30555

THORIUM FORMATES
see also Cesium Thorium Formates
nuclear magnetic resonance spectra of hydrated, 22:50978
spectra of, ir, 22:37764
structure of hydrates of, x-ray diffraction studies on, 22:35787

THORIUM HALIDES
reactions with carbon and reducing metal to yield thorium carbides, 22:23883(P)

THORIUM HIGH-TEMPERATURE REACTOR
see also AVR Reactor
construction of, computer programs for planning of, 22:46900 (JUL-521-RG)
coolant flow behavior in, geometric and physical effects on, 22:32806
design of, conceptual, 22:24936 (CONF-660524-, pp 91-105)
development program for, review of, 22:53337
dynamic behavior at partial power, (T), 22:20845
fuel economics of, effects of power requirements on, 22:3832 (KFK-566)
fuel element development for, 22:23855 (CONF-660524-, pp 293-8)
fuel pellets for, description of, 22:27426
fuel pellets for, fabrication of spherical thorium and uranium carbide (ThC_2--UC_2), 22:6040
graphite moderator for, effects of temperature on corrosion by steam of, 22:30145 (EUR-3900)
neutron fraction in, analysis of effective delayed, (T), 22:20845
reactivity of, samarium-149 and xenon-135 effects on, (T), 22:20845
shielding for, description of, 22:27433

THORIUM HYDRIDES
hydrogen nuclear spin relaxation in, mechanism of, 22:50220 (IS-T-252)
neutron doubly differential inelastic scattering cross section at 0.06 to 0.18 eV, (E), 22:29864
neutron inelastic scattering at low energy, (E), 22:13908 (RPI-328-100, pp 120-39)
neutron scattering by, lattice dynamics from cold inelastic, (E/T), 22:5440
production by reduction of oxide, 22:33365(P)

THORIUM HYDROXIDE NITRATES
crystal structure of $Th_2(OH)_2(NO_3)_6 \cdot (H_2O)_8$, 22:40074

THORIUM HYDROXIDE SULFITES
complexes with acetamide, preparation and properties of hydrates of, 22:10245

THORIUM HYDROXIDES
calcintering under pressure for production of dense oxide, 22:31519
diffusion in natural waters in hypergenic zone, 22:25517
effects on desorption of uranium carbonate precipitates on heavy metal hydroxides or phosphates, 22:42626
precipitation from ammonium oxalate--thorium nitrate solutions, 22:27559
precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6380
precipitation with tungsten, 22:18793
separation of protactinium from neutron-irradiated colloidal, by recoil, 22:48895 (CEA-R-3493)
separation of radium from colloidal, by recoil techniques, 22:48895 (CEA-R-3493)
use in separation of chromium, molybdenum, and rhenium by precipitation, 22:23104

THORIUM IODATES
precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177

THORIUM IODIDE OXIDES
crystallographic properties of, 22:16500
preparation of, 22:16500
spectra of, infrared, 22:16500

THORIUM IODIDES
dissociation of ThI_4, preparation of thorium by, 22:23733

THORIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
complexes with 3,3',4',5,6,7-hexahydroxyflavone, absorption spectra of, 22:33239
complexes with 3,3',4',5',7-pentahydroxyflavone, spectrophotometric study of, 22:42680
complexes with 3,4',5,7-tetrahydroxyflavone, spectrophotometric study of, 22:42680
effects on determination of free acid in nitric and hydrochloric acid systems, 22:14448
effects on electrolyte coagulation and stability of aquosol of antimony trisulfide, 22:4095
effects on indium precipitation from alkaline solutions with hydroxide, 22:14575
effects on potentiometric determination of trace fluoride in various solutions, 22:33244
effects on spectra of uranyl ions in dihydroxymaleic acid in acetone, ethanol, and methanol solutions, 22:33222
effects on stability of hydrosol of arsenic trisulfide, 22:12280
hydration number of, 22:33330
hydrolysis in sodium chloride solutions, 22:27676
hydrolysis of, sorption on silica gel of products from, 22:2043
protective effects of, against lysis of yeast cells by cationic dyes and surfactants, 22:10730
solvation of, 22:33330
spectroscopic integrals for, (T), 22:50019

THORIUM ISOTOPES
  activity measurements of, multichannel pulse analyzer for alpha spectrometers used for separation of α--α coincidences in simultaneous, 22:38071
  content of biological materials, method for estimation of, 22:43301 (AERE-R-5474)
  decay properties of, tables and charts on, (E), 22:7723
  determination in carbonates by ion exchange and alpha spectrometry, 22:6271
  determination in crustal rocks, reference standard for, 22:23137
  effects on defects in solid thorium dioxide, 22:30643
  effects on surface layers of polyethylene, 22:30643
  excretion in urine by man, methods for calculation of safe limits of, 22:6811
  radiation dose distribution from, in solids, 22:30643
Thorium Isotopes (MsTh$_1$)
  see Radium Isotopes Ra-228
Thorium Isotopes (MsTh$_2$)
  see Actinium Isotopes Ac-228
Thorium Isotopes (RdTh)
  see Thorium Isotopes Th-228
Thorium Isotopes (ThA)
  see Polonium Isotopes Po-216
Thorium Isotopes (ThB)
  see Lead Isotopes Pb-212
Thorium Isotopes (ThC)
  see Bismuth Isotopes Bi-212
Thorium Isotopes (ThC')
  see Polonium Isotopes Po-212
Thorium Isotopes (ThC'')
  see Thallium Isotopes Tl-208
Thorium Isotopes (ThD)
  see Lead Isotopes Pb-208
Thorium Isotopes (ThX)
  see Radium Isotopes Ra-224
THORIUM ISOTOPES Th-226
  neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
  neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
THORIUM ISOTOPES Th-227
  alpha decay of, α--γ coincidence and angular correlation studies of, (E), 22:11947 (MIT-952-4, pp 220-66)
  alpha decay of, γ spectra from, (E), 22:35303
  alpha decay of, internal conversion electron spectra for, (E), 22:11944(R) (AECL-2780)
  alpha spectra of, use of semiconductor spectrometer for determining, 22:38060 (CONF-670545, pp 88-95)
  content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
  gamma spectra of, singles and coincidence, (E), 22:44692
  separation of actinium-227 from, residue adsorption method for, 22:1956(R) (MLM-1405)
THORIUM ISOTOPES Th-228
  abundance ratio to thorium-230 in crustal rocks, reference standard for, 22:23137
  alpha decay of, conversion-electron spectra from, (E), 22:30024
  alpha decay of, gamma spectrometric determination of activity ratios between daughters and, 22:48564
  alpha emission by, effects of, on synthesis of androgens in beagles, 22:43244
  alpha emission by, tumorigenic effects of, on bones of dogs, 22:47581
  alpha spectra of, energies of intense lines in, (E), 22:35357
  content in Caucasus neovolcanic rocks, age determination from, 22:18919
  content in hot spring waters in Japan, 22:6447
  content in natural materials, determination of, 22:2376
  content in seawater, measurement of, 22:45205 (TID-24654)
  content in surface seawater, Dec. 1966 to Nov. 1967, 22:10404 (CU-3139-1(App.A))
  content in tissues, gamma spectroscopy method for determining, 22:49099
  content of living environment, 22:43301 (AERE-R-5474)
  determination in biological materials, microautoradiographic, 22:1970
  effects on radiation body burdens of man, 22:33800 (A-AC-82/G/L-1182)
  energy-level transitions in, total internal conversion coefficients for E2, (E), 22:50611
  fission tracks from, use in age estimation of fossils, 22:6471
  gamma emission by, effects of, on synthesis of androgen in beagles, 22:43244
  gamma emission by, tumorigenic effects of, on bones of dogs following injection, 22:47581
  metabolism, use of whole-body counters to study, 22:43300 (AERE-PR/HPM-12)
  neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
  neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
  radiochemical assay of plants for, in Brazil, 22:25829 (TID-24488)
  toxicity in dogs, clinical and pathological aspects of, 22:25962(R) (COO-119-236)
  use as α source, 22:14680
THORIUM ISOTOPES Th-229
  energy levels of, calculation of quadrupole, (T), 22:16041
  production of, 22:42019(R) (MLM-1494)
  recovery from thorium--uranium systems, 22:18738(R) (MLM-1417)
  recovery from waste solutions, 22:33208(R) (MLM-1456)
  recovery from waste solutions, 22:25440(R) (MLM-1443)
  separation from uranium-233 by ion exchange at high temperatures, 22:1956(R) (MLM-1405)
THORIUM ISOTOPES Th-230
  abundance ratio to thorium-228 in crustal rocks, reference standard for, 22:23137
  abundance ratio to uranium-234 in crustal rocks, reference standard for, 22:23137
  alpha decay of, attenuation coefficients for α-γ directional correlations in, (E), 22:26929(R) (COO-1420-139)
  boron-10 reactions (B-10,8n) at 75 to 95 MeV, production of spontaneously fissionable product in, (E), 22:7704(T) (ORO-tr-3346-15)
  content and distribution in Indian Ocean bottom sediments, 22:33555
  content in Barbados Island corals, use in age estimation, 22:21189
  content in Caucasus neovolcanic rocks, age determination from, 22:18919
  content in ground water sediments, use in age estimation, 22:10366
  content in oceanic sediments, determination of sedimentation rate from measurement of, 22:23182
  content in Pleistocene shells, open system model for radioactive age estimation using, 22:6463
  content in river sediments from eastern and southern US, 22:33557
  content in soils on Niue Island in south Pacific Ocean, 22:37878
  content in volcanic rocks, age estimation from, 22:18922
  content ratio to uranium-238 in fossil chitons and corals, 22:8213
  content ratio to uranium-238 in stalactites and stalagmites, 22:35930
  content ratio with protactinium-231 in ocean sediments, use for age estimation, 22:45180(R) (ORO-3622-2)
  determination in pitchblende using solvent extraction and ion exchange, 22:37676
  deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
  isotopic shift measurements for, 22:13250
  neutron fission of, fission barrier and compound-nucleus quasistable states in, (T), 22:44711
  neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
  neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
  neutron total cross section at 0.014 to 1.0 eV, (E), 22:37342 (ITEF-546)
  nuclear deformation energies of, (T), 22:30077
  separation from uranium in sulfuric acid solution by ion exchange, 22:37850
  use in age estimation measurements on hydrothermal uranium deposits, 22:30695
  use in ratio with protactinium-231 for measuring growth rates in manganese nodules, 22:16390 (COO-1540-8)
  use in studying subsidence rates of Pacific atolls, 22:6465
  thorium-230--thorium-232, neutron reactions with, production of uranium-232 by, 22:45091 (BMwF-FBK-68-09)
THORIUM ISOTOPES Th-231
  beta decay of, β and conversion-electron spectra for, (E), 22:16014 (NP-17208)
  energy levels from thorium-230 neutron fission, quasistable, (T), 22:44711
  energy-level transitions from uranium-235 alpha decay, conversion coefficients for, (E), 22:14000 (NP-17225)
  gamma spectra of, measurement and analysis of low-energy, (E), 22:20575 (NP-17285)
  preparation of thin sources of, for spectrometer, 22:2175 (NP-17077)
THORIUM ISOTOPES Th-232
  alpha emission by, effects of, on dose to man following administration of thorotrast, 22:21577
  alpha emission by, effects of, on human liver following injection of Thorotrast, 22:40906
  alpha fission at 33 MeV, fission-fragment energy correlations in, (T), 22:42119
  alpha fission at 45 MeV, ternary, (E), 22:11946(R) (COO-1716-4)
  alpha fission of, isomer yield ratio for krypton-85 from, (E), 22:35332
  alpha fission with moderately excited compound nucleus, fission-fragment charge and mass distributions from, (E), 22:44734
  boron-10 reactions (B-10,2n) with, fission properties of isomeric americium-240 from, (E/T), 22:1735
  charged-particle fission of, α emission in, (E), 22:3720
  content and distribution in Indian Ocean bottom sediments, 22:33555
  content in Bay of Banyuls sediments, 22:35955
  content in river sediments from eastern and southern US, 22:33557

content in seawater, measurement of, 22:45205 (TID-24654)
content in selected Florida minerals, 22:40209 (SC-RR-68-196)
content in volcanic rocks, age estimation from, 22:18922
content of thorotrast, 22:21577
content ratio to uranium-238 in eclogite inclusions in deep-seated pipes, 22:42857
content ratio to uranium-238 in volcanic rocks of Oki Island, Japan, 22:51109
determination in air filters by neutron activation methods, 22:37655 (UCRL-18140, pp 91-9)
determination in biological materials, microautoradiographic, 22:1970
determination of, microautographic methods for, 22:37692
deuteron fission at 11.5 MeV, nuclear charge distribution in, (E), 22:22588 (ORO-1797-11, pp 114-64)
deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
distribution in soils, waters, and plants of Indian monazite areas, 22:6440
effects on chromosomes in man, aberrant, 22:6798(R) (IAEA-2819-6)
electron reactions at 20 to 60 MeV, neutron yields from, (E), 22:32584
energy level at 49.8 keV, lifetime of, (E), 22:53191
energy level transitions following Coulomb excitation with 70 MeV oxygen-16 and 190 MeV argon-40 ions, (E), 22:30027
fast neutron fission of, analysis of mass balance in CANDU-type reactor, 22:37400 (AECL-3109)
fission by 14-MeV neutrons, yields from, 22:20975(R) (BMwF-FBK-67-89)
fission by reactor neutrons, mass spectrometric and gamma measurements of yields from, 22:50912
fuel elements of, configuration of multi-zone, 22:42486(P)
gamma emission by, effects of, on dose to man following administration of thorotrast, 22:21577
gamma emission by, effects of, on human liver following injection of Thorotrast, 22:40906
half-life and type of decay of, 22:42698
isotopic shift measurements for, 22:13250
Moessbauer effect for 49.8-keV transition from alpha scattering with Coulomb excitation, (E), 22:53191
neutron capture by, γ spectra and radiative widths for, (E), 22:20498 (BNL-12268)
neutron capture by, γ spectra from, (E), 22:9921 (JUL-Conf-1)
neutron capture cross section for, analysis of 0.1 to 3.4 eV, 22:42428
neutron capture cross sections and resonance parameters at 0.1 to 3.4 eV, (E), 22:35343
neutron capture resonance integrals in homogeneous mixture, effective, (E), 22:48415 (JAERI-1160)
neutron cross section for, use of optical model for evaluation of, 22:27396(R) (AI-AEC-12638)
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
neutron differential and integral fission cross sections at 0.5 to 1.2 MeV, (E/T), 22:16053
neutron differential elastic scattering cross section and polarization at 0.6 to 1.2 MeV, (E), 22:20578 (WASH-1079)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission above 0.6 MeV, relative cross sections for, (E), 22:18259
neutron fission at 1 to 6 MeV, effects of thorium-233 states on fragment energy and mass distributions in, (E), 22:35360
neutron fission at 1.2, 1.4, and 1.6 MeV, fission-fragment angular distributions and cross sections for, (E), 22:39635(R) (NYO-3938-1)
neutron fission at 1.2, 1.4, and 1.6 MeV, fragment angular distributions and cross sections for, (E), 22:50651
neutron fission at 1.3 to 1.8 MeV, angular distributions of fragments for, (E), 22:50646
neutron fission at 1.5 to 3.3 MeV, average number of prompt neutrons from, (E), 22:39643
neutron fission at 1.5 to 3.3 MeV, measurements of anti ν for prompt neutron emission in, (E), 22:42017(T) (LA-tr-68-20)
neutron fission at 14.8 MeV, mass distribution in, (E), 22:44704
neutron fission at 14.8 MeV, mass distribution of fragments for, (E), 22:53216
neutron fission at 14.8 MeV, yields in symmetric, (E), 22:20598
neutron fission at 2 MeV, neutron spectra for, (E), 22:11948(R) (NP-17216)
neutron fission at 3 and 14 MeV, absolute delayed neutron yields from, (E), 22:32591
neutron fission at 3 and 14 MeV, delayed neutron emission in, (E), 22:20578 (WASH-1079)
neutron fission at 3 and 14 MeV, delayed neutron yields from, (E), 22:24859 (LA-DC-9403)
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission of, fission-fragment angular anisotropy and mass asymmetry in fast, (E), 22:35286(T) (ANL-Trans-611)
neutron fission of, survey of yields from fast, 22:20559 (AERE-R-5086)
neutron production by, in soils, 22:30705
neutron resonance absorption in reactors, effect of resonance width on, (E/T), 22:26768
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
photofission at 4.5 to 8.2 MeV, cross section and yields for, (E), 22:20497(R) (AECL-3009)
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:3688 (FEI-73)
photofission at 5 to 8 MeV, fission-fragment angular distribution near threshold for, (E), 22:18275
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:42010(T) (ANL-Trans-639)
photofission at 5 to 8.3 MeV, yield curves for, (E), 22:32512(R) (AECL-3108)
photofission at 6 to 8 MeV, radiative widths for, (E), 22:46729(R) (AECL-3157)
photofission cross section at 5.4 to 8.8 MeV, angular distribution for, (E), 22:37340(R) (EANDC(E)-89(U))
proton fission at 156 MeV, delayed neutron emission in, (E), 22:9877
proton fission at 20 to 85 MeV, isomeric yield ratios of zenon-133 in, (E), 22:35324
proton fission at 9.5 and 11.3 MeV, nuclear charge distribution in, (E), 22:22588 (ORO-1797-11, pp 114-64)
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
separation from daughter products by ion exchange using anionite AV-17, 22:30687
separation from fission product solutions by ion exchange using anionite AV-17, 22:30687
uptake and metabolism by animals and man, 22:8644
uptake by liver fractions in rats, effects of route of administration on, 22:51371
use in breeding blanket of uranium-233 fueled light water-cooled breeder reactor, 22:1877(P)
Th-232--U-233, neutron multiplication in light- and heavy-water-moderated assemblies of, 22:6105
thorium-230--thorium-232, neutron reactions with, production of uranium-232 by, 22:45091 (BMwF-FBK-68-09)

THORIUM ISOTOPES Th-233
  beta decay of, γ spectra from, (E), 22:37365
  beta decay of, internal conversion electron spectra from, (E), 22:44719
  energy levels from thorium-232 neutron capture, (E), 22:20498 (BNL-12268)
  energy-level transitions from thorium-232 neutron capture, (E), 22:9921 (JUL-Conf-1)
  nuclear level densities in, testing random-matrix model by, (T), 22:27378

THORIUM ISOTOPES Th-234
  content in Bay of Banyuls sediments, 22:35955
  content in surface seawater, Dec. 1966 to Nov. 1967, 22:10404 (CU-3139-1(App.A))
  distribution in coastal and open ocean waters in relation to sedimentation rates, 22:49182 (TID-24637)
  neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
  neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
  production of curie amounts of, 22:33382
  use as tracer to study rapid near-surface chemical reactions in seawater, 22:49182 (TID-24637)

THORIUM ISOTOPES Th-238
  content in Bay of Banyuls sediments, 22:35955

THORIUM MINERALS
    see also Ekanites
    see also Gadolinites
  analysis for thorium, comparison of colorimetric and radiochemical methods for, 22:25288
  crystal structure of, role of alpha particles in metamictization of, 22:27931
  occurrence in Congo Republic, 22:48956
  separation of thorium from rare earths in, by ion exchange, 22:33541(P)
  separation of thorium from, by solvent extraction, 22:4247
  uranium content in, effect of organic compounds on, 22:4293

THORIUM NITRATES
    see also Potassium Thorium Acid Nitrates
  analysis for cadmium by linear-sweep chronoamperometry, 22:33218
  analysis for impurities, 22:14481 (ORNL-4139, pp 43-7)
  analysis for trace impurities by solvent extraction and activation, 22:12240
  analysis of acidic solutions of, for traces of fluorides, 22:14422 (NLCO-1004)

analysis of solutions of, for cadmium by linear chronoamperometry, 22:33265
complexes of, structure of, x-ray diffraction studies of, 22:16562
complexes with aromatic derivatives of nitrogen, phosphorus, and sulfur, 22:45048
complexes with tributyl phosphate, dielectric constants of, 22:4133
crystal structure of hydrated, x-ray diffraction studies of, 22:43596 (ANL-7299, pp 280-9)
denitration of solutions of, fluid-bed, 22:23110(P)
effects on electrophoretic behavior of monodisperse polystyrene lattices in solution, 22:27664
hydrolysis of, potentiometric studies of, 22:35814
magnetic susceptibility of, 22:27669
precipitation of thorium from aqueous solutions of, using sodium fumarate or potassium maleate, 22:18779
precipitation of, method for preparation of dense and sulfate-containing thorium dioxide by, 22:13058(P)
properties of hydrated, in ethyl acetate solutions, acidic, 22:30565
reactions with aqueous thorium oxide, structure of products from, 22:40078
separation by solvent extraction using nitric acid--TBP--water, chromatographic studies on effects of diluents on, 22:6405
separation by solvent extraction using TBP and trioctylamine, salting out isotherm during, 22:10334
separation by solvent extraction using TBP, effects of calcium nitrate as salting out agent on, 22:10329
separation by solvent extraction, precalculation of effects of salting out in, 22:10330
separation of fluoride ions from aqueous solutions of, sorption process for, 22:37857(P)
separation of lead from, 22:10182
stability constants of ions of, in potassium nitrate, sodium perchlorate, and sodium nitrate--sodium perchlorate at 15 to 25ºC, 22:33310
structure of crystalline hydrates of, ir spectral studies on, 22:12300
use in determination of fluorides, 22:1973
use in determination of fluorides by titration, 22:16447
use in determination of fluorides by titration, 22:30436(R) (UCRL-50006-68-1)
use in determination of fluorine, 22:21047
use in determination of fluorine by titration, 22:48815 (FOA-4-4363)
H_2O--sodium o-nitrobenzoate--$Th(NO_3)_4$, phase studies on acidity, concentration, and electronegativity of, 22:12302
H_2O--sodium p-nitrobenzoate--$Th(NO_3)_4$, phase studies on acidity, concentration, and electronegativity of, 22:12302
HNO_3--TBP--$Th(NO_3)_4$, phase studies on, by distribution coefficient measurements, 22:6408
$Th(NO_3)_4$--$U(NO_3)_4$, separation of uranium and thorium from, by solvent extraction using tributyl phosphate, 22:14579(P)

THORIUM NITRIDES
crystal structure of, 22:37720
decomposition of, thermodynamics of, 22:45044
electric properties of ThN and Th_3N_4, at 4 to 850ºK, 22:4879
formation over nitrogen-containing boron--phosphorus--thorium system, thermodynamics of, 22:45044
magnetic susceptibility at -190, -76, and 22º, 22:24466
preparation, crystal structure, and melting points of, 22:8061
properties of, description of mechanical and physical, 22:53456 (BNWL-861)
properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
ThC--ThN, electric properties of solid-solution, at 4 to 500ºK, 22:15141 (BNL-50057, pp 79-100)
thermodynamic properties at 1000ºC, 22:49852
ThN--UN, phase formation in, mechanisms of thorium-rich oxide, 22:8739 (ORNL-4170, pp 97-102)
ThN--UN, phase relations at 1000ºC, 22:49852

THORIUM ORES
see also Monazites
analysis using gamma scintillation spectrometers, 22:6619
processing by liquid-liquid extraction, review of, 22:42836
production in 1967, review of world, 22:30730
properties of precambrian, metamorphic, and ultramorphic, in western Aldan shelf, 22:27935
prospecting for, gamma spectrometric method for, 22:51117
radiation measurements on powdered, effects of natural emanation on, 22:34047
radiation measurements on, effects of natural emanation on in-place, 22:34047

THORIUM OXALATES
complexes, composition of precipitate from thorium nitrate--ammonium oxalate solutions, 22:27559
magnetic susceptibility of, 22:27669
nuclear magnetic resonance spectra of hydrated, 22:50978
precipitation from ammonium oxalate--thorium nitrate solutions, 22:27559
precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
thermal conductivity of, 22:8731 (ORNL-4170, pp 37-41)
plutonium oxalate--thorium oxalate, magnetic susceptibility of, 22:18792

THORIUM OXIDE SULFITES
complexes with acetone, preparation and properties of hydrates of, 22:10245

THORIUM OXIDES
see also TD Nickel
alpha emission by, effects of, on nervous system of dogs, 22:28659
analysis for rare earths by isotope-dilution mass spectrography, 22:22930(R) (NBL-242)
analysis of high-fired, for residual gases by gas chromatography, 22:14423 (NLCO-1006)
content of tissues, 22:6731
crystallite size distribution in fine powders of colloidal, (E), 22:28973
deposition by spraying, effect of particle size and gun pressure on, 22:8301(R) (ALO-3634-7)
development for reactor fuels, 22:734
diffusion of uranium in, grain boundary, 22:28834
dissolution of aqueous, in thorium nitrate solution, structure of products from, 22:40078
effects on phagocytosis of colloidal gold-198 in rabbits, 22:12773
effects on radiolysis of potassium and sodium nitrates, 22:33398
fuel elements of, economics of CIRENE-type, 22:22827 (RT/FI-(67)29)
gadolinium ion EPR in, isotope effect in ground-state crystal-field splitting in, (T), 22:24438
gadolinium-155 hyperfine coupling in, temperature dependence of trivalent-ion, (E/T), 22:52530
machining behavior, 22:41028
mass transfer coefficients for fluidized sol droplets of, 22:30507 (ORNL-TM-2163)
optical properties of films of, in uv region of spectrum, 22:2692
preparation of hypostoichiometric reactor fuels of, incorporating lanthanum, niobium, or yttrium additive, 22:38611(P)
preparation of single crystals of, evaporation method for, 22:26077
production of fuel elements of, containing uranium dioxide, method for, 22:34105(P)
properties as solid electrolyte in study of thermodynamic properties of alloys, 22:27637
properties of colloids of, x-ray diffraction studies of, 22:30509 (RT/MET-(68)1)
properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
reactions of solid, with liquid cobalt and iron at 2000 to 2500ºK, 22:42654(R) (NYO-2082-18)
reactions with carbon dioxide, spectral studies of surface, 22:27727
reactions with deuterium oxides, spectral studies of surface, 22:27727
reactions with water, spectral studies of surface, 22:27727
reduction of, 22:33528
separation of uranium-233 from neutron-irradiated, by solvent extraction using triisooctylamine, 22:23112
sintering in gas discharges, method and results for, 22:23862
sorptive properties for fluoride ions in aqueous thorium nitrate solutions, 22:37857(P)
sorptive properties of crystalline, for orthophosphate in aqueous solution, 22:47122
surface chemistry of sols of, 22:27727
suspension of carbon black in sols of, (E), 22:28919
thermal conductivity at 200 to 1700ºC, 22:42970(R) (ALO-3634-9)
thermal insulation coatings of, 22:42970(R) (ALO-3634-9)
water extraction from sols of, fluidized in 2-ethyl-1-hexanol, 22:30507 (ORNL-TM-2163)
Mo--ThO_2, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
PuO_2--ThO_2, fuel elements for pebble bed reactors, design and economics of dispersion of, 22:22716
Ta--ThO_2, compatibility at 1700 to 1900ºC, 22:10481(R) (ALO-3634-6)
ThO_2--U, fuels of enriched, physics parameters of, 22:20807 (DP-1125)

THORIUM OXIDES ThO
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704

THORIUM OXIDES ThO_2
alpha and gamma emission by, effects of, on tissues of animals and man, review of pathological, 22:33948
alpha emission by, effects of, on internal organs of man following injection of thorotrast, 22:31165
analysis for impurities, spectrographic, 22:1994
analysis for phosphorus, extraction method for spectrophotometric, 22:4043
analysis for thorium, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for traces of lithium using hollow-cathode discharge tube, spectrographic, 22:12245
analysis of sintered, for moisture by coulometric electrolytic measurement with electronic integration, 22:10191

blanket elements of, reactivity measurements of hexagonal and rectangular arrays of, at 20ºC, 22:14262 (WAPD-TM-614)
book: High Temperature Materials, 22:31360
breeding blanket assemblies for thermal reactor, description of, 22:42269(P)
breeding element of, analysis of lattice parameters for heavy water-moderated, (E/T), 22:22837
content in sands of Nettuno, Rome, 22:37891
content in tissues, gamma spectroscopy method for determining, 22:49099
content of man following therapy, effects of, on frequency of chromosome aberrations in leukocytes, 22:28440
cost of Italian, 22:30732
creep of sol-gel, compressive, 22:8821 (ORNL-4170, pp 34-6)
creep swelling of, computer program for effects of burnup on, 22:30350 (WAPD-TM-755)
crystal defects in, calculations of formation energy, 22:52287
crystal structure of arc melted, 22:28954
crystallite size, measurements by electron microscopy and x-ray diffraction, equivalence of, (E), 22:28947
curium ion ESR in single crystals of, (E), 22:24435
density of compacted sol-gel, effects of sintering on, 22:8821 (ORNL-4170, pp 34-6)
deposition on tantalum and tungsten foils, spray coating method for, 22:51177(R) (ALO-3634-10)
deposition on tungsten for corrosion protection at high temperatures, 22:43537
determination in thoria--beryllia blocks by x-ray spectrochemical method, 22:42582 (AAEC/TM-446)
development for reactor fuels, review, 22:12954
diffuse transition and melting in, 22:23013
diffusion coefficient of protactinium in sintered, analysis of lattice, 22:48790
diffusion of gases from sol-gel, 22:35778 (ORNL-TM-2268)
diffusion of protactinium in, 22:15255
diffusion of thorium in, cationic, 22:28955
dissolution in hydrofluoric acid--nitric acid systems, 22:8185
dissolution of aluminum-clad, 22:40151 (BNWL-240)
dissolution of, factors affecting acid, 22:33529
distribution in tissues of young rats following intravenous injection, 22:51366
effect of dispersions of, on fracture of chromium-nickel alloys, 22:49765
effects as additive on thorium hardness, 22:8740 (ORNL-4170, pp 105-7)
effects of combination of, with palladium on preparation of uranium dioxide sols, catalytic, 22:10201(P)
effects of semiconductor impurities of, on radiolysis of ammonium, potassium, and sodium nitrates, 22:30632
effects on bones of rabbits following intravenous injection, 22:38486
effects on chromosomes in man, aberrant, 22:6798(R) (IAEA-2819-6)
effects on chromosomes of man, aberrant, 22:23494
effects on hamsters, tumorigenic, 22:10837
effects on liver of man, effects of dose on carcinogenic, 22:10872
effects on liver of man, latent, 22:40906
effects on man following use for contrast studies, carcinogenic, 22:2552
effects on man, determination of, by lymphocyte chromosome aberrations, 22:40689
effects on man, pathological, 22:21597
effects on peripheral blood picture in man, 22:6908
effects on rats, protective effects of sensitization with carrageenans, indium chloride, and tannic acid against hemorrhagic, 22:10817
effects on yttrium oxide sintering grain growth, 22:11077
electric conductivity at 800 to 1100ºC, 22:31478
electric conductivity of polycrystalline, at 1030 to 2880ºK, 22:13060 (BNWL-473, pp 4.1-9)
electromotive force measurements on galvanic cells containing, at 25 to 2000ºC, 22:27704
erbium-ion spin--lattice relaxation in cubic sites of, (E), 22:32005
fabrication of sintered, for nuclear fuel rods, 22:7054(P)
fuel cycle for 500 MW(e) CIRENE-type reactor, calculation of optimum economic, 22:44835 (RT/FI-(66)42-bis)
fuel cycle performance in heavy water-moderated organic-cooled 1000 MW(e) reactors, 22:30247
fuel fabrication of resin-bonded silicon carbide (SiC)-coated spheres, description of, 22:42200(R) (ORNL-4200)
fuel target for 8 x 8 lattice PCTR supercell of, measurement of infinite medium reactivity multiplication factor of multiple configuration, 22:50800 (BNWL-792)
fuels of, burnup analysis at 1250 to 1400ºC for small spheres of, 22:22688 (GA-7549)
gadolinium ESR spectra in single crystals of, temperature variation of, 22:24385 (CONF-670502-, pp 89-100)
gamma emission by, effects of, on internal organs of man following injection of thorotrast, 22:31165
gelation times of droplets of sols of, in 2-ethylhexanol, 22:12276 (ORNL-4094, pp 40-9)
growth of doped, single-crystal, 22:52289
hardness of, effects of temperature on, (E), 22:8818 (BMI-X-447)
hazards of medical use of, legislation by Food and Drug Administration on, 22:12780
heating sol-gel microspheres of, gas evolution in, 22:33295 (ORNL-TM-1809)
immersion in water, effects of specific surface area and outgassing temperature on heat of, 22:17174
leaching from aluminum oxide beds, 22:149
mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
molecular configuration of, polarity in, 22:4873
neutron absorption by rods of, temperature dependence of, 22:17190
neutron capture resonance integrals for, effective, (E), 22:48415 (JAERI-1160)
oxidation of pyrolytic-carbon-coated fuel particles of, by helium-water vapor mixtures at 1100 to 1400ºC, 22:41084 (ORNL-TM-2199)
particle-size distribution in, sedimentation method for determination of, 22:14450
preparation and growth of single crystals of, doped with tetravalent actinide ions, 22:23005(R) (UCLA-34-P-120-3)
preparation and properties of compacted pellets of, 22:49808
preparation by sol-gel process for use in industry, 22:11031
preparation of dense, and sulfate-containing, from aqueous thorium nitrate solution, method for, 22:13058(P)
preparation of gel microspheres from sols of, 22:4151(P)
preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
preparation of microspheres and sols of, methods and equipment for, 22:12476 (ORNL-TM-1978)
preparation of microspheres of, 22:17160 (ORNL-4075, pp 43-61)
preparation of microspheres of, by sol-gel process, 22:47698
preparation of microspheres of, by sol-gel process, 22:12276 (ORNL-4094, pp 40-9)
preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
preparation of microspheres of, development of sol dispersion devices for, 22:14481 (ORNL-4139, pp 43-7)
preparation of microspheres of, equipment development for, 22:27866 (ORNL-4204, pp 40-5)
preparation of microspheres of, fluidized-bed extractor for, 22:17160 (ORNL-4075, pp 43-61)
preparation of microspheres of, for use as reactor fuels, 22:13057(P)
preparation of monocrystalline, incorporating rare earth oxide impurities, 22:41091
preparation of shaped particles of, for reactor fuel, 22:11036(P)
preparation of sol of, 22:14511(P)
preparation of sols of, from nitrate solutions by solvent extraction using amines, 22:57 (ORNL-4095)
preparation of sols of, hydrothermal method for, 22:4863(P)
production of dense, by pressure calcintering of thorium hydroxide, 22:31519
production of fine powders of, methods for, 22:41092
production of particles in sols of, 22:33330
production of single-crystal, from molten salts, 22:8840 (ORNL-4170, pp 3-7)
properties as coating on tungsten alloy cathode, 22:37753
properties as thermocouple electric insulating material, 22:647(R) (BNL-50077)
properties of pyrolytic carbon coated, for fuel, 22:11046 (ORNL-TM-2061)
properties of sols and microspheres of, effects of purity of thorium nitrate on, 22:14481 (ORNL-4139, pp 43-7)
properties of sols of, 22:26073 (ORNL-TM-2205)
properties of, description of mechanical and physical, 22:53456 (BNWL-861)
radiation effects on properties of, literature survey, 22:36553 (N-68-17095)
radiation effects on single-crystal optical properties, uv, 22:736
radiation effects on solid, from thorium isotopes, 22:30643
radiation effects on uptake of, by liver cells, x, 22:14910(R) (COO-1244-12)
reactions in vacuum at 1200 to 2000ºC with silicon monocarbide, 22:52231
reactions with americium oxides, solid-state, 22:30548
reactions with rhenium--tungsten alloys at 2215 to 2290ºC, 22:645 (AECL-2768)
reactions with uranium mononitride at 600 and 1100ºC, mechanism and products of, 22:48849 (KFK-771)
reduction by calcium to yield thorium metal, 22:4080
shrinkage of gels of, at low temperature, model for, 22:21055 (TID-24336)
single crystal growth of, use of slow cooling and gradient flux techniques for, 22:736
sintering behavior of gels of, crystallite size distribution effects on, 22:11079

sintering characteristics of, effects of calcination on, 22:19633
sintering characteristics of, effects of crystallinity on, 22:19633
sintering gels of, effects of calcium oxide on, 22:13054
sorption by pericardium of rats, electron microscopy study of, 22:51317
sorption from pericardium of rats, lymphangiographic study of, 22:51318
sorptive properties for water, effects of porosity on, 22:37741
sorptive properties for water, electron-microscopic studies of, 22:14432 (ORNL-4196, pp 63-6)
sorptive properties for water, thermodynamics of, 22:25330 (ORNL-4229, pp 105-11)
spectra of adsorbed species on, 22:25330 (ORNL-4229, pp 105-11)
surface properties of, effects of irreversibly adsorbed water on, 22:25330 (ORNL-4229, pp 105-11)
testing of coatings of, for foil-type thermal insulation, 22:28008(R) (ALO-3634-8)
thermal conductivity of compacted microspheres of, 22:8731 (ORNL-4170, pp 37-41)
thermal conductivity of sol-gel, 22:8731 (ORNL-4170, pp 37-41)
thermal conductivity of, effects of lanthanum oxide on, 22:13070(P)
thermal conductivity of, effects of niobium oxide on, 22:13070(P)
thermal properties of fuels of, at 300 to 2000°C, 22:47703 (BMI-X-10210)
thermodynamic properties, 22:52268
ThO_2-base--UO_2, fabrication of low-density fuel pellets of, using dextrose to produce porosity, 22:41088 (WAPD-TM-721)
use for scanning in man, effects of, on erythropoiesis, 22:47615
use for scanning of human liver and spleen, development of hemangioendothelioma in liver following, 22:47600
use for scanning of human organs, development of tumors following, 22:36305
use in composites with niobium and tantalum, 22:41018
use in oxygen ion-conducting solid electrolytes, 22:10247
ytterbium ion EPR in, stress dependence of g factors of, 22:15584
Be--ThO_2, production and stability of dispersions of, 22:43561
BeO--PuO_2--ThO_2, development of fuels of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
BeO--PuO_2--ThO_2--UO_2, reprocessing fuel of, 22:149
BeO--ThO_2, analysis of blocks of, for thoria by x-ray spectrochemical method, 22:42582 (AAEC/TM-446)
BeO--ThO_2--UO_2, radiation effects on dispersions of, fast and thermal neutron, 22:19587
C--ThO_2--UO_2, preparation of pyrolytic carbon coated microspheres of, design of equipment for, 22:25591
CeF_3--ThO_2, phase studies, 22:17178
Co-base--Mo--Ni--ThO_2--W, evaluation of dispersion-strengthened, 22:34005
Cr--Ni--ThO_2, creep and fracture of, effects of environment, rolling, and temperature on, 22:11054
Cr--Ni--ThO_2, testing cermet, for encapsulation of cobalt-60, 22:10929
Gd_2O_3--ThO_2, phase studies of, 22:23898 (CONF-670502-, pp 213-22)
H_2O--ThO_2, thermodynamics of net differential heat of adsorption with specific surface area, 22:33342
HfC--ThO_2--W-base, tensile properties of, effects of pressure and temperature on, 22:49767
Ho_2O_3--ThO_2, phase diagrams, 22:2703 (KFK-597)
Ho_2O_3--ThO_2, phase studies, 22:4890 (KFK-521)
LaO_3--ThO_2, phase studies of, 22:23898 (CONF-670502-, pp 213-22)
Lu_2O_3--ThO_2, phase diagrams, 22:2703 (KFK-597)
Lu_2O_3--ThO_2, phase studies, 22:4890 (KFK-521)
Mo--ThO_2, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Ni--ThO_2, crystal structure of hot-pressed, 22:2626
Ni--ThO_2, mechanical properties of hot-pressed, 22:2626
Ni--ThO_2, work-hardening, (E/T), 22:41060
PuO_2--ThO_2, power density of solid-solution radioisotopic fuels of, 22:49785 (LA-DC-9686)
PuO_2--ThO_2, preparation of microspheres of, by sol-gel process, 22:43643
PuO_2--ThO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
PuO_2--ThO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
PuO_2--ThO_2, preparation, properties, and phase relations of, 22:2699
PuO_2--ThO_2, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--ThO_2, radiation effects on fuels of, review on, 22:8804
PuO_2--ThO_2, radiation testing of metal-clad fuels of, in-pile, 22:8823 (ORNL-4170, pp 211-26)
PuO_2--ThO_2, reactions with rhenium--tungsten thermocouples at 2215 to 2290°C, 22:645 (AECL-2768)
PuO_2--ThO_2, sintering of, densification and solid solution formation in, 22:45802 (AERE-M-1964)
PuO_2--ThO_2-base, radiation effects testing of, in-pile, 22:23904 (CONF-660524-, pp 463-73)
Re--ThO_2--W, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Re--ThO_2--W, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6
Re--ThO_2--W, mechanical properties of sheets of, at 1928°C, 22:643(R) (AD-645143)
Sc_2O_3--ThO_2, phase diagrams, 22:2703 (KFK-597)
Sc_2O_3--ThO_2, phase studies, 22:4890 (KFK-521)
Ta--ThO_2, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6
Tb_2O_3--ThO_2, phase relations in, at 450 to 1100°C, tensimetric studies on, 22:33341
ThO_2--^{233}U, fuel system for fast reactors, calculation o optimum economic, (T), 22:46961
ThO_2--$^{233}UO_2$, blanket elements of, reactivity measurements of hexagonal and rectangular arrays of, a 20°C, 22:14262 (WAPD-TM-614)
ThO_2--$^{233}UO_2$, physics measurements of core and blanket o fast breeder reactor, calculation of, (T), 22:47052
ThO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
ThO_2--U_3O_8, preparation of powders by dissociation of thorium sulfate and ammonium diuranate, 22:49808
ThO_2--UO_2 preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
ThO_2--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
ThO_2--UO_2, analysis for trace impurities, preconcentration procedures for spectroscopic, 22:14430 (ORNL-4196, pp 55-9)
ThO_2--UO_2, analysis of irradiated, procedures for, 22:37641(R) (BAW-3809-2)
ThO_2--UO_2, burnup of Indian Point Power Reactor Unit 1 Core A Type 304 stainless steel-clad Zircaloy 2-clad fuel elements of, profilometer and metallographic analysis of, 22:53261(R) (BAW-3809-4)
ThO_2--UO_2, crystal growth by in-crucible centrifugal motion, 22:52289
ThO_2--UO_2, crystal structure of nonstoichiometric phases in, 22:4897
ThO_2--UO_2, crystal structure, (E), 22:8818 (BMI-X-447)
ThO_2--UO_2, cycle costs as HWOCR fuel, evaluation of, 22:23854 (CONF-660524-, pp 157-84)
ThO_2--UO_2, diffusion coefficient of protactinum in sintered, analysis of lattice, 22:48790
ThO_2--UO_2, diffusion of gases from sol-gel, 22:35778 (ORNL-TM-2268)
ThO_2--UO_2, diffusion of krypton and tritium from, in shear-leach process, 22:149
ThO_2--UO_2, diffusion of protactinium in solid solutions of, 22:15255
ThO_2--UO_2, diffusion of uranium in, grain boundary, 22:28834
ThO_2--UO_2, extrusion method for mixed, 22:49797
ThO_2--UO_2, fabrication and properties of reactor fuels of, 22:49798
ThO_2--UO_2, fabrication into pebble-type fuels, program development for, 22:23855 (CONF-660524-, pp 293-8)
ThO_2--UO_2, fuel assembly of, four-factor two-group analysis of lattice parameters for heavy water-moderated, (E/T), 22:22836
ThO_2--UO_2, fuel element performance of, analysis of void migration and cracking in, (E/T), 22:47047 (WAPD-TM-794)
ThO_2--UO_2, fuel elements of Zircaloy-clad, effects of time and temperature on failures of, 22:33174
ThO_2--UO_2, fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of, economic and technical analysis of, 22:50741 (WASH-1083)
ThO_2--UO_2, fuel particles of, development for Dragon project, 22:5932(R) (NP-17118)
ThO_2--UO_2, fuel rods of heavy water-moderated 19-element critical assembly, physics measurements in CANDU-type, (E/T), 22:44882 (AECL-2779)
ThO_2--UO_2, fuel suspension flow at 250°C, analysis of optimum, 22:35531
ThO_2--UO_2, fuels in exponential piles, use of aqueous suspension, 22:25107
ThO_2--UO_2, fuels of, burnup analysis at 1250 to 1400°C for small spheres of, 22:22688 (GA-7549)
ThO_2--UO_2, hardness of, effects of composition and temperature on, (E), 22:8818 (BMI-X-447)
ThO_2--UO_2, heating gels of, effects of particle size on gases from, 22:33295 (ORNL-TM-1809)
ThO_2--UO_2, homogeneity of vibratory-compacted, γ-attenuation method for inspection of, 22:14739
ThO_2--UO_2, lattice parameter measurements in heavy water moderated 19-rod clusters of uranium-235 enriched, 22:7890 (AECL-2778)
ThO_2--UO_2, measurements of reflector savings in, computer analysis of radial-flux distributions for, (E), 22:35633
ThO_2--UO_2, mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
ThO_2--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
ThO_2--UO_2, neutron multiplication in light- and heavy-water-moderated assemblies of, 22:6105
ThO_2--UO_2, neutron physics of uranium-233 and -235 seed blankets of, 22:6116

ThO_2--UO_2, preparation and properties of compacted fuel pellets of, 22:49808
ThO_2--UO_2, preparation by sol-gel process, equipment and flowsheets for, 22:12476 (ORNL-TM-1978)
ThO_2--UO_2, preparation of fuel spheres of, by KEMA sol-gel process, 22:23856 (CONF-660524-, pp 377-90)
ThO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
ThO_2--UO_2, preparation of microspheres of, design of equipment for, 22:25591
ThO_2--UO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
ThO_2--UO_2, preparation of thin sintered foils of, 22:38613
ThO_2--UO_2, preparation of uranium-233-enriched, pilot plant design and operation for direct sol-gel, 22:23857 (CONF-660524-, pp 417-43)
ThO_2--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
ThO_2--UO_2, production of ceramic grade, method for, 22:741(P)
ThO_2--UO_2, production of fuels of, using recycle method, 22:49796
ThO_2--UO_2, production of gels of, 22:33301
ThO_2--UO_2, radiation effects on beryllium oxide dispersions of, beta, fission fragment, and neutron, 22:774
ThO_2--UO_2, radiation effects on carbon-coated particulate, fast neutron, 22:4915
ThO_2--UO_2, radiation effects on crack healing and void movement of, in-pile, 22:21775 (AECL-3008)
ThO_2--UO_2, radiation effects on fuels of, in-pile, 22:17185(R) (BAW-3809-1)
ThO_2--UO_2, radiation effects on pyrolytic carbon coated, in-pile, 22:11046 (ORNL-TM-2061)
ThO_2--UO_2, radiation effects on sol-gel carbon coated, in-pile, 22:11046 (ORNL-TM-2061)
ThO_2--UO_2, radiation testing of metal-clad fuels of, in-pile, 22:8823 (ORNL-4170, pp 211-26)
ThO_2--UO_2, reactor physics parameter measurements in heavy water, 22:6104
ThO_2--UO_2, separation of beryllium oxide from fuels of, leaching and solvent extraction method for, 22:51061
ThO_2--UO_2, solubility of irradiated and unirradiated, in nitric and hydrofluoric acids, (E), 22:47702(R) (BAW-3809-3)
ThO_2--UO_2, sorptive properties of gels of, for carbon dioxide, 22:33295 (ORNL-TM-1809)
ThO_2--UO_2, thermal conductivity of, 22:8731 (ORNL-4170, pp 37-41)
ThO_2--UO_2, thermal conductivity of, effects of lanthanum oxide and niobium oxide on, 22:13070(P)
ThO_2--UO_2, thermal conductivity of, effects of lanthanum oxide and yttrium oxide on, 22:13070(P)
ThO_2--UO_2, thermal properties of fuels of, at 300 to 2000°C, 22:47703 (BMI-X-10210)
ThO_2--UO_2, thermodynamic properties of nonstoichiometric solid solutions in, 22:4882
ThO_2--UO_2--W, stability of molybdenum--rhenium--tungsten alloy-clad, in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
ThO_2--UO_3, compound formation in aqueous solutions of, 22:12289
ThO_2--UO_3, preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
ThO_2--UO_3, preparation of microspheres of, 22:28887 (ORNL-4204, pp 22-39)
ThO_2--UO_3, preparation of sols of, by solvent extraction, 22:26073 (ORNL-TM-2205)
ThO_2--UO_3, preparation of sols of, from nitrate solutions by solvent extraction using amines, 22:57 (ORNL-4095)
ThO_2--UO/sub 2+x/, magnetic properties of, 22:48177
ThO_2--W, analysis for thorium, 22:30436(R) (UCRL-50006-68-1)
ThO_2--W, analysis for tungsten using flavonol, fluorimetric, 22:25282
ThO_2--W, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
ThO_2--W, density and weight loss of sintered, effects of heating rate on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
ThO_2--W, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
ThO_2--W, oxidation resistance of coated, at 4000°F in flowing air, 22:10919
ThO_2--W-base, tensile properties of, effects of pressure and temperature on, 22:49767
ThO_2--W-base, thermal conductivity at 100 to 350°K, 22:8738 (ORNL-4170, pp 80-92)
ThO_2--Y_2O_3, properties as electrolytes, 22:72
ThO_2--Y_2O_3-base, elastic moduli at 25 to 1100°C, (E), 22:28931
ThO_2--Yb_2O_3, phase studies of, 22:23898 (CONF-670502-, pp 213-22)

THORIUM PERCHLORATES
hydrolysis of, potentiometric studies of, 22:35814
preparation and properties of aqueous solutions of, 22:30510(T) (UCRL-Trans-10236)
properties of hydrated, in ethyl acetate solutions, acidic, 22:30565

THORIUM PHOSPHATES
formation and stability constants for, 22:12283
precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
properties as ion-exchange material, 22:33552

THORIUM PHOSPHIDES
crystal structure of, 22:37720
preparation, crystal structure, and melting points of, 22:8061
properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
reactions with nitrogen, thermodynamics of, 22:45044
ThP_2--UP_2, magnetic properties of solid solutions of, 22:44243
ThP--UP, magnetic properties of solid solutions of, 22:44243

Thorium Potassium Fluorides
see Potassium Thorium Fluorides

Thorium Potassium Hydrogen Nitrates
see Potassium Thorium Acid Nitrates

THORIUM PYROPHOSPHATES
solubility in perchloric acid or sodium perchlorate at 25°C, 22:27691

THORIUM RESERVES
estimates of Italian, 22:30732
estimates of, 1967, 22:23174 (NP-17371)

Thorium Rubidium Fluorides
see Rubidium Thorium Fluorides

THORIUM SELENIDES
crystal structure of, 22:37720
preparation, crystal structure, and melting points of, 22:8061

THORIUM SULFATES
diffusion in natural waters in hypergenic zone, 22:25517
magnetic susceptibility of, 22:27669

THORIUM SULFIDES
crystal structure of, 22:37720
preparation, crystal structure, and melting points of, 22:8061
properties of, x-ray diffraction studies on thermal and thermodynamic, 22:63
ThS--US, magnetic properties of, 22:46276

THORIUM SULFITES
complexes with acetone, preparation and properties of hydrates of, 22:10245
stability of hydrated, thermal, ir, and NMR studies of thermal, 22:8074

THORIUM TELLURIDES
crystal structure of, 22:37720
preparation, crystal structure, and melting points of, 22:8061

THORIUM TUNGSTEN BRONZE
electric properties of, 22:4872

THORIUM TUNGSTATES
electric conductivity of single-crystal, 22:4872
enthalpy of formation of, 22:12311
entropy of formation of, 22:12311
thermodynamics of, development for radar use, 22:52179
$Th(WO_4)_2$--$Y_2(WO_4)_3$, phase studies in, effects of annealing on, 22:34121

THORIUM URANIUM OXIDES
magnetic susceptibility at 1.7 to 60°K as function of composition, 22:15611
thermal conductivity and diffusivity of stoichiometric, 22:38619 (BNWL-704)

Thorium--Uranium Recycle Facility (TURF)
see Radiochemical Processing Plants

THORIUM VANADATES
properties as ion-exchange material, 22:33552

THORIUM YTTRIUM OXIDES
electric conductivity at 800 to 1100°C, 22:31478
preparation of electrodes of, for potentiometric measurements in fused salts, 22:25350

Thoron
see Radon Isotopes Rn-220

Thoron (Reagent)
see Benzenearsonic Acid, o-[(2-Hydroxy-3,6-disulfonaphthyl)azo]-, Sodium Salt

Thorotrast (R)
see Thorium Oxides ThO_2

THREE MILE ISLAND POWER REACTOR, UNIT 1
accidents in, safety analysis of hypothetical, 22:18396 (DOCKET-50289-2)
auxiliary and emergency systems for, safety analysis of, 22:18396 (DOCKET-50289-2)
blowdown analysis for, 22:35444 (DOCKET-50289-8)
building for, isolation valve summary for, 22:35443 (DOCKET-50289-7)
containment and reactor buildup at, design criteria for, 22:18397 (DOCKET-50289-3)
containment integrity in, evaluation of, 22:18399 (DOCKET-50289-5)
containment spray system for, analysis of efficiency of, 22:18398 (DOCKET-50289-4)
containment structures for, design and loading factors for shell and liner of, 22:35445 (DOCKET-50289-9)
containment structures for, use of ungrouted tendons for post-tensioning of concrete, 22:35444 (DOCKET-50289-8)
containment system for, evaluation of fluid block system for isolation of, 22:18398 (DOCKET-50289-4)
containment system for, safety analysis of, 22:18395 (DOCKET-50289-1)
containment systems for, changes in cooling units for, 22:35442 (DOCKET-50289-6)

containment ventilation system for, safety analysis of, 22:18395 (DOCKET-50289-1)
containment vessel liner for, specifications for, 22:18397 (DOCKET-50289-3)
control rods for, rack and pinion drive mechanisms for, 22:35442 (DOCKET-50289-6)
control systems and instrumentation for, safety analysis of, 22:18396 (DOCKET-50289-2)
coolant for, fission product inventory for, 22:35443 (DOCKET-50289-7)
coolant loss accidents in, effects of pipe break size on, 22:35445 (DOCKET-50289-9)
cooling system for, ECCS operation-induced thermal shock to components of primary, 22:35444 (DOCKET-50289-8)
cooling system for, safety analysis of, 22:18395 (DOCKET-50289-1)
cooling systems for, tests and inspection requirements for, 22:35444 (DOCKET-50289-8)
cooling water systems, revised diagrams for, 22:35443 (DOCKET-50289-7)
core cooling system for, evaluation of thiosulfate injection type, 22:35445 (DOCKET-50289-9)
core for, effects on valves of vibrations in, 22:18399 (DOCKET-50289-5)
core for, revised reactivity calculations and analyses for, 22:35445 (DOCKET-50289-9)
core for, shutdown reactivity analysis of, 22:35443 (DOCKET-50289-7)
design of, comparison with General Design Criteria of, 22:35445 (DOCKET-50289-9)
design of, safety analysis of, 22:18395 (DOCKET-50289-1)
electrical systems for, line diagrams for, 22:35443 (DOCKET-50289-7)
electrical systems for, safety analysis of, 22:18396 (DOCKET-50289-2)
emergency and auxiliary systems for, changes in number of make-up pumps for, 22:35442 (DOCKET-50289-6)
emergency and auxiliary systems for, use of cooling towers in condenser circulating, 22:35442 (DOCKET-50289-6)
engineered safeguards for, consequences of leakage of, 22:35444 (DOCKET-50289-8)
engineered safeguards for, safety analyses of, 22:35442 (DOCKET-50289-6)
engineered safeguards for, single failure analysis for power supply to, 22:35445 (DOCKET-50289-9)
engineered safety systems for, evaluation of interaction of guaranteed power supply with, 22:18399 (DOCKET-50289-5)
piping systems for, dynamic analysis of critical, 22:18398 (DOCKET-50289-4)
radiation monitoring system for, design for, 22:35445 (DOCKET-50289-9)
radiation monitoring systems for, 22:18398 (DOCKET-50289-4)
radiation protection and radioactive waste handling at, safety analysis of, 22:18396 (DOCKET-50289-2)
radioactive waste systems for, revised design of, 22:35443 (DOCKET-50289-7)
regulatory action on, AEC, 22:44854
safety analyses for, 22:35442 (DOCKET-50289-6)
safety injection system for, analysis of, 22:18395 (DOCKET-50289-1)
seismic design of, evaluation of, 22:18398 (DOCKET-50289-4)
site for, additional flood flow studies for, 22:35442 (DOCKET-50289-6)
site for, seismology, geology, and meteorology of, 22:18397 (DOCKET-50289-3)
siting of, safety analysis of, 22:18395 (DOCKET-50289-1)
steam and power conversion system for, revised diagrams for, 22:35443 (DOCKET-50289-7)
steam and power conversion system for, safety analysis of, 22:18396 (DOCKET-50289-2)
turbines for, effects of over speed of, 22:18398 (DOCKET-50289-4)

THREONINE
determination of carbon-14-labeled, in ninhydrin reaction products from amino acid analyzer by scintillation counting, 22:37659
effects on radiosensitivity of aspartate kinase, 22:14946
radiation effects on acceptor function of RNA specific to, x, 22:23421
radiation effects on, in meat, review of, 22:52111
reactions with hydrogen peroxide and titanium trichloride, ESR spectral studies on free radicals produced by, 22:2147
use of carbon-14-labeled, to study synthesis of plasma proteins in irradiated rabbits, 22:43250

Threshold Detectors (Activation)
see Radiation Detectors, Activation

Threshold Detectors (Fission)
see Radiation Detectors, Fission Foil

Throat
see Pharynx

THROMBIN
see also Prothrombin

THTR (Thorium-Hochtemperatur Reaktor)
see Thorium High-Temperature Reactor

THUCHOLITES
formation and structure of, relation to humic carbonaceous material, 22:12454

THULIUM
see also Rare Earths
alpha particle reactions at 54.4 MeV, energy losses, range, and straggling in, (E), 22:26744
atomic weight of, based on carbon-12 = 12, 22:42698
cathodoluminescent properties in yttrium oxide, 22:2299 (CONF-670502-, pp 271-82)
complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
complexes with 2-methyllactic acid, stoichiometric step-formation constants of, effects of ionic strength on, 22:4067 (IS-T-208)
complexes with acetates, spectrophotometric studies of, 22:42605
complexes with aluminon, structure and stability of, 22:14501
compounds with 2,2,6,6-tetramethyl-3,5-heptanedione, spectra of, vapor-phase, 22:30530
compounds with singlet crystal field ground state, magnetic susceptibility of, 22:24381 (CONF-670502-, pp 48-57)
crystal structure of, comparison of layer stacking sequence with thulium trialuminide, 22:2650
crystalline electric field parameters for, Moessbauer-effect determination of, 22:7400
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, methods of separation in, 22:4034
determination by neutron activation techniques, 22:47079
determination by photon activation methods, 22:27591
determination in rock samples by neutron activation methods after chemical group-separation, 22:25286
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in yttrium oxide by spectrophotoluminescence, 22:8025
determination in yttrium oxide matrix by cathode-ray-excited emission spectroscopy, 22:25270
determination in zinc sulfide matrix by cathode-ray-excited emission spectroscopy, 22:25270
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of traces of, in yttrium oxides, spectrographic, 22:22950
determination of, spectrometric, 22:42597
determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
effects on superconductors, 22:52689
electric conductivity of single crystals of, at 4 to 300°K, 22:24403 (CONF-670502-, pp 627-34)
energy levels of, quadrupole shielding and antishielding factors for atomic, 22:5070
gamma reflection at surfaces of, 8.4-keV total, (E), 22:17797
hardening and recrystallization of, effects of impurities on, 22:4756
infrared laser emission from vapors of, (E), 22:49997
ionization potential of, surface ionization comparison measurement of first, 22:24458
ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
magnetic entropy of, 22:37036
magnetic hyperfine fields at nuclei of, 22:24025 (CONF-670502-, pp 495-505)
magnetic ordering of, 22:44220
magnetic properties of single-crystal, (E), 22:15617
magnetization of single crystals of, high-field, (E), 22:44210 (IS-T-220)
neutron paramagnetic scattering cross section at 0.001 to 0.12 eV, (T), 22:22537
properties for laser action, 22:24391 (CONF-670502-, pp 228-38)
reactions with nitrate ions and water, spectral studies on effects of solvents on, 22:45010
reactions with oxygen and/or water vapor at 650 to 850°C, kinetics of oxidation, 22:2570
Seebeck coefficients of single crystals of, at 4 to 300°K, 22:24403 (CONF-670502-, pp 627-34)
separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
separation from carboxylic acids and mixtures with aminopolyacetic acids by solvent extraction using bis(2-ethylhexyl) phosphate, 22:16663
separation from cerium using sulfuric acid--ammonium acetate mixture, 22:33511
separation from dysprosium, lanthanum, and praseodymium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
separation from rare earths by solvent extraction using naphthenic acids, 22:27868

separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from yttrium using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
separation of terbium from by electrolysis, quantitative, 22:10332
solubility in liquid plutonium at 700 to 1000°C, 22:38555
solubility in liquid plutonium, enthalpy of, 22:40053 (LA-3951)
sorption on hot polycrystalline tungsten, lifetime of, 22:27709
spectra of, beta--gamma region of x-ray L emission, (E), 22:31658
spectra of, gamma region of x-ray L emission, (E), 22:31656
spectra of, L-emission, (E), 22:50057
thermal capacity at 0.02 to 0.4°K, (E), 22:11531
thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
thulium-169 hyperfine structure below Neel point, measurements using Moessbauer effect, (E), 22:46256
thulium-169 Moessbauer spectra of, hyperfine structure below Neel temperature in, (E), 22:29547
x-ray absorption spectra for, soft, 22:3209
x-ray emission spectra of, self-absorption effects in soft, 22:7149

THULIUM ALLOYS AND SYSTEMS
Ni--Tm, crystal structure of intermetallic TmNi$_5$, 22:22243
Ag--Tm, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Al--Tm, crystal structure of intermetallic TmAl$_3$, 22:2650
Al--Tm, magnetic properties of intermetallic compound TmAl$_3$ at 4.2 to 700°K, 22:41037
Al--Tm, oxidation of intermetallic compounds in, phase studies on anodic, 22:50990
Au--Tm, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
Au--Tm, Moessbauer spectra of, at 4.2 to 300°K, 22:24396 (CONF-670502-, pp 506-9)
Co--Tm, magnetic properties of intermetallic TmCo$_2$, TmCo$_3$, and TmCo$_5$, 22:13001 (CONF-661216-2)
Ga--Ni--Tm, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
Ga--Tm, crystal structure of intermetallic Tm$_5$Ga$_3$, 22:2649
Mg--Tm, crystal structure of, x-ray diffraction analysis of, 22:19559
Mn--Tm, crystalline electric field splitting in intermetallic TmMn$_2$ from thulium-169 Moessbauer effect, (E), 22:17806
Ni--Tm, crystal structure of intermetallic Tm$_3$Ni, 22:49759
Ni--Tm, magnetic properties of intermetallic Tm$_2$Ni$_{17}$, (E), 22:46201
Re--Tm, crystalline electric field splitting in intermetallic TmRe$_2$ from thulium-169 Moessbauer effect, (E), 22:17806
Re-base--Tm, work function for, (E), 22:34761
Ru--Tm, crystalline electric field splitting in intermetallic TmRu$_2$ from thulium-169 Moessbauer effect, (E), 22:17806
Sb--Tm, magnetic anisotropy of single-crystal intermetallic TmSb, (E), 22:15592
Tm--U-base, production and properties of, using carrier metal, 22:28754 (LA-3911)

THULIUM BORIDES
magnetic properties of TmB$_4$, 22:5435

THULIUM BROMIDES
preparation of anhydrous, by dehydration of hexahydrates, 22:45046
spectra of, vapor-phase, 22:30530
structure of anhydrous, crystal and molecular, 22:45046

THULIUM CARBIDES
hydrolysis of, products of, 22:16514

THULIUM CHLORIDES
hydrolysis of vapor-phase, thermodynamics of, 22:14476 (BMwF-FBK-67-87)
hydrolysis of, vapor-phase, 22:2018(R) (BMwF-FBK-67-76)
polarographic behavior in lithium chloride--potassium chloride eutectic, 22:27690

THULIUM ETHYL SULFATES
gamma--gamma angular correlation in, effect of crystal field on, (T), 22:5439

THULIUM FERRATES Tm(FeO$_2$)$_3$
sublattice magnetization of, from iron-57 NMR measurements, 22:31955

THULIUM IODIDES
spectra of, vapor-phase, 22:30530

THULIUM IONS
crystalline electric field splittings in intermetallic compounds, 22:17806
energy level transitions in yttrium oxides, calculation of spontaneous emission probabilities for, 22:36724
fluorine-19 nuclear polarization by optical pumping in calcium fluoride crystal doped with, (E), 22:48156 (UCB-34-P-20-2)
radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622

THULIUM ISOTOPES
production by holmium-165 (α,n), $(\alpha,2n)$, $(\alpha,3n)$, $(\alpha,4n)$, and $(\alpha,5n)$ reactions, (E/T), 22:20573 (LYCEN-6781)

THULIUM ISOTOPES Tm-159
half-life, (E), 22:46765 (JINR-P6-3945)

THULIUM ISOTOPES Tm-161
half-life of isomeric, (E), 22:46765 (JINR-P6-3945)

THULIUM ISOTOPES Tm-163
beta transitions to three-quasiparticle states in erbium-163, (E/T), 22:27177
electron-capture decay of, γ spectra from, (E), 22:9863
energy levels of, K = 1/2 rotational, (T), 22:20664
half-life of isomeric, (E), 22:46765 (JINR-P6-3945)
nuclear spin of, measurement using atomic-beam magnetic resonance, (E), 22:27227

THULIUM ISOTOPES Tm-164
beta decay of, erbium-164 collective energy levels from, (E), 22:9861
beta transitions to erbium-164 collective states, effect of spin-quadrupole force on, (T), 22:7752

THULIUM ISOTOPES Tm-165
beta transitions to three-quasiparticle states in erbium-165, (E/T), 22:27177
electron capture decay of, coincidence measurements of conversion electrons from, (E), 22:11951
electron-capture decay of, conversion-electron and γ spectra from, (E), 22:5816 (JINR-P6-3492)
electron-capture decay scheme of, (E), 22:16040
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level spins and transitions from ytterbium-165 decay, (E), 22:42041
energy-level transitions in, hindered E1, (E/T), 22:48515 (JAERI-1158, pp 21-5)
energy-level transitions in, identification of hindered isomeric E1, 22:1676
half-life of isomeric, (E), 22:46765 (JINR-P6-3945)
nuclear spin of ground state of, measurement using atomic-beam magnetic-resonance method, (E), 22:14010

THULIUM ISOTOPES Tm-166
beta and electron-capture decay of, conversion electron--γ coincidence spectra for, (E), 22:48565

THULIUM ISOTOPES Tm-167
electron-capture decay of, γ singles and coincidence spectra for, (E), 22:50652
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level transitions in, hindered E1, (E/T), 22:48515 (JAERI-1158, pp 21-5)
gyromagnetic ratio of, calculation of collective, (T), 22:20684
half-life, (E), 22:14028

THULIUM ISOTOPES Tm-168
electron-capture decay scheme of, γ spectra for, (E), 22:20594
half-life, (E), 22:14028

THULIUM ISOTOPES Tm-169
alpha reactions (α,n) at 14 MeV, search for isomeric lutetium-172 by, (E), 22:20586
alpha reactions (α,n), $(\alpha,2n)$, $(\alpha,3n)$, $(\alpha,4n)$, and $(\alpha,5n)$ at 18 to 55 MeV, cross sections for, (E/T), 22:20573 (LYCEN-6781)
Auger K spectrum of, following electron-capture decay in ytterbium-169, (E), 22:16039
conversion electron-gamma directional correlations in, particle parameters from, (E), 22:26929(R) (COO-1420-139)
energy level at 379 keV, g-factor measurement using perturbed angular correlations, (E), 22:24835(R) (BARC-305)
energy level at 379 keV, gyromagnetic ratio of, (E), 22:32639
energy levels from beta decay of erbium-169, K = 1/2 rotational, (E), 22:16028
energy levels from ytterbium-169 decay, (E), 22:30044
energy levels of, calculation of nonrotational, (T), 22:9934
energy levels of, g-factor measurements using precession in magnetic fields of ferromagnetic lattices, (E), 22:37339 (COO-1746-6)
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level transitions in ground-state rotational band, multipole mixing ratio for, (E), 22:26929(R) (COO-1420-139)
energy-level transitions in, hindered E1, (E/T), 22:48515 (JAERI-1158, pp 21-5)
energy-level transitions in, L- and M-conversion coefficients for E2, (E), 22:37366
gamma emission at 8.4 keV from, total reflection of recoilless 8.4-keV, (E), 22:17797
gamma--gamma angular correlations in iron, effects of magnetic hyperfine interactions on, (E), 22:46731(R) (COO-1746-8)
gamma-gamma angular correlations in single crystals of iron, precession measurements on, (E), 22:46271
gyromagnetic ratio of, calculation of collective, (T), 22:20684
hyperfine interaction of, in iron, 22:38747
hyperfine magnetic field in gadolinium iron garnet, temperature inversion of, (E), 22:46261
hyperfine magnetic fields at nuclei in single crystals of

iron, measurements using precession of γ-γ angular correlations, (E), 22:46271
internal conversion electron spectra from erbium-169 β decay, (E), 22:20616
internal-conversion electron spectrum of, dependence on chemical environment, (E), 22:27120
Moessbauer effect in intermetallic compounds, crystalline electric field splittings from, (E), 22:17806
Moessbauer effect in thulium below Neel point, hyperfine structure in, (E), 22:46256
Moessbauer spectra in thulium metal, hyperfine structure below Neel temperature in, (E), 22:29547
neon-20 reactions (Ne-20,xn) with, production of alpha-active gold isotopes by, (E), 22:18261
neutron absorption and scattering cross sections for, thermal, (E), 22:18281
neutron capture below 136 eV, partial radiative widths for, (E), 22:53206
neutron capture by, correlation between reduced neutron and radiative width in thermal, (E/T), 22:20587
neutron capture by, γ spectra from epithermal and resonance, (E), 22:3686 (BNL-11903)
neutron capture by, γ spectra from thermal, (E), 22:9912
neutron capture by, γ spectra from thermal, (E), 22:50604
neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:50649
neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,α) at 14 MeV, α spectra from, (E), 22:3692 (INR-814/I/PL)
neutron reactions (n,α) at 14.2 MeV, energy spectra of alpha particles from, (E), 22:20619
neutron resonance parameters at 3.91 eV, resolution corrections to, (E/T), 22:41917 (CNAEM-51)
neutron resonance parameters at 4 to 761 eV, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
neutron strength function and scattering radius at 0 to 760 eV, (E), 22:18285
neutron total cross section at 0.001 to 1.0 eV, (E), 22:18281
nitrogen-14 reactions (N-14,5n) with, conversion-electron and gamma spectra from, (E), 22:30027
nuclear charge radius of, effects of collective excitations on, (E), 22:27192
nuclear polarization in calcium fluoride crystals by optical pumping, (E), 22:20073
THULIUM ISOTOPES Tm-170
availability, characteristics, and cost of, for use as power sources, 22:8307
beta decay of, conserved vector current theory of first-forbidden, (T), 22:16035
beta decay of, conversion coefficients and γ spectra for, (E), 22:16005 (IS-1730)
beta decay of, γ spectra for, (E), 22:42068
beta decay of, internal conversion coefficient of K level for 84.3-keV gamma ray from, (E), 22:20660
beta transitions between K-mixed states in, first-forbidden, (T), 22:9976
beta transitions in, CVC theory with Woods--Saxon superfluid corrections for first-forbidden, (T), 22:53178
beta transitions in, description using Woods-Saxon eigenfunctions for first-forbidden, (T), 22:27221
beta transitions in, matrix-element calculations using Nilsson model for first-forbidden, (T), 22:3781
beta-gamma directional correlation measurements on, (E), 22:35309
deuteron inelastic scattering at 5.5 and 12 MeV, differential cross sections and spectra for, (E), 22:5836
effect on multidispersion in x-ray radiometric well logging, 22:14586
effects on hematopoiesis, liver, and nervous system of man following inhalation, 22:31216
energy levels from deuteron inelastic scattering, spins and transition probabilities for collective, (E), 22:5836
energy levels from thulium-169 thermal neutron capture, (E), 22:9912
half-life of, 22:14433 (ORNL-4196, pp 66-89)
half-life of, (E), 22:24845
half-life of, measurement using calorimetry, (E), 22:1661
incorporation in thulium oxide heat sources, 22:52233 (DP-MS-68-24)
production in power reactors, economic aspects of, 22:119
properties for radioisotopic heat sources, 22:16770 (BNWL-680, pp a.1)
use as gamma source for measurement of void fractions in two-phase critical flows, 22:49013 (ANL-7430)
use as gamma source for production of x rays of particular wavelength, 22:388(P)
use as gamma source in separating potatoes from rocks and soil, 22:37941
use as γ source in selective logging for copper, iron, and manganese ores, 22:6499
THULIUM ISOTOPES Tm-171
energy levels and transitions from erbium-171 decay, (E), 22:42051
energy levels from beta decay of erbium-171, (E), 22:7722
energy levels from beta decay of erbium-171, K = 1/2 rotational, (E), 22:16028
energy levels from erbium-171 decay, spin--parity assignments for, (E), 22:46729(R) (AECL-3157)
energy levels from erbium-171 decay, spin-parity assignments and transition multipolarities for, (E), 22:32512(R) (AECL-3108)
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level transitions from erbium-171 decay, (E), 22:32565 (COO-1112-166)
energy-level transitions from erbium-171 decay, (E), 22:11944(R) (AECL-2780)
energy-level transitions from erbium-171 decay, conversion coefficients and multipolarities of, (E), 22:20497(R) (AECL-3009)
energy-level transitions in, hindered E1, (E/T), 22:48515 (JAERI-1158, pp 21-5)
gyromagnetic ratio of, calculation of collective, (T), 22:20684
radiation dose to man following ingestion or inhalation of oxide particles containing, β, 22:23509(R) (SC-CR-67-2729)
radiation dose to man following ingestion or inhalation of oxide particles containing, γ, 22:23509(R) (SC-CR-67-2729)
separation from neutron-irradiated erbium by electrophoresis, 22:42826
use as power source for artificial heart, acute and chronic radiation effects on man from, 22:31275
use as power source in mechanical heart for implantatio in man, 22:30789
THULIUM ISOTOPES Tm-172
beta decay of, β spectra and β--γ directional correlations for, (E), 22:24835(R) (BARC-305)
beta decay of, β--γ and γ--γ coincidence spectra for, (E), 22:50632
beta decay of, γ singles and coincidence spectra for, (E), 22:9896
beta decay of, γ spectra for, (E), 22:30040
beta decay scheme of, γ spectra for, (E), 22:53095 (BMwF-FBK-68-11)
energy-level lifetimes from beta decay of erbium-172, (E), 22:16027
gamma spectra for, line energies and intensities in, (E) 22:53095 (BMwF-FBK-68-11)
THULIUM ISOTOPES Tm-173
beta decay scheme of, γ spectra for, (E), 22:53095 (BMwF-FBK-68-11)
THULIUM ISOTOPES Tm-174
beta decay scheme of, β and γ spectra for, (E), 22:2717
beta decay scheme of, β and γ spectra for, (E), 22:2488
beta decay scheme of, γ spectra for, (E), 22:53095 (BMwF-FBK-68-11)
gamma spectra for, line energies and intensities in, (E) 22:53095 (BMwF-FBK-68-11)
nuclear spin of ground state of, (E), 22:24885
THULIUM ISOTOPES Tm-175
beta decay scheme of, γ spectra for, (E), 22:53095 (BMwF-FBK-68-11)
energy levels of, K = 1/2 rotational, (T), 22:20664
gamma spectra for, line energies and intensities in, (E) 22:53095 (BMwF-FBK-68-11)
THULIUM ISOTOPES Tm-176
beta decay scheme of, β and γ spectra for, (E), 22:2488
THULIUM MANGANATES
crystal structure of, effects of pressure on, 22:4799
THULIUM NITRATES
complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665
THULIUM NITRIDES
paramagnetic resonance study of crystal-field and exchange effects in excited state of, (E), 22:1345
THULIUM OXIDES
emittance at 1400 to 3000°K, hemispherical spectral, (E) 22:28929
gamma reflection at surfaces of, 8.4-keV total, (E), 22:17797
precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
preparation and properties of thulium-170 enriched Tm_2O_3 22:52233 (DP-MS-68-24)
preparation of microspheres of, by sol-gel process, 22:4859
spectra of, widths of forbidden zones in reflected, 22:4107
spectral emittance at 2300 to 3000°K, measurement of, 22:4768 (IS-1688)
thermal conductivity of, 22:8731 (ORNL-4170, pp 37-41)
NpO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
NpO_3--Tm_2O_3, phase studies, 22:4890 (KFK-521)
PuO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
ThO_2--Tm_2O_3, phase studies, 22:4890 (KFK-521)
Tm_2O_3--PdO, phase relations of, in air, 22:19664
Tm_2O_3--UO_2, phase studies, 22:4890 (KFK-521)
THULIUM PHOSPHIDES
magnetic coupling in, NMR studies of s-f exchange energy

for, 22:24383 (CONF-670502-, pp 68-77)
THULIUM SULFATES
  see also Thulium Ethyl Sulfates
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
THYMIDINE
  beta emission by tritium-labeled, effects of, on synthesis of DNA, RNA, and proteins in L cells of mice, 22:19274
  content of bacteria, effects of, on synthesis of cell walls, 22:4712
  deficiency of, effects of, on x-radiosensitivity of DNA in Escherichia coli, 22:25780
  distribution of tritium-labeled, in animal tissues, technique for water-soluble autoradiographic study of, 22:45381 (EUR-3290f-e, pp 29-38)
  effects on growth of cultured corn root tips, 22:23674(R) (NYO-3561-4)
  effects on moths, mutagenic, 22:6211(R) (NYO-2902-10)
  effects on reproduction of cultured lymphoblasts from mice, 22:25711 (COO-78-163, pp 1-38)
  effects on x-radiosensitivity of HeLa cells, 22:36185
  incorporation in LM-induced tumor cells in mice, 22:28289 (ORNL-4100, pp 178-201)
  incorporation of tritium-labeled, in brain of rats for autoradiographic determination of development of neurons, 22:23597(R) (MIT-3045-34)
  incorporation of tritium-labeled, into DNA of mice, 22:25766
  labeling of hematopoietic cells with tritium-labeled, in rats, 22:14969
  lysis in medium during tracer studies, effects of, on interpretation of results, 22:45506 (EUR-3290f-e, pp 39-50)
  metabolism of tritium-labeled, in rats, 22:45521
  phosphorylation of labeled, in cultured liver extracts, effects of tritium on, 22:45383 (EUR-3290f-e, pp 79-88)
  preparation of carbon-11-labeled, for scanning neoplasms, 22:49406
  radiation effects on incorporation of tritium-labeled, into DNA of splenic lymphocytes from hamsters, x, 22:23604
  radiation effects on incorporation of tritium-labeled, in nuclei of grasshopper neuroblast cells, uv, 22:28407(R) (ORO-2575-41)
  radiation effects on incorporation of tritium-labeled, by splenic lymphocytes of hamsters, x, 22:23603
  radiation effects on incorporation of, in DNA of human lymphocyte, uv, 22:16991
  radiation effects on incorporation of, into DNA during tracer studies, effects of, on interpretation of results, 22:45506 (EUR-3290f-e, pp 39-50)
  radiation effects on metabolism of, in intestine of cultured chicken embryos, protective effects of RNA against x, 22:40733
  radiation effects on metabolism of, in isolated perfused rat intestine, x, 22:49227
  radiation effects on powders of, free radical production in mixed γ and neutron, 22:21126
  radiation effects on rate of incorporation of tritium-labeled, into DNA in spleen and thymus of mice, x, 22:19243
  radiation effects on solution of, and psoralen, uv, 22:16995
  radiation effects on survival of cultured hamster fibroblast cells following incorporation of tritium-labeled, β, 22:45382 (EUR-3290f-e, pp 73-7)
  radiation effects on uptake of tritium-labeled, by bone marrow cells, 22:45657
  radiation effects on uptake of, by Staphylococcus aureus, γ, 22:15125(R) (RLO-1730-2)
  radiation effects on urinary excretion of, by rats, effects of adrenalectomy on γ, 22:28655
  reactions of tritium-labeled, with enzymes, spurious isotope effects in, 22:37756
  stability of tritium-labeled, in metabolic processes, 22:51461
  toxicity of tritium-labeled, in cultured HeLa cells, 22:51458
  toxicity of tritium-labeled, on genetic material of cells, 22:51555
  toxicity of tritium-labeled, to cultured Chinese hamster cells, 22:51458
  uptake by DNA of Hemophilus influenzae, tracer study of, 22:25715(R) (NYO-1371-51)
  uptake by L cells, tracer study on, 22:36202
  uptake in uv-irradiated cultured neuroblasts in relation to chromatin condensation, 22:49178(R) (ORO-3546-6)
  uptake of tritium-labeled, by cells of cervical neoplasms in man, autoradiographic study of, 22:40943
  uptake of tritium-labeled, by chromosomes, aberrant effects of, 22:4592 (UCSF-10-P-2-36)
  uptake of tritium-labeled, by DNA in cells of developing palate of mouse fetuses, 22:40902
  uptake of tritium-labeled, by DNA, effects of histones on, 22:439
  uptake of tritium-labeled, by DNA, effects of, on degradation by DNAase, 22:464
  uptake of tritium-labeled, by nuclei of lens cells in chick embryo, 22:28283 (ORNL-4100, pp 75-96)
  uptake of tritium-labeled, by pericycle and primordial cells of Vicia faba roots, autoradiographic study of, 22:47479
  uptake of tritium-labeled, by transforming DNA of Bacillus subtilis, inactivating effects of, 22:47463
  uptake of tritium-labeled, in Arbacia eggs, effects of hydrostatic pressure on, 22:434
  use of carbon-14-labeled, for study of phytohemagglutinin-induced cell division, 22:14929
  use of tritium-labeled, as intranuclear tracer in squamous cell carcinomas of larynx in man, 22:10784
  use of tritium-labeled, for autoradiographic study of DNA synthesis in small intestine and tongue epithelium of mice, 22:36315
  use of tritium-labeled, for determining cell cycle time in epithelial tissues, method for, 22:45419
  use of tritium-labeled, for measurement of DNA synthesis and cycle duration of human cells in vitro, 22:51453
  use of tritium-labeled, for measurement of DNA synthesis in HeLa cells, 22:36212
  use of tritium-labeled, for selective destruction of neoplasms, combined effects of 5-iododeoxyuridine on, 22:17030
  use of tritium-labeled, for study of DNA synthesis in HeLa cells, 22:36402
  use of tritium-labeled, for study of incorporation and reproduction of psittacosis virus in L-cell cultures, 22:28332
  use of tritium-labeled, to study cell proliferation in skeleton of mice, 22:38208
  use of tritium-labeled, to study DNA replication in x-irradiated HeLa cells, 22:6742
  use of tritium-labeled, to study DNA synthesis in x-irradiated hypoglossal nerve of rabbits, 22:43455
  use of tritium-labeled, to study killing efficiency of beta particles on cultured mammalian cells, 22:43456
  use of tritium-labeled, to study kinetics of x-irradiated muscle and nerve cells of mice, 22:38221
THYMIDINE MONOPHOSPHATES
  (Thymidine 3'- or 5'-monophosphates)
  radiation effects on solution of, and psoralen, uv, 22:16995
THYMIDINEMONOPHOSPHATE KINASE
  effects on phosphorylation of labeled thymidine in cultured liver extracts, effects of tritium on, 22:45383 (EUR-3290f-e, pp 79-88)
  radiation effects on activity of, in liver of rats, protective effects of AET against x, 22:4589
  radiation effects on synthesis of, in regenerating liver of rats, γ, 22:16986
Thymidylic Acids
  see Thymidine Monophosphates
Thymidylic Kinase
  see Thymidinemonophosphate Kinase
THYMINE
  content of satellite DNA in crustacea, 22:28288 (ORNL-4100, pp 166-77)
  content of SP 8 and SP 3 phages of Bacillus subtilis, effects of, on uv-radiosensitivity, 22:4709
  decay of tritium-labeled, in Escherichia coli, degradation of DNA by, 22:19250
  dimers, radiolysis of aqueous solutions of, γ, 22:33442
  effects on γ-radiosensitivity of hemin and yeasts, 22:51771
  effects on uv- and x-radiosensitivity of Escherichia coli, 22:49648
  effects on uv-radioinduced photochemical reactions of DNA and psoralen, 22:47454
  photochemistry of derivatives of, in aqueous solution, 22:23409(R) (NYO-2798-32)
  production from gamma-irradiation of 5-methylhydrouracil, 22:16595
  radiation effects on content of, in DNA of rabbit bone marrow, x, 22:33737
  radiation effects on death of E. coli deficient in, effects of photoreactivation on uv, 22:591
  radiation effects on dimers of, in aqueous solutions, 22:51038
  radiation effects on excretion of metabolites of, in man, x, 22:45508(R) (PG-Report-826)
  radiation effects on pathway for metabolism of, in man, mice, rabbits, and rats, 22:45508(R) (PG-Report-826)
  radiation effects on powders of, free radical production in mixed γ and neutron, 22:21126
  radiation effects on solution of, and bergaptin, uv, 22:16995
  radiation effects on solution of, and psoralen, uv, 22:16995
  radiation effects on, chemical analysis of uv, 22:19286
  radiation effects on, electronic aspects of uv, 22:33786
  radiation effects on, in animals, review of ionizing and uv, 22:51495
  radiation effects on, in nucleic acids of Escherichia coli, comparison of ionizing, to effects of ozone and sodium hypochlorite, 22:51389
  radioinduced cleavage of dimers of, in Escherichia coli, fast electron and uv, 22:45445
  radioinduced dimerization of, in Bacillus megaterium, uv, 22:28719
  radioinduced dimerization of, in Tetrahymena, uv, 22:28399 (ORNL-4100, pp 40-7)
  radioinduced dimers in DNA, structure of uv, 22:36216

- radioinduced dimers of, in cells of mammals, effects of, on DNA synthesis, uv, 22:21426
- radioinduced dimers of, in cultured human cells, 22:28403 (ORNL-4100, pp 70-4)
- radioinduced dimers of, in cultured mammalian cells, dark repair of uv, 22:31217
- radioinduced formation of dimers of, in cells of Haplopappus and tobacco, uv, 22:23397(R) (COO-1704-4)
- radioinduced formation of dimers of, in nucleic acids of Streptococcus faecalis, protective effects of azathymine and azauracil against uv, 22:519
- radioinduced formation of photoproducts of, in DNA, mechanism of uv, 22:25715(R) (NYO-1371-51)
- radioinduced photoproduct of, in DNA, uv, 22:28288 (ORNL-4100, pp 166-77)
- radioinduced photoproducts of, in Escherichia coli DNA, effects of low temperature on uv, 22:51447
- radioinduced release of, from DNA following degradation, tritium β, 22:33709(R) (COO-1603-2)
- radioinduced trans-syn dimers of, in DNA, identification and photoreactivation of uv, 22:47464
- radioinduced tritium abstraction from, kinetics of γ, 22:33384
- radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
- radiolysis of aqueous solutions of, γ and x, 22:51470
- radiolysis of aqueous, effects of oxygen, acidity, and nitrous oxide on γ, 22:12382
- radiolysis of de-aerated aqueous solutions of, γ, 22:458
- radiolysis of, formation of urea in α and γ, 22:51040
- radioprotective effects of, on trypsin, x, 22:33762
- release of dimers of, from uv-irradiated DNA, review of HCR-initiated, 22:25793
- role in repair of uv-irradiated DNA in Escherichia coli, comparison of, to 5-bromouracil, 22:19309(R) (SU-326-P-7-194)
- starvation in Escherichia coli, effects of, on uv-radiosensitivity of Escherichia coli cultures, 22:40566
- starvation in Escherichia coli, effects of, on uv-radiosensitivity of synthesis of DNA, proteins, and RNA, 22:47451
- uptake by DNA of Hemophilus influenzae, tracer study of, 22:25715(R) (NYO-1371-51)
- use of tritium-labeled, for studying chromosome synthesis in Escherichia coli, 22:51524

Thymine Deoxyriboside
- see Thymidine

THYMINE, 2-THIO-
- radiation effects on, electronic aspects of uv, 22:33786

THYMOL
- effects on polarographic behavior of uranium in sulfuric acid, 22:12319

Thymonucleic Acids
- see Nucleic Acids

THYMUS GLAND
- effects on differentiation of immunologically competent cells in rats, 22:40518(R) (RT/BIO-(68)3)
- effects on establishment of immunological competence, 22:47445 (BNL-12327)
- effects on γ-radiosensitivity of reticuloendothelial activity in mice, effects of adult and neonatal removal of, 22:51927
- effects on homograft response of adult mice, combined effects of γ and x radiation on, 22:51369
- effects on immune response of chimeric mice to cytomegalic virus, 22:8483
- effects on leukopoiesis in radiation chimeras, 22:10715
- effects on radiosensitivity of hematopoiesis in mice, 22:38466
- effects on x-radiosensitivity of lymph nodes of rabbits, histological study of, 22:25879
- germinal centers in, of neonatally irradiated mice after splenectomy and multiple x-ray exposure of peripheral lymphoid tissue, 22:40833(R) (UCSF-34-P-41-18)
- incidence of leukemia in, of mice induced by methylcholanthrene, combined effects of croton oil on, 22:28289 (ORNL-4100, pp 178-201)
- localization of tumors in, use of selenium-75-labeled selenomethionine for, 22:12882
- radiation damage to segment of rat, x, 22:40848
- radiation effects on behavior of Hassall's corpuscles in, of guinea pigs, x, 22:51349
- radiation effects on cell differentiation in cultured tissues of, from embryonic mice, effects of urethan on x, 22:21550
- radiation effects on cells of, in rats, effects of low dose on ionizing, 22:45447
- radiation effects on cellular composition of, in mice, x, 22:43401
- radiation effects on content of glycogen in, of mice, effects of age on whole-body x, 22:8464
- radiation effects on content of histones and acid-soluble proteins in rat, whole-body γ, 22:40540
- radiation effects on cytochromes and membranes of mitochondria of rat, γ, 22:45426
- radiation effects on DNA of, of rats, effects of hydrodynamic forces following, 22:49198
- radiation effects on DNA synthesis by cells of, of mice, whole-body x, 22:4572
- radiation effects on grafts of, electron microscopic study of cytology following, 22:51929
- radiation effects on histochemistry of, in mice, lethal x, 22:12906
- radiation effects on hydrolytic enzymes in reticular cells of, of rats, whole-body x, 22:441
- radiation effects on incidence of leukemia in mice following injection of leukemogenic filtrate into transplant of, x, 22:28670
- radiation effects on involution of, following ingestion of irradiated food by mice and rats, 22:45743
- radiation effects on lactate dehydrogenase content of, i mice, acute x, 22:49274
- radiation effects on mitosis in cells of, in rats, effects of divalent cations on γ, 22:23572
- radiation effects on molecular structure of DNA in, of rats, effects of dose on γ, 22:23435
- radiation effects on rate of incorporation of tritium-labeled thymidine into DNA of, in mice, early x, 22:19243
- radiation effects on release of leukemogenic agent from, of mice, effects of age on x, 22:28633
- radiation effects on size and weight of, in mice, protective effects of AET and PAPP against, 22:15038
- radiation effects on survival of cultured cells from, of rats, effects of dose on γ and x, 22:40883
- radiation effects on synthesis and utilization of ATP i cell nuclei of, in rats, whole-body x, 22:30951
- radiation effects on synthesis of lipids in, of rabbits, γ, 22:51473
- radiation effects on ultrastructure of cells of, in mice x, 22:36195
- radiation effects on uptake of proteins by, of guinea pigs, x, 22:14975
- radiation effects on virus replication in transplants of in kidneys of mice, 22:23633
- radiation effects on, effects of, on development of lymphomas, x, 22:25877
- radiation effects on, in relation to bone marrow and spleen, combined effects of urethan on x, 22:6713(R) (COO-1455-2)
- radiation effects on, of mice, effects of 19S α-2 globulin for treatment of x, 22:28566
- radiation effects on, of mice, effects of isologous bone marrow transplants on regeneration of x, 22:51848
- radiation effects on, of mice, pathological fast neutron 22:33940
- radiation effects on, of mice, protective effects of methandrostenolone on x, 22:40775
- radiation effects on, of mice, RBE for fast neutron, γ, and x, 22:40891
- radiation effects on, of rats, RBE of fast neutron, γ, and x, 22:40844
- radioinduced death of cells of rat, in vitro and in vivo study of mechanism of acute x, 22:49618
- radioinduced leukemia of, in mice, effects of radiation-leukemia protection factor on, 22:31136
- radioinduced lymphomas in, of mice, effects of dose fractionation and shielding on x, 22:28642
- radioinduced lymphomas in, of mice, effects of dose on neutron, 22:31237
- radioinduced neoplasms in human, following therapy of myasthenia, x, 22:51930
- radioinduced tumors in, of rats, 120 MeV proton, 22:23668
- radioprotective effects of extract from, on survival of rats, 22:33844
- radioprotective effects of transplants from, on new-born mice, x, 22:36358
- radiosensitivity of, in rats, effects of age, castration of sex, endocrine status, and sex on x, 22:31223
- radiotherapy of benign diseases of, in human children, incidence of thyroid carcinomas following x, 22:51772
- radiotherapy of benign diseases of, in human children, incidence of leukemia following low-dose x, 22:28556
- radiotherapy of enlarged, in human children, incidence of neoplasms in man following x, 22:33934
- radiotherapy of enlarged, in human infants, development of thyroid cancer following x, 22:49592
- radiotherapy of, effects of, on incidence of thyroid carcinomas in man, x, 22:23599 (UCRL-50376)
- removal by surgery in mice, effects of, on x-radiosensitivity of leukopoiesis, 22:23640
- removal by surgery, effects of, on immune reactions to bone marrow transplants in x-irradiated mice, 22:40588
- removal from dogs, effects of, on radiosensitivity of transformation of hematopoietic cell transplants, 22:31266
- removal from guinea pigs and rats, effects of, on iodine-131 metabolism in respiratory tract, 22:431
- removal from mice, effects of, on multiplication of Mycobacterium in foot pad, 22:49654
- removal in mice, effects of, on x-radiosensitivity of serum proteins, 22:28379
- removal in mice, effects of, on x-radiosensitivity of skin grafts, 22:6869 (USNRDL-TR-67-92)
- removal of, effects of surgical, on abundance of antibody plaque-forming cells in spleen of mice, 22:38223
- removal of, effects of, on immune response of x-irradiated mice to Mycobacterium leprae, 22:12811
- removal of, effects of, on x-radioinduced amyloidosis in mice, 22:19288
- removal of, effects of, on x-radiosensitivity of mice to

  chemical carcinogenesis, 22:19439
  removal, effects of, on x-radioinduced kidney lesions in aging rodents, 22:43225
  role in mechanism of tolerance to cellular alloantigens in mice, 22:36174
  shielding during x irradiation of guinea pigs, effects of, on tritium uptake by bone marrow, 22:562
  shielding of, effects of, on x-radiosensitivity of newborn mice, 22:36358
  surgical removal of, effects of, on immune reactions to transplants of bone marrow or spleen cells in x-irradiated mice, 22:33928
  surgical removal of, effects of, on immune reactions in irradiated rats, 22:51433
  surgical removal of, effects of, on immune reactions to thymus transplants in mice, 22:51433
  tissues from, effects of, on immune competence of irradiated spleen cells from mice, 22:19282
  transplant to radiation chimeras of mice, effects of, on immune reactions and tolerance to skin grafts, 22:36174
  transplantation of cells of, effects of, on lymphoid development in neonatally thymectomized mice, 22:25859 (UCLA-12-668, pp 1-28)
  transplants of, effects of, on adoptive tolerance in thymectomized x-irradiated mice, 22:40588
  transplants of, effects of, on development of lymphoid tissues in neonatally thymectomized mice, 22:33839 (UCLA-12-640, pp 1-30)
Thyratrons
    see Electron Tubes
THYROGLOBULIN
  iodination and maturation of, in rats, effects of propylthiouracil on, 22:14949
  iodine content of swine, method for determining, 22:51434
THYROID GLAND
  activation of iodine in, of man, uniformity of epithermal, fast, and thermal neutron, 22:15065
  activity in goldfish, effects of, on x-radiosensitivity, 22:6872
  americium-241 content of rat, effects of administration route on, 22:47473
  analysis of human, for iodine by neutron activation, 22:25253
  autoradiography in rabbits, use of iodine-125 and iodine-131 for, 22:30969
  beta dose following reactor coolant loss accident to human, description of computer programs for calculation of, 22:39896 (EUR-3927)
  book: Principles of Nuclear Medicine, 22:49411
  bromine-82 uptake by, of rats, effects of perchlorates and thyrotropin on, 22:10689
  effects on blood serum proteins and fetal bone system of γ- and x-irradiated rats, 22:19445
  effects on iodine-131 conversion ratios in domestic birds, factors affecting, 22:51451
  effects on iodine-131 uptake by submaxillary glands of mice, effects of sex on, 22:12768
  fission products dose to, of offsite population from nuclear reactor tests during 1965, measurement of, 22:23519
  function in female rats, effects of content of uranium in drinking water on, 22:51376
  function in goiter and hyperthyroid patients following iodine-131 therapy, method for determining, 22:12885
  function in man, iodine-131 tracer study of abnormal, 22:14922
  function in rats, effects of pituitary tumors on, 22:43452
  function of, use of uptake of iodine-125- and iodine-131-labeled triiodothyronine for determination of, 22:10813
  incidence of adenomas and carcinomas of, in man following radiotherapy, 22:8617
  incidence of cancer in, of human population exposed to atomic bombings of Hiroshima and Nagasaki, 22:8579
  incidence of carcinoma in, of children of atomic bomb survivors of Japan, 22:28565
  incidence of carcinomas and Hashimoto's thyroiditis of, as related to diagnostic criteria, iodized salt, and radiotherapy, 22:23599 (UCRL-50376)
  incidence of neoplasms of, in human populations exposed to atomic bombings of Hiroshima and Nagasaki, 22:8560 (ABCC-TR-16-63)
  iodine content of rat, activation analysis method for determination of, 22:49270
  iodine content of, determination of, by neutron activation analysis, 22:17049
  iodine content of, in man, measurement of, following neutron activation, 22:36192
  iodine content of, of animals and man, effects of infectious disease on, 22:40681
  iodine isotope uptake by, use of biological model to study, 22:51347
  iodine metabolism in, of man, use of iodine-125-, iodine-131-, iodine-132, or technetium-99-labeled iodotyrosine and thyroxine to study, 22:14918
  iodine uptake by, development of tracer technique for simultaneous use of iodine-125, -127, and -131 to study, 22:19284
  iodine uptake by, of man, whole-body radiometric study of, 22:28550
  iodine-125 content of, in pregnant cows and fetuses, 22:14967
  iodine-125 distribution in human, use of spark-imaging camera for determining, 22:2345 (ORNL-IIC-10(Vol.1), pp 268-81)
  iodine-125 metabolism in rat, effects of hypophysectomy on, 22:40517(R) (ORO-1643-89)
  iodine-125 uptake by, of dogs, effects of age and sex on, 22:28622 (ANL-7278, pp 95-131)
  iodine-125 uptake by, of guinea pigs, effects of follicle size on, 22:8460
  iodine-127 uptake by, technique for determining absolute, 22:12885
  iodine-131 content in New Zealand cattle, in 1967, 22:42870(R) (NP-17524)
  iodine-131 content of bovine, in United States, federal surveillance network for measurement of, 22:51570 (NP-17401)
  iodine-131 content of, in cattle during Jan. to March 1967, 22:40693
  iodine-131 content of, in cattle in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  iodine-131 content of, in cattle in New Zealand during 1966, 22:6800(R) (NP-17015)
  iodine-131 content of, in cattle in U. S. during 1965, 22:28502
  iodine-131 content of, in cattle in U. S. during 1966, 22:23520
  iodine-131 content of, in cattle in United States during June to March 1967, 22:28510
  iodine-131 content of, in cattle, in U. S. during 1966, 22:28519
  iodine-131 content of, in fetuses of rabbits, effects of maternal injection on, 22:10686
  iodine-131 content of, in grazing animals, world-wide monitoring of fallout, 22:40517(R) (ORO-1643-89)
  iodine-131 content of, in human children in UK and USA, effects of nuclear testing on, 22:28467
  iodine-131 content of, in medical personnel, 22:2509
  iodine-131 content of, in mule deer in Colorado following nuclear tests during 1961 and 1962, 22:21459(R) (COO-1156-28)
  iodine-131 content of, in pregnant cows and fetuses, 22:14967
  iodine-131 content of, of cattle, effects of nuclear testing on, 22:51310 (SAN-509-2)
  iodine-131 distribution in parenchyma of, of young dogs, autoradiographic study of effects of somatotropic hormone on, 22:49269
  iodine-131 dose to, of human children, parameters used for prediction of, 22:21572 (LA-DC-9095)
  iodine-131 metabolism in human, computer processing of scintiscan matrices of, 22:40776
  iodine-131 metabolism in rat, effects of iodine-deficient diet on, 22:45386
  iodine-131 metabolism in, of man, effects of aging on, 22:4583
  iodine-131 metabolism in, of pregnant rabbits, 22:10687
  iodine-131 metabolism in, of rats, comparison of, with technetium-99, 22:14961
  iodine-131 metabolism in, of rats, effects of melatonin and ovariectomy on, 22:30977
  iodine-131 scanning in, development of shadow-shield scintillation detector for, 22:12583
  iodine-131 scanning of, for metastases, effects of bronchiectasis on, 22:51307 (ORAU-106, pp 105-34)
  iodine-131 uptake and release by, as measure of function in relation to growth rate of sheep, 22:51316
  iodine-131 uptake by human, calibration of three-crystal ring-type scintillation detector for measurement of, 22:12864(R) (ORO-2401-10)
  iodine-131 uptake by human, correlation of, with electroencephalogram in poliomyelitis sequelae, 22:43246
  iodine-131 uptake by human, development of scintillation counter meeting IAEA specifications for measurement of, 22:38346
  iodine-131 uptake by, in fetuses of monkeys, effects of exogenous thyroid hormones on, 22:40727
  iodine-131 uptake by, in human fetus during radioisotope placentography, 22:28577
  iodine-131 uptake by, in male and female rats, effects of castration and seasons on, 22:14966
  iodine-131 uptake by, in man, effects of potassium iodide and thyrotropin on, 22:38340
  iodine-131 uptake by, in man, effects of potassium iodide treatment on, 22:8458
  iodine-131 uptake by, of cattle following administration, effects of rate of, on β and γ dose, 22:40831 (ORO-657, pp 46-64)
  iodine-131 uptake by, of dogfish, 22:14936
  iodine-131 uptake by, of fish, effects of light and season on, 22:43248
  iodine-131 uptake by, of guinea pigs, effects of follicle size on, 22:8460
  iodine-131 uptake by, of man with polycythemia vera, effects of blood letting and phosphorus-32 β radiation on, 22:49615
  iodine-131 uptake by, of psychiatric patients, statistical analysis of, 22:47450

iodine-131 uptake by, of rats following pinealectomy, 22:47475
iodine-131 uptake by, of rats, effects of methylthiouracil and potassium iodides on, 22:19254
iodine-131 uptake by, of sheep following oral administration, 22:10701
iodine-132 excretion from, in man, effects of extrathyroid activity on rate of, 22:23465
iodine-132 uptake by human, effects stage of pregnancy on, 22:47487
iodine-132 uptake by, in man, effects of potassium iodide and thyrotropin on, 22:38340
measurement of iodine in, of man, use of iodine-131 for, 22:15065
neutron activation of iodine in human, for use in metabolism studies, 22:10706
radiation dose to human, during diagnostic examinations with iodine-125, iodine-131, technetium-99, and combination of iodine-132 and technetium-99, 22:31194
radiation dose to human, during scintiscanning of salivary glands with technetium-99-labeled pertechnetates, 22:31183
radiation dose to human, following inhalation of fresh fission products, 22:33821
radiation dose to human, following uptake of iodine-131, effects of potassium iodide treatment on β and γ, 22:8458
radiation dose to tissues in human, during dental radiography, x, 22:12870
radiation dose to, in human children, effects of iodine-131 content of milk on β and γ, 22:23510 (UCRL-70787)
radiation dose to, in human infants in Utah, effects of iodine-131 content of milk on β and γ, 22:23511 (UCRL-70788)
radiation dose to, of children following therapy for ringworm, x, 22:31085
radiation dose to, of human children in relation to iodine-131 content of water supplies, β and γ, 22:19326 (BNWL-665)
radiation dose to, of human fetus following scintiscanning of kidneys and ureters, iodine-131 β and γ, 22:36339
radiation dose to, of human infants and children during use of iodine-131 for scintiscanning, β and γ, 22:33826
radiation dose to, of man during activation analysis of intrathyroidal iodine content, neutron, 22:45508(R) (PG-Report-826)
radiation dose to, of man during diagnosis of goiter, calculation of β and x, 22:4623
radiation dose to, of man following subcutaneous injection of iodine-125-labeled 4-iodoantipyrine, γ, 22:15060
radiation effects on antibody formation in human, β and γ, 22:25750
radiation effects on cell reproduction in human, following iodine-131 therapy of hyperthyroidism, β and γ, 22:38376
radiation effects on cellular ultrastructure of transplants of, in rats, effects of dose on x, 22:12813
radiation effects on clearance rate of, following iodine-131 therapy, long term β and γ, 22:23466
radiation effects on development and function of, in fetuses of monkeys, iodine-131 β and γ, 22:40727
radiation effects on DNA synthesis in, of rats, β, 22:2534(R) (COO-1243-8)
radiation effects on fibrosarcomas of, therapeutic laser, 22:12784
radiation effects on formation of autoantibodies to, following iodine-131 therapy for hyperthyroidism, evaluation of, 22:19289
radiation effects on function of human, following therapy of hyperthyroidism, use of iodine-131-labeled triiodothyronine for, 22:51774
radiation effects on function of, in dogs, effects of surgery on x, 22:28622 (ANL-7278, pp 95-131)
radiation effects on function of, in dogs, x, 22:43412
radiation effects on function of, in man, microwave, 22:21623
radiation effects on function of, in man, tracer studies of γ, 22:51796
radiation effects on function of, in rats, radio wave, 22:51994
radiation effects on function of, of man, β, 22:2534(R) (COO-1243-8)
radiation effects on incidence of carcinomas in, of man in relation to age, survey of, 22:15055
radiation effects on iodine-131 content of guinea pig, ultrasonic radiation, 22:49594
radiation effects on iodine-131 uptake by, of mice, whole-body x, 22:31222
radiation effects on morphology of, in human population exposed to atomic bombing of Japan, mice, and therapy patients, iodine-131 β and γ and x, 22:40933
radiation effects on physiology of, of mammals, 22:554(R) (UR-49-810)
radiation effects on xenon-133 circulatory clearance rate in tumors of, 22:38231
radiation effects on, in Marshall Islanders exposed to fallout during 1954, 22:43360
radiation effects on, of chickens, effects of pregnant mare serum gonadotropin on comb and testis following iodine-131 β and γ, 22:43453
radiation effects on, of chicks, pathological iodine-131 β, 22:43434
radiation effects on, of goldfish, cytological and physiological study of iodine-131 β and γ, 22:36208
radiation effects on, of human population of Marshall Islands following exposure to fallout, 22:38417 (ACRH-1000-59)
radiation effects on, of industrial and medical personnel, protective measures against x, 22:51592
radiation effects on, of man following iodine-131 therapy of thyroid, β and γ, 22:15105
radiation effects on, of man, histological analysis of iodine-131 β and γ, 22:15089
radiation effects on, of man, pathological x, 22:2534(R) (COO-1243-8)
radiation effects on, of man, protective effects of potassium perchlorate and serum albumin against iodine-131 β, 22:36313
radiation effects on, of Marshall Islanders exposed to fallout, late pathological iodine-131 β and γ, 22:19363
radiation effects on, of rats, effects of, on incidence of gonadotropic adenomas of pituitary, β and x, 22:10871
radiation effects on, of rats, iodine-131 β and γ, 22:10675 (BNWL-480, pp 21-54)
radiation effects on, of rats, polonium-210 α and γ, 22:47606
radiation effects on, of rats, response to goitrogenic stimulus following x, 22:33969
radiation protection of human, during technetium-99 scanning, γ, 22:25932
radioactivity content of, in cows in United States during 1966, effects of Chinese nuclear test on, 22:28505
radiodiagnosis of diseases of human, using color scintigraphy, 22:38389
radiodiagnosis of diseases of, use of gamma camera with iodine-131 or technetium-99 for, 22:12887
radiodiagnosis of disorders of, in man, use of technetium-99 for, 22:19386
radiodiagnosis of dysfunction of, in dogs using resin sponge uptake of iodine-131-labeled triiodothyronine, 22:28538 (NYO-2147-13, pp 78-86)
radiodiagnosis of function of, in patients with sprue and thyroid diseases, 22:23481(R) (PRNC-102)
radiodiagnosis of function of, use of protein-bound iodine-131-labeled triiodothyronine for, 22:4632(T) (AERE-Trans-1073)
radiodiagnosis of toxic adenoma of, use of scintiscanning of iodine-131 for, 22:2523
radiodiagnosis of, use of radioisotopes for, review of, 22:40758
radiodiagnosis of, use of uptake of iodine-131-labeled triiodothyronine by erythrocytes for, 22:10812
radioinduced ablation of, in chicks, effects of, on glycogen content and size of liver, iodine-132 β, 22:51815
radioinduced adenomas in human, following therapy, iodine-131 β and γ, 22:25973
radioinduced adenomas in, of mice and rats, iodine-131 β and γ, 22:43450
radioinduced cancers in, of rats, effects of thiouracil and dose on iodine-131 β and γ, 22:49628
radioinduced carcinoma of human, following therapy, review of, 22:51905
radioinduced carcinoma of, in rats, effects of methylthiouracil on iodine-131 β, 22:47594
radioinduced carcinoma of, of man, effects of dose to neck in infancy on, 22:33969
radioinduced carcinomas in human, 22:28689
radioinduced carcinomas in, following therapy for benign diseases in human children, x, 22:51772
radioinduced carcinomas in, of man, effects of dose on incidence of Thorotrast, 22:10872
radioinduced disturbances of, in female human children exposed to fallout from testing of nuclear explosions, 22:10818
radioinduced myxedema of human, following iodine-131 therapy for hyperthyroidism, 22:38445
radioinduced neoplasms in, of children following iodine-131 therapy of hyperthyroidism, β and γ, 22:12900
radioinduced neoplasms in, of miniature swine and sheep, iodine-131 β and γ, 22:10675 (BNWL-480, pp 21-54)
radioinduced neoplasms in, of rats, analysis of changes in cell nuclei during development of β, 22:2534(R) (COO-1243-8)
radioinduced neoplasms of, following radiotherapy of thymus enlargement during infancy, x, 22:19448
radioinduced tumors in, of rats, 120 MeV proton, 22:23668
radioinduced tumors of, in human population of Marshall Islands exposed to fallout during 1954, 22:19354 (BNL-11999)
radioinduced tumors of, in rats, determination of low dose for fast neutron and proton, 22:38483
radioinduced tumors of, in rats, iodine-131, 22:45693
radioisotope localization in cells of, in guinea pigs, iodine-131 and sulfur-35, 22:12777
radioisotope scanning of human, use of pilocarpine

  nitrate prior to quantitative, 22:36332
  radioisotope scanning of, methods for, 22:45650
  radioisotope scanning of, preparation of technetium-99m for, 22:51779
  radiosterilization of tissues of, for transplantation in man, γ, 22:52098
  radiotherapy of cancer of human, chromosome aberrations following iodine-131 β and γ, 22:49289
  radiotherapy of carcinoma of human, development of heart disease following x, 22:36383
  radiotherapy of carcinomas of, development of complications following iodine-131 β, 22:4682
  radiotherapy of diseases of human, development of myxedema following iodine-131 β, 22:47594
  radiotherapy of diseases of human, incidence of ophthalmopathy following iodine-131 β and γ, 22:49625
  radiotherapy of diseases of human, iodine-131 β and γ, 22:25974
  radiotherapy of diseases of human, review of iodine-131 β, 22:51866
  radiotherapy of diseases of, development of hypothyroidism following iodine-131 β and γ, 22:45671
  radiotherapy of diseases of, in man, development of leukemia and chromosome abnormalities following iodine-131 β and γ, 22:40778
  radiotherapy of disorders of human, development of thyrocalcitonin deficiency following iodine-131, 22:40872
  radiotherapy of exophthalmic goiters of humans, complications following iodine-131 β and γ, 22:49628
  radiotherapy of hyperactive, in man, development of hypoparathyroidism following iodine-131 β, 22:47618
  radiotherapy of hyperfunction of, in man, effects of, on heart function, iodine-131 β and γ, 22:49593
  radiotherapy of hyperfunctioning of, development of hyperthyroidism following iodine-131, 22:17048
  radiotherapy of neoplasms of, development of blood and bone marrow injuries following iodine-131 β and γ, 22:10874
  radiotherapy of neoplasms of, in man, incidence of hypothyroidism following iodine-131 β and γ, 22:49429
  radiotherapy of recurrent tumors of human, electron, 22:51708
  radiotherapy of thyrotoxicosis of human, incidence of hypothyroidism following iodine-131 β and γ, 22:49623
  radiotherapy of thyrotoxicosis of, of man, development of pulmonary edema following iodine-131 β, 22:51863
  radiotherapy of toxic adenoma of, use of iodine-131 for, 22:2523
  radiotherapy of toxic adenomas in human, iodine-131 β and γ, 22:38345
  radiotherapy of tumors of human, protection of spinal cord during postoperative high-energy electron, 22:51703
  radiotherapy of tumors of, in man, combined effects of surgery on fast electron, 22:51729
  removal from goats, effects of, on calcium-45 metabolism, 22:420 (COO-1339-16)
  removal from rats, effects of, on bone development in fetuses, 22:36387
  removal of rat, effects of, on calcium and phosphate content in blood of rats, 22:6200(R) (COO-1668-3)
  removal of, effects of, on calcium metabolism in rats, 22:6716 (ORO-284-10)
  removal of, effects of, on food consumption by mammals, 22:21404 (COO-301-150)
  scanning of, computer programs for interpretation of scintillation, 22:40796
  scanning of, use of iodine-125, iodine-131, and technetium-99 for, 22:28582
  scanning of, use of iodine-131 and two opposed detectors for, in unrestrained rats, 22:33857
  scanning to determine details of anatomy and function, use of Spintharicon for visualization during, 22:31121
  scanning using iodine-131, 22:51784
  scintigram quality of human, evaluation of radioisotope scanner and scintillation camera, 22:45304
  scintiscanning in man, use of iodine-131 or iodine-132 combined with thyrotropin for, 22:38340
  scintiscanning incidental to brain scanning using technetium-99-labeled pertechnetate, 22:541
  scintiscanning of adenomas in human, use of iodine-131 for, 22:38345
  scintiscanning of human, 22:33885
  scintiscanning of human, use of mixture of iodine-125 and iodine-131 for, 22:28619
  scintiscanning of human, using technetium-99-labeled pertechnetate, 22:51858
  scintiscanning using iodine-123, iodine-125, iodine-131, iodine-132, or technetium-99, comparison of techniques for, 22:25922
  scintiscanning using iodine-125, 22:28596
  scintiscanning using technetium-99, 22:25935
  secretion of thyrocalcitonin by, in rats, 22:6716 (ORO-284-10)
  size of human, evaluation of errors in methods for determining, 22:36295
  technetium-99 content of human, determination of, 22:51643
  technetium-99 metabolism in, of rats, comparison of, with iodine-131, 22:14961
  technetium-99 uptake by, effects of decomposition of pertechnetate solution on, 22:23583
  technetium-99 uptake by, in man, effects of potassium perchlorates on, 22:36325
  thermal neutron activation of iodine in human, 22:36192
  uptake by rabbit, effects of ultrasound on, 22:437
  use of iodine-131 for treatment of diseases of, feedback mechanisms in, 22:43245
  volume determinations for human, use of radioisotope scans and roentgenograms for, 22:38360
Thyroid Hormones
    see Hormones, Thyroid
THYROID INHIBITORS
    see also Methimazole
  effects on β-radiosensitivity of ophthalmopathy associated with Graves disease in man, 22:49626
  effects on development of complications following iodine-131 therapy of exophthalmic goiters, 22:49628
  effects on incidence of hypothyroidism following iodine-131 therapy of thyrotoxicosis, 22:49623
Thyronine
    see Hormones, Thyroid--thyronine
Thyrotropic Hormone
    see Hormones, Pituitary--thyrotropic hormone
Thyroxine
    see Hormones, Thyroid
Ticks
    see specific names under Arachnida
TIDAL POWER
  atmosphere effects on, LAM code study of, 22:31694 (UCRL-50368)
Tight Rope Burst
    see Dominic Operation
TIGLIC ACID
  deuterium exchange between heavy water and, 22:12327
Tiglium Oil
    see Croton Oil
Time-to-Amplitude Converters
    see Pulse Converters
TIME MEASUREMENT
    (See also specific instrument used, i.e., Oscillographs, Pulse Generators (Electronics).)
    see also Chronometers
    see also Frequency Standards
    see also Oscillographs
    see also Timing Circuits
  atomic clock using rubidium for, description of New Zealand, 22:8423
  design of digital unit for, 22:28273 (ANL-7278, pp 219-49)
  development of microday time code for continuous day counting, 22:6236 (UCRL-17884)
  equipment for, design of digital time interval, 22:45369
  equipment for, in darkroom, 22:22930(R) (NBL-242)
Time Reversal
    see Invariance Principles
Time Sorters
    see Pulse Analyzers
TIMING CIRCUITS
  description of fiducial distribution, for data recording systems, 22:38147 (UCID-15336)
  design for coincidence measurements of conversion electron--x ray and γ--x ray directional correlations in cerium-139 decay, (E), 22:46807
  design for counting nuclear disintegrations with automatic setting of time intervals, 22:47353(P)
  design for semiconductor spectrometers for coincidence measurements, 22:23372
  design for signal delay up to 8.6 ms for use in EIR neutron time-of-flight spectrometer, 22:16929 (EIR-130)
  design of digital time intervalometer for measuring msec or less time intervals, engineering drawings for, 22:51290
  design of fast zero-crossing discriminator, for pulsed beams, 22:408
  design of fast, for Cherenkov detectors, 22:14813
  design of gamma exposure, for industrial radiography, 22:28252
  design of high-speed, for time analyzer, 22:14612
  design of transistorized unit for automatic channel stepping of 512-channel Laben analyzer, 22:21385 (PINSTECH/PHY-11)
  design of wide-range digital time analyzer with resolution of 50 psec, 22:10661
  development for neutron time-of-flight facilities, 22:37281(R) (NYO-72-191)
  development for provision of repetitive pulses at preselected time intervals, 22:37281(R) (NYO-72-191)
  development of digital delay generator with 1 μsec to 300 msec widths in 100 μsec steps, 22:51279(R) (RISO-M-729)
TIN
  abundance in chondrites, 22:2727
  analysis for submicrotraces of copper by neutron activation, 22:33231
  analysis for trace elements, methods for, 22:37679
  analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
  atomic weight of, based on carbon-12 = 12, 22:42698
  bremsstrahlung spectra from beta-excited, (E), 22:13248
  chromatographic behavior on thin layers of cellulose and

silica gel impregnated with tributyl phosphate, 22:23115
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with aromatic and heterocyclic azomethines, preparation and structure of, 22:8076
complexes with diketones, Moessbauer studies of structure of, 22:14386(R) (NYO-906-80)
compounds of, tin-119 Moessbauer effect isomer shifts and nuclear radius change in, (E), 22:22228
compounds, spectra of, standard for chemical shift of, 22:27534 (NBS-TN-421)
condensation in meteorites, (T), 22:5023
content in sodium, chemical determination of, 22:12006(R) (ANL-7399)
content of human lungs, effects of age on, 22:12749 (ORNL-P-3541)
corrosive effects on refractory metals at 1000°C of liquid, analysis of, 22:30388
cosmic-particle reactions with nuclei of, production cross sections for Λ^0, Σ^{+-}, and K_1^0 in, (E), 22:22302
critical current curves and resistive transitions of superconducting, 22:11399
critical currents and flux fluctuations in superconducting ring of, (E/T), 22:31740
crystal orientation of, measurement by optical means, 22:52679 (AD-672357)
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
determination as ascorbate, spectrophotometric, 22:2009
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by spectrophotometry using high-frequency excitation tubes without electrodes, 22:30494
determination by x-ray fluorescence methods, 22:14453
determination in ancient copper coins and bronze objects by fast neutron activation methods, 22:27592
determination in copper, activation, 22:27558
determination in copper-base alloy by gamma-excited x-ray fluorescence, 22:1960 (ORNL-IIC-10(Vol.1), pp 483-502)
determination in electrolytic zinc sulfate solution by neutron activation methods, 22:25277
determination in gallium by neutron activation methods, 22:42614
determination in high-purity niobium, 22:1981
determination in iron ores, spectrochemical, 22:27615
determination in lead telluride and tin telluride by automatic titration using EDTA, 22:35755
determination in lead tin telluride thin films, polarographic, 22:9(R) (NBS-TN-425)
determination in lead--tin alloys, spectrophotometric, 22:1964 (RFP-1001)
determination in metallic materials, spectrochemical method for, 22:22963
determination in meteorites by chemical and neutron activation methods, 22:10199
determination in mild steel, x-ray fluorescence, 22:50938
determination in mixtures of light elements, electromagnetic isotope separation in activation methods for, 22:47090
determination in molybdenum--uranium alloys, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
determination in nickel by activation and isotopic-exchange methods, 22:2008
determination in products in mineral processing plants by x-ray fluorescence techniques, 22:47061 (AAEC/TM-473)
determination in scandium, spectroscopic, 22:18727
determination in tantalum and tungsten, 22:1981
determination in teeth fillings by neutron activation methods, 22:25254
determination in tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in uranium alloys by complexing with gelatin, spectrophotometric, 22:50924
determination in uranium oxide using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
determination in uranium--zirconium plates, polarographic, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in Zircaloy by x-ray fluorescence, 22:47097
determination in Zircaloy-2 by x ray fluorescence, 22:7024
determination in Zircaloy-2, spectrographic, 22:4006
determination in Zircaloys, spectrographic, 22:22926 (BARC-312)
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, in germanium by neutron activation methods, 22:14441
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
determination using rhodizonic acid, 22:7998
diffusion in aluminum at 400 to 630°C, 22:10967
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion of silver in, volume and grain-boundary, 22:34767
diffusion of sodium in, coefficients of, 22:21688 (COO-1352-25)
diffusion of tantalum-182 in liquid, at 400 to 1100°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
dissolution by liquid aluminum, heat of, 22:31362
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on emission bands of calcium oxide, 22:92
effects on emission bands of thorium-activated calcium oxide, 22:92
effects on phosphorescence decay of calcium oxide, 22:91
effects on phosphorescence decay of thorium-activated, 22:91
effects on restoration of irradiated aluminum, 22:19594
effects on separation of niobium from tantalum by precipitation by oxine, 22:4038
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
effects on titrimetric determination of uranium, 22:22972
electric conductivity of superconducting, calculation of complex, 22:26333
electron reactions at 900 MeV with, electromagnetic cascade showers from, (E), 22:24065
electron reactions with, ionization cross sections for, (E/T), 22:11224
electron scattering by, cross sections for 200- and 400-keV, 22:38787
electron tunneling at 2.2°K through thin CdS film between two layers of, effects of light on, (E), 22:31752
electron tunneling in junctions of lead and, relation to electromagnetic radiation absorption, 22:2987
emission spectra excitation in, by β particles of carbon-14 or promethium-147, 22:27844
energy gap in, dependence on magnetic field and film thickness, (E), 22:15499
energy-level transitions in μ-mesic atoms of, charge distribution parameters from x-ray spectra from, 22:14835
fragmentation of molten, when dropped into water, 22:22653(R) (ANL-7419)
gamma backscattering at 0.412 to 1.25 MeV, 22:11489
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
gamma scattering at 1002 keV by K-shell electrons of, incoherent, (E), 22:43901
gamma scattering from semi-infinite stratified slabs of aluminum and, 22:52843
helicon waves in intermediate state of superconducting, (E), 22:34522
ionization by relativistic electrons, K, (T), 22:947
Knight shift of tin-119 in, effects of temperature on NMR spectra of, 22:50234
magnetic properties of superconducting hollow cylinders of, effect of surface energies on field retention and shielding, (E), 22:44059
magnetization of superconducting, sources of hysteresis in, (E), 22:5296
melting of, enthalpy of, 22:40993(R) (COO-1198-534)
microwave properties of superconducting, 22:46085
microwave surface resistance of superconducting, magnetic-field dependence of, 22:7240
Moessbauer effect studies of, 22:18735

neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron differential elastic scattering cross section at 0.3 to 1.5 MeV, 22:18194
neutron differential elastic scattering cross section and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
neutron inelastic scattering by polycrystals of, (E), 22:13923
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
neutron total cross section for, measurement using self-indication method, (E), 22:20578 (WASH-1079)
nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104
nuclear magnetic resonance and spin-orbit coupling in superconducting, 22:39027
nuclear magnetic resonance in single-crystal white, magnetic-field dependence of Knight-shift oscillations in, (E), 22:3198
nuclear magnetic resonance in superconducting, 22:31779
nuclear magnetic resonance spectra in single-crystal, 22:32009
nuclear-magnetic-resonance Knight shift in superconducting, particle-size effects on, (E), 22:1114
oder parameter in superconducting, (E), 22:7222
photoeffect quantum yields from, (E), 22:38799
photoelectric cross section at 145 keV, K-shell, (E), 22:9028
photoelectric cross sections at 30, 40, and 50 keV, (E/T), 22:41347
photoelectric cross sections for 50 to 208 keV, 22:24064
photoelectric cross sections for K, L, and M shell of, for 412- to 1332-keV x rays, 22:5082
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
photon reactions with, low-energy electron spectra from 1.25- or 0.66 MeV, (E), 22:31985
positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
positron annihilation in, total cross sections for single-quantum, (E), 22:36723
precipitation from boiling acid solutions by phytin, 22:33319
preparation of high-purity, method for, 22:23803
production of high-purity whiskers of, 22:23782
production of, separation of niobium and tantalum from intermediate products in, 22:45175
properties and uses of, review of, 22:23803
proton atomic stopping powers at 3.75 to 5.5 MeV, (E), 22:30039
quantum phase fluctuations in superconducting, (E), 22:17595
radiation effects on temperature of implants of, in tissue phantoms, IFR, 22:43343
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced iodination of, kinetics of γ, 22:4206
radioinduced reactions with bromobutane, γ, 22:30603
reactivity measurement of, in ARMF fast flux converter, 22:6096 (IN-1143)
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation by solvent extraction using TBP, 22:23119
separation from antimony and arsenic in hydrochloric acid solution, ion exchange, 22:40192
separation from antimony, indium, and tellurium by vaporization, 22:14573
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from arsenic by paper chromatography, 22:25257
separation from arsenic, bismuth, germanium, indium, or mercury, in hydrochloric acid solution, ion exchange, 22:40192
separation from iron by anion exchange, 22:10328
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from titanium by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of ruthenium from, by solvent extraction using carbon tetrachloride, 22:18884
solvent distribution between di-n-butyl thiophosphate in carbon tetrachloride and hydrochloride acid solutions, 22:1969
solvent properties of liquid, for tantalum, 22:43527 (ANL-7299, pp 150-72)
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
sorption by manganese dioxide from nitric acid, 22:157
sorptive properties for ionic radioisotopes in aqueous solutions, effects of acidity on, 22:35767(T) (AEC-tr-6776)
sorptive properties for radioisotopes, 22:4129
spectra of, far-ultraviolet absorption, (E), 22:2776 (DESY-67/27)
spin--lattice and spin--spin relaxation times in single crystals of, pulsed NMR study of, 22:29577
superconducting critical field for quenched thin films of, dependence on film properties and angle between field and film plane, (E/T), 22:36862 (COO-1054-41)
superconducting critical fields at 240 and 270 kbar and 0.1 to 4.2°K, (E), 22:31761
superconducting critical fields of disordered films of, effects of annealing on upper, (E), 22:34525
superconducting critical fields of films and foils of, thickness dependence of, (E), 22:44057
superconducting critical magnetic field of, 22:2996
superconducting critical magnetic fields of thin films of, angular and temperature dependence of, (E), 22:39018
superconducting critical temperature of thin films of, thickness dependence of, 22:52717
superconducting energy gap of impure, ultrasonic studies of reduced anisotropy of, (E), 22:17603
superconducting energy gaps in thick films of, measurement using far-infrared absorption spectra, 22:17549
superconducting films of, current decrease due to depairing in, (E), 22:50124
superconducting properties of pure and doped, 22:52679 (AD-672357)
superconducting properties of thin film, at microwave frequencies, 22:17580
superconducting properties of, effects of aluminum impurities on, (E), 22:41504
superconducting quantum phase coherence in, using electromagnetically stabilized Josephson junctions to verify long-range, (E), 22:2993
superconducting transformer effect in magnetically coupled thin films of, effects of temperature and magnetic fields on, 22:52712
superconducting transition temperature of thin films of, effects of thin germanium coatings on, (E), 22:2975
superconducting transition temperatures of layers of lead and, as function of lead thickness, (E), 22:13393
superconducting vortex coupling between two insulated films of, (E), 22:48056
superconducting whisker crystals of, intrinsic thermodynamic fluctuations in, (E), 22:17583
superconductivity of cylinders of, at cryogenic temperatures, 22:38510 (BNL-50082, pp 93-152)
superconductivity of small particles of, embedded in oxide film, (E/T), 22:34541
superconductivity of thin-film, at 3.5 to 6.5°K, 22:38510 (BNL-50082, pp 93-152)
superconductivity of, microwave analysis of thin film, 22:29453
superconductivity transition temperature of thin-film, 22:15141 (BNL-50057, pp 79-100)
surface energy effects in type-II superconducting, calorimetric study of, (E), 22:24230
surface impedance of superconducting microwave measurements of, (E/T), 22:24236
surface resistivity at 4.2°K of contacts of, 22:45230
thermal conductivity of cadmium-doped single crystals of, effects of superconducting energy-gap anisotropy on, (E), 22:1109
thermal conductivity of pure and doped, at low temperatures, 22:52679 (AD-672357)
thermal conductivity of superconducting films of, effects of magnetic fields on, (E), 22:17552
thermal conductivity of superconducting films of, in magnetic field, 22:29440
thermal conductivity of superconducting intermediate state of, (T), 22:34570
tin-119 Moessbauer effect in, isomer shifts in, (E), 22:22228
tunneling between bulk niobium and films of, microwave-photon-assisted, (E), 22:17592
tunneling in superconducting, in magnetic field, (E), 22:2995
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
use in image-detecting plate for neutron radiography, 22:37913(P)
use of superconducting, as magnetic field probe, 22:1119
viscosity of liquid, effects of temperature on, 22:43527 (ANL-7299, pp 150-72)
voltages due to longitudinal temperature gradients in superconducting films of, transverse, 22:1077
wetting refractory carbides and oxides by liquid, mechanisms of, 22:23752 (AERE-M/R-1746)
x-ray attenuation coefficients below K-absorption edge of, measurement of, 22:29199
x-ray fluorescence spectra of, semiconductor detectors for measuring, 22:19096 (INR-820/II/PS)
x-ray spectra from beta-excited, (E), 22:13248
x-ray spectra of, isotope shifts in K, (E), 22:24887

TIN ALLOYS AND SYSTEMS
  see also Bronze

see also Zircaloy-2
see also Zircaloy-3
see also Zircaloy-4
analysis for antimony and copper by autoradiography and activation techniques, 22:6259
analysis of, methods for, 22:37679
Moessbauer spectra of, relation between electron structure and isomer shifts in, (T), 22:5425
properties and uses of, review of, 22:23803
Ag--Cd--In--Pd--Sn, mechanical properties of, effects of annealing temperature on, 22:30166(R) (WCAP-3707)
Ag--Cd--In--Pd--Sn, metallurgical properties of, effects of annealing temperature on, 22:30165(R) (WCAP-3706)
Ag--Cd--In--Pd--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Pt--Sn, tensile properties of control elements of, effects of annealing temperature on, 22:30167(R) (WCAP-3708)
Ag--Cd--In--Sn, mechanical properties of, effects of annealing temperature on, 22:30166(R) (WCAP-3707)
Ag--Sn, deformation of, effects of temperature on activation energies for, 22:21717 (COO-916-13)
Ag--Sn, oxidation of, kinetics of high-temperature, 22:8764
Ag--Sn, Raoults' law behavior in molten-salt EMF cell, 22:1924 (LA-3733)
Ag--Sn, superconducting proximity effect in superimposed films of, (E), 22:7219
Ag--Sn--Zn, activity coefficients and reaction parameters of, determination by torsion-effusion method, 22:31389
Ag-base--Sn, magnetic resonance of, effects tin content on, 22:43595 (ANL-7299, pp 265-7)
Al--Cr--Fe--Si--U-base, radioinduced swelling at 400 to 550°C of, neutron, 22:34090
Al--Mo--Si--Sn--Ti-base--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Mo--Si--Sn--Ti-base--Zr, properties, 22:31323
Al--Mo--Sn, deposition and protective effects as coating on tantalum alloys, 22:19482
Al--Mo--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Mo--Sn--Ti-base--Zr, mechanical properties of alpha-type, 22:23744(P)
Al--Mo--Sn--Ti-base--Zr, mechanical properties of beta-phase forged, 22:45768
Al--Mo--Sn--U, analysis for aluminum and tin, complexing methods for spectrophotometric, 22:50924
Al--Mo--Sn--U, radioinduced swelling at 500 MWd/t burnup, in-pile, 22:49778
Al--Mo--Sn--U-base, radioinduced swelling at 400 to 550°C of, neutron, 22:34090
Al--Mo--Sn--Zr-base, properties for reactor structures of, in layered fabrications with corrosion resistant alloys incorporating zirconia separating barrier, 22:36467(P)
Al--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Al--Sn, deposition and oxidation resistance of coatings of, on niobium alloy, 22:2582
Al--Sn, effects as coating on oxidation of molybdenum and TZM alloy, 22:19488
Al--Sn, preparation of intermetallic AlSn coatings of, 22:45775
Al--Sn, properties for protection of niobium alloys from oxidation, 22:36433
Al--Sn--Ti, radiation effect on mechanical properties of, neutron, 22:4813 (TID-24148)
Al--Sn--Ti, texture strengthening of, methods for, 22:52185
Al--Sn--Ti-base, crystallization of, effects of temperature on, 22:21711
Al--Sn--Ti-base, mechanical properties of plates and weldments of, 22:2619
Al--Sn--Ti-base, plasticity of α and β, phase analysis at 990°C of, 22:702
Al--Sn--Ti-base, radiation effects on mechanical properties of, cryogenic-neutron, 22:41075(R) (N-68-13825)
Al--Sn--Ti-base, welding to aluminum alloys, solid-state methods for, 22:629(R) (N-67-19274)
Al--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Sn--Ti-base--V, crack propagation in delayed failures of, 22:649 (BNWL-SA-1134)
Al--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Sn--Ti-base--V, properties for aerospace uses, 22:45775
Au--Sn, Raoults' law behavior in molten-salt EMF cell, 22:1924 (LA-3733)
Ba--Sn, preparation and crystal structure of intermetallic BaSn, 22:2593
Be--Sn, phase diagram, 22:10986(T) (JPRS-43479)
Bi--Sn, superconducting transition temperatures of metastable eutectic alloys of, pressure effects up to 30 kbar on, (E), 22:34523
Bi--Sn, thermal gradient effects in eutectic, 22:43627 (ANL-7299, pp 14-113)
Bi-base--Cd--Pb--Sn, use of Cerrobend, to impregnate pores of metallic materials for metallography, 22:43544 (Y-1625)
C--Mo--Sn--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Nb--Sn, superconductivity of phases in, 22:45745 (UCRL-18043, pp 107-53)
C--Nb--Sn--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Sn--Ti--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Sn--U--W, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Sn--U--Zr, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
Ca--Sn, reactions of intermetallic compounds in, with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Cd--Mg--Sn, ultrasonic wave velocity at approximately 342°C in, 22:52257 (ANL-7425, pp 94-129)
Cd--Mg--Sn, ultrasound velocity in liquid, 22:36543 (ANL-7450, pp 39-74)
Cd--Sn, electric conductivity at 325°C, 22:38510 (BNL-50082, pp 93-152)
Cd--Sn, ultrasonic velocity in liquid solutions of, measurements on, 22:25321 (ANL-7375, pp 95-134)
Cd--Sn, ultrasound velocity in liquid, effects of composition on, 22:36543 (ANL-7450, pp 39-74)
Ce--Sn, magnetic properties at 4.2°K of intermetallic $CeSn_3$, Moessbauer study of, 22:34747
Co--Mn--Sn, tin-119, Moessbauer effect in intermetallic, hyperfine fields from, 22:24471
Co--Sn, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Fe--Ni--Sn--Zr-base, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Cr--Fe--Sn--Zr, corrosion behavior of, analysis of, 22:48788
Cr--Fe--Sn--Zr-base, corrosion by steam and water at high temperatures, hydrogen sorption during, 22:21655 (WAPD-TM-517)
Cr--Hf-base--Sn, corrosion by steam, 22:10921(P)
Cr--Hf-base--Sn, tensile properties of, 22:10921(P)
Cr--Mo--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Cr--Pt--Sn, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cu--Nb--Sn--stainless steel, superconducting properties of, mechanical and electrical, 22:29447
Cu--Sb--Sn, performance as coating for metals, evaluation of flame-sprayed, 22:10932
Cu--Sn, performance as coating for metals, evaluation of flame-sprayed, 22:10932
Cu--Sn, Raoults' law behavior in molten-salt EMF cell, 22:1924 (LA-3733)
Cu--Sn, separation of copper-63 and -65 from, method for, 22:130 (AERE-M-1948)
Er--Sn, tin-119 Moessbauer effect in, hyperfine magnetic fields from, (E), 22:52545
Eu--Sn, Moessbauer relaxation spectra of tin-119 in intermetallic $EuSn_3$, (E), 22:26461
Eu--Sn, preparation and crystal structure of intermetallic EuSn, 22:2593
Fe--Mo--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Fe--Sn, hyperfine field measurements using iron-57 Moessbauer effect in intermetallic compounds and solid solutions, (E), 22:46264
Fe--Sn, nuclear magnetic resonance of iron-57 in, (E), 22:7384
Fe--Sn, superconducting proximity effect in superimposed films of, (E), 22:7219
Ga--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Gd--Sn, Moessbauer relaxation spectra of tin-119 in intermetallic $GdSn_3$, (E), 22:26461
Ge--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059
Hf-base--Mo--Sn, corrosion by steam, 22:10921(P)
Hf-base--Mo--Sn, tensile properties of, 22:10921(P)
Hf-base--Nb--Sn, corrosion by steam, 22:10979(P)
Hf-base--Nb--Sn, corrosion by steam, 22:10921(P)
Hf-base--Nb--Sn, tensile properties of, 22:10979(P)
Hf-base--Nb--Sn, tensile properties of, 22:10921(P)
Hf-base--Nb--Sn--Zr, corrosion by steam, 22:10979(P)
Hf-base--Nb--Sn--Zr, tensile properties of, 22:10979(P)
Hg--Sn, electric conductivity at 232°C, 22:38510 (BNL-50082, pp 93-152)
Hg--Sn, superconducting transition temperature as function of composition at 87 to 94 per cent tin, (E), 22:17573
In--Nb--Sn, superconducting transition temperature, lattice constants, and microhardness of solid solutions of, (E), 22:48059

In--Sn, critical current curves and resistive transitions of superconducting, 22:11399
In--Sn, Ettinghausen effect in superconducting, (E), 22:7239
In--Sn, indium-115 and tin-119 NMR in, Knight shift as function of alloy composition in, (E), 22:36983
In--Sn, magnetic properties of superconducting films of, (E), 22:34569
In--Sn, superconducting critical fields of, anisotropy effects on, (E), 22:46071
In--Sn, superconducting, mechanical entropy transport in, (E), 22:17546
In--Sn, surface energy effects in type-II superconducting, calorimetric study of, (E), 22:24230
In--Sn, tunneling in superconducting, in magnetic field, (E), 22:2995
La--Sn, formation of intermetallic compounds of, at 273°K, 22:49727
La--Sn, heats of solution at 725, 750, and 775°K, 22:49727
La--Sn, superconducting properties of $LaSn_3$, effects of praseodymium and thulium on, 22:52689
La--Sn, superconducting transition temperature of intermetallic, effect of gadolinium on, 22:48058
La--Sn, superconductivity of intermetallic, with Cu_3Au structure, (E), 22:24223
Li--Sn, tin-119 Moessbauer spectra in intermetallic $SnLi_4$, dependence of isomeric shift on lithium atomic radius in, (E), 22:39185
Li--Sn, vapor pressure of, transpiration measurements of, 22:52556 (ANL-7425, pp 172-89)
Mg--Sn, densities, phase equilibria, and specific volumes of liquid, 22:10948 (NYO-2731-4)
Mg--Sn, piezoelectric properties of n-type intermetallic Mg_2Sn at 50 to 300°K, (E), 22:5411 (IS-T-198)
Mg--Sn, thermal conductivity of intermetallic Mg_2Sn at 80 to 700°K, 22:3166 (IS-1712)
Mo--Ni--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Mo--Sn--Ti-base, properties of, for aerospace and cryogenic uses, 22:45775
Na--Sn, tin-119 Moessbauer spectra in intermetallic $SnNa_4$, dependence of isomeric shift on sodium atomic radius in, (E), 22:39185
Nb--Sn, alternating current losses in superconducting intermetallic Nb_3Sn, (E), 22:46040 (N-68-19140)
Nb--Sn, analysis of intermediate phases of, 22:697
Nb--Sn, coil configurations for, used as combined function elements in accelerators, 22:32352 (CEAL-2000, pp A150-1)
Nb--Sn, compacting by hot-pressing, effects of temperature and grain size on, 22:38530
Nb--Sn, configurations of superconducting coils of, for use as separated-function elements in accelerators, 22:32297 (CEAL-2000, pp 391-2)
Nb--Sn, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Sn, fabrication of intermetallic Nb_3Sn, 22:22079
Nb--Sn, flux jumping in sintered superconducting intermetallic Nb_3Sn, use of helium flowing through pores to control, 22:11367
Nb--Sn, grain structure of superconducting, (E), 22:19917
Nb--Sn, isotope effect in superconducting, (T), 22:9238
Nb--Sn, lattice softening and stiffening of single-crystal, at low temperatures, 22:41507
Nb--Sn, magnet coils of, design of intermetallic Nb_3Sn superconducting, 22:21256
Nb--Sn, magnetic flux jumps in intermetallic Nb_3Sn, temperature increase preceding, (E), 22:36877
Nb--Sn, magnetic hysteresis in superconducting intermetallic Nb_3Sn, relation to structure, 22:44035
Nb--Sn, magnetic hysteresis of superconducting, in Nb_3Sn region, (E), 22:24199
Nb--Sn, metallography of, anodic oxidation method for, 22:28823
Nb--Sn, performance of super conducting magnets of intermetallic Nb_3Sn, at 2.18°K, 22:15141 (BNL-50057, pp 79-100)
Nb--Sn, phase stability of intermetallic Nb_3Sn after heat treatment, (E), 22:26053 (INR-871/XIV/PS)
Nb--Sn, phase transformation in intermetallic, low-temperature, 22:11524
Nb--Sn, preparation of stabilized superconducting Nb_3Sn by diffusion process, (E), 22:11353
Nb--Sn, properties and techniques of winding for superconducting tapes of intermetallic Nb_3Sn, 22:11370
Nb--Sn, properties of intermetallic Nb_3Sn, effects of stoichiometry deviations on, 22:44062
Nb--Sn, single crystals of intermetallic Nb_3Sn, growth by chemical transport, 22:635
Nb--Sn, superconducting critical fields of intermetallic Nb_3Sn, 22:22080
Nb--Sn, superconducting critical surface of commercial Nb_3Sn ribbon, 22:46082
Nb--Sn, superconducting magnets of intermetallic Nb_3Sn, transient stabilization of, 22:29435
Nb--Sn, superconducting phase transition in polycrystalline Nb_3Sn, high-resolution x-ray study of, 22:46060
Nb--Sn, superconducting properties of intermetallic Nb_3Sn doped with zirconium oxide, 22:36874
Nb--Sn, superconducting properties of intermetallic Nb_3Sn, effect of hydrogen impurities on, (E), 22:26329
Nb--Sn, superconducting properties of intermetallic Nb_3Sn, relation to lattice stability, (T), 22:44034
Nb--Sn, superconducting resistive transition in intermetallic Nb_3Sn, 22:22084
Nb--Sn, superconductive properties of intermetallic Nb_3Sn, 22:38530
Nb--Sn, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Nb--Sn, superconductivity of intermetallic Nb_3Sn, in niobium carbide matrices, 22:4851 (UCRL-17826)
Nb--Sn, thermal capacity measurements on intermetallics Nb_3Sn and Nb_4Sn at 1 to 42°K in magnetic fields up to 53 kG, 22:17604
Nb--Sn, tin-119 Moessbauer effect in Nb_3Sn, temperature dependence of, 22:48181
Nb--Sn, use in nonsymmetric copper--Nb_3Sn--stainless steel composite superconductors, 22:11371
Nb--Sn, use in superconducting, large-bore, high-field modular magnet, (E), 22:11346
Nb--Sn, use of intermetallic, in superconducting coils, 22:5289
Nb--Sn, use of ribbon, in 10- to 100-kG magnet coils, 22:21255
Nb--Sn--NbC, synthesis of two-phase high-field superconducting, 22:26347
Nb--Sn--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Nb--Sn--Zr-base, radiation effects on mechanical properties of, neutron, 22:21730
Nb--Sn--Zr-base, radioinduced corrosion by steam and water, neutron, 22:21730
Nb--Sn--Zr-base, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Nb-base--Sn, phase diagrams, 22:23814 (INR-877/XIV/PS)
Nd--Sn, spectra of Knight shift of tin-119 in, effects of temperature on NMR, 22:50234
Ni--Sn, crystal structure of intermetallic $Ni_{1.5}Sn$ in, disorder--order transitions of, 22:2654
Ni-base--Sn, neutron magnetic scattering by, (E), 22:24809
Pb--Sn, analysis for tin, spectrophotometric, 22:1964 (RFP-1001)
Pb--Sn, electron reflection at 600 to 1200 keV, 22:45965
Pb--Sn, magnetic properties of oriented lamellae of superconducting eutectic, (E), 22:2986
Pb--Sn, magnetization and energy losses in superconducting, ac-induced, (T), 22:13423
Pb--Sn, superconducting transition temperature and thermal capacity of eutectic, calculation of, 22:1082
Pb--Sn, superconducting tunnel junctions of, electromagnetic radiation from, (E), 22:36867
Pb--Sn, thermal capacity near superconducting transition temperature, 22:11340
Pb-base--Sn, transition temperature of superconducting, (E), 22:48039
Pb-base--Sn, use in elastomer matrix as flexible shielding material, 22:43523(P)
Pd--Sn, thermodynamic properties, 22:43594 (ANL-7299, pp 251-64)
Pt--Sn, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pt--Sn, spectra of Knight shift of platinum-195 and tin-119 in, effects of temperature on NMR, 22:50234
Pu--Sn, formation heats of intermetallic compounds of, methods of determining, 22:31364
Pu--Sn, phase studies of, 22:2655
rare earths--Sn, analysis by arc spectrographic, chemical, or x-ray fluorescence methods, 22:44984
Sb--Sn, isomer shifts at antimony-121 and tin-119 nuclei in solid solutions of, (E), 22:48507(R) (ANL-7436)
Sb--Sn, tin-119 Moessbauer effect in semiconducting, isomer shift in, (E), 22:26506
Si--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Sm--Sn, analysis by arc spectrographic, chemical, or x-ray fluorescence methods, 22:44984
Sm--Sn, heats of solution and formation of intermetallics $SmSn_3$, Sm_2Sn_3, and Sm_5Sn_3, (E), 22:28784
Sn--Sr, preparation and crystal structure of intermetallic SrSn, 22:2593
Sn--U, performance of intermetallic USn_3, in bearings, 22:28779 (NP-17422)
Sn--U, spectra of Knight shift of tin-119 in, effects of temperature on NMR, 22:50234
Sn--U, tin-119 NMR and magnetic susceptibility in intermetallic, 22:22232
Sn--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
Sn--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
Sn--V, vanadium-51 nuclear spin--lattic relaxation time in intermetallic V_3Sn as function of magnetic field and temperature, (E), 22:34544
Sn--Y, formation and decomposition of intermetallic compounds in, 22:31410
Sn--Y, phase diagram of, 22:31410
Sn--Y, phase studies of, 22:2560(R) (IS-RD-11)

  Sn--Y, phase studies of, 22:705
  Sn--Yb, preparation of intermetallic YbSn, 22:2593
  Sn--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
  Sn--Zr, oxidation by oxygen, breakaway mechanisms of, 22:625
  Sn--Zr-base, corrosion by high-temperature water and steam effects of chromium, iron, and niobium additions on, 22:28738 (WAPD-TM-619)
  Sn--Zr-base, radiation effects on creep rate of, neutron, 22:28855
  Sn--Zr-base, sorptive properties for hydrogen in high-temperature water and steam, effects of chromium, iron, and niobium additions on, 22:28738 (WAPD-TM-619)
  Sn-base--U, performance in bearings, 22:28779 (NP-17422)
  SnTe, Sn-119 Moessbauer effect determination of Debye temperature in, (E), 22:41671
TIN ARSENATES
  properties as ion-exchange material, 22:33552
TIN BORATES
  properties as ion-exchange material, 22:33552
TIN BROMIDES
  tin-119 Moessbauer spectra in, dependence of isomeric shift on bromine atomic radius in, (E), 22:39185
Tin Bronze
    see Bronze
TIN CHLORIDES
  analysis for trace elements by cathode-ray polarography, 22:42600
  effects on oxidation and rupture of irradiated polyethylenes, 22:47135
  effects on the gamma-induced polymerization of acrylonitrile at -78°C, 22:25383
  radiation effects on, retention of tin-113, tin-117m, and tin-119m in products from neutron, 22:16619
  sodium atom scattering by, velocity dependence of total cross sections for, (E), 22:11235
  tin-119 Moessbauer spectra in, dependence of isomeric shift on chlorine atomic radius in, (E), 22:39185
  use in spectrometric determination of molybdenum in ores, 22:33235
  use with 2,3-butanedione oxime in spectrophotometric determination of molybdenum and rhenium, 22:16463
  $AlCl_3$--$POCl_3$--$SnCl_4$, phase studies on, 22:8068
TIN HALIDES
  radiolysis of organometallic, 22:14556
TIN HYDRIDES
  hydrolysis of, chemistry of, 22:45029 (UCRL-18043, pp 7-105)
  tin-119 Moessbauer spectra in, dependence of isomeric shift on hydrogen atomic radius in, (E), 22:39185
TIN HYDROXIDES
  properties as ion-exchange material, 22:33552
TIN IODIDES
  lattice vibrations of SnI_4, analysis of Moessbauer data for, 22:46235
  Moessbauer effect in crystals of, 22:24408 (IA-1128, pp 21-54)
  tin-119 Moessbauer spectra in, dependence of isomeric shift on iodine atomic radius in, (E), 22:39185
TIN IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  reactions with amorphous boron, degree of oxidation of boron in, 22:2676
TIN ISOTOPES
  alpha reactions (α,2n) and (α,3n) with, γ angular distributions and spectra for, (E), 22:27160
  determination of fallout, in water by sequential separation and β counting, 22:12248
  deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
  energy level from proton inelastic scattering, and (p,d) and (p,t) reactions at 55 MeV, (E), 22:27144
  energy levels from one-neutron transfer reactions, calculations of spectroscopic factors using quasiparticle Tamm--Dancoff approximations with Tabakin potential, (T), 22:50607
  energy levels of even-A, calculations using Tabakin interaction with Tamm-Dancoff approximation, (T), 22:41966
  energy levels of even-A, calculations using two- and four-quasiparticle Tamm--Dancoff formalisms, (T), 22:29996
  energy levels of even-A, description using finite Fermi formalism for vibrational, (T), 22:35316
  energy levels of even-A, description using two- and four-quasiparticle Tamm-Dancoff theory with Takakin potential and core polarization, (T), 22:27132
  energy levels of even-A, systematics of isomeric, (E), 22:32608
  energy levels of, calculations using modified Tamm--Dancoff quasiparticle approximation, (T), 22:3675
  energy levels of, calculations using simplified model, (T), 22:48592
  energy levels of, calculations using two- and four-quasiparticle Tamm--Dancoff approximations with realistic nucleon--nucleon potentials, (T), 22:50614
  energy levels of, energies and transition probabilities of I/sup n/ = 3^- states by random phase approximation method, (T), 22:44628 (UJV-2024)
  energy levels of, low-lying, (E), 22:1667
  energy levels of, research using neutron capture γ resonance fluorescence, (E), 22:30043
  Moessbauer effect in, isomer shifts from, (E/T), 22:48507(R) (ANL-7436)
  nitrogen-14 reactions (N-14,xn) at 60 to 110 MeV, production of lanthanum-128 isomer by, (E), 22:30007
  nuclear charge distribution in, measurement using electron elastic scattering, (E), 22:1682
  nuclear charge radii of, measurements using K x-ray spectra, (E), 22:24887
  nuclear charge radii variations from isotope shifts of K x rays, (E), 22:18238
  nuclear structure of, research program on, (E/T), 22:35285(R) (AERE-PR/NP-13)
  proton reactions (p,t) with even-A, calculations using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
  triton reactions (t,p) with even-A, calculations using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
  x-ray spectra of, isotope shifts of K, (E), 22:27190
TIN ISOTOPES Sn-101
  energy levels of, calculation of neutron single-particle (T), 22:37378
TIN ISOTOPES Sn-110
  gamma activity from tellurium-111 proton decay following carbon-12 reactions with palladium-102, (E), 22:14059
TIN ISOTOPES Sn-111
  beta and electron-capture decay of, γ spectra from, (E), 22:1667
  beta and electron-capture decay of, indium-111 energy levels and transitions from, (E), 22:37348
  energy levels from tin-112 (p,d) reactions, (E), 22:20627
TIN ISOTOPES Sm-112
  alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
  alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
  deuteron differential elastic scattering cross section a 14.5 MeV, optical-model analysis of, (E), 22:44639
  deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
  deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
  energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
  energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
  helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
  helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
  isomeric transition in, half-life for, (E), 22:32608
  neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
  neutron capture cross section for, thermal, (E), 22:22608
  neutron reactions (n,2n) at 12.6 to 19.6 MeV, excitation function for, (E), 22:42006
  neutron reactions (n,2n) at 13 to 20 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron reactions (n,γ) with, cross sections for thermal, 22:14433 (ORNL-4196, pp 66-89)
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
  proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
  proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
  proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
TIN ISOTOPES Sn-113
  decay of, measurement of internal conversion coefficients for, 22:25440(R) (MLM-1443)
  determination in reactor coolant water, 22:12258
  electron capture decay of, K x ray--γ directional correlation in K^-, (E), 22:39669
  electron-capture decay of, use to study K- and L-Auger spectra of indium-113, (E), 22:2809
  energy levels from tin-114 (p,d) reactions, (E), 22:20627
  energy levels of, calculations using independent quasi particle model, (T), 22:1734
  gamma spectra of, high-resolution measurements using lithium-drifted germanium detectors, (E), 22:39675
  preparation of carrier-free, 22:36008
  removal from LOFT condition aerosols, effects of spray injection on, 22:20909(R) (ORNL-TM-2095)
  separation from VVR-S reactor cooling water, 22:6132

- separation of indium-113m from, using complexing resins, 22:37846
- spectra of, internal conversion studies on electron, 22:1956(R) (MLM-1405)
- stabilization of recoils of, during reactor irradiation of tin oxides, 22:4210
- yields in products from neutron irradiation of tin compounds, 22:16619

TIN ISOTOPES Sn-114
- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- alpha reactions (α,n) at 22 MeV, production of tellurium-117 isomers by, (E), 22:3729
- deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
- deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
- deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- energy levels of, calculations using shell model with tensor forces for vibrational, (T), 22:7716
- energy levels of, spins and parities of, (E), 22:9914
- energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
- energy-level transitions from antimony-114 decay, (E), 22:50638
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
- isomeric transition in, half-life for, (E), 22:32608
- neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
- nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
- photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
- proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627

TIN ISOTOPES Sn-115
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- energy levels from tin-116 (p,d) reactions, (E), 22:20627
- energy levels of, calculations using independent quasi particle model, (T), 22:1734
- isomeric transition in, half-life for, (E), 22:32610
- neutron capture by, γ spectra from resonance and thermal, (E), 22:20576 (ORNL-TM-2159)
- proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)

TIN ISOTOPES Sn-116
- alpha differential elastic and inelastic scattering cross sections at 34.4 MeV, angular distributions for, (E), 22:39649
- alpha differential elastic and inelastic scattering cross sections at 66 MeV, optical-model analysis of angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
- alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- alpha reactions (α,He-3) at 66 MeV, angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
- deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
- deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
- deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- electron inelastic scattering at 150 MeV, form factors for, (E), 22:7725
- electron inelastic scattering with excitation of collective states, calculations using quasiparticle Tamm-Dancoff theory, (T), 22:20654
- energy level at 1.29 MeV, collective, (T), 22:24835(R) (BARC-305)
- energy level at 1.29 MeV, description using exact zero-range formalism for collective, (T), 22:32632
- energy level at 2369 keV, g-factor for, (E), 22:48509(R) (BMwF-FBK-68-22)
- energy levels from electron inelastic scattering, collective, (E), 22:7725
- energy levels from indium-116 beta decay, (E), 22:1667
- energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
- energy levels from proton inelastic scattering, tin-117 (p,d) reactions, and tin-118 (p,t) reactions, (E), 22:27144
- energy levels of, (E), 22:30009
- energy levels of, calculations using effective forces from Tabakin and Yale potentials, (T), 22:22617
- energy levels of, calculations using quasiparticle second Tamm--Dancoff approximation for even-parity, (T), 22:20641
- energy levels of, description using quasi-particle Tamm-Dancoff approximations with effective electromagnetic interaction operators from realistic nucleon-nucleon potentials, (T), 22:32720
- energy levels of, description using quasiparticle second Tamm--Dancoff approximation, 22:39678
- energy levels of, description using quasiparticle second Tamm--Dancoff approximation for odd-parity, (T), 22:27114
- energy levels of, description using two- and four-quasiparticle Tamm-Dancoff theory with Tabakin potential and core polarization, 22:27132
- energy levels of, description using two- and four-quasiparticle Tamm--Dancoff approximations with finite-range forces, (T), 22:27101
- energy levels of, spins and parities of, (E), 22:9914
- energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
- energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
- energy-level transition probabilities from electron inelastic scattering, (E), 22:20578 (WASH-1079)
- energy-level transition probabilities from proton inelastic scattering, (E), 22:48519 (JAERI-1158, pp 56-63)
- energy-level transitions from decay of antimony-116 and indium-116, (E), 22:50638
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
- helium-3 reactions (He-3,d) at 28.2 MeV, deuteron spectra from, (E), 22:3734
- helium-3 reactions (He-3,d) with, angular distributions for, 22:39628 (CONF-670970-, pp 117-38)
- isomeric transition in, half-life for, (E), 22:32608
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- nuclear charge distribution in, (E), 22:20578 (WASH-1079)
- nuclear charge distribution in, measurement using electron elastic scattering, (E), 22:1682
- nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
- nuclear quadrupole deformation parameters from alpha elastic and inelastic scattering, (E), 22:39649
- nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
- oxygen-16 reactions (O-16,4n) at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
- oxygen-16 reactions (O-16,4n) with, angular distributions and γ spectra for, (E), 22:48528
- photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
- proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
- proton differential elastic scattering cross section and polarization at 40 MeV, angular distributions of, (E), 22:1598(R) (COO-1265-49)
- proton differential inelastic scattering cross sections at 55 MeV, angular distributions for, (E), 22:27144
- proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
- proton elastic scattering at 6.7 to 8.5 MeV using polarized beams, isobaric analog resonances in, (E), 22:42069
- proton elastic scattering at 6.7 to 8.5 MeV, polarization measurements near isobaric analog resonances in, (E), 22:42040
- proton inelastic scattering at 15 MeV, DWBA analysis of angular distributions for, (E), 22:48519 (JAERI-1158, pp 56-63)
- proton inelastic scattering at 55 MeV, energy spectra and angular distributions from, (E), 22:30009
- proton inelastic scattering at 6.8 to 7.1 MeV, cross sections and spectra for inelastic, (E), 22:20628
- proton inelastic scattering by, angular distributions and excitation functions for, (E), 22:9914
- proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
- proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)
- triton reactions (t,p) at 13 MeV, proton angular distributions from, (E), 22:20620
- triton reactions (t,p) with, analysis using pairing vibrational model, (T), 22:42088

TIN ISOTOPES Sn-117
- alpha differential elastic and inelastic scattering cross sections at 34.4 MeV, angular distributions for, (E), 22:39649
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- energy levels from beta decay of indium-117, (E), 22:29983 (MIT-905-108, pp 1-32)
- energy levels from proton inelastic scattering and tin-

118 (p,d) reactions, (E), 22:27144
  energy levels from tin-118 (p,d) reactions, (E), 22:20627
  energy levels of, (E), 22:30009
  energy levels of, calculations using independent quasi particle model, (T), 22:1734
  energy levels of, spin-parity assignments for isobaric analog, (E), 22:42040
  energy-level transition in, measurement of conversion--electron particle parameters for M4, (E), 22:46731(R) (COO-1746-8)
  hyperfine structure in (5p6s) $^3P_1^0$ level of Sn I, 22:17388
  internal conversion coefficients and electron spectra for isomeric, (E), 22:18254
  internal conversion parameters for M4 transitions of, (E), 22:26929(R) (COO-1420-139)
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nuclear quadrupole deformation parameters from alpha elastic and inelastic scattering, (E), 22:39649
  photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
  proton differential inelastic scattering cross sections at 55 MeV, angular distributions for, (E), 22:27144
  proton inelastic scattering at 55 MeV, energy spectra and angular distributions from, (E), 22:30009
  proton reactions (p,d) and (p,t) with, research program on, (E), 22:37316(R) (UR-3591-9)
  proton reactions (p,d) at 55 MeV, angular distributions for, (E), 22:27144
  proton reactions (p,d) at 55 MeV, deuteron energy spectra and angular distributions from, (E), 22:30009
  proton reactions (p,n) at 4.5 MeV, angular distributions for, (E), 22:35293(R) (ORNL-4230)
  proton reactions (p,np) at 12 to 16 MeV, differential cross sections and spectra for, (E), 22:27211
  yields of isomeric, in products from neutron irradiation of tin compounds, 22:16619
TIN ISOTOPES Sn-118
  alpha differential elastic and inelastic scattering cross sections at 34.4 MeV, angular distributions for, (E), 22:39649
  alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
  alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
  deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
  deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
  deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
  deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
  deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
  energy levels from alpha inelastic scattering, (E), 22:32574 (MIT-2098-422, pp 95-105)
  energy levels from proton inelastic scattering and tin-119 (p,d) reactions, (E), 22:27144
  energy levels from proton inelastic scattering, (E), 22:35318
  energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
  energy levels from slow neutron resonance capture, (E), 22:16018
  energy levels from tin-116 (t,p) reactions, calculations using pairing vibrational model, (T), 22:42088
  energy levels of, calculations using quasiparticle second Tamm--Dancoff approximation for even-parity, (T), 22:20641
  energy levels of, calculations using shell model with modified delta-function effective residual interaction, (T), 22:18239
  energy levels of, lifetimes of, (E), 22:14056
  energy levels of, spins and parities of, (E), 22:9914
  energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
  energy-level transition probabilities from electron inelastic scattering, (E), 22:20578 (WASH-1079)
  energy-level transitions from decay of antimony-118, (E), 22:50638
  helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
  helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
  helium-3 reactions (He-3,d) at 19 MeV, deuteron spectra from, (E), 22:35327
  helium-3 reactions (He-3,d) at 28.2 MeV, deuteron spectra from, (E), 22:3734
  helium-3 reactions (He-3,d) with, angular distributions for, 22:39628 (CONF-670970-, pp 117-38)
  isomeric transition in, half-life for, (E), 22:32608
  neutron capture by, p-wave, (E), 22:3686 (BNL-11903)
  neutron elastic scattering at 4 MeV using polarized neutrons, differential cross section and polarization angular distribution for, (E), 22:14019
  neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
  neutron reactions (n,γ) with, 22:10517
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nuclear charge distribution in, (E), 22:20578 (WASH-1079)
  nuclear quadrupole deformation parameters from alpha elastic and inelastic scattering, (E), 22:39649
  nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
  oxygen-16 reactions (O-16,4n) at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
  oxygen-16 reactions (O-16,4n) with, angular distributions and γ spectra for, (E), 22:48528
  photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
  proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
  proton differential elastic scattering cross section and polarization at 40 MeV, angular distributions of, (E), 22:1598(R) (COO-1265-49)
  proton differential inelastic scattering cross sections at 55 MeV, angular distributions for, (E), 22:27144
  proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
  proton elastic scattering at 6.5 to 9.5 MeV using polarized beams, isobaric analog resonances in, (E), 22:42069
  proton elastic scattering at 6.5 to 9.5 MeV, polarization measurements near isobaric analog resonances in, (E), 22:42040
  proton inelastic scattering cross section for excitation of 2^+ collective state, (T), 22:42143
  proton inelastic scattering cross sections at 8.2 to 12.0 MeV, (E), 22:35318
  proton reactions (p,d) and (p,t) at 55 MeV, spectroscopic factors for, (E), 22:27144
  proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
  proton reactions (p,d) at 55 MeV, deuteron energy spectra and angular distributions from, (E), 22:30009
  proton reactions (p,t) at 20 MeV, angular distributions for, (E), 22:27202
  proton reactions (p,t) at 55 MeV, triton energy spectra and angular distributions from, (E), 22:30009
  proton reactions (p,t) with, spectroscopic factors from Tamm--Dancoff calculations, (T), 22:27263
  separation from tin-119, electromagnetic, 22:10517
  triton reactions (t,p) at 12 MeV, proton angular distributions from, (E), 22:20620
  triton reactions (t,p) with, analysis using pairing vibrational model, (T), 22:42088
  triton reactions (t,p) with, calculations using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
  triton reactions (t,p) with, spectroscopic factors from Tamm--Dancoff calculations, (T), 22:27263
  x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)
TIN ISOTOPES Sn-119
  alpha differential elastic and inelastic scattering cross sections at 34.4 MeV, angular distributions for, (E), 22:39649
  deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
  energy levels from proton inelastic scattering by tin-118, isobaric-analog, (E), 22:35318
  energy levels from tin-120 (p,d) reactions, (E), 22:20627
  energy levels of, calculations using independent quasi particle model, (T), 22:1734
  energy levels of, spin-parity assignments for isobaric analog, (E), 22:42040
  energy-level transition in isomeric, total internal conversion coefficient of 23.874-keV, (E), 22:53208
  gamma isomer shift in tin compounds, pressure dependence of, (E), 22:35317
  gamma resonance scattering at 23.8 keV, angular distribution for, (E), 22:22611
  gamma-ray diffraction from crystals of, scattering spectra at Bragg angle resonance, (E), 22:38740
  hyperfine structure in (5p6s) $^3P_1^0$ level of Sn I, 22:17388
  internal conversion coefficient for 23.9-keV ground-state transition in isomeric, (E), 22:18123(R) (RLO-1925-11)
  internal conversion coefficient for isomeric, effect of chemical binding on O-shell, (E), 22:14513 (BNL-50057, pp 60-78)
  internal conversion electron spectra for isomeric, (E), 22:18254
  isomer shift in transition-metal matrices, 22:17787
  isomeric transition in stannous chloride, 22:10517
  isomeric transition in, internal conversion coefficients for, (E), 22:53208

Knight shift of, in tin and its alloys, effects of temperature on NMR spectra of, 22:50234
Knight shift of, in tin--neodymium and tin--uranium alloys, effects of temperature on NMR spectra of, 22:50234
magnetic fields at nuclei of impurity atoms of, in ferromagnetic materials, Moessbauer study of, 22:13561
Moessbauer absorption spectra in metallic matrices, 22:46277
Moessbauer effect in cerium--tin intermetallic compounds at 4.2 and 300°K, 22:34747
Moessbauer effect in Co_2, MnSn, hyperfine fields from, 22:24471
Moessbauer effect in erbium--tin alloy, hyperfine magnetic fields from, (E), 22:52545
Moessbauer effect in ferrite spinels above Curie point, (E), 22:31959
Moessbauer effect in garnet-structure compounds, relation of tin ion position to isomer shift in, (E), 22:34775
Moessbauer effect in gold, silver, and copper alloys with manganese and iron, (E), 22:1342
Moessbauer effect in iron, cobalt, and nickel, (E), 22:1362
Moessbauer effect in isomeric, cross section for, (E), 22:53208
Moessbauer effect in Nb_3Sn alloy, temperature dependence of, 22:48181
Moessbauer effect in nickel, (E), 22:35285(R) (AERE-PR/NP-13)
Moessbauer effect in SnTe, Debye temperature determination from, (E), 22:41671
Moessbauer effect in solid solutions of barium stannate in barium titanate, (E), 22:17785
Moessbauer effect in tin compounds, isomer shift in, (E), 22:22228
Moessbauer effect in tin dioxide crystals, defect detection from 200 to 300-eV (n,γ) reactions by, (E), 22:29563
Moessbauer effect in tin sulfides dispersed in sulfur and in salol, 22:9448
Moessbauer effect in, ionization chamber as resonant gamma detector for studying, 22:47330
Moessbauer isomer shifts in tin compounds, correlation with electron densities at nucleus, (T), 22:52869
Moessbauer relaxation spectra in intermetallics $EuSn_3$ and $GdSn_3$, (E), 22:26461
Moessbauer spectra in semiconducting compounds, isomer shift in, (E), 22:26506
Moessbauer spectra in tin compounds, dependence of isomeric shift on atomic radius in, (E), 22:39185
Moessbauer spectra of, electric field gradient tensor for quadrupole splitting of, 22:5462
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
nuclear charge distribution in isomeric, (E), 22:14513 (BNL-50057, pp 60-78)
nuclear magnetic resonance and magnetic susceptibility in USn_3, 22:22232
nuclear magnetic resonance in indium--tin alloys, Knight shift as function of alloy composition in, (E), 22:36983
nuclear magnetic resonance in tin single crystals, pulsed, (E), 22:29577
nuclear quadrupole deformation parameters from alpha elastic and inelastic scattering, (E), 22:39649
nuclear radius change in tin compounds, Moessbauer study of, 22:22228
photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
production of isomeric, 22:10517
proton reactions (p,d) and (p,t) with, research program on, (E), 22:37316(R) (UR-3591-9)
proton reactions (p,d) at 55 MeV, angular distributions for, (E), 22:27144
proton reactions (p,np) at 12 to 16 MeV, differential cross sections and spectra for, (E), 22:27211
proton reactions (p,p'γ), (p,p'n), and (p,np') at 17 MeV, angular and energy correlations for, (E), 22:42048
separation from tin-118, electromagnetic, 22:10517
use of metastable, for Moessbauer analysis of chemical problems, 22:5457
x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)
yields of isomeric, in products from neutron irradiation of tin compounds, 22:16619

TIN ISOTOPES Sn-120
alpha differential elastic and inelastic scattering cross sections at 34.4 MeV, angular distributions for, (E), 22:39649
alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
argon-40 reactions (Ar-40,4n) at 158 MeV, cross sections and γ spectra for, (E), 22:27163
argon-40 reactions (Ar-40,4n) at 158 MeV, cross sections and γ spectra for, (E), 22:5860
description using Hartree-Fock formalism with realistic effective two-body forces, (T), 22:30068
deuteron inelastic scattering at 12 MeV, cross sections and spectra for, (E), 22:20636
deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
electron inelastic scattering at 150 MeV, form factors for, (E), 22:7725
energy levels from electron inelastic scattering, collective, (E), 22:7725
energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
energy levels from slow neutron resonance capture, (E), 22:16018
energy levels from tin-118 (t,p) reactions, calculations using pairing vibrational model, (T), 22:42088
energy levels of, calculations using quasiparticle second Tamm--Dancoff approximation for even-parity, (T), 22:20641
energy levels of, description using quasiparticle second Tamm--Dancoff approximation for odd-parity, (T), 22:27114
energy levels of, description using quasiparticle second Tamm--Dancoff approximation, 22:39678
energy levels of, description using two- and four-quasiparticle Tamm--Dancoff approximations with finite-range forces, (T), 22:27101
energy levels of, lifetimes of, (E), 22:14056
energy levels of, spins and parities of, (E), 22:9914
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
energy-level transition probabilities from electron inelastic scattering, (E), 22:20578 (WASH-1079)
energy-level transition probabilities from proton inelastic scattering, (E), 22:48519 (JAERI-1158, pp 56-63)
energy-level transitions from antimony-120 decay, (E), 22:50638
helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
helium-3 reactions (He-3,d) at 28.2 MeV, deuteron spectra from, (E), 22:3734
helium-3 reactions (He-3,d) with, angular distributions for, 22:39628 (CONF-670970-, pp 117-38)
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
nuclear charge distribution in, (E), 22:20578 (WASH-1079)
nuclear charge distribution in, measurement using electron elastic scattering, (E), 22:1682
nuclear quadrupole deformation parameters from alpha elastic and inelastic scattering, (E), 22:39649
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
oxygen-16 reactions (O-16,4n) at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
oxygen-16 reactions (O-16,4n) with, angular distributions and γ spectra for, (E), 22:48528
photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
proton differential elastic and inelastic scattering cross sections at 20.6, 25.2, 30.6, and 36.2 MeV, tables of, (E), 22:29984 (ORNL-4252)
proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
proton differential elastic scattering cross section and polarization at 40 MeV, angular distributions of, (E), 22:1598(R) (COO-1265-49)
proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
proton elastic scattering at 7 to 10 MeV, isobaric analog resonances in, (E), 22:11949(R) (ORO-2972-47)
proton elastic scattering at 7.4 to 9.1 MeV using polarized beams, isobaric analog resonances in, (E), 22:42069
proton elastic scattering at 7.4 to 9.1 MeV, polarization measurements near isobaric analog resonances in, (E), 22:42040
proton inelastic scattering at 15 MeV, DWBA analysis of angular distributions for, (E), 22:48519 (JAERI-1158, pp 56-63)
proton inelastic scattering at 30 MeV, collective-model distorted-wave calculations of, (T), 22:30102
proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
proton reactions (p,n) at 30 and 50 MeV with excitation of isobaric analog states in, (E), 22:46734
proton reactions (p,t) at 20 MeV, angular distributions for, (E), 22:27202

- proton scattering at 40 MeV, real part of optical potential for, (T), 22:44774
- x-ray spectra of μ-mesic, isotopic shift in, (E), 22:5817(R) (NYO-GEN-72-28)

TIN ISOTOPES Sn-121
- beta spectra, (E), 22:32606
- energy levels from tin-122 (p,d) reactions, (E), 22:20627
- energy levels of, calculations using independent quasi particle model, (T), 22:1734
- energy levels of, spin-parity assignments for isobaric analog, (E), 22:42040
- energy-level spins and parities, (E), 22:32606
- half-life, (E), 22:48542
- half-life, (E), 22:32606
- hyperfine interaction constants for, measurement using atomic-beam magnetic resonance, (E), 22:27233
- nuclear moments and spin of, measurement using atomic-beam magnetic resonance, (E), 22:27233
- Moessbauer spectra in isoelectronic antimony compounds, 22:11510

TIN ISOTOPES Sn-122
- alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- argon-40 reactions (Ar-40,4n) at 143 MeV, cross sections and γ spectra for, (E), 22:27163
- argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
- deuteron inelastic scattering at 12 MeV, cross sections and spectra for, (E), 22:20636
- deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
- energy levels of, calculations using quasiparticle second Tamm--Dancoff approximation for even-parity, (T), 22:20641
- energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
- energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
- neutron capture at 0.3 to 2.7 MeV, cross section for, (E), 22:48535
- neutron capture by tin-123 energy levels from, thermal, (E), 22:9893
- neutron capture cross section for, thermal, (E), 22:22608
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
- oxygen-16 reactions (O-16,4n) at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
- oxygen-16 reactions (O-16,4n) with, angular distributions and γ spectra for, (E), 22:48528
- proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
- proton differential elastic scattering cross section and polarization at 40 MeV, angular distributions of, (E), 22:1598(R) (COO-1265-49)
- proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
- proton inelastic scattering at 7.5 to 7.9 MeV, cross sections and spectra for inelastic, (E), 22:20628
- proton inelastic scattering by, angular distributions and excitation functions for, (E), 22:9914
- proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
- proton reactions (p,t) at 20 MeV, angular distributions for, (E), 22:27202
- triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)

TIN ISOTOPES Sn-123
- beta decay of isomeric, γ spectra and log-ft values for, (E), 22:27173
- beta decay of, γ spectra for, (E), 22:32641
- beta decay scheme of, γ spectra and log-ft values for, (E), 22:35342
- energy levels from thermal neutron capture in tin-122, (E), 22:9893
- energy levels from tin-124 (p,d) reactions, 22:20627
- energy levels of, calculations using independent quasi particle model, (T), 22:1734
- half-life, (E), 22:48542
- yield from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)

TIN ISOTOPES Sn-124
- alpha differential elastic scattering cross section at 104 MeV, diffraction pattern in angular distribution for, (E), 22:39594
- alpha inelastic scattering at 10 MeV with Coulomb excitation, (E), 22:37353
- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- argon-40 reactions (Ar-40,4n) at 143 MeV, cross sections and γ spectra for, (E), 22:27163
- argon-40 reactions (Ar-40,4n) with, cross sections and γ spectra for, (E), 22:5860
- deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
- deuteron reactions (d,He-3) at 22 MeV, spectra for, (E), 22:27143
- deuteron reactions (d,p) and (d,t) with, differential cross sections for, (E), 22:9914
- electron inelastic scattering at 150 MeV, form factors for, (E), 22:7725
- energy levels from electron inelastic scattering, collective, (E), 22:7725
- energy levels from proton inelastic scattering, deformation parameters for collective, (E), 22:53196
- energy levels from slow neutron resonance capture, (E), 22:16018
- energy levels from tin-122 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
- energy levels of, calculations using quasiparticle second Tamm--Dancoff approximation for even-parity, (T), 22:20641
- energy levels of, description using quasiparticle second Tamm--Dancoff approximation, 22:39678
- energy levels of, description using two- and four-quasiparticle Tamm--Dancoff approximations with finite-range forces, (T), 22:27101
- energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
- energy-level transition probabilities from α inelastic scattering with Coulomb excitation, E2, 22:37353
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27145
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:48527
- helium-3 reactions (He-3,d) at 25 MeV, angular distributions for, (E), 22:30010
- helium-3 reactions (He-3,d) at 25 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- neutron capture at 0.3 to 2.7 MeV, cross section for, (E), 22:48535
- neutron capture at thermal energies, tin-125 energy levels from, (E), 22:9893
- neutron capture cross section for, thermal, (E), 22:22608
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- nuclear charge distribution in, (E), 22:20578 (WASH-1079)
- nuclear charge distribution in, measurement using electron elastic scattering, (E), 22:1682
- nuclear electric quadrupole moment of, measurement using Coulomb excitation, (E/T), 22:46830
- nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
- oxygen-16 reactions (O-16,4n) at 80 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
- oxygen-16 reactions (O-16,4n) with, angular distributions and γ spectra for, (E), 22:48528
- photon reactions (γ,n), (γ,pn), (γ,2n), and (γ,3n) at 8 to 32 MeV, cross sections for, (E), 22:20578 (WASH-1079)
- photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
- proton differential elastic and inelastic scattering cross sections at 16 MeV, angular distributions for, (E), 22:27203
- proton differential elastic scattering cross section and polarization at 40 MeV, angular distributions of, (E), 22:1598(R) (COO-1265-49)
- proton elastic and inelastic scattering at 16 MeV, optical-model analysis of angular distributions for, (E), 22:53196
- proton inelastic scattering at 7.7 to 8.1 MeV, cross sections and spectra for inelastic, (E), 22:20628
- proton inelastic scattering by, angular distributions and excitation functions for, (E), 22:9914
- proton reactions (p,d) at 30 MeV, deuteron angular distributions and spectra for, (E), 22:20627
- proton reactions (p,t) at 20 MeV, angular distributions for, (E), 22:27202
- separation of antimony-125 and tellurium-125m from, by electroplating, 22:37776 (BNL-50082, pp 79-92)
- triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)

TIN ISOTOPES Sn-125
- beta decay of isomeric, antimony-125 energy levels from, (E), 22:1688
- beta decay of, antimony-125 energy levels from, (E), 22:16029
- containment of rocket reactor exhaust, performance of water scrubbing system for, 22:35567 (LA-DC-9555)
- energy levels from thermal neutron capture in tin-124, (E), 22:9893
- energy levels of, calculations using independent quasi

particle model, (T), 22:1734
gamma--gamma angular correlations in, (E), 22:24835(R) (BARC-305)
half-life, (E), 22:48542
separation of antimony-125 and tellurium-125m from, by electroplating, 22:37776 (BNL-50082, pr 79-92)
TIN ISOTOPES Sn-126
energy levels from tin-124 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
TIN ISOTOPES Sn-128
gamma spectra of, line energies for, (E), 22:48542
half-life, (E), 22:48542
TIN ISOTOPES Sn-129
existence of 1-hr isomeric, (E), 22:35331
Moessbauer effect in tin tetraiodide, analysis for lattice vibrations, 22:46235
production of isomeric, 22:20558
TIN ISOTOPES Sn-133
production of isomeric, 22:20558
TIN ISOTOPES Sn-134
neutron emission probability for, (E/T), 22:29994
TIN ISOTOPES Sn-135
neutron emission probability for, (E/T), 22:29994
TIN MINERALS
uranium content of, determination using uranium fission fragment tracks, 22:18979
TIN ORES
uranium content of, determination using uranium fission fragment tracks, 22:18979
TIN OXIDES
see also Stannates
analysis for oxygen by neutron activation, 22:30457
content in sands of Nettuno, Rome, 22:37891
diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.50}Sn_{.50})_{.86}Ti_{.14}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.60}Sn_{.40})_{.92}Ti_{.08}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.68}Ti_{.07}Sn_{.25})_{.98}O_3$, 22:4870 (SC-RR-67-730)
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
properties as ion-exchange material, 22:33552
radiation effects on, retention of tin-113, tin-117m, and tin-119m in products from neutron, 22:16619
radiation effects on, stabilization form of recoil tin-113m during reactor, 22:4210
radioinduced defects in single crystals of, ESR study of paramagnetic states of electron, gamma, and neutron, 22:44213 (ORNL-TM-2264)
radioinduced defects in, tin-119m Moessbauer effect detection of 200- to 300-eV (n,γ), (E), 22:29563
uranium content of, determination using uranium fission fragment tracks, 22:18979
TIN PHOSPHATES
properties as ion-exchange material, 22:33552
TIN PHOSPHIDES
see also Zinc Tin Phosphides
TIN SELENIDES
tin-119 Moessbauer effect in semiconducting, isomer shift in, (E), 22:26506
TIN SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
TIN SULFIDES
tin-119 Moessbauer effect in, dispersed in sulfur and in salol, 22:9448
TIN TELLURIDES
critical magnetic fields of, at ultralow temperatures, (E/T), 22:24231
ferroelectric transition in germanium-substituted Sn(Ge)Te, 22:11944(R) (AECL-2780)
superconducting properties as function of carrier concentration, (E/T), 22:29427
tin-119 Moessbauer effect in semiconducting, isomer shift in, (E), 22:26506
PbTe--SnTe, analysis for lead, tellurium, and tin by automatic titration, 22:35755
TIN, TETRAPHENYL-
radiation effects on, retention of tin-113, tin-117m, and tin-119m in products from neutron, 22:16619
Tin Zinc Phosphides
see Zinc Tin Phosphides
TIN VANADATES
properties as ion-exchange material, 22:33552
TIRES
radioinduced vulcanization of rubber, using spent fuel elements, 22:2283
wear of rubber, use of thallium-204 beta source to measure, 22:45251
TISSUE EXTRACTS
cysteine uptake by, from mice, 22:33865
pancreas, effects of, on iron-59 uptake by rats with fatty livers, 22:49244
radiation effects on content of thiols in, from melanomas of mice, uv, 22:36182
radiation effects on immune reactions to mixed liver and spleen, in rats, 22:25771
radiation effects on leukemogenic properties of, from leukemic mice, uv and x, 22:21458
radioprotective effect of spleen, on mice, x, 22:33873
radioprotective effects of spleen, against development of leukemia in mice, 22:45646
radioprotective effects of spleen, on mice, x, 22:21562
radioprotective effects of thymic, on regeneration of spleen, x, 22:6713(R) (COO-1455-2)
radioprotective effects of thymus, on survival of rats, relation of splenectomy to, 22:33844
use of anterior pituitary, with prostigmine for elimination of colic gases during intestinal radiodiagnosis, 22:4640
TISSUE HOMOGENATES
digestion of iodine-131-labeled thyroid, by pancreatin or pronase, 22:466
radiation effects on cholinesterase activity of supernatants from brain, x, 22:51375
radiation effects on dehydrogenase activity in, of rat liver, whole-body γ, 22:51481
radiation effects on enzymatic degradation of deoxyribonucleoprotein in, from rabbits, γ, 22:43229
radiation effects on liver or tumor, effects of, on hepatoma-susceptibility of rats, 22:6709 (ACRH-1000-21)
radiation effects on, of rat liver, chemiluminescence and ESR studies of, 22:51401
radioinduced formation of organic peroxides in, of rat brain, kidney, and liver, whole-body ionizing, 22:51480
Tissue Transplants
see Transplants
TISSUES
(See also specific tissues.)
see also Bone Marrow
see also Connective Tissue
see also Membranes
see also Placental Tissues
alpha attenuation in, measurement of, 22:19339
analysis for antimony, arsenic, copper, and mercury by neutron activation methods, 22:16410 (GA-8171, pp 295-314)
analysis for calcium, chlorine, potassium, and sodium by neutron activation methods, 22:10200
analysis for copper by neutron activation methods, 22:16467
analysis for copper, magnesium, manganese, and zinc by neutron activation methods including radiochemical separation technique, 22:25261
analysis for halogens and mercury by neutron activation methods, 22:25255
analysis for radioisotopes, autoradiographic methods for, 22:16474
analysis for strontium by atomic absorption spectrophotometry, 22:25245
analysis for thorium by neutron activation methods, 22:18711
analysis for thorium-228 and decay products, gamma spectroscopy method for, 22:49099
analysis of animal, for trace elements, activation, 22:16423
analysis of cancerous, for trace inorganic elements by activation methods, 22:47
analysis of neoplastic, for antigens, 22:14429 (ORNL-4196, pp 44-54)
analysis of normal and neoplastic, for amino acids, 22:14429 (ORNL-4196, pp 44-54)
analysis of rat, for polonium-210, effects of dry ashing in muffle furnace on, 22:25263
bremsstrahlung attenuation by, phantom studies on, 22:51618
cadmium-115 content of shell and soft, of snails, 22:4581
calcium-47 retention by body, of rats, effects of growth and maturation on, 22:40548
carbon-14 distribution in, of fish, analysis of, 22:25837
cesium-133 content of fetal and neonatal, in animals and man, mechanisms of selectivity for, 22:23462
cesium-134 distribution in, of mule deer, effects of age and sex on, 22:14908 (COO-1156-25)
cesium-134 distribution in, of rats, effects of age on, 22:36163
cesium-137 content of fetal and neonatal, in animals and man, mechanisms of selectivity for, 22:23462
cesium-137 content of human, 22:40692
cesium-137 content of human, sampled in Japan during 1966, 22:4605 (NP-17083)
content of oxytocin of, of rats, tritium tracer study of, 22:49201
content of trace elements in, use of x-ray spectrometers for determination of, 22:6717 (UCD-472-210)
copper-64 content of shell and soft, of snails, 22:4581
cysteine uptake by, in mice, 22:33865
distribution of carbon-14- and tritium-labeled tetraphenylporphinesulfonate in, of rats, 22:8447
distribution of micro elements in various, autoradiographic method of determining, 22:14525
distribution of tritium-labeled thymidine in animal,

technique for water-soluble autoradiographic study of, 22:45381 (EUR-3290f-e, pp 29-38)
effects on cobalt-60 γ-radiosensitivity of survival in mice, 22:12911
fission product distribution in, of dogs, guinea pigs, rabbits, and rats, unseparated uranium, 22:8473
gamma attenuation in human, 22:36324
gamma dose to, at high altitude, design and performance of tissue-equivalent proportional detectors for measuring, 22:4482 (BNWL-SA-1364)
gamma dosimetry in, 22:28187
gamma irradiation of animal and plant, 22:2290(P)
growth of neoplastic, in relation to regulatory function of histones, 22:12206(T) (LA-tr-68-1)
identification by neutron activation methods, 22:48835
iodine-131 uptake by exoskeletal and fat body, of insects, 22:19262
iron-59 content of, in rabbits, following chronic oral administration, 22:21452
irradiation of, radioprotection during, 22:39956 (ISS-67/30)
kinetics of reproduction in lymph, in relation to secondary antibody response, 22:14906 (BNL-50057, pp 123-37)
lymphoid, in mice, relation of germinal centers in, to immunological memory, 22:43217
mercury content of, determination of, by double isotope technique, 22:40526
meson (π^+) and meson (π^-) absorption in simulated, (E), 22:43324
metabolism of colloidal phosphorus-32-labeled zirconyl phosphate in, of mice, 22:6755
microwave absorption by human, for use in localization of tumors, 22:6842
microwave sorption in human, attenuation coefficients for, 22:51628
neutron dose to, at high altitude, design and performance of tissue-equivalent proportional detectors for measuring, 22:4482 (BNWL-SA-1364)
neutron dosimetry at depth in, use of plastic phosphor dosimeter to measure proton recoil dose for, 22:45508(R) (PG-Report-826)
nuclear reactions in living, 22:28509
oxygen content of human, effects of radioprotective agents on, 22:45606
penetration of, computer code analysis of proton, 22:35668 (ORNL-RSIC-22(Pt.2))
phosphorus-32 content of plant, autoradiographic method for determination of, 22:31070
photon reactions with, fluence of low-energy electrons produced in and emitted from, 22:43114
plutonium and uranium determination in, by particle track analysis in polycarbonate plastics, 22:16883
plutonium content of human, following occupational exposure, 22:38265 (UCRL-18140, pp 103-22)
plutonium-239 distribution in swine, following intravenous and oral administration, 22:47468
polonium-210 content of dried plant, relation of storage time to, 22:38287
polonium-210 content of human, 22:40692
potassium-40 content of fetal and neonatal, in animals and man, mechanisms of selectivity for, 22:23462
proton energy distribution in, performance of silicon detectors in determining recoil, 22:37988 (CONF-670545-, pp 178-84)
proton recoil in fast neutron-irradiated, use of polythene phantom to study effects of bone on, 22:516
radiation absorption by tumor, characteristics of neodymium and ruby laser, 22:4617
radiation depth dose in, method for calculation of soft x, 22:49356
radiation dose to human, following inhalation of xenon-133, β and γ, 22:40664 (NP-17466)
radiation dose to human, use of nuclear emulsions for measurement of, 22:25842
radiation dose to soft, effects of adjacent plane bone interface on x, 22:510
radiation dose to, at interface with bone, α, 22:45542
radiation dose to, calculation of buildup of, 22:38315
radiation dose to, effects of elemental composition on specifications for ionizing, 22:28288 (ORNL-4100, pp 166-77)
radiation dose to, from neutrons produced by ^{9}Be(^{3}He,n)^{11}C reaction in cyclotrons, 22:19370
radiation dose to, in relation to exposure and LET, electron and photon, 22:38307
radiation dose to, LET and RBE for galactic cosmic, 22:4598 (AD-648299)
radiation dose to, methods for measurement and calculation of integral γ and x, 22:25836
radiation dose to, protective effects of shielding on Apollo and Gemini space vehicles against solar flare, 22:2501 (AD-635204)
radiation dose to, with respect to depth, method for determining 5.2-GeV electron, 22:2507 (ORNL-TM-2026)
radiation dosimetry at interface of soft, with bones, fast neutron and x, 22:38314
radiation dosimetry in heterogeneous, effects of air cavities, bone density, and tissue thickness on, 22:507
radiation dosimetry in phantoms of human, γ, 22:23538
radiation dosimetry in, following radium-226 inhalation, 22:31061 (NP-17201)
radiation dosimetry in, point-source beta, 22:38387
radiation dosimetry in, using polystyrene phantom, proton, 22:15005
radiation effects on activity of enzymes in, of brain in rats, x, 22:23447
radiation effects on adenosine triphosphatase activity of hematopoietic, of rats, protective effects of drugs against γ, 22:8592(R) (AD-629311)
radiation effects on antitoxin-localizing ability in, of rabbits, effects of dose on x, 22:6712(R) (COO-1172-7)
radiation effects on aspartate aminotransferase activity in liver, of rats, effects of liver excision on x, 22:28348
radiation effects on brain, following gold-198 administration to hydrocephalic dogs, pathology of β, 22:10688
radiation effects on C-reactive protein content of malignant and normal, of man, electron, γ, and photon, 22:45407
radiation effects on cancerous, protective effects of RNA on, 22:33875
radiation effects on chemical and physical properties of, in brain of rats, x, 22:23447
radiation effects on connective, of gastrointestinal tract of fish, internal β and γ, 22:33971
radiation effects on connective, review of, 22:33946
radiation effects on content of amino acids in, of brain in rats, x, 22:23447
radiation effects on content of calcium, potassium, and sodium in, of rabbits, polonium-210 α and γ, 22:47611
radiation effects on content of RNAase in, of guinea pigs and rats, whole-body x, 22:40538
radiation effects on crypt and villi, in intestine of mice, comparison of fast neutron and x, 22:40935
radiation effects on deep, RBE of pion, 22:8599 (CONF-670305-, pp 346-8)
radiation effects on developing dental, of rats, effects of age on x, 22:4696
radiation effects on developing, of rat teeth, histological study of x, 22:45697
radiation effects on distribution of extracellular enzymes in, 22:45508(R) (PG-Report-826)
radiation effects on hard and soft dental, microscopic analysis of laser, 22:47465
radiation effects on histamine content of rat, effects of dose on γ, neutron, and proton, 22:25726
radiation effects on immune reactions in animal, indicator method for γ, 22:47621
radiation effects on immune reactions to transplanted, in animals and man, x, 22:425(T) (AEC-tr-6726)
radiation effects on lipogenesis and lipolysis in adipose, of rats, effects of time on uv, 22:21441
radiation effects on living, bibliography on, 22:4663 (AED-C-04-30)
radiation effects on localization of injected protein in, of rabbits, effects of inflammation on x, 22:6712(R) (COO-1172-7)
radiation effects on mitosis and mitotic spindles in cultured, from salamanders, action spectra of microbeam uv, 22:14930
radiation effects on neoplastic and normal, of man, RBE for high-energy electron and x, 22:38276
radiation effects on oral, of rats, histochemical and histological analysis of deuteron, 22:568
radiation effects on oxygen tension of neoplastic and normal, in man, 22:19382
radiation effects on porphyrin complexes of respiration in, mechanism of recovery from, 22:23425
radiation effects on regeneration of, by planaria, x, 22:40842
radiation effects on release of leukemogenic agent from, of mice, x, 22:28633
radiation effects on respiration in, of rat brain, x, 22:49495
radiation effects on soft oral, of rats, effects of pulsing on laser, 22:40938
radiation effects on subcutaneous, during radiotherapy, 15-MeV electron, 22:51764
radiation effects on subcutaneous, of rabbits, effects of dose on high-energy electron, 22:38419 (CEA-R-3294)
radiation effects on surrounding, following therapy of laryngeal tumors, high-energy electron, 22:51732
radiation effects on swine, chronic iodine-131 β and γ, 22:51298(R) (COO-1484-3)
radiation effects on temperature of phantom, effects of metal implants on IFR, 22:43343
radiation effects on transplants of, in twin cattle, γ, 22:40830 (ORO-657, pp 35-45)
radiation effects on, bibliography on, 22:51869 (AED-C-04-31)
radiation effects on, effects of LET and oxygen on, 22:25990
radiation effects on, effects of LET and thickness on electron, 22:25755
radiation effects on, factors determining renewal response following continuous, 22:49469 (CONF-680410-, pp 3.1-12)
radiation effects on, of animals and man, review of pathological Thorotrast α and γ, 22:33948
radiation effects on, of cattle and sheep,

histopathological study of, following autopsy, 22:40830 (ORO-657, pp 35-45)
radiation effects on, of human breast following therapy for carcinoma, histological study of x, 22:30981
radiation effects on, of human hand following therapy, latent pathological x, 22:43440
radiation effects on, of man exposed to atomic bombings at Hiroshima and Nagasaki, review of carcinogenic and pathological, 22:15048
radiation effects on, of man, protective effects of chemicals against ionizing and high-frequency electromagnetic, 22:23673
radiation effects on, of tomato plants, protective effects of sulfhydryl compounds against lytic γ, 22:51832
radiation effects on, parameters required for measurement of high-energy charged-particle, 22:8434 (CONF-670305-, pp 197-220)
radiation effects on, population kinetic studies of, 22:21579
radiation effects on, use of thermoplastic material for measuring of, 22:6354(P)
radiation penetration into, of man, measurement of β, 22:49407
radioactivity of transplants of, following exposure to sterilizing doses, 22:8666
radiography of soft, use of Compton and photoelectric effects in, 22:10785
radioinduced actinic cheilitis in lip, of man, histopathology of solar uv, 22:45700
radioinduced changes in skin, of man, histological analysis of x, 22:28672
radioinduced inactivation of thromboplastin in brain, uv, 22:47588
radioinduced inflammations in, of man during therapy for cancer of female genital organs, histological and serological analysis of γ, 22:15100
radioinduced molecular crosslinking in, in relation to aging, cosmic and uv, 22:49193
radioinduced splatter of tumor, design of device for trapping laser, 22:43358
radioisotope content of soft, in radium dial painters, 22:38198 (UCRL-18140, pp 159-73)
radioisotope content of, method for liquid scintillation counting of carbon-14 and tritium, 22:43266
radioisotope localization in, use of focusing collimators for, 22:45608
radioisotope uptake and metabolism by, of animals and man, 22:8644
radioisotope uptake by cultured bone, effects of lanthanum on barium-140, calcium-45, and strontium-89, 22:45456
radioisotope uptake by, of epididymus of mice and rats, cadmium-109 and zinc-65, 22:51365
radiometry of tryptophan 5-hydroxylase activity in, of rats, 22:457
radiomimetic effects of irradiated sugars on cultured vegetables, 22:43261
radiosensitivity of animal and human, effects of dose on, 22:36377
radiosensitivity of cricket, effects of oxidation-reduction potential during anaerobiosis on, 22:25869
radiosensitivity of neoplastic and normal, in man, effects of systemic factors on, 22:19452
radiosterilization of preserved transplants of, in man, γ and neutron, 22:52093
radiosterilization of thyroid, for transplantation in man, γ, 22:52098
radiosterilization of transplants of, effects of, on mechanical strength, β and γ, 22:8666
radiotherapy of diseases in deep, use of heavy charged particle beams for, 22:31177
radiotherapy of sarcomas in soft, of man, comparison of high-energy electron and x, 22:51716
radiotherapy of sarcomas of soft, in man, high-energy electron, 22:51715
radiotherapy of tumors in, of man, effects of density inhomogeneity on treatment planning for electron, 22:51749
scanning of blood circulation in, using xenon-133, 22:25946
scanning of overlapping, mathematical analysis of use of double isotope technique for, 22:40743
sorption of plutonium nitrate by, of swine, effects of chilling and tourniquets on, 22:10677 (BNWL-480, pp 99-106)
standards for, use of freeze-dried foods as, 22:14430 (ORNL-4196, pp 55-9)
strontium content of shell, of bivalve marine mollusks, effects of temperature on, 22:43212
strontium-89 content of, in chickens, 22:6768
strontium-89 content of, in chicks, effects of calcium and phosphate content of diet and vitamin D_3 on, 22:36215
strontium-89 metabolism in, of chickens, effects of calcium, phosphate, sodium alginate, and vitamin D_3 content of diet on, 22:36215
strontium-89 uptake and distribution in, of apple trees, 22:40606
strontium-89 uptake and retention by, of chickens, effects of phosphorus on, 22:14973
strontium-90 content of human, 22:40692
sulfur-35 distribution in, of mice, use of whole body autoradiography for determination of, 22:16988
technetium-99 content of human, following use for brain scanning, 22:49447
technetium-99 content of human, method for high resolution autoradiography of, 22:45451
transplants of tumor, effects of, on phagocytosis in spleen of mice, 22:19235(R) (COO-1282-1)
uptake of tritium-labeled thymidine by DNA from histones of tumor, 22:439
xenon-133 content of, of rabbits and rats, 22:4575
zinc-65 content of shell and soft, of snails, 22:4581
zinc-65 content of, in fish from Columbia River, 22:10740 (BNWL-480, pp 153-93)
zinc-65 metabolism in, of calves and goats, effects of dietary cadmium and EDTA on, 22:10698

TITANATES
see also Barium Strontium Titanates
see also Barium Titanates
see also Cobalt Titanates
see also Europium Titanates
see also Iron Titanates
see also Lanthanum Titanates
see also Lead Titanates
see also Lead Zirconium Titanates
see also Strontium Titanates
book: Continuous Compilation of New Reference Data on Diffusion Processes in Inorganic Solids and Their Melts, Vol. 1, No. 1, 22:31381

Titania
see Titanium Oxides

TITANIUM
abundance in Arcturus, (E), 22:17263
abundance in B stars, (T), 22:4941
abundance in γ Capricorni, (E), 22:38692
abundance in HR 4072, (E), 22:11172
abundance in HR 774, (E), 22:23983
abundance in spectrum of HD 101065, (E), 22:8886
abundance in tau Bootis, (E), 22:45848
adhesion to titanium under high vacuum, force and torque measurements of, 22:654 (N-67-22884)
alpha reactions with, x-ray excitation cross sections for, 22:52525
analysis for deuterium using hollow cathode discharge, 22:16431
analysis for hafnium by neutron activation methods, 22:37694
analysis for hydrogen, spectral-isotopic method for, 22:19534
analysis for nitrogen and oxygen by proton-beam activation, microscale, 22:30427 (BNL-50083, pp 192-202)
analysis for oxygen by fast neutron activation methods, 22:6284
analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
analysis for oxygen, fast-neutron activation method for, 22:37700
analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
analysis for trace elements, methods for, 22:37679
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
argon-ion scattering at 2 keV on target electrodes of, currents produced in, 22:52546
argon-ion sputtering at 3 to 9 keV, 22:15332
atomic weight of, based on carbon-12 = 12, 22:42698
book: Uncommon Metals, 22:10981
cathodic behavior in sulfuric acid solutions of benzaldehyde or oxalic acid, 22:52172
chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
cladding steel with, explosive method for, 22:19504
coating for, protective, 22:41009(P)
coating of sintered, method for, 22:6946
coating of, process using molten aluminum, 22:21679
compatibility with uranium phosphide at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with aromatic and heterocyclic azomethines, preparation and structure of, 22:8076
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with rutin and quercetin, infrared study of structure of, 22:16493
compounds, analysis for hafnium by neutron activation methods, 22:37694
compounds, uses in nuclear technology, 22:42811 (HMI-B-69)
corrosion by acids, 22:19484
corrosion by air at 1000°C, kinetics of, 22:23721
corrosion by aqueous hydrochloric acid, effects of concentration and temperature on, 22:31330
corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
corrosion by aqueous saline solutions at less than or equal to 220°C, 22:41010
corrosion by high-temperature aqueous sodium chloride, effects of concentration on crevice, 22:31330

corrosion by liquid sodium, 22:12966
corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
corrosion by saline water, effects of molybdenum, nickel, and palladium on, 22:26029 (ORNL-4229, pp 71-83)
corrosion by water vapor at 1000°C, 22:23721
corrosion of, anodic film growth in, 22:26029 (ORNL-4229, pp 71-83)
corrosion of, effect of pure and seawater on, 22:4748
corrosion resistance of nuclear materials containing, 22:31357
corrosion, recent developments in, 22:31322
crystal structure, 22:34070
crystal structure, 22:11000
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
crystallization of types I and II, effects of temperature on, 22:21711
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deformation faulting analysis of, (T), 22:699
deposition on aluminum oxide, using electron beams, 22:23870
deposition on cold surfaces for production of ultrahigh vacuum, 22:16835
deposition on cold surfaces for production of ultrahigh vacuum, 22:16836
deposition on niobium alloys of, description of nonelectrolytic process for, 22:30389
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
detection of, use of separated acetylene--air or acetylene--nitrous oxide flames for, 22:37664
determination as ascorbate, spectrophotometric, 22:2009
determination as impurity in amorphous boron, spectrographic, 22:16429
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
determination as thiocyanate complex by paper chromatography, 22:21040
determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic absorption or fluorescence spectroscopy, microwave-excited electrodeless discharge tubes for, 22:48844
determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
determination by gravimetry using sodium salt of benzilic acid, 22:4026
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination in acetic acid and inorganic acids by complexing with molybdic acid, photometric, 22:30495
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in cerium--thorium--titanium--zirconium mixtures by ring-oven method, 22:18708
determination in corrosion water and sodium sulfate by x-ray fluorescence spectrometry, 22:33280
determination in highly alloyed steels by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
determination in ilmenite and ferrotitanium by gravimetric and spectrophotometric methods using 2-benzoylacetanilide, 22:28
determination in iron ores, spectrochemical, 22:27615
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in mild steel, x-ray fluorescence, 22:50938
determination in niobium alloys, ion-exchange separation in, 22:48838
determination in ores and rocks using portable radioisotope x-ray fluorescence analyzer, 22:48829
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in silicates, spectrometric, 22:22960
determination in solutions of refractory materials, spectrographic, 22:21032
determination in thorium--titanium--uranium--zirconium mixture by ring-oven method, 22:18708
determination in titanium oxides by neutron activation methods, 22:37686
determination in titanium--vanadium alloys, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, use of paper chromatography in, 22:25258
determination using sulfosalicylic acid, effects of uranium on spectrophotometric, 22:16443
deuteron reactions with, neutron yields from, 22:20370 (KN-67-655(R))
diffusion in beta, themo- and electrotransport in, 22:13600
diffusion in hcp phase, self, 22:43577
diffusion in modified Hastelloy N, 22:47675 (ORNL-4254, pp 183-240)
diffusion in titanium--vanadium alloys, 22:8728 (ORNL-4170, pp 15-18)
diffusion of hydrogen in, from 35 keV H^+ ion implantation, 22:52171
diffusion of molybdenum, tungsten, and zirconium in, 22:13009
diffusion of, dependence on temperature of self, 22:686
dislocations in, effects of elastic anisotropy on, 22:49761
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
effects of additive of, on recovery of aluminum and aluminum alloy lattice defects after deformation at 78°K, 22:19560
effects of metallic, on corrosion of steel loops by boiling mercury, 22:4745
effects on boron hardenability of low-carbon structural steel, 22:49745
effects on carbon transfer in stainless steel at 1400°C, 22:12968
effects on colorimetric determination of uranium, 22:33262
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on creep-rupture properties of chromium--molybdenum nickel alloys, 22:47675 (ORNL-4254, pp 183-240)
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on electronic specific heat of iron, 22:41049
effects on ferromagnetism of zinc--zirconium alloys, (E), 22:1320
effects on gamma radiation effects on electric properties of glass, 22:21097
effects on lanthanum determination by flame photometric titration, 22:48836
effects on lattice constant of molybdenum, 22:2638
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on mechanical properties of manganese steel, 22:6998
effects on melting point and transition temperature of yttrium, 22:23775
effects on photometric determination of indium, 22:2007
effects on polarographic determination of cerium in yttrium oxide, 22:50929
effects on properties of copper--zirconium alloys, 22:6987
effects on properties of niobium alloys, 22:23706 (BM-RI-7116)
effects on separation of niobium from tantalum by precipitation by oxine, 22:4038
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on superconducting transition temperature of aluminum, (E), 22:7217
effects on superconductivity and transition temperatures of intermetallic Nb_3Sn, 22:6984(T) (CONF-640310-1)
effects on tensile properties of type 304 stainless steel as additive, 22:19579 (BNWL-455, Paper 11.1-18)
effects on thermodynamic properties of hydrogen dissolved in α-, 22:10965
effects on titrimetric determination of uranium, 22:22972
effects on yield points of vanadium alloys, 22:2616(T) (ORNL-tr-1791)
electric conductivity at 2 to 300°K, 22:31375
electrodesorption of gas from, effects of 10^{-6} to 10^{-9} torr on, 22:52215(T) (SLAC-Trans-86)
electromigration of, effects of temperature on, 22:45765(R) (RPI-1044-18)
electron band structure of, from x-ray bremsstrahlung

isochromats, 22:34783
electron reflection at 600 to 1200 keV, 22:45965
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electronic structure, x-ray isochromat spectral study of, 22:17747
embrittlement by hydrogen, NMR studies on, 22:24408 (IA-1128, pp 21-54)
fabrication for chemical plants, 22:38526
fabrication of powder shapes of, by molding and sintering, 22:638(P)
fabrication of wires of, for ultrahigh vacuum sublimation pumps, 22:16846
fabrication, recent developments in, 22:31322
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
hydridation at less than 100°C in electrolytic cells, effects of etching on, 22:19483
hydrogen--ion reactions at 3 to 30 keV, trapping in, 22:1005
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
ionization by electron impact, calculations of cross sections and rate coefficients of, 22:43856 (IPP-1/76)
iron-57 Moessbauer effect in, effect of high pressure on, 22:17722 (COO-1198-512)
iron-57 Moessbauer effect in, effects of pressure on f number and isomer shift in, (E), 22:46229
joining aluminum to, explosive method for, 22:38528
joining stainless steels to, explosive method for, 22:38528
joining to low-carbon steels, explosive method for, 22:38528
joining to stainless steels, explosive method for, 22:38528
joints with different materials, metallography of, 22:43553
machining of, thermal expansion and reduced tool life in hot-, 22:21678
mechanical properties at cryogenic temperatures, 22:45778
melting and casting using plasma electron beam, 22:6941
melting in electron beam furnace, 22:23734
melting of, heat transfer to water-cooled crucibles during vacuum arc, 22:232 (BM-RI-7035)
metallurgical properties of nuclear materials containing, 22:31357
neutron capture by, γ spectra for thermal, (E), 22:48476 (IA-1102)
neutron capture using polarized beam, γ circular polarization from thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron cross sections and scattering law parameters for, ENDF/B data compilation for, 22:50559 (ANL-7387)
neutron cross sections for, compilation of ENDF/B, 22:32959 (ANL-7310, pp 1-30)
neutron elastic scattering at 1.5 MeV, angular distributions and differential cross section for, (E), 22:53154
neutron total cross section at 300 to 1200 keV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 6.0 to 7.5 MeV, fluctuations in, (E), 22:20537
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
nitrogen-ion sputtering at 3 to 9 keV, 22:15332
oxidation-rate constant at 77 to 298°K and 10^{-6} to 10^{-8} torr oxygen, method for, 22:38519
oxygen-ion sputtering at 3 to 9 keV, 22:15332
performance as catalyst for graphite preparation from carbon, 22:12993
phase transitions in, high-pressure electric resistance cell for studying, 22:43151 (FOA-4-4361-23)
photoeffect quantum yields from, (E), 22:38799
physical properties and thermal treatment of nuclear materials containing, 22:31357
plating process for, 22:34030
precipitation from boiling acid solutions by phytin, 22:33319
preparation, 22:36471
preparation as flux-monitor by irradiation in MTR for intercalibration of counting laboratories, 22:43615(R) (BNWL-710)
preparation by powder metallurgy, review, 22:49682
preparation of deuterated targets of, for neutron production, 22:11746 (CEA-R-3065)
preparation of reinforced composites of, incorporating molybdenum fibers, 22:41022
preparation of self-supporting foils of, 22:37272
preparation of tritium-impregnated targets of, 22:37241
pressure broadening and shift of lines of, by argon, (E), 22:47794
production and uses of, 22:36445
production of ultrapure, methods for, 22:49701
properties and uses of, review of, 22:15182 (IS-1757)
properties for use in gamma thermometers, 22:43055
properties for use in vacuum systems, 22:16828
properties of and uses for, in the chemical industry, review of, 22:21712
properties of powder compacts of, prepared by high-velocity impact, 22:43562
proton diffusion in, determination by condensation method, 22:26203(T) (NP-tr-1631)
proton diffusion in, determination by condensation method, (E), 22:7166
proton reactions at 660 MeV with, secondary nucleon flux and dose from, (E), 22:31912
proton reactions at 9.1 MeV, total cross section for, (E), 22:26970
radiation effects on corrosion of electrodes of, in acid and basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on creep of, neutron, 22:2670
radiation effects on electric resistivity of thin films of, argon ion, (E), 22:26494
radioinduced diffusion of cobalt in, electron and γ, 22:8800
radioinduced hydriding of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
radioinduced oxidation of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
reactions of metal sponge of, with nitrogen, use of kinetics of, for design of gettering system, 22:4065 (ANL-7167)
reactions with boron trifluoride at 1600°C, preparation of titanium borides by, 22:7034
reactions with carbon at 1500 to 2200°C, phase studies of, 22:31506
reactions with phosphonazo III, spectral studies on, 22:48867
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
separation by extraction using salicylohydroxamic acid, spectrophotometric study of, 22:45172
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation from 32 cations by paper chromatography, 22:25257
separation from aluminum and iron by paper chromatography, 22:25257
separation from aqueous solutions by extraction after complexing with pyrocatechol and various quaternary salts, 22:48906
separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
separation from iron and molybdenum by ion exchange chromatography, 22:48908
separation from iron and vanadium by paper chromatography, 22:4248
separation from iron by anion exchange, 22:10328
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals by precipitation using cinnamic acid, 22:37855
separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from mixture of metals by ring-oven method, 22:18880
separation from niobium and tantalum, 22:2012
separation from niobium, frothing method for, 22:4262
separation from ores, 22:40191
separation from other metal ions by paper chromatography, 22:25258
separation from plutonium by fluoride volatility process, 22:48900 (RFP-1052)
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from sulfuric acid solutions by solvent extraction using TBP, 22:23119
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from tungsten by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
separation from uranium hexafluoride by selective sorption techniques, 22:4240
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of hafnium and/or zirconium from solutions containing phosphorus and, 22:37871(P)
separation of lead from, by complexing with thionalide, 22:4024
separation of niobium and tantalum from hydrochloric acid solutions of, by solvent extraction using TBP, 22:27888
separation of niobium from, in hydrochloric acid by solvent extraction using TBP, 22:37863
sintering powdered carbides and nitrides of, using inert gas atmospheres, 22:742(P)
slip modes of hexagonal-close-packed, 22:1314
solubility in liquid plutonium at 700 to 1000°C, 22:38555
solubility in mercury at 500 to 750°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336

sorption by manganese dioxide from nitric acid, 22:157
sorptive properties for hydrogen, use of uranium or titanium hydrides to increase, 22:13005(T) (UCRL-Trans-10180)
sorptive properties of films of, for nitrogen, development of ultrahigh vacuum system to study, 22:23253
spectral lines for center of solar disk of, curve of growth for, (E), 22:52443
spectrum in sunspots, curves-of-growth for, 22:13150
Stark effect constants for, quadratic, 22:7136
surface friction and wear of, effects of crystal structure and properties on, 22:52177
surface friction of single-crystal riders of, sliding on polycrystalline titanium disks, 22:52177
tensile properties at 77 to 1133°K, (E), 22:21697(R) (ORO-3262-5)
tensile properties of hcp, effects of interstitial nitrogen and oxygen on, 22:23769
tensile properties of, determination by electric conductivity at cryogenic temperatures, 22:34052
thermal conductivity at room temperature, 22:679
thermal expansion at -180 to 1500°C, 22:34070
thermal expansion of polycrystalline, at 2 to 30°K, 22:43576
transformation mechanisms of, electron microscope studies of, 22:4798(R) (RLO-1375-5)
triton reactions with, neutron yields from, 22:20370 (KN-67-655(R))
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
uranium diffusion in β-, rates at low uranium concentrations, 22:13000 (CEA-R-3253)
use as intermediate layer in welding graphite, 22:15242
use in heat exchanger tubes in desalination plants, 22:31321
use in image-detecting plate for neutron radiography, 22:37913(P)
use of beds of particles of, for purification of terphenyl, 22:30653(P)
use of tritium-impregnated films of, for neutron production, lattice parameters for, 22:26762(R) (NP-17412)
use with rhenium in tungsten-base alloys for high temperature strength and reduced ductile-brittle transition temperature, 22:47681(P)
uses, recent developments in, 22:31322
valency-band structure of, 22:21721
welding method for, using liquid nitrogen cooled electrodes, 22:41015
welding of, electron beam method for, 22:19505
welding of, method and temperature for diffusion, 22:6943
welding plates of, distribution of copper, nickel, and niobium from wire inserts in fusion zone of electron beam, 22:41026
welding technique for, development of explosive, 22:38528
x-ray spectra from π-mesic atoms of, meson(π) mass from, (E), 22:5492

TITANIUM ALLOYS AND SYSTEMS
  see also A-286 (Iron Alloy)
  see also D-36 (Niobium Alloy)
  see also Hastelloy R235
  see also Inconel X
  see also Inconel X750
  see also Inconel 702
  see also Inconel 713C
  see also Inconel 718
  see also Nimonic 80A
  see also Nimonic 90
  see also Nimonic PE 16
  see also Rene-41
  see also TZC (Molybdenum Alloy)
  see also TZM (Molybdenum Alloy)
  see also Udimet 500 and 700
  see also Waspaloy
analysis for molybdenum using ion exchange, thermometric, 22:16449
analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
analysis of, methods for, 22:37679
behavior under creep-inducing conditions, review, 22:45770
coating for, protective, 22:41009(P)
compatibility with compressed methanol, 22:31321
corrosion by aqueous hydrochloric acid, effects of concentration and temperature on, 22:31330
corrosion by aqueous saline solutions at less than or equal to 220°C, 22:41010
corrosion by high-temperature aqueous sodium chloride, effects of concentration on crevice, 22:31330
corrosion by saline water, effects of temperature on pitting potentials in, 22:26029 (ORNL-4229, pp 71-83)
corrosion protection by coating with aluminum zirconium silicides, 22:34014(P)
development for aerospace and cryogenic uses, 22:45775
development in, 22:31322
effects on steels for steam turbine components, 22:47672 (CONF-671007-5)
mechanical properties at cryogenic temperatures, 22:45778
melting and casting using plasma electron beam, 22:6941
melting of, inspection processing and techniques for consumable electrode vacuum, 22:28759
phase equilibria in, effects of transition metal additions on alpha (cph) reversible beta (bcc), 22:52201
preparation of high-quality, by vacuum melting using addition agents, 22:28759
production and uses of, 22:36445
properties for use in vacuum systems, 22:16828
radiation effects on mechanical properties of 55A, cryogenic-neutron, 22:41075(R) (N-68-13825)
use of beds of particles of, for purification of terphenyl, 22:30653(P)
welding, effects on mechanical properties of, 22:2619
wetting by copper--iron and copper--nickel eutectics, 22:17090
Al--Co--Cr--Mo--Ni-base--Ti--W, coatings for, corrosion and oxidation of boron-base, 22:6935
Al--Co--Cu--Fe--Ni--Ti, Moessbauer spectral studies of alnico 8, 22:5431
Al--Co--Ni--steel--Ti crystal structure and properties of maraging-processed, 22:45745 (UCRL-18043, pp 107-53)
Al--Cr--Co--Mo--Nb--Ni-base--Ti, fabrication of In-100, methods for powder metallurgy, 22:10978
Al--Cr--Co--Mo--Ni-base--Ta--Ti, fabrication of B-1900 alloy, methods for powder metallurgy, 22:10978
Al--Cr--Co--Mo--Ni-base-Ti, extrusion of rods of, method for, 22:34028
Al--Cr--Co--Nb--Ni-base--Ti--W, fabrication of MAR-M-200, methods for powder metallurgy, 22:10978
Al--Cr--Ni--Ti--W, phase equilibria at 850°C, 22:15211
Al--Cr--Ti-base--V, crystallization of, effects of temperature on, 22:21711
Al--Cr--Ti-base--V, fracture toughness of forged, effect of alpha and beta structure on, 22:45769
Al--Cr--Ti-base--V, properties for fabrication into sheets, 22:4763 (AD-648245)
Al--Fe--Mg--Ni--Si--Ti, cladding of uranium oxide (UO_2) fuel elements, radiation testing in Halden Boiling Water Reactor of, 22:44824 (HPR-100)
Al--Fe--Mo--Ti-base--V, physical properties of, 22:4762 (AD-648244)
Al--Fe--Mo--Ti-base--V, properties for mill production of sheets of, 22:4763 (AD-648245)
Al--Mo--Nb--Ta--Ti-base, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Si--Sn--Ti-base--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Mo--Si--Sn--Ti-base--Zr, properties, 22:31323
Al--Mo--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Mo--Sn--Ti-base--Zr, mechanical properties of alpha-type, 22:23744(P)
Al--Mo--Sn--Ti-base--Zr, mechanical properties of beta-phase forged, 22:45768
Al--Mo--Ti--V, corrosion cracking by hydrogen chloride, stress, 22:19474 (DP(NASA)-1130)
Al--Mo--Ti--V, texture strengthening methods for, 22:52185
Al--Mo--Ti-base, corrosion by chlorides at 500 to 800°F, effects of silver chloride coating on, 22:45748
Al--Mo--Ti-base, corrosion cracking of titanium alloy plates and weldments, stress, 22:2619
Al--Mo--Ti-base, fracture toughness of forged, effect of alpha and beta structure on, 22:45769
Al--Mo--Ti-base, mechanical properties of plates and weldments, 22:2619
Al--Mo--Ti-base--V, continuous-cooling transformation diagrams of, heated to 2100 and 2400°F, 22:47687
Al--Mo--Ti-base--V, corrosion cracking by hot salts, mechanism studies of stress, 22:28734(R) (DP(NASA)-961)
Al--Mo--Ti-base--V, corrosion cracking by hot sea salts, studies of stress, 22:28733 (DP(NASA)-941)
Al--Mo--Ti-base--V, corrosion cracking by hot-salt solutions, stress, 22:34010(R) (DP(NASA)-1005)
Al--Mo--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Ti-base--V, corrosion cracking of, effects of aqueous environments on stress, 22:45747
Al--Mo--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Mo--Ti-base--V, properties of, effects of fabrication and heat treatment on, 22:45771
Al--Mo--Ti-base--V, welding to Inconel 600, solid-state methods for, 22:629(R) (N-67-19274)
Al--Mo--Ti-base--V, welding to stainless steel, solid-state methods for, 22:629(R) (N-67-19274)
Al--Nb--Ta--Ti-base, corrosion by seawater at ambient temperature, 22:28737 (USNRDL-TR-68-26)
Al--Nb--Ta--Ti-base, corrosion cracking plates and weldments of, stress, 22:2619
Al--Nb--Ta--Ti-base, mechanical properties of plates and weldments of, 22:2619
Al--Ni--steel--Ti, radiation effects on mechanical properties of pressure vessel, evaluation of temperature and neutron, 22:50748 (ZJE-27)

Al--O_2--Ti, texture strengthening of, methods for, 22:52185
Al--O--Ti-base, plasticity of α and β, phase analysis at 990°C of, 22:702
Al--Si--Ti-base--W--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Sn--Ti, radiation effect on mechanical properties of, neutron, 22:4813 (TID-24148)
Al--Sn--Ti, texture strengthening of, methods for, 22:52185
Al--Sn--Ti-base, crystallization of, effects of temperature on, 22:21711
Al--Sn--Ti-base, mechanical properties of plates and weldments of, 22:2619
Al--Sn--Ti-base, plasticity of α and β at 990°C, phase studies analysis of, 22:702
Al--Sn--Ti-base, radiation effects on mechanical properties of, cryogenic-neutron, 22:41075(R) (N-68-13825)
Al--Sn--Ti-base, welding to aluminum alloys, solid-state methods for, 22:629(R) (N-67-19274)
Al--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Sn--Ti-base--V, crack propagation in delayed failures of, 22:649 (BNWL-SA-1134)
Al--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Sn--Ti-base--V, properties for aerospace uses, 22:45775
Al--Ti, production of intermetallic Ti_3Al, during fusion of aluminum--titanium--zirconium alloys, 22:52203
Al--Ti, reactions of intermetallic compounds in, with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Al--Ti--V, plasticity of α and β, phase analysis at 990°C of, 22:702
Al--Ti--V, properties of, 22:31321
Al--Ti--V, stresses in, measurement of residual surface, 22:14737 (CONF-671011-, pp 168-83)
Al--Ti--V, texture strengthening of, methods for, 22:52185
Al--Ti--V, welding of, explosive techniques for, 22:38528
Al--Ti--Zr, fracture properties of, effects of oxygen and hydrogen contents on delayed, 22:2630
Al--Ti--Zr, phase studies, 22:52203
Al--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Ti-base--V, fracture toughness of beta-phase forged, 22:45768
Al--Ti-base--V, fracture toughness of forged, effect of alpha and beta structure on, 22:45769
Al--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Ti-base--V, radiation effects on mechanical properties of, cryogenic-neutron, 22:41075(R) (N-68-13825)
Al--Ti-base--V, stress corrosion cracking of, 22:52170
Al--Ti-base--V, tensile properties of, effects of cobalt on, 22:28792
Al--Ti-base--V, thermal stability of, effects of cobalt on, 22:28792
Al--Ti-base--V--W, failure behavior of tungsten fiber-reinforced, (E), 22:26046
Al--Ti-base--V--Zr, mechanical properties of plates and weldments of, 22:2619
Al--Ti-base--Zr, failure of, effects of hydrogen and oxygen on delayed, 22:6997 (KFK-638)
Al-base--Ti, crystal defect recovery after deformation at 78°K, 22:19560
analysis for titanium by gravimetric and spectrophotometric methods using 2-benzoylacetanilide, 22:28
B--C--Co-base--Cr--Ti--W--Zr, morphology of, effects of molybdenum, niobium, nitrogen, tantalum, and vanadium additions on, 22:13025
B--Mn--Mo--Nb--Ni-base--Si--Ti, microstructure and properties of, 22:19639
B--Ta--Ti, phase studies of, 22:23900
B--Ti, corrosion and oxidation resistance as coatings for nickel-base alloys, 22:6935
B--Ti, fracture of filament-reinforced composite, 22:4884
B--Ti, thermodynamics of surface alloying of aluminum, iron, and nickel with, 22:30575
Be--Fe--Ti, phase studies, 22:612(R) (GEMP-69)
Be--Ti, phase diagram, 22:10986(T) (JPRS-43479)
Be--Ti, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
C--Co--Fe--Ti--W--Zr, magnetic and mechanical properties at high temperatures, (E), 22:15631
C--Co--Ti--W--Zr, magnetic properties at high temperatures, (E), 22:15631
C--Co-base--Fe--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Co-base--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Cr--Fe-base--Mo--Si--Ti, wear resistance of, optimum composition for maximum, 22:43580
C--H--Ti, crystal and electronic structure of solid-phase, 22:15215
C--Mo--Ti, mechanical properties of effects of microstructure on, 22:4792
C--Mo--Ti, phase diagrams and properties of, 22:17145
C--Mo-base--Ti, precipitation hardening of, effects of tempering on, 22:13014
C--Sn--Ti--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Ti, phase diagram, 22:49826
C--Ti, phase diagrams, 22:36548
C--Ti, thermodynamics, 22:36541
C--Ti, thermodynamics of surface alloying of iron with, 22:30575
Ce--Th--Ti--Zr, analysis for individual elements by ring-oven method, 22:18708
Co--Fe--Ti, electronic structure and hyperfine fields of, from Knight shift and isomer shift measurements, 22:11550
Co--Fe--Ti, magnetic and structural properties of pseudobinary systems in, (E), 22:39161(R) (NYO-3454-22)
Co--Fe--Ti, Moessbauer effect and nuclear magnetic resonance in, line profiles of, (E), 22:24456
Co--Fe--Ti, thermal capacity of, electronic, (E), 22:39161(R) (NYO-3454-22)
Co--Fe-base--Mo--Ni--Ti, crystal structure banding in rolled plates of, 22:10998
Co--Ni--Ti, nuclear magnetic resonance and susceptibility of, (E), 22:24455
Co--Ti, nuclear magnetic resonance and susceptibility of, (E), 22:24455
Co--Ti--Zr, crystal structure of intermediate intermetallic compounds from $TiCo_2$ to $ZrCo_2$, 22:47685
Co--Ti--Zr, magnetic and structural properties of intermetallic compounds in, (E), 22:39169 (NYO-3454-22, Paper 8)
Co--Ti--Zr, magnetic characteristics of intermediate intermetallic compounds from $TiCo_2$ to $ZrCo_2$, 22:47685
Co--Ti--Zr, phase studies of intermetallic $TiCo_2$--$ZrCo_2$, 22:10980
Co-base--Cr--Fe--Mo--Ni--Ti--W, radiation effects on mechanical properties of Ht 565, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Ni--Ti--W, radiation effects on mechanical properties of Ht 567, neutron, 22:34077 (BNL-12438)
Co-base--Ni--Ti--Zr, creep strength of, measurement at 1050 to 1150°F, 22:12975
Cr--Fe--Mo--Nb--Ni-base--Ta--Ti, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Cr--Fe--Ni--Ti, radiation effects on, neutron, 22:13040
Cr--Fe-base--Ti, ductility at 475°C, 22:10975
Cr--Nb--Ti--V--W, elasticity, 22:10959
Cr--Ni--steel--Ti, corrosion by carbon dioxide in Windscale AGR tubes of austenitic, (E), 22:44857
Cr--Ni--steel--Ti, corrosion by liquid sodium, 22:47660 (CONF-671007-2)
Cr--Ni--steel--Ti, corrosion by liquid sodium at 500 to 600°C, 22:23768
Cr--Si--Ti, effects as coating, on oxidation of niobium or tantalum, 22:2571
Cr--Si--Ti, properties for protection of niobium alloys from oxidation, 22:36433
Cr--Si-base--Ti, performance as coating on B-66 niobium alloy at high temperatures, 22:17131
Cr--Ti, crystal structure of intermetallic $TiCr_2$, 22:47685
Cr--Ti, crystal structure of intermetallic $TiCr_2$ layers of, on chromium, 22:52278
Cr--Ti, electric conductivity of, effects of aging on, 22:4798(R) (RLO-1375-5)
Cr--Ti, electric properties of, effects of microstructure on, 22:4798(R) (RLO-1375-5)
Cr--Ti, magnetic and structural properties of intermetallic $TiCr_2$, (E), 22:39169 (NYO-3454-22, Paper 8)
Cr--Ti, magnetic characteristics of intermetallic $TiCr_2$, 22:47685
Cr--Ti, phase studies, 22:4798(R) (RLO-1375-5)
Cr--Ti, polymorphic modifications of $TiCr_2$ intermetallic, 22:2659
Cr--Ti, properties of intermetallic Cr_2Ti, 22:10980
Cr--Ti, transformation mechanisms of, electron microscope studies of, 22:4798(R) (RLO-1375-5)
Cr--Ti--V, mechanical properties of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Cr--Ti--V, mechanical properties of, effects of neutron fluence and temperature on, 22:12006(R) (ANL-7399)
Cr--Ti--V, radiation effects on mechanical properties of, measurement at 510 to 704°C of neutron, 22:32741 (BNWL-532, pp 3.1-17)
Cr--Ti--V, radiation effects on tangential rupture strength of, analysis of neutron, 22:48788
Cr--Ti--V, radiation effects on tensile properties of, fast-neutron, 22:647(R) (BNL-50077)
Cr--Ti--V-base, compatibility of cladding of, with LMFBR carbide fuels, 22:30118 (ANL-7438)
Cr--Ti--V-base, compatibility with uranium-base fuel alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, corrosion by low-oxygen sodium at 850°C, 22:43629(R) (LA-3933)
Cr--Ti--V-base, corrosion by sodium at 650°C, 22:43627

(ANL-7299, pp 14-113)
Cr--Ti--V-base, creep strength of, effects of annealing temperature on, 22:7788(R) (ANL-7382)
Cr--Ti--V-base, fabrication for fuel element cladding, 22:34046(R) (WARD-3791-17)
Cr--Ti--V-base, fabrication of improved AM-75, for fast reactor fuel element cladding, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, mechanical properties of 1050°C-annealed sheet, 22:49692(R) (CEND-3742-342)
Cr--Ti--V-base, mechanical properties of, effects of heat treatments on, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, mechanical properties of, testing for cladding uses, 22:34046(R) (WARD-3791-17)
Cr--Ti--V-base, preparation and properties for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
Cr--Ti--V-base, production of high-purity sheet, 22:49692(R) (CEND-3742-342)
Cr--Ti--V-base, production of high-purity, commercial melting method for, 22:43539(R) (CEND-3742-336)
Cr--Ti--V-base, properties and crystal structure of, 22:43539(R) (CEND-3742-336)
Cr--Ti--V-base, radiation effects on mechanical properties of, in-pile, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, radiation effects on tensile properties of, fast neutron, (E), 22:19573 (BNWL-455, Paper 3.1-8)
Cr--Ti--V-base, thermal conductivity of, measurement of, 22:7788(R) (ANL-7382)
Cr--Ti--Zr, phase diagram of $TiCr_2$--$ZrCr_2$ intermetallic system, 22:2659
Cr--Ti-base--V, wettability of, for braze alloys, 22:8737 (ORNL-4170, pp 65-79)
Cr-base--Ti--V, fabrication into fuel cladding for breeder reactors, 22:4753
Cu--Fe--Ti, corrosion, stability, and strength of solders of, 22:17090
Cu--Ni--Ti, corrosion, stability, and strength of solders of, 22:17090
Cu--Ti, phase studies on splat-cooled, 22:47683
Cu--Ti, reactions of intermetallic compounds in, with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Eu--O--Ti, phase studies at 900 to 1500°C, 22:23896 (CONF-670502-, pp 194-9)
Fe--Nb--Ti-base, phase equilibrium and superconductivity of, 22:19535
Fe--Ti, analysis for aluminum using stilbazo, photometric, 22:18700
Fe--Ti, analysis for iron in presence of hydrogen peroxide by high-frequency titration with cupferron, 22:25281
Fe--Ti, analysis for phosphorus by photometry, 22:47095
Fe--Ti, lattice structure of Laves phase $TiFe_2$ containing excess iron, (E), 22:3196
Fe--Ti, magnetic properties at 0°K, 22:43594 (ANL-7299, pp 251-64)
Fe--Ti, radiation effects on tensile properties of, neutron, 22:45793(R) (EURAEC-2028)
Fe--Ti--Y, magnetic and structural properties of pseudobinary systems in, (E), 22:39161(R) (NYO-3454-22)
Fe--Ti--Zr, thermal capacity of, electronic, (E), 22:39161(R) (NYO-3454-22)
Fe--Ti-base, phase transformations and superconductivity of, 22:19535
Fe-base--Ti, diffusion of iron in, at 900 to 1200°C, 22:38540 (UCRL-50314)
H--N--Ti, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
H--Ti, phase diagram, 22:26059(T) (AD-663333)
Hf--Mo-base--rare earth--Ti--V, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
Hf--Ti, oxidation characteristics of, 22:31324
HF--Ti-base, heat resistance and physical properties of solid-solution, 22:10960
La--Pd--Re--Ta--Ti-base, production and tensile properties at -196 to +800°C, 22:4789
Mn--Ti-base, crystal structure of omega-phase, 22:49768
Mo_2C--Ti, thermodynamic properties of, effects of carbon content on, 22:755
Mo--Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--Ti--Zr, mechanical properties of, 22:7016
Mo--Nb--Ti--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Mo--Nb-base--Ti, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Mo--Nb-base--Ti--W, corrosion by hydrochloric acid, lithium at 1000°C, or sulfuric acid, 22:17118
Mo--Nb-base--Ti--W, microstructure of, effects of composition and temperature on, 22:38551
Mo--Nb-base--Ti--W, physical properties of, effects of composition and temperature on, 22:38551
Mo--Nb-base--Ti--W, preparation and properties of, 22:17118
Mo--Nb-base--Ti--W, welding of, 22:17118
Mo--Sn--Ti-base, properties of, for aerospace and cryogenic uses, 22:45775
Mo--Ti, corrosion by aqueous saline solutions at less than or equal to 220°C, 22:41010
Mo--Ti, corrosion by nitric acid, mechanism of, 22:38517
Mo--Ti, crystal structure of quenched, electron microscopy study of, 22:17132
Mo--Ti, Hall effect in mixed-state type-II superconductors of, (E), 22:24201
Mo--Ti, hardness at 25 to 1200°C, 22:15225 (GEMP-1002, pp 38-64)
Mo--Ti, melting of, electron beam, 22:15157
Mo--Ti, microstructure of thin foils of bcc, electron metallographic, 22:2661
Mo--Ti, phase transformation in quenched, martensitic, 22:17132
Mo--Ti, thermal capacity of bcc, at 1.4 to 4.2°K, 22:41048
Mo--Ti--V--W, corrosion protection of niobium and tantalum alloys by coatings of, 22:41007
Mo--Ti--Zr, phase studies of, 22:36493
Mo--Ti-base, crystal structure of omega-phase, 22:49768
Mo--Ti-base, phase transformations in, 22:7021
Mo-base--rare earth--Ti--V--Zr, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
Mo-base--Ti, crystal lattice parameters of, 22:43612
Mo-base--Ti, hardness of, effects of crystal lattice and heating on, 22:8767(T) (UCRL-Trans-10162)
Mo-base--Ti, hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
Mo-base--Ti, mechanical properties at high temperatures, effects of addition of hafnium and zirconium on, 22:41054
Mo-base--Ti--Zr, mechanical properties of hot-forged, effects of extrusion on, 22:49725
N--Nb--Ti, preparation and superconducting properties of wires of, (E), 22:17559
N--Nb--Ti, superconducting properties of reactively sputtered thin film, 22:29428
Nb--Ta--Ti, critical fields and critical temperatures of solid-solution, effects of composition on, 22:45745 (UCRL-18043, pp 107-53)
Nb--Ta--Ti, superconducting properties of wires of, (E), 22:7230
Nb--Ti, alternating current losses in superconducting, (E), 22:46040 (N-68-19140)
Nb--Ti, corrosion by acids, effects of increased niobium content on, 22:19484
Nb--Ti, corrosion by oxygen contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb--Ti, creep and heat resistance of, 22:10993
Nb--Ti, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Ti, critical current density of superconducting, effect of plastic deformation on, (E), 22:1092
Nb--Ti, critical current density of superconducting, with yttrium, gadolinium, thorium, and oxygen inclusions, 22:1099
Nb--Ti, critical currents in superconducting, (E), 22:24197
Nb--Ti, critical transport currents and omega phase precipitation in superconducting, 22:1102
Nb--Ti, effective resistivity of mixed-state superconductors of, in varying magnetic fields, (E), 22:36877
Nb--Ti, elasticity of, effect of chromium, tungsten, and vanadium additives on, 22:10959
Nb--Ti, electric conductivity of superconducting joints, 22:1090
Nb--Ti, electrochemical and mechanical properties of, 22:19484
Nb--Ti, energy losses in superconducting magnets of, measurement of ac, 22:29386 (UCRL-18176)
Nb--Ti, flux jumps in superconducting rods of, (E), 22:44047
Nb--Ti, formation of α phase in superconducting, during heating in electron microscope, (E), 22:29394
Nb--Ti, magnetic flux flow and stabilization in superconducting, (E/T), 22:22070(R) (ORNL-TM-2162)
Nb--Ti, magnetic flux flow and stabilization in superconducting, 22:31733(R) (ORNL-TM-2233)
Nb--Ti, magnetic flux flow and stabilization of superconducting, 22:9234(R) (ORNL-TM-2075)
Nb--Ti, magnetic flux jumps in superconducting, in rapidly varying magnetic fields, (E), 22:36877
Nb--Ti, magnetic properties of superconducting, reversible and irreversible, (E), 22:11402
Nb--Ti, magnetization and energy losses in superconducting, ac-induced, (T), 22:13423
Nb--Ti, melting of, electron beam, 22:15157
Nb--Ti, microstructure of thin-wire superconducting, 22:44063
Nb--Ti, preparation and properties of superconducting wires of, 22:2980
Nb--Ti, propagating current of superconducting, 22:1100
Nb--Ti, soldering of copper-clad, to aluminum, production of nanohm resistance joints by ultrasonic, 22:5288
Nb--Ti, source of instability in superconducting, (E), 22:44024
Nb--Ti, specific heat at superconducting transition temperature, 22:46066

Nb--Ti, stability of flux-flow state in superconducting strips of intermetallic NbTi, (E), 22:38981
Nb--Ti, superconducting critical currents in, relation of current--voltage characteristics to peak effect in, (E), 22:44049
Nb--Ti, superconducting critical currents on copper-clad Nb--40 percent Ti, 22:29446
Nb--Ti, superconducting magnet coil of, electrical loss measurements in, 22:48038 (UCRL-18374)
Nb--Ti, superconducting magnet coils of, development of, 22:22083
Nb--Ti, superconducting performance on magnet coils, 22:46079
Nb--Ti, superconducting properties of, 22:26321(T) (ANL-Trans-598)
Nb--Ti, superconducting properties of, 22:31766
Nb--Ti, superconducting properties of copper-clad Nb--40 percent Ti, 22:19900 (NP-17338)
Nb--Ti, superconducting properties of, effects of metal, nitrogen, and oxygen additions on, (E), 22:34563
Nb--Ti, superconducting transition currents in solenoids in helium I and II, liquid temperature effects on, 22:46074
Nb--Ti, superconductivity stabilization and use in solenoid coil, 22:46081
Nb--Ti, thermal conductivity at low temperatures, magnetic field and temperature dependences of, (E), 22:44029
Nb--Ti, thermoelectric properties of, (E), 22:9430
Nb--Ti, use as superconductor in high-current-density magnet, 22:48066
Nb--Ti, use in copper matrix for fabrication of 48-kG 10-cm-bore superconducting magnet coils, 22:11374
Nb--Ti, use in large-current integrally-processed composite superconductor with copper, 22:11373
Nb--Ti--V, creep at >650°C, 22:49747
Nb--Ti--V, creep at 650 to 800°C, effects of titanium content on, 22:2578
Nb--Ti--V, stress rupture at >650°C, 22:49747
Nb--Ti--V, tensile properties at 650 to 800°C, effects of titanium content on, 22:10953(T) (ORNL-tr-1790)
Nb--Ti--V, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
Nb--Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
Nb--Ti--W, coating of, deposition methods for protective, 22:52174
Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--Ti--W-base, oxidation at 1000 to 1300°C, mechanisms of, 22:52174
Nb--Ti--W-base, oxidation of, effects of alloying elements on, 22:52174
Nb--Ti--Zr, critical current density of superconducting, in magnetic fields, 22:38548
Nb--Ti--Zr, critical currents in superconducting, (E), 22:24197
Nb--Ti--Zr, ductility of electron-beam-melted ingots of, 22:47669
Nb--Ti--Zr, magnetic properties of annealed, effects of oxygen reactions and zirconium content on, 22:17128
Nb--Ti--Zr, phase studies of, 22:23823
Nb--Ti--Zr, superconducting properties of, 22:31766
Nb--Ti--Zr, superconductivity destruction in, phase composition and structure during, (E), 22:19923
Nb--Ti--Zr, superconductivity of, effects of critical current density in high magnetic field on, 22:49729
Nb--Ti--Zr, superconductivity of, effects of crystal structure on, 22:49729
Nb--Ti--Zr-base, analysis for zirconium using gallocyanine, colorimetric, 22:33287
Nb--Ti-base, phase morphology in, transmission electron microscopy studies on omega, 22:15212
Nb--Ti-base, phase transformation and superconductivity of, 22:19535
Nb--Ti-base, phase transformations in superconducting, 22:48063
Nb-base--Ti, corrosion by mineral acids, effects of increased titanium content on, 22:19485
Nb-base--Ti, electrochemical and mechanical properties of, 22:19485
Nb-base--Ti--V, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--V--Zr, oxidation by air at 900 to 1200°C, mechanisms of, 22:2581
Nb-base--Ti--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--Zr, magnetic properties of wires of, at 4.2°K, 22:13012
Ni--Ti, corrosion by saline water, effects of sulfides on, 22:26029 (ORNL-4229, pp 71-83)
Ni--Ti, phase studies of martensitic, intermetallic compound in, 22:49752 (COO-588-14)
Ni--Ti--V, corrosion by liquid sodium at 500 to 600°C, 22:23768
Ni-base--Ta--Ti--W, corrosion by air at 2100°F, 22:15150
Ni-base--Ti, particle coarsening in precipitates of, 22:15207 (CALT-221-39)
Pu--Ti, phase studies of, 22:2655
Pu--Ti, reactions of, kinetics of solid-state, 22:2633
Pu--Ti--U, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--Ti--U, phase studies, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, compatibility with stainless steel and vanadium-base alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, enthalpy and thermal capacity of, 22:19538
Pu--Ti--U-base, enthalpy and thermal capacity of, 22:19538
Pu--Ti--U-base, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--Ti--U-base, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Re--Ti-base, oxidation by oxygen at 1 to 10 torr and at 800 to 1400°C, 22:12977
Rh--Ti, superconducting transition temperature as function of rhodium concentration, (E), 22:7231
Rh--Ti, thermal capacity at 0.9 to 8°K, (E), 22:7231
Sc--Ti, reactions with hydrogen, properties of compounds formed by, 22:27703
steel--Ti, forging lubricants for, 22:8719
Th--Ti--U--Zr, analysis for individual elements by ring-oven method, 22:18708
Ti--TiO, meson (π) reactions with targets of, condensed-state effects in x-ray spectra from, (E), 22:52507
Ti--U, yield surface of, effects of welds on, 22:45767 (UCID-15362)
Ti--U-base, heat treatment and properties of, 22:2618
Ti--U-base, wires of, ductility of swaged, 22:31335(R) (RMI-10)
Ti--V, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Ti--V, analysis for titanium, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
Ti--V, creep at >650°C, 22:49747
Ti--V, creep at 650 to 800°C, effects of titanium content on, 22:2578
Ti--V, mechanical properties of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Ti--V, mechanical properties of, effects of surface defects on, 22:27479 (BNL-50096)
Ti--V, radiation effects on mechanical properties of, measurement at 510 to 704°C of neutron, 22:32741 (BNWL-532, pp 3.1-17)
Ti--V, radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39790(R) (UNC-5201)
Ti--V, radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39789 (UNC-5198)
Ti--V, radiation effects on tensile properties of, fast-neutron, 22:647(R) (BNL-50077)
Ti--V, radiation effects on, neutron, 22:52126 (BNL-50127)
Ti--V, radioinduced corrosion by sodium, in-pile, 22:17082
Ti--V, stress rupture at >650°C, 22:49747
Ti--V, superconducting critical current densities in, 22:29445
Ti--V, tensile properties at 650 to 800°C, effects of titanium content on, 22:10953(T) (ORNL-tr-1790)
Ti--V, tensile properties of, effects of annealing at 900 and 1000°C on, 22:27479 (BNL-50096)
Ti--V, vanadium-51 nuclear spin--lattice relaxation time in superconducting, 22:31780
Ti--V, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
Ti--V-base, compatibility with uranium-base fuel alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, corrosion by low-oxygen sodium at 900°C, 22:43629(R) (LA-3933)
Ti--V-base, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Ti--V-base, corrosion by sodium, effects of calcium on, 22:52130(T) (ANL-Trans-666)
Ti--V-base, corrosion by sodium, effects of calcium on, 22:23723
Ti--V-base, corrosion by sodium, effects of trace oxygen on high-temperature, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, creep of sodium-exposed, at 650°C, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, fabrication for fuel element cladding, 22:34046(R) (WARD-3791-17)
Ti--V-base, fabrication of improved AM-82, for fast reactor fuel element cladding, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, mechanical properties of, effects of heat treatment on, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, mechanical properties of, testing for cladding uses, 22:34046(R) (WARD-3791-17)
Ti--V-base, penetration by liquid uranium-base fuel alloys, 22:43526 (ANL-7299, pp 114-19)
Ti--V-base, preparation and properties for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
Ti--V-base, radiation effects on mechanical properties of, in-pile, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, radiation effects on tensile properties of,

fast neutron, (E), 22:19573 (BNWL-455, Paper 3.1-8)
- Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
- Ti--Va-base, oxidation by oxides in liquid sodium, kinetics of, 22:45752
- Ti--W, phase diagrams, 22:31403
- Ti--Y, melting points and transition temperatures of, 22:23775
- Ti--Zn--Zr, magnetic properties of, 22:39174
- Ti--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Ti--Zr, combustion of, lower concentration limit of explosive, (E), 22:28808
- Ti--Zr, Debye temperature, low-temperature specific heat, and superconducting transition temperature of, (E), 22:24203
- Ti--Zr, phase studies of omega transformations in, 22:49752 (COO-588-14)
- Ti--Zr, radiation effects on corrosion and electrochemical behavior of, thermal neutron, 22:52224
- Ti--Zr, strength of, effects of oxygen as alloying impurity on, 22:23773
- Ti--Zr, use as brazing alloys, 22:31321
- Ti-base--V, production of niobium-plated Ti28V strip, 22:47670
- Ti-base--Zr, heat resistance and physical properties of solid-solution, 22:10960
- U--Zr, thermal capacity at 1.1 to 4.2°K, 22:8730 (ORNL-4170, pp 27-31)
- V--Ti, spin--lattice relaxation processes in superconducting, (E), 22:31739

TITANIUM ARSENATES
- properties as ion-exchange material, 22:33552

TITANIUM BORATES
- properties as ion-exchange material, 22:33552

TITANIUM BORIDES
- bonding forces between atoms in TiB_2, x-ray line-broadening measurements of, 22:49840
- chemical and crystallographic properties of plasma-sprayed, 22:47704
- compatibility with zirconium dioxide at high temperatures, 22:21767
- Debye temperature, 22:2700
- density of plasma-sprayed, 22:47704
- deposition on wires, chemical vapor, 22:7046
- effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
- elastic moduli, 22:2700
- electric conductivity at 77 and 293°K, 22:2700
- electric conductivity of, temperature coefficient, (E), 22:28932
- mechanical properties of plasma-sprayed, 22:47704
- oxidation at 700 to 1050°C, 22:49781
- oxidation resistance of plasma-sprayed, 22:47704
- oxidation resistance of, effects of metals and compound phase additions on, 22:36502
- performance as crucible material for containing molten beryllium, 22:28888 (RFP-882)
- performance as round-hole extrusion die nibs, 22:8719
- polishing of, effects of preparation on, 22:740
- preparation and properties of hot-pressed, 22:2684
- preparation by borothermic reduction of oxide in vacuum, 22:2678
- preparation by reactions of titanium with boron trifluoride at 1600°C, 22:7034
- production by chemical vapor deposition, equipment and processes for, 22:7046
- properties as crucible for liquid metals, 22:43654
- radiation effects at <100°C on, thermal neutron, 22:34086
- reactions with tungsten at 2500°C, 22:4894
- sputtering by cadmium ions at 100 to 500 eV, (E), 22:36727
- thermal conductivity at room temperature, 22:679
- CrB_2--TiB_2, radiation effects at <100°C on, thermal neutron, 22:34086
- MoB_2--TiB_2--UO_2-base--ZrB_2, sintering method for dense, 22:36532(P)
- UO_2--TiB_2, fabrication of fuel elements of, 22:11034(P)

TITANIUM CARBIDES
- crystal and electronic structure of solid-phase, 22:15215
- deposition on boron carbide, for incorporation in metal-matrix control rods, 22:28910(P)
- deposition on carbon fibers, method for, 22:15248(P)
- diffusion of carbon in, 22:15201
- effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
- effects on creep strength of niobium--tungsten and niobium--tantalum--tungsten alloys, 22:26049
- elastic properties of TiC, determination by sound velocity, 22:49830
- electric conductivity at 1200 to 3500°K, (E), 22:26084
- electric conductivity at 20 to 2000°C, (E), 22:39181
- electric conductivity of, temperature coefficient, (E), 22:28932
- emissivity at 1200 to 3500°K, total hemispherical and spectral, (E), 22:26084
- lubrication characteristics at high service temperatures, effects of molybdenum on, 22:28940
- mechanical behavior of, review of, 22:49826
- oxidation of, effects of temperature on, 22:2580
- performance as crucible material for containing molten nickel, 22:28888 (RFP-882)
- performance as round-hole extrusion die nibs, 22:8719
- polishing of, effects of preparation on, 22:740
- preparation and properties of 100 to 1000 A particles of, 22:38604(T) (SC-T-68-1535)
- production of porous, using soot reduction, (E), 22:31456
- properties and uses, 22:52275
- properties as crucible for liquid metals, 22:43654
- properties of cermets based on, effects of molybdenum or molybdenum carbide on, 22:28940
- properties of, analysis of physico-mechanical, 22:52271
- properties of, used for electrodeposited coatings on metals, 22:2590
- radiation effects at 300 to 700°C, fast-neutron, 22:21779
- radiation effects on gross volume gain of, analysis of fast neutron, 22:48788
- radiation effects on TiC, effects of dose on fast neutron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
- radiation effects on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
- reactions with liquid platinum, 22:12287
- superconductivity in interstitial, 22:22117
- thermal conductivity of, effects paint defects on, 22:40993(R) (COO-1198-534)
- thermodynamic properties of nonstoichiometric, at 973 to 1223°K, 22:31472
- thermodynamics, 22:36541
- thermoelectric power at 20 to 2000°C, (E), 22:39181
- welding at 1473 to 2273°K, method for diffusion, 22:6943
- wettability by copper, lead, and silver, 22:23752 (AERE-M/R-1746)
- C--TiC, thermodynamics of vapor composition over, at 2200 to 2500°K, 22:13066(T) (LA-tr-67-91)
- Co--Mo--TaC--TiC--WC, properties for cutting tools, 22:8719
- Co--NbC--TaC--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
- Co--NbC--TiC--WC, properties of vacuum sintered, effects of carbide composition and carbon content on, 22:43658
- Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:4861
- Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:17163
- Co--TaC--TiC--WC-base, preparation and properties of, effect of copper on, 22:43645
- Co--TiC, cracks and microhardness of, effects of lapping on, 22:19634
- Co--TiC--WC, phase diagrams and properties of, 22:17183
- Co--TiC--WC, properties of, effects of carbon content on, 22:2696
- Co--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
- Cr_3C_2--TiC--WC, reactions with liquid platinum, 22:12287
- Cr--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
- HfC--TiC, miscibility at 1200°C to critical point, 22:43653
- Mo_2C--TiC, reactions with liquid platinum, 22:12287
- Mo--Nb--Ni--Ta--TiC, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
- Mo--TiC, welding of, method for diffusion, 22:6943
- Nb--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
- Nb--TiC, erosion by potassium, effects of temperature on cavitation-type, 22:52126 (BNL-50127)
- NbC--TiC, crystal structure of homogeneous, 22:52281
- NbC--TiC, electric conductivity of homogeneous, 22:52281
- NbC--TiC, microhardness of homogeneous solid solution, 22:52281
- NbC--TiC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
- Ni--TiC, strength of, effects of molybdenum or molybdenum carbide on, 22:28940
- Ni--TiC, wettability by molybdenum, 22:28940
- TaC--TiC--WC-base, preparation and properties, 22:19614
- TiC--TiO, thermodynamics of, 22:28943
- TiC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
- TiC--UC--WC, fuel pellets of, description of cylindrical clad, 22:25067(P)
- TiC--WC, formation of titanium oxide on cutting tools of, effects of, 22:23899
- TiC--WC, reactions with liquid platinum, 22:12287
- TiC--ZrC, miscibility at 1200°C to critical point, 22:43653
- TiC--ZrO_2, phase studies of, 22:49848

TITANIUM CHLORIDES
- reactions with hydrogen peroxide in presence of amino acids, ESR spectral studies on amino acid radicals produced by, 22:2147
- reactions with uranium trioxide, 22:27651
- spectra from flash heating, absorption, 22:8038(R) (COO-1684-2)
- spectra of chlorine-35 in liquid, NMR, 22:45029 (UCRL-18043, pp 7-105)

TITANIUM DEUTERIDES

  neutron total cross section for, thermal, (E), 22:1566
TITANIUM FLUORIDES
  spectra of flash-heated, absorption, 22:8038(R) (COO-1684-2)
TITANIUM HYDRIDES
  development for reactor moderators, 22:614
  neutron differential inelastic scattering cross sections at 0.146 eV, (E), 22:3592 (RPI-328-101)
  neutron doubly differential inelastic scattering cross sections at 0.1 to 0.6 eV, (E), 22:29864
  neutron inelastic scattering at 0.1 to 1.0 eV, cross sections for, (E), 22:53076
  neutron total cross section for, thermal, (E), 22:1566
  positron lifetime in, delayed coincidence system study of, (E), 22:38732
  precipitation in titanium--aluminum--molybdenum--vanadium alloy during thinning, 22:28734(R) (DP(NASA)-961)
  production by reduction of oxide, 22:33365(P)
  use for reactor moderators, review of, 22:12958
  use in increasing hydrogen sorption by palladium, palladium alloys, tantalum, titanium, and uranium, 22:13005(T) (UCRL-Trans-10180)
  AuH--TiH, superconductivity in, (E), 22:7227
  TiH_2--TiN, thermodynamics of, 22:28943
  TiH_2--ZrH_2, thermodynamics of, 22:28943
TITANIUM HYDROXIDES
  precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6380
  properties as ion-exchange material, 22:33552
  reactions with lanthanum hydroxides, preparation of lanthanum titanate by precipitation, 22:4101
  use in separation of chromium, molybdenum, and rhenium by precipitation, 22:23104
TITANIUM IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  energy levels in aluminum oxides, far-infrared spectroscopy of low-lying, 22:46199 (UCRL-18043, pp 183-98)
  spectra in aluminum oxide, at 4.2°K in magnetic field, far-infrared, 22:39970 (UCRL-18229)
  spectra of Ti II during solar eclipse of Nov. 12, 1966, 22:843
  spectral emission lines in lower chromosphere of, intensity of, (E), 22:52441
  spectral line intensities in 73 Draconis, (E), 22:11158
  spectrum in Nova Delphini 1967, (E), 22:23924
TITANIUM ISOTOPES
  abundance in titanium dioxide, minerals, and ores, 22:42847 (IS-T-217)
  alpha elastic and inelastic scattering at 43 MeV, (E), 22:20578 (WASH-1079)
  alpha elastic and inelastic scattering at 43 MeV, (E), 22:5809(R) (ANL-7354)
  electron inelastic scattering by, (E), 22:53095 (BMwF-FBK-68-11)
  energy levels of even-even, research program on quadrupole and octupole, (E), 22:35285(R) (AERE-PR/NP-13)
  energy levels of, systematics of octupole, (E), 22:41988
  neutron capture by, γ spectra from thermal, (E), 22:24854 (IA-1128, pp 12-20)
  nuclear potential radius for, isotope shift in, (T), 22:30074
  nuclear radii of, measurements using electron elastic scattering, (E), 22:53095 (BMwF-FBK-68-11)
  nuclear radius of, measurement using electron elastic scattering, (E), 22:27380
  nuclear structure of, dissertation summary on reaction spectroscopy for, 22:44657
  nuclear temperature from (n,p) reactions at 13.6 to 19.5 MeV, (E), 22:32552
  photon reactions (γ,p) at 22 and 30 MeV, proton yields from, (E), 22:1636
TITANIUM ISOTOPES Ti-42
  energy levels calcium-40 (He-3,n) reactions, (E), 22:20515
  energy levels from calcium-40 (He-3,n) reactions, (E), 22:37324
  proton interaction in, state dependence of Coulomb, (T), 22:53247
TITANIUM ISOTOPES Ti-44
  beta decay of, relative intensities of scandium-44 energy-level transitions from, (E), 22:14831
  cosmogenic activity in stone meteorites, (E), 22:2742
  energy levels from calcium-40 (α,γ) reactions, (E), 22:35276
  energy levels from calcium-40 (α,γ) reactions, spins and parities of, (E), 22:9841
  energy levels from calcium-40 alpha elastic scattering, (E), 22:20499 (INP-577/PL)
  energy levels of, Hartree-Fock calculation of, (T), 22:32503
  energy levels of, isospin structure of low-lying, (T), 22:32543
  radioactivity in Granes meteorite, cosmic-ray-induced, (E), 22:47743
TITANIUM ISOTOPES Ti-45
  energy levels from titanium-46 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
  energy levels from titanium-46 (He-3,α) reactions, spectroscopic factors for, (E), 22:44632
  energy levels from titanium-46 (p,d) reactions at 26.0 MeV, (E/T), 22:26965
TITANIUM ISOTOPES Ti-46
  alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
  alpha reactions (α,2p) at 30 MeV, search for, (E), 22:1598(R) (COO-1265-49)
  deuteron elastic and inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:50593
  energy level at 2006 keV, half-life of, (E), 22:18237
  energy level of, lifetime of first excited, (E), 22:46731(R) (COO-1746-8)
  energy levels from deuteron scattering at 7.5 MeV, deformation parameters and spin--parity assignments for, (E), 22:50593
  energy levels from electron inelastic scattering, (E), 22:53095 (BMwF-FBK-68-11)
  energy levels from projected Hartree--Fock calculations, (T), 22:20689
  energy levels from proton inelastic scattering, spin--parity assignments and branching ratios for, (E), 22:53136
  energy levels from proton inelastic scattering, spin assignments and deformation parameters for, (E), 22:44651
  energy levels from scandium-45 (He-3,d) and titanium-47 (He-3,α) reactions at 15 MeV, (E), 22:20530
  energy levels from scandium-45 (He-3,d) reactions and proton inelastic scattering, (E), 22:9800(R) (COO-535-571)
  energy levels from scandium-45 (He-3,d) reactions, (E), 22:39628 (CONF-670970-, pp 117-38)
  energy levels from scandium-46 decay, spin-parity assignments from γ--γ angular correlations, (E), 22:35266
  energy levels from titanium-47 (He-3,α) reactions, spectroscopic factors for, (E), 22:44632
  energy levels of, calculation of collective behavior in, (T), 22:48603
  energy levels of, isospin structure of low-lying, (T), 22:32543
  energy levels of, lifetime measurements using delayed coincidence method, (E), 22:32643
  energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
  energy-level spins and transitions from proton inelastic scattering at 6.5 to 6.8 MeV, (E), 22:9821
  energy-level transitions from scandium-45 (p,γ) reactions, branching ratios for, (E), 22:44670
  helium-3 reactions (He-3,α) at 18.2 MeV, angular distributions for, (E), 22:44632
  helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
  helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
  helium-3 reactions (He-3,p) at 12.0 MeV, vanadium-48 energy levels from, (E), 22:20521
  helium-3 reactions (He-3,t) at 24.6 MeV, coupled-channel and microscopic analysis of differential cross sections for, (E), 22:29946
  neutron reactions (n,p) at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
  nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
  proton differential inelastic scattering cross sections at 17.5 MeV, angular distributions for, (E), 22:44651
  proton elastic scattering at 26.0 MeV, angular distributions for, (E/T), 22:26965
  proton inelastic scattering at 21.2 MeV, energy spectra and angular distribution from, (E), 22:29968
  proton inelastic scattering at 8 MeV, p--γ angular correlations in, (E), 22:53136
  proton reactions (p,d) at 26.0 MeV, angular distributions for, (E/T), 22:26965
  proton reactions (p,γ) with, γ spectra and Q-value for, (E), 22:20514
  use in neutron fluence measurements in fast reactors, 22:48746
TITANIUM ISOTOPES Ti-47
  deuteron elastic and inelastic scattering at 2.5 to 10 MeV, angular distributions for, (E/T), 22:15972
  deuteron reactions (d,p) with, angular distribution for l = 3 transition in, (E), 22:20522
  energy levels from titanium-48 (He-3,α) reactions, (E), 22:32516 (MIT-2098-422, pp 43-68)
  energy levels from titanium-48 (He-3,α) reactions, spectroscopic factors for, (E), 22:44632
  energy levels from titanium-48 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
  helium-3 reactions (He-3,α) at 15 MeV, titanium-46 energy levels from, (E), 22:20530
  helium-3 reactions (He-3,α) at 18.2 MeV, angular distributions for, (E), 22:44632
  helium-3 reactions (He-3,d) at 11 MeV, angular distributions for, (E), 22:26937
  helium-3 reactions (He-3,t) at 24.6 MeV, coupled-channel and microscopic analysis of differential cross sections

- for, (E), 22:29946
- neutron reactions (n,p) at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
- photon reactions (γ,p) at 22 and 30 MeV, proton yields from, (E), 22:1636
- proton reactions (p,n) with, conversion-electron and γ spectra from, (E), 22:11935

TITANIUM ISOTOPES Ti-48

- alpha inelastic scattering at 31 MeV, angular distributions for, (E), 22:41988
- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E/T), 22:44645
- deuteron differential inelastic scattering cross sections at 52 MeV, angular distributions for, (E), 22:27008
- deuteron elastic and inelastic scattering at 2.5 to 10 MeV, angular distributions for, (E/T), 22:15972
- deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron elastic and inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:50593
- deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
- deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
- deuteron inelastic scattering at 13.6 MeV, calculation of angular distributions for, (T), 22:13956
- deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E/T), 22:20505
- deuteron reactions (d,He-3) at 52 MeV, angular distributions for, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron reactions (d,p) at 13 MeV, proton angular distributions and spectra for, (E), 22:35250 (INP-594/PL)
- deuteron reactions (d,p) at 19 MeV, angular distributions for l = 3, (E), 22:37387
- electron scattering at 250 MeV, analysis for nuclear charge distribution, (E), 22:53152
- energy levels and transitions, (E), 22:5817(R) (NYO-GEN-72-28)
- energy levels from α inelastic scattering, spin-parity assignments for, (E), 22:41988
- energy levels from deuteron inelastic scattering, deformation parameters for, (E), 22:48509(R) (BMwF-FBK-68-22)
- energy levels from deuteron scattering at 7.5 MeV, deformation parameters and spin--parity assignments for, (E), 22:50593
- energy levels from electron inelastic scattering, (E), 22:53095 (BMwF-FBK-68-11)
- energy levels from projected Hartree--Fock calculations, (T), 22:20689
- energy levels from titanium-49 (He-3,α) reactions, spectroscopic factors for, (E), 22:44632
- energy levels of, calculation of collective behavior in, (T), 22:48603
- energy levels of, isospin structure of low-lying, (T), 22:32543
- energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
- helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (T), 22:32525
- helium-3 elastic scattering at 10 MeV, (E), 22:26939
- helium-3 reactions (He-3,α) at 18.2 MeV, angular distributions for, (E), 22:44632
- helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
- helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
- helium-3 reactions (He-3,α) with angular distributions for, (E), 22:32516 (MIT-2098-422, pp 43-68)
- helium-3 reactions (He-3,d) at 10 MeV, angular distributions for, (E), 22:26939
- helium-3 reactions (He-3,d) at 17 MeV, vanadium-49 energy levels from, (E), 22:15969
- helium-3 reactions (He-3,d) at 18 MeV, deuteron angular distributions and spectra for, (E), 22:7667
- helium-3 reactions (He-3,d) at 18 MeV, deuteron angular distributions and spectra for, (E), 22:3639 (BMwF-FBK-67-75)
- helium-3 reactions (He-3,t) at 24.6 MeV, coupled-channel and microscopic analysis of differential cross sections for, (E), 22:29946
- helium-3 reactions (He-3,t) at 25 MeV, differential cross sections for, (T), 22:32525
- neutron capture at 2.8 MeV, gamma energies and differential cross sections for, (E/T), 22:5793
- neutron capture by, thermal, (E), 22:20570 (ITEF-52)
- neutron capture by, thermal, (E), 22:22566
- neutron capture by, titanium-49 energy levels from thermal, (E), 22:9826
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- neutron reactions (n,p) at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron reactions (n,p) at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
- neutron scattering at 6, 10, and 14 MeV, optical-model analysis using pole representation, (T), 22:32711
- nuclear charge distribution from electron scattering experiments, (E), 22:53152
- nuclear deformation parameters from deuteron inelastic scattering and (d,He-3) reactions, (E), 22:27008
- nuclear deformation parameters from deuteron inelastic scattering, (E/T), 22:44645
- nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
- photon absorption cross sections at 14 to 24 MeV, effects of giant resonance coupling to surface quadrupole oscillations on, (T), 22:30058
- photon reactions (γ,p) at 22 and 30 MeV, proton yields from, (E), 22:1636
- proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
- proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
- proton inelastic scattering at 155 MeV, effects of core polarization in shell-model formalism for, (T), 22:27270
- proton inelastic scattering at 18.6 MeV using polarized protons, asymmetries in, (E), 22:9834
- proton inelastic scattering at 4 to 6 MeV, differential cross sections and p-γ angular correlations for, (E), 22:9832
- proton inelastic scattering by, mechanism of, (E/T), 22:20550
- proton reactions (p,γ) at 1.0 to 1.4 MeV, γ spectra from isobaric analog resonances in, (E), 22:44631
- proton reactions (p,γ) at 1.0 to 1.4 MeV, γ spectra for, (E), 22:20502
- proton reactions (p,γ) at 1.3 to 2.3 MeV, resonances in, (E), 22:41991

TITANIUM ISOTOPES Ti-49

- deuteron elastic and inelastic scattering at 2.5 to 10 MeV, angular distributions for, (E/T), 22:15972
- deuteron reactions (d,p) with, angular distribution for l = 3 transition in, (E), 22:20522
- energy levels from thermal neutron capture in titanium-48, (E), 22:9826
- energy levels from titanium-50 (He-3,α) reactions, spectroscopic factors for, (E), 22:44632
- energy levels from titanium-50 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
- energy levels of, spin-parity assignments and widths of isobaric analog, (E), 22:44631
- energy-level transition at 0.34 MeV, M1 + E2 mixing ratio of, (E), 22:15998
- energy-level transition from titanium-48 thermal neutron capture, internal conversion coefficient and multipolarity for, (E), 22:20570 (ITEF-52)
- energy-level transition from titanium-48 thermal neutron capture, conversion coefficient and multipolarities for, (E), 22:22566
- helium-3 reactions (He-3,α) at 18.2 MeV, angular distributions for, (E), 22:44632
- helium-3 reactions (He-3,t) at 24.6 MeV, coupled-channel and microscopic analysis of differential cross sections for, (E), 22:29946
- neutron reactions (n,p) at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
- neutron total cross section at 20 to 250 keV, (E), 22:37340(R) (EANDC(E)-89(U))
- photon reactions (γ,p) at 22 and 30 MeV, proton yields from, (E), 22:1636
- proton reactions (p,n) with, conversion-electron and γ spectra from, (E), 22:11935
- triton reactions (t,p) at 12 MeV, (E), 22:50573

TITANIUM ISOTOPES Ti-50

- alpha inelastic scattering at 44 MeV, differential cross sections and spectra for, (E), 22:3643 (CEA-R-3142)
- alpha reactions with, β spectra from, (E), 22:11956
- deuteron elastic and inelastic scattering at 2.5 to 10 MeV, angular distributions for, (E/T), 22:15972
- deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
- deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
- deuteron reactions (d,α) at 18 MeV, α angular distributions and spectra from, (E), 22:1598(R) (COO-1265-49)
- deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E/T), 22:20505
- deuteron reactions (d,He-3) at 52 MeV, angular distributions for, (E), 22:48509(R) (BMwF-FBK-68-22)
- deuteron reactions (d,p) at 10 MeV, (E), 22:50573
- deuteron reactions (d,p) at 13 MeV, proton angular distributions and spectra for, (E), 22:35250 (INP-594/PL)
- energy levels from alpha inelastic scattering at 43 MeV, (E), 22:5809(R) (ANL-7354)
- energy levels from electron inelastic scattering, (E), 22:53095 (BMwF-FBK-68-11)

energy levels from projected Hartree--Fock calculations, (T), 22:20689
energy levels from vanadium-51 (d,He-3) reactions at 34.4 MeV, (E), 22:20505
energy levels of, calculation of matrix elements and structure of, (T), 22:37378
energy levels of, calculations using shell model with soft-core potential, (T), 22:3682
energy-level spins and transitions from alpha inelastic scattering at 44 MeV, collective, (E), 22:3643 (CEA-R-3142)
helium-3 elastic scattering at 10 MeV, (E), 22:26939
helium-3 reactions (He-3,α) at 18.2 MeV, angular distributions for, (E), 22:44632
helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
helium-3 reactions (He-3,d) at 10 MeV, angular distributions for, (E), 22:26939
helium-3 reactions (He-3,d) at 10 MeV, vanadium-51 energy levels from, (E), 22:3677
helium-3 reactions (He-3,t) at 24.6 MeV, coupled-channel and microscopic analysis of differential cross sections for, (E), 22:29946
neutron reactions (n,p) at 13.6 to 19.5 MeV, cross sections for, (E/T), 22:32552
nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
photon reactions (γ,p) at 22 and 30 MeV, proton yields from, (E), 22:1636
proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
proton elastic scattering at 2.45 to 2.65 MeV, isobaric analog resonance parameters for, (E), 22:53139
proton inelastic scattering at 18.6 MeV using polarized protons, asymmetries in, (E), 22:9834

TITANIUM ISOTOPES Ti-51
energy levels from titanium-49 (t,p) and titanium-50 (d,p) reactions, spin--parity assignment and 2p--1h configuration mixing in, (E), 22:50573

TITANIUM ISOTOPES Ti-52
search for, (E), 22:29983 (MIT-905-108, pp 1-32)

TITANIUM MINERALS
see also Sphenes
titanium isotope abundance in, 22:42847 (IS-T-217)

TITANIUM NITRIDES
chemical and crystallographic properties of plasma-sprayed, 22:47704
coatings in zirconium fuel element cladding, fabrication of, 22:42553(P)
density of plasma-sprayed, 22:47704
electric conductivity of, temperature coefficient, (E), 22:28932
mechanical properties of plasma-sprayed, 22:47704
modulus of elasticity of, ultrasonic measurement of, 22:38630
oxidation of, kinetics of, 22:25345
oxidation resistance of plasma-sprayed, 22:47704
radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
sputtering by cadmium ions at 100 to 500 eV, (E), 22:36727
superconductivity in interstitial, 22:22117
HfN--TiN, thermodynamics of, 22:28943
TiH_2--TiN, thermodynamics of, 22:28943
TiN--UN, phase studies at 1700 to 2400°C, 22:43664
TiN--UN, phase studies of, 22:31487 (KFK-721)

TITANIUM ORES
titanium isotope abundance in, 22:42847 (IS-T-217)

TITANIUM OXIDES
analysis for constituents by neutron activation methods, 22:37686
analysis for hafnium by neutron activation methods, 22:37694
analysis for lanthanum by neutron activation method including radiochemical separation, 22:25280
analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
analysis for oxygen by neutron activation, 22:30457
chemical and electric properties of, effects of niobium doping on, 22:19647
content of crystallite anatase, in neogene sediments of Niigata Prefecture, Japan, 22:51118
crystal defect structure of TiO_2, 22:11084
crystal growth by arc transfer method, 22:52289
degradation of, effects of space environment on, 22:17191
density of compacted, effects of power and vibrational frequency on, 22:2680
diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
effects on hydrogenation of ethylene, flow-reactor kinetics of catalytic, 22:2024 (CU-2791-6(App.))
effects on hydrogenation of ethylene, kinetics of catalytic, 22:2096 (CU-2791-6)
effects on radioactivity of chernozem soils from Romania, 22:30690 (IFA-IS-49)
effects on radioinduced embrittlement of iron, 22:7027
effects on reactions of unsaturated hydrocarbons with deuterium or heavy water, 22:2066
electric pulse effect on ferroelectric $[Pb_{.99}Nb_{.02}(Zr_{.66}Ti_{.34})_{.98}O_3]_{.90}(LaFeO_3)_{.10}$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.65}Ti_{.35})_{.99}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.80}Ti_{.20})_{.99}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Bi_{.02}(Zr_{.65}Ti_{.35})_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.50}Sn_{.50})_{.86}Ti_{.14}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.60}Sn_{.40})_{.92}Ti_{.08}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.65}Ti_{.35})_{.98}O_3$, 22:4870 (SC-RR-67-730)
electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.68}Ti_{.07}Sn_{.25})_{.98}O_3$, 22:4870 (SC-RR-67-730)
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
equivalent widths of lines of, in sunspot spectra, (E), 22:29097
europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
formation of solid-solution Pb/sub 1-z/Sr/sub z/Ti/sub 0.46/Zr/sub 0.54/O_3, 22:45827
formation on carbide cutting tools, kinetics of, 22:23899
identification in stellar spectra, (E), 22:15277
krypton ion ranges in, measurement using sputtering technique, 22:26222
molecular configuration of, polarity in, 22:4873
neutron scattering by Ti_2O_3, (E), 22:24810
oxygen potentials in nonstoichiometric, effects of defects and temperature on, 22:4883
preparation of single crystals of, evaporation method for, 22:26077
properties as ion-exchange material, 22:33552
purity of research-grade, evaluation of, 22:52289
radiation effects on chemisorption of oxygen by solid, γ, 22:2096 (CU-2791-6)
radiation effects on, proton and ultraviolet, 22:17191
radioinduced defects in single crystals of, ESR study of paramagnetic states of electron, gamma, and neutron, 22:44213 (ORNL-TM-2264)
radioisotope precipitation with hydrated, 22:42811 (HMI-B-69)
radioprotective effects of, on skin of man, uv, 22:33843
reactions with americium oxides, solid-state, 22:30548
reactions with uranium mononitride at 600 and 1100°C, mechanism and products of, 22:48849 (KFK-771)
reflectance of sintered, effects of sintering temperature on spectral, (E), 22:31461
separation of lanthanum from, by radiochemical procedure, 22:25280
solvent properties of hydrous, for uranium from seawater, 22:25481
spectral absorption lines in red giant stars due to, (E), 22:52343
sputtering by krypton and oxygen ions, coefficients for, (E), 22:26222
superconductivity of, effect of lattice vacancies on, (E), 22:29437
thermodynamic properties of TiO_2, 22:52268
Ti_3O--Zr_3O, brittleness of, 22:19650
titanium isotope abundance in, 22:42847 (IS-T-217)
use in radioactive waste processing, 22:4265(P)
use of hydrated in decontamination of radioactive effluents, 22:42811 (HMI-B-69)
viscosity during densification, effects of temperature on, 22:49816(R) (COO-1122-14)
Al_2O_3--CaO--Fe_2O_3--SiO_2-base--TiO_2, properties of Kaolite-20, as refractory castable, 22:43013 (BNWL-797)
Al_2O_3--Cr-base--Mo--TiO_2, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
BeO--TiO, electron irradiation effects on shf energy absorbers of, 22:1343
Cr_2O_3--PbO--TiO--ZrO_2, phase studies of, 22:760
Cr_2O_3--PbO--TiO--ZrO_2, properties of ceramic, 22:760
Cr_2O_3--TiO_2, phase diagram, 22:28951
$CrNbO_4$--TiO_2, phase studies of solid solutions in, 22:17177
Fe_2O_3--Nb_2O_5--TiO_2--U_3O_8--Y_2O_3, reactions with chlorine gas, avoidance of $NbOCl_3$ formation in, 22:50984
MgO--TiO, electron irradiation effects on shf energy absorbers of, 22:1343
Na_2O--TiO_2, radiation effects on glasses of, ESR studies of γ, 22:30636
NbO_2--TiO_2, oxygen potentials in nonstoichiometric, effects of defects and temperature on, 22:4883
Re_2O_3--TiO_2--ZrO_2, crystal structure and phases of, 22:23901
$SrTiO_3$--$SrZrO_3$--TiO_2--ZrO_2, phase studies of, 22:25320 (AERE-R-5671)
Ta_2O_3--TiO_2, phase diagrams, 22:36544
Ti_2O_3--V_2O_3, analysis for constituents by neutron

activation methods, 22:37686
Ti_3O--Zr_3O, phase studies of, 22:19650
Ti--TiO_2, meson (π) reactions with targets of, condensed-state effects in x-ray spectra from, (E), 22:52507
TiC--TiO, thermodynamics of, 22:28943
TiO_2--WO_2, phase diagram, melting relations in, (E), 22:31517
TITANIUM PHOSPHATES
ion exchange properties for cesium in simulated radioactive waste, 22:42834
ion exchange properties of synthetic, as compared to chromium and zirconium phosphates, 22:12291
properties as ion-exchange material, 22:33552
use in potentiometric determination of uranium in phosphoric acid, 22:1968(T) (CEA-tr-X-630)
TITANIUM PHOSPHIDES
effects as coating, on oxidation of niobium or tantalum, 22:2571
electron band structure of, magnetic susceptibility and NMR studies of, 22:17807
TITANIUM SILICIDES
electric conductivity of, temperature coefficient, (E), 22:28932
oxidation of $TiSi_2$ at 300 to 1200°C, 22:52133(R) (N-68-23469)
production by auxiliary metal bath procedure, 22:38614
radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
$MoSi_2$--$TiSi_2$, properties as coating material on tantalum alloy, 22:40998(R) (N-68-19623)
TITANIUM STEEL
corrosion by liquid sodium, 22:12966
Co--Mo--Ni--Ti, crystal structure banding in rolled plates of, 22:10998
Cr--Mo--Ti, mechanical properties of, preparations for testing effects of high-temperature sodium on Croloy 5 Ti, 22:19476(R) (MSAR-68-14)
Cr--Ni--Ti, growth of fuel cans of, during oxidation by carbon dioxide, 22:15148
TITANIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
use as chemical dosimeter for gamma radiation, 22:8393
oxalic acid--$Ti_2(SO_4)_3$, radiation effects on, formation mechanisms of hydrogen peroxide in γ, 22:10303
TITANIUM, TETRABUTYL-
effects on radioinduced polymerization of butadiene, 22:33387
TITANIUM TRITIDES
deposition on copper plated beryllium and mild steel radiation targets, 22:14634
deuteron reactions at 300 keV, effects on lifetime of accelerator targets from, 22:1518 (AWRE-O-52/67)
performance as target for neutron production by (d,n) reactions, 22:37243
TITANIUM TUNGSTATES
enthalpy of formation of, 22:12311
entropy of formation of, 22:12311
thermodynamics of, development for radar use, 22:52179
TITANIUM TUNGSTEN OXIDES
effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
TITANIUM VANADATES
properties as ion-exchange material, 22:33552
TITRATION EQUIPMENT
see also Laboratory Equipment
see also Remote-Control Equipment
design for neutron absorptiometric methods, 22:12233
design for studies of hydrolytic equilibria, 22:25329 (ORNL-4229, pp 84-104)
design modification of controlled-potential coulometric, 22:22933 (ORNL-TM-2175)
design of solid-state controlled-potential coulometric, 22:14425 (ORNL-4196, pp 1-12)
TLA (Trilaurylamine)
see Tridodecylamine
TMP
see Thymidine Monophosphates
TNT
see Toluene, Trinitro-
Tobacco (Nicotiana)
see Nicotiana under Angiospermidae
Toads (Bufo)
see Bufo under Amphibia
Toboggan Project
see Plowshare Project
TOKAI-MURA POWER REACTOR
construction of, description of, 22:14159
cooling system of, description of ducts, pipes, and auxiliaries for, 22:20840
design parameters and layout for, 22:16146 (GA-8075)
inspection of, description of first annual safety, 22:53296
operation of, description of, 22:46972
operations and performance of 166 MW(e), effects of anti-earthquake design variations on, 22:14170
operations of, description of, 22:22717
pressure vessel steels for, analysis of brittle fractu
testing of, 22:27448
Tokomak
see Thermonuclear Reactors
p-TOLUAMIDE, N-ISOPROPYL-α-(2-METHYLHYDRAZINO)-, HYDROCHLORIDE
effects on organs and tumors of mice and rats, combined effects of radiation on, 22:40838
TOLUENE
analysis for hydrogen by neutron slowing-down method, 22:4005
analysis for tritium by paper chromatography and counting, 22:18731
determination in atmosphere, spectrophotometric, 22:21029 (SC-M-67-3044)
determination in pyrolyzed polystyrene films, gas chromatographic, 22:33257
detonation of row charges of, crater formation from simultaneous and one-at-a-time, 22:8242 (SC-RR-67-72
deuterium exchange between methyl sulfoxide and, catalytic effects of lithium and potassium tert-butoxide on, 22:45087
deuterium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067
deuterium exchange with hydrogen in, at 110°C, effects chromium oxide gel catalysts on, 22:14505
deuterium self-exchange reactions in labeled, catalytic effects of nickel and platinum on, 22:33340
effects as diluent on solvent properties of nitric acid-TBP--water for actinide and rare earth nitrates, gas chromatographic studies on, 22:6405
effects on deuterium isotope effects in thermal decomposition of 2,2'-azobis[2-methylpropionitrile], 22:10217
effects on γ radioinduced isomerization of stilbene, 22:48878(R) (NYO-3242-29)
effects on γ-induced polymerization of ethylene, 22:416
effects on separation of calcium from strontium by solvent extraction using D2EHPA and dioctyl ester of phosphoric acid, 22:45154
effects on solvent properties of dioctyl phosphate for europium and terbium, 22:6400
effects on yields in gamma radiolysis of methanol solutions containing nitrous oxide, 22:10281
efficiency of blending mixes containing, for scintillation counting of aqueous tritium solutions, 22:16433
electron LET at 100 eV to 10 MeV in, (T), 22:38800
electron reactions at 4 to 36 keV, emission spectra from 22:9069
exchange reactions with tritium, effects of argon and helium on kinetics of, 22:78
meson (μ^-) depolarization in, 22:21860
meson (μ^-) residual polarization in, 22:38718 (JINR-P14-3809)
neutron diffusion parameters for, measurement using pulsed source technique, (E), 22:39559
nitration of alkylbenzene, benzene, and halobenzene mixtures of, by nitroniumtetrafluoroborate in tetrahydrothiophene 1,1-dioxide solutions, 22:18800
performance as scintillator in presence of water, effect of dioxane and naphthalene on, 22:22952
phase homogeneity of solid crystalline, radiothermoluminescence studies on, 22:18790
proton LET at 0.5 to 900 MeV in, (T), 22:38800
radiation effects on ion pair production in, method for measuring mean energy in γ, 22:16601
radiation effects on, tritium substitution in, γ and uv, 22:16577
radioinduced chlorination of, LET effects in, 22:10269
radioinduced nitrosation of, products from electron and γ, 22:2157
radiolysis in 3-methylpentane glass at 77°K, luminescenc studies on γ, 22:35831 (PRNC-116)
radiolysis of deuterated and normal, at 40°C, isotope effects in γ, 22:18838
radiolysis of, assignment of excited species producing transient fluorescence and absorption in nanosecond pulse, 22:25397
radiolysis of, formation of excited states in nanosecond pulse, 22:37806
radiolysis of, yields of hydrogen from γ, 22:25393
reactions with benzene, mass spectrometric studies on ion-molecule, 22:37795
reactions with copper chloride--diisopropyl peroxydicarbonate, 22:21066
reactions with deuterium or heavy water on titanium dioxide catalyst, kinetics of, 22:2066
reactions with helium tritide in gaseous phase, kinetics of, 22:10218
reactions with hydrogen atoms produced by pulse radiolysis, rate constants for gas-phase, 22:2115
reactions with hydrogen bromide, effects of deuterium or 22:10258
separation of deuterated and normal, by gas chromatography using open tubular thick layer graphitized carbon black columns, 22:27874

separation of mixtures of deuterium-labeled, by chromatography, 22:51053
solvent properties for chromium on uranyl complexes of 2,4-pentanedione and uranyl complexes of 8-quinolinol, 22:12298
solvent properties for tetraheptylammonium fluoride, effects of benzyl alcohol, 1-decanol, 1-naphthol, and p-phenylphenol on, 22:37718 (UCRL-17989, pp 181-252)
tritium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067
2,3-butanedione--toluene, radiolysis of, nanosecond-pulse, 22:37806
anthracene--toluene, radiolysis of, nanosecond-pulse, 22:37806
benzene--toluene, exchange reactions with tritium, kinetics of, 22:78
biphenyl--toluene, radiolysis of, nanosecond-pulse, 22:37806
naphthalene--toluene, radiolysis of, nanosecond-pulse, 22:37806
toluene--xylene, exchange reactions with tritium, kinetics of, 22:78

Toluene, Amino-
see Toluidine

TOLUENE, α-4-BIPHENYLYL-α-METHOXY-
deuterium exchange between 2-methyl-2-propanol and, kinetics of, 22:21063
deuterium exchange between methyl sulfoxide--methanol and, rates of potassium methoxide-catalyzed, 22:21064
racemization of, effects of deuterium on, 22:21063
racemization of, effects of deuterium on potassium methoxide-catalyzed, 22:21064

TOLUENE, α-CHLORO-
displacement reactions of substituted, effects of carbon-14 on nucleophilic, 22:16485(R) (ORO-3234-6)
effects on yields in gamma radiolysis of methanol solutions containing nitrous oxide, 22:10281
radiolysis of liquid, dimeric products from γ, 22:25394
radiolysis of, pulse, 22:14513 (BNL-50057, pp 60-78)

TOLUENE, m-(1-CHLOROETHYL)-
solvolysis of, effects of deuterium on, 22:12326

TOLUENE, p-(1-CHLOROETHYL)-
solvolysis of, effects of deuterium on, 22:12326

TOLUENE, α-CHLORO-p-NITRO-
chlorine-36 exchange between chlorine-36-labeled-lithium chloride and, electrodeposition study of, 22:16558

TOLUENE, 2,4-DICYCLOHEXYL-
radiation effects on stability of, 22:42770

TOLUENE, 2,5-DIFLUORO-
deuterium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067
tritium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067

TOLUENE-3,4-DITHIOL
complexes with actinides, preparation of, 22:30515

TOLUENE, ETHYL-
oxidation by carboxylatocopper complex, 22:45051
radiolysis of, effects of isomeric form on γ, 22:2146

TOLUENE, p-ETHYNYL-
hydration in heavy and light water, isotope effects in acid-catalyzed, 22:21075

TOLUENE, 2,4,6-TRI-tert-BUTYL-
nitration of, effects of deuterium on aromatic, 22:27717

TOLUENE, α,α,α-TRIFLUORO-
deuterium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067
tritium exchange with aryl hydrogen between lithium cyclohexylamide and, in cyclohexylamine, kinetics of, 22:21067
CaF_2--trifluorotoluene, fluorine-19 NMR in, (E), 22:20047

TOLUENE, TRINITRO-
compressive rheological behavior of brittle, strain-rate sensitive, polycrystalline, dynamics of, 22:45030 (UCRL-50446)
detonation of spheres of, crater formation by, 22:51127 (SC-RR-68-449)
reaction zones of, numerical hydrodynamic studies of time-dependent, 22:1925 (LA-3764)

TOLUENE-α,4-DIAMINE
preparation of,, 22:14483 (ORNL-4196, pp 91-2)

TOLUENESULFONIC ACID
hydrazide, effects on γ-induced discoloration of poly(vinyl chloride), 22:35864

TOLUENESULFONIC ACID, METHYL ESTER
reactions with dimethylphenylphosphine, effects of deuterium on, 22:4158
reactions with dimethylphenylphosphine, secondary deuterium isotope effects in, 22:8080
reactions with N,N-dimethylaniline, effects of deuterium on, 22:4158
reactions with N,N-dimethylaniline, secondary deuterium isotope effects in, 22:8080

α-TOLUENETHIOL
radiolysis at 77°K, EPR studies of γ, 22:37799

TOLUIC ACID
deuterium exchange between heavy water and, 22:12327

TOLUIDINE
reactions with p-methoxybenzenediazonium borofluoride, effects of deuterium on, 22:18751

TOLUIDINE BLUE
effects on yeast cells, protective effects of thorium and uranyl ions against lytic, 22:10730
molybdenum-toluidine blue, method for staining of polyribosomes in cultured mammalian cells, evaluation of, 22:25712 (COO-78-163, pp 39-63)
radiation effects on staining reactions of amoebae to, effects of dose on x, 22:49189

Toluylene
see Stilbene

p-TOLYL PHOSPHATE
see also Phosphoric Acid, Di-p-tolyl Ester

p-TOLYLOXY, 2,6-DI-tert-BUTYL-α-(3,5-DI-tert-BUTYL-4-OXO-2,5-CYCLOHEXADIEN-1-YLIDENE)-
radiation effects on absorption of ESR spectra of, adsorbed on silica gel, γ, 22:37788

Tomatoes (Lycopersicum)
see Lycopersicum under Angiospermidae

TONGUE
radiation effects on DNA synthesis in epithelium of, in mice, autoradiographic study of combined effects of Endoxan on, 22:36315
radiation effects on, of mice, protective effects of topically applied radioprotective chemicals against x, 22:43367
radioinduced injuries to, of man following therapy of oral carcinomas, cobalt-60 γ and radium, 22:40803
radioinduced lesions of, in hamsters, effects of dose on x, 22:12880
radioinduced neoplasms in, following therapy in man, x, 22:49527
radioinduced spinocellular carcinoma of human, following radium therapy for facial hypertricosis, 22:31160
radiotherapy of tumors of, in man, comparison of photon- and x ray-to high-energy electron, 22:51735
radiotherapy of tumors of, in man, technical problems in high-energy electron, 22:51737

TONSILS
radiotherapy of epitheliomas of, comparison of electron and photon, 22:51702

Tool Steel
see Tungsten Steel

Tools
see Cutting Tools

TOPAZ
crystallization in hydrothermal stage of pegmatite process, 22:7981(T) (WAPD-Trans-80)

TOPO
see Phosphine Oxide, Trioctyl-

TOPOLOGY
see also Mathematics
correspondence of points of bounded polyhedron orothogonal projections to 3-space Euclidean set, determination of, 22:14379 (LA-DC-9167)
equivalence of letter classes using, determination of fractional factorial design, 22:27521(R) (ORNL-4236)
homology theory in, 22:13625
Riemann surfaces of analytical Lie groups and functional spaces, 22:26673 (ITF-67-35)
theory and use of algebraic, for Feynman integrals, 22:13837

TOPOT
see Oxazole, 2,2'-p-Phenylenebis[5-tolyl-

Topsy
see Critical Assemblies

TORBERNITES
see also Metatorbernites

Torecan
see Thiethylperazine

TORI
beam injection into magnetic configurations of, filling from fast neutral, (T), 22:15507(T) (UCRL-Trans-10223)
design of magnetic shield, for space vehicles, 22:5406
design of partially stable 90-kG superconducting solenoid, 22:29387
design of quadrupole device with inner current fed through magnetically shielded supports, 22:11404(R) (LA-3831)
design of stabilized levitated superconducting rings, 22:29455
hydrogen injection in magnetic configurations of, (T), 22:19930 (UCID-15298)
magnet coil system for plasma injection into toroidal octupole device, 22:19926 (GA-7423)
magnetic field production in, negative V'', 22:34577 (AD-665528)
performance of thermonuclear devices of, with adiabatic compression by jacket deformation, (T), 22:17612(T) (MATT-Trans-50)
plasma Bohm diffusion in, ignition in, (T), 22:36882 (UCID-15334)
plasma confinement and stability in magnetic configurations of, 22:5311
plasma confinement in magnetic configurations of, prospects for low-beta, (E/T), 22:19929 (TID-24228)
plasma confinement in magnetic systems of, with negative V'' and shear, (T), 22:19936(T) (NP-tr-1621)
plasma confinement in multipole devices of, properties of, 22:7260

- plasma confinement in octupole device, (E), 22:17609 (GA-8141)
- plasma confinement in octupole device, research on, 22:5306(R) (COO-1233-59)
- plasma confinement in toroidal octupole device, (E), 22:52734
- plasma confinement in toroidal octupole magnetic fields, 22:39031 (CONF-680805-7)
- plasma confinement in turbulent-heated, 22:46099 (IAE-1485)
- plasma confinement in, electron cloud, 22:1143(R) (NYO-3863-1)
- plasma confinement in, fluid description of low-beta, (T), 22:24247 (MATT-Q-25, pp 201-22)
- plasma diagnostics in, microwave techniques for turbulent, 22:3026
- plasma diffusion in magnetic configurations of, (E/T), 22:17613
- plasma diffusion in magnetic configurations of, (E/T), 22:17614
- plasma drift waves in magnetic quadrupole configurations, (E/T), 22:15517 (GA-8074)
- plasma electric conductivity in Al'fa device, hf, 22:3027
- plasma electron trajectories in magnetic configuration of, 22:17657
- plasma equilibria in magnetic configurations of, high-β, (T), 22:39033 (RIEC-TR-29).
- plasma equilibrium and stability in magnetic configurations of, 22:36954
- plasma equilibrium in steady-state and hf magnetic fields of, (T), 22:17713
- plasma equilibrium in, high beta, (T), 22:24365
- plasma fluctuations in octupole fields in, 22:44160
- plasma hydromagnetic equilibrium in magnetic configurations of, finite beta, 22:1266 (LA-3770, Paper B2)
- plasma hydromagnetic equilibrium in magnetic geometries of, finite-beta, 22:13512 (LA-3778)
- plasma injection and confinement in magnetic geometries of, (T), 22:19940
- plasma injection into levitated quadrupoles, azimuthally localized fluctuations in, (E), 22:29484
- plasma instabilities in axisymmetric configurations of, low-frequency, (T), 22:46190 (MATT-617)
- plasma interchange instabilities in, low-frequency limit of, (T), 22:24360
- plasma lf loss mechanisms in MHD-stabilized, 22:44071 (MATT-624)
- plasma losses from magnetic configurations of, (T), 22:17618
- plasma properties in toroidal multipoles, 22:31806 (ORNL-4238, pp 67-104)
- plasma properties in, curvature effects on, 22:39058 (CEA-R-3490)
- plasma resistive instabilities in, (E), 22:34722
- plasma ring diffusion in magnetic configurations of, (E), 22:19942
- plasma screw pinch in, 22:41569 (NP-17527)
- plasma stability and transport processes in magnetic geometry of, 22:5386(T) (NP-tr-1600)
- plasma stability in magnetic configurations of, magnetohydrodynamic, 22:17710
- plasma stability in quadrupole and octupole magnetic configurations, (E), 22:36956
- plasma stabilization by finite orbit effect in, (T), 22:31873
- plasma stationary equilibrium in magnetic geometries of, (T), 22:26395
- plasma temperature in arc-discharge configurations of, 22:50143 (IPP-6/67)
- plasma turbulence in high-current discharges in magnetic configurations of, (E/T), 22:20027(T) (MATT-Trans-53)
- theory of closed spatially periodic magnetic configurations with minimum B, 22:46113(T) (MATT-Trans-58)

Tornillo Event
- see Plowshare Project

Torpedoes
- see Ordnance Materiel

TORQUE METERS
- design for low temperatures using superconductors, 22:4527
- design of radiometric, 22:2442

Torsion Bars
- see Springs

Tory Reactor
- see Pluto Reactors (Tory)

Toshiba Training Reactor (TTR-1)
- see Reactors, Research

TOURMALINES
- content in neogene sediments of Niigata Prefecture, Japan, 22:51118
- use of pyroelectric, for x-ray dosimetry, 22:19160(R) (NYO-3409-4)

TOXICITY
- beryllium, in mice and rats, effects of organophosphorus complexing agents on, 22:43206(T) (JPRS-45973)
- book: Analytical Toxicology of Industrial Inorganic Poisons, 22:18734
- book: Laboratory Handbook of Toxic Agents, 22:36289
- book: Short Manual on Toxicology, 22:8563(T) (JPRS-42929)
- book: The Toxicology of Radioactive Substances, Volume 3 Iron-59, 22:21449
- cadmium, to man, review of information on, 22:40581
- cesium-137, to pea seedlings, in relation to content of DNA and RNA and mitosis, 22:10739 (BNWL-480, pp 127-51)
- determination of herbicides, 22:14913 (ORNL-TM-2042)
- determination of lithium fluoride, to personnel during thermoluminescent dosimetry, 22:19248
- determination of undecahydrododecaborate sulfhydryl anion, in man and mice, 22:51673(R) (NYO-3267-5)
- determination of yttrium oxide, to beagle dogs after exercise and inhalation, 22:33744
- diagnosis of uranium, in rabbits, use of fluorescence microscopy for, 22:21436
- methods for control of, of radiopharmaceuticals, 22:23586
- ozone, in frogs, mice, and rabbits, 22:40751
- plant, to man, pathology and treatment of, 22:7967 (SWRHL-33-r)
- plutonium-237, for man, determination of, 22:28385
- radiation effects on, of biological insecticides, uv, 22:8665
- radiation effects on, of cobra venom in aqueous solution, γ, 22:43204 (CONF-680517-1)
- radiation effects on, of Endoxan for Escherichia coli and HeLa cells, effects of phosphate buffer on, 22:23473
- radiation effects on, of epsilon aminocaproic acid in mice and rats, x, 22:43350
- radiation effects on, of food, review of, 22:49676
- radiation effects on, of fruit juices, γ, 22:40978(R) (NP-17182)
- radiation effects on, of Pasteurella tularensis, lethal γ, 22:49657
- radiation effects on, of phages produced by mutants of Corynebacterium diptheriae, uv, 22:593
- radiation effects on, of shrimp to mice, effects of post-irradiation storage temperature on low dose, 22:49663(R) (ORO-3698-2)
- radiation effects on, to mice of contrast media containing iodine, acute x, 22:52112
- radiation, in rats following prenatal injection of tritium-labeled thymidine, evaluation of, 22:40601
- radioinduced, in cod and flounder, effects of low temperature on, 22:52061 (CONF-670945)
- radioinduced, in food following radiation processing, 22:43514
- radioinduced, of glucose solutions to bacteriophages and infusoria, 22:15122
- radioisotope, computer analysis of data on, 22:23407 (LF-38, pp 147-52)
- radioisotope, to sheep, comparison of radium and strontium-90, 22:40829 (ORO-657, pp 18-34)
- reaction mechanisms for, of insecticides in house flies and mice, 22:25225(R) (UCB-34-P-113-2)
- sodium fluoride, in rabbits, 22:16375 (UR-49-891)
- strontium-90, for embryos of rats, 22:8486
- tellurium, in rats, 22:6720(T) (TT-1283)
- tritium, to cells and animals, 22:51459
- uranium, in mice, rabbits, and swine in relation to distribution in tissues following sorption through skin, 22:49242
- uranium-233, to mice in relation to distribution in bone, kidney, and spleen, 22:45433

TOXINS
- see also Endotoxins
- activation of Clostridium botulinum type E, effects of trypsin on, 22:49660(R) (COO-1183-26)
- biosynthesis in γ-irradiated shrimp and oysters by Clostridium botulinum type E, effects of dose and temperature on γ, 22:49667
- book: Radiation Toxins: Their Nature and Role in the Biological Effect of High-Energy Radiation, 22:40944
- characterization of Pasteurella tularensis, 22:49657
- distribution of copper-65-labeled snake venom, use of activation analysis for tracer study of, 22:31008
- effects on Ehrlich ascites cells, combined effects of gamma radiation on, 22:51958
- filters for, development of high-efficiency, 22:21230 (AWRE-O-81/65)
- production by bacteria in γ-irradiated haddock and perch, 22:17062(R) (MIT-3343-28)
- radiation effects on antigen activity, sterility, and toxicity of cobra venum, in aqueous solution, γ, 22:43204 (CONF-680517-1)
- radiation effects on content of type E botulinum, in cod, effects of storage temperature on, 22:49660(R) (COO-1183-26)
- radiation effects on content of, of quinoid nature in bone marrow and liver of rats, methods for detection of, 22:49512
- radiation effects on formation of, by spores of Clostridium botulinum type F, γ, 22:33986(R) (ORO-3347-5)
- radiation effects on immune reactions of guinea pigs to diphtheria, effects of transplantation of homologous hematopoietic tissues on γ, 22:49230
- radiation effects on production of botulinum, in cod, effects of dose, pH, spore load, and temperature on, 22:6930(R) (COO-1183-24)

radiation effects on production of Clostridium botulinum, in fish, effects of temperature on, 22:52061 (CONF-670945)
radiation effects on production of, by Fusarium sporotrichioides and Fusarium poae, uv, 22:25757
radiation effects on production of, by storage wheat-infesting fungi, cobalt-60 γ, 22:31303
radiation effects on resistance of oats to, of fungi, 22:19307(R) (ORO-3092-15)
radiation effects on sensitivity of mice to botulin, 22:30985
radioinduced, effects of, on genetics of animals, review of, 22:23601
radioinduced, effects of, on synthesis of DNA in embryos of Misgurnus fossilis, 22:23423
radioinduced, in blood cells, effects of, on nervous system of mammals, x, 22:19437
radioinduced, in bone marrow suspensions, x, 22:25862
radioinduced, in cells, review of role of, in recovery, γ and x, 22:25910
radioinduced, in plants, mutagenic effects of, on Escherichia coli, 22:51522
separation of amanita, by thin-layer chromatography, 22:14428 (ORNL-4196, pp 33-44)

Toy Top
see Magnetic Mirror Machines

TOYOCAMYCIN
effects on chromosomes in leukocytes of man following therapy for cancer, effects of time on aberrant, 22:51533
effects on γ-radiosensitivity of phosphorus-32 uptake by DNA and RNA of ascites hepatoma cells in rats, 22:31025
effects on phosphorus-32 uptake by DNA and RNA of ascites hepatoma cells in rats, 22:31025

TP-D
see Q Devices

TPHA
see Acetic Acid, [(Carboxymethyl)Imino]Bis[[Ethylene[(Carboxymethyl)Imino]Ethylene]Nitrilo]Tetra-

TPN
see Nicotinamide-Adenine Dinucleotide Phosphate

TR-1
see Reactors, Research

TRACE ELEMENTS
content in uranium minerals of Federal Republic of Germany, 22:6501
content of foods and tissues, use of x-ray spectrometers for determination of, 22:6717 (UCD-472-210)
content of marine organisms and sediments, minerals, rock, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
content of organisms in relation to ash, dry and wet weight, and organic carbon and nitrogen, 22:43311(R) (PRNC-85)
content per gram of carbon and nitrogen in marine food chains, 22:43311(R) (PRNC-85)
detection in drugs, use of activation analysis for, 22:12230
determination in animals, plants, and soils by neutron activation analysis, 22:17049
determination in bone samples, chemical preconcentration method for, 22:6803 (ORNL-4168, pp 231-88)
determination in seawater by neutron activation, 22:4308 (TID-24029)
determination of, review on methods for, 22:33213
distribution in food chains of benthic fauna, 22:23481(R) (PRNC-102)
distribution in rocks, factors affecting, 22:30692 (PNE-5008)
distribution of mineral, in sediments off west coast of Puerto Rico, 22:21217 (PRNC-104, pp 121-46)
effects on x-radiosensitivity of immunity and physiology of cattle, 22:51894
fractionation in nuclear explosions, exploding-wire studies of, 22:45187 (NYO-3756-2, Sect. C)
measurement in hydraulic fluids of metallic, neutron activation method for, 22:4308 (TID-24029)
measurement of metallic, neutron activation method for aircraft oils, 22:4308 (TID-24029)
metabolism in man in relation to pathogenesis and treatment of disease, 22:14906 (BNL-50057, pp 123-37)
neutron activation of, in hair of man, 22:6740
radiation effects on uptake of, by isolated rat spleen mitochondria, x, 22:40853
separation from seawater, economic feasibility of facility for, 22:47249 (AERE-R-5500(Vol.2), pp 387-98)
uptake by marine mollusks, 22:51329

TRACER TECHNIQUES
see also Radioisotopes
see also Stable Isotopes
accuracy and precision of, for liquid flow measurement, 22:14717
analysis of data on, effects of data error on, 22:36168
automation of, 22:40050
bibliographies on use of, in food and textile industries, 22:4727
bibliography on diagnostic use of, 22:4637
bibliography on use of, in medicine, 22:43254
book: Advances in Tracer Methodology, Vol. 4, 22:16470
book: Compartments, Pools, and Spaces in Medical Physiology, 22:6832 (CONF-661010)
book: Radioactive Isotopes. Their General Biological and Medical Applications, 22:36309
book: Radioisotopes, 22:21146
book: Tritium-Labeled Molecules in Biology and Medicine, 22:51464
conference on measurement of solids transport in seawater, Brussels, October 2 to 4, 1963, 22:42917
conference on measurement of solids transport in seawater, Brussels, October 2 to 4, 1963, 22:42918
conference on, Eleventh Annual, Boston, Mass., Oct. 13 and 14, 1966, 22:16470
corrections for radioisotope decay, (T), 22:7777
corrosion of materials in inaccessible locations using cobalt-60, 22:23724(P)
description and uses of, for atmospheric diffusion studies in nuclear installation site survey, 22:45356 (TID-24190, pp 257-300)
development for atmospheric precipitation studies using neutron activation analysis, 22:18960 (BNWL-481-1, pp 82-5)
development for evaluation of condensation--evaporation coefficient of liquid metals, 22:49731
development for evaluation of effectiveness of intra-arterial chemotherapy, 22:2482
development for geophysics and industry, 22:10507 (SGAE-IB/IA-15/1967)
development for ground water contamination studies using bromine-82, 22:16804
development for measurement of diesel engine filter efficiency, 22:23234
development for measurement of silt movement in surface waters, 22:30775 (PAEC/Chem/Misc-2)
development for process research in oil industry, 22:40330
development for radiodiagnosis of liver and lung conditions, 22:6856
development for simultaneous use of different radioisotopes in metabolism studies, 22:19284
development for soil physics and irrigation studies, conference on, 22:23135 (STI/PUB-158)
development for studies of soil water kinematics, 22:23152
development for surface labeling of sands and silts with chromium-51 and gold-198, 22:19063
development for tagging sediments with gold-198, 22:25614 (CEA-R-3389)
development for tracing ground water flow, 22:27915
development for use in atmosphere, natural water, and ocean pollution studies, 22:47294(R) (TID-24349)
development for use in medicine, 22:27742 (BNL-12405)
development for use in natural gas industry, 22:25621
development for use in textile industry, 22:21288 (EUR-3648)
development of airborne phosphorescent, for atmospheric diffusion studies, 22:18955 (BNWL-481-1, pp 53-68)
development of bromine-82, to study sewage diffusion in sea, 22:36003
development of carbon-14, for determination of water content in gases, 22:14698
development of carbon-14, for surface area and roughness measurements, 22:16789
development of cobalt-60 labeling, for snakes, 22:19432
development of cosmic ray-produced radioisotope, to study atmospheric precipitation processes, 22:40250 (AECL-2787, pp 567-80)
development of double isotope, for measurement of fecal radioactivity, 22:6725
development of double, for process analysis in chemical plants, 22:14710
development of dual, for plume diffusion measurements, 22:18950 (BNWL-481-1, pp 5-8)
development of gold-198, for determining homogeneity of fodder mixture, 22:14919
development of indium, for studying rain scavenging processes, 22:47239(R) (COO-1407-20)
development of iodine-125 and -131, for measurement of glomerular filtration rate and effective renal plasma flow, 22:25743
development of krypton-85, for use in science and industry, 22:21290
development of oxygen-17, for study of transport during sintering of ceramic materials, 22:15236 (UCRL-70164)
development of phosphorus-32, for study of honey bees, 22:47458
development of photon, for use in medical diagnosis, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)
development of radioactive single-well pulse, for ground water flow studies, 22:19068
development of radioactive, for large-scale ground water recharge studies, 22:19067
development of radioactive, for location of leaks from large water reservoirs, 22:19071
development of radioactive, for measurement of turbulent fluid flow, 22:21291
development of radioactive, for measuring diffusion and mixing during turbulent flow of water in pipes, 22:47280 (AERE-R-5569)
development of radioactive, to determine residence times and distributions of industrial systems, 22:16784
development of stable-tracer activation analysis, for use

in hydrologic studies, 22:48930
development of tritiated gas, for measurement of gas--oil displacement in oil shale, 22:14692
development of tritiated water, for measurement of water movement in soils, 22:23162
development of window, for study of DNA synthesis in cultured mammalian cells, 22:40587
development of zinc-65, for measuring respiration in fish in natural environments, 22:10728
development to study carbon-14 transfer in nature, 22:33573
development to study radioisotope transport in streams, 22:10356 (ORO-490-12)
development to study scavenging by rainwater, 22:40249 (AECL-2787, pp 553-66)
developments in, for chemical analysis, review on, 22:25311
equipment for measuring blood flow in organs, scintillation detector, 22:45287(P)
evaluation of radioactive, in industrial process flow studies, 22:14703
ground water and soil moisture movement at Savannah River Plant using tritium, 22:21181 (DP-MS-68-23)
groundwater movement for agriculture, 22:23131 (CONF-680112-1)
iodine-131, for immunoassay of prolactin in sheep, 22:12800
kinetics theory of radioactive, 22:35929
measurement of blood plasma volume and erythrocyte mass of man, double, 22:51824
mechanisms of sea salt corrosion of titanium alloys using chlorine-36 and sodium-22, 22:28733 (DP(NASA)-941)
method for chromium leach rate on chromated aluminum using chromium-51, 22:52137
method for detection of geological faults, use of radon in, 22:14693
method for determination of dispersal and migration of ticks, iron-59, 22:12776
method for diffusion of carbon and uranium in uranium carbide, 22:49849
method for distribution of cobalt in Wisconsin lakes, 22:18912 (COO-1281-5)
method for engine wear measurement, 22:14684
method for gas flow rate measurement using krypton-85, 22:16761
method for investigation of railway wheel flange lubrication, 22:14688
method for iron tracer from solid metal specimens to liquid slags using iron-59, 22:15136(T) (ANL-Trans-559)
method for measurement of combustion engine wear, 22:14687
method for measurement of extracellular space in smooth muscle, cobalt-60, 22:16987
method for measuring diffusion of metals in titanium and zirconium, 22:13009
method for simultaneous measurement of engine component wear, 22:14686
method for studying digestive and phagocytic functions of reticulo-endothelial system of rats, gold-198 and iodine-131, 22:23610
method for sulfur isotopes in atmosphere, 22:177 (BNL-11848)
method for water mixing in rod bundles by dysprosium activation, 22:4344
method to study deposition of small particles on vertical surfaces, 22:16717
method using uranium-235 for uranium diffusion in uranium dioxide, 22:19638
methods for diffusion in metal oxides, bibliography on, 22:11071 (ORNL-3795(Pt.5))
methods for hydrology using stable isotopes, 22:16773 (STI/DOC-10/73)
methods for industrial application of, 22:4587
neutron source for, design of antimony-124--beryllium thermal, 22:44587
permeability of thick membranes to liquid hydrocarbons, using tritiated propane, 22:28977
phosphorus-32, for determining distribution of mosquitoes in Burma, 22:17003
radiation effects on cells during use of tritium, β, 22:45506 (EUR-3290f-e, pp 39-50)
radioisotope production for, use of portable antimony--beryllium neutron source for, 22:14699
research progress on stable-isotope, 22:12179(R) (ORO-2858-19)
review on radio-release methods for chemical analysis, 22:16421
sensitivity for trace characterization, 22:30478
stability of tritium label in biological, 22:51461
systems analysis approach to, in nuclear medicine laboratories, use of computers for, 22:36307
tracer kinetics in biological, two-compartment model for, 22:47546
tritium uses in, determination of isotope effect from, 22:51463
tritium, techniques for labeling organic molecules for, 22:51462
use for analysis of immune response mechanisms in γ-irradiated rats, 22:10853
use for analysis of insecticide metabolism and toxicity, 22:25225(R) (UCB-34-P-113-2)
use for analysis of phagocytic activity of leukocytes, 22:438
use for analysis of x-radiation effects on biosynthesis of kidney soluble proteins in rabbits, 22:33739
use for comparison of residence times in continuous-flow chemical reactors, 22:4082
use for detection and quantitation of proteins synthesized during mitotic cycle, 22:25713 (COO-78-163, pp 64-125)
use for determination of iodide and sulfate content of brain, 22:40607
use for determination of role of thymus gland in immunity, 22:47445 (BNL-12327)
use for measurement of density of steam--water mixtures flowing in boiler tubes, 22:14725
use for measurement of materials retention time on production lines, 22:14714
use for measurement of red cell mass and plasma volume, 22:30986
use for measurement of residence-time distribution in laminar fluid flow through annuli and sand flow through rotary kilns, 22:14715
use for measurement of stream flow through reservoirs, 22:18940
use for measurement of stream reaeration, 22:48937
use for measurement of waste water mixing in Vistula River, 22:48926
use for measurement of water flow through turbines, 22:14718
use for measuring flow of polymers through polymerization equipment, 22:14708
use for measuring propellant quantities in space vehicles, 22:30884
use for stack-gas dispersion studies, 22:14697
use for stream pollution control in paper and pulp industries, 22:30779
use for studies of chemical processes, 22:14706
use for study of dispersion of Anopheles sergenti, phosphorus-32 or sulfur-35, 22:51403
use for study of iodine metabolism in thyroid of man, iodine-125-, iodine-131, iodine-132-, or technetium-99-labeled iodotyrosine and thyroxine, 22:14918
use for study of sewage dispersion in ocean off Danish coast, 22:14695
use for studying sand movement in littoral systems, 22:38146 (ORNL-TM-2212)
use in agricultural research, IAEA program for, 22:6248
use in determination of growth of hair, development of method for, 22:43391 (ACRH-28, pp 101-4)
use in determining oxygen transport during oxidation of nickel and zirconium, 22:52239
use in determining tantalum mass transfer in cerium--cobalt--plutonium melts, 22:10918
use in determining vanadium diffusion in niobium and zirconium, 22:10977
use in entomology, review of, 22:12949
use in hydrology and applied geology, 22:8322
use in industrial research and production programs, 22:4586
use in industry, review of, 22:6247
use in industry, review of, 22:30790
use in inspection of pressure vessels, 22:40343
use in Italian automotive industry, development of devices for, 22:8323
use in Italian metallurgical industry, 22:8324
use in Italian textile industry, 22:8321
use in measurement of abrasivity of magnetic recording tapes, 22:19052
use in measurement of turbulent flow in rivers and artificial channels, 22:12554
use in measuring beryllium-7 diffusion in berullium oxide at 1550°C, 22:4773 (UCRL-7887)
use in measuring diffusion in ceramic oxides, 22:28941 (AAEC/E-188)
use in medicine, ICRU recommended concepts, methods and nomenclature of, 22:31158
use in petroleum industry, 22:8320
use in plume diffusion experiments, for correlating meteorological data and diffusion results, 22:45194 (TID-24190, pp 117-88)
use in point dilution method for measurement of ground water flow, 22:23140
use in prospecting for oil, review of, 22:19050
use in sediment movement studies, chromium-51 sand labeling method for, 22:19062
use in steel industry, 22:2444
use in studies of natural radioactive elements in marine environments, 22:8232 (ORO-2411-8)
use in study of polymer chemistry, 22:71
use in study of self-diffusion in epsilon phase plutonium, 22:49764
use of activation analysis with, review of methods for, 22:31008
use of antimony-122 and gold-198 to measure dust release from cement factories, 22:23220 (IA-1128, pp 160-8)
use of argon-41, to study behavior of continuous point source plumes, 22:27925
use of bomb-produced tritium in, in atmospheric research, (E), 22:8220(R) (COO-1199-14)
use of bromine-82 in, for laboratory measurements of sand porosity, (E), 22:30697

use of bromine-82 in, to determine oil reflux in diffusion pumps, 22:19055
use of cadmium-109 in, for fallout from high-altitude nuclear explosions, 22:4283
use of carbon-13, to measure ground water movement, 22:42983
use of carbon-14, for atmospheric mixing and carbon dioxide exchange studies, 22:16716
use of cesium-137 to measure cesium retention by clay minerals, 22:12438
use of chromium-51 and gold-198 for measurement of riverflow, 22:48952
use of chromium-51 and iron-59 in steel plate abrasion measurements, 22:37960
use of chromium-51 and iron-59 in, for measurement of abrasiveness of solid fuels, 22:28024
use of chromium-51-EDTA and radon, for ground water flow studies, 22:19075
use of chromium-51-EDTA and tritium in, for measurement of ground water flow, 22:19074
use of cosmic ray-produced radioisotopes in, for atmospheric precipitation studies, 22:18961 (BNWL-481-1, pp 85-7)
use of deuterium and oxygen-18 in hydrology, 22:18927
use of deuterium in, to study ground water movement in Iceland, 22:18926
use of dissolved chromium in, to trace pond waste water at NRTS, 22:2192 (IDO-22049)
use of germanium-77 in, for studies of petroleum product behavior during refining, 22:14709
use of gold-198 and iridium-192 in, for measuring sand movements in Seine estuary, 22:48942
use of gold-198 in, for measurement of Danube River bed material movement, 22:18996
use of hafnium-181 as tracer to evaluate thermal diffusion process for separation of hafnium and zirconium chlorides, 22:16785
use of iodine-127 in, for measurement of anion sorption and movement in Danube River soils, 22:23158
use of iodine-131 and mercury-197 for double, in radiography of heart, 22:23585
use of iodine-131 in multi-well and single-well, for ground water flow measurements, 22:19069
use of iodine-131 in, for measurement of rainwater movement in soils, 22:23155
use of iodine-131 to study water movement in marine-deposited clay soils, 22:2196
use of iodine-131, with radiometric flowmeter to measure surface water currents, 22:18941
use of iron-55 in, for measurement of clay movement in soils, 22:23159
use of iron-59, for measurement of iron diffusion in stainless steel, 22:23800
use of irradiated glass fibers in, for determination of flow of cellulose through industrial bleaching process, 22:14702
use of isotopic, to study circulation of natural waters, 22:18925
use of krypton-85 in, for atmospheric diffusion studies, 22:18959 (BNWL-481-1, pp 78-81)
use of krypton-85 in, for determination of effectiveness of nuclear chimney purging methods, 22:21228 (UCID-15259)
use of krypton-85 in, for measurement of corrosion, surface temperatures, and wear, 22:14685
use of krypton-85 in, for study of gas flow characteristics in high-speed gas reaction vessels, 22:14719
use of lanthanum-140 in, for measurement of estuary silt movement in Firth of Forth, 22:19059
use of natural tritium, for studies of Icelandic ground water hydrology, 22:18933
use of nonradioactive elements in, for measurement of bearing wear, 22:15191
use of nuclear weapon-produced carbon-14, in atmospheric circulation studies, 22:37885
use of oxygen-18 and tritium, for studies of French ground water hydrology, 22:18934
use of ozone and radioactivity in, to measure stratospheric--tropospheric exchange, 22:33570
use of phosphorus-32 and polonium-210 in, to study propagation of ice crystals in clouds, 22:51188
use of radioactive halogen, for measuring bypassing in continuous stream processes, 22:47286(P)
use of radioactive monazite in, for locating control survey markers, 22:48931
use of radioactive, for leak detection in inaccessible flow systems, review of literature on, 22:49034
use of radioactive, for measurement of colloid and ion movement through rocks and soils, 22:23154
use of radioactive, for measurement of gravel movement in Danube River, 22:19064
use of radioactive, for measurement of ion and water movement through soil columns, 22:23153
use of radioactive, for measurement of mixer efficiency, 22:14721
use of radioactive, for measurement of movement of complex compounds through soils, 22:23156
use of radioactive, for measurement of piston ring wear, 22:49031
use of radioactive, for measurement of sea sediment movement, 22:19060
use of radioactive, for measurement of sediment movements in surface and sea waters, 22:19058
use of radioactive, for measurement of vertical movement of iron and manganese in Spanish soils, 22:23157
use of radioactive, for measurement of water movement in soils, 22:23161
use of radioactive, for measuring carbon and uranium self-diffusion in uranium carbide, 22:47701 (AI-AEC-12726)
use of radioactive, for process analyses of aluminum and magnesium production methods, 22:14711
use of radioactive, for process analysis of electrolytic nickel refining, 22:14712
use of radioactive, for seepage control in dams, 22:19072
use of radioactive, for streamflow measurements, 22:19057
use of radioactive, for study of process material flow in aluminum oxide production plants, 22:14705
use of radioactive, in borehole dilution methods for ground water flow measurements, 22:19070
use of radioactive, in development of new chemical processes, 22:14723
use of radioactive, in ground water hydrology studies, 22:19066
use of radioactive, in industrial chemical process flow studies, 22:14704
use of radioactive, in soil diffusion experiments, limitations on, 22:49030
use of radioactive, in Swedish steel industry, 22:14713
use of radioactive, to determine impurities in electroplated metal coatings, 22:14724
use of radioactive, to measure water flow through porous aquifiers, 22:19073
use of radioactive, to study dispersal of sewage in ocean, 22:19061
use of radioactive, to study flow patterns in glass-making furnaces, 22:14716
use of radioactive, to study granitic phenomenon in rocks, 22:48928
use of radioactive, to study sediment movements in Bay of Naples, 22:48968
use of radioactive, to study silt movements near spoil grounds, 22:47288 (AERE-R-5500(Vol.3), pp 594-607)
use of radiocarbon, for Dutch ground water flow measurements, 22:18932
use of radioisotope, for measuring ground water movement, 22:49038
use of radioisotope, in French industry, 22:49035
use of radioisotope, to measure tappet wear, 22:47301
use of radioisotopes in, 22:47297
use of radioisotopes in, for measurement of porosity of ground water aquifers, 22:25508
use of radioisotopes in, to determine exchange processes in upper atmosphere, 22:25542
use of radioisotopes in, to study stressed masses, 22:37934(T) (AEC-tr-6933)
use of rhodamine B in, to study distribution of heat discharged from marine nuclear power plants, 22:18995 (NYO-3109-26)
use of rhodamine B, for determining oceanic diffusion, 22:51120 (NYO-3109-35)
use of rhodamine dyes and radioactive, to study dispersion of pollutants in lakes, rivers, and seas, 22:14696
use of scandium-46 in, for measurement of estuary silt movement in Firth of Forth, 22:19059
use of scandium-46 in, for measurement of soil erosion by rain in western Congo, 22:19065
use of scandium-46 in, for studying silt movement in Firth of Forth, 22:8300 (AERE-R-5523)
use of simultaneous, for measurement of erythrocyte volume, extracellular fluid volume, and plasma volume in man, 22:51857
use of sodium-24, for measurement of Eggborough Power Plant cooling water flow, 22:47279 (AERE-R-5390)
use of strontium-85 in, to study effects of sediments on transport of solutes, 22:37876 (ORO-490-12-a)
use of strontium-85 in, to study strontium diffusion in soil columns, 22:25501 (BNWL-481-3, pp 39-42)
use of strontium-89 and -90, to determine movement of atmosphere, 22:25533 (SZS-4/68)
use of sulfur-35 in, for measuring moisture movement during drying of thin peat layers on moist soils, 22:25620
use of tetrakis (dimethylamino) ethylene for tracking clouds, 22:21209 (SC-RR-66-2693)
use of tritiated oil in, for continuous measurement of oil consumption in internal combustion engines, 22:14700
use of tritium in, for ground water movement studies, 22:18939
use of tritium in, for measurement of water movement in sandy soils, 22:23160
use of tritium in, to determine atmospheric motions, 22:30720
use of tritium, for measuring hydrogen diffusion in metals, 22:47674 (DP-1108)
use of tritium, for studies of New Zealand ground water hydrology, 22:18935
use of tungsten-185 in, to study stratospheric transport

processes, 22:12447
use of uranine dye, to determine reactor effluent dispersion, 22:40226 (AECL-2787, pp 87-104)
use of xenon-133 in, for measurement of gas flow in large-scale chemical processes, 22:14720
use of zinc sulfide, for instantaneous plume detection, 22:18953 (BNWL-481-1, pp 33-43)
use of zinc sulfide, for lateral plume diffusion measurements, 22:18949 (BNWL-481-1, pp 1-4)
use of zirconium-95 in, to study transport of suspended river sediments, 22:4272 (TID-24140)
use to determine distribution of living roots and performance of root systems in soil, 22:23471
use to determine effects of x rays on uptake of amino acids by growing and resting hairs of rodents, selenium-75 and tritium, 22:36392
use to measure sand movement on sea floor, 22:23220 (IA-1128, pp 160-8)
use to study x radiation effects on tissue regeneration in planaria, 22:40842
use to study x-radiosensitivity of bone marrow, 22:33871
uses at Israel AEC, 22:48806(R) (IA-1168)
uses in chemical, glassmaking, and metallurgical industries, 22:14707
uses in engineering geology and hydrology, 22:37944
uses in Finnish industrial process plants, evaluation of results from, 22:14701
uses in hydrology, review of, 22:18924
uses in IAEA member countries industry, 22:14683
uses in industry, analytical, 22:4313
uses in industry, review of, 22:2315
uses in industry, survey of, 22:14682
uses in medicine, electronic equipment for, 22:19216
uses in mining and ore beneficiation, 22:12537(T) (AEC-tr-6723)
uses in Romanian petroleum industry, 22:14694
uses in sedimentology, 22:42975(T) (ORNL-tr-1805)
uses in USA oil field technology, review of, 22:14689
uses in USSR oil field technology, 22:14690
uses of radioactive, in industry and research, 22:23232
uses of radioactive, in iron ore processing, review of, 22:25623

TRACHEOPHYTA
see also Sphenopsida

Tracks
see Particle Tracks

Tradescantia
see under Angiospermidae

Trajectories
see Particle Trajectories

TRANQUILIZERS
see also Promazine
see also Reserpine
effects on radioinduced hypertension in man following therapy for malignant tumors, 22:31128

TRANSACTINIDE ELEMENTS
(Heavy elements, Z = 104, 105,... .)
see also Element One Hundred and Four
see also Element One Hundred and Five
bibliography on, 22:24860 (TID-3317)
electron configurations near Z = 126, self-consistent-field calculations of, 22:38764
half-lives of isotopes with Z near 114 and N near 184, (T), 22:44781
neutron capture and fission cross sections and resonance integrals for, method for estimating thermal, (T), 22:24852 (BNL-12353)
nuclear deformation energies of, shell corrections to, (T), 22:46813(T) (ANL-Trans-634)
nuclear ground-state and saddle-point properties of, calculations using liquid-drop model with curvature and shell-energy corrections, (T), 22:53228
nuclear structure and stability of Z = 114, (T), 22:39695 (UCRL-17989, pp 101-25)
production and properties of, conference on, 22:18207 (JINR-D7-3548)
production and properties of, research program on, 22:44678(T) (ANL-Trans-633)
production and properties of, research program on, 22:18208 (JINR-D7-3548, pp 3-14)
production by compound-nucleus reactions, neutron emission and fission width ratios for, (T), 22:14079 (UCRL-16348)
production of Z = 110, by argon-40 reactions with uranium-238, (E), 22:48544
production of Z = 114, using heavy ion-induced reactions, (T), 22:18209 (JINR-D7-3548, pp 39-47)
production of, methods for, 22:16006 (JINR-D7-3623)
production of, survey, 22:27090 (UCRL-17907)
production using heavy ion fusion reactions, research program on, (E), 22:37316(R) (UR-3591-9)
search for Z = 114, using argon-40 reactions with curium-244 and curium-248, (E), 22:39640 (UCRL-17989, pp 127-57)
specific activities of, tables of, (T), 22:44725
stability of, theory of, (T), 22:22583 (JINR-P7-3733)
synthesis of, survey of methods and prospects for, 22:44715

Transcurium Elements
see Transuranium Elements

TRANSDUCERS
see also Accelerometers
see also Piezoelectric Crystals
see also Potentiometers
see also Pressure Gages
see also Strain Gages
see also Thermocouples
calibration of Hall, design and performance NMR nutation magnetometer for, 22:8422
calibration of high temperature, inductive type proximity, in liquid sodium at 500, 700, and 1000°F, 22:23196 (NYO-3363-7(Vol.2))
circuit diagrams for Halden Boiling Reactor in-pile, 22:20814 (HPR-79)
counting system for piezoelectric, 22:51276(R) (IDO-17269)
description of electromechanical, with negative feedback used in Moessbauer spectroscopy, 22:28227
description of sodium-cooled reactor fuel element acoustic signal, 22:20876(P)
description of sodium-immersed ultrasonic, 22:22654 (APDA-220)
design and fabrication of thermal-wave, 22:12556 (BNWL-473, pp 10.1-12)
design and performance for measurement of deep ocean low-frequency waves, 22:22892 (HIG-67-11)
design for incorporation in vibratory extrusion assemblies, 22:28906(P)
design for measuring electric charge on raindrops, 22:18957 (BNWL-481-1, pp 74-6)
design for ultrasonic scanner, engineering drawings for, 22:25588
design of compact, for low-temperature experiments, 22:27534 (NBS-TN-421)
design of thermal, for isothermal water bath calorimeter, 22:27992
design of transceiver, 22:14129(R) (APDA-212)
design of, for measuring pressure pulses, 22:49159(P)
development for nondestructive testing equipment, 22:42994 (ANL-7299, pp 173-97)
development for under-sodium scanning at high temperatures, review of, 22:17100 (BNL-50089)
development of dynamic fission gas pressure, 22:12027(R) (HPR-88)
development of eddy current, for measuring fuel rod diametrical growth and displacement, 22:51276(R) (IDO-17269)
development of electronic, for detection of incipient malfunctions in reactor systems, 22:16312 (CONF-671011-, pp 71-86)
development of fission gas pressure, 22:16265(R) (ANL-7403)
development of fission-gas pressure, 22:7788(R) (ANL-7382)
development of ultrasonic, for determining impurities in sodium, 22:40480 (APDA-210(Add.))
development of ultrasonic, for under sodium scanning, 22:24926(R) (APDA-214)
evaluation of thick quartz disk, 22:16368 (SC-DC-67-3204)
evaluation of, design of pulse pressure source for, 22:18672 (UCID-15266)
frequency response of linear variable differential-transformer type, measurement of sinusoidal, 22:37632 (RFP-1034)
performance in simultaneous measurement of two spectra, 22:27534 (NBS-TN-421)
performance of narrow-beam ultrasonic, in liquid sodium at 600°F, 22:1750(R) (APDA-206)
performance of pressure, in EFFBR coolant system, 22:14124 (ANL-7380, pp 29-36)
radiation effects on strain gage pressure, fast neutron and γ, 22:4559 (TID-24144)
testing of pneumatic-to-electric, used for pneumatic signal scanning, 22:21382 (ORNL-4219, pp 75-86)
testing of thick quartz, shock tube nondestructive, 22:7965 (SC-TM-67-807)
transfer functions of spectra calculations using, 22:7788(R) (ANL-7382)
use for detection of ground motion near reactor sites, 22:19221
use in monitoring cracks in reactor piping, 22:21294(R) (BNWL-CC-763)
use of lead-titanate-zirconate ultrasonic, for post-irradiation dimension measurements of reactor fuel element coolant channels, 22:30899
use of magnetized ferromagnetic, for maximum temperature measurement in reactor irradiation samples, 22:42528(P)
use of piezoelectric crystal, for stress measurements in granite, 22:19000 (UCID-15283)
use of velocity, for ground motion measurement in Dumont and Vulcan events, 22:4298 (UCRL-13322)

Transductors
see Electronic Equipment

TRANSFERASES
see also Alanine Aminotransferase
see also Amylomaltase
see also Aspartate Aminotransferase
see also Aspartate Carbamoyltransferase
see also Aspartate Kinase
see also Dextransucrase
see also DNA Nucleotidyltransferase

see also DNA Oligodeoxyribonucleotidyl Transferase
see also α-Glucan Phosphorylase
see also Glucose 1-Phosphate Uridylyltransferase
see also D-Glutamyltransferase
see also Hexokinase
see also Maltose Phosphorylase
see also Phosphofructokinase
see also Phosphoglucomutase
see also Ribonuclease
see also RNA Methyltransferase
see also RNA Nucleotidyltransferase
see also Thymidinemonophosphate Kinase
see also Tyrosine Aminotransferase
see also UDP Glucose--Glycogen Glucosyltransferase
nucleoside phosphorylases, radiation effects on, in erythrocytes of rats, effects of dose on, 22:45508(R) (PG-Report-826)
pyrophosphatase, radiation effects on activity of, in medium, use of bacterial growth to study sulfur-35 β, 22:40524
transaminases, radiation effects on production of, in rat fetus following maternal exposure to whole-body x, 22:12897 (SZS-12/67)
use in preparation of nucleotides from thymus gland, 22:28399 (ORNL-4100, pp 40-7)

TRANSFERRIN
binding of chromic ions to, 22:38195(R) (NYO-3515-3)
plutonium reactions with, in human blood serum, 22:21416
reactions with injected plutonium-239 in blood of dogs, 22:36204

TRANSFORMATION TEMPERATURES
see also Phase Studies
critical point of cerium, at 550°C and 19 kbars, 22:8774
measurement for liquid-gas systems using cold neutron coherent scattering near critical point, (E), 22:32431 (KFKI-10/1968)
radiation effects on uranium tetraiodide, self-induced, 22:2710
theories concerning, developments in, 22:6208 (LA-3805)

TRANSFORMERS
characteristics of cable, for forming high-voltage pulses of several nanoseconds, 22:45349(T) (CERN-Trans-68-5)
current accumulation in superconducting, 22:44041
design and performance of pulse, for fast circuits, 22:392 (TID-24094)
design for coupling continuous channel electron multipliers, 22:45372
design of 200-kV, 2-mA, insulating-core, for neutron generator, 22:10639
design of high-voltage pulse, for flash x-ray tubes, 22:30908(P)
design of superconducting, 22:11339
design parameters for 0.25 to 10.0 MW Nuclear Auxiliary Power Systems, analysis of optimum, 22:35572 (SAN-679-4)
design, operation, and maintenance of ORNL MODEL Q-2625 inverter, 22:36128 (ORNL-TM-1638(Pt.25))
development for 0.25 to 10 MW(e) potassium Rankine cycle nuclear space power systems, 22:37552 (CONF-680802-1)
use for measurement of high-impulse currents, 22:393 (UCID-15220)
use of pulse, for improving response of preamplifiers used with semiconductor detectors, 22:14749 (KFK-617)
use of Tesla, for power supply and control of accelerators, 22:39510

Transient Reactor Test (TREAT)
see Reactor Safety Experiments

TRANSISTORS
see also Semiconductors
book: Radiation Effects in Semiconductor Devices, 22:16971
description of radiation-hard MOSFET, 22:12742
design and performance of MOSFET, for use in portable ionization chamber monitors, 22:21311 (CLOR-67/D)
fabrication of MOS, for minimum radiation sensitivity, 22:12738
junctions of, evaluation of lithium doped silicon and cadmium--zinc, for solar cells, 22:15262(R) (N-66-37213)
noise fluctuations in FET, analysis of, 22:40498
operation of tunnel diode, in nuclear electronics, 22:14882
performance in electronic equipment for automatic whole-body x-ray dosimetry, 22:8531
performance of MOSFET, at 4.2°K, 22:23378
preparation and performance of n-p-n silicon, with constant current gain at 300 to 76°K, 22:19227(P)
radiation damage effects in, gamma, (E/T), 22:39178
radiation damage in p-channel MOS field-effect, thermal annealing of 1.5-MeV electron, 22:23394
radiation effects on 2N911, in space environment, 22:12729
radiation effects on bipolar, transient analysis of, 22:12725
radiation effects on carrier mobilities in inversion layers of MOSFET, electron, 22:12737
radiation effects on electric characteristics of, 22:45379
radiation effects on electric characteristics of MOS, localized electron-beam, 22:23393
radiation effects on electrical characteristics of MOS, electron, 22:38188
radiation effects on flicker noise of silicon planar, gamma, 22:33703
radiation effects on insulated-gate silicon FET, x-ray, (E), 22:41208
radiation effects on metal-coated surface-oxidized silicon, model of gamma and neutron, 22:11019
radiation effects on MOS, 22:8429
radiation effects on MOS, 22:33707
radiation effects on MOS, gamma, 22:19232
radiation effects on MOSFET devices, gamma, 22:8430
radiation effects on MOSFET, gamma, 22:12739
radiation effects on MOSFET, gamma, 22:47441 (BNWL-715(Pt.1), pp 15-20)
radiation effects on MOSFET, large signal equivalent circuit for response to pulsed, 22:12731
radiation effects on n--p--n silicon planar epitaxial, gamma, 22:418 (N-67-18545)
radiation effects on p--n junction, 22:413 (AD-648236)
radiation effects on performance of bipolar, 22:2478
radiation effects on properties of MNS- and MOS-FET, gamma, 22:417 (HMI-B-62)
radiation effects on properties of two-step recovery diode, 22:414 (AD-648380)
radiation effects on silicon nitride insulated MOSFET, electron, 22:12740
radiation effects on silicon planar, gamma, 22:21402 (CEA-R-3313)
radiation effects on silicon, annealing characteristics of neutron, 22:13578
radiation effects on silicon, neutron, 22:28267
radiation effects on silicon, neutron, 22:17723(R) (COO-1624-11)
radiation effects on silicon-on-sapphire thin-film, 22:415(R) (AD-648453)
radiation effects on threshold voltage of metal--nitride--oxide--silicon, 22:30927
radiation effects on, design for reducing deteriorating, 22:8431(P)
radiation effects on, electron and proton, 22:19231
radiation effects on, electron, uv, and x, 22:413 (AD-648236)
radiation effects on, review of, 22:30926
radiation tolerances of bipolar and junction field effect, comparison of neutron, 22:10671
radioinduced current gain in semiconductor, neutron, 22:12724
radioinduced peaking effect in open geometry p-channel MOSFET, electron, 22:12741
radioinduced space-charge buildup in MOS, 22:33706
radioinduced surface and bulk effects in bipolar, neutron, 22:33705
radioinduced surface and bulk effects in MOS, neutron, 22:33705
radioinduced surface recombination in bipolar MOS, 22:12736
radioinduced transients in diodes of, diffusion component of x, 22:8428 (CONF-670708-4)
resolution of FET, used as preamplifier in spectroscopy unit, 22:12708
response to ionizing radiation, computerized model for, 22:12726
switching characteristics of enhancement MOS, methods for predicting, 22:3969 (EGG-1183-1324)
use in circuits, lectures on techniques on, 22:2455 (RHEL/R-133)
use of FET, in fast multiplier circuits, 22:12715(P)
use of FET, in nuclear quadrupole resonance spectrometers, 22:23374
use of field effect, in charge-sensitive low noise preamplifiers, 22:14819
use of field-effect, for nuclear quadrupole resonance spectrometers, 22:8414
use of helium-cooled germanium FET, in low-noise preamplifiers, 22:2350 (UCRL-17818)
use of MOSFET, in storage counter for nuclear instrumentation, 22:23367
use of tunnel diode, in nuclear physics instrumentation, 22:10668
wires of, design of tool for cutting lead, 22:12714(P)

TRANSITION METAL ALLOYS AND SYSTEMS
crystal structure of Fe_2P Type intermetallic compounds of, data tabulation, 22:43594 (ANL-7299, pp 251-64)
crystal structure of sigma-phase binary, 22:43606
hyperfine fields and electronic structure in, 22:9114
nuclear specific heats in, (E), 22:9104
solvent properties for hydrogen, review on, 22:15197
Al--transition metals, crystal structure and properties of, NMR studies of, 22:43594 (ANL-7299, pp 251-64)

TRANSITION METAL BORIDES
properties of, mechanical and physical, 22:36539

TRANSITION METAL CARBIDES
entropy of solid-solution, 22:31473
properties of, mechanical and physical, 22:36539

TRANSITION METAL NITRIDES
decomposition of, thermodynamics of, 22:45044
properties of, mechanical and physical, 22:36539

TRANSITION METAL OXIDES
cohesion in cubic-structure, effects of valence on, 22:8828
molecular structure of rutile-related, 22:47710
preparation of large crystals of, 22:27734(P)

separation by electrolysis and precipitation, 22:27734(P)

TRANSITION METALS

(See also specific metals of transition groups)

argon-ion reactions with, ionization rates from 6-keV, (E), 22:43933

behavior and state of interstitial ions in, (E), 22:15253(R) (TID-24210)

bibliography on properties of, 22:19519 (ORNL-RMIC-8)

binding energy of, molecular orbital theory approximation of, 22:40054(R) (NYO-2269-12)

chemistry of solutions of, 22:40054(R) (NYO-2269-12)

complexes with chlorides, review of ion exchange and solvent extraction methods for study of, 22:27666

complexes, radiolysis of solutions of, pulse, 22:25433

compounds of, thermodynamic properties of, effects of electron structure on, 22:27636

cross sections of, relative, 22:2023(R) (COO-1147-22)

density of states in conduction band of, 22:6295

diffusion of bcc, effects of elastic constants on ethalpy and entropy of, 22:34064

ductile-to-brittle transition model of, 22:17108 (GA-7978, pp 143-9)

effects on determination of vanadium in sodium chloride by neutron activation methods, 22:27560

effects on deuterium exchange between heavy water and picoline, lutidine, thiophene, or furan, 22:50988

electron spin polarizations in ferromagnetic alloys of, (E/T), 22:46259

energy levels of, self-consistent field wave functions for, 22:9053

formation of substoichiometric, kinetics of, 22:17181

internal friction and modulus of bcc, dislocation model of, 22:17137 (GA-7978, pp 61-81)

isotope effect in superconducting, (T), 22:9238

nuclear specific heats in, (E), 22:9104

properties of cubic carbides, nitrides, and oxides of, 22:17182

properties of, effects of spin fluctuations on, (T), 22:3220

radioinduced defects in, neutron, 22:17139 (GA-7978, pp 133-41)

solubility in liquid calcium, 22:15187 (UCRL-50315)

solubility in liquid cerium, 22:15187 (UCRL-50315)

solubility in liquid cesium, 22:15187 (UCRL-50315)

solubility in liquid lanthanum, 22:15187 (UCRL-50315)

solubility in liquid lithium, 22:15187 (UCRL-50315)

solubility in liquid magnesium, 22:15187 (UCRL-50315)

solubility in liquid potassium, 22:15187 (UCRL-50315)

solubility in liquid rubidium, 22:15187 (UCRL-50315)

solubility in liquid sodium, 22:15187 (UCRL-50315)

solvent properties for hydrogen, review on, 22:15197

sorptive properties for atoms or molecules, low-energy electron diffraction studies of crystal structures of layers formed in, 22:26056(R) (NYO-3830-5)

strain release process of, design of measuring instrument for, 22:17111 (GA-7978, pp 163-72)

superconducting transition temperatures of, effects of nonmagnetic impurities on two-band model for, (T), 22:39020

use in manufacture of cutting tools, 22:27988(P)

TRANSONIC FLOW

see also Supersonic Flow

TRANSPLANTS

bone marrow, effects of, on regeneration of thymus gland in x-irradiated mice, isologous, 22:51848

bone marrow, in dogs, cytotoxic typing of serum for, 22:36172

bone marrow, in x-irradiated rats, effects of, on survival, 22:49491 (UCSF-10-P-2-40)

effects on γ-radiosensitivity of hematopoiesis in spleen of rats, isologous bone marrow, 22:28694

effects on γ-radiosensitivity of hematopoiesis in man, kidney, 22:49579

effects on karyotype changes in callus cultures of Haplopappus gracilis, 22:12180(R) (ORO-3348-2)

effects on regeneration of limbs of x-irradiated Triturus viridescens, skin, 22:43451

effects on regeneration of x-irradiated tissues of Salamanders, 22:45688

effects on tolerance to alloantigens in mice, liver, lymph nodes, thymus, and spleen, 22:36174

fluorine-18 content of bone, determination of, by photoscanning, 22:51802

growth of bone marrow, in lethally-irradiated mice, effects of erythropoietin and plethora on, 22:40924

histocompatibility in, evaluation of irradiated hamster test for, 22:51456

immune reactions against bone marrow, in irradiated monkeys, effects of blood transfusions on, 22:23433

immune reactions to thymus, in mice, effects of thymectomy on, 22:51433

immune reactions to, of skin in mice, effects of pre-treatment with spleen transplants on, 22:51431

immunity to cancer induced by bone marrow, combined effects of radiation on, 22:12785

production of spleen nodules by hematopoietic tissue, from mouse radiation chimeras, 22:36171

protection of irradiated human nerve, in dogs, evaluation of methods for, 22:51933

radiation effects on antigenicity of, of human arteries, bones, and nerves, γ, 22:19257

radiation effects on cellular ultrastructure in thyroid, in rats, effects of dose on x, 22:12813

radiation effects on content of γ-globulin in, of Ehrlic ascites carcinoma cells in mice, γ, 22:51454

radiation effects on cornea, of rabbits, cytology and immunology following x, 22:47485

radiation effects on embryo, of wheat, effects of, on frequency of chromosome aberrations in root tip cells, x, 22:14983

radiation effects on formation of cornea and function in skin, to eyes of tadpoles, x, 22:33926

radiation effects on growth of carcinoma, in mice, effects of triiodothyronine on x, 22:19398

radiation effects on growth of carcinomas and spontaneous mammary tumor, in mice, effects of triiodothyronine on x, 22:36302

radiation effects on growth of sarcoma, in mice, effects of injection of immune serum on x, 22:25748

radiation effects on growth of sarcoma, in mice, x, 22:25746

radiation effects on growth of tumor, in mice, x, 22:8647

radiation effects on hematopoietic tissue, review of effects of antibiotics and hormones on, 22:4698

radiation effects on immune reactions of dogs and man to kidney, gold-198 β and γ, 22:51415

radiation effects on immune reactions of mice to sarcoma cell, effects of simultaneous transplantation of immune macrophages on x, 22:25747

radiation effects on immune reactions of rabbits to skin, silver-111 and iodine-131 β and γ, 22:21439

radiation effects on immune reactions to bone marrow, in mice, x, 22:40588

radiation effects on immune reactions to corneal, in rabbits, x, 22:51395

radiation effects on immune reactions to skin, in rabbits, x, 22:51430

radiation effects on immune reactions to spleen cell, in mice, 22:51431

radiation effects on immune reactions to tissue, in animals and man, x, 22:425(T) (AEC-tr-6726)

radiation effects on immune reactions to, of bone marrow in mice, x, 22:51474

radiation effects on immune reactions to, of cornea in rabbits, γ, 22:38433

radiation effects on immune response of dogs and rats to skin, extracorporeal x, 22:49221

radiation effects on immune response of guinea pigs to, of lymphocytes, review of γ and x, 22:45448

radiation effects on immune response of hamsters to skin, effects of lymphocyte injections on whole-body, 22:10683

radiation effects on immune response of mice to, of sensitized spleen cells, effects of anti-lymphocytic antibody on, 22:40535

radiation effects on immunity of rats against, of Yoshida sarcoma cells, 22:47492

radiation effects on immunogenicity of lymphoma, in mice, x, 22:10732

radiation effects on immunological response to skin, effects of extracorporeal lymph exposure on, 22:14906 (BNL-50057, pp 123-37)

radiation effects on mammary carcinoma, in mice, effects of mammary-tumor-agent on x, 22:12812

radiation effects on nerve, in goats, β, 22:21592

radiation effects on organ and tissue, in twin cattle, γ, 22:40830 (ORO-657, pp 35-45)

radiation effects on pancreatic, of dogs, x, 22:43260

radiation effects on performance of nerve hetero-, in dogs, rabbits, and rats, effects of pretreatment with specific antiserum on, 22:51364

radiation effects on pituitary, in Triturus, 22:19239(R) (ORO-3564-3)

radiation effects on primary immune response in cell, of embryos of chicken, 22:19276

radiation effects on proliferation and differentiation of bone marrow stem cell, in dogs, immunologic x, 22:49254

radiation effects on regeneration of bone marrow, in mice, x, 22:23632

radiation effects on regeneration of, in Salamanders, effects of source on x, 22:52010

radiation effects on rejection of skin, extracorporeal γ, 22:31204 (BNL-50088)

radiation effects on replication of virus particles in, of thymus in kidneys of mice, 22:23633

radiation effects on response of adult-thymectomized mice to, γ and x, 22:51369

radiation effects on response of mice to bone marrow, effects of age on x, 22:51344

radiation effects on shrinkage and tensile strength of collagen-containing tissue, electrons and γ, 22:52092

radiation effects on skin, in mice, effects of age, sex, and thymectomy on x, 22:6869 (USNRDL-TR-67-92)

radiation effects on skin, in rabbits and rats, γ, 22:19336

radiation effects on spleen cell, in mice, effects of, on incidence of amyloidosis, 22:51432

radiation effects on survival of liver, in dogs, combined effects of actinomycin C and azathioprine on local x, 22:19272

  radiation effects on survival of, following antibody suppression with labeled antigens, 22:25859 (UCLA-12-668, pp 1-28)
  radiation effects on thymus, electron microscopic study of cytology following, 22:51929
  radiation effects on tolerance of mice to, combined effects of unrelated antigens on x, 22:38216
  radiation effects on transformation of hematopoietic cell, in thymectomized dogs, 22:31266
  radiation effects on uv-fluorescence of, of rat lymphosarcoma cells, 22:36350
  radiation effects on, of kidney in dogs, combined effects of immunosuppressive drugs on acute x, 22:51354
  radiation effects on, of nerves in rats, combined effects of azathioprine on, 22:40951
  radiation effects on, of nerves with artery, Silastic, or vein sheaths, 22:49496
  radiation effects on, of tumor cells in rats, effects of oxygen on x, 22:10797
  radioactivity of tissue, following exposure to sterilizing doses, 22:8666
  radiodiagnosis of survival of pedicle skin, in man, use of technetium-99 for, 22:40763
  radioinduced suppression of immune response to sarcoma, in isogenic mice, whole-body x, 22:8446
  radioprotective effects of auto-, of bone marrow on animals, review of, 22:25909
  radioprotective effects of bone marrow and spleen, in mice, effects of cell dose on γ, 22:25895
  radioprotective effects of bone marrow, on dogs, γ, 22:49437
  radioprotective effects of bone marrow, on hematopoietic systems, review of, 22:19399
  radioprotective effects of bone marrow, on spleen of mice, x, 22:19251
  radioprotective effects of bone marrow, on survival of x-irradiated mice, 22:45675
  radioprotective effects of bone-marrow, on Saguinius fusciollis, γ, 22:534
  radioprotective effects of hematopoietic, on passive immunity in guinea pigs, γ, 22:49230
  radioprotective effects of isologous bone marrow, on mice, effects of strain on, 22:25894
  radioprotective effects of spleen cell, from intact and immunized donors on mice, γ, 22:38455
  radiosterilization of aortic valve, in Canada, γ, 22:43511
  radiosterilization of aortic valve, method for beta, 22:19465
  radiosterilization of arterial, in comparison with antibiotic and chemical sterilization, 22:45739
  radiosterilization of fascia lata, for repair of eyelid of man, clinical evaluation of γ, 22:10901
  radiosterilization of human heart valve, γ, 22:52089
  radiosterilization of lyophilized tissue, γ, 22:52091
  radiosterilization of organ and tissue, for man, IAEA research on, 22:33908
  radiosterilization of preserved tissues for, in man, γ or neutron, 22:52093
  radiosterilization of thyroid tissue, γ, 22:52098
  radiosterilization of tissue, effects of, on mechanical strength β and γ, 22:8666
  radiosterilization of, review of γ, 22:15128
  rejection by host, effects of immunologically competent cells on, 22:7940(R) (EUR-3297)
  research in Soviet Union during 50 years, review on, 22:4638
  retention of foreign-tissue, by animals, effects of injected antigen fragments on, 22:12160(R) (CALT-642-3)
  significance of erythrocyte groups for immunology of, 22:43397 (EUR-4032)
  survival of skin, in co-twin marmosets, 22:51309 (ORAU-106, pp 194-220)
  survival time of skin, in mice in relation to lymph node immune reactions, 22:36170
  transfer of specific homograft tolerance by thymus, in thymectomized x-irradiated mice, 22:40588
  use in measurement of vital activity of irradiated animals, review of, 22:25982
  use of bone and bone marrow, for restoration of hematopoiesis in man, method for, 22:12869
  use of bone marrow, for treatment of radiation sickness in dogs, combined effects of blood substitutes on efficiency of, 22:19388
  use to study effects of fractionated doses on rat tumors, 22:23648

Transplutonium Elements
  see Transuranium Elements

TRANSPORT THEORY
  asymptotic extrapolation distance for Milne problem in free-electron atmosphere, (T), 22:841
  biorthogonal system for, 22:24371
  Bogolyubov distribution functions in dense-gas, (T), 22:34821
  Boltzmann equation expression for neutron, use of fission and slowing-down kernels for energy-dependent, 22:30374
  Boltzmann equation for, approximate solution for relativistic, 22:34256
  Boltzmann equation for, proof of positivity and uniqueness of solution to time independent fixed source, 22:30349 (WAPD-TM-730)
  Boltzmann equation in, numerical method for solution of linear, 22:24796
  Boltzmann equation with cutoff potentials for, 22:1207
  book: Introduction to General Theory of Particle Transport, 22:22267
  book: Linear Transport Theory, 22:20104
  book: Monte Carlo Method for calculating Radiation Transmission, 22:5407
  Cauchy problem of relativistic Boltzmann equation, (T), 22:26536
  coarse-graining of Hamiltonian for, analysis of, (T), 22:35547
  derivation of Green functions in space-angle neutron, 22:35723
  development of collided flux diffusion theory, accuracy analysis for, (T), 22:53464 (WAPD-TM-801)
  Duhamel's principle in nonstationary radiation field, 22:52906
  eigenfunction expansion method application to Boltzmann equation in two-group, 22:35695
  electron momentum in Monte Carlo, for x radiation, 22:48146
  energy transfer by particles and radiation in general relativistic gases, (T), 22:44279
  equation for anisotropic scattering, solution of, (T), 22:19760
  equation for cosmic rays in interplanetary space, (T), 22:15381 (D-1-82-0625)
  equations for analysis of neutron flux distribution in reactor fuel assemblies, 22:30390
  equations for ionized monatomic gases, 22:1206
  equations for neutron, recursive solution to B_1, 22:33135
  equations for neutron, use of quadrature for solving directly the singular integral form of one-velocity, 22:33141
  equations for neutron, use of reflection-transmission matrix methods for, 22:33140
  equations for neutron, use of variational principles with arbitrary adjoint source for solution to monoenergetic Boltzmann, 22:33139
  equations for particle transfer, (T), 22:44288
  equations for reactors, mathematical techniques for solving, 22:12142 (JEN-171-DF/I-51)
  equations for two-temperature binary gas mixtures, 22:26427
  equations for, analysis of initial value problem with delayed neutrons for, 22:33130
  equations for, Benchmark Problem Book for solutions of, (T), 22:46693 (ANL-7416)
  equations for, derivation of time-energy dependent inhomogeneous neutron flux distribution from, 22:42492
  equations for, error bounds determinations using P/sub N/ solutions to, 22:10085
  equations for, Lie series expansions of flux terms for, 22:33088 (EIR-132)
  equations for, method for solving Fredholm, 22:53071
  equations for, method for solving nonstationary, 22:24510
  equations for, orthogonal polynomial solutions and error estimates for eigenvalues to integral, 22:33086 (ANL-7310, pp 431-511)
  equations for, S/sub n/ discrete ordinates method for solution of, 22:7914 (LA-DC-9092)
  equations for, thermalization treatment of eigenvalue problem in, 22:30370
  equations for, use of space-angle synthesis for solution to, 22:14305
  equations of one-speed multiregion, solution of plane geometry infinite medium integral, (T), 22:25143
  equations of, solutions using discrete ordinates S/sub n/ method, (T), 22:22524 (ORNL-RSIC-19)
  exponential integral functions for, 22:1290
  formalism for anisotropic scattering, Milne problem in, 22:3595
  formalism for interpretation of fluctuations in radiation distributions in finite inhomogeneous systems, 22:1203
  gamma, for multilaminar geometry, LETO computer program for, 22:1289 (WAPD-T-2057)
  gamma, for various materials, Monte Carlo solution of, 22:1285 (ANL-7314)
  general relativistic version of Boltzmann, 22:15320
  Green's functions for one-speed neutron, in spherical geometry, 22:29538
  Green's functions in ''viscous hydrodynamical approximation'' derivation of classical Boltzmann equation in, 22:32024
  improved S/sub N/ calculations for slab geometry, (T), 22:1588
  invariant imbedding equations for dissipation functions of inhomogeneous finite slab, 22:34732
  kinetic equation solution for reactivity coefficients in homogereous reactors, analysis of energy-dependent Boltzmann, (T), 22:42385(T) (ANL-Trans-645)
  Legendre polynomial representation in, difference equations for, 22:17836
  Milne problem in radioactive transfer, 22:46301
  Milne problem with general scattering law, exact solution of, (T), 22:22263
  Monte Carlo integration of adjoint gamma-ray equation in,

22:48144
Monte Carlo sampling technique for, verification of, (T), 22:22264
Monte Carlo solutions for gamma, 22:29535
neutron diffusion length determination using, use of asymptotic solution technique for, (T), 22:33127
neutron multiplication factor determinations using S_8, comparison of asymptotic diffusion theory methods with, 22:33108
neutron spectra measurement in heterogeneous reactors by, analysis of thermal, (T), 22:35634
neutron, correlation of Case method with Chandrasekhar theory of radiative transfer, (T), 22:50511
numerical solution in inhomogeneous media using a linear differential equation for scalar neutron flux, 22:37622
particle flight-path intersections with wall of helical tubular duct, method for determining, 22:41919 (N-68-18541)
perturbation of radiation field by local inhomogeneities in, 22:41639
quantum, in strong magnetic fields, 22:44286
radiation transfer in spectral lines, 22:945(T) (CLM-Trans-10)
radiative source-function predictions for finite and semi-infinite nonconservative atmospheres, (T), 22:38683
radiative transfer in dispersive medium, 22:41217
radiative transfer in stellar atmospheres, (T), 22:806
radiative transfer in, initial-value methods for basic boundary-value problem and integral equation of, 22:22261
radiative transfer including effects of photon scattering, 22:52477 (LA-4006)
radiative, Chandrasekhar's scattering matrix for semi-infinite Rayleigh-scattering atmosphere, (T), 22:37063
radiative, Eddington approximation for, (T), 22:37064
scattering in anisotropic, anisotropic, 22:48140 (BMwF-FBK-68-12)
solution for slab and spherical assemblies, analysis of thermal neutron decay constant, (T), 22:35638
solution of diffusion and well mixed models for analysis of uranium oxide (UO_2) fission products in steam-air environment, 22:25123 (BNWL-581)
solution of generalized Milne problem in two-group approximation, 22:35695
solution of infinite medium symmetric scattering and isotropic infinite plane pulsed source monoenergetic neutron distribution, integral transform methods for, (T), 22:37562 (RT/FI-(68)15)
solution of Milne problem with anisotropic scattering for infinitely high approximation, 22:48142
solution of monoenergetic stationary neutron, for three-dimensional P/sub N/ spherical harmonics approximation for cylinders, (T), 22:35715
solution of neutron transport problems by S/sub N/ method, analysis of variational formulation, 22:39936
solution of reactor kinetics time-dependent equations for, analysis of, (T), 22:42495
solution of velocity-dependent, for wave propagation in polycrystalline reactor moderators, (E/T), 22:35714
solution to n-th Legendre harmonic formula for space-energy and space-time neutron flux distributions in infinite homogeneous media, (T), 22:30369
space--angle synthesis of the transport equation, 22:27481 (BNWL-634, pp 2.1-8)
use for neutron flux distribution calculations for plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel rods, (T), 22:44941
use of computer program, P/sub n/-approximation, and S/sub N/-method for fast neutron spectra measurements of, (E/T), 22:35707
use of energy-dependent, for anisotropic γ scattering in slab geometry, 22:11488
use of, for calculation of distribution functions for γ scattering in air at 100 to 3000 keV, 22:5394 (EGG-1183-2163)
variational calculations of diffusion in a lattice with cavities, 22:1586
Vlasov equation for, integration of perturbed in reduced phase space, 22:9405
Transportation
see Shipping
TRANSURANIUM ELEMENTS
(Heavy elements, Z = 93 through 103, for Z = 104 and above, see Transactinide Elements.)
see also Actinides
see also Americium
see also Berkelium
see also Californium
see also Curium
see also Einsteinium
see also Fermium
see also Lawrencium
see also Mendelevium
see also Neptunium
see also Nobelium
see also Plutonium
see also Transactinide Elements
amalgamation in lithium citrate solution, electrolytic, 22:18748
analysis and determination of, facility for, 22:14433 (ORNL-4196, pp 66-89)
analysis of solutions of, for berkelium-249 by beta counting, 22:44995
analysis of, isotopic, 22:37647 (EUR-3949)
book: Chemistry of Transuranium Elements and Fission Products, in Russian, 22:45090
book: Complex Compounds of Transuranides, 22:37755
book: The Encyclopedia of the Chemical Elements, 22:45055
chemistry and preparation of, review on, 22:48862
chemistry of, systematics of, 22:23021
determination by chromatography and electromigration, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination by precipitation with barium sulfate and alpha counting, 22:37656 (UCRL-18140, pp 101-2)
determination in debris from Anacostia and Kennebec thermonuclear events in Plowshare program, 22:37657 (UCRL-50441)
determination in irradiated fuels, 22:37647 (EUR-3949)
determination in neutron-irradiated plutonium dioxide, 22:14419 (DP-1137)
determination of, methods for, 22:23114
determination of, radiometric, 22:44973 (JINR-P7-3855)
determination of, review of techniques for, 22:23021
diffusion from HFIR target rods, 22:14433 (ORNL-4196, p 66-89)
electron binding energies and x-ray energies for Z = 126 and 140, calculation using relativistic self-consistent-field atomic wave functions, 22:47807
fabrication of radiation targets of, safety analysis of plant for, 22:25461 (ORNL-3954)
handling and inspection of, design of laboratory and equipment for, 22:6511 (EUR-3618)
isotope buildup in high-flux epithermal reactors, nuclea data for calculating, 22:39627 (BNL-50082, pp 19-24)
neutron absorption and capture cross sections for, effects of optical anisotropy on, (T), 22:32569 (JINR P2-3738)
neutron capture and fission cross sections and resonance integrals for, method for estimating thermal, (T), 22:24852 (BNL-12353)
nuclear deformation energies of, shell corrections to, (T), 22:46813(T) (ANL-Trans-634)
nuclear ground-state and saddle-point properties of, calculations using liquid-drop model with curvature an shell-energy corrections, (T), 22:53228
nuclear optical anisotropy of spontaneously fissioning isomers of, (T), 22:48632
nuclear shell effects in, (T), 22:18307 (JINR-D7-3548, pp 51-8)
nuclear stability of superheavy, (T), 22:39640 (UCRL-17989, pp 127-57)
preparation of, 22:23108
preparation of element 105 in Soviet Union, 22:35854
preparation of, review of, 22:27621 (EUR-3893)
processing facility for, health physics procedures at LR Livermore, 22:4399
processing flowsheets for, chemical, 22:4312
production and history of, 22:23054
production and properties of, conference on, 22:18207 (JINR-D7-3548)
production and properties of, research program on, 22:18208 (JINR-D7-3548, pp 3-14)
production and properties of, research program on, 22:44678(T) (ANL-Trans-633)
production and purification of, 22:14517 (ORNL-TM-2083)
production and separation of, review of, 22:6363
production and uses of, review on, 22:30614
production and uses of, review on, 22:48862
production by compound-nucleus reactions, neutron emission and fission width ratios for, (T), 22:14079 (UCRL-16348)
production by irradiation of aluminum--plutonium targets conditions for, 22:25455 (CEA-N-616, pp 295-368)
production by neutron capture in fissionable materials, solution of rate equations for, (T), 22:39663
production of superheavy, by fusion of heavy ions, cross sections for, (T), 22:44712
production of, equipment and method for, 22:25455 (CEA-N-616, pp 295-368)
production of, fabrication of radiation targets for, 22:8744 (ORNL-4170, pp 184-91)
production of, methods for, 22:16006 (JINR-D7-3623)
production of, methods for, (T), 22:13996 (JINR-P7-3617
production of, review of, 22:37760
production of, review of, 22:40121
production of, review of methods for, 22:48855
production using heavy ion-induced reactions, effects of N = 152 subshell on, (E), 22:46760(T) (ANL-Trans-636)
production using heavy ion-induced reactions, effects of N = 152 subshell, on, (E), 22:46760(T) (ANL-Trans-636
production using thermonuclear explosions, neutron capture cross sections for, (T), 22:14003(T) (BNL-tr-174)
properties of, 22:37760
properties of, chemical and physical, 22:23021
properties of, facility design for study of, 22:4320
properties of, review of, 22:27621 (EUR-3893)
properties of, systematics of, 22:23054
purification by Tramex solvent extraction process, 22:23101 (ORNL-TM-1938)

  research at Berkeley on, review of, 22:27090 (UCRL-17907)
  separation by precipitation with barium sulfate under various oxidation-reduction conditions, 22:37656 (UCRL-18140, pp 101-2)
  separation from aqueous solutions by solvent extraction using tridodecylamine hydrochloride, 22:16685
  separation from fission products, safety analysis of plant for, 22:25461 (ORNL-3954)
  separation from HFIR primary coolant, 22:10061(R) (ORNL-TM-2078)
  separation from irradiated plutonium, evaluation of TRU flowsheets, equipment, and procedures for, 22:23101 (ORNL-TM-1938)
  separation from irradiated targets, safety analysis of plant for, 22:25461 (ORNL-3954)
  separation from rare earths by anion exchange in acetone--hydrochloric acid mixture, 22:21153 (ANL-7415)
  separation from rare earths by solvent extraction using nitric acid--tetrabutyl hypophosphate--tetrabutyl pyrophosphate, 22:27853 (INP-591/C)
  separation of berkelium-249 from solutions of, chromatographic and solvent extraction method for, 22:44995
  separation of plutonium and uranium from, by thin-layer chromatography using as solvent a tributyl phosphate--benzene mixture, 22:37851
  separation of plutonium from, by ion exchange on zirconium phosphate silicate, 22:30678
  separation of, methods for, 22:23114
  specific activities of Z = 88 to 104, tables of, (T), 22:44725
  synthesis of, survey of methods and prospects for, 22:44715
  uses of, review of, 22:37760
  uses of, review of, 22:48855
  uses of, review of, 22:27621 (EUR-3893)
TRANSURANIUM PROCESSING PLANT
  conveyor system for, design and operation of intercell, 22:8329 (ORNL-TM-2022)
  design, 22:4312
  equipment development for HFIR target fabrication, 22:8744 (ORNL-4170, pp 184-91)
  maintenance aspects of, 22:4324
  radiation monitoring instruments for ORNL, 22:19098 (ORNL-TM-1774)
TRAPS
  see also Filters
  see also Vacuum Systems
  design and operation of high carbon and oxygen cold, 22:23194 (MSAR-67-203)
  design of automated, variable-temperature condensation, 22:2277 (UCRL-50318)
  design of cold, for plutonium hexafluoride in bromine-halide volatility process, 22:51134 (K-L-2963)
  design of cold, for Portsmouth feed materials facility, engineering drawings for, 22:27978
  design of cold, for separation of uranium hexafluoride from fluorine, nitrogen, and oxygen, engineering drawings for, 22:14651
  development of cold, for oxygen removal from liquid sodium, 22:43629(R) (LA-3933)
  efficiency for removal of carbon and oxygen from sodium at 1100 to 1200°F, 22:23194 (MSAR-67-203)
  performance of cold, effects of Reynolds number and temperature on, (E/T), 22:33098 (LA-3936)
  performance of cold, for impurity control in sodium, 22:27487(R) (LA-3880)
  performance of impregnated activated charcoal, for sorption of gaseous methyl iodide, 22:42944(P)
  performance of impregnated activated charcoal, for sorption of gaseous methyl iodide, 22:42945(P)
  performance of liquid sodium cold, analysis of, 22:44820(R) (GEAP-5508)
  performance of liquid sodium cold, testing for optimum oxygen removal, (E/T), 22:33153
  performance of sodium cold, for oxygen concentration control, 22:6138(R) (LA-3820)
  residue identification in cold, in liquid sodium corrosion loops, 22:50735(R) (GEAP-5648)
  sodium oxide precipitation in cold, methods of even distribution of, 22:12973
  testing for use in sorption of volatile impurities from uranium hexafluoride, 22:4233 (K-L-6167-9)
  use for prevention of oil transfer from diffusion pumps in ultrahigh vacuum systems, 22:19091
Trasylol
  see Kallikrein--trypsin Inhibitor
TRAWSFYNYDD REACTORS
  (Two units comprising the Trawsfynydd Station.)
  design parameters and layout for, 22:16146 (GA-8075)
  performance of, description of power operation, 22:46907 (NP-17599, pp 7-25)
TREAT
  see Reactor Safety Experiments
TREHALOSE
  radioinduced degradation of solid, ESR study of yields from γ, 22:14526
Trematodes
  see Platyhelminthes
TREMORINE
  radioprotective effects of, on mice, effects of hypoxia on, 22:28591

Trenimon
  see Triaziquone
Triacetoneamine Nitroxide
  see 4-Piperidone, 2,2,6,6-Tetramethyl-, N-Oxide
Triacetyldiphenolisatin
  see 2-Indolinone, 1-Acetyl-3,3-Bis(p-Hydroxyphenyl)-, Diacetate
Triallyl Cyanurate
  see s-Triazine-2,4,6(1H,3H,5H)-trione, Triallyl-
Triatomic Hydrogen
  see Hydrogen
s-TRIAZINE
  effects on Rhizobium mutants, correlation of, with uv radiation, 22:40653
  radioprotective effects of hydroxyaryl derivative of, on organic compounds, 22:33855(P)
s-TRIAZINE-2,4,6(1H,3H,5H)-TRIONE, TRIALLYL-
  effects on irradiated polyvinylidene fluoride, 22:25438(P)
s-TRIAZINE, 2,4,6-TRI-2-PYRIDYL-
  use in spectrophotometric determination of ruthenium, 22:40015
s-TRIAZINE, 2,4,6-TRIS(ALLYLOXY)-
  polymers, radioinduced polymerization with chloroethylene polymer, γ, 22:45102
s-Triazine, 2,4,6-tris(1-Aziridinyl)-
  see Melamine, Triethylene-
as-TRIAZINE-3,5(2H,4H)-DIONE, 6-METHYL-
  effects on sexual differentiation in Allomyces arbusculus, 22:14981
  radiation effects on, electronic aspects of uv, 22:33786
TRIAZIQUONE
  effects on rhabdomyosarcoma of man, combined effects of cobalt-60 γ radiation on, 22:31171
TRIAZOLE
  radioprotective effects of, on hemin solutions, x, 22:8562 (NP-16875)
1,2,4-TRIAZOLE, 3-AMINO-
  effects on synthesis of tryptophan synthase in Neurospora crassa, 22:12158 (BNWL-480, pp 107-26)
Tribolium
  see under Insecta
Triboluminescence
  see Luminescence
Tributyl Phosphate
  see Phosphoric Acid, Tributyl Ester
Tributyl Phosphate Process
  see TBP Process
TRIBUTYL PHOSPHATE PROCESS (CANADA)
  (For the USAEC tributyl phosphate process, which is not related, see TBP Process.)
  see also Purex Process
TRIBUTYLAMINE
  effects on separation of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amine carbonate in methanol solutions, 22:133 (CU-755-4, Paper IIB)
TRICARBOXYLIC ACID CYCLE
  radiation effects on metabolism of carbohydrates and organic acids in, of carrot tissue, 22:433
  radiation effects on metabolism of substrates of, by mitochondria from rat liver, 22:8457
Trichina
  see under Nematoda
TRICYCLO[3.3.2.0(2,8)]DECA-3,6,9-TRIENE
  thermal capacity of, 22:10204(R) (COO-1149-102)
TRICYCLO[2.2.1.0(2,6)]HEPTANE
  enthalpies of combustion and formation of, 22:10204(R) (COO-1149-102)
  strain energies of, 22:10204(R) (COO-1149-102)
  thermal capacities of, 22:10204(R) (COO-1149-102)
TRIDECANE
  radiolysis of liquid, ESR spectral studies on transient free radicals produced by electron-beam pulse, 22:42746
  stability in fuel reprocessing, chemical and radiolytic, 22:47226
TRIDECANE, 1-PHENYL-
  radiolysis of, yields of hydrogen from γ, 22:25393
TRIDECYLAMINE
  complexes with plutonium and uranium, charge transfer transitions in, 22:37745
  reactions with uranyl ions in benzene or carbon tetrachloride, spectral studies on reduction, 22:35794
  solvent properties for uranium, 22:4251
TRIDODECYLAMINE
  decomposition in fuel reprocessing, compounds formed in, 22:47226
  hydrochloride, solvent properties for transplutonium elements, rare earths, and actinides, 22:16685
  nitrate, separation of actinides from, by backwashing using nitrous acid, 22:16689
  radiation stability of, 22:35893
  separation from didodecylamine by precipitation, 22:40155 (CEA-R-3506)
  separation of actinides from solutions of, 22:37872(P)
  separation of plutonium from, by solvent extraction using nitric oxide, 22:25452 (CEA-N-616, pp 154-214)
  separation of plutonium from, by solvent extraction using nitric acid--sulfuric acid solution, 22:27845 (CEA-N-

816, pp 150-276)
  separation of plutonium from, on silica-gel column, 22:16688
  solvent properties for actinides and rare earths, 22:25455 (CEA-N-616, pp 295-368)
  solvent properties for actinides and rare earths in nitric acid, effects of complexants on, 22:27848 (CEA-N-816, pp 359-414)
  solvent properties for americium and lanthanides, 22:37640(T) (ANL-Trans-628, pp 2-50)
  solvent properties for cesium, copper, iron, strontium, and uranium, 22:40153 (CEA-R-3469)
  solvent properties for neptunium, 22:37640(T) (ANL-Trans-628, pp 2-50)
  solvent properties for neptunium, 22:6382
  solvent properties for neptunium in fission product mixtures, 22:27848 (CEA-N-816, pp 359-414)
  solvent properties for plutonium, 22:35893
  solvent properties for plutonium, 22:37824(T) (ANL-Trans-626, pp 1-35)
  solvent properties for plutonium, 22:40154 (CEA-R-3478)
  solvent properties for plutonium, 22:37823(T) (ANL-Trans-619)
  solvent properties for plutonium, 22:25452 (CEA-N-616, pp 154-214)
  solvent properties for plutonium, 22:27845 (CEA-N-816, pp 150-276)
  solvent properties for protactinium, 22:25455 (CEA-N-616, pp 295-368)
  solvent properties for protactinium, effects of acetone and alcohols on, 22:40198
  solvent properties for some fission products and thorium, effects of plutonium on, 22:37862
  solvent properties for uranium in sulfuric acid solutions, 22:35915
  solvent properties for uranium, effects of dibutyl phosphate on, 22:27845 (CEA-N-816, pp 150-276)
  solvent properties for water, 22:27620 (CEA-N-816, pp 481-8)
  stability in nitric acid, effects of temperature on, 22:27845 (CEA-N-816, pp 150-276)
  stability of, effects of didodecylamine removal on, 22:40155 (CEA-R-3506)
  dodecane--HNO_3--Pu--tridodecylamine, phase studies of, 22:40154 (CEA-R-3478)
  H_2SO_4--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
  HBr--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
  HCl--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
  $HClO_4$--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518
  HNO_3--tridodecylamine, vapor pressure in non-polar solvents, determination of activity coefficients from lowering of, 22:30518

TRIETHYLAMINE
  complexes with europium and 1,3-diphenyl-1,3-propanedione, fluorescence of americium-241-doped, 22:42792
  effects on γ-radiolysis and photolysis of tert-butyl peroxide, ESR study of, 22:16626
  radiation effects on separation of nitrobenzene from aqueous solutions of, γ, 22:48877 (JINR-P13-3943)

TRIETHYLAMINE, 2,2',2''-TRICHLORO-
  effects on radiosensitivity of response to anesthesia in animals, 22:8624

Triethylenediamine
  see 1,4-Diazabicyclo(2,2,2)octane

TRIETHYLENEPHOSPHORAMIDE
  effects on digestion of blood meal by mosquitoes, 22:2546

TRIETHYLENETHIOPHOSPHORAMIDE
  effects on cultured human cells, latent mutagenic, 22:21476
  effects on enzyme activity of rabbits and rats, comparison of, to radiation effects, 22:49239
  radioprotective effects of, on mice, cobalt-60 γ, fast neutron, and x, 22:31188

TRIGA Reactors
  see Reactors, Research

Triglycerides
  see Glycerides

TRIHEXYLAMINE
  solvent properties for uranium, 22:4251

TRIISOOCTYLAMINE
  solvent properties for uranium-233 in thorium oxides, 22:23112
  solvent properties for uranyl chloride and uranyl sulfates, 22:16654

TRIKETONES
  see also Ketones

TRIKT-50
  see Nuclear Auxiliary Power Systems

Trilaurylamine
  see Tridodecylamine

Trillekamin
  see Triethylamine, 2,2',2''-Trichloro-

TRIMETHYLAMINE
  compound with chloroborane, preparation of, 22:16561
  compound with dichloroborane, preparation of, 22:16561
  deuterium exchange between liquid ammonia and systems containing, 22:47208(P)
  effects on radioinduced polymerization of styrene under anhydrous conditions, 22:8099(T) (AEC-tr-6908, pp 79 96)
  radiation effects on production of, in fish, effects of dose fractionation on, 22:15125(R) (RLO-1730-2)

TRIMETHYLENE OXIDE
  radiation effects on bond scission of, electron, 22:42719(T) (AEC-tr-6937, pp 176-83)
  radiation effects on, at 77°K, ESR spectral studies on free radicals produced by electron, 22:8129
  radiation effects on, at 77°K, ESR studies of free radicals from electron, 22:42714(T) (AEC-tr-6937, pp 117-32)

TRINEUTRONS
  binding energy of, lower bound for, (T), 22:39574
  existence of, calculations on, (T), 22:48450
  existence of, calculations using separable nucleon--nucleon p-wave interaction, (T), 22:53090
  existence of, research using meson (π⁻) reactions with helium-4, (E), 22:5759
  production in tritium (n,p) reactions, (T), 22:50528
  search for, technique of, (E), 22:30023
  search for, using neutron reactions with lithium-7 at 14 to 19 MeV, (E), 22:41955
  search for, using tritium (n,p) reaction, (E), 22:9771
  search for, using tritium (t,He-3) reactions, (E), 22:20578 (WASH-1079)

Trinitite
  see Radioactive Minerals

TRINO POWER REACTOR
  boron--temperature reactivity coefficients at startup an 7000 MWd/MTU, (E/T), 22:14134(R) (EUR-3732)
  control system performance in, statistical analysis of, (T), 22:14134(R) (EUR-3732)
  coolant flow distribution in core area of, (T), 22:14134(R) (EUR-3732)
  cooling system for, development of closed-cycle water, 22:18416(R) (EUR-3657)
  core for, design and fabrication of first, 22:50751
  core for, performance and operating limits of chemical-shim, 22:7830
  core operating limits evaluation for, (T), 22:14134(R) (EUR-3732)
  core power density distributions during first cycle, (E/T), 22:14134(R) (EUR-3732)
  core power in, correlation between fuel mean effective temperature and, (E/T), 22:14134(R) (EUR-3732)
  design parameters for, 22:22712 (STI/PUB-174)
  fuel burnup in, variation of critical boron concentratio with, (E/T), 22:14134(R) (EUR-3732)
  fuel cycles for, description of optimum management of, 22:22776
  fuel elements for, economic and technological aspects of using plutonium, 22:22685 (EUR-3890)
  neutron flux distributions during operation of core 1 cycle 1 in, use of Aeroball incore instrumentation for 22:39769 (EUR-3932)
  operations and performance from June 1966 to June 1967, 22:18416(R) (EUR-3657)
  performance of core 1 cycle 1 of, use of Aeroball incore instrumentation for analysis of, 22:39769 (EUR-3932)
  performance test program for, description of, 22:25015
  reactivity balances and long term changes for, evaluatio of, (E/T), 22:14134(R) (EUR-3732)
  steam generator instabilities in, (E/T), 22:14134(R) (EUR-3732)
  xenon reactivity coefficients at startup and 7000 MWd/MTU, (E/T), 22:14134(R) (EUR-3732)

TRIOCTYLAMINE
  solvent properties for niobium and tantalum, 22:18903
  solvent properties for rhenium in processing solutions containing molybdenum, 22:37840
  solvent properties for thorium nitrate, 22:10334
  solvent properties for uranium, 22:4257
  solvent properties for uranium in sulfuric acid solutions, 22:35915
  solvent properties for uranium thiocyanates, spectral studies on, 22:18797
  solvent properties for uranium, plutonium, americium, an curium in fused salts at 180°C, 22:4255
  benzene--trioctylamine, effects on electron exchange reactions between hexavalent and tetravalent uranium, 22:27736

Trions
  see Elementary Particles (Triplet)

Triose
  see Glyceraldehyde

s-TRIOXANE
  radioinduced vapor-phase graft polymerization of solid, with polyethylene films, γ, 22:27821

TRIOXANES
  polymerization of preirradiated, mechanism of, 22:10299
  radiation effects on, at 77°K, ESR spectral studies on free radicals produced by electron, 22:8129
  radiation effects on, at 77°K, ESR studies of free radicals from electron, 22:42714(T) (AEC-tr-6937, pp

117-32)
  radioinduced polymerization by contacting with irradiated tetroxane, 22:51033
  radioinduced polymerization in presence of methylenesuccinic acid anhydride, formation of polyoxymethylene copolymer by, 22:35845(P)
  radioinduced polymerization of liquid, under anhydrous conditions, γ, 22:8122
  radioinduced polymerization of liquid, under anhydrous conditions, 22:42707(T) (AEC-tr-6937, pp 54-8)
  radioinduced polymerization of solid, electron microscopic studies on fibrils formed by, 22:8132
  radioinduced polymerization of solid, electron microscopic studies of, 22:42717(T) (AEC-tr-6937, pp 158-69)
  radioinduced polymerization of solid, kinetics of crystallization in, 22:8107(T) (AEC-tr-6908, pp 173-82)
  radioinduced polymerization of, effects of electron and proton acceptors on rate of solid-state, 22:42726(T) (NSJ-tr-108)
  radioinduced polymerization of, effects of high pressure on solid-state, 22:4194
  radioinduced polymerization of, solid-state, 22:4195
  radioinduced polymerization of, with 1,3-dioxolane, 22:21145(P)
  radioinduced polymerization with maleic anhydride and/or itaconic acid anhydride, 22:47190(P)
  radioinduced polymerization with nitrogen-containing compounds, 22:37810(P)
  radioinduced postpolymerization of, molecular weight distribution of polyoxymethylenes in solid-state, 22:42744
  radioinduced thermoluminescence and triboluminescence of polymerized crystals of, gamma, 22:12651
  acenaphthylene--trioxane, radioinduced polymerization of, γ, 22:42741
TRIPHENYLAMINE
  effects on yields in pulse electron radiolysis of polystyrene, 22:42700 (AD-664883)
  radiolysis in 3-methylpentane glass at 77°K, luminescence studies on γ, 22:35831 (PRNC-116)
  radiolysis of polystyrene solutions of, spectral studies on electron, 22:10276
  radiolysis of, effects of solvent on absorption spectra from pulse, 22:27775
TRIPHENYLENE
  electron attachment cross sections for, nondissociative, 22:35777 (ORNL-TM-2216)
TRIPHENYLENE, 1,2,3,4,5,6,7,8,9,10,11,12-DODECAHYDRO-
  polymers, radioinduced polymerization of butadiene in, γ, 22:27791
Triphosphopyridine Nucleotide
    see Nicotinamide-Adenine Dinucleotide Phosphate
Triple Points
    see Phase Studies
Triplet Model
    see Elementary Particle Models (Triplet)
Triplets
    see Elementary Particles (Triplet)
TRIPROPYLAMINE
  deuterium exchange and racemization of deuterated 9-methylfluorenyl compounds with, 22:27672
  deuterium exchange between N,N,9-trimethyl-7-nitrofluorene-2-carboxamide and, in 2-methyl-2-propanol--tetrahydrofuran, 22:27671
  racemization of deuterated N,N,9-trimethyl-7-nitrofluorene-2-carboxamide with, 22:27671
Triptycene
    see 9,10-o-Benzenoanthracene, 9-Bromo-9,10-dihydro-
TRITHIANE
  radioinduced solid-state polymerization of, 22:12385
TRITIDES
    see also Erbium Tritides
    see also Hydrogen Tritides
    see also Titanium Tritides
TRITIUM
  absorption on metal surfaces, percutaneous transfer, removal, and smear sampling of, 22:43300 (AERE-PR/HPM-12)
  abundance in iron meteorites, solar wind hydrogen effects on, 22:4937
  abundance in solar flares, (T), 22:19731
  accumulation and storage of, equipment for, 22:18773
  activity in ground water, rainwater, and surface water in southwestern France, measurement of, 22:18936
  activity measurements of aqueous solutions of, cost reduction of liquid scintillation, 22:43059
  activity measurements of, effects of vial activity on sensitivity of liquid scintillation detectors for, 22:28109
  activity of, equipment and methods for measuring, 22:51236
  activity of, toluene-blended liquid scintillation detectors for measuring, 22:47358
  activity of, use of G--M detectors incorporating gas sample for determining, 22:6574
  alpha differential elastic scattering cross sections at 4 to 18 MeV, angular distributions for, (E), 22:3602
  alpha elastic scattering at 3 to 11 MeV, angular distributions and excitation function for, (E), 22:20435
  alpha scattering at 4 to 18 MeV, excitation function for, (E), 22:20485
  assay of, methods for liquid scintillation, 22:28273 (ANL-7278, pp 219-49)
  atmospheric balance of, (T), 22:34310
  behavior during fluidized-bed fluoride volatility and pyrochemical reprocessing of reactor fuels, 22:25444 (ANL-7375, pp 180-9)
  beta activity of, afterpulsing effects on scintillation detectors for measuring absolute, 22:49088
  beta activity of, liquid scintillation detectors for standardization of, 22:16889
  beta decay by, effects of, on genetics of Escherichia coli, 22:51553
  beta decay energy of, calorimetric measurement of, (E), 22:13925 (AWRE-O-33/61)
  beta decay in organic compounds, autoradiolysis by, 22:30641
  beta dosimetry in small body cavities using thermoluminescence, 22:31107
  beta emission by thymidine-incorporated, effects of, on rats following ingestion and injection, 22:45521
  beta emission by thymidine-incorporated, effects of, on morphology of palate in mice, 22:40902
  beta emission by, comparison of ionization chamber and liquid scintillation counter for efficient measurement of, 22:51665
  beta emission by, decay scheme and resultant energy levels for, 22:53091
  beta emission by, effects of low-energy, on applications in medicine and research, 22:51862
  beta emission by, effects of, on aging and incidence of neoplasms in mice, 22:43419
  beta emission by, effects of, on cell proliferation in skeleton of mice, 22:38208
  beta emission by, effects of, on cells during tracer studies, 22:45506 (EUR-3290f-e, pp 39-50)
  beta emission by, effects of, on chromosomes of human fibroblasts, 22:45486
  beta emission by, effects of, on cultured lymphoma cells from mice, lethal, 22:43209 (UCSF-10-P-2-39, pp 2-51)
  beta emission by, effects of, on DNA of liver of kangaroo rats, 22:49184 (UCRL-50461)
  beta emission by, effects of, on excretion of β-aminoisobutyric acid in urine of cancer patients, 22:45704
  beta emission by, effects of, on growth of cultured corn root tips, 22:23674(R) (NYO-3561-4)
  beta emission by, effects of, on labeled chromosomes, aberrant, 22:43276 (UCSF-10-P-2-39, pp 52-124)
  beta emission by, effects of, on mammalian cell cultures, 22:52013
  beta emission by, effects of, on mice, carcinogenic, 22:38481
  beta emission by, effects of, on Nicotiana hybrids, tumorigenic, 22:45728
  beta emission by, effects of, on replication kinetics of ileal cells in rats, 22:45660
  beta emission by, effects of, on reproduction of Hydrogenomonas facilis, 22:52059
  beta emission by, effects of, on survival of cultured mammalian cells following incorporation, 22:43456
  beta emission by, effects of, on survival of cultured hamster fibroblast cells, effects of thymidine or uridine incorporation on, 22:45382 (EUR-3290f-e, pp 73-7)
  beta emission by, in relation to radiation monitoring of work areas, 22:21525
  beta emission by, method for measurement of, in biological materials, autoradiographic, 22:51617
  beta emission by, performance of liquid scintillation counters for measurement of, 22:51240
  binding energy and radius of, calculation using cluster model, (T), 22:26857
  binding energy of ground state of, calculation using separable nonlocal hard-core potential, (T), 22:20771
  binding energy of, calculations using exponential, well, and Yukawa potentials, (T), 22:48450
  binding energy of, method for calculating, (T), 22:9800(R) (COO-535-571)
  binding energy of, self-consistent calculations using Hamada--Johnston potential, (T), 22:26816
  book: Tritium-Labeled Molecules in Biology and Medicine, 22:51464
  bremsstrahlung of, determination of sulfur in oil products by absorption of, 22:37697
  buildup in Savannah River Production Reactors, safety analysis for, 22:35455 (DPSPU-66-30-13)
  chemical stability of pyrimidine nucleoside-incorporated, conference on, 22:45380 (EUR-3290)
  concentration in hydrogen on palladium chromatograph, 22:40200
  concentration in natural water, electrolytic, 22:42831
  contamination from neutron generators, vacuum cartridge for containing, 22:48393 (ORO-3346-29)
  contamination hazards near accelerators for neutron production, 22:43310 (PHS-999-RH-29)
  contamination of man, treatment following, 22:28479
  content in air and water discharged at Mound Laboratory in 1967, 22:21205(R) (MLM-1464)
  content in atmosphere, 22:37880 (BNWL-SA-1639)

content in atmosphere and liquids and on surfaces, equipment for measuring, 22:23262 (CEA-R-3350)
content in atmosphere, effect of sunspots on, 22:6492
content in atmospheric ethane and methane, effect of nuclear industry releases on, 22:16715
content in atmospheric hydrogen, effects of nuclear explosions on, 22:16714
content in atmospheric methane, effect of nuclear industry releases on, 22:16713
content in Austrian ground waters, measurement of seasonal variations in, 22:18938
content in biological materials, solid-state scintillation counting technique for determining, 22:4443
content in fallout in California during 1961 to 1967, effects of 1961--1962 nuclear explosions on, 22:25536
content in fallout in Lake Michigan during 1954 to 1965, effects of 1961--1962 nuclear explosions on, 22:25536
content in fallout in polar regions during 1960 to 1966, effects of 1961--1962 nuclear explosions on, 22:25536
content in French precipitation, measurement of, 22:18937
content in German ground and surface waters and wines, measurements of, 1963 to 1965, 22:18928
content in German ground water and soils, use in age estimation, 22:18929
content in German ground waters, 22:48929
content in ground water beneath Hanford Project, surveillance of, 22:40208 (BNWL-835)
content in ground water, rainwater, and surface water in Evian basin, France, measurement of, 22:18934
content in ground water, rainwater, and surface water in New Zealand, measurement of, 22:18935
content in ground waters at Hanford, 22:19085(R) (BNWL-687)
content in Icelandic ground waters, measurement of, 22:18933
content in mixed and surface layers of North Pacific Ocean, 22:6506
content in natural waters of USSR, method for determining, 22:50940
content in ocean of bomb-produced, measurement of, 22:6505
content in oils and shales, effects of exposure time and water volume on, 22:23186(R) (ORNL-TM-2198)
content in power reactor liquid waste, 22:2323(R) (ORNL-TM-1887)
content in precipitation over North Pacific Ocean, 22:6506
content in Sedan crater soil and ejecta, measurement of residual, 22:12465 (UCRL-50360)
content in total precipitation in United States, 1964 and 1965, 22:37888
content in water, comparison of Triton-X emulsion systems with dioxane solutions in liquid scintillation determination of, 22:6580
content in water, liquid scintillation system for determining, 22:25641
content in water, survey of detection systems for determining, 22:6575
content of air and water during 1966, 22:28523
content of biological materials, effects of concentration on measurement of, 22:51661
content of paper- and thin-layer chromatograms, methods for analysis of, 22:51662
content of surface waters in United States during 1964 to 1965, 22:28527
content of tissue samples method for liquid scintillation counting of, 22:43266
content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
content of urine, measurement of, by liquid scintillator, 22:14999 (AECL-2699)
content of urine, measurement of, for monitoring work areas, 22:21525
content of water in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
content of water, methods for measurement of, 22:45563
content of waters of Atlantic Ocean, 22:42915(R) (NYO-2174-87)
counting of aqueous solutions of, efficiency of dioxane and toluene blended mixes for scintillation, 22:16433
counting of, efficiency of silicon avalanche detector for, 22:19097(R) (NYO-3246-TA-1)
counting on paper chromatograms, factors influencing efficiency of, 22:18731
current algebra sum rule for helium-3--tritium pair, test of, 22:5618
decay from DNA-precursor-incorporated, in Escherichia coli, effects of, on DNA, 22:19250
decay in 3 Cen A, 22:819
decay in compounds, self-radiolysis from, 22:27699
decay in cytosine, free radical production by, 22:47200
decay in Escherichia coli, genetic and physiological effects of, 22:33709(R) (COO-1603-2)
decay in helium--tritium systems, formation of complex molecules by, 22:35876 (LA-3956)
decay of, effects on labeled uracil, 22:14530
decay of, effects on tritium exchange between hydrochloric acid and mesitylene, 22:42664
deposition in man, hazards from, 22:8527 (SC-DC-67-21
description using nonlocal factorizable potential with three-body forces, (T), 22:22543
description using separable nonlocal potential with ha shell repulsion, 22:26814
detection and measurement of, use of scintillator--photographic film system for, 22:38024
detection in plant tissues, combined use of autoradiography, scintillation counting, and thin-lay chromatography for improved, 22:30418 (UCRL-17852)
detection of, design of scintillation system for, 22:10538 (CEA-R-3321)
determination by beta radioluminescence in standard thi layer chromatographic media, 22:18709
determination by counting using ionization chamber, 22:42586 (CEA-R-3348)
determination by liquid scintillation counting, efficiency of, (T), 22:43044
determination by liquid scintillation counting, sample preparation techniques for, 22:27611
determination by liquid scintillation, method for measuring efficiency of, 22:23290
determination by radiometric analysis of thin-layer chromatograms, 22:16472
determination by scintillation counting, effects of whi fabric on efficiency of, 22:40014
determination in 1-hexene by radiogas chromatography, 22:16480(R) (COO-890-9)
determination in adenosine and toluene by paper chromatography and counting, 22:18731
determination in air, design of detector cell for, 22:4454(P)
determination in air, liquid scintillation method for, 22:51228
determination in animal cells, autoradiographic and proportional detector methods for simultaneous carbon-14 and, 22:51233
determination in biological materials, oxygen flask combustion technique for, 22:16471
determination in carbon-14-labeled solutions, effects of white fabric on efficiency of, 22:40014
determination in compounds by paper chromatography and liquid scintillation counting, 22:18712
determination in compounds in tissues, high-resolution autoradiography for, 22:16473
determination in dusts, 22:14433 (ORNL-4196, pp 66-89)
determination in effluents from gas--liquid chromatography column, flow-through proportional counter for, 22:10549
determination in gaseous mixtures with hydrogen by ionization current measurements, 22:14417 (AWRE-O-52/61)
determination in homogeneous and heterogeneous counting systems, variation in efficiency for, 22:18732
determination in human urine, equipment for, 22:23267 (SC-M-68-245)
determination in hydrogen in sealed systems using L x rays from thin gold films, 22:12222 (AWRE-O-59/61)
determination in krypton by counting, 22:33208(R) (MLM-1456)
determination in labeled compounds, apparatus and method for, 22:27617(P)
determination in labeled samples, preparation of liquid scintillation mixtures for, 22:33274
determination in labeled wool by liquid scintillation counting, effects of fiber diameter on, 22:33230
determination in man by scintillation counting of urine, 22:2502 (AECL-2665)
determination in microbiological samples, liquid scintillation methods for, 22:43037
determination in microbiological samples, review of liquid scintillation systems for, 22:43038
determination in organic compounds by modified micro combustion method, 22:47107
determination in organic compounds by radio-gas-chromatography, 22:8036(P)
determination in organic compounds using flow monitoring counter, 22:45005
determination in polyacrylamide gels by scintillation counting, 22:37660
determination in urine, radiochemical method for, 22:44970 (AERE-AM-103)
determination in water, 22:42831
determination in water by conversion to ethane and counting, 22:35762
determination in water samples by liquid scintillation counting, 22:12234
determination in water without isotopic enrichment by β counting, 22:50940
determination of distribution of, in uracil and uridine, 22:47105
determination on swipes and in urine and water using scintillation spectrometer, 22:21029 (SC-M-67-3044)
deuteron elastic scattering at 3 to 11 MeV, angular distributions and excitation function for, (E), 22:20435
deuteron reactions (d,He-3) at 33 MeV, n--n scattering length from, (E), 22:11902
deuteron reactions (d,He-3) with, n-n scattering length from, (T), 22:26790
deuteron reactions (d,n) at 140 keV using polarized beams, parity conservation in, (E), 22:53089
deuteron reactions (d,n) from threshold to 5 MeV, neutron

production in, (T), 22:39554 (SC-RR-68-19)
deuteron reactions (d,n) with, 14-MeV neutron yields from, (T), 22:7630 (SC-RR-67-346)
deuteron reactions (d,n) with, alpha counting technique for determining 14-MeV neutron yields from, 22:23292
deuteron reactions (d,n) with, calculations of neutron production from, 22:32479 (BNL-50083, pp 179-91)
deuteron reactions (d,n) with, neutron polarization from, (T), 22:9777
deuteron reactions (d,n) with, neutron production by, (E/T), 22:5752
deuteron reactions (d,n) with, time-of-flight spectrometer for measuring fast neutrons from, 22:19137
diffusion from thorium dioxide--uranium dioxide fuels in shear-leach process, 22:149
diffusion of nuclear explosion-produced, through geologic media, 22:35964 (NVO-1229-85)
disposal to ground, effects on radioactivity of Snake Plain aquifer ground water from NRTS, 22:2192 (IDO-22049)
distribution in Sedan crater ejecta, 22:40284 (UCRL-70630)
distribution in thin-backed targets, determination using (p,n) reactions, 22:37242
distribution of anesthetic-incorporated, in tissues of guinea pigs following subcutaneous injection, 22:31006
distribution of tetraphenylporphinesulfonate-incorporated, in tissues of rats, 22:8447
distribution of thymidine-incorporated, in animal tissues, technique for water-soluble autoradiographic study of, 22:45381 (EUR-3290f-e, pp 29-38)
dosimetry of compounds labeled with, effects of LET on, 22:51663
economics for use in thermonuclear reactors, 22:19925 (CLM-R-85)
effects in enzymatic reactions with labeled substrates, spurious, 22:37756
effects of atmospheric, on photographic film, thermoluminescent, and photoluminescent dosimeters, 22:33670 (BNWL-SA-1569)
effects of thymidine-incorporated, on genetic material of cells, toxic, 22:51555
effects on aromatic nitration of 1,3,5-tri-tert-butylbenzene, 22:27717
effects on benzene-sensitized and direct photolysis of, 22:37734
effects on Broensted-catalyzed hydrolysis of ethyl vinyl ether, 22:25340
effects on chemical reactions, influence of tunneling on, 22:40070
effects on chromatographic behavior of amino acids, 22:16487
effects on chromatography of steroid hormones, 22:28273 (ANL-7278, pp 219-49)
effects on chromosomes at different stages in Chinese hamster cells, aberrant, 22:25824
effects on decomposition of chloro- and fluoroethane, mechanism of halide removal in, 22:21109
effects on electron-irradiation of ethane and ethylene, 22:14552
effects on enzymatic phosphorylation of labeled thymidine in cultured regenerating liver extracts, isotopic, 22:45383 (EUR-3290f-e, pp 79-88)
effects on fumarase-catalyzed dehydration of malic acid, 22:14509
effects on hydrogen abstraction from aromatic hydrocarbons, 22:37732
effects on hydrogen chloride elimination from chloroethane or 1,2-dichloroethane, 22:45064
effects on hydrogen transfer in transition states, 22:4112
effects on ion exchange chromatography of amino acids, 22:28273 (ANL-7278, pp 219-49)
effects on oxidation of 2,2,2-trifluoro-1-phenylethanol, 22:40070
effects on oxidation of 4,4',4''-methylidynetris[N,N-dimethylaniline], by 2,3,5,6-tetrachloro-p-benzoquinone, 22:40070
effects on photochlorination of 2-methylpropane, 22:18774
effects on rate of oxidation of ethanol by yeast alcohol dehydrogenase, 22:4093
effects on self-radiolysis of methyl stearate, yields in, 22:37802
effects on solid iodoethane, reaction kinetics of intermediates formed by, 22:48894
effects on solvolysis of cyclopropane in sulfuric acid, 22:37729
effects on spectra of mercury hydride, 22:4152
effects on vapor pressure and molecular rotation of methane, 22:10254
effects on vapor pressure of water from -9 to 114°C, 22:16489
electron elastic scattering by, electromagnetic form factor of nucleons from, 22:11626
electron paramagnetic resonance spectra in irradiated lithium fluoride crystals, 22:34764
energy levels of molecular, first excited $^1\Sigma$/sub g/$^+$, (T), 22:34276
energy-level transitions in, electromagnetic, (T), 22:26793
enrichment by thermal diffusion, description of method for, 22:6541
enrichment in hydrogen, development of thermal diffusion method for rapid, 22:6480
exchange between 2-nitropropane and 2,4,6-trimethylpyridine, 22:40070
exchange between aromatic compounds and isotopic water, production of labeled compounds by metal-catalyzed, 22:4121
exchange between hydrocarbons and tritiated phosphoric acid and boron trifluoride complex, 22:18807 (EUR-3731)
exchange between meso-2,3-ditritiosuccinate and water, catalytic effects of succinate dehydrogenase on, 22:35788
exchange between methanolic sodium methoxide and polyfluorobenzenes, kinetics of, 22:21068
exchange between succinates and water, catalytic effects of succinate dehydrogenase on, 22:35789
exchange between tritium oxide and organic compounds in presence of platinum oxide, 22:8058
exchange from labeled compounds in aqueous solutions, 22:27699
exchange reactions between benzene--toluene and xylene--toluene, kinetics of, 22:78
exchange reactions between toluene vapor and, effects of argon and helium on kinetics of, 22:78
exchange reactions with aryl hydrogen between benzene, 2,5-difluorotoluene, fluorobenzene, toluene, and α,α,α-trifluorotoluene and lithium cyclohexylamide in cyclohexylamine kinetics of, 22:21067
exchange reactions with chloroethylene polymer foils, 22:10765(T) (LB/G-2598)
excretion in urine by man, methods for calculation of safe limits of, 22:6811
half-life in man, 22:8527 (SC-DC-67-2191)
helium-3 elastic scattering at 3 to 11 MeV, angular distributions and excitation function for, (E), 22:20435
helium-3 reactions (He-3,np) at 1.5 MeV, final-state interactions in, (E), 22:20437
hyperfine splitting in argon, pressure shift of, (E), 22:47812
incorporation in bile pigments, 22:28273 (ANL-7278, pp 219-49)
incorporation in compounds, method for, 22:18773
incorporation in compounds, use of kinetics of exchange reaction in, 22:6298
incorporation in crystalline polycyclic hydrocarbons, effects of variables on Wilzbach method for, 22:65
incorporation in detergents for cleaning effectiveness measurements, 22:45225
incorporation in DNA and RNA, effects of, on degradative activity of DNAase and RNAase, 22:2485
incorporation in gibberellin A_1, 22:12792
incorporation in inositol, in water, with and without uv radiation, 22:12390
incorporation in leukocytes of rats, 22:12750(R) (RLO-1377-3)
incorporation in lipids, review of methods for, 22:50914
incorporation in organic compounds, gas-chromatographic techniques for, 22:16480(R) (COO-890-9)
incorporation in RNA by methylation, method for, 22:461
incorporation in tetraphenylporphinesulfonic acid for use in tumor localization, 22:8447
incorporation in thymidine for determining DNA, protein, and RNA synthesis in L cells, 22:19274
incorporation in yields produced by gamma radiolysis of labeled-benzene--methanol system, 22:30624
injection of thymidine-incorporated, into brain of rats, effects of, on cells of subependymal layer, 22:40861
isotopic exchange with organoboranes, 22:16480(R) (COO-890-9)
labeling of adenine, orotic acid, and uracil for preparation of labeled RNA, 22:12746 (EUR-3669)
labeling of cell nuclei in fetus of rats, effects of, on growth and morphology, 22:40601
labeling of DNA, effects of, on degradation by DNAase, 22:464
labeling of hematopoietic cells, in γ-irradiated rats, 22:14969
labeling of leukocytes with thymidine-incorporated, for determination of origin and kinetics of mononuclear phagocytes, 22:51392
labeling of lipids, review of methods for, 22:40570
labeling of organic molecules, techniques for, 22:51462
management in aqueous wastes of fuel processing, 22:25444 (ANL-7375, pp 180-9)
maximum permissible concentration of, in air in buildings, 22:51619
measurement in Halden Boiling Reactor cooling system during core 2 operation, 22:16150 (HPR-92)
mesons (π^-) elastic scattering by, ground state structure from, 22:13928
metabolism by man, estimation of absorbed beta dose from, 22:45505 (DP-MS-66-77)
metabolism in man, 22:21525
metabolism in rats, biological half-life for excretion following uptake through lungs or skin, 22:51619
metabolism of gibberellin A_1-incorporated, in dwarf pea plants, 22:12792

metabolism of thymidine-incorporated, in rats, 22:45521
metabolism of water-incorporated, in corn roots radial exchange, 22:40597
migration during phenylalanine hydroxylation, mechanism of, 22:2169
monitoring equipment for, technical specifications of, 22:23267 (SC-M-68-245)
monitoring in air of work areas, 22:21525
monitoring in air, tritium aerosol generator for calibrating detectors for, 22:14756(R) (UCRL-50007-67-2)
monitoring in atmosphere, Kanne ionization chamber for remote, 22:36030 (DPSPU-67-30-1)
monitoring in work areas, use of urine analysis for, 22:21525
monitoring near DIDO and PLUTO reactors, system design for, 22:19093 (AERE-M-1929)
monitoring of Mound Laboratory area, environmental, 22:45183 (MLM-1522)
monitoring of Savannah River Production Reactors, safety analysis for, 22:35455 (DPSPU-66-30-13)
monitoring of, released from tritium-labeled compounds during storage in refrigerators, use of content in frost formed in unit for β, 22:31102
neutrino scattering by, current commutation relations for cross section sum rules for, 22:9531
neutron absorption efficiency of, effects of gas pressure on, (E/T), 22:32972 (IN-1139)
neutron elastic scattering at 14.1 MeV, neutron angular distributions from, 22:32484
neutron elastic scattering at 14.4 MeV, angular distribution for, (E), 22:26821
neutron elastic scattering at 6, 9, 18, 19.5, 21, and 23 MeV, angular distributions and polarization for, (E), 22:20578 (WASH-1079)
neutron reactions (n,d) at 14.1 MeV, deuteron spectra from, (E), 22:32484
neutron reactions (n,d) at 15.1 MeV, neutron--neutron scattering length from, (E), 22:15942
neutron reactions (n,d), (n,p), and (n,t) at 15 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,p) at 14, 18, and 22 MeV, proton energy spectra for, (E), 22:9771
neutron reactions (n,p) with, cross section for, (T), 22:50528
neutron reactions (n,t) at 14.1 MeV, triton angular distribution and spectra from, (E), 22:32484
neutron reactions at 14.1 MeV, (E), 22:5761
neutron scattering at 14.1 MeV, (E), 22:5761
neutron total and scattering cross sections at 0.007 to 5 eV, (E), 22:11896
nuclear axial-vector form factor for, (T), 22:24825
nuclear binding energy and charge radius of, calculations using separable two-body potentials, (T), 22:32482
nuclear charge distribution and binding energy for, calculations using Ohmura hard-core wave function with admixture of S' and S states, (T), 22:50527
nuclear electromagnetic radius of, effects of Coulomb repulsion on, (T), 22:5756
nuclear ground state of, probability of mixed-symmetry s-state in, (T), 22:20701
nuclear magnetic moment of, calculation using velocity-dependent potentials, (T), 22:22542
nuclear magnetic resonance in tritium-doped lithium hydride, (E), 22:5429
nuclear spin filter for selecting metastable atoms of, 22:32483
nuclear spin polarization of atomic beams of, calculations on selection techniques for, 22:2777 (LA-3725)
nuclear structure of, description of, (T), 22:14067(R) (BMwF-FBK-67-81)
nucleon scattering by, theory using second-quantization formalism, (T), 22:9919 (IPNO/TH-102)
order regarding registration of, used as radiation source in instruments in United Kingdom, 22:31112
oxidation of glucose-6-phosphate-incorporated, in mammary gland homogenates from lactating rats, 22:30964
performance as targets for low-energy pulsed neutron production, 22:37251
photodisintegration cross sections for, two- and three-body, (T), 22:9776
photodisintegration of, cross section for, (T), 22:20433 (JINR-P2-3705)
photodisintegration of, cross-section calculations using separable potentials for two- and three-body, (T), 22:18118
photodisintegration of, use of Majorana exchange forces in calculating, (T), 22:5902
photon absorption by, Drell--Herne--Gerasimov sum rule for, 22:3333
photon reactions (γ,n) and (γ,p) at 32.5 MeV endpoint energy, (E), 22:5757
photon reactions (γ,p)2n at 10 to 30 MeV, cross sections for, (T), 22:26803
photon reactions (γ,π) with helium-3 and, magnetic moment anomaly from, 22:13928
polarization of atoms of, Majorana de-, (T), 22:52476 (LA-3949)
preparation of radiation targets of, by impregnating titanium, 22:37241
preparation of radiation targets of, developments in, 22:37240
production by US power reactors through 1990, 22:45245 (BNWL-716)
production in helium-cooled reactors by helium-3 (n,p) reaction, (T), 22:42217
production in proton reactions with helium-4, (E), 22:26829
production in stony meteorites by cosmic radiation, estimation of, 22:41274
production in thermonuclear reactors, safety problems associated with, 22:49059
production in titanium--tritium targets, scintillation detector system for measuring, 22:51228
production rates in fast-neutron fission of reactor fuels, 22:46859 (ANL-7434)
properties of paramagnetic centers due to, in neutron-irradiated lithium fluoride crystals, (E), 22:17779
protection against gaseous, design of ventilated plastic suits for, 22:10765(T) (LB/G-2598)
proton elastic scattering at 14 MeV, angular distributions for, (E), 22:20578 (WASH-1079)
proton elastic scattering at 3 to 11 MeV, angular distributions and excitation function for, (E), 22:20435
proton elastic scattering by, use of Feynman diagrams to determine position of resonances in, (T), 22:18337
proton reactions (p,d) and (p,n) at 14 MeV, angular distributions for, (E), 22:20578 (WASH-1079)
proton reactions (p,γ) and (p,n) with, use of Feynman diagrams to determine position of resonances in, (T), 22:18337
proton reactions (p,n) at 15.4 MeV, cross section for, (E), 22:26821
proton reactions (p,n) at 3 MeV, angular distributions for, (E), 22:18195
proton reactions (p,n) from threshold to 5 MeV, neutron production in, (T), 22:39554 (SC-RR-68-19)
proton reactions (p,n) with, calculations of neutron production from, 22:32479 (BNL-50083, pp 179-91)
proton reactions (p,n) with, neutron production by, (E/T), 22:5752
purging from nuclear chimneys, evaluation of methods for, 22:21228 (UCID-15259)
quality of domestic and foreign targets of, in Japan, 22:35179
radiation dose to man following ingestion or inhalation, effects of age on, 22:33814 (ORNL-TM-2229)
radiation dose to personnel, design and performance of photographic film dosimeters for determining, 22:8399
radiation effects on content of thymidine-incorporated, in HeLa cells, x, 22:38200 (UCSF-10-P-2-41)
radiation effects on rate of incorporation of thymidine-incorporated, into DNA in spleen and thymus of mice, x, 22:19243
radiation effects on substitution in benzene and toluene, 22:16577
radiation effects on uptake of serine-incorporated, by hairs of mice, electron, 22:6710 (ACRH-1000-26)
radiation effects on uptake of thymidine-incorporated, by bone marrow cells, effects of cell phase on, 22:45657
radiation effects on uptake of thymidine-incorporated, by mast cells in rats, 22:14941
radiation effects on uptake of, by guinea pig bone marrow, effects of thymus shielding on γ, 22:562
radiation hazards from, in wastes from nuclear power plants, 22:36016 (RISO-M-735)
radioactive decay of, effects of, on storage of labeled compounds, 22:51460
radiochemical purity of molecules labeled with, methods for determining, 22:51460
radioinduced abstraction from thymine, kinetics of γ, 22:33384
radioinduced exchange between hydrochloric acid and mesitylene, 22:42664
radioinduced exchange with hydrogen in organic compounds, 22:42787
reactions of atomic, with olefin molecules at cryogenic temperatures, 22:27728
reactions of atomic, with solid propane and propene, products from, 22:10240
reactions of recoil atoms of, in benzene--cyclohexane mixture, effects of iodine on formation of labeled compounds in, 22:30594
reactions of recoil atoms of, with dichloromethane, decomposition of labeled yields in, 22:21110
reactions of recoil atoms of, with hydrocarbons and halocarbons in the presence of hexafluorocyclobutene, 22:47165
reactions of recoil, mechanisms of, 22:23074
reactions of recoil, with 2-methylpropane, effects of deuterium and phase on, 22:27755
reactions of recoil, with benzene, effects of bromine and iodine on yield of labeled products from, 22:42768
reactions of recoil, with butane, pentane, and 2,2-dimethylpropane, 22:40130
reactions of recoil, with chloropropanes, kinetics of, 22:16628
reactions of recoil, with compounds containing N--H bonds, yield of HT from, 22:23047
reactions of recoil, with deuterated and normal alkanes, effects of bond energy on, 22:40120

reactions of recoil, with hydrocarbons, effects of various scavenger--moderator combinations on HT yields from, 22:45125
reactions of recoil, with hydrocarbons, yield of labeled products from, 22:37808
reactions of recoil, with isopropyl ether, 22:23075
reactions of recoil, with methane, effects of pressure on, 22:16628
reactions of recoil, with methane, hydrogen, deuterium, and deuterium hydrides, 22:12392
reactions of recoil, with methyl isocyanide, effects of phase on yields from, 22:16622
reactions of recoil, with methyl propyl ether, yields of tritium-labeled products from, 22:42767
reactions of recoil, with methylsilanes, 22:37789
reactions of recoil, with propene in excess perfluorocyclobutene, abstraction yields from, 22:33404
reactions of recoil, with solid hydrocarbons, absolute yields of products from, 22:27758
release from fuel reprocessing plants, 22:6436 (ORNL-4168, pp 1-60)
release from thermonuclear reactors, 22:8330
release to atmosphere from nuclear power reactors and underground nuclear explosions, permissible limits for, 22:12463 (UCID-15251)
removal from equipment, decontamination methods for, 22:23262 (CEA-R-3350)
removal from stainless steel by moist air at 300°C, 22:16737 (CEA-R-3312)
safety hazards from use of, supervision of protection against, 22:19345
safety methods for, at Nuclear Fuel Services processing plant, 22:25444 (ANL-7375, pp 180-9)
sampling methods for bomb-produced, in Illinois atmosphere, 1966 and 1967, (E), 22:8220(R) (COO-1199-14)
sampling of gases and water vapors of, design of bubbler collector for, 22:43155 (LA-3916)
separation analysis of, in contaminated areas, 22:38298
separation from contaminated oil shale by distillation, 22:16733(R) (ORNL-TM-2119)
separation from shale oil processed by underground nuclear explosions, 22:45208(R) (ORNL-TM-2298)
separation of organic metabolite-incorporated, from urine, method for, 22:47446 (CONF-680503-3)
solubility and diffusion of, in single crystals of silicon, coefficient for, 22:44225
stability in biological systems and enzyme reactions, 22:51460
stability of nucleic acid-incorporated, in metabolic processes, 22:51461
standards for dosimetry and safety in handling, 22:51664
storage of compounds labeled with, in refrigerators, safety of, 22:31102
toxicity of amino acid- and nucleoside-incorporated, 22:51458
toxicity of water-incorporated, in cells and animals, 22:51459
tracer study of DNA synthesis in x-irradiated HeLa cells, 22:43209 (UCSF-10-P-2-39, pp 2-51)
transfer from labeled 3-hexenedinitrile, 22:14480(R) (NYO-1725-28)
transfer from labeled tert-butylmalononitrile, 22:14480(R) (NYO-1725-28)
transfer of water vapor-incorporated, to rough surfaces, effects of molecular diffusivity on, 22:43300 (AERE-PR/HPM-12)
transport in tropical rain forest, ecological evaluation of, 22:47496(R) (PRNC-103)
triton differential elastic scattering cross section for, calculations using resonating-group method, (T), 22:7632
triton reactions (t,α) at 22 MeV, final-state interaction in, (E), 22:35292 (ORNL-4217, pp 1-81)
triton reactions (t,He-3) with, helium-3 spectra from, (E), 22:20578 (WASH-1079)
triton reactions (t,p) at 22 MeV, proton spectra for, (E), 22:50524
uptake and metabolism by animals and man, 22:8644
uptake by human skin from vapor in air at Chalk River, 22:14999 (AECL-2699)
uptake by rats through lungs and skin, 22:51619
uptake by subcellular fractions in liver of rats and brain of monkeys, 22:40572
uptake of thymidine-incorporated, by chromosomes, aberrant effects of, 22:4592 (UCSF-10-P-2-36)
uptake of thymidine-incorporated, by DNA, effects of histones on, 22:439
uptake of thymidine-incorporated, by pericycle and primordial cells of Vicia faba roots, autoradiographic study of, 22:47479
uptake of uridine-incorporated, by cytoplasm and nucleus of oocytes of mice, 22:28405 (ORNL-4100, pp 110-16)
use as heat source in radiovoltaic and radiophotovoltaic direct energy converters, 22:6543
use as label for determining immune reactions in mice, 22:449
use as tracer for continuous measurement of oil consumption in internal combustion engines, 22:14700
use as tracer for evaluating beta contamination of surfaces, 22:23547
use as tracer for ground water flow and soil moisture movement, 22:21181 (DP-MS-68-23)
use as tracer for ground water flow measurements, 22:19074
use as tracer for location of leaks in large water reservoirs, 22:19071
use as tracer for measurement of hydrogen diffusion in metals at room temperature, 22:47674 (DP-1108)
use as tracer for measurement of ion and water movement through undisturbed soil columns, 22:23153
use as tracer for measurement of oil--gas displacement in oil shales, 22:14692
use as tracer for measurement of porosity of ground water aquifers, 22:25508
use as tracer for measurement of water movement in sandy soils, 22:23160
use as tracer for streamflow measurements, 22:19057
use as tracer in detection of water leaks in ammonia plants, 22:16781
use as tracer in ground water movement studies, 22:18939
use as tracer in groundwater, bibliography on, 22:42864
use as tracer in hydrologic survey, 22:16773 (STI/DOC-10/73)
use as tracer in streams for reaeration rate coefficient determination, 22:48937
use as tracer in technique for measurement of water movement in soils, 22:23162
use as tracer of atmospheric motions, 22:30720
use as tracer to study radioisotope dispersion in sands, 22:19073
use as tracer to study synthesis of crystallins in lens cells, 22:28283 (ORNL-4100, pp 75-96)
use for autoradiography of biological materials, 22:33769
use for studying radiation effects on cells, 22:30966
use in determination of hydrogen by radio-release method, 22:16421
use in hailstorm and hurricane research, (E), 22:8220(R) (COO-1199-14)
use in production of atmospheric ions, 22:43165
use in x-ray fluorescence analyzer, 22:14453
use of 5-iododeoxyuride- and thymidine-incorporated, for destruction of neoplasms, 22:17030
use of bomb-produced, as atmospheric tracer, (E), 22:8220(R) (COO-1199-14)
use of bomb-produced, as tracer in water circulation studies, 22:18925
use of cytidine- and thymidine-incorporated for study of reproduction of psittacosis virus in L-cell cultures, 22:28332
use of histidine- and leucine-incorporated, for determining photodynamic damage to protein of Escherichia coli, 22:28289 (ORNL-4100, pp 178-201)
use of hydrogen iodide- and hydrogen sulfide-incorporated, to label free radicals formed in γ-irradiated DNA, 22:25759
use of L-methionine-incorporated, to study synthesis of plasma proteins in irradiated rabbits, 22:43250
use of lysine-incorporated, to determine effects of inhibitors on synthesis of proteins during spermatogenesis in Drosophila, 22:28668
use of nucleotide-precursor-incorporated, for studying radiation effects on nucleoside-incorporation into DNA of splenic lymphocytes from hamsters, 22:23604
use of oxytocin-incorporated, for determining metabolites in tissues of rats, method for, 22:49201
use of synkavit-incorporated, for radiotherapy of malignant tumors of man and rats, 22:19384
use of thymidine-incorporated, as intranuclear tracer in squamous cell carcinomas of larynx in man, 22:10784
use of thymidine-incorporated, for determining cell cycle time in epithelial tissues, method for, 22:45419
use of thymidine-incorporated, for determining rate of DNA synthesis in Escherichia coli, 22:16974(R) (ORO-2832-56)
use of thymidine-incorporated, for measurement of DNA synthesis and cycle duration of human cells in vitro, 22:51453
use of thymidine-incorporated, for measurement of DNA synthesis in HeLa cells, 22:36212
use of thymidine-incorporated, for study of DNA synthesis in HeLa cells, 22:36402
use of thymidine-incorporated, for study of DNA synthesis in small intestine and tongue epithelium of mice, 22:36315
use of thymidine-incorporated, for study of x-radiation effects on splenic lymphocytes from hamsters, 22:23603
use of thymidine-incorporated, for studying cell proliferation in skeleton of mice, 22:38208
use of thymidine-incorporated, to study DNA replication in x-irradiated HeLa cells, 22:6742
use of thymidine-incorporated, to study DNA synthesis in x-irradiated hypoglossal nerve of rabbits, 22:43455
use of thymidine-incorporated, to study kinetics of x-irradiated muscle and nerve cells of mice, 22:38221
use of thymine-incorporated, for studying chromosome synthesis in Escherichia coli, 22:51524
use of water-incorporated, to study radial exchange in corn roots, 22:25729
use to measure evaporation in Peach Lake, Ontario, 22:35919(R) (AECL-3022)

uses in tracer studies, determination of isotope effect from, 22:51463
wave function for ground state of, (T), 22:26815
yields from fast neutron fission of plutonium-239, plutonium-241, uranium-233, uranium-235, and uranium-238, (T), 22:53165 (ANL-7425, pp 190-2)
yields from neutron fission of plutonium-239, plutonium-241, uranium-233, uranium-235, and uranium-238, (T), 22:37312 (ANL-7450, pp 105-7)
D--T, plasma focus experiments in, neutron emission in, 22:1279 (LA-3770, Paper C2)

Tritium Hydrides
see Hydrogen Tritides

TRITIUM IONS
see also Tritons
coupling constants for electronic and mesic molecular, nonadiabaticity corrections to Born--Oppenheimer approximation for, 22:24066
production of controlled-energy, design of mass spectrometer for, 22:18807 (EUR-3731)
production of negative, development of economical production of, 22:7582
production of polarized, system for selecting metastable atoms for, 22:32483
reactions of beams of, with cyclohexane, effects of energy on, 22:2784
reactions with gaseous butane, effects of particle energy and pressure of target on, 22:18807 (EUR-3731)

Tritium Oxide (HTO)
see Water-t

Tritium Oxide (T_2O)
see Water-t_2

Tritium Oxides (T_2O--Solid)
see Ice-t_2

TRITIUM SYSTEMS
D--T, shock wave structure in, 22:19988
D--T, stability of high-temperature plasma of, 22:11480
H_2--T_2, equilibria of, steady states and initial reaction rates at 76.7°K, (E/T), 22:11226
H--T, analysis for tritium by ionization current measurements, 22:14417 (AWRE-O-52/61)
He--T, tritium decay in, formation of molecular complexes by, 22:35876 (LA-3956)
T--ZnS, preparation of self-luminescent phosphors of, 22:21083(P)

Triton Reactor (France)
see Fontenay-aux-Roses Reactors (Triton)

TRITONS
see also Tritium Ions
attenuation by silicon, up to 50 MeV, range-energy and stopping power calculations for, 22:2361
binding energy of, calculation of, 22:39428
binding energy of, calculation of, (T), 22:20770
binding energy of, calculation using deuteron-plus-neutron model, (T), 22:26812
binding energy of, calculation using nonlocal separable potentials, (T), 22:5758
binding energy of, calculation using separable nonlocal potential with hard-shell repulsion, (T), 22:26814
binding energy of, calculation using three-body repulsive forces, (T), 22:22543
binding energy of, calculations using nonlocal potential, (T), 22:1590
binding energy of, lower bound for, (T), 22:39574
binding energy of, self-consistent calculations using Hamada--Johnston potential, (T), 22:26816
binding energy of, three-body, 22:39432
detection and discrimination of, two-counter, 22:47337
effectiveness for polonium-210 removal from human skin, 22:43333
effects on crystalline and molten lithium nitrates, 22:25378
emission in uranium-235 neutron fission, (E), 22:14023
emission of high-energy, from nuclear spallation in emulsions, (T), 22:13778
energy of ground state of, variational calculations using hard-core potentials, (T), 22:44603
energy versus magnetic field strength x orbit radius at 10^5 to 1.2 x 10^6 G.cm for, table of, 22:20364 (CEA-R-3383)
form factors for, calculation of electric, 22:39428
intensity of secondary cosmic-ray, 22:34310
interactions d + t, reaction rate calculation using averages over deformed Maxwellian distributions, 22:36957 (FOA-4-4360-25)
interactions e + t, neutron electromagnetic form factors from, 22:3326
interactions $\pi^+ + t \rightarrow \gamma + {}^3He$, PCAC hypothesis for, 22:9617
interactions t + d, coupled-channel Schroedinger equation model and phase shifts for, 22:24689
nuclear electromagnetic radius of, effects of Coulomb repulsion on, (T), 22:5756
nuclear forces in, three-body, (T), 22:27289
nuclear optical model potential for, lectures on, (T), 22:20675 (NP-17228, pp 130-60)
nuclear potentials and wave functions for, (T), 22:32693
nuclear potentials for, optical-model, (T), 22:3801
nuclear radius of, calculation of, 22:39428
nucleon interactions in, (T), 22:39428
production of beams of polarized, (E), 22:35212
production of fast, in high-energy nuclear interactions, (E), 22:34846
properties of, variational principles for, 22:20102
range-energy tables for silicon at 1 to 200 MeV, (E/T), 22:3663
reactions (t,2α)2n with lithium-7, with three-body decay of helium-6, (T), 22:22558
reactions (t,α) and (t,d) with beryllium-9 at 0.5 to 1.7 MeV, angular distributions of differential cross sections for, (E), 22:48452 (JINR-P15-3965)
reactions (t,α) and (t,p) with carbon-12 at 7.48 and 7.6 MeV, particle-γ coincidence spectra for, (E), 22:5310
reactions (t,α) with beryllium-9 at 2.1 MeV, angular distributions for, (E), 22:26891
reactions (t,α) with bismuth-209 at 13 MeV, angular distributions from, (E), 22:9888
reactions (t,α) with boron-10 at 13 MeV, angular distributions for, (E), 22:26867
reactions (t,α) with calcium 40, calcium-42, calcium-44, calcium-46, and calcium-48 at 13 MeV, angular distributions and Q-values for, (E), 22:50590
reactions (t,α) with carbon-12 at 0.6 to 3.0 MeV, cross section for, (E), 22:26949
reactions (t,α) with carbon-12 at 1.5 to 3.2 MeV, angula distributions and excitation functions for, (E), 22:26899
reactions (t,α) with chromium-50 at 13 MeV, α angular distributions and spectra for, (E), 22:7667
reactions (t,α) with chromium-50, zinc-64, and zinc-66 a 13 MeV, α angular distributions and spectra for, (E), 22:3639 (BMwF-FBK-67-75)
reactions (t,α) with chromium-52 and iron-54 at 12 MeV, angular distributions for, (E), 22:20532
reactions (t,α) with copper-65 and selenium-80 at 13 MeV, α spectra for, (E), 22:11948(R) (NP-17216)
reactions (t,α) with copper-65 and selenium-80, angular distributions and Q-values for, (E), 22:26932(R) (NP-17434)
reactions (t,α) with copper-65 at 12 MeV, core excitatio in, (E/T), 22:44673
reactions (t,α) with fluorine-19 and magnesium-26 at 1 t 3 MeV, α-γ angular correlations for, (E), 22:26992
reactions (t,α) with helium-3 and tritium at 22 MeV, final-state interactions in, (E), 22:35292 (ORNL-4217, pp 1-81)
reactions (t,α) with magnesium-26, α-γ coincidences in, (E), 22:20578 (WASH-1079)
reactions (t,α) with samarium-144 at 12.9 MeV, α angular distributions and spectra from, (E), 22:32657
reactions (t,α) with zinc-64 and zinc-66 at 13 MeV, angular distributions for, (E), 22:48509(R) (BMwF-FBK-68-22)
reactions (t,αγ) with fluorine-19, α spectra and α-γ angular correlations for, (E), 22:20476
reactions (t,d) with lead-208 at 8.85 MeV, normalization of zero-range DWBA cross section for, (E/T), 22:50624
reactions (t,d) with nuclei below Coulomb barrier, (T), 22:44767
reactions (t,d) with nuclei, differential cross section for, (T), 22:3765
reactions (t,d) with nuclei, use in spectroscopic studies, (T), 22:27365
reactions (t,He-3) with deuterium at 22 MeV, final-state interaction in, (E), 22:35292 (ORNL-4217, pp 1-81)
reactions (t,He-3) with lithium-7 at 22 MeV, differential cross section and spectra for, (E), 22:26856
reactions (t,He-3) with tritium, helium-3 spectra from, (E), 22:20578 (WASH-1079)
reactions (t,n) with deuterium, neutron polarization from, (T), 22:9777
reactions (t,n) with oxygen at 0.5 to 3 MeV for determining metal oxide film thickness, excitation functions for, 22:49138
reactions (t,n) with oxygen-16 at 1.7 to 3.4 MeV, cross section for, (E), 22:26949
reactions (t,n) with oxygen-16, determination of oxygen by, 22:27595
reactions (t,nt) with beryllium-9, triton--neutron resonance interaction energy from, (E), 22:11905
reactions (t,p) with calcium-40 and -44 at 7.5 MeV, angular distributions for, (E/T), 22:9833
reactions (t,p) with beryllium-9, boron-10, boron-11, carbon-12, and lithium-7, angular distributions for, (T), 22:26889
reactions (t,p) with cadmium-110 at 10 MeV, form factor and cross section for, (T), 22:27354
reactions (t,p) with calcium-40, -42, -44, -46, and -48 at 10 to 12 MeV, analysis using distorted-wave Born approximation with configuration mixing, (T), 22:44666
reactions (t,p) with calcium-48, cross-section calculations using shell-model wave functions for calcium-50, (T), 22:5799
reactions (t,p) with calcium-48, nickel-56, oxygen-16, and silicon-28, calculation of reduced widths using surface delta interaction wave functions, (T), 22:32554
reactions (t,p) with even calcium and nickel isotopes, cross sections for, (T), 22:27022
reactions (t,p) with even tin isotopes, calculations using four-quasiparticle second Tamm--Dancoff approximation, (T), 22:27092
reactions (t,p) with helium-3 and tritium at 22 MeV,

proton spectra for, (E), 22:50524
reactions (t,p) with iron-54 at 12 MeV, DWBA analysis of angular distributions for, (T), 22:27023
reactions (t,p) with lead-207 and lead-208, proton spectra and angular distributions from, (E), 22:32613
reactions (t,p) with lead-207 and lead-208, shell-model calculations of angular distributions and relative cross sections for, (T), 22:32601
reactions (t,p) with lead-208 at 14 to 17 MeV, isobaric analog resonances in, (E), 22:24878
reactions (t,p) with magnesium-24 at 2.05 and 3.40 MeV, angular distributions for, (E), 22:26949
reactions (t,p) with magnesium-26 at 1.5 to 3.6 MeV, activation cross section for, (E), 22:26949
reactions (t,p) with magnesium-26, neon-22, and sodium-23 at 1 to 3 MeV, p-γ angular correlations in, (E), 22:26992
reactions (t,p) with neon-22, p-γ correlations in, (E), 22:20578 (WASH-1079)
reactions (t,p) with nuclei, amplitude for, (T), 22:14097
reactions (t,p) with\nuclei, calculations using pairing potential, (T), 22:44787
reactions (t,p) with nuclei, form factor for DWBA analysis of, (T), 22:39687 (CONF-670970-, pp 97-9)
reactions (t,p) with nuclei, two-nucleon transfer in, (T), 22:39696 (UCRL-18225)
reactions (t,p) with oxygen-16, analysis for effective two-body matrix elements for sd shell, (T), 22:20696
reactions (t,p) with oxygen-16, cross sections for, (T), 22:20489
reactions (t,p) with oxygen-16, cross-section calculations using distorted-wave approximation with Ohmura hard-core wave function, (T), 22:32510
reactions (t,p) with p-shell nuclei, cross-section calculations using rectangle diagrams, (T), 22:50683
reactions (t,p) with silicon-28, shell-model two-particle matrix elements from, (T), 22:7783
reactions (t,p) with tin-116 and -118 at 13 and 12 MeV respectively, proton angular distributions from, (E), 22:20620
reactions (t,p) with tin-116 and tin-118, analysis using pairing vibrational model, (T), 22:42088
reactions (t,p) with tin-118, spectroscopic factors from Tamm--Dancoff calculations, (T), 22:27263
reactions (t,p) with tin-122 and tin-124 at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
reactions (t,p) with titanium-49 at 12 MeV, (E), 22:50573
reactions (t,p) with zinc-66, angular distributions for, (E), 22:35263
reactions (t,p) with zirconium-90, zirconium-92, zirconium-94, and zirconium-96 at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
reactions (t,pf) with uranium-234, anisotropy as function of excitation energy for, (E), 22:20578 (WASH-1079)
reactions with copper, manganese, nickel, and titanium, relative neutron yields from, 22:20370 (KN-67-655(R))
reactions with magnesium-26 in magnesium oxide, production of magnesium-28 by, 22:33406(P)
reactions with matter, energy straggling distributions in, 22:24765
reactions with matter, LET for, 22:10761 (MIT-952-4, pp 132-201)
reactions with nuclei, use in nuclear spectroscopy, (E/T), 22:1745
reactions with silicon at 1.0 to 200 MeV, stopping power and range tables for, 22:45284 (UCRL-17663(Rev.1))
scattering by A = 9 to 20 nuclei at 2 MeV, optical-model analysis of elastic, (E/T), 22:26883
scattering by beryllium-9 and neon-20 at 2 MeV, optical-model analysis of elastic, (E/T), 22:26883
scattering by beryllium-9 at 2.1 MeV, differential cross section for elastic, (E), 22:26891
scattering by helium-3 and tritium, differential cross sections for elastic, (T), 22:7632
scattering by helium-4 at 1.4, 1.7, 2.1, 2.5, and 3.0 MeV, angular distributions and spectra for elastic, (E), 22:26824
scattering by helium-4 at 6 to 12 MeV, angular distribution of triton polarization in elastic, (E), 22:35212
scattering by nickel-64 and zirconium-90, optical-model potentials for elastic, (T), 22:27364
scattering by nuclei, optical-model analysis of elastic, (T), 22:48615
scattering by nuclei, optical-model analysis of elastic, (E/T), 22:39686 (CONF-670970-, pp 41-96)
scattering by oxygen-16 at 0.9 to 1.7 MeV, cross section for elastic, (E), 22:24827 (JINR-P15-3756)
scattering by zirconium-90 at 20 MeV, angular distributions for inelastic, (E), 22:37360
spectra from uranium-235 thermal neutron fission, (E), 22:3693 (INR-822/IA/PL)
theory of, as three-nucleon system, 22:39432
theory of, using short-range correlations, (T), 22:20687
wave function of, symmetric S- and D-state components of, (T), 22:5892
wave functions in thermal neutron capture by deuterium, (T), 22:37288
TRITYL (FREE RADICAL)
radiolysis of halogen derivatives of, 22:14556
radiolysis of peroxide and hydroperoxide derivatives of, 22:14556
reactions with oxygen, 22:14556
Trochotrons
see Mass Spectrometers
TROILITES
see also Iron Sulfides
TROPAEOLIN O
deuterium isotope effects on intramolecular hydrogen bonds in, 22:10226
TROPOLONE
complexes with lithium and thorium and uranium with and without lithium, spectral studies on coordination in, 22:12286
complexes with plutonium or uranium, preparation of, 22:25440(R) (MLM-1443)
complexes with uranium, x-ray diffraction studies on structure of, 22:1956(R) (MLM-1405)
complexes with uranyl ions, preparation of, 22:48859
complexes with uranyl nitrate and perchlorate, NMR spectral studies on, 22:1956(R) (MLM-1405)
TROPOSPHERE
absorption of solar radio waves at 7 GHz in, (T), 22:19897
book: Propagation Factors in Space Communications, 22:46038
carbon-14 transport processes in, development of box model to study, 22:33573
cesium-137 transfer from, to man, 22:21460(R) (COO-1171-82)
circulation in, cosmic-ray effects on, (T), 22:29351
data tabulations for, U.S. Standard Atmosphere Supplements, 1966, 22:5270
diffusion processes in, research on large-scale, 22:18660(R) (COO-1585-3)
effects on cosmic radio source scintillation, (E), 22:26149
exchange with stratosphere, use of ozone and radioactivity to measure, 22:33570
fallout deposition from, effects of dry and wet weather on, 22:37887
fallout distribution in Alaskan and Hawaiian, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
fallout transport in, tracer studies of, 22:47238 (COO-1199-15)
folding of tropopause in lower, solution of potential vorticity equations to study, 22:2226 (NYO-3317-1)
geomagnetic activity in, effects of 27-day solar cycle on, (E), 22:11316
mixing of radioactive aerosols in, mechanisms of, 22:10377
mixing processes in, use of ground-level atmospheric radioactivity to study, 22:25523 (BNWL-SA-1739)
radio measurements in, conference on, (T), 22:34363 (CONF-660950-(Pt.1))
radio-wave attenuation at 0.4 to 10 GHz in, (E/T), 22:22010
radio-wave refraction in, (T), 22:2920
scattering of twilight N_2^+ emission, (T), 22:34433
solar wind and temperature field of, 22:5243
solar-wind velocity effects on, (E), 22:41175
temperature of, effects of 27-day solar cycle on, (E), 22:11316
trace material behavior in, 22:10377
uranium content in, 1959, 22:10376
Trout (Salmo, Salvelinus)
see Salmo or Salvelinus under Osteichthyes
TRU
see Transuranium Processing Plant
Trucks
see Vehicles
Trypaflavine
see Acriflavine
TRYPSIN
effects on activation of toxin from Clostridium botulinum type E, 22:49660(R) (COO-1183-26)
effects on chromium-51 uptake by human kidney cells in vitro, 22:51995
effects on γ-irradiated heat coagulated egg white proteins, 22:28306
effects on γ-radiosensitivity of RNAase, 22:4574
effects on x-irradiated proteins in membranes of erythrocytes, hydrolytic, 22:23442
effects on x-irradiated serum albumins, hydrolytic, 22:23442
function and structure of, 22:14905 (BNL-50057, pp 111-22)
inactivation by light, effects of, on molecular structure, 22:14907 (COO-875-80)
inactivation of, kinetic studies of photodynamic, 22:25795
inhibitors of, determination of chemical structure and intracellular distribution of, 22:14905 (BNL-50057, pp 111-22)
radiation effects on activity of, nature of near and vacuum uv, 22:43247
radiation effects on content of, in man, therapeutic x, 22:36354
radiation effects on crystalline, EPR spectral studies on radicals produced by γ and proton, 22:2144
radiation effects on recombination of unpaired electrons

in, effects of temperature on γ and uv, 22:49176(T) (JPRS-43645, pp 95-7)
radiation effects on solutions of, effects of temperature on uv, 22:28344
radioinduced free radicals in, effects of nitric oxide and oxygen on ESR signal of x, 22:10703
radioinduced free radicals in, electron, 22:30937 (UCRL-17751, pp 1-26)
radioinduced inactivation of porcine, effects of, on serological properties, γ and uv, 22:36159
radioinduced inactivation of, effects of dose and hydroxyl radicals on, 22:33762
radioinduced inactivation of, effects of exposure time and wavelength on uv, 22:12821
radioinduced inactivation of, effects of LET and temperature on, 22:12819
radioinduced inactivation of, effects of oxygen and temperature on x, 22:45425
radioinduced inactivation of, protective effects of egg ovomucoid and soybean trypsin inhibitor against γ, 22:520
radioinduced luminescence of, 22:14519(T) (CEA-tr-R-1907)
radioinduced luminescence of, x, 22:12365
reactions with atomic hydrogen, 22:35733 (NYO-3242-26)
chondroitinsulfuric acid--trypsin, radiolysis at 77°K, EPR studies on protective effect of polyanions in x, 22:2143
cysteine--trypsin, radiolysis at 77°K, EPR studies on protective effect of cysteine in x, 22:2143
hyaluronic acid--trypsin, radiolysis at 77°K, EPR studies on protective effect of polyanions in x, 22:2143

TRYPTAMINE
radioinduced mutations for production of, in Claviceps, γ and uv, 22:45476
radioprotective effects of, on nucleoproteins, 22:31143

Tryptamine, 5-Methoxy-
see Indole, 3-(2-Aminoethyl)-5-methoxy-

TRYPTOPHAN
determination in urine by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)
effects on activity of enzymes, 22:14907 (COO-875-80)
effects on α- and γ-radioinduced inactivation of bovine deoxyribonucleases, 22:23427
effects on x-radiosensitivity of tryptophan pyrrolase synthesis in rats, 22:36210
metabolism in man, tracer study of effects of disease on, 22:14906 (BNL-50057, pp 123-37)
radiation effects on acceptor function of RNA specific to, x, 22:23421
radiation effects on excretion of metabolites of, in man, x, 22:45508(R) (PG-Report-826)
radiation effects on, in meat, review of, 22:52111
radioinduced damage to, effects of temperature on γ, uv, and x, 22:45394
radioinduced fluorescence and phosphorescence in, fast electron, uv, and x, 22:12822
radioinduced luminescence in aqueous solutions of, uv and x, 22:19283
radioinduced luminescence in, effects of water on uv and x, 22:51446
radioinduced molecular changes in, review of uv, 22:49223
radioprotective effects of, on chromosomes of human bone marrow cells in vitro, 22:49438
transport in Neurospora crassa, mechanisms of, 22:12158 (BNWL-480, pp 107-26)
uptake by Neurospora crassa, metabolic control of, 22:12158 (BNWL-480, pp 107-26)
use for treatment of radiation sickness in man following nuclear accidents, 22:45606
use of carbon-14-labeled, to study NAD synthesis in mice, 22:45396

TRYPTOPHAN, 5-HYDROXY-
radioprotective effects of, on survival of mice, relation of 5-hydroxytryptophan decarboxylase to x, 22:43372

TRYPTOPHAN 5-HYDROXYLASE
activity in tissues of rats, radiometric micromethod for study of, 22:457

TRYPTOPHAN OXYGENASE
activity in liver of rats, effects of nickel carbonyl on cortisone-induced, 22:6216(R) (ORO-3461-9)
radiation effects on content of, in liver of rats, effects of glucagon, hydrocortisone, and starvation on whole-body, 22:19271
radiation effects on synthesis of, in rats following administration of hydrocortisone or tryptophan, x, 22:36210

TRYPTOPHAN PEROXIDASE
radiation effects on activity of, in liver of rats, x, 22:19383

Tryptophan Pyrrolase
see Tryptophan Oxygenase

TRYPTOPHAN SNYTHASE
synthesis in Neurospora crassa, effects of 3-amino-1,2,4-triazole and anthranilic acid on, 22:12158 (BNWL-480, pp 107-26)

TSURUGA POWER REACTOR
construction of anti-earthquake structures for, description of, 22:32854
construction of, description of, 22:53340
construction of, description of, 22:46972
containment vessel for, description of design and fabrication of, 22:32855
description of anti-earthquake design variations for 322 MW(e), 22:14170
design parameters for, 22:22712 (STI/PUB-174)
fuel cycles for, analysis of fuel sources and economics for, 22:32849
piping for, design and fabrication of field, 22:32851
piping systems of, description of problems for, 22:1416

TTA
see 1,3-Butanedione, 4,4,4-Trifluoro-1-(2-thienyl)-

TTR (Savannah River)
see Savannah River Thermal Test Reactor

TTR-1 (Japan)
see Reactors, Research

Tuballoy
see Uranium

TUBERCULIN
effects on survival of x-irradiated cultured lymphocytes from normal man and patients with Hodgkin's disease, 22:28333

TUBES
(Generally thin-walled, small diameter.)
see also Accelerator Tubes
see also Cathode-Ray Tubes
see also Electric Discharge Tubes
see also Electron Multiplier Tubes
see also Electron Tubes
see also Finned Tubes
see also Hilsch Tubes
see also Photomultiplier Tubes
see also Pipes
see also Pipets
see also Shock Tubes
aerosol flow through, effects of tube configuration on precipitation of particles during laminar, (E), 22:19034 (TID-24285)
boiling heat transfer to water in, measurements of transition and film, 22:42960 (GEAP-5563)
boiling in vertical, determination of slip ratio in, (E/T), 22:6532
bore surface inspection in small-diameter, replica technique for, 22:51192 (LA-DC-9429)
brazing of spacers or wear pads to fuel, induction heating equipment for, 22:49007(P)
burnout heat flux in, effect of cold patch on, 22:12531
changing of heat exchanger, design of device for, 22:30765(P)
compression of radial metallic, by pulsed magnetic fields, 22:13463
coolant void development and initiation in rectangular, effect on heat transfer from, 22:4340(R) (NYO-3679-2)
corrosion by carbon dioxide of austenitic chromium--niobium--titanium steel, analysis of, (E), 22:44857
corrosion of austenite boiler, effects of liquid sodium on, 22:39794
corrosion of pressure, in British power reactors, 22:47660 (CONF-671007-2)
corrosion of Type 304 stainless steel and Croloy, effects of water leaks on liquid sodium, (E), 22:35423(R) (APDA-224)
crack propagation characteristics of irradiated and unirradiated Zircaloy-2, under pressure cycling, 22:53454 (BNWL-828)
crack propagation characteristics of zirconium--niobium alloy, under pressure cycling, 22:53454 (BNWL-828)
crack propagation in niobium--zirconium alloy, effects of fatigue damage on, 22:648 (BNWL-560)
cracking and deformation in, use of acoustic emission to detect, 22:269 (BNWL-SA-1262)
cratering by sodium--water reactions, wastage from, 22:4744
creep bowing behavior of, under external pressure at high temperature, (T), 22:30353
creep in thin pressurized, effects of high temperature on, 22:28810
creep of hollow concentric, effects of solid fission product accumulation on, 22:52226
deformation in thin pressurized, effect of temperature gradient on plastic yielding, 22:28810
description of concentric independent expansion pressure, for pressure tube reactors, 22:12066(P)
description of SGHWR pressure, 22:18468
design of double, for heat exchangers, 22:42968(P)
development of pressure, 22:3813(R) (AI-CE-54)
dimensional stability of fuel element, under thermal and pressure cycling, 22:3859
drawing of metallic, using ultrasonic energy, 22:34032
economics of long, for multistage flash evaporators, 22:25220 (ORNL-TM-1923)
enthalpy and flow in parallel, measurement during boiling of, (E), 22:8294 (BNWL-371(Pt.2))
erosion of bend configurations of, in high-pressure steam generators, 22:43529 (BAW-1280-53)
erosion of Type 321 stainless steel, Croloy, and Incoloy 800, effects of liquid sodium on, (E), 22:35423(R) (APDA-224)
extrusion of niobium--stainless steel bimetallic, evaluation of, 22:631 (N-67-22891)
extrusion of niobium--stainless steel--zirconium, evaluation of, 22:631 (N-67-22891)

- extrusion using dissimilar metals, methods for, 22:49693 (NP-17605)
- fabrication and testing of, for sodium-heated steam generator, 22:8247(R) (BAW-1280-47)
- fabrication into concentric reactor fuel elements, 22:10460(P)
- fabrication methods in Japan of reactor fuel element, 22:14177
- fabrication of butt welded, with homogeneous grain structure, 22:8721(P)
- fabrication of concentric, for nuclear fuel elements, 22:49696(P)
- fabrication of helically seamed, for use as reactor fuel elements, 22:8285(P)
- fabrication of inside closures of filiform, tool design for, 22:27983(P)
- fabrication of joints in aluminum, by magnetic pulse forming, 22:202 (ANL-7343)
- fabrication of molybdenum--niobium alloy by high-temperature vacuum extrusion, 22:10934
- fabrication of projections on zirconium alloy, by heating and pressure, 22:2604(P)
- fabrication of rhenium--tungsten, use of chemical vapor deposition for, 22:44876(R) (UCRL-50004-68-1(Pt.1))
- fabrication of sintered aluminum--aluminum oxide (Al_2O_3) cermets, description of, 22:42570(P)
- fabrication of uranium, by rotary-piercing of billets in high alpha temperature ranges, 22:2588 (NLCO-991)
- fabrication of welded, for reactor fuel assemblies, 22:35987
- fabrication of Zircaloy, control of hydride platelet orientation in, 22:661
- fabrication of Zircaloy, effects on surface hydride platelet orientation on, 22:662
- fabrication of Zircaloy, for reactors, 22:10940(P)
- failures in type 304 stainless steel boiler, analysis of cracks in, 22:32840
- fluid flow in rapidly heated, pressure, temperature, and velocity measurements for nonmetallic, 22:8293 (ANL-7337)
- fluid flow through circular, analysis of axial laminar, 22:40312
- fracture properties of Zircaloy-2 pressure, in operating reactors, use of acoustic emission to determine, 22:268 (BNWL-545)
- gas flow in circular, effect of wall friction and fluid properties on heat transfer for turbulent, 22:12525
- gas flow through vertical, particle flux profiles for turbulent, (E), 22:25605 (BNWL-481-3, pp 75-80)
- grinding of fuel can, design of machine for, 22:14662(P)
- heat exchanger, description of dual-section U-shaped bundles of, 22:20957(P)
- heat transfer characteristics of bayonet heat exchanger, mathematical model for prediction of, 22:37927 (IN-1177)
- heat transfer crisis in upward flow of steam--water mixtures through, 22:40304 (EUR-3920)
- heat transfer from argon plasma flowing in circular, 22:12524
- heat transfer from walls of, to boiling and nonboiling mercury and mercury alloys, 22:14668(T) (BNL-tr-176)
- heat transfer from, effect of forced circulation water pressure on, (E), 22:12519 (EUR-3658)
- heat transfer in fuel element, effects of roughened surfaces on, 22:12527
- heat transfer in horizontal, effect of gravity on boiling, 22:14670
- heat transfer in nine-rod square lattice of Inconel-X, analysis of steam--water two phase flow critical heat flux, 22:53275 (GEAP-5616)
- hydriding of Zircaloy-2 process, in Hanford reactors, 22:24991
- inspection of inside of fuel element, optical system for, 22:23385(P)
- inspection of welded and seamless, design of eddy current equipment for, 22:267 (ANL-7334)
- liquid and steam--liquid flow in, critical heat flux in, 22:19041
- liquid metals and water flow in smooth, heat transfer coefficients for, 22:12528
- mechanical properties of, formed by chemical vapor deposition, 22:7011
- opening of, device for, 22:10462(P)
- particle deposition and re-entrainment during turbulent air flow in vertical, 22:25604 (BNWL-481-3, pp 68-74)
- performance of bellows-type sodium-heated 3000 kW boiler, evaluation of, 22:45764 (NAA-SR-Memo-4998)
- permeability to gases, bibliography on, 22:34041 (LA-3909)
- plates for, fabrication of, 22:10474(P)
- power densities in superconducting, from electromagnetic theory, 22:9246
- pressure losses in steady state and transient fluid flow in, 22:234 (ORNL-TM-1975)
- production of irradiation-crosslinked polymeric, 22:37817(P)
- production of layflat, nuclear method of width control for, 22:37958
- radiation effects on creep of hollow concentric, 22:52226
- radiation effects on CVTR Core 1 Zircaloy-4 pressure, analysis of neutron, 22:35428 (CVNA-289)
- radiation embrittlement of pressure, in British power reactors, 22:47660 (CONF-671007-2)
- sealing plugs for pressure, description of claw-and-groove, 22:18647(P)
- steam--water flow through, film thickness measurements for spray annular, 22:42958 (CONF-680903-1)
- steam-water flow in, measurement of rates of energy and mass transfer for, 22:45238(R) (GEAP-5497)
- strength of type 304L stainless steel and Zircaloy-2 fuel cladding, effects of thickness and surface defects on burst, 22:33618
- stress determination in, boring method for, 22:48998
- stress in sodium-cooled reactor heat exchanger, effect of temperature on, 22:10441(R) (UNC-5189)
- stress-rupture of stainless steel Type 304 thin-walled, effects of liquid sodium cycles at 1200ºF on, 22:42384 (AI-AEC-12695)
- support structures for pressure, description of liquid cooled, 22:25163(P)
- support system for elongated heat exchanger, design of, 22:12514(P)
- temperature distribution in fuel element cladding, effects of thermal neutron flux peaking on, 22:3821 (EUR-3557)
- temperature of heat exchanger, measurement of, 22:233 (NP-17095)
- temperature of organic-cooled reactor zirconium alloy pressure, optimum operating, (E/T), 22:18483
- testing of fuel, nondestructive, 22:1777(R) (WCAP-3696-5)
- testing of, design of multichannel eddy current device for nondestructive, 22:37626 (BNWL-765)
- thermal shielding for reactor pressure, description of T-shaped pressure ring-connected multi-section concentric cylinder, 22:39915(P)
- thermal shock in austenite boiler, analysis, 22:39794
- thermal stress in fuel element cladding, effects of thermal neutron flux peaking on, 22:3821 (EUR-3557)
- thickness of plastic, design of radiometric gage for measuring, 22:25690(P)
- thickness of, in reactors, ultrasonic interference micrometers for measuring, 22:49153
- use in nuclear power plants, preparation and properties for, 22:32805
- wastage of, effects of liquid sodium flow on, 22:14129(R) (APDA-212)
- wastage rate during water leaks in sodium systems, effects of sodium temperature and circulation on Croloy, (E), 22:47040(R) (APDA-228)
- wastage rates in steam generators from sodium-water reaction, 22:24926(R) (APDA-214)
- water discharge from long, fluid dynamic method for studying saturated, (E), 22:8297(T) (AEC-tr-6928)
- water flow in dual, measurement of, 22:2291 (AI-CE-TDR-1038)
- welded joints of niobium--zirconium alloy, properties of, 22:2596

Tulip Trees (Liriodendron)
- see Liriodendron under Angiospermidae

Tumors
- see Diseases, Neoplastic

TUNGSTATES
- see also Aluminum Tungstates
- see also Barium Tungstates
- see also Calcium Tungstates
- see also Chromium Tungstates
- see also Dysprosium Tungstates
- see also Gadolinium Tungstates
- see also Hafnium Tungstates
- see also Holmium Tungstates
- see also Lead Tungstates
- see also Manganese Tungstates
- see also Neodymium Tungstates
- see also Radium Tungstates
- see also Samarium Tungstates
- see also Sodium Tungstates
- see also Strontium Tungstates
- see also Thorium Tungstates
- see also Titanium Tungstates
- see also Uranium Tungstates
- see also Yttrium Tungstates
- see also Zinc Tungstates
- see also Zirconium Tungstates
- analysis for gallium by titration using EDTA, 22:2006
- analysis of solutions of, for hexavalent tungsten by electrometric titration, 22:42604
- effects on mechanical properties of alloy steel, 22:2598
- effects on precipitation of molybdenum and tungsten with zirconium hydroxide, 22:8063

TUNGSTEN
- accommodation coefficients of rare gases on, measurement of thermal, 22:2068
- adhesion to tungsten under high vacuum, force and torque measurements of, 22:654 (N-67-22884)
- analysis for aluminum and silicon by neutron activation methods, 22:8029
- analysis for carbon by helium-3 activation, sensitivity limits for, 22:12236
- analysis for carbon by helium-3 and helium-4 activation methods, 22:27593
- analysis for fluoride, 22:30436(R) (UCRL-50006-68-1)

analysis for hafnium by vacuum cup solution method, spectrographic, 22:30436(R) (UCRL-50006-68-1)
analysis for hafnium, vacuum-cup solution method for spectrographic, 22:14446
analysis for hydrogen, vacuum-degassing method for, 22:10974
analysis for impurities, 22:1981
analysis for impurities by neutron activation, 22:14614
analysis for impurities by neutron activation method, 22:50910
analysis for impurities by neutron activation methods, 22:16387 (CEA-R-3267)
analysis for impurities in zone-melted, methods for, 22:25316
analysis for impurities, manual on, 22:48820 (NP-17627)
analysis for metallic impurities, spectrographic, 22:30436(R) (UCRL-50006-68-1)
analysis for molybdenum, spectrophotometric, 22:30485
analysis for nitrogen, vacuum-degassing method for, 22:10974
analysis for oxygen by helium-3 activation, 22:12236
analysis for oxygen by helium-3 activation, 22:16413 (IAE-1165)
analysis for oxygen by helium-3 activation, 22:8005
analysis for oxygen by helium-3 and helium-4 activation methods, 22:27593
analysis for oxygen, vacuum-degassing method for, 22:10974
analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
analysis of almost pure, for tungsten using flavonol, fluorimetric, 22:25282
analysis of powders of, for combined nitrogen, method for spectrophotometric, 22:31
atom stopping by, ion reactions with silicon and tungsten crystals for Z-dependence of, 22:29270
atomic potential calculations, 22:5051
atomic scattering factors of, x-ray diffraction measurements of, 22:44247
atomic structure of, field-ion micrographic studies of, 22:36488 (COO-1198-518)
atomic weight of, based on carbon-12 = 12, 22:42698
barium atom reactions with, ionization coefficients for, (E), 22:29245
behavior of iridium-coated, 22:40997(R) (N-68-13805)
bibliography on, 22:49681
bonding to boron nitride by flash evaporation of aluminum, 22:23745(P)
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
book: High Temperature Materials, 22:31360
book: Uncommon Metals, 22:10981
bremsstrahlung spectra from beta-excited, (E), 22:13248
bubble growth in, effects of high temperature stress on, 22:19564
bubbles and voids in, morphology of, 22:8729 (ORNL-4170, pp 19-26)
capture and diffusion of low-energy inert gas ions in polycrystalline, 22:52205
carburization of annealed, 22:52174
carburization study using conductivity measurements on ribbons, 22:2636
cathodes of pure and thoriated, testing for electron-bombardment heaters of, 22:10427 (ANL-7364)
cesium ion reactions with surfaces of, temperature effects on energy spectra of slow ions from, (E), 22:24028(T) (AD-666243)
cladding for uranium oxide (UO_2)--tungsten-184 rocket reactor fuel elements, description of, 22:42349(P)
cladding with boron nitride by chemical vapor deposition, 22:7042
cladding with silicon carbide by chemical vapor deposition, 22:7042
coating for oxidation protection, using molybdenum disilicide or niobium disilicide, 22:34107
coating of sintered, method for, 22:6946
coating of, method for electrodeposition of wear-resistant composite, 22:2590
coating with boron, 22:27726
coating with uranium, work function of thin-film, 22:28827
coatings for, preparation of oxidation-resistant, 22:43536
coatings of, testing of plasma-sprayed, 22:15165
coatings on, effects of hydrogen surface potential on work functions of uranium, 22:10963
compacting model for powdered, using vibration, 22:2594
compatibility testing with selenium and tellurium at 400 and 500°C, 22:52556 (ANL-7425, pp 172-89)
compatibility with dysprosium oxide dispersions at high-temperatures, 22:43661
compatibility with hafnium carbide at 2500°C, 22:49825
compatibility with niobium carbide at 2500°C, 22:49825
compatibility with tantalum carbide at 2500°C, 22:49825
compatibility with uranium phosphide at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
compatibility with zirconium carbide at 2500°C, 22:49825
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with cyclopentadiene, preparation, properties, and structure of, 22:45027(T) (RFP-Trans-41)
complexes with organic compounds, tables of thermodynami stability constants for, 22:58 (UCRL-50200)
compounds with heteropolyacids, performance as radiation dosimeters, 22:28180
conductivity of, porosity and temperature dependences of electric and thermal, 22:47679
contamination of high-purity niobium by, during electron-beam melting, 22:36442 (ORNL-TM-2208)
contamination of thin foils of, by heat treatment in vacuum, 22:43572 (UCRL-71029)
content in steel, use of x-ray sources for determining, 22:4494
corrosion at high temperatures, effects of carbon additions on, 22:43537
corrosion at high temperatures, effects of molybdenum additions on, 22:43537
corrosion at high temperatures, effects of niobium additions on, 22:43537
corrosion at high temperatures, effects of rhenium additions on, 22:43537
corrosion at high temperatures, effects of tantalum additions on, 22:43537
corrosion at high temperatures, effects of zirconium additions on, 22:43537
corrosion at high temperatures, minimization using refractory coatings, 22:43537
corrosion by ammonium hydroxide, 22:43530 (BM-RI-7169)
corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
corrosion by chromic acid, 22:43530 (BM-RI-7169)
corrosion by helium in ATR model gas loop, 22:13036 (BNWL-473, pp 7.1-71)
corrosion by hydrochloric acid, 22:43530 (BM-RI-7169)
corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
corrosion by metal chloride solutions, 22:43530 (BM-RI-7169)
corrosion by nitric acid, 22:43530 (BM-RI-7169)
corrosion by organic acids, 22:43530 (BM-RI-7169)
corrosion by phosphoric acid, 22:43530 (BM-RI-7169)
corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
corrosion by sodium hydroxide, 22:43530 (BM-RI-7169)
corrosion by sodium hypochlorite, 22:43530 (BM-RI-7169)
corrosion by sulfuric acid, 22:43530 (BM-RI-7169)
corrosion resistance of nuclear materials containing, 22:31357
cost, production, and trade of, review of 1967, 22:31319
cracks in chemical vapor deposited, effects of gas bubbles on, 22:19564
creep and stress-rupture at 1600 to 3000°C, 22:612(R) (GEMP-69)
creep at 1100 to 2700°K, 22:23771
creep behavior of, effects of composition and heat treatments on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
creep of chemical-vapor-deposited, at 1650 and 2200°C, 22:7010
creep of, relation with grain size and strain rate, 22:23792
creep rate of arc-cast sheet, in hydrogen at 1600 to 3000°C, 22:15176 (GEMP-1002, pp 11-37)
critical magnetic field of superconducting, (E), 22:36876
critical magnetic fields of superconducting, 22:29439
crystal stacking fault energies at 300°K, 22:38570
crystal structure of carbon-contaminated (110) surface of, 22:32064
crystal structure of chemical-vapor-deposited, from chlorides, 22:7008
crystal structure of electric spark-affected surface layers of, 22:43604
crystal structure of single-crystal, 22:52174
crystal structure of sputtered films of, 22:8777
crystal structure of sputtered films of, effects of sputtering energy and substrate temperature on, 22:23736
crystal structure of thin wires of, 22:23737
crystal structure of, effects of barium chemisorption on, 22:28829
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
deformation characteristics, 22:2639
deformation of thermochemically deposited sheets of, 22:11075
degasification of carbon monoxide from (211) face of, by electron impact, 22:26265
densification by sintering at 1600°C, effects of microstructure on, 22:19558
densification of powdered, effects of pressure, temperature, and time on, 22:28802
density of powdered, effects of particle size on, 22:10968
deposition by electrocrystallization in fused salts, 22:37704(T) (ANL-Trans-610, pp 57-63)
deposition of coatings of, chemical vapor, 22:7046
deposition of uranium on, effects of hydrogen contamination on work function of, 22:36481

deposition of, effects of temperature on vapor, 22:27521(R) (ORNL-4236)
deposition of, statistical model of vapor, 22:27521(R) (ORNL-4236)
deposition on copper by pyrolysis of tungsten hexafluoride, factors affecting, 22:15155 (ORNL-TM-2074)
deposition on copper from chemical vapor, statistical study of, 22:6961
deposition on copper from organic tungsten compound vapors, 22:6963
deposition on copper tubes from chemical vapor, factors affecting, (E), 22:8709 (ORNL-TM-2066)
deposition on metallic base by plasma jet, 22:19502
deposition on silicon, growth of tungsten silicide layer in, 22:759
deposition on superalloys and TD-nickel, vacuum-pack and slurry processes for, 22:49698
deposition on uranium dioxide spheres from vapor, 22:23871
desorption of ammonia from surfaces of, effects of low-energy electrons on, 22:28975
desorption of carbon monoxide from surfaces of, by low energy electron bombardment, 22:36477
desorption of hydrogen from, by electron bombardment, 22:8746 (ORNL-4170, pp 245-7)
desorption of rare gases from (100) surface of, temperature spectra of, 22:48189
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
detection of, use of separated acetylene--air or acetylene--nitrous oxide flames for, 22:37664
determination as ascorbate, spectrophotometric, 22:2009
determination as impurity in gallium arsenide, activation, 22:1969
determination as impurity in semiconductor silicon, neutron activation, 22:39993
determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
determination as trace impurity in vanadium pentoxide, 22:37681
determination as tungstate by molybdotungstic acid formation, spectrophotometric, 22:22979
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by mass spectrometry using negative surface ionization method, 22:6265
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by photon activation methods, 22:27589
determination in alloys by neutron activation methods, 22:33269
determination in binary metal alloys, beta fluorescence, 22:50943
determination in biological materials, automatic separation system for, 22:8020
determination in boron, spectrochemical, 22:22930(R) (NBL-242)
determination in carbon--molybdenum--tungsten and iron--tungsten alloys, complexometric, 22:33233
determination in chromium by activation methods using γ-spectrometry after ion exchange, 22:33245
determination in high-purity niobium, 22:1981
determination in high-purity niobium or tantalum by dithiol method, 22:48837
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in mild steel, x-ray fluorescence, 22:50938
determination in molybdenum by neutron activation methods, 22:16387 (CEA-R-3267)
determination in molybdenum solutions and molybdenum--tungsten alloys using Complexon III and pyrocatechol, spectrophotometric, 22:48821
determination in molybdenum, modified counter-current extraction method for, 22:16437
determination in molybdenum--rhenium--tungsten alloys, 22:30436(R) (UCRL-50006-68-1)
determination in niobium alloys, ion-exchange separation in, 22:48838
determination in plants by neutron activation techniques, 22:47082
determination in rhenium--tungsten alloys, 22:14428 (ORNL-4196, pp 33-44)
determination in rhenium--tungsten alloys, method for, 22:27530 (CEA-N-816, pp 9-65)
determination in semiconductor silicon by neutron activation methods, 22:14459
determination in steels, x-ray fluorescence method for, 22:255 (ORNL-IIC-10(Vol.2), pp 696-722)
determination in thoriated tungsten and refractory alloys using flavonol, fluorimetric, 22:25282
determination in tool steel by x-ray-fluorescence methods, 22:33211
determination in tool steel, x-ray fluorescence method for, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
determination in uranium dioxide by optical emission spectroscopy, 22:25236 (CEA-N-616, pp 20-71)
determination in uranium dioxide, laser sampling techniques for spectroscopic, 22:35759
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials, beta-backscattering method for, 22:28194
determination of hexavalent, in tungstate solutions by electrometric titration, 22:42604
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of, review of methods for, 22:18728
determination of, spectrophotometric, 22:14428 (ORNL-4196, pp 33-44)
development for incandescent bulb wires, 22:8761
development, properties, and uses of, review of, 22:52179
diffusion at 1400 and 2200ºC near grain boundaries of crystalline, self, 22:703
diffusion in crystalline, self, 22:52174
diffusion in monocrystals of, electrochemical sectioning for studies of, 22:19542
diffusion in titanium and zirconium, 22:13009
diffusion in, equations for surface self-, 22:15202
diffusion in, model of grain boundary, 22:38582
diffusion of carbon in, 22:28817
diffusion of carbon in, internal friction studies of, (E), 22:31359
diffusion of fission products and fuel materials through cladding of, 22:7008
diffusion of niobium-95 in monocrystals of, at 1800ºC, 22:19542
diffusion of nitrogen in arc-cast, at 1800 to 2600ºC, 22:38558
diffusion of oxygen in, at 2000 to 2800ºC, 22:45815 (GEMP-439)
diffusion of rhenium in, at 1400 to 2000ºC, 22:17135
diffusion of uranium at 1760 to 2730ºC in, 22:41016
diffusion of, dependence on temperature of self, 22:686
dislocation density of arc-cast, effects of stress and temperature on, 22:15176 (GEMP-1002, pp 11-37)
dislocation in, field evaporation study of structure of screw, (E), 22:24448
dislocation relaxations of, thermally activated, 22:17107 (GA-7978, pp 119-23)
dislocation structure of, monocrystals of, 22:19557
dislocation structures in, 22:38586
dislocation velocity in crystalline, model of, 22:36506
displacement modulus in wide frequency range at 900 to 2500ºK, (E), 22:31380
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
Doppler effect measurements in ZPR-9 assemblies 12-17, 22:32734 (ANL-7310, pp 137-248)
ductile-to-brittle transition of, strain release correlation with, 22:17108 (GA-7978, pp 143-9)
effects of aluminum, carbon, molybdenum, niobium, platinum, rhodium, silicon, and tantalum on emissivity of, 22:2665(R) (N-67-16572)
effects of fibrous, on strength of copper and copper alloy composites, 22:41053
effects of vacancy migration on electric conductivity of irradiated, 22:2664(R) (CU-3551-8)
effects of wires of, on creep deformation of copper composites, 22:41052
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on compositional analysis of urania for oxygen/uranium, 22:25321 (ANL-7375, pp 95-134)
effects on corrosion of steel by superheated steam and water at 300 to 500ºC, 22:626
effects on determination of molybdenum using aspartic acid, polarographic, 22:12239
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on electric conductivity of molybdenum, (E), 22:13592
effects on electronic specific heat of iron, 22:41049
effects on mechanical properties of stainless steel, 22:7002
effects on photometric determination of indium, 22:2007
effects on polarographic determination of cerium in yttrium oxide, 22:50929
effects on properties and structure of heat-resistant alloy, 22:2637
effects on properties of niobium and tantalum alloys, 22:23706 (BM-RI-7116)
effects on properties of uranium carbide fuel rods, 22:45755 (NAA-SR-12629)
effects on separation of niobium from tantalum by precipitation by oxine, 22:4038
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of molybdenum, 22:18717
effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
effects on strength of niobium, 22:2641
effects on titrimetric determination of lanthanum using

sodium rhodizonate and ceric sulfate, 22:27555
elastic moduli at 20 to 2700°C, 22:21706
elastic moduli at 25 to 1480°C, 22:15169 (ANL-7272)
elastic properties at 24 to 1800°C of single-crystal, 22:670
electric conductivity at 1.8 to 35°K, magnetic field effects on, (E), 22:13548
electric conductivity at 2 to 300°K, 22:31375
electric conductivity at 300 to 2200°C, 22:4767 (GEMP-562)
electric conductivity at 300 to 2300°C, 22:15176 (GEMP-1002, pp 11-37)
electric conductivity of, effects of carbon content on residual, 22:19541
electric conductivity, temperature dependence at low temperatures, (E/T), 22:34567
electrodeposition of, effect of citrates and tartrates on, 22:26031
electron diffraction from (110) surface of, inner sources of diffuse background in low-energy, 22:43608
electron diffraction patterns of single-crystal, model interpretation of, 22:15220
electron diffraction patterns of, determination using ultrahigh vacuum electron camera, 22:15193
electron emission by (100) surface of, bombarded by protons at 50 to 225 keV, (E), 22:17402
electron emission properties of chemically vapor deposited, for use in thermionics, 22:7008
electron reactions at 240 MeV with, auto-ion microscope studies of, 22:31988
electron scattering from surfaces of single-crystal, analysis of, 22:15222
electron work function of, measurement in cesium plasma, 22:50067 (JUL-508-TP)
electronic structure of, x-ray isochromat spectral study of, 22:17747
embrittlement of, effect of oxides on, 22:10481(R) (ALO-3634-6)
emissivity measurements on, 22:2665(R) (N-67-16572)
energy exchange mechanisms with gases at 1 x 10^{-7} atm and 5 x 10^{-5} atm and 700 to 2800°K, 22:28815
energy exchange of high-temperature filaments of, with elemental gases at room temperature, 22:45799 (UCRL-18043, pp 155-82)
enthalpy, 22:28780 (TID-24314(PT.1))
enthalpy and heat capacity at 1200 to 3260°K, 22:19515 (GEMP-578)
enthalpy at 1200 to 3250°K, 22:15256
enthalpy at 1200 to 3250°K, 22:15176 (GEMP-1002, pp 11-37)
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
extrusion at 20 to 600°C of rods of, hydraulic press, 22:15161
extrusion into tubing, 22:8738 (ORNL-4170, pp 80-92)
extrusion method for, 22:2605(P)
extrusion of tubes of, floating-mandrel technique for, 22:15185 (ORNL-4210)
fabrication and pressure treatment of, 22:12997
fabrication method for high-density ingots of, 22:6977(P)
fabrication of powder shapes of, by molding and sintering, 22:638(P)
fabrication of shapes from powders of, by isostatic pressing, 22:640(P)
fabrication of tubes of, 22:7016
fabrication of tubes of, by powder metallurgy, 22:34005
fabrication of tubing of, by chemical vapor deposition, 22:6968
fabrication of, review of developments in, 22:34023
fabrication, plasma technology of, 22:6948
Fermi surface of, 22:17773
Fermi surface of, study using de Haas--van Alphen effect, 22:52872
fission-fragment ranges in, barium-140 and strontium-91, (E), 22:9458
flow stress of, in presence of nonequilibrium concentration of kinks, (E), 22:29559
fracture at 1500°C, effects of dislocations and grain boundaries on single-crystal, 22:26042
fracture stress of sintered, at 4.2 to 298°K, 22:38556
gamma differential elastic scattering cross section at 1.33 MeV, (E), 22:32647
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
gas bubble formation at grain boundaries in chemically vapor-deposited, effects of annealing and fluorine content on, 22:6969
grain boundaries of monocrystalline, etch behavior of, 22:34074
grain growth of chemical-vapor-deposited, effect of fluorine on, 22:7009
grain size of, effects of stress on, 22:15176 (GEMP-1002, pp 11-37)
grain structure of annealed doped, evidence for voids in, 22:12988
grain structure of chemical-vapor-deposited, effect of interstitial fluorine on, 22:6966
growth of whiskers of, vapor-phase, 22:23725 (BM-RI-7118)
hardness anisotropy in single-crystal, 22:38559
hardness at -180 to 800°C, 22:38621(T) (KFK-tr-252)
hardness of chemical-vapor-deposited, effect of fluorine on, 22:7009
heat transfer of thin wires of, in nonsteady gas flow, 22:51167
heat transfer properties of thorium dioxide-coated multifoil layers of, at 800 to 1800°C, 22:51177(R) (ALO-3634-10)
helium ion reactions at 30 to 400 eV with contaminated surfaces of, effects of angle of incidence on Auger electron emission in, (E), 22:29224
helium ion scattering by oxide-coated crystals of, effects of channeling in, (E), 22:26488
helium-ion trapping and thermal re-emission from polycrystalline, (E), 22:26455
hydrogen permeation through, 22:34755
hyperfine field measurements on recoil-implanted, in ferromagnets, (E), 22:11535
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
internal friction at 1100 to 2700°K, 22:23771
internal friction at 1400 to 2500°K, frequency dependence of, 22:43586
internal friction peak changes of monocrystals of, during fracture, 22:26042
ion channeling at 2 to 30 MeV, 22:11537
ion range in, effect of temperature on sodium-24 and xenon-133, (E), 22:994
ion reactions at 1.5 x 10^8 cm/sec with crystals of, determination of Z dependence of atomic stopping from channeling in, (E), 22:29270
ion reactions with, trapped argon, helium, and krypton ion emission spectra from, 22:9039
ion stopping in, atomic number dependence of electronic cross sections for, 22:50034
joining of, review of techniques for, 22:36474
joining to carbon steel by braze-welding, 22:23740
joining to copper by braze-welding, 22:23740
joining to graphite as transition metal bond between graphite shapes, 22:43632 (LA-3960)
joining to molybdenum--tungsten by chemical vapor deposition, 22:6966
joining to rhenium--tungsten by chemical vapor deposition, 22:6966
joining to stainless steel by braze-welding, 22:23740
joining tubes of, chemical vapor deposition for, 22:6966
joints with different materials, metallography of, 22:43553
lattice vacancies in, computer calculations of, 22:2666(R) (NYO-3653-2)
machining and properties of, 22:8750(T) (AD-658385)
machining of, 22:8750(T) (AD-658385)
machining of, thermal expansion and reduced tool life in hot-, 22:21678
mechanical properties at high temperature of chemical-vapor-deposited, 22:7010
mechanical properties of floating-zone melted, 22:10970
mechanical properties of monocrystals of, 22:17104 (GA-7978, pp 11-46)
mechanical properties of tubes of chemical-vapor-deposited, 22:7011
mechanical properties of wrought, 22:7016
mechanical properties of, effects of carbon or rhenium additives on, 22:4794
mechanical properties of, effects of high pressure on, 22:36454 (N-68-15715)
mechanical properties of, effects of trace additions of hafnium and lanthanum on, 22:38552
mechanical properties of, review, 22:52189
melting of, study of electron-beam, 22:43545
melting of, use of point-focus electron beams for floating-zone, 22:663
metabolism in rats, 22:38212
metallography of, performance of aluminum oxide--resin mounts for, 22:26058 (RFP-1104)
metallurgical properties of nuclear materials containing, 22:31357
metallurgical properties of, effects of fluorine on, 22:8738 (ORNL-4170, pp 80-92)
metallurgy of, research on, 22:43524
metallurgy of, review of, 22:12957
microstructure of chemical vapor deposited, factors affecting, 22:6962
microstructure of chemical-vapor-deposited, 22:7010
microstructure of chemical-vapor-deposited tubes of, effects of working on, 22:6968
microstructure of oxidized single crystal, effects of oxidizing temperature on, 22:15221
microstructure of thin foils of bcc, electron metallographic, 22:2661
molybdenum crystal growth from liquid on single crystals of, epitaxy in, (E), 22:22252
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron ages in tungsten--water mixtures, from d--D and d--T sources, 22:48417 (N-68-25058)
neutron capture at 1 to 100 keV, average cross section for, (E), 22:39637 (RPI-328-123, pp 1-17)
neutron capture at 10 to 150 keV, cross section for, (E), 22:35346
neutron capture at 10 to 150 keV, cross section for, (E),

22:37340(R) (EANDC(E)-89(U))
neutron capture cross section at 10 to 150 keV, (E), 22:3687 (EURFNR-404)
neutron capture in, rate of radiative epithermal, (E), 22:32928 (NDA-2143-9)
neutron capture measurements below 30 keV for, effects on Doppler-effects of energy- and temperature-dependent, (E/T), 22:35626
neutron capture rates at 0.2 to 30 keV, temperature-dependent, (E), 22:5811 (EURFNR-400)
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
neutron differential elastic and inelastic scattering cross sections at 1.0 to 4.5 MeV, (E), 22:27067
neutron differential elastic scattering cross section and polarization at 0.6 to 1.2 MeV, (E), 22:20578 (WASH-1079)
neutron inelastic scattering at 1 MeV, γ production cross sections for, (E), 22:20578 (WASH-1079)
neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
neutron reactions with, effect of cross section resolution on transport and secondary gamma calculations, 22:31897
neutron resonance absorption by, analysis using Monte Carlo method, (T), 22:37345 (N-68-21924)
neutron resonance absorption by, Doppler coefficient for, (E), 22:5743
neutron resonance integrals for, reactivity measurements of effective, (E), 22:18270
neutron resonance parameters at 27 eV, (E), 22:22607
neutron scattering cross section at 10 to 300 eV, (E), 22:22607
neutron scattering cross sections for, bright line measurements of slow, 22:2406
neutron strength functions for, p- and d-wave, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 0.6 to 25 MeV, effects of deformations on, (E/T), 22:32648
neutron total cross section at 27 GeV/c, (E), 22:44619
neutron total cross section at 5.3 to 6.3 MeV, measurement using time-of-flight method, (E), 22:20523
neutron transport in, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
nitrogen permeation and solution in, 22:34756
nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104
optical constants at 537 to 5770 A, measurement by reflectance vs angle of incidence method, 22:13556
oxidation at 700 to 1000°C, galvanic-cell measurements of free-energy changes in, 22:12980
oxidation at low pressures between 1400 and 2500°K, (E), 22:28740
oxidation by carbon dioxide at 600 to 1000°C, kinetics of, 22:17079
oxidation by carbon dioxide, kinetics and thermodynamics of, 22:17080
oxidation in air, effects of humidity variations at 20°C on, 22:49686
oxidation model of, 22:8735 (ORNL-4170, pp 51-3)
oxidation of, analytical methods for measurements of electrochemical, 22:28795
oxidation of, effects of lithium oxide additions on, 22:49689
oxidation of, equilibrium model of steady-state, 22:34044 (TID-24491, pp 57-64)
passivation and surface polishing using potassium hydroxide, 22:52136
performance as coating for metals, evaluation of flame-sprayed, 22:10932
performance of crucibles of, for measurement of enthalpy changes in oxides at high temperatures, 22:31498
performance of wires of, as reinforcement for sintered Hastelloy X powder composites, 22:2595
perturbations in BN-350 type critical assembly from, analysis of, 22:18570
photoelectric cross section at 145 keV, K-shell, (E), 22:9028
photoelectric cross sections at 30, 40, and 50 keV, (E/T), 22:41347
photoelectric cross sections for 50 to 208 keV, 22:24064
physical properties and thermal treatment of nuclear materials containing, 22:31357
porosity of sintered, effects of air penetration on, 22:675
potassium ion range in oriented single crystals of, temperature effects on maximum, (E), 22:26478
powder metallurgy of billets of, 22:34048
precipitation with metal hydroxides, 22:18793
precipitation with molybdenum using lead acetate and 8-quinolinol, 22:48858
precipitation with zirconium hydroxide, effects of foreign ions on, 22:8063
preparation, 22:36471
preparation and properties of 100 to 1000 A particles of, 22:38604(T) (SC-T-68-1535)
preparation and properties of low-index-surface monocrystals of, high-energy electron diffraction studies on, 22:36497
preparation and properties of vapor deposited monocrystalline, 22:34073
preparation and properties of, review, 22:26051
preparation and properties of, review, 22:26052
preparation and properties of, review on, 22:8762
preparation by reduction of tungsten carbonyl, 22:36447
preparation of coatings by reduction of pentachloride by cadmium or zinc, 22:43549
preparation of high-purity, method for, 22:23803
preparation of sheet, by thermochemical deposition from hydrogen reduction of tungsten hexafluoride, 22:11075
preparation of single-crystal, methods for, 22:10973
preparation of vapor-deposited, effects of temperature on, 22:15160
production by chemical vapor deposition from fluoride, 22:7009
production from tungsten hexafluoride by chemical vapor deposition, 22:6962
production of fibers of, by reduction of tungstic acid using hydrogen, 22:43554
production of hard, wear-resisting coatings of, by chemical vapor deposition, 22:6966
production of jet-pipe neck of, by machining, 22:6947
production of single-crystal filaments of, using ultrahigh-vacuum bell jar, 22:5809(R) (ANL-7354)
production of small particle size high surface area powders of, method for, 22:12996(P)
production of tubes of, by vapor deposition from tungsten hexafluoride, 22:8738 (ORNL-4170, pp 80-92)
production of, separation of niobium and tantalum from intermediate products in, 22:45175
properties and uses of, review of, 22:23803
properties for space applications, 22:41057
properties for use in gamma thermometers, 22:43055
properties for use in vacuum systems, 22:16828
properties of deformed monocrystals of, 22:34063
properties of monocrystal, 22:52174
properties of powder compacts of, formed by hydrostatic pressing, 22:2621
properties of ultrafine recrystallized wires of, evaluation of, 22:2629
proton reactions (p,n) and (p,2n) at 8 to 14 MeV, cross sections for, (E), 22:5843
proton reactions at 10 MeV, production of short-lived isomer by, (E), 22:24874
proton reactions at 250 to 1560 keV, x-ray yields from, (E), 22:960
proton reactions with, upper limit for W production from, 22:15664 (NEVIS-164)
proton scattering at 400 keV by, energy and temperature dependence of directional effects in, (E), 22:26472
radiation damage to clean annealed surfaces of, low-energy ion, 22:15227
radiation effects at 1100°C on creep-rupture of, fast neutron, 22:31418 (BNWL-532, pp 10.1-26)
radiation effects at 15 to 20°K on, proton, 22:2666(R) (NYO-3653-2)
radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on corrosion of electrodes of, in acid solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on creep rupture of, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)
radiation effects on density and yield strength of, fast neutron, (E), 22:19575 (BNWL-455, Paper 5.1-10)
radiation effects on desorption of carbon monoxide by, electron, 22:11013
radiation effects on desorption of carbon monoxide, nitric oxide, and oxygen by, electron, 22:11011
radiation effects on desorption of water by, low-energy electron, 22:11015
radiation effects on electric conductivity of recrystallized, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)
radiation effects on electric conductivity of, neutron, 22:612(R) (GEMP-69)
radiation effects on electric resistivity of pure, annealing stages of electron, 22:44249
radiation effects on electric resistivity of thin films of, argon ion, (E), 22:26494
radiation effects on hardness at 20 to 1300°C, neutron, 22:612(R) (GEMP-69)
radiation effects on high-purity monocrystals of, neutron, 22:17104 (GA-7978, pp 11-46)
radiation effects on internal friction and tensile properties of, neutron, 22:26068
radiation effects on mechanical properties and microstructure of, fast neutron, 22:8793
radiation effects on mechanical properties of, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)
radiation effects on microstructure of, fast neutron, 22:31433
radiation effects on oxygen desorption from single crystals of, mechanism of electron, 22:34773
radiation effects on photocathodes of, electron, 22:51293
radiation effects on properties of boride and carbide coatings on, neutron, 22:34127
radiation effects on properties of, neutron, 22:21746
radiation effects on quantum efficiency of photocathodes of, electron, 22:48154 (N-68-24731)
radiation effects on sorptive properties of, for

nitrogen, electron, 22:11012
radiation effects on work function of polycrystalline ribbons of, annealing of rare-gas-ion, 22:44260
radiation effects on, recovery from neutron, (E), 22:13042
radiation from x-ray anodes of, continuum, (E), 22:17395
radioinduced crystal defects in, electron microscopy of neutron, 22:612(R) (GEMP-69)
radioinduced defects in, effects of annealing at 870 to 900°C on neutron, 22:2664(R) (CU-3551-8)
radioinduced defects in, electron microscopic study of fission-recoil and fast-neutron, (E), 22:28864
radioinduced defects in, structure of vacancy dislocation loops from 1100°C annealing of fast-neutron, (E), 22:26452 (GEMP-594)
radioinduced single vacancies in, removal methods for, 22:712(R) (CU-3551-9)
rare earth absorption on hot polycrystalline, lifetime of, 22:27709
rare earth diffusion out of, 22:29795
rare gas ion reactions with crystals of, target orientation dependence of thermal gas release following, (E), 22:26483
rare gas-ion sputtering on, effects of trapped gas on, (E), 22:19753
reactions in vacuum at 1200 to 2000°C with silicon monocarbide, 22:52231
reactions of thorium-covered surfaces of, low-energy electron diffraction studies of oxygen, 22:26028 (NYO-3839-5, Paper 6)
reactions with borides of tantalum, titanium, tungsten, and zirconium at 2500°C, 22:4894
reactions with hydrogen, thermodynamics of, 22:27635
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity worth, effects of surface-to-mass ratio on fast neutron, (E/T), 22:35667 (NAA-SR-Memo-12288)
recovery of defects after irradiation and cold work, review, 22:24375 (BLG-424)
recovery of, development of methods for, 22:52179
recrystallization mechanism of doped wires of, effect of nickel on, 22:49757
recrystallization of vacuum melted, 22:52174
recrystallization of, effects of surface carburization on, 22:23771
refining by sintering in hydrogen and vacuum, thermodynamics of, 22:34024
rubidium atom reactions on surfaces of, ionization coefficients for, (E), 22:52496
rupture of arc-cast sheet, in hydrogen at 1600 to 3000°C, 22:15176 (GEMP-1002, pp 11-37)
rupture of, effect of method of fabrication on, 22:7010
scandium adsorption on (110) face of, (E), 22:50246
separation from 35 ions by paper chromatography, 22:25257
separation from aqueous solutions by extraction after complexing with pyrocatechol and various quaternary salts, 22:48906
separation from chromium and molybdenum in hydrofluoric acid solutions by ion exchange, 22:48902
separation from hydrochloric acid--tartaric acid solutions by solvent extraction using amyl acetate, amyl alcohol, methyl isobutyl ketone, and TBP, chromatographic, 22:4246
separation from iron by anion exchange, 22:10328
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from mixture of metals by ring-oven method, 22:18880
separation from molybdenum and rhenium in hydrochloric acid--tartaric acid solutions, distribution-chromatographic method for, 22:4246
separation from molybdenum by solvent extraction using acetophenone, 22:37840
separation from molybdenum by zone refining, (E), 22:13592
separation from molybdenum in hydrochloric acid solutions by solvent extraction using 3-methyl-1-butanol, 22:6417
separation from molybdenum, niobium, and tantalum by column chromatography using methyl isobutyl ketone, 22:8190
separation from niobium and tantalum, 22:2012
separation from other metal ions by paper chromatography, 22:25257
separation from rhenium by ion exchange, 22:47207
separation from titanium by paper chromatography, 22:25258
separation from titanium by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by ion exchange on Amberlite IR-120 and zirconium phosphate, 22:40204
separation of lead from, by complexing with thionalide, 22:4024
separation of rhenium from, by solvent extraction using tetraphenylarsonium chloride, 22:47087
sintering mechanisms of powdered, 22:52209
sintering of, effects of initial grain size on grain growth in, 22:49699
sintering powders of, 22:7031
slip planes in deformed monocrystals of, determination of, 22:34072
slip systems in weakly deformed single crystals of, orientation dependence of, (E), 22:24479
solubility in liquid plutonium, enthalpy of, 22:40053 (LA-3951)
solubility in liquid silver, 22:8825 (UCID-15238(Pt.1))
solvent distribution between di-n-butyl thiophosphate in carbon tetrachloride and hydrochloride acid solutions, 22:1969
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
sorption by manganese dioxide from nitric acid, 22:157
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorption of cesium at 600 to 1000°C by, 22:38533 (GA-8574)
sorption of cesium at 800°C by, 22:38533 (GA-8574)
sorption of rare gas ions by polycrystalline, mechanisms of, 22:10966
sorptive properties for alkali metal ions at 1000 to 1700°K, 22:5809(R) (ANL-7354)
sorptive properties for ammonia, low-energy electron diffraction studies of, 22:26056(R) (NYO-3830-5)
sorptive properties for carbon dioxide, hydrogen, nitrogen, oxygen, and thorium, electron diffraction analysis of, 22:15192
sorptive properties for carbon monoxide, 22:21666
sorptive properties for carbon monoxide of hot surfaces of, dissociative, 22:36482
sorptive properties for cesium fluoride, 22:36475
sorptive properties for cesium on single crystals of, thermionic emission study, 22:46287
sorptive properties for hydrogen in beams, field-emission microscopic study, 22:43583
sorptive properties for hydrogen, nitrogen, and carbon monoxide, field-emission microscopic study of second-layer migration with trapping on first layer sites, 22:46289
sorptive properties for nitrous oxide at room temperature, 22:28826
sorptive properties for oxygen at 78°K, 22:28828
sorptive properties for oxygen on polycrystalline, thermionic emission study, 22:46286
sorptive properties for oxygen on single crystals of, thermionic emission study, 22:46285
sorptive properties for oxygen, determination by electron-impact desorption, 22:43584
sorptive properties for oxygen, low-energy electron diffraction studies of, 22:26056(R) (NYO-3830-5)
sorptive properties for rare earth ions, 22:47109 (AERE-R-5323)
sorptive properties for thorium, low-energy electron diffraction studies of, 22:26062
sorptive properties for zirconium, effects of temperature on, 22:31365
sorptive properties of (112) crystal faces of, for oxygen, 22:15221
sorptive properties of single crystal planes of field emitters of, for carbon monoxide, 22:12270(R) (COO-1383-1)
sound velocities in, at 25 to 1480°C, 22:15169 (ANL-7272)
specific heat of, measurement to melting point, 22:4766 (CEA-R-3287)
sputtering by argon ions at 5, 11, and 17 keV, mechanism of, 22:36704(T) (ANL-Trans-627)
stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
stacking faults in, field-emission microscopic study of, 22:50249
strain release of, effects of temperature on, 22:17112 (GA-7978, pp 173-7)
strength at high temperatures, carburization effects on, 22:2642
superconductivity enhancement in films of, structural effects on, (E/T), 22:1126
superconductivity in evaporated films of, 22:24207
surface diffusion of mercury on substrates of, 22:28804
surface friction and wear, effects of crystal structure and properties on, 22:52177
surface migration of atoms of, determination by field emission, 22:28824
swaging of, equipment and method for, 22:6521(P)
tantalum-181 Moessbauer effect in, (E), 22:48553
temperature of, design of photoelectric pyrometer for measurement of, 22:31358
tensile properties and structure of annealed wire of, at 1100 to 1800°C, 22:11002
tensile properties of polycrystalline, effects of pressure and temperature on, 22:49767
tensile properties of single-crystal, preparation for testing of, 22:10973
tensile strength of whiskers of, 22:23725 (BM-RI-7118)
testing as cladding on molybdenum--uranium dioxide fuel elements, 22:23730 (DLR-MITT-66-07, pp 69-72)
testing for isotope capsule material, ultrasonic, 22:2607 (BNWL-547)
testing of thorium dioxide-coated foil, for thermal

insulation, 22:28008(R) (ALO-3634-8)
thermal capacity, 22:28780 (TID-24314(PT.1))
thermal capacity at 1300 to 3000°K, 22:9461
thermal capacity at 24 to 1800°C, validity of Nernst--Lindemann equation for, 22:34802
thermal conductivity above 1500°K, review, 22:28781 (TID-24314(Pt.2))
thermal conductivity at 100 to 350°K, 22:8738 (ORNL-4170, pp 80-92)
thermal conductivity at 100 to 400°K, 22:21708
thermal conductivity at 1200 to 3250°K, 22:15176 (GEMP-1002, pp 11-37)
thermal conductivity at room temperature, 22:679
thermal emittance of coated, at 1600 to 3200°F, 22:10961
thermal emittance of siliconized, at 1600 to 3200°F, 22:10961
thermal fatigue life of die-casting dies of, 22:6999
thermionic emission along different directions by single crystals of, effects of sorbed oxygen on, 22:46285
thermionic emission by bare and cesiated single-crystal, 22:46287
thermionic emission by polycrystalline, effects of sorbed oxygen on, 22:46286
thermionic emission of vapor deposited, effects of surface treatment on, 22:7008
thermodynamic properties of, effects of hafnium and lanthanum traces on, 22:38552
thermodynamics of surface alloying of, with boron--zirconium and molybdenum--silicon, 22:30575
thermomagnetic properties below 2.6°K, phonon drag effects in Nernst--Ettinghausen and Righi--Leduc coefficients, 22:3185
tungsten-183 Moessbauer effect in, following Coulomb excitation by protons, (E), 22:44254
use as anticathode for continuous x irradiation of Vicia faba root tip cells, 22:51528
use as barrier in aluminum--stainless steel transition joints for high temperature reactor service, 22:627 (AI-CE-72)
use for neutron dosimetry, 22:38105
use in heat pipes with indium and silver working fluids, (E), 22:33595(R) (LA-3941)
use in nuclear devices, hazards to biological materials from, 22:496 (UCRL-50163(Pt.3))
use of powdered, liquid uranium oxide (UO_2) enthalpy measurements through, 22:30118 (ANL-7438)
wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
welding method for, using liquid nitrogen cooled electrodes, 22:41015
welding of unalloyed, 22:8738 (ORNL-4170, pp 80-92)
welding of, method and temperature for diffusion, 22:6943
welding to boron carbonitrides, diffusion, 22:6943
wires of, effects of processing variables on longitudinal splitting of, 22:13008
wires of, preparation for transmission electron microscopy, 22:23737
wires of, x ray production in vacuum from exploding, 22:21238 (UUIP-562)
work functions of single-crystal faces of, effects of sodium adsorption on, (E), 22:13560
x-ray attenuation coefficients below K-absorption edge of, measurement of, 22:29199
x-ray fluorescence spectra of, semiconductor detectors for measuring, 22:19096 (INR-820/II/PS)
x-ray spectra from beta-excited, (E), 22:13248
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640
x-ray spectra of, isotope shifts in K, (E), 22:24887
xenon ion range distribution at 40 keV in single crystals of, effects of crystal properties on, (E), 22:26479
zero point energy of crystals of, 22:20051
LiH--W, gamma dose rate from neutron capture in reactor shields of, dependence on neutron energy, 22:36962 (ORNL-TM-2209)
Mo--W, ductile-to-brittle transition temperatures of, effects of composition on, 22:671
Sm_2O_3--W, impact testing of rhenium--tungsten encapsulated cermets of, 22:42977(R) (SC-PR-68-451)
UC--W, diffusion of uranium in, 22:7065

TUNGSTEN ALLOY COUPLES
Os--Re/Re--W, radiation effects on electric properties of, 22:612(R) (GEMP-69)
Re/W--W, thermocouple performance in SPERT-4 of, 22:6095(R) (IDO-17245)
Re--W/Re--W, performance at 2600°C, 22:40295
Re--W/Re--W, performance for DFR fuel pin center temperature measurement, 22:44811 (CONF-660521-6)
Re--W/Re--W, performance of thermocouples of, in reactors, 22:45347(T) (AERE-Trans-1095)
Re--W/W, calibration and performance at high temperatures, 22:612(R) (GEMP-69)
Re--W/W, design and performance of, 22:36453 (LMEC-Memo-68-10)
Re--W/W, electric insulation for, performance at 2000°R of beryllium oxide, 22:28916 (WANL-TME-1549)
Re--W/W, performance at high temperatures, 22:15144 (GEMP-1002, pp 137-42)
Re--W/W, performance of thermocouples of, in reactors, 22:45347(T) (AERE-Trans-1095)

TUNGSTEN ALLOYS AND SYSTEMS
see also C-129Y (Niobium Alloy)
see also Cb-132 (Niobium Alloy)
see also Cb-132M (Niobium Alloy)
see also Cb-752 (Niobium Alloy)
see also D-43 (Niobium Alloy)
see also FS-85 (Niobium Alloy)
see also Hastelloy C
see also Hastelloy X
see also Hastelloy X 280
see also Haynes Stellite 6B
see also Haynes Stellite No. 21
see also Haynes Stellite No. 1016
see also Haynes 25 Alloy
see also Haynes 56 Alloy
see also Multimet
see also T-111 (Tantalum Alloy)
see also T-222 (Tantalum Alloy
analysis for molybdenum using phosphoric acid, titrimetric, 22:22948
coatings for oxidation protection of, review, 22:41002
coatings for, development of high-temperature, 22:7030
development and properties of, review on, 22:4751 (NP-17109)
development, properties, and uses of, review of, 22:52179
effects on steels for steam turbine components, 22:47672 (CONF-671007-5)
extrusion processes for tubes of, description of, 22:48787
fabrication and pressure treatment of, 22:12997
joining of, review of techniques for, 22:36474
mechanical properties and fabrication of, review, 22:52189
mechanical properties of vacuum arc-melted, 22:47676 (N-68-24477)
Mo--W, ion reactions with, secondary ion emission induced by slow, (E), 22:50002
preparation and fabrication of, review of developments in, 22:34023
preparation and properties of, review on, 22:8762
preparation by vacuum melting, addition agents for, 22:28759
production by powder metallurgy for nuclear use, 22:41014
properties and uses of, review of, 22:23803
properties for space applications, 22:41057
properties for use in vacuum systems, 22:16828
radiation effects on properties of, neutron, 22:21746
Re--W-base, development of wires of, for incandescent bulbs, 22:8761
UC--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
UO_2--^{184}W, fuel element of multiple plate tungsten-clad, description of rocket reactor, 22:50785(P)
Ag--W, wear in sliding contact with copper, effects of sintering on, 22:19487
Al_3O_2--Cr--W-base wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Al--Co--Cr--Mo--Ni-base--Ti--W, coatings for, corrosion and oxidation of boron-base, 22:6935
Al--Co--W, magnetic properties, 22:28800
Al--Cr--Co--Nb--Ni-base--Ti--W, fabrication of MAR-M-200, methods for powder metallurgy, 22:10978
Al--Cr--Ni--Ti--W, phase equilibria at 850°C, 22:15211
Al--Si--Ti-base--W--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--SiC--W, performance as round-hole extrusion die nibs, 22:8719
Al--Ti-base--V--W, failure behavior of tungsten fiber-reinforced, (E), 22:26046
Au--W, bremsstrahlung emission spectra from thick targets of, at electron energies of 5.3 to 20.9 MeV, system for measuring absolute, 22:25667
B--C--Co-base--Cr--Ti--W--Zr, morphology of, effects of molybdenum, niobium, nitrogen, tantalum, and vanadium additions on, 22:13025
B--Co-base--Cr--Si--W, corrosion of braze alloy of, by lithium hydride at 1300°F, 22:2569 (NAA-SR-Memo-12005)
B--Cr--Fe--Ni-base--Si--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
B--Cr--Fe--Ni-base--Si--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
B--Cr--W, phase equilibria, (E), 22:28948
B--Mo--W, phase equilibria, (E), 22:28948
B--Re--W, phase studies of cast, 22:45789
B--W--Zr, phase diagrams at 1400°C, 22:36548
B--W--Zr, phase studies on, 22:4891
Be--W, formation of intermetallic WBe_{12} and WBe_{22} in hot-pressed dispersions, 22:43561
Be--W, performance as round-hole extrusion die nibs, 22:8719
Be--W, phase diagram, 22:10986(T) (JPRS-43479)
Be--W, production and stability of dispersions of, 22:43561
Be--W, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
BI_3--W, adsorption and nucleation studies of, 22:27726

BN--W, phase studies of, 22:762
BN--W, physical properties of, 22:762
BN--W, surface friction of, effects of pressure on sliding, 22:17171
C--Co--Fe--Ti--W--Zr, magnetic and mechanical properties at high temperatures, (E), 22:15631
C--Co--Ti--W--Zr, magnetic properties at high temperatures, (E), 22:15631
C--Co-base--Cr--W, phase diagram at 1050°C, 22:43588
C--Co-base--Cr--W, properties for hard-facing of tools, 22:43588
C--Co-base--Fe--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Co-base--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Cr--W, phase diagram, 22:21651
C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38523(R) (N-68-13630)
C--Hf--N--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811 CN, 22:38522(R) (N-68-13625)
C--Hf--Nb--W, microstructure of thin foils of bcc, electron metallographic, 22:2661
C--Hf--Re--Ta-base--W, creep of ASTAR 811C, at high temperatures, 22:41057
C--Hf--Re--Ta-base--W, creep properties of dispersion strengthened, effect of grain size on, 22:38524(R) (N-68-18131)
C--Hf--Re--Ta-base--W, creep properties of, effect of grain size and annealing temperatures on, 22:38523(R) (N-68-13630)
C--Hf--W, mechanical properties at 3200°F, 22:31323
C--Hf--W-base, tensile properties of, effects of composition, heat treatments, and substructure on, 22:38536 (N-68-17317)
C--Mn--W, crystal structures of, 22:49842
C--Mo--W, analysis for tungsten, complexometric, 22:33233
C--Re--W, superconducting transition temperature of, 22:19922
C--Re--W-base, tensile properties of, effect of electronic structure on, 22:687 (AD-645762)
C--Sn--U--W, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Ta--W, phase diagram of isothermal section at 2300°C, 22:36470
C--U--W, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
C--W, phase diagrams, 22:36548
C--W, thermodynamic properties of solid-solution, 22:653(R) (N-67-22439)
Ce_2O_3--W, thermoemission of, 22:754
Co--Cr--Fe--Mn--Mo--Ni-base--W, oxidation rate of Ra 333, at 1000°C, 22:19043(R) (DP-1143-1)
Co--Cr--Fe--Mn--Ni--W, properties for use as encapsulating material for cobalt-60 power sources, 22:16780
Co--Cr--Fe-base--Mn--Mo--Nb--Ni--W, oxidation rate of N 155, at 1000°C, 22:19043(R) (DP-1143-1)
Co--Cr--Fe-base--Mo--Nb--Ni--W, radiation effects on mechanical properties of, neutron, 22:19575 (BNWL-455, Paper 5.1-10)
Co--Cr--Fe-base--Mo--V--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Co--Cr--W--Fe-base, tempering behavior of, for hot work tools, 22:2635
Co--Fe-base--W, performance as tools for machining molybdenum, 22:2628
Co--W, properties and structure for permanent magnets, 22:10971
Co--W, thermodynamic properties of solid solutions in, 22:28791
Co--W-base, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Co-base--Cr--Fe--Mn--Ni--Si--W, fatigue testing Cronidur 600, at 800 to 1200°C, 22:678
Co-base--Cr--Fe--Mn--Ni--W, oxidation rate of Haynes 8188, at 1000°C, 22:19043(R) (DP-1143-1)
Co-base--Cr--Fe--Mo--Ni--Ti--W, radiation effects on mechanical properties of Ht 565, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Fe--Nb--Ni--W, tensile properties for cobalt-60 heat source capsules, 22:10500 (DP-1096)
Co-base--Cr--Fe--Ni--W, radiation effects on mechanical properties of Ht 569, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Fe--Ni--W--Zr, radiation effects on mechanical properties of Ht 586, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Ni--Ti--W, radiation effects on mechanical properties of Ht 567, neutron, 22:34077 (BNL-12438)
Co-base--Cr--Ni--W, radiation effects on mechanical properties of Haynes 188, neutron, 22:34077 (BNL-12438)
Co-base--Cr--W, morphology of, effect of titanium, zirconium, and carbon additions on, 22:13025
Co-base--Mo--Ni--ThO_2--W, evaluation of dispersion-strengthened, 22:34005
Co-base--W, stress rupture properties of, effect of chromium, titanium, zirconium, and carbon additions on, 22:13025
Cr--base--W, decomposition of solid solutions of, 22:23834
Cr--Co-base--Ni--W, fabrication of X-40, methods for powder metallurgy, 22:10978
Cr--Nb--Ti--V--W, elasticity, 22:10959
Cr--steel--W, crystal structure of, effects of tempering on, 22:34051
Cr--W, electric conductivity and Neel temperature as function of tungsten content, (E), 22:15609
Cr--W--Fe-base, tempering behavior of, for hot work tools, 22:2635
Cr-base--W--Y, hot hardness of, 22:15179 (GEMP-1002, pp 83-93)
Cu--Ni--W, mechanical properties of, effects of sintering on, 22:6953
Cu--Ni--W, production of high-density sintered, 22:6953
Cu--W, erosion of impregnation-prepared and sintered, by electric arcs, 22:49691
Cu--W, thermal expansion of, concentration dependence of, (E), 22:28809
Cu--W, wear in sliding contact with copper, effects of sintering on, 22:19487
Eu_2O_3--W, thermoemission of, 22:754
Fe--Mo--Ni--Ru--W-base, preparation method for improved, 22:6976(P)
Fe--Ni--W, aging mechanisms of, 22:38553
Fe--Ni--W, hardness of, effects of heating on, 22:10997
Fe--Ni--W, mechanical properties of, effects of sintering on, 22:6953
Fe--Ni--W, phase diagram, 22:10997
Fe--Ni--W, phase studies on temperature dependence of Young's modulus and kinetics in, 22:2648
Fe--Ni--W, production of high-density sintered, 22:6953
Fe--Ni--W-base, crystal structure and properties of, 22:4780
Fe--Ni--W-base, effects of nickel--iron ratio on strength, ductility and hardness of, 22:4780
Fe--Ni--W-base, effects of nickel--iron ratio on strength, ductility and hardness of, 22:4780
Fe--W, analysis for tungsten, complexometric, 22:33233
Fe--W, magnetic properties at 0°K, 22:43594 (ANL-7299, pp 251-64)
Fe--W, mechanical properties of, effect of alloying methods on, 22:2598
Fe--W, phase studies at 0 to 45 at. percent tungsten, 22:15213
Fe-base--Mo--W, performance as tools for machining molybdenum, 22:2628
graphite--Hf--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
graphite--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Mo--Re--W, surface hardness of, effects of hafnium content on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
Hf--Mo--W, phase diagrams, 22:31411
Hf--Nb-base--W, properties as high-temperature alloy, 22:41038
Hf--Re--Ta-base--W, creep of dispersion strengthened, effects of grain size on, 22:38524(R) (N-68-18131)
Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38522(R) (N-68-13625)
Hf--Re--Ta-base--W, properties of dispersion strengthened ASTAR-811, 22:38523(R) (N-68-13630)
Hf--Ta--W, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Hf--Ta--W, corrosion by air at 3200 to 3900°F, 22:12982
Hf--Ta--W, corrosion of oxygen contaminated, by reflux-boiling sodium at 1095°C, 22:33152
Hf--Ta--W, extrusion methods for, description of, 22:30389
Hf--Ta--W--Y, properties, 22:31323
Hf--Ta-base--W, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
Hf--W, analysis for hafnium by x-ray fluorescence analysis, 22:30436(R) (UCRL-50006-68-1)
HfC--Mo--Nb-base--W, elastic moduli at 20 to 2700°C, 22:21706
HfC--ThO_2--W-base, tensile properties of, effects of pressure and temperature on, 22:49767
HfN--W, co-vapor deposition of, effects of nitrogen on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
Ir--W, emissivity measurements on, 22:2665(R) (N-67-16572)
La--Th--W, thermoelectron emission by cathodes of, 22:4781
La--W--Zr, thermoelectron emission by cathodes of, 22:4781
Mo--Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Mo--Nb-base--Ti--W, corrosion by hydrochloric acid, lithium at 1000°C, or sulfuric acid, 22:17118
Mo--Nb-base--Ti--W, microstructure of, effects of composition and temperature on, 22:38551

Mo--Nb-base--Ti--W, physical properties of, effects of composition and temperature on, 22:38551
Mo--Nb-base--Ti--W, preparation and properties of, 22:17118
Mo--Nb-base--Ti--W, welding of, 22:17118
Mo--Nb-base--V--W, mechanical properties of, 22:52174
Mo--Nb-base--W, elastic moduli at 20 to 2700°C, 22:21706
Mo--Nb-base--W--Zr, corrosion by hydrochloric acid, lithium at 1000°C, or sulfuric acid, 22:17118
Mo--Nb-base--W--Zr, preparation and properties of, 22:17118
Mo--Nb-base--W--Zr, welding of, 22:17118
Mo--Re--W, analysis for components, 22:30436(R) (UCRL-50006-68-1)
Mo--Re--W, analysis for metallic impurities, spectrographic, 22:30436(R) (UCRL-50006-68-1)
Mo--Re--W, creep-rupture behavior at high temperatures, 22:8723 (GEMP-570)
Mo--Re--W, crystal structure and emission properties of, 22:34068
Mo--Re--W, deposition on copper and molybdenum, from chemical vapors, 22:7007
Mo--Re--W, diffusion of oxygen in, at 2000 to 2800°C, 22:45815 (GEMP-439)
Mo--Re--W, effects on space power reactor reactivity of uncertainties in cross sections of, 22:20899 (UCRL-70797)
Mo--Re--W, fabrication by powder metallurgy, 22:8723 (GEMP-570)
Mo--Re--W, hardness at 25 to 1200°C, 22:15225 (GEMP-1002, pp 38-64)
Mo--Re--W, mechanical properties at high temperatures, 22:49680(R) (USBM-RC-1347)
Mo--Re--W, microstructure of vapor deposited, effects of temperature on, 22:7007
Mo--Re--W, preparation by arc melting and powder metallurgy, 22:49680(R) (USBM-RC-1347)
Mo--Re--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
Mo--Re--W, radiation effects on, 22:19076(R) (TID-11295(Pt.1)(5th Ed.))
Mo--Re--W, stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
Mo--Re--W, welding methods for, testing of, 22:44876(R) (UCRL-50004-68-1(Pt.1))
Mo--Re--W-base, creep and stress-rupture at 1600 and 2200°C, 22:612(R) (GEMP-69)
Mo--Re--W-base, crystal structure of, effects of annealing and recrystallization on, 22:612(R) (GEMP-69)
Mo--Re--W-base, ductility of cold-rolled, effects of isochronal anneals in hydrogen on, 22:15178 (GEMP-1002, pp 77-82)
Mo--Re--W-base, fabrication of tubes of, development of drawing and extrusion methods for, 22:42994 (ANL-7299, pp 173-97)
Mo--Re--W-base, hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
Mo--Re--W-base, porosity of electron-beam weld seams on samples of extruded, 22:612(R) (GEMP-69)
Mo--Rh--W, analysis for molybdenum by controlled-potential coulometry, 22:44993
Mo--Ti--V--W, corrosion protection of niobium and tantalum alloys by coatings of, 22:41007
Mo--UO_2--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
Mo--W, analysis for molybdenum and tungsten using Complexon III and pyrocatechol, spectrophotometric, 22:48821
Mo--W, analysis of, beta fluorescence, 22:50943
Mo--W, compatibility testing with selenium at 400°C, 22:52556 (ANL-7425, pp 172-89)
Mo--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Mo--W, elastic moduli at 20 to 2700°C, 22:21706
Mo--W, extrusion method for, 22:2605(P)
Mo--W, joining to tungsten by chemical vapor deposition, 22:6966
Mo--W, mechanical and physical properties of, effects of high temperature on, 22:685
Mo--W, mechanical properties of vacuum electron beam zone melted, 22:52174
Mo--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
Mo--W, production of powders of, method for, 22:12996(P)
Mo--W, spectral emissivity at 2000 to 2400°K, (E), 22:37048
Mo--W, sputtering by argon ions at 5, 11, and 17 keV, mechanism of, 22:36704(T) (ANL-Trans-627)
Mo-base--W, corrosion by ammonium hydroxide, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by chromic acid, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by hydrochloric acid, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by metal chloride solutions, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by nitric acid, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by organic acids, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by phosphoric acid, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by sodium hydroxide, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by sodium hypochlorite, 22:43530 (BM-RI-7169)
Mo-base--W, corrosion by sulfuric acid, 22:43530 (BM-RI-7169)
Mo-base--W, creep rate of powder metallurgy prepared, in hydrogen at 1600 and 2200°C, 22:15176 (GEMP-1002, pp 11-37)
Mo-base--W, creep rate of powder metallurgy prepared, in hydrogen at 1600 and 2200°C, 22:15176 (GEMP-1002, pp 11-37)
Mo-base--W, creep rupture of arc-cast sheet, in hydrogen at 1600 and 2200°C, 22:15176 (GEMP-1002, pp 11-37)
Mo-base--W, stress rupture of arc-cast sheet at 1600 and 2200°C, 22:15176 (GEMP-1002, pp 11-37)
MoC--W, welding of, method for diffusion, 22:6943
Nb--Ta)--W, creep strength of, effects of metallic borides and carbides on, 22:26049
Nb--Ti--W, coating of, deposition methods for protective, 22:52174
Nb--Ti--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--Ti--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--Ti--W-base, oxidation at 1000 to 1300°C, mechanisms of, 22:52174
Nb--Ti--W-base, oxidation of, effects of alloying elements on, 22:52174
Nb--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Nb--W, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--W, creep and heat resistance of, 22:10993
Nb--W, creep of, dependence on temperature of, 22:686
Nb--W, creep strength of, effects of metallic carbides and borides on, 22:26049
Nb--W, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--W, mechanical properties of vacuum electron beam zone melted, 22:52174
Nb--W, tensile properties, 22:4790
Nb--W, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--W--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Nb-base--W, corrosion by low-oxygen sodium at 1350°C, 22:43629(R) (LA-3933)
Nb-base--W, deformation of, flow stress and mechanisms of, 22:47680
Nb-base--W, tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
Nb-base--W--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
NbC--W, welding of, method for diffusion, 22:6943
Nd_2O_3--W, thermoemission of, 22:754
Ni--W, atomic arrangements as function of cold working and heat treatment in, (E), 22:41682
Ni--W, electrodeposition on plates, from pyrophosphate baths, 22:28765
Ni--W-base, properties of sintered filters of, 22:31342
Ni-base--Ta--Ti--W, corrosion by air at 2100°F, 22:15150
Ni-base--W, crystal structure of, effects of cold working on ordering in, 22:38563 (N-68-11803)
Ni-base--W, neutron magnetic scattering by, (E), 22:24809
O--V--W, crystal structure of WV_2O_7 phase in, 22:34120
Os--Re--W, phase studies of sintered, 22:7023
Os--Re--W, tensile properties of sintered, 22:7023
Pd--W, crystal structure and superconductivity of, 22:36496
Pm_2O_3--W, fabrication for radioisotopic heat sources, 22:4360
Pr_2O_3--W, thermoemission of, 22:754
Pt--W, crystal structure and superconductivity of, 22:36496
Pu--W, phase diagrams and properties, 22:36495
Pu--W, phase studies of, 22:2655
Re--Mo--W-base, microstructure of cold-rolled, effects of aging on, 22:15178 (GEMP-1002, pp 77-82)
Re--Ru--W, brazing alloys of, for tantalum and tungsten, 22:19545(P)
Re--Ta--W, phase studies at 2500°C, 22:4809
Re--Ta-base--W, creep of Astar 811C, in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
Re--Ta-base--W, creep testing of Astar 811C, at high temperatures, 22:43568 (N-68-13631)
Re--ThO_2--W, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
Re--ThO_2--W, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
Re--ThO_2--W, mechanical properties of sheets of, at 1928°C, 22:643(R) (AD-645143)
Re--W, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Re--W, analysis for rhenium, spectrophotometric, 22:1972
Re--W, analysis for tungsten, 22:14428 (ORNL-4196, pp

33-44)
Re--W, analysis for tungsten, method for, 22:27530 (CEA-N-816, pp 9-65)
Re--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Re--W, corrosion by liquid zinc and molten chlorides, 22:33528
Re--W, creep behavior of, effects of composition and heat treatments on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
Re--W, deposition on spherical reactor fuels as coating, 22:45811(P)
Re--W, deposition on uranium dioxide spheroids from fluoride vapors, 22:7044
Re--W, ductile-to-brittle transition-temperatures for, comparison of, 22:48787
Re--W, ductility of chemical-vapor-deposited, grain stabilization for, 22:6966
Re--W, electric conductivity at 300 to 2300°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W, emissivity measurements on, 22:2665(R) (N-67-16572)
Re--W, fabrication of foils of, for use in thermal insulation, 22:8301(R) (ALO-3634-7)
Re--W, feed materials for chemical vapor deposition of, economic analysis of direct fluorination of scrap materials for, 22:6967
Re--W, identification of rhenium in, using field-ion microscopes, 22:668
Re--W, impact testing as heat source capsule material, 22:36536 (SC-DR-68-295)
Re--W, joining to tungsten by chemical vapor deposition, 22:6966
Re--W, mechanical properties of arc melt consolidated, 22:28757(R) (UCRL-13341)
Re--W, mechanical properties of arc melted and sintered, 22:49680(R) (USBM-RC-1347)
Re--W, mechanical properties of tubes of chemical-vapor-deposited, 22:7011
Re--W, mechanical properties of vacuum arc-melted, 22:47676 (N-68-24477)
Re--W, microstructure of chemical vapor deposited, factors affecting, 22:6962
Re--W, oxidation of, analytical methods for measurements of electrochemical, 22:28795
Re--W, phase studies at 2500°C, 22:4809
Re--W, preparation by chemical vapor deposition of, 22:6962
Re--W, preparation by reduction from oxides, 22:28757(R) (UCRL-13341)
Re--W, preparation of porous solid solution, 22:21681(P)
Re--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
Re--W, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Re--W, recovery from scrap by direct fluorination and flame reduction, economic analysis of, 22:6967
Re--W, stability in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
Re--W, tensile properties of, effects of annealing and cold working on, 22:28757(R) (UCRL-13341)
Re--W, thermal capacity at 1600 to 2900°K, (E), 22:37031
Re--W, thermoelectron emission properties of, 22:4782
Re--W, tube fabrication of, use of chemical vapor deposition for, 22:44876(R) (UCRL-50004-68-1(Pt.1))
Re--W-base ductility of, field ion microscopy studies of, 22:13006
Re--W-base, analysis of arc-melted and powder metallurgy processed, 22:23731 (USBM-RC-1274)
Re--W-base, bend yield stress of sheet, effects of grain size and temperature on, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, creep at 1650 and 2200°C, 22:23731 (USBM-RC-1274)
Re--W-base, creep rate of arc-cast sheet, in hydrogen at 1600 to 2600°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, creep rupture of, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, crystal structure and thermal emf of, effects of carbon on, 22:52173
Re--W-base, dislocation structures in polycrystalline, 22:38586
Re--W-base, electric conductivity at 300 to 2200°C, 22:4767 (GEMP-562)
Re--W-base, extrusion into tubing, 22:8738 (ORNL-4170, pp 80-92)
Re--W-base, extrusion of tubes of, floating-mandrel methods for, 22:15185 (ORNL-4210)
Re--W-base, fabrication of tubes of, development of drawing and extrusion methods for, 22:42994 (ANL-7299, pp 173-97)
Re--W-base, porosity of electron-beam weld seams on samples of extruded, 22:612(R) (GEMP-69)
Re--W-base, preparation of, incorporating reactive metal additive for high temperature strength and reduced ductile-brittle transition temperature, 22:47681(P)
Re--W-base, radiation effects on creep-rupture properties of, fast neutron, 22:19603
Re--W-base, radiation effects on electric conductivity of recrystallized, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)
Re--W-base, reactions with plutonium oxide--thorium oxide and thorium oxide ceramics at 2215 to 2290°C of, 22:645 (AECL-2768)
Re--W-base, stress rupture of arc-cast sheet, in hydrogen at 1600 to 2600°C, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, tensile properties of arc melted, at 25 to 2500°C, 22:23731 (USBM-RC-1274)
Re--W-base, tensile properties of unworked, effects of grain size on, 22:41039
Re--W-base, thermal conductivity as function of temperature, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, thermal conductivity at 300 to 2200°C, 22:4767 (GEMP-562)
Re--W-base, thermal diffusivity at 300 to 1000°C in argon, 22:15176 (GEMP-1002, pp 11-37)
Re--W-base, welding of sheet, plate, and tubing, 22:8738 (ORNL-4170, pp 80-92)
Rh--W, development, properties, and uses of, 22:52179
Sc_2O_3--W, compatibility at 500 to 2000°K, 22:23717
Sc_2O_3--W--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
Si--W, thermodynamics of surface alloying of niobium, molybdenum, and tantalum with, 22:30575
SiO_2--W, corrosion by air at 3200 to 3900°F, 22:12982
SiO_2--W, production by hot pressing and sintering, 22:721(R) (AD-646616)
Sm_2O_3--W, testing of encapsulated cermet, impact, 22:36536 (SC-DR-68-295)
Sm_2O_3--W, thermoemission of, 22:754
Ta--V--W, crystal structure of intermetallic compound TaV_2 in, 22:45788
Ta--W, as capsule for plutonium alloy fuel, effects of carburization on, 22:4730 (LA-3766)
Ta--W, corrosion by liquid and gaseous cesium, 22:647(R) (BNL-50077)
Ta--W, deformation of monocrystals of, at 77 to 623°K, 22:28811
Ta--W, development, properties, and uses of, review of, 22:52179
Ta--W, diffusion at 2000°C in, 22:43582
Ta--W, diffusion of carbon in, effects on carbide surface formation, 22:729 (LA-DC-8803)
Ta--W, electric conductivity at 300 to 2400°K, effects of composition on, 22:19540
Ta--W, hardness at 25 to 1200°C, 22:15225 (GEMP-1002, pp 38-64)
Ta--W, machining of, thermal expansion and reduced tool life in hot-, 22:21678
Ta--W, phase studies at 2500°C, 22:4809
Ta--W, spectral emissivity at 2000, 2200, and 2400°K, (E), 22:41342
Ta--W, testing for use as fuel capsule liner, 22:4355(R) (NAA-SR-12578)
Ta--W-base, cesium sorption by, at 800°C, 22:38533 (GA-8574)
Ta--W-base, dislocation structures in polycrystalline, 22:38586
Ta-base--W, compatibility testing of, for large radioisotope heat source capsules, 22:51175 (AI-AEC-12739)
Ta-base--W, compatibility with iron titanates in heat source capsules, 22:23216(R) (AI-AEC-12642)
Ta-base--W, creep rupture of, 22:8737 (ORNL-4170, pp 65-79)
Ta-base--W, creep rupture properties of, at 1000 to 1650°C, 22:38543
Ta-base--W, creep-rupture at 1200 to 1650°C, 22:8747 (ORNL-TM-1994)
Ta-base--W, fabrication for large radioisotope heat source capsule inner liner, 22:47290(R) (AI-AEC-12713)
Ta-base--W, fabrication of large radioisotope heat source capsules of, 22:23216(R) (AI-AEC-12642)
Ta-base--W, fuel capsules of, pressure testing of SNAP-21A, 22:28014(R) (MND-3322-7)
Ta-base--W, hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
Ta-base--W, properties for use in large radioisotope heat source capsules, 22:10503 (NAA-SR-12635)
Ta-base--W, properties for use in SNAP-3 fuel capsule fabrication, 22:45766 (SC-DC-68-2385)
Ta-base--W, tensile properties of, 22:49760
TaC--W, welding of, method for diffusion, 22:6943
Tc--W, fabrication of, description of methods for, 22:52144 (BNWL-865)
Tc--W, phase studies of, 22:4807
Tc--W, tensile properties of, effects of temperature on, 22:52144 (BNWL-865)
Te--W, production by hydrogen reduction of fluorides in flame processes, 22:6965
ThO_2--UO_2--W, stability of molybdenum--rhenium--tungsten alloy-clad, in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
ThO_2--W, analysis for thorium, 22:30436(R) (UCRL-50006-68-1)
ThO_2--W, analysis for tungsten using flavonol, fluorimetric, 22:25282
ThO_2--W, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
ThO_2--W, density and weight loss of sintered, effects of heating rate on, 22:42344(R) (UCRL-50004-67-3(Pt.1))
ThO_2--W, heat transfer through cylindrical-edge and planar insulation samples of, 22:10481(R) (ALO-3634-6)
ThO_2--W, oxidation resistance of coated, at 4000°F in flowing air, 22:10919

  ThO_2--W-base, tensile properties of, effects of pressure and temperature on, 22:49767
  ThO_2--W-base, thermal conductivity at 100 to 350°K, 22:8738 (ORNL-4170, pp 80-92)
  Ti--W, phase diagrams, 22:31403
  UC--W, fuel dispersions of, irradiation swelling tests on, 22:27396(R) (AI-AEC-12638)
  UC--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
  UC--W, phase diagrams of, 22:7065
  UN--W, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
  UO_2--^{184}W, fuel elements for rocket reactors of cermets of, description of tungsten-clad, 22:42349(P)
  UO_2--W, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
  UO_2--W, extrusion and oxide deformation of fiber-reinforced composites of, 22:41012 (N-68-18610)
  UO_2--W, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
  UO_2--W, fabrication of gridded fuel elements of, methods for, 22:8816(P)
  UO_2--W, fuel element assemblies of, description of rocket reactor tungsten-clad multi-plate, 22:35574(P)
  UO_2--W, fuel fabrication by hot isostatic compaction of, description of thin plate and rod, 22:39905 (N-68-21705)
  UO_2--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
  UO_2--W, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
  UO_2--W, recrystallization kinetics at 600 to 1800°C, 22:36550
  UO_2--W, temperature gradients for fuel elements of, determination of allowable, (E), 22:39904 (N-68-14986)
  W--WC, welding of, method for diffusion, 22:6943
  W--Y_2O_3, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
  W--ZrB_2, performance as round-hole extrusion die nibs, 22:8719
  W--ZrO_2, extrusion and oxide deformation of fiber-reinforced composites of, 22:41012 (N-68-18610)
  W--ZrO_2, phase studies of cermets of, 22:763
TUNGSTEN BORIDES
  compatibility with zirconium dioxide at high temperatures, 22:21767
  crystal and electronic structure of, determination by x-ray diffraction, 22:38640
  crystal structure and lattice constants of, 22:45789
  isotope effect in, superconducting, (E/T), 22:11390
  polishing of, effects of preparation on, 22:740
  reactions with tungsten at 2500°C, 22:4894
  thermal conductivity at room temperature, 22:679
  LaB_6--WB, preparation and physical properties of, 22:23732
  UO_2--WB_2, reactions with steam at high temperatures, 22:17173
Tungsten Bronze (The sodium-tungsten alloy)
    see Tungsten Alloys
TUNGSTEN BRONZES
  (For specific tungsten bronzes (M/sub x/WO_3), see headings of the type Sodium Tungsten Bronze)
    see also Europium Tungsten Bronze
    see also Gadolinium Tungsten Bronze
    see also Holmium Tungsten Bronze
    see also Lanthanum Tungsten Bronze
    see also Rare Earth Tungsten Bronze
    see also Thorium Tungsten Bronze
    see also Uranium Tungsten Bronze
    see also Yttrium Tungsten Bronze
TUNGSTEN CARBIDE OXIDES
  preparation by decomposition of hexacarbonyl, 22:34104
TUNGSTEN CARBIDES
  book: Strength of Hard Alloys, 22:34115
  coating for plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuels of, effects on burnup performance of, 22:39783(R) (NUMEC-3432-32)
  cracks in, effects of lapping on, 22:19634
  crystal lattice parameters of cubic, 22:38634(T) (LA-tr-68-27)
  crystal structure of, effects of production from cobalt solutions on, 22:15234 (COO-1198-501)
  crystal structure of, neutron diffraction studies on, 22:30557
  development, properties, and uses of, review of, 22:52179
  diffusion of carbon in, 22:38622 (LA-3795)
  elastic properties of WC, determination by sound velocity, 22:49830
  electric conductivity at 2 to 300°K, 22:31375
  electric conductivity of, temperature coefficient, (E), 22:28932
  enthalpy and entropy of WC, at 298.15°K to melting point, 22:11056
  extrusion through graphite dies at 1600 to 2400°C, process for, 22:8811(P)
  grinding and removal of layers of, using diamond abrasive wheels, 22:43640
  grinding of, economics of electrolytic, 22:15162
  grinding of, equipment and procedures for, 22:15239
  grinding of, method using metal-bonded diamond wheels, 22:15163
  growth of large monocrystals of, from cobalt flux, 22:49786
  hardness of, effect of lapping on, 22:19634
  hardness of, effects of high pressure and high temperature on, 22:52272
  mechanical and thermodynamic properties, analysis of, 22:49836
  metallography of, performance of aluminum oxide--resin mounts for, 22:26058 (RFP-1104)
  micrographs of hcp, computer methods for indexing, 22:36500
  performance as protective coating on steam lubricated bearings, 22:17073 (MTI-68-TR-13)
  preparation and fabrication of, review of developments in, 22:34023
  preparation and properties of, review on, 22:8762
  preparation of spherical granules of, 22:38612
  production from annealed tungsten films by carburization, 22:52174
  production from rhenium--tungsten alloys by carburization, 22:52173
  production of hard, wear-resisting coatings of, by chemical vapor deposition, 22:6966
  properties as crucible for liquid metals, 22:43654
  properties of, analysis of physico-mechanical, 22:52271
  properties of, used for electrodeposited coatings on metals, 22:2590
  radiation effects at 300 to 700°C, fast-neutron, 22:21779
  radiation effects on gross volume gain of, analysis of fast neutron, 22:48788
  radiation effects on WC, effects of dose on fast neutron, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  radiation effects on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
  reactions with liquid platinum, 22:12287
  separation from iron powder, flotation method for, 22:37841
  sintering of powdered, effects of pressure and temperature on, 22:2677
  thermodynamic properties of WC, 22:11056
  wear properties of, sodium effects on, 22:24925(R) (ANL-7427)
  welding at 1473 to 2273°K, method for diffusion, 22:6943
  welding coatings of, on machine tools, 22:19613
  wettability by bismuth, copper, and tin, 22:23752 (AERE-M/R-1746)
  Co--Mo--TaC--TiC--WC, properties for cutting tools, 22:8719
  Co--NbC--TaC--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
  Co--NbC--TaC--WC-base, phase studies using microprobe and acid etching, 22:34117
  Co--NbC--TiC--WC, properties of vacuum sintered, effects of carbide composition and carbon content on, 22:43658
  Co--NbC--WC, phase diagrams and properties of, 22:17183
  Co--NbC--WC, phase diagrams and properties of, 22:17183
  Co--NbC--WC, properties of cemented, effects of carbon and niobium carbide contents on, 22:41107
  Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:17163
  Co--TaC--TiC--WC, mechanical properties of, effects of carbon content on, 22:4861
  Co--TaC--TiC--WC-base, preparation and properties of, effect of copper on, 22:43645
  Co--TaC--WC, mechanical properties of, effects of carbon content on, 22:30388
  Co--TaC--WC, phase diagrams and properties of, 22:17183
  Co--TaC--WC, wear of sintered, effects of cobalt content, hardness, and tungsten carbide grain size on, 22:19635
  Co--TiC--WC, phase diagrams and properties of, 22:17183
  Co--TiC--WC, properties of, effects of carbon content on, 22:2696
  Co--TiC--WC-base, phase studies using microprobe and acid etching, 22:34117
  Co--WC, cracks and microhardness in, effects of lapping on, 22:19634
  Co--WC, creep deformation at stresses of 10,000 to 110,000 psi, 22:41109
  Co--WC, deformation at 800°C, effect of pressure loading rate on, 22:36542
  Co--WC, diffusion reactions with carbon steel, effects of carbon on, 22:19640
  Co--WC, fracture strength of, 22:17115(R) (NYO-2394-31)
  Co--WC, microstructure, 22:2681
  Co--WC, phase diagrams of, 22:15234 (COO-1198-501)
  Co--WC, sample preparation for electron microscopy examination, 22:2681
  Co--WC, sample preparation for x-ray examination, 22:2681
  Co--WC, sintering of powdered, effects of pressure and temperature on, 22:2677
  Co--WC, tensile properties of, effects of cobalt content on, 22:49856
  Co--WC-base testing of, by strain--stress bend, 22:23886
  Co--WC-base, creep at 800 to 1000°C and 10,000 to 110,000 psi stress, mechanisms of, 22:49834
  Co--WC-base, deformation model, 22:43585
  Co--WC-base, electrolytic machining of VK8, voltage balance relations for, 22:43638
  Co--WC-base, fracture of beam specimens of, effects of

    grain orientation and size on, 22:23886
  Co--WC-base, kinetics of peritectoid reactions in, 22:28840
  Co--WC-base, phase studies in solid state at 750 to 1200°C, 22:28840
  Co--WC-base, plastic deformation of, effects of composition and microstructure on, 22:23886
  Cr_3C_2--TiC--WC, reactions with liquid platinum, 22:12287
  Cr--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
  Mo--WC, welding of, method for diffusion, 22:6943
  Nb--Ni--TaC--TiC--WC, properties for cutting tools, 22:8719
  NbC--WC, preparation and properties of, 22:38629
  TaC--TiC--WC-base, preparation and properties, 22:19614
  TaC--WC, preparation and properties of, 22:38629
  TaC--WC, production on tantalum--tungsten alloys, measurement of carbon diffusion-induced, 22:729 (LA-DC-8803)
  TiC--UC--WC, fuel pellets of, description of cylindrical clad, 22:25067(P)
  TiC--WC, formation of titanium oxide on cutting tools of, effects of, 22:23899
  TiC--WC, reactions with liquid platinum, 22:12287
  W--WC, welding of, method for diffusion, 22:6943
TUNGSTEN CARBONYLS
  reduction by hydrogen for preparation of tungsten metal, 22:36447
TUNGSTEN CHLORIDE OXIDES
  $ReOCl_4$--$WOCl_4$, phase studies of, 22:4899
TUNGSTEN CHLORIDES
  preparation of WCl_6, method for, 22:4749 (BM-RI-6984)
  purification by adsorption and zone refining, 22:4749 (BM-RI-6984)
  purification by fractional distillation of WCl_6, 22:4749 (BM-RI-6984)
  purification by scrubbing in lithium chloride--potassium chloride eutectic, 22:4749 (BM-RI-6984)
  reduction by hydrogen to prepare vapor-deposited tungsten, 22:15160
  reduction of WCl_6, by cadmium or zinc for vapor deposition, 22:43549
  reduction to tungsten whiskers, vapor-phase, 22:23725 (BM-RI-7118)
TUNGSTEN COUPLES
  thermoelectric properties for ultrasonic thermometry from 2000 to 5000°F, analysis of, 22:14139(R) (NYO-3906-1)
  Re/W, fabrication of SEFOR hexagonal channel plutonium oxide (PuO_2)--uranium oxide (UO_2) pellet-type fuel element, description of, 22:44889(R) (GEAP-5629)
  Re/W, stability of VR5/20, in vacuum at high temperatures, 22:52176
  Re/W--W, calibration of, description of static, 22:35596(R) (IDO-17260)
  Re--W/W, calibration and performance at high temperatures, 22:612(R) (GEMP-69)
  Re--W/W, design and performance of, 22:36453 (LMEC-Memo-68-10)
  Re--W/W, electric insulation for, performance at 2000°R of beryllium oxide, 22:28916 (WANL-TME-1549)
  Re--W/W, performance at high temperatures, 22:15144 (GEMP-1002, pp 137-42)
  Re--W/W, performance of thermocouples of, in reactors, 22:45347(T) (AERE-Trans-1095)
Tungsten Dioxides
  see Tungsten Oxides
TUNGSTEN FLUORIDES
  crystal structure of WF_6, electron-diffraction study of, 22:33436
  hydrogen reduction for chemical vapor deposition of tungsten on copper, 22:6961
  hydrogen reduction in mixtures with rhenium fluoride for deposition on uranium dioxide spheres, 22:7044
  molecular motion in, fluorine-19 relaxation studies of, 22:10250
  pyrolysis for tungsten deposition on copper, 22:15155 (ORNL-TM-2074)
  reactions with binary ionic chlorides, 22:47145
  reactivity and thermal stability of WF_6, comparison of, 22:45072
  reduction by hydrogen for thermochemical deposition of tungsten, 22:11075
  reduction of WF_6, for production of tungsten tubes by vapor deposition, 22:8738 (ORNL-4170, pp 80-92)
  tungsten deposition from, flow rate effects on efficiency for, 22:27521(R) (ORNL-4236)
  UF_6--WF_6, analysis of, triple point depression curves for, 22:18689 (K-1697)
  UF_6--WF_6, phase equilibria of, liquid--solid, 22:52280
  UF_6--WF_6, phase studies of, liquid-vapor, 22:42671
  UF_6--WF_6, phase studies of, triple point depression curves for, 22:18689 (K-1697)
TUNGSTEN HYDROXIDES
  properties as ion-exchange material, 22:33552
TUNGSTEN IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  production of multicharged, from arc-discharge cyclotron ion sources, 22:29816
TUNGSTEN ISOTOPES
  nuclear charge radii of, measurements using K x-ray spectra, (E), 22:24887
  nuclear charge radii variations from isotope shifts of K x rays, (E), 22:18238
  nuclear quadrupole moments, (E/T), 22:11957
  separation from rhenium and tantalum isotopes by coprecipitation with iron hydroxide, effects of pH on, 22:45168
  x-ray spectra of, isotope shifts of K, (E), 22:27190
TUNGSTEN ISOTOPES W-172
  energy-level transition rotational constants for, (E), 22:30027
TUNGSTEN ISOTOPES W-174
  energy-level transition rotational constants for, (E), 22:30027
TUNGSTEN ISOTOPES W-176
  energy-level transition rotational constants for, (E), 22:30027
  energy-level transitions from rhenium-176 decay, (E), 22:27182
TUNGSTEN ISOTOPES W-177
  energy-level transitions from rhenium-177 decay, (E), 22:27182
TUNGSTEN ISOTOPES W-178
  beta decay of, hafnium-178 energy-level parities from, (E), 22:7719
  energy level at 343.5 keV, from rhenium-180 decay, (E), 22:27182
  energy-level transitions from rhenium-178 decay, (E), 22:35356
  energy-level transitions in ground-state rotational band from hafnium-176 (α,2n) reactions, (E/T), 22:39710
TUNGSTEN ISOTOPES W-179
  energy levels of, K = 1/2 rotational, (T), 22:20664
TUNGSTEN ISOTOPES W-180
  alpha decay of, α energies and half-life for, (E), 22:35323
  energy level at 1006 keV, two-quasi-particle, (E), 22:30041
  energy levels from beta and electron-capture decay of rhenium-180, (E), 22:3725
  energy levels from rhenium-180 decay, (E), 22:27182
  energy levels from rhenium-180 decay, two-quasiparticle, (E), 22:27181
  energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
  energy-level transitions from rhenium-180 decay, conversion coefficients and multipolarities of, (E), 22:35356
  energy-level transitions in ground-state rotational band from hafnium-178 (α,2n) reactions, (E/T), 22:39710
  energy-level transitions in, conversion electron spectra from, (E), 22:25664
  energy-level transitions in, identification of hindered isomeric E1, 22:1676
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  production and properties of short-lived isomeric, by proton reactions with tantalum at 10 MeV, (E), 22:24874
TUNGSTEN ISOTOPES W-181
  content in atmosphere over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
  electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
  energy levels of, K = 1/2 rotational, (T), 22:20664
  energy levels of, K = 1/2 rotational, (T), 22:20664
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
TUNGSTEN ISOTOPES W-182
  alpha fission cross section at 35 to 120 MeV, (E), 22:39640 (UCRL-17989, pp 127-57)
  alpha inelastic scattering at 8 MeV with Coulomb excitation, (E), 22:37351
  energy level at 1289 keV, magnetic moment of two-quasiparticle, (E), 22:24882
  energy level of, magnetic dipole and electric quadrupole moments of first excited 2^+, (E), 22:46798
  energy level transition, hyperfine center-of-gravity shift for E2, (T), 22:43897
  energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)
  energy-level spins and transitions from tantalum-182 decay, (E), 22:27171
  energy-level spins and transitions from tantalum-182 decay, (E), 22:18245
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, (E), 22:37351
  energy-level transition probabilities in, ratios of E2, (T), 22:16043
  energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
  energy-level transitions from Coulomb excitation, branching ratios, and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  energy-level transitions from tantalum-182 decay, (E), 22:35334
  energy-level transitions from tantalum-182 decay, multipole mixing ratios for, (E), 22:26929(R) (COO-

1420-139)
  energy-level transitions in ground-state rotational bands from hafnium-180 (α,2n) reactions, (E/T), 22:39710
  energy-level transitions in, K/L and K/L_3 internal conversion ratios for E2, (E), 22:53187
  gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
  Moessbauer spectra for 100-kev 2^+--0^+ transition in calcium tungstate, quadrupole splitting in, 22:32573 (MIT-2098-422, pp 69-94)
  neutron capture at 1 to 100 keV, average cross section for, (E), 22:39637 (RPI-328-123, pp 1-17)
  neutron capture resonances at 0.1 to 20 keV, (E), 22:22592 (RPI-328-112, pp 1-15)
  neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:50649
  neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
  neutron reactions (n,p) in reactor spectrum, cross section for, (E), 22:35301
  neutron resonance integrals for, reactivity measurements of effective, (E), 22:18270
  neutron total cross section at 0.6 to 25 MeV, effects of deformations on, (E/T), 22:32648
  nuclear charge distribution and transition quadrupole moment from x-ray spectra of μ-mesic, (E/T), 22:37281(R) (NYO-72-191)
  nuclear charge radius of, effects of collective excitations on, (E), 22:27192
  nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
  nuclear hyperfine interactions in, Moessbauer studies of, (E), 22:18302
  proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
  proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)
  x-ray spectra of μ-mesic, isotopic shift and electric quadrupole effects in, (E), 22:5817(R) (NYO-GEN-72-28)
TUNGSTEN ISOTOPES W-183
  alpha decay of, α energies and half-life for, (E), 22:35323
  alpha fission cross section at 35 to 120 MeV, (E), 22:39640 (UCRL-17989, pp 127-57)
  alpha inelastic scattering at 8 MeV with Coulomb excitation, (E), 22:37351
  deuteron reactions (d,p) at 12 MeV, cross sections for exciting gamma-vibrational levels in tungsten-184 by, (T), 22:3726
  energy level at 46.5 keV, lifetime measurement using Moessbauer effect, (E), 22:14013
  energy levels in high-lying rotational bands, inertial parameter for, (T), 22:27138
  energy levels of, K = 1/2 rotational, (T), 22:20664
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, (E), 22:37351
  gamma spectra of isomeric, (E), 22:28148
  gamma spectra of isomeric, high-resolution, (E), 22:30006
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  Moessbauer effect in tungsten metal following Coulomb excitation by protons, (E), 22:44254
  neutron capture at 1 to 100 keV, average cross section for, (E), 22:39637 (RPI-328-123, pp 1-17)
  neutron capture by, γ spectra from resonance, (E), 22:5809(R) (ANL-7354)
  neutron capture by, γ spectra from resonance, (E), 22:20578 (WASH-1079)
  neutron capture resonances at 0.04 to 12 keV, (E), 22:22592 (RPI-328-112, pp 1-15)
  neutron reactions (n,p) in reactor spectrum, cross section for, (E), 22:35301
  neutron resonance integrals for, reactivity measurements of effective, (E), 22:18270
  nuclear hyperfine interactions in, Moessbauer studies of, (E), 22:18302
TUNGSTEN ISOTOPES W-184
  alpha fission cross section at 35 to 120 MeV, (E), 22:39640 (UCRL-17989, pp 127-57)
  alpha inelastic scattering at 8 MeV with Coulomb excitation, (E), 22:37351
  energy level of, magnetic dipole and electric quadrupole moments of first excited 2^+, (E), 22:46798
  energy level transition, hyperfine center-of-gravity shift for E2, (T), 22:43897
  energy levels in γ-vibrational bands, rotational, (T), 22:20647
  energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)
  energy-level excitation in tungsten-183 (d,p) reactions at 12 MeV, cross sections for gamma-vibrational, (T), 22:3726
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, (E), 22:37351
  energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
  energy-level transitions from Coulomb excitation, branching ratios, and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  energy-level transitions from tungsten-183 neutron capture, (E), 22:5809(R) (ANL-7354)
  gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  neutron absorption resonance integrals for, effective, (E), 22:18271
  neutron capture at 1 to 100 keV, average cross section for, (E), 22:39637 (RPI-328-123, pp 1-17)
  neutron capture resonances at 0.1 to 17 keV, (E), 22:22592 (RPI-328-112, pp 1-15)
  neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
  neutron reactions (n,α) in reactor spectrum, cross section for, (E), 22:35301
  neutron resonance integrals for, reactivity measurements of effective, (E), 22:18270
  neutron total cross section at 0.6 to 25 MeV, effects of deformations on, (E/T), 22:32648
  nuclear charge distribution and transition quadrupole moment from x-ray spectra of μ-mesic, (E/T), 22:37281(R) (NYO-72-191)
  nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
  proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)
  x-ray spectra of μ-mesic, isotopic shift and electric quadrupole effects in, (E), 22:5817(R) (NYO-GEN-72-28)
TUNGSTEN ISOTOPES W-185
  concentration and stratospheric drift of, effects of meteorological factors on, 22:12447
  diffusion and transport in stratosphere, numerical models for predicting, 22:35942 (NYO-3654-4)
  energy levels of, K = 1/2 rotational, (T), 22:20664
  gamma spectra of isomeric, (E), 22:28148
  gamma spectra of isomeric, high-resolution, (E), 22:30006
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  half-life, (E), 22:18271
  radiation dose to rats from, administered orally, γ, 22:38212
  use as activation detector for measuring epithermal neutron spectra, 22:8348
  use as tracer in atmospheric circulation and diffusion studies, 22:40261
  use in studies of electrodeposition of tungsten alloys, 22:26031
  use in tungsten self diffusion measurements, 22:52174
TUNGSTEN ISOTOPES W-186
  alpha inelastic scattering at 8 MeV with Coulomb excitation, (E), 22:37351
  alpha reactions (He-3,xnyp) at 10 to 44 MeV, cross sections for, (E), 22:53179
  energy level of, magnetic dipole and electric quadrupole moments of first excited 2^+, (E), 22:46798
  energy level transition, hyperfine center-of-gravity shift for E2, (T), 22:43897
  energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)
  energy levels of, g-factors and lifetimes of 2^+ rotational, (E), 22:30042
  energy-level transition probabilities from α inelastic scattering with Coulomb excitation, (E), 22:37351
  energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
  energy-level transitions from Coulomb excitation, branching ratios, and probabilities of, (E), 22:29985 (ORNL-TM-2121)
  energy-level transitions from tantalum-186 beta decay, (E), 22:18301
  gamma energy shifts in μ-mesic atoms of, interpretation of isomer shifts for, (E/T), 22:50621
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  helium-3 reactions (He-3,xnyp) at 10 to 33 MeV, cross sections for, (E), 22:53179
  neutron absorption resonance integrals for, effective, (E), 22:18271
  neutron activation resonance integral and self-shielding factor for, epithermal, (E), 22:16011 (JUL-503-RX)
  neutron capture at 1 to 100 keV, average cross section for, (E), 22:39637 (RPI-328-123, pp 1-17)
  neutron capture experiments using liquid scintillation detector, γ spectra from resonance, (E), 22:48423 (RPI-328-133, pp 1-34)
  neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
  neutron capture resonances at 0.1 to 18 keV, (E), 22:22592 (RPI-328-112, pp 1-15)
  neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
  neutron resonance integral and Doppler coefficients, (E), 22:7693 (NAA-SR-12500)

- neutron resonance integrals for, reactivity measurements of effective, (E), 22:18270
- neutron scattering resonance integral for, (T), 22:37345 (N-68-21924)
- neutron total cross section at 0.6 to 25 MeV, effects of deformations on, (E/T), 22:32648
- nuclear charge distribution and transition quadrupole moment from x-ray spectra of μ-mesic, (E/T), 22:37281(R) (NYO-72-191)
- nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
- proton inelastic scattering with Coulomb excitation, γ angular distributions and yields from, (E), 22:29985 (ORNL-TM-2121)
- x-ray spectra of μ-mesic, isotopic shift and electric quadrupole effects in, (E), 22:5817(R) (NYO-GEN-72-28)

TUNGSTEN ISOTOPES W-187
- beta decay of, γ--γ angular correlations and spectra for, (E), 22:24835(R) (BARC-305)
- energy levels of, K = 1/2 rotational, (T), 22:20664
- metabolism in crickets and milkweed bugs, 22:6772 (ORNL-4168, pp 61-118)
- radiation dose from, deposited in rats, γ, 22:38212
- uptake from food and water by brown crickets and milkweed bugs, 22:30998

TUNGSTEN ISOTOPES W-188
- content in atmosphere over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)

TUNGSTEN ISOTOPES W-190
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304

TUNGSTEN ISOTOPES W-192
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304

TUNGSTEN OXIDES
- analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
- analysis for oxygen by neutron activation, 22:30457
- book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
- decomposition temperatures of, measurement of, 22:12980
- effects on decomposition kinetics in effects of x radiation on ammonium perchlorate, 22:47173
- electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
- formation of, galvanic-cell measurements of free energy of, 22:12980
- oxygen isotope exchange between molecular oxygen and, rate of, 22:27675
- production from rhenium--tungsten alloys, by oxidation, 22:52173
- properties as ion-exchange material, 22:33552
- reduction at high temperature, particle growth during, 22:52209
- reduction by hydrogen at 600 to 1000°C, interparticle gas composition during, 22:23893
- sintering of WO_3, shrinkage during, (E/T), 22:31512
- Al_2O_3--WO_3, radiation effects on catalytic dehydrogenation efficiency of, for butane, 22:25384
- Au--WO_2, production of thin-film, by sputtering, 22:722(R) (AD-648018)
- $CaWO_4$--WO_2--WO_3, phase studies on oxygenated bronzes in, at 400 to 1000°C, 22:7063
- CsF--H_2O--WO_3, phase studies and compound formation in, 22:45080
- Dy_2O_3--WO_3, sintering at 900°C, tungstate formation by, 22:47696
- Er_2O_3--WO_3, crystal structure of, 22:34103
- Er_2O_3--WO_3, phase studies of, 22:34103
- H_2O--KF--WO_3, phase studies and compound formation in, 22:45080
- H_2O--NH_4F--WO_3, phase studies and compound formation in, 22:45080
- H_2O--RbF--WO_3, phase studies and compound formation in, 22:45080
- Ho_2O_3--WO_3, sintering at 900°C, tungstate formation by, 22:47696
- MoO_3--WO_3, phase studies by powder x-ray methods, 22:45828
- Nd_2O_3--WO_3, crystal structure of, 22:34103
- Pt--WO_2, production of thin-film, by sputtering, 22:722(R) (AD-648018)
- Sm_2O_3--WO_3, crystal structure of, 22:34103
- TiO_2--WO_2, phase diagram, melting relations in, (E), 22:31517

TUNGSTEN SELENIDES
- crystal structure of WSe_2, band model of, 22:47712
- development of lubricants of, 22:52179

TUNGSTEN SILICIDES
- electron- and ion-emission by, in cesium vapor, (E), 22:24454
- formation during coating of silicon by tungsten, 22:759
- production by auxiliary metal bath procedure, 22:38614
- radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
- silicon epitaxial growth on layers of, on silicon, 22:759

TUNGSTEN STEEL
- analysis for tungsten by x-ray-fluorescence methods, 22:33211
- grain structure of austenitic, effects of ferrite on, 22:19548(T) (UCRL-Trans-10227)
- tempering behavior of, for hot work tools, 22:2635
- tempering diagrams of, use in selection of compositions for suddenly stressed tools, 22:21705
- C--Cr--Mn--Mo--Ni--Si--V--W, radiation effects on mechanical properties of, 2.5-MeV electron, 22:8790
- Cr--Mo--V--W, welding to chromium steel, factors affecting joint stability, 22:15159

TUNGSTEN SULFIDES
- development of lubricants of, 22:52179
- radiation effects on electric properties of $WS_{2.3}$, reactor, (E), 22:24417

TUNGSTIC ACID
- reduction to tungsten metal fibers, method using hydrogen, 22:43554

Tunicates
- see Urochordata

Tuning Circuits
- see Radio Tuning Circuits

Turbidimeters
- see Nephelometers

TURBINE BLADES
- corrosion and erosion by potassium vapor, test facility for, 22:4738
- corrosion testing of nickel--tantalum--titanium--tungsten, at 2100°F, 22:15150
- erosion minimization by materials optimization, 22:47672 (CONF-671007-5)
- erosion of nickel-plated stainless steel, by potassium vapor, 22:8698
- performance of Udimet M-252 in, 22:4784

Turbine Pumps
- see Pumps

TURBINES
- see also Blowers
- see also Compressors
- see also Gas Turbine Engines
- bearings for nuclear power plant, performance tests in turbulent regime for water lubricated journal and thrust, 22:8274
- bearings for, design data for liquid metal-lubricated, 22:23195 (NYO-3363-7(Vol.1))
- bearings for, testing of potassium--sodium lubricated tilting pad, 22:23196 (NYO-3363-7(Vol.2))
- cladding process for, arc strip, 22:15164
- component sizes for reactor closed-cycle, using argon and helium, 22:7850
- condensers for, design of optimum 0.5 to 0.1 psia exhaust jet, 22:42339 (AGC-3484)
- configuration of closed-cycle gas-cooled reactor helium-drive, description of optimum, 22:46941
- configuration of Hinkley Point 2 Reactor twin 660 MW, description of, 22:46970
- configuration of Oskarshamn Power Reactor, description of, 22:50758
- configuration of SGHWR, 22:42229
- configuration of SGHWR two-cylinder close-coupled tandem-compound 3000 rpm, description of, 22:53295
- construction of, description of progress during 1966 on, 22:16248(R) (EUR-3745)
- cycle study for HWOCR, 22:3813(R) (AI-CE-54)
- damage from moisture to saturated steam, prevention of, 22:18491
- description of 250 MW, for French gas-cooled reactors, 22:42228
- description of availability of small high-speed hermetically sealed steam, 22:22787(R) (ORNL-4216)
- description of direct-cycle gas, for Geesthacht Power Reactor, 22:39824
- description of, for use with saturated steam cycles, 22:16230
- design for British power reactors, review of, 22:18487
- design for power reactors, basic parameters of, 22:18490
- design for use with potassium vapor at high temperatures, 22:17100 (BNL-50089)
- design of 3-stage potassium, for testing, 22:647(R) (BNL-50077)
- design of Halden Boiling Reactor, effects of fluid flow on optimum, 22:35464(R) (HPR-99)
- design of saturated steam, for power reactors, 22:18489
- design of saturated steam, for power reactors, 22:18491
- design of saturated steam, for water-cooled power reactors, 22:18492
- design parameters for Obrigheim, 22:14189
- development for gas-cooled power reactors, 22:18488
- development of multi-reactor driven, for Pickering Power Reactor, 22:3809 (AECL-2941)
- development of potassium vapor, for large space power systems, 22:14734
- development of power reactor saturated-vapor, description of, 22:35511
- efficiency of Army Reactors (ML-1), effects of compressor parameters on, 22:14232 (TID-24219)
- erosion of blades of, effects of liquid metals and steam on, 22:36432 (ORNL-TM-2088)
- evaluation of large gas, for gas-cooled fast breeder reactors, 22:35466 (KFK-689)
- evaluation of various, for dual-purpose plants, 22:3813(R) (AI-CE-54)
- flow meter calibration for Halden Boiling Reactor, description of, 22:20814 (HPR-79)
- journal bearings for, cavitation erosion in liquid

  - mercury lubricated, 22:8271
  - materials for steam, requirements of, 22:47672 (CONF-671007-5)
  - operation of gas, optimum compression efficiency for, (T), 22:16179
  - performance of closed-cycle gas, in high-temperature gas-cooled reactors, 22:39821
  - performance of gas, effects of working fluid on, 22:2270 (NYO-3237-9)
  - performance of potassium, in space power systems, 22:12975
  - performance prediction for large, operating with saturated and low superheat steam, 22:16229
  - performance problems in nuclear power plants, review of, 22:37453
  - performance with one-cycle helium and two-cycle helium--steam systems, 22:30219
  - process-fluid lubrication of, in nuclear power plants, 22:8266
  - radial clearances in, radiometric instrument for controlling and measuring, 22:2287
  - seals for, development of dynamic, 22:23202
  - use in nuclear MHD power plants, engineering problems in, 22:37503
  - water flow through, radioactive tracer method for measurement of, 22:14718
- Turbogenerators
  - see Electric Generators
- Turbulent Flow (Fluids)
  - see Fluid Flow (Turbulent)
- Turbulent Flow (Gases)
  - see Gas Flow (Turbulent)
- TURKEY
  - fallout monitoring in, Aug. 1965 through July 1966, 22:181(R) (TAEC-D-5)
  - radiation processing of grain in, design of industrial-scale facility for, 22:4717
- **TURKEY POINT POWER REACTOR, UNIT 3**
  - core for, effects of moderator coefficient of reactivity on stability of, 22:53268 (DOCKET-50250-1)
  - regulatory action on, AEC, 22:44854
- TURKEY POINT POWER REACTOR, UNIT 4
  - core for, effects of moderator coefficient of reactivity on stability of, 22:53268 (DOCKET-50250-1)
  - regulatory action on, AEC, 22:44854
- Turkeys (Meleagris)
  - see Meleagris under Aves
- TURPENTINE
  - effects on suppression of febrile reactions in irradiated rabbits, 22:49511
- TURPS (Terrestrial Unattended Reactor Power System-Martin Co.)
  - see Nuclear Auxiliary Power Systems
- Turret Reactor
  - see Los Alamos Turret Reactor
- Turtles
  - see specific names under Reptilia
- TUTTON SALTS
  - magnetic resonance in, cross relaxation in extra ENDOR spectrum of VO^{2+} in, (E), 22:34742 (COO-1112-161)
- TVA-Browns Ferry Reactor-1
  - see Browns Ferry Power Reactor, Unit 1
- 2X Device
  - see Magnetic Mirror Machines
- **TYLOSIN**
  - radiation effects on stability of, effects of dose on γ, 22:21421
- **TYRAMINE**
  - content of human urine, effects of electromagnetic waves and vibration on, 22:25970
- TYROSINE
  - components of bovine serum albumin in relation to luminescence, 22:28289 (ORNL-4100, pp 178-201)
  - content of human urine, effects of electromagnetic waves and vibration on, 22:25970
  - content of tissues of rats, tritium tracer study of, method for, 22:49201
  - effects on γ-induced deamination of glycine, 22:2125
  - polymers of, radiolysis of aqueous solutions of, pulse, 22:27829
  - polymers, radiation effects on monolayer properties of synthetic, γ, 22:40586
  - radiation effects on acceptor function of RNA specific to, x, 22:23421
  - radiation effects on content of, in blood of mice, whole-body, 22:19261
  - radiation effects on content of, in RNAase, effects of dose on γ, 22:28378
  - radiation effects on content of, in thyroid gland of fetuses of monkeys, iodine-131 β and γ, 22:40727
  - radiation effects on production of, in fish, effects of dose fractionation on, 22:15125(R) (RLO-1730-2)
  - radiation effects on, in meat, review of, 22:52111
  - radiation effects on, in RNAase, effects of dose on γ, 22:45423
  - radioinduced damage to, effects of temperature on γ, uv, and x, 22:45394
  - radioinduced deamination of, to form ammonia and α-keto acids, γ, 22:40571
  - radioinduced luminescence in aqueous solutions of, uv and x, 22:19283
  - radiolysis of aqueous solutions of, effects of acidity on γ, 22:16579
  - radiolysis of aqueous solutions of, effects of concentration, oxygen, and pH on kinetics of, 22:42773
  - radiolysis of aqueous solutions of, pulse, 22:27829
  - uptake by ACTH during synthesis in pituitary gland of adrenalectomized or x-irradiated rats, 22:23458
  - yields in reactions between hydrogen atoms and ribonuclease, 22:48878(R) (NYO-3242-29)
- TYROSINE AMINOTRANSFERASE
  - degradation of, effects of actinomycin D and cycloheximide on, 22:28287 (ORNL-4100, pp 160-4)
  - radiation effects on content of, in liver of rats, effects of glucagon, hydrocortisone, and starvation on whole-body, 22:19271
  - synthesis by liver of rats, effects of glucagon, growth hormone, and insulin on, 22:7955 (ORNL-P-3466)
  - synthesis in cultured hepatoma cells, effects of hormones on, 22:28289 (ORNL-4100, pp 178-201)
  - synthesis in liver of rats, combined effects of adrenalectomy, partial hepatectomy, and hydrocortisone on, 22:28289 (ORNL-4100, pp 178-201)
  - synthesis in perfused liver of rats, effects of hormones on, 22:28287 (ORNL-4100, pp 160-4)
- TYROSINE, 3,5-DIIODO-
  - iodine-131-labeled, method for preparation of, 22:30983
  - precursors of, development of tracer techniques for study of, using multiple radioisotopes, 22:19284
  - radiation effects on stability of iodine-131-labeled, β and uv, 22:30983
  - radiolysis of aqueous solutions of iodine-131-labeled, self-, 22:127 (RCC-R-209)
- TYROSINE, IODO-
  - iodine-131 exchange with iodine of, analysis of enzyme system for, 22:6729
  - iodine-131-labeled, method for preparation of, 22:30983
  - precursors of, development of tracer techniques for study of, using multiple radioisotopes, 22:19284
  - radiation effects on content of, in plasma of euthyroid and hyperthyroid patients, iodine-125 and iodine-131 β, 22:21582
  - radiation effects on stability of iodine-131-labeled, β and uv, 22:30983
  - use of iodine-125-, iodine-131-, iodine-132-, or technetium-99-labeled, for study of iodine metabolism in thyroid of man, 22:14918
- TYUYAMUNITES
  - age of, thorium-230 accumulation method for estimation of, 22:30695
- TZC (MOLYBDENUM ALLOY)
  - corrosion by liquid potassium at 400 to 1300°F, 22:647(R) (BNL-50077)
  - corrosion by potassium at high temperatures, 22:12975
  - creep at 1800 to 2200°F, 22:38537 (N-68-17372)
  - creep at high temperatures, 22:41057
  - creep in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
  - creep testing at high temperatures, 22:43568 (N-68-13631)
  - erosion by potassium, effects of temperature on cavitation-type, 22:52126 (BNL-50127)
  - Cr-base--TZC--Y, hardness at 750°C, effects of impurities on, 22:15179 (GEMP-1002, pp 83-93)
  - Cr-base--TZC--Y, stress-rupture rates of warm-rolled at 750°C, 22:612(R) (GEMP-69)
- TZM (MOLYBDENUM ALLOY)
  - brazing to copper at low temperatures, 22:2592
  - corrosion and erosion by potassium vapor, 22:4738
  - corrosion by ammonium hydroxide, 22:43530 (BM-RI-7169)
  - corrosion by chromic acid, 22:43530 (BM-RI-7169)
  - corrosion by copper--magnesium--uranium/magnesium chloride--potassium chloride--sodium chloride system at 700°C, 22:25442 (ANL-7375, pp 19-45)
  - corrosion by hydrochloric acid, 22:43530 (BM-RI-7169)
  - corrosion by metal chloride solutions, 22:43530 (BM-RI-7169)
  - corrosion by nitric acid, 22:43530 (BM-RI-7169)
  - corrosion by organic acids, 22:43530 (BM-RI-7169)
  - corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
  - corrosion by phosphoric acid, 22:43530 (BM-RI-7169)
  - corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
  - corrosion by potassium at high temperatures, 22:12975
  - corrosion by sodium hydroxide, 22:43530 (BM-RI-7169)
  - corrosion by sodium hypochlorite, 22:43530 (BM-RI-7169)
  - corrosion by sulfuric acid, 22:43530 (BM-RI-7169)
  - creep at 1800 to 2200°F, 22:38537 (N-68-17372)
  - creep at high temperatures, 22:41057
  - creep in vacuum at 1600 to 2600°F and 0.5 to 65 ksi stress, 22:49715(R) (N-68-23642)
  - creep testing at high temperatures, 22:43568 (N-68-13631)
  - fabrication by shear spinning, 22:6939
  - hardness of, effects of temperature on, 22:43615(R) (BNWL-710)
  - machining of, 22:6939
  - machining of, thermal expansion and reduced tool life in hot-, 22:21678
  - mechanical properties of, 22:8737 (ORNL-4170, pp 65-79)
  - oxidation protection by molybdenum silicide layer impregnated with aluminum--tin alloy, 22:19488

oxidation resistance of coated, at 4000°F in flowing air, 22:10919
tensile properties of arc-cast, effects of grain size on, 22:36487
tensile properties, review, 22:21651
testing for isotope capsule material, ultrasonic, 22:2607 (BNWL-547)
wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
welding of foils of, electron beam and Tig fusion, 22:23785
welding of fuel capsules of, methods of, 22:8707 (ORNL-4170, pp 229-32)
Mo--TZM, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Mo-base--TZM, radiation effects on electric conductivity of recrystallized, fast and thermal neutron, 22:19578 (BNWL-455, Paper 10.1-40)

U

UA-RR-1
see Reactors, Research
Ubiquinones
see Coenzyme Q
UDIMET 500 AND 700
corrosion by potassium at high temperatures, 22:12975
deformation and fracture at high temperatures and high strain rates, 22:4764 (AD-648451)
fabrication of, methods for powder metallurgy, 22:10978
joining to low-carbon steels, explosive method for, 22:38528
production of powders of, by atomization, 22:34048
UDP GLUCOSE--GLYCOGEN GLUCOSYLTRANSFERASE
radiation effects on activity of, in bone marrow cells of rabbits, x, 22:33728
Ultra-High-Temperature Reactor Experiment
see Los Alamos Turret Reactor
ULTRACENTRIFUGATION
equipment operation for bucket horizontal positioning at start of, 22:45224(P)
method for brazed joints, integration, 22:47401 (LA-DC-9383)
method for separating DDT from natural water, 22:50887 (K-1755)
use for determination of molecular weight of proteins, 22:16974(R) (ORO-2832-56)
use for isolation of mitochondria from Neurospora, 22:28286 (ORNL-4100, pp 153-9)
ULTRASONIC TESTING
cladding for Orgel-type reactor fuel elements, method for finned-tube, 22:39798
development of lens system for, evaluation of plastic materials for, 22:782 (SCL-DR-67-110)
development of mechanized systems for in-service reactor testing, 22:16126 (CONF-671011-, pp 220-7)
development status of industrial, 22:33620
effect of partially permeable interfaces on, (T), 22:274(T) (NP-tr-1582)
equipment and method for SNAP fuel capsule, 22:25624 (BNWL-649)
equipment and methods for, review of Battelle-Northwest, 22:36010 (BNWL-SA-1395)
equipment design for detecting radioinduced embrittlement in pressure vessel steel, 22:40493
equipment design for, to locate objects in high-temperature liquid sodium, 22:25588
equipment development for, 22:10525(T) (UCRL-Trans-10185)
equipment for, 22:22908(R) (SC-CR-68-3521)
equipment for discerning objects in liquid sodium, development of, 22:45348 (APDA-223)
equipment for lamb-wave imaging, for fuel plates, 22:2318
equipment for liquid sodium, lead titanate zirconate piezoelectric ceramic disks as, 22:4498 (APDA-210)
equipment for pressure vessel in-service, description of LACBWR, 22:42209 (SWRI-1228-P-11-8)
equipment for, of flaws in reactor fuel elements, 22:23365
equipment for, of isotopic heat sources, 22:6672 (BNWL-CC-1238-L)
instruments for nuclear applications, development of, 22:10632(R) (NYO-3622-12)
method for coating--metal bonding, 22:23240
method for defect detection in reactor fuel elements, 22:23236 (INR-856/XIV/PS)
method for determining elastic properties of MSBR graphite, 22:47675 (ORNL-4254, pp 183-240)
method for FFTF fuels, nondestructive, 22:1854 (BNWL-SA-1388, pp 9.1-6)
method for heavy-section steel plates for reactor pressure vessels, (E), 22:10524(R) (ORNL-4176)
method for in-space fabrication inspection, 22:43000
method for large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
method for nondestructive materials testing, review of, 22:10527
method for reactor materials, review of, 22:12956
method for SNAP fuel capsules, 22:25624 (BNWL-649)
method for thin-walled Zircaloy tubes, 22:45258
method for tubular fuel element cladding bonding, 22:14740
methods and equipment for elastic constants of metals and non-metals, review of, 22:49044
methods and recommended practices for, ASTM standards for, 22:40332
methods for brazed and welded joints, 22:40341
methods for radioinduced embrittlement of stainless steel, 22:11005 (BNWL-SA-1467)
methods for SNAP-15A fuel capsule welds, 22:10499 (BNWL-529)
methods for thin specimens, 22:8741 (ORNL-4170, pp 119-23)
methods for tube-to-spacer brazed joints, 22:8742 (ORNL-4170, pp 151-7)
methods for Zircaloy and stainless steel fuel element cladding, 22:14169
methods for Zircaloy/stainless steel transition joints, 22:43543 (WCAP-3374-7-P)
scanner design for, engineering drawings for, 22:25588
transceiver tube for liquid sodium, design of, 22:14129(R) (APDA-212)
use for measuring adiabatic elastic constants of lead--thallium alloy monocrystals, 22:19553
use for thermometry in liquid metal-cooled fast breeder reactors, 22:28209(R) (NYO-3906-2)
use in determining elastic moduli of high-temperature materials, 22:42994 (ANL-7299, pp 173-97)
use in evaluation of weld integrity in SNAP-21 and -23 fuel capsules, 22:12557 (BNWL-528)
use of narrow-beam transducers for scanning systems in liquid sodium at 600°F, description of, 22:35423(R) (APDA-224)
uses in selection of isotope capsule materials, 22:2607 (BNWL-547)
ULTRASOUND
absorption in superconductors having multiband anisotropic Fermi surfaces, (T), 22:13390
absorption in superconductors near transition temperature, peak effect in transverse, 22:52711
absorption in two-zone superconducting alloys, calculation by correlation function method, 22:9266
amplification in gaseous plasma, (T), 22:44120
attenuation in anisotropic superconductors, coefficient for limit ql much less than 1, (T), 22:17574
attenuation in dirty superconductors, effects of p-wave scattering on, (T), 22:5297
attenuation in gadolinium near Curie temperature and at frequencies of 30 tc 180 Mc, (E), 22:17739
attenuation in gadolinium near Curie temperature, (E), 22:15612
attenuation in liquid gallium at 8.5 to 56 Mc, effects of magnetic fields on, (E/T), 22:15400
attenuation in niobium near H/sub c2/, (E), 22:29407
attenuation in normal and superconducting indium, electronic contribution to, 22:17571
attenuation in normal and superconducting thallium at 0.5 to 4.2°K, (E), 22:38973
attenuation in normal lead at low temperatures, relation to superconducting-to-normal electronic attenuation ratio, 22:39012
attenuation in plastics, measurement of, 22:782 (SCL-DR-67-110)
attenuation in pure and lithium-containing potassium chlorides, 22:13534 (NYO-2471-31)
attenuation in pure strong-coupling superconductors, calculation of longitudinal, 22:39014
attenuation in pure type-II superconductors, anisotropy of, (T), 22:17547
attenuation in quartz, effects of neutron irradiation on, (T), 22:34793
attenuation in superconducting lead, amplitude-independent longitudinal, (E), 22:39013
attenuation in superconducting pure and cadmium-doped mercury, (E), 22:44055
attenuation in superconductors near transition temperature, model for amplitude dependence of shear-wave, 22:44053
drilling technique using, description of uranium oxide (UO_2) micro-, 22:37621
effects on cultured mammalian cells, synergistic effects of x radiation on, 22:30938 (UCRL-17751, pp 27-40)
effects on dissolution of molybdenum--uranium dioxide fuel cores in nitric acid, 22:2174 (KFK-573)
effects on dissolution of molybdenum--uranium dioxide fuel cores in nitric acid, 22:12408(T) (EURFNR-319)
effects on electrocrystallization of nickel deposits from aqueous media, 22:27619 (CEA-N-816, pp 90-101)
effects on electrodeposition of iron--molybdenum--nickel alloys on substrates, 22:52145
effects on electrolytic deposits of copper and nickel, 22:25451 (CEA-N-616, pp 145-51)
effects on insects for population control, 22:17068
effects on iodine-131 metabolism in guinea pigs, effects of dose on, 22:49594
effects on iodine-131 uptake by thyroid gland of rabbits, 22:437
effects on NMR line of indium-115 in intermetallic InSb, (E), 22:17781
effects on productivity of potatoes, 22:12942
effects on superconducting electronic attenuation in

indium, (E), 22:17541
radioinduced waves of, in eye, pathological effects of laser, 22:40940
use for determining bubble dynamics from neutron-induced cavitation in tetrachloroethylene, 22:25602
use for determining neutron-induced cavitation in tetrachloroethylene, 22:25603
use for level indicator in liquid metal-cooled fast reactor, description of, 22:42292(P)
use for removal of radioisotopes from skin, combined effects of decontaminating solutions on, 22:40708
use for thermometry in LMFBR-type reactors, testing systems for, 22:53281(R) (NYO-3906-3)
use for welding of metals in ultrahigh vacuum, 22:10440 (UCRL-13331)
use in drawing metal tubes, 22:34032
use in extrusion of graphite, 22:28908(P)
use in instrumentation for nuclear applications, 22:647(R) (BNL-50077)
use in measuring modulus of elasticity in dense titanium nitride and zirconium nitride, 22:38630
use in measuring residual surface stresses of materials, 22:14737 (CONF-671011-, pp 168-83)
velocities in tungsten at 25 to 1480°C, 22:15169 (ANL-7272)
velocity in liquid metals, 22:36543 (ANL-7450, pp 39-74)

ULTRAVIOLET RADIATION
absorption of extreme, in upper atmosphere, photoelectron production from, (T), 22:36840
book: Introduction to Research in Ultraviolet Photobiology, 22:23672
book: Ultraviolet Radiation, 22:33900(T) (JPRS-41315)
detection from winter Milky Way, 22:886
detection of 1216 to 1450 A solar, (E), 22:24191
detection of Lyman-α, in vicinity of Earth and in interplanetary space, (E), 22:29135
detection of Lyman-β and helium resonance radiation in night airglow, (E), 22:34418
detection of, design of G--M-type detector for, 22:21331(P)
detection of, design of photocathode--position-sensitive silicon detector for, 22:28083
detection of, sensitivity of electron channel multipliers for, 22:321
dosimetry in skin of man, 22:43323
dosimetry of, conductivity measurements of thermally-stimulated neutron-irradiated diamond for, 22:19160(R) (NYO-3409-4)
dosimetry of, design of instrument for medical, 22:40807
dosimetry of, use of bismuth-doped zinc sulfide for, 22:19160(R) (NYO-3409-4)
dosimetry of, use of pyroelectric zinc sulfide for, 22:19160(R) (NYO-3409-4)
dosimetry of, use of thermoluminescent calcium fluoride for, 22:47383 (TID-24640)
dosimetry under field conditions, instruments for, 22:28492
effectiveness for industrial sterilization of supplies, 22:52113
effects at molecular level in biological systems, review of, 22:49223
effects of solar extreme, on upper atmosphere heating, (E), 22:36802 (N-68-10358)
effects on 20-keto-steroids, deuterium isotope effects in, 22:67
effects on absorption coefficients of polymethyl methacrylate, 22:33397
effects on acid stability of erythrocyte membranes, effects of dose and sodium citrate on, 22:40557
effects on acid-fastness and virulence of Mycobacterium tuberculosis in relation to isoniazid sensitivity, 22:31297
effects on acid-fastness of mycobacteria, differentiation of strains by, 22:31296
effects on acridine orange-sensitized E. coli phage, 22:596
effects on acriflavine-sensitivity of Escherichia coli, 22:52037
effects on Actinomyces aureofaciens, combined effects of ethylenimine on mutagenic, 22:40654
effects on actinophages, aberrant and mutagenic, 22:49295
effects on activity of alcohol dehydrogenase in yeasts, 22:43255
effects on activity of bacteriophage Kappa, effects of temperature on, 22:589
effects on activity of dehydrogenase in bacteria, 22:43239
effects on activity of enzymes in sausage, 22:33999
effects on activity of hydrogenase in Proteus vulgaris, effects of light intensity on, 22:16978
effects on activity of lysosomes in skin of mice and rats, 22:51911
effects on activity of lysozyme in lambda bacteriophages, 22:38193(R) (EUR-3912)
effects on activity of transfer RNA, 22:51442
effects on activity of trypsin, effects of temperature on, 22:28344
effects on activity of trypsin, effects of temperature and wavelength on, 22:43247
effects on adrenergic and cholinergic neurohormonal transmitting substances, 22:45394
effects on aerosols of bacteria, L forms, and mycoplasmas, 22:23684
effects on aging process of films of chlorovinyl resin, 22:27780
effects on air of sanitoria, sterilizing, 22:52048
effects on aliphatic dipeptides in solid state, 22:36160
effects on allelic recombination in yeasts, repair of, 22:47513
effects on allergic reactions of skin of man to bithionol, halogenated salicylanilides, and hexachlorophene, 22:19361
effects on ammonium hexachlorotechnetates, spectral studies on yields in, 22:51024
effects on animal and human skin, protective effects of drugs and hormones against erythemic, 22:49393
effects on anthraquinone, mechanism of blue-fluorescing compound formation in, 22:27626 (MIT-905-108, pp 33-62)
effects on anthrax bacteriophages, effects of dose on mutagenic, 22:10752
effects on antibiotic activity of Actinomycetes, mutagenic, 22:12828
effects on antigenicity of DNA, 22:49197
effects on aqueous solutions of nucleic acids, 22:45097
effects on aromatic amines and heterocyclics in organic glasses at 77°K, spectral studies on, 22:35831 (PRNC-116)
effects on ascospores of Microsporum gypseum, mutagenic, 22:31023
effects on Aspergillus nidulans, mutagenic, 22:25812
effects on Aspergillus niger, mutagenic, 22:6782
effects on Aspergillus terreus, mutagenic, 22:23499
effects on Aspergillus, mutagenic, 22:8511
effects on ATPase system in peripheral nerve of crab, monochromatic, 22:23437
effects on Bacillus subtilis, combined effects of β-lysin on, 22:36415
effects on Bacillus subtilis, mutagenic, 22:28409
effects on bacteria and bacteriophages, review of HCR of lethal and mutagenic, 22:25793
effects on bacteria and spores, lethal, 22:15127
effects on bacteria in atmosphere of Moscow, 22:33984(T) (JPRS-41315, pp 44-50)
effects on bacteria, effects of acriflavine on synthesis of DNA and RNA following, 22:49644(R) (NYO-3893-1)
effects on bacteria, effects of copper on, 22:19366
effects on bacteria, effects of DNA incorporation of 5-bromouracil on mutagenic, 22:33787
effects on bacteria, effects of LET and oxygen enhancement ratio on, 22:6928
effects on bacteria, methods for detection of mutagenic, 22:52050
effects on bacteria, mutagenic and physiological, 22:40615(R) (EUR-3889)
effects on bacterial and mammalian cells, review of, 22:36419
effects on bacteriophage phi X 174 and infectious DNA, mutagenic, 22:45497
effects on bacteriophage T4B, mutagenic, 22:40625
effects on bacteriophage T1, latent, 22:17060
effects on bacteriophage, use of inactivating, for interference studies, 22:36417
effects on bacteriophages Ec9 and T6, inactivating, 22:49645
effects on barley seeds, 22:17053
effects on barley, mutagenic, 22:51502
effects on benzene--bromobiphenyl systems, 22:18805 (COO-913-23)
effects on benzene--cyclopentanone, yields in, 22:12340 (NYO-2668-15)
effects on binding energy in gaseous molecular systems, 22:12389
effects on biological activity of DNA and RNA in relation to radiation injuries to cells, 22:38234
effects on biologically significant molecules, repair of, by excision and photoreactivation, 22:49223
effects on biosynthesis of DNA, protein, and RNA in HeLa cells, microbeam, 22:36217
effects on blood serum proteins in relation to atherosclerosis, 22:45645
effects on bromouracil-induced mutants of Serratiaphage kappa, mutagenic, 22:40637
effects on bromouracil-labeled DNA, 22:21410(R) (YALE-2653-30)
effects on burst size of phage 22 in Salmonella typhimurium, effects of colicin I factors on, 22:26011
effects on β-galactosidase and synthesis of proteins in Escherichia coli, effects of energy, thymine, or uracil starvation on, 22:40566
effects on caffeine-resistant mutants of Escherichia coli, use of, for selection of excision-repair mutants, 22:14942
effects on capacity of L cells to support growth of encephalomyocarditis virus, 22:10861
effects on carboxypeptidase A, calculation of quantum yields for inactivation of, 22:470
effects on cell division in sand dollar zygotes, effects of BUdR on, 22:43432
effects on cell growth and mitosis in Physarum polycephalum in relation to sensitivity of plasmodium to starvation and treatment with actinomycin,

22:43475(R) (COO-1432-4)
effects on cell wall composition of Salmonella typhimurium, mutagenic, 22:51508
effects on cell wall synthesis in bacteria, 22:4712
effects on cells and organisms, use of nucleic acids to restore, 22:40766
effects on cells and spores of Bacillus megaterium, photobiology and photochemistry of, 22:28719
effects on cells, macromolecules, and viruses, review of, 22:33710(T) (JPRS-41315, pp 4-15)
effects on cells, repair of, in comparison to repair of x-radioinduced lesions, 22:14912(R) (NYO-3834-1)
effects on cellulose triacetate, 22:6296
effects on Chlamydomonas reinhardi, photoreactivation of, 22:31286
effects on Chlorella pyrenoidosa, mutagenic, 22:43290
effects on Chlorella vulgaris, mutagenic, 22:36220
effects on Chlorella, comparison of mutagenic x and, 22:51496
effects on chlorination of toluene, 22:10269
effects on chlorine in presence of oxygen, lifetimes and spectra of free radicals produced by, 22:45029 (UCRL-18043, pp 7-105)
effects on chlorophyll content and growth of plants, effects of wavelength of solar, 22:43484
effects on chloroplasts of cucumber and tomato plants, effects of wavelength on, 22:12940
effects on cholesterol content of human skin, effects of pigment on, 22:51338
effects on cholinesterase activity and content of acetylcholine in brain of rabbits, 22:45437
effects on chromatin in cultured neuroblasts in relation to uptake of thymidine, microbeam, 22:49178(R) (ORO-3546-6)
effects on chromic, chromate, and ferric ions, 22:45065
effects on chromosome replication in Escherichia coli, effects of 5-bromouracil on, 22:6786
effects on chromosomes and DNA synthesis in Chinese hamster cells, 22:47521
effects on chromosomes in bromouracil-substituted mammalian cells, protective effects of cysteamine against, 22:8588
effects on chromosomes in cells of hamster fibroblasts, effects of dose fractionation on aberrant, 22:33935
effects on chromosomes in Chlorella vulgaris, aberrant, 22:21631
effects on chromosomes in cultured mammalian cells, aberrant, 22:33899(R) (EUR-3906)
effects on chromosomes of amphibia, 22:28402 (ORNL-4100, pp 62-9)
effects on chromosomes of cultured Chinese hamster cells, aberrant, 22:21467
effects on chromosomes of Escherichia coli, mapping of sensitive gene loci to, 22:51530
effects on chromosomes, mitosis, and survival of cultured cells of Haplopappus gracilis, 22:19457
effects on cis-trans conversion in various compounds, 22:16571
effects on Claviceps, mutagenic, 22:45476
effects on cleavage and differentiation of blastomeres of Parascaris, 22:40950
effects on collagen in skin of mice, 22:6895
effects on colony-forming ability of Escherichia coli mutants, 22:52055
effects on color center induction in alkali silicate glass, spectral studies on, 22:50995
effects on complexes of polyuridylic acid, analysis of photoproducts from, 22:10727
effects on components of nucleic acids, chemical analysis of, 22:19286
effects on conidia of Aspergillus niger, mutagenic, 22:51550
effects on connective tissue of human skin, effects of age on, 22:49241
effects on content of melanin in melanomas of mice, 22:49196
effects on content of pyrimidine dimers in DNA of cultured human cells, 22:51957
effects on content of thiols in melanosomes isolated from mouse melanomas, protective effects of melanin against, 22:36182
effects on content of thiols in subcellular fractions isolated from melanomas in mice, 22:36182
effects on corneal epithelium of eyes of mice, 22:36352
effects on crosslinking of cinnamic acid ester polymers, 22:27833
effects on cultured amphibian cells, photoreactivation of, 22:45667
effects on cultured Chinese hamster cells, effects of wavelength on, 22:51881
effects on cultured human kidney cells, effects of dose on, 22:49210
effects on cultured mammalian cells in comparison to nitrosoguanidine, triethylene melamine, and x irradiation, mutagenic, 22:28289 (ORNL-4100, pp 178-201)
effects on cultured mammalian cells, dark repair of, 22:31217
effects on cytidylic acid, photochemical, 22:45441
effects on cytidylyl-(3'-5') cytidine, reaction scheme for dimeric, 22:51436
effects on degradation of titanium oxide coatings at low pressures, 22:17191
effects on denatured single stranded and native double stranded DNA, comparison of inactivating, 22:40615(R) (EUR-3889)
effects on development and growth of Blastocladiella emersonii, photoreactivation of, 22:31288
effects on development of ovaries in mice, effects of wavelength on uv, 22:8614
effects on development of testes of mice, effects of dose on, 22:15061
effects on diphenyl carbonate and related carbonates, intramolecular cage recombinations in, 22:27792
effects on dissociation in Bacillus brevis, 22:47504
effects on DNA and protein synthesis of Saccharomyces, 22:38240
effects on DNA content and nuclei of epidermal rat cells, 22:49253
effects on DNA content in nuclei of animal cells, 22:19249
effects on DNA content of nuclei in animal cells, microbeam, 22:8449
effects on DNA from crabs, 22:28288 (ORNL-4100, pp 166-77)
effects on DNA from Escherichia coli, lytic, 22:28288 (ORNL-4100, pp 166-77)
effects on DNA in Escherichia coli, effects of caffeine on photoreactivability of lambda phage for, 22:40965
effects on DNA in relation to production of antibodies in rabbits, 22:14928
effects on DNA of bacteriophage, effects of wavelength on physicochemical, 22:30942
effects on DNA of bacteriophage, repair of, 22:51321
effects on DNA of bacteriophages, combined effects of 5-bromouracil-substitution on, 22:31000
effects on DNA of Escherichia coli and phiR phage, mechanisms of recovery from, 22:12806
effects on DNA of Escherichia coli mutant, mechanisms for degradation, 22:49268
effects on DNA of Escherichia coli, effects of 5-fluorouracil on RNA synthesis following irradiation in relation to repair of, 22:40969
effects on DNA of Escherichia coli, effects of caffeine and 8-chlorocaffeine on dark repair of, 22:51435
effects on DNA of Escherichia coli, repair synthesis of, 22:52036 (ORO-3596-7)
effects on DNA of HeLa cells, effects of bromouracil substitution on repair of, 22:51838
effects on DNA of lambda phage, 22:40560
effects on DNA of mammalian cells, mechanisms of repair of, 22:38200 (UCSF-10-P-2-41)
effects on DNA of mammals, role of enzymes in repair of, 22:38409
effects on DNA of microorganisms, repair of, 22:19309(R) (SU-326-P-7-194)
effects on DNA of Paramecium aurelia, 22:28399 (ORNL-4100, pp 40-7)
effects on DNA of Salmonella typhimurium, 22:49653
effects on DNA of Schizosaccharomyces pombe, mutagenic, 22:10747
effects on DNA of T4 bacteriophage, effects of host cell radiosensitivity on, 22:51367
effects on DNA of Tetrahymena, effects of light on repair of, 22:21587
effects on DNA replication by lambda bacteriophage, 22:28362
effects on DNA synthesis and survival of HeLa cell cultures, effects of cell stage at exposure on, 22:6753
effects on DNA synthesis in Bacillus subtilis, 22:14943
effects on DNA synthesis in bacteria, 22:4712
effects on DNA synthesis in corneal epithelial cells of dogfish, tracer study of, 22:12769
effects on DNA synthesis in developing sea urchin eggs, 22:28337
effects on DNA synthesis in Escherichia coli, combined effects of acriflavine on, 22:8664
effects on DNA synthesis in hamster cells, effects of caffeine sensitization on, 22:23397(R) (COO-1704-4)
effects on DNA synthesis in HeLa cells, repair of, 22:43209 (UCSF-10-P-2-39, pp 2-51)
effects on DNA synthesis in L cells, theoretical calculation of, 22:31005
effects on DNA synthesis in yeast, 22:426
effects on DNA synthesis of Escherichia coli, effects of radiosensitivity on, 22:33727
effects on DNA, demonstration of system for repair of, 22:25822
effects on DNA, effects of pyrimidine dimer formation on photoreactivation of, 22:21424
effects on DNA, ESR spectra of, 22:12823
effects on DNA, identification of products of, 22:47464
effects on DNA, lethal and mutagenic photoproducts of, 22:25792
effects on DNA, photoproduct formed from, 22:33768
effects on early thymineless death of E. coli, effects of photoreactivation on, 22:591
effects on egg hatch, larval development, and adult longevity of tobacco bollworm and budworm, effects of dose and wavelength on, 22:36347
effects on Ehrlich ascites carcinoma cells, fluorescing, 22:33726

effects on electrical activity of membranes, use of, to determine structural relationship of sodium-potassium activated ATPase system, 22:23436
effects on electron density and melanin content of epidermal cells, 22:49179(R) (ORO-3578-4)
effects on elements under primitive earth conditions, abiogenic, 22:25789
effects on embryos of Drosophila melanogaster, gene site for sensitivity to, 22:28417
effects on embryos of Triturus alpestris, 22:45678
effects on energy transfer in poly(methyl methacrylate), effects of cumene and α-methylstyrene on, 22:2095 (COO-1224-15)
effects on energy transfer in polymethyl methacrylate containing p-terphenyl and nonluminescent aromatic molecules or sinks, 22:2094 (COO-1224-14)
effects on equilibrium of stereoisomers of cinnamic acid derivatives of plant origin, spectrophotometric measurement of, 22:14945
effects on ergosterol, chromatographic analysis of, 22:21425
effects on ergosterol, lytic, 22:12788
effects on Escherichia coli β, phage transduction of gene controlling, 22:36235
effects on Escherichia coli C and Schizosaccharomyces pombe, mechanism for effects of holding in buffer solutions on, 22:49457
effects on Escherichia coli in relation to sensitivity to colicins, 22:17015
effects on Escherichia coli in relation to spontaneous mutability, 22:40636
effects on Escherichia coli K_{12}, combined effects of penicillin on mutagenic, 22:21469
effects on Escherichia coli K12, mutagenic, 22:10754
effects on Escherichia coli K12, phage-induction, 22:8499
effects on Escherichia coli strain deficient in excision-repair of pyrimidine dimers, mutagenic, 22:33792
effects on Escherichia coli, analysis of mutagenic and sublethal, 22:31040
effects on Escherichia coli, chemical kinetics of photoreactivation of, 22:40945
effects on Escherichia coli, combined effects of hydroxylamine on mutagenic, 22:43283
effects on Escherichia coli, combined effects of heat treatment on mutagenic, 22:28722
effects on Escherichia coli, combined effects of xanthine analogs on mutagenic, 22:51538
effects on Escherichia coli, dark and light repair of pathological, 22:51526
effects on Escherichia coli, dark recovery from mutagenic, 22:49287
effects on Escherichia coli, dark repair of mutagenic, 22:17016
effects on Escherichia coli, determination of gene responsible for, 22:36229
effects on Escherichia coli, effects of acriflavine and caffeine on mutagenic, 22:36228
effects on Escherichia coli, effects of caffeine on mutagenic, 22:40648
effects on Escherichia coli, effects of lambda bacteriophage on recovery from, 22:45735
effects on Escherichia coli, effects of low temperature on lethal and mutagenic, 22:483
effects on Escherichia coli, effects of strain difference on recovery from, 22:36412
effects on Escherichia coli, effects of temperature on photoreactivation of, 22:28288 (ORNL-4100, pp 166-77)
effects on Escherichia coli, effects of time on photoreactivation of mutagenic, 22:49644(R) (NYO-3893-1)
effects on Escherichia coli, effects of, on RNA synthesis in presence of acriflavine, 22:49263
effects on Escherichia coli, effects of, on transfer during conjugation, 22:47646
effects on Escherichia coli, genetic mapping of mutagenic, 22:45487
effects on Escherichia coli, lethal and mutagenic, 22:49284 (NYO-2740-5, pp 201-66)
effects on Escherichia coli, method for determining specificity of mutagenic, 22:4593
effects on Escherichia coli, mutagenic, 22:25814
effects on Escherichia coli, mutagenic, 22:25822
effects on Escherichia coli, mutagenic, 22:52051
effects on Escherichia coli, photoreversal of lethal, 22:49644(R) (NYO-3893-1)
effects on Escherichia coli, protective effects of 1,3-cyclohexanedione and methylated derivatives against cobalt-60, 22:33853
effects on Escherichia coli, protective effects of 5-fluorouracil against, mechanisms for, 22:40782
effects on Escherichia coli, protective effects of acridine dyes against, 22:28274 (ANL-7278, pp 250-82)
effects on Escherichia coli, protective effects of nucleoproteins against inactivating, 22:36300
effects on Escherichia coli, repair synthesis of mutagenic, 22:40628
effects on Escherichia coli, review of lethal and mutagenic, 22:40622
effects on Escherichia coli, role of host-cell repair in recovery from, 22:12947
effects on ESR of 7-hydroxyxanthine, 22:6868(R) (NYO-910-60)
effects on ESR of KSH- and KSeH-doped KCl and KBr crystals, (E/T), 22:41649(T) (NRC-TT-1311)
effects on Eudorina elegans, lethal and mutagenic, 22:38241
effects on Euglena gracilis, effects of dyes and light on mutagenic, 22:25823
effects on excision of pyrimidine dimers from DNA by bacterial extracts, 22:28288 (ORNL-4100, pp 166-77)
effects on excitability characteristics of membranes, monochromatic, 22:23440
effects on eye of man, effects of wavelength on, 22:15042
effects on eyes and skin of man, 22:6891
effects on eyes of man, histological comparison of laser effects with xenon-lamp, 22:10879
effects on eyes of man, pathological, 22:49622
effects on fecundity of sperm of sea urchins, combined effects of psoralen on, 22:21563
effects on fertility of Escherichia coli populations, 22:49650
effects on fertilized eggs of toads, mutagenic, 22:49322
effects on fine structure of mast cells in skin of mice, 22:49571
effects on fluorescence of carotenes and carotenoids, effects of wavelength on, 22:19290
effects on fluorescence of carotenes and carotenoids, effects of solvent and temperature on, 22:43205(R) (COO-894-30)
effects on fluorescence of uranyl complexes with EDTA, 22:21073
effects on fluorescence spectra of DNA and furocoumarins, 22:4578
effects on formation of cytosine and thymine dimers in cells of mammals, effects of, on DNA synthesis, 22:21426
effects on formation of dimers and hydrates in pyrimidines, effects of complexing with purines on, 22:25791
effects on formation of pyrimidine dimers in DNA of Escherichia coli in relation to mutagenesis, 22:23457
effects on formation of thymine dimers in cells of Haplopappus and tobacco, 22:23397(R) (COO-1704-4)
effects on FR-1 satellite thermal-coating aging, 22:12719
effects on free radical formation in polyolefins, 22:6353
effects on furocoumarins and pyrimidine bases, 22:16995
effects on fusion activity of HVJ for cultured cells, 22:52043
effects on gaseous and liquid deuterium-labeled and normal propane, mechanism of, 22:33375(R) (COO-1528-26)
effects on gene function, genetic recombination, and replication of bacteriophage DNA, 22:40615(R) (EUR-3889)
effects on genes controlling respiration in yeast cells, mutagenic, 22:31024
effects on genetic factors in animals, review of, 22:51495
effects on genetic information in Escherichia coli, effects of m-RNA on repair of, 22:40970
effects on genetic recombination in oocytes of Drosophila melanogaster, 22:10748
effects on genetic recombination of bacteriophage mutants, 22:43288
effects on genic recombination and survival of yeasts, protective effects of photoreactivation against, 22:40973
effects on germ cell formation in larvae of frogs following exposure of eggs, 22:10849
effects on germ cells of frog embryos, effects of parabiosis on, 22:33917
effects on germinal plasma of frog eggs, effects of stage of oogenesis on, 22:10692
effects on giant cell formation by Escherichia coli mutant, 22:23495
effects on gland controlling respiration in yeast, mutagenic, 22:40638
effects on glass, yields in, 22:40125
effects on glasses containing cerium and neodymium, EPR study of color formation from, 22:9446
effects on glycine-containing dipeptides on silica gel, chromatographic analysis of, 22:51425
effects on glycogen content of human epidermal cells, uv, 22:49252
effects on grafting of vinyl or vinylidene groups onto ester- or phenyl-activated halogen-containing polymers, 22:14554(P)
effects on granulosis virus of butterflies, effects of visible light on recovery from, 22:2558
effects on growth cycle of Micrococcus radiodurans, 22:23410(R) (NYO-3319-17)
effects on growth of cultures of Ginkgo pollen and HeLa cells, photoreactivation of, 22:15069
effects on growth of Escherichia coli, effects of incubation in thymine-deficient medium on, 22:49648
effects on growth of green algae, effects of dose fractionation on, 22:36404
effects on growth of L cells, effects of exposure of cytoplasm or nucleus on, 22:49507

effects on growth of lettuce seedlings, effects of phytochrome on, 22:23679
effects on guaiazulene, 22:47184
effects on halide ions in inorganic glasses, spectral studies on, 22:30606
effects on Hemagglutinating Virus, effects of, on induction of Rous Sarcoma Virus in γ-irradiated mixed cell cultures, 22:8660
effects on herpetic keratitis virus, effects of pH and temperature on, 22:15042
effects on homozygous lines of corn, effects of pollen exposure on, 22:23484(R) (COO-1512-5)
effects on host cell DNA, repair of, by infecting T_4 bacteriophage, 22:51541
effects on human epidermis, acute, 22:52017
effects on human skin following contact with antibacterial agents in toilet soaps, pathological, 22:49598
effects on human skin in relation to differentiation of allergic dermatoses and photodermatoses, 22:28572
effects on human skin, effects of dose and dose fractionation on pathological, 22:43323
effects on human skin, effects of dose on incidence of erythema following, 22:21613
effects on human skin, effects of dose on pathological, 22:19459
effects on human skin, erythemogenic, effects of, on formation of kinins, 22:15108
effects on human skin, etiology of erythema induced by, 22:23608
effects on human skin, excretion of serotonin and 5-hydroxyindole acetic acid following erythemogenic, 22:21586
effects on human skin, protective effects of artificial and natural sunscreens against, 22:51972
effects on human skin, review of carcinogenic solar, 22:45699
effects on human skin, sensitizing effects of nalidixic acid on, 22:49424
effects on human skin, use of 5-fluorouracil for treatment of keratosis induced by, 22:51826
effects on hydrated x-irradiated barium chlorate, 22:20089
effects on hydrocarbon glasses at 77°K, ESR and optical studies on electrons trapped by, 22:30627
effects on hydrogenase activity in Proteus vulgaris, 22:21405(R) (CU-1803-12)
effects on immunity and physiology of young cattle, effects of trace elements on, 22:51894
effects on incidence of cataracts in industrial personnel, review of hazards from and protective measures against, 22:31089
effects on incidence of erythema in psoriasis patients, 22:15066
effects on incidence of skin allergies in man, following application of triacetyldiphenolisatin, shortwave, 22:28687
effects on infectivity of bacteriophages, effects of light on reactivation of, 22:40975
effects on infectivity of double and single stranded DNA of polyoma virus, 22:40615(R) (EUR-3889)
effects on infectivity of encephalomyocarditis virus, effects of, on inhibition of RNA synthesis by host cell, 22:8659
effects on infectivity of foot-and-mouth virus, 22:14944
effects on infectivity of T-even phages for Escherichia coli, combined effects of pyruvaldehyde on, 22:19460
effects on infectivity of tobacco necrosis virus in beans, Chenopodium, and tobacco, dark reactivation of, 22:52056
effects on influenza virus, effects of dose on, 22:4710
effects on informative RNA of macrophages in relation to antibody synthesis, 22:28391
effects on insects for population control, 22:17068
effects on interference activity of Newcastle Disease Virus in kidney cells from calves, 22:17059
effects on iodine-131-labeled compounds on chromatographic papers, 22:12313
effects on ionization of hydroaromatic ions in inorganic glasses, mechanism of, 22:30606
effects on isomerization of ammonium thiocyanate to thiourea, 22:2122
effects on KB cells, protective effects of hydrocortisone against, 22:51819
effects on kinetics of plaque growth of SP 3 and SP 8 bacteriophages of Bacillus subtilis, 22:10892
effects on Klebsiella bacteriophages, comparison of, with effects on coliphages, 22:33990
effects on L cells, biochemical and histological study of, 22:45438
effects on lambda phage DNA molecules in Escherichia coli mutants, repair of, 22:40629
effects on lambda phage induction in Escherichia coli, 22:10894
effects on lambda phage of Escherichia coli, effects of, on host control mechanisms, 22:52052
effects on lambda phage reproduction, effects of, on DNA synthesis, 22:51426
effects on lambda prophage excision in Escherichia coli, linkage relation following, 22:26015
effects on lambda prophage excision in Escherichia coli, lethality of, 22:26013
effects on leukemogenic properties of cell-free extracts from leukemic mice, 22:21458
effects on leukocyte affinity of fibroblasts, microbeam, 22:25728
effects on liberation of lambda prophage, effects of physiological conditions on, 22:40974
effects on light emission by tryptophan, 22:12822
effects on lipases of adipose tissues of rats, 22:19260
effects on lipogenesis and lipolysis in adipose cells of rat, 22:21441
effects on lips of man, histopathology of neoplastic solar, 22:45700
effects on liquid and vaporous nitroethane, mechanism and yields in, 22:10298
effects on liquid and vaporous nitromethane, mechanism and yields of, 22:10297
effects on luminescence in serum albumin solutions, effects of oxygen, pH, and temperature on, 22:28372
effects on luminescence of albumin solutions, effects of radioprotective compounds on, 22:28298
effects on luminescence of DNA, nucleosides, and nucleotides, mechanisms for, 22:49199
effects on luminescence of eosin, 22:14519(T) (CEA-tr-R-1907)
effects on luminescence of solutions of albumins, amino acids, dyes, and synthetic polymers, 22:28294
effects on luminescence of tryptophan, effects of water on, 22:51446
effects on luminescence of zirconium silicates, (E), 22:13582
effects on luminescence spectra of tryptophan and tryosine in aqueous solutions, 22:19283
effects on luminescent properties of uranium in sodium perchlorate solution, 22:33389
effects on lyosgenic and toxinogenic properties of phages produced by Corynebacterium diptheriae mutants, 22:593
effects on lysogenic bacteriophage of Staphylococcus aureus, mechanism of, 22:52053
effects on lysogenic phage of Escherichia coli, photoreactivation spectra of, 22:52057
effects on lysogenic properties of Escherichia coli, 22:51525
effects on lysogenic properties of T7 bacteriophages, effects of dose on, 22:40964
effects on lysozyme production during T4 infection of Escherichia coli, 22:26014
effects on magnetic resonance of free radicals in nucleotides and nucleosides, 22:43256
effects on man with photodermatitis, 22:8612
effects on man, effects of wavelength on therapeutic, 22:23561
effects on mast cells, effects of filtration and wavelength on, 22:51939
effects on measles virus replication in cultured human amniotic FL cells, 22:45736
effects on meiosis in algae, mechanisms for dark repair of, 22:19310
effects on melanocyte populations in skin of man, combined effects of methyldopa on, 22:21622
effects on membranes in relation to site of ATPase activity on membrane, monochromatic, 22:23437
effects on metabolism of human melanocytes, effects of methyldopa on, 22:49240
effects on Micrococcus glutamicus, comparison of chemical induction with mutagenic, 22:476
effects on Micrococcus lysodeikticus, characterization and transformation of mutagenic, 22:51510
effects on Micrococcus lysodeikticus, mutagenic, 22:51509
effects on Micrococcus radiodurans, lethal and mutagenic, 22:49309
effects on Micrococcus radiodurans, mutagenic, 22:23410(R) (NYO-3319-17)
effects on microorganisms of air of pharmacies, 22:33996(T) (JPRS-41315, pp 36-43)
effects on Microsporon gypseum, mutagenic, 22:45474
effects on Microsporon gypseum, mutagenic, 22:31028
effects on mitochondria, effects of ATP, magnesium, and manganese ions on, 22:28315
effects on mitosis and mitotic spindle in tissue cultures from salamanders, action spectra of microbeam, 22:14930
effects on mitosis in cells of onion root tip meristem, near, 22:10707
effects on mitosis in Escherichia coli, protective effects of light against, 22:15123
effects on mitosis in neuroblast cells of grasshoppers, 22:28407(R) (ORO-2575-41)
effects on mitosis in Saccharomyces, effects of metabolism and ploidy of chromosomes on repair of, 22:26005
effects on mitosis in slime molds, effects of cell phase and dose on, 22:43480
effects on mitosis of sea urchin eggs, analysis of recovery from, 22:25712 (COO-78-163, pp 39-63)
effects on mitotic cycle of mammalian cells in relation to inhibition of DNA synthesis, 22:30988
effects on molecular structure of DNA of phage T2 and T4, 22:40559
effects on molecular structure of membranes, monochromatic, 22:23440

effects on molecular structure of thermally denatured acid-soluble calf skin collagen, effects of dose on, 22:21415
effects on morphology and biochemistry of cell components, microbeam and partial-cell, 22:427
effects on morphology and virulence of Fusarium sporotrichioides and Fusarium poae, 22:25757
effects on morphology of cells in tissue cultures, 22:23635
effects on morphology of KB cells, electron microscopic study of, 22:40541
effects on morphology of nuclei of cultured animal cells, 22:19249
effects on mutant of Aspergillus nidulans, determination of sensitivity to, 22:28708
effects on mutants of Chlamydomonas reinhardi, effects of gene variation on recovery from, 22:10895
effects on mutants of E. coli, 22:592
effects on mutants of Escherichia coli B in relation to oxygen enhancement ratios, mechanisms for, 22:28715
effects on mutants of Saccharomyces, genetic control of, 22:47519
effects on mutants of Streptococcus, dark repair of, 22:23689
effects on mutation frequency and survival of Escherichia coli, combined effects of hydrogen peroxide incubation on, 22:49644(R) (NYO-3893-1)
effects on Neurospora conidia, effects of photoreactivation on, 22:28400 (ORNL-4100, pp 48-53)
effects on Neurospora crassa, effects of wavelength on photoreactivation of, 22:15114
effects on Neurospora crassa, mutagenic, 22:17018
effects on Neurospora mutants, photoreactivation of, 22:19312
effects on Neurospora, protective effects of acridine dyes against, 22:28404 (ORNL-4100, pp 97-103)
effects on nitrogen dioxide, role of oxygen in, 22:10298
effects on nitromethane, 22:2154
effects on nitrous oxide in methanol solution, effects of carbon tetrachloride and potassium hydroxide on gaseous, yields in, 22:23034 (IA-1128, pp 78-96)
effects on nonphotosynthetic bacteria, effects of carotenoid pigments on lethal, 22:4707
effects on normal and uv-sensitive strains of Aspergillus nidulans and Neurospora crassa, mutagenic, 22:31042
effects on nucleic acids of bacteria and bacteriophages, review of, 22:49251
effects on organic liquids, solids, and solutions, photochemical analysis of, 22:25798
effects on organic materials, protective effects of hydroxyaryl-1:3:5-triazine against, 22:33855(P)
effects on organic vitreous liquids, 22:6328
effects on organisms, comparison of, with x ray, biophysical, 22:52048
effects on origin of life on earth, 22:25788
effects on origin of life on earth, 22:33734
effects on osmoregulation in paramecia, effects of increased osmotic pressure and unbalanced salt solutions on, 22:15121
effects on oxidation of ethanol to acetaldehyde, determination of uranium by, 22:22947
effects on oxygen, kinetics of ozone formation in, 22:25422
effects on ozone in presence of hydrogen peroxide, lifetimes and spectra of free radicals produced by, 22:45029 (UCRL-18043, pp 7-105)
effects on P1 phage, reactivation of inactivating, by Escherichia coli Bs2, 22:47644
effects on P22 bacteriophage, mutagenic, 22:51527
effects on parainfluenza virus, effects of, on interferon response of cultured bovine cells to, 22:52049
effects on paramagnetic defects associated with hydrogen and deuterium adsorption on calcium and magnesium oxides, 22:45108
effects on partially-diploid Escherichia coli, genetic, 22:19319
effects on Penicillium purpurogenum, mutagenic, 22:23678
effects on permeability of skin, 22:49179(R) (ORO-3578-4)
effects on phage induction in donor Escherichia coli following mating with lysogenic recipient, 22:17058
effects on phage phi X 174, effects of 5-bromouracil on, 22:47560
effects on phage phi X 174, mechanism of sensitizing effects of 5-bromouracil on, 22:47558
effects on phage reproduction in lysogenic Escherichia coli, effects of, on activity of RNA methyltransferases, 22:38214
effects on phages and component infectious DNA, effects of wavelength on, 22:21420
effects on phages infecting Escherichia coli, 22:25720(R) (ORO-3630-2)
effects on phenazine in acid methanol solutions, 22:27626 (MIT-905-108, pp 33-62)
effects on phosphorescence of nucleotides and RNA, 22:51302(R) (HUX-2643-42)
effects on photochemistry and survival of spores of Bacillus megaterium, effects of temperature on, 22:49656
effects on photoproducts and survival of Bacillus megaterium spores, 22:28288 (ORNL-4100, pp 166-77)
effects on photoreactions in algae and isolated chloroplasts and quinones from algae, 22:4699(R) (RLO-1783-13)
effects on photosensitive diseases of skin in man, effects of antimalarial drugs on, 22:19410
effects on physiology of animals, review of, 22:33901(T) (JPRS-41315, pp 16-25)
effects on pigment formation, effects of intensity and time on, 22:40714
effects on pigment synthesis by Mycobacterium phlei, mutagenic, 22:40623
effects on pigment-free mutant of Nocardia minima, lethal, 22:45734
effects on pituitary gland of mice, effects of dose on histochemical, 22:6732
effects on ploidy of tomato seeds, effects of pollen exposure on, 22:52029
effects on poly(ethylene terephthalate), ESR studies on, 22:35870
effects on poly(methyl methacrylate) stereoisomers and copolymers, protection against, 22:35856
effects on polycrystalline amino acids, ESR study of free radicals formed following, 22:23444
effects on polyisobutene, 22:25414
effects on polymerization of 4-methyl-1-pentene with and without 2,2-azobis[2-methylpropionitrile], 22:8097(T) (AEC-tr-6908, pp 64-73)
effects on polymerization of cyclic ethers, 22:47192(P)
effects on polymerization of methyl methacrylate, effects of mixing on, 22:37775 (BNL-50082, pp 40-78)
effects on polynucleotides, 22:43223
effects on Polyoma virus, indirect, 22:21640
effects on production of melanin in human skin, combined effects of phenothiazine on, 22:4672
effects on productivity of hybrid fruit trees, effects of pollen exposure on, 22:45481
effects on properties and structure of tobacco mosaic virus, use of electron microscopy for detection of, 22:8663
effects on properties of SV40-adenovirus hybrid population, 22:8661
effects on protease activity in Aspergillus niger, mutagenic, 22:47516
effects on protein moiety of DNA, effects of, on type of mutation induced in genes, 22:25784
effects on protein, EPR studies of, 22:47459
effects on protoplasm of dinoflagellates, oxidation, 22:31259
effects on prototrophy in Chlamydomonas, mutagenic, 22:31046
effects on psoralen, mutagenic effects of, on Drosophila, 22:47457
effects on psoriasis vulgaris in man, evaluation of therapeutic, 22:4650
effects on purine N-oxides, 22:421(R) (NYO-910-57)
effects on pyrimidine bases, electronic aspects of lethal and mutagenic, 22:33786
effects on pyrimidines in DNA of Paramecium, photoreactivation of, 22:8445
effects on racemization of isotactic poly(methyl methacrylates), 22:30625
effects on radical formation in sulfur-containing amino acids, 22:10720
effects on rate of deuterium exchange between benzene and heavy water in presence of platinum oxide, 22:8058
effects on reactions of DNA and RNA with psoralen, role of thymine and uracil in, 22:47454
effects on reactions of skin of man to sandalwood oil, photoallergic, 22:38213
effects on readout of manganese-doped calcium fluoride thermoluminescent dosimeters, 22:25677
effects on recombination in lambda bacteriophages, effects of uv-radiosensitivity of host on, 22:19311
effects on recombination of unpaired electrons in peptides and proteins, 22:33747
effects on recombination of unpaired electrons in polypeptides and proteins, 22:49176(T) (JPRS-43645, pp 95-7)
effects on recombination-deficient mutants of Salmonella typhimurium, 22:40650
effects on reduction of nitrates in pure and seawater to ammonia and nitrites, 22:23078
effects on reduction of uranyl ions by acetaldehyde and propionaldehyde in aqueous and nonaqueous solutions, mechanism of, 22:35871
effects on reflectance of aluminum, magnesium, and nickel, 22:49771 (N-68-23560)
effects on reflectance of coated aluminum and nickel solar mirrors, 22:31440
effects on reovirus-induced interference in BSC-1 cells, 22:49647
effects on repair of lambda cb2 phages following treatment with hydroxylamine, 22:40968
effects on repair replication of HeLa cell DNA, 22:51410
effects on reproduction of lysogenic bacteriophages in Escherichia coli, 22:38193(R) (EUR-3912)
effects on reproduction of Mycoplasma pneumoniae, 22:52046
effects on resistance of Hypomyces solani to fungicides, 22:21639
effects on respiration of Escherichia coli, 22:28288 (ORNL-4100, pp 166-77)

effects on Rhizobium mutants, correlation of, with resistance to herbicides, 22:40653
effects on RNA in bacteriophages, effects of, on infectivity and replication in Escherichia coli, 22:33989
effects on RNA of tobacco mosaic virus, multiplicity reactivation of, 22:51529
effects on RNA of tobacco mosaic virus, protective effects of virus protein against, 22:28321
effects on RNA of viruses, effects of riboflavin and vitamin A on, 22:4708
effects on RNA synthesis in nucleolus of HeLa cells, autoradiographic study of, 22:28314
effects on RNAase in ethylene glycol and water, effects of dose and temperature on, 22:51352
effects on RNAase, ESR study of, 22:45409
effects on Saccharomyces cerevisiae, comparison of mutagenic to x-radiation, 22:31020
effects on Saccharomyces cerevisiae, dark repair of lethal and mutagenic, 22:28412
effects on Saccharomyces cerevisiae, effects of copper and iron compounds and hydrogen peroxide on inactivating, 22:36329
effects on Saccharomyces cerevisiae, mutagenic, 22:8502
effects on Saccharomyces mutants, genetic control of, 22:51491 (UCRL-18404)
effects on Salmonella typhimurium, characterization of mutagenic, 22:36233
effects on Schizosaccharomyces pombe, combined effects of caffeine on lethal and mutagenic, 22:28416
effects on Schizosaccharomyces pombe, mechanisms of mutagenic, 22:6789
effects on sedimentation of proteins, 22:36161
effects on seed of tomatoes, genetic, 22:17050(R) (EUR-3606)
effects on selenium, internal photoeffect spectral distribution from, (E), 22:20077
effects on sensitivity to tribromosalicylanilide in man, 22:43443
effects on septum formation by Escherichia coli, role of DNA in, 22:23432
effects on serological properties of porcine trypsin, 22:36159
effects on Serratia ETA bacteriophage, repair of, 22:36422
effects on Serratia marcescens kappa phage, mutagenic, 22:51554
effects on Serratia marcescens, effects of dehydration and temperature on lethal and mutagenic, 22:589
effects on Serratia marcescens, photosensitizing effects of prodigiosine on, 22:52047
effects on sexual differentiation in Allomyces arbusculus, 22:14981
effects on silicon dioxide--zirconium dioxide pigment, 22:11093
effects on single-stranded DNA in T4 bacteriophage, effects of host enzymes on repair of, 22:30953
effects on skin of animals and man, plasma jet, 22:51653
effects on skin of guinea pigs and man, effects of furocoumarins on, 22:529
effects on skin of guinea pigs and man, effects of erythropoietic protoporphyria on, 22:51877
effects on skin of man, 22:564
effects on skin of man following exposure to sun, 22:28641
effects on skin of man, combined effects of halogenated salicylanilides on, 22:43426
effects on skin of man, determination of wavelength for pathogenetic, 22:15071
effects on skin of man, effects of cyclamate on, 22:23570
effects on skin of man, effects of environment and seasonal variations on, 22:6899
effects on skin of man, effects of halogenated salicylanilides on, 22:15035
effects on skin of man, effects of window glass filter on, 22:19446
effects on skin of man, porphyric, 22:25987
effects on skin of man, protective effects of antirheumatic drugs against erythemic, 22:45594
effects on skin of mice, combined effects of croton oil on carcinogenic, 22:36343
effects on skin of mice, pathological, 22:49520
effects on skin, combined effects of drugs on photosensitive, 22:40770
effects on skin, effects of hereditary benign chronic pemphigus on, 22:36336
effects on skin, relation of crosslinkage theory of aging to, 22:49193
effects on slime-producing mutant of Escherichia coli, 22:33795
effects on small intestine of rats, in vivo-generated, 22:51882
effects on SP 8 and SP 3 phages of Bacillus subtilis, effects of thymine content on, 22:4709
effects on spacecraft thermal control materials, 22:11094
effects on sperm of frogs in relation to development of haploid embryos following fertilization, 22:25996
effects on spontaneous revertants of T-44 (lambda) mutants of Escherichia coli, 22:31298
effects on spores of Bacillus cereus, effects of β-2-thienylalamine on, 22:10896
effects on spores of Bacillus stearothermophilus, effects of salt and sugar contents on photoreactivation of, 22:47643
effects on spores of Colletotrichum gloeosporoides, comparison of x and, 22:36406
effects on sporulation of Alternaria solani, 22:49659
effects on stability of iodine-131-labeled mono- and diiodotyrosine, 22:30983
effects on stability of vitamin D in yeast cells, effects of cholesterol and oxygen on, 22:8448
effects on stimulus threshold of muscles in frogs following eosin perfusion, 22:17047
effects on strains of tobacco mosaic virus, effects of coat protein on, 22:49266
effects on strength of young female man, effects of acute suberythemic dose on, 22:49601
effects on Streptomyces sp., effects of inorganic salts on recovery from lethal and mutagenic, 22:23690
effects on structure of recombinant region of DNA in transformation heterozygotes of Diplococcus sp, 22:28353
effects on sulfur hexafluoride in presence of acetylenes, propene, and vinyl chloride, ESR spectral studies on free radicals produced by, 22:96(R) (RRL-2310-214)
effects on sulfur oxidation and ubiquinone in Thiobacillus thiooxidans, 22:23686
effects on sunlight deficiency in man, program for, 22:25967
effects on survival of Anacystis nidulans, effects of acriflavine on, 22:52028
effects on survival of Aspergillus orycae, Bacillus pseudoanthracis spores, and Escherichia coli, effects of dose on, 22:12946
effects on survival of auxotrophic Escherichia coli, mechanism for synergistic effects of x rays on, 22:43485
effects on survival of Bacillus subtilis spores and Micrococcus radiodurans, effects of low temperatures on, 22:33972
effects on survival of Bacillus subtilis spores in relation to photoproducts, 22:28288 (ORNL-4100, pp 166-77)
effects on survival of bacteria and bacteriophages in water aerosol, protective effects of inositol against, 22:45643
effects on survival of bacteria in ice, 22:28717
effects on survival of bacteriophage in Streptococcus pyogenes mutant strains, 22:38506
effects on survival of cultured Chinese hamster cells, 22:36361
effects on survival of cultured mammalian cells, 22:33899(R) (EUR-3906)
effects on survival of Escherichia coli, 22:16974(R) (ORO-2832-56)
effects on survival of Escherichia coli mutants, 22:45480
effects on survival of Escherichia coli, comparison of, with effects on Tetrahymena pyriformis, 22:36421
effects on survival of Escherichia coli, effects of dose fractionation on, 22:36416
effects on survival of Escherichia coli, effects of 5-fluorouracil and uracil starvation on, 22:51683
effects on survival of mice, combined effects of immune state and x-irradiation on, 22:43445
effects on survival of microorganisms on foods, 22:43515
effects on survival of microorganisms, space flight, 22:33988
effects on survival of mycoplasma, 22:49649
effects on survival of Netrium, photoreactivation of, 22:52023
effects on survival of protozoa, 22:21619
effects on survival of uv-sensitive mutants of Proteus mirabilis, 22:51539
effects on survival of vegetative and spore forms of bacteria and fungi, effects of dose on, 22:19459
effects on survival of yeasts, effects of dose fractionation on, 22:36403
effects on survival of yeasts, effects of incubation in distilled water prior to plating on, 22:31292
effects on synthesis of amylase by Bacillus subtilis, mutagenic, 22:36232
effects on synthesis of DNA in bromouracil-substituted mammalian cells, protective effects of cysteamine against, 22:8588
effects on synthesis of DNA in cells, 22:33933
effects on synthesis of DNA in Chlorella in relation to cell phase, 22:21631
effects on synthesis of DNA in Escherichia coli, effects of, on cell division, 22:36188
effects on synthesis of DNA in Escherichia coli, repair of, 22:8493
effects on synthesis of DNA in HeLa cells, combined effects of x rays on, 22:36402
effects on synthesis of DNA in Tetrahymena, 22:12744 (BL-207)
effects on synthesis of DNA, proteins, and RNA in Escherichia coli, effects of glucose, histidine, thymine, or uracil starvation on, 22:47451
effects on synthesis of peptides from ethylene glycol and hydroxylamine, 22:10721

effects on synthesis of polyphenylalanine by ribosomes of Escherichia coli, inhibitory, 22:4568
effects on synthesis of protein and RNA in granular cells of human epidermis, 22:10726
effects on technetium chlorocomplexes, spectral studies on, 22:8116
effects on temperature of upper atmosphere of solar extreme, (E), 22:24164
effects on tetrachloroethylene in pentane solutions, mechanism of formation of hydrochloric acid and trichloroheptene in, 22:23034 (IA-1128, pp 78-96)
effects on Tetrahymena pyriformis, repair of, 22:28399 (ORNL-4100, pp 40-7)
effects on Tetrahymena, effects of caffeine, growth cycle, and recovery capacity on, 22:49455
effects on Tetrahymena, effects of, on production of pyrimidine dimers, 22:51441
effects on Thanatephorus cucumeris, mutagenic, 22:31031
effects on thermal decomposition of lithium azide, 22:33448
effects on thermally stimulated currents and thermoluminescence in insulating and semiconducting diamonds, 22:24408 (IA-1128, pp 21-54)
effects on thiamine content of culture media, 22:28338
effects on thymidine incorporation in human lymphocytes DNA, 22:16991
effects on thymine dimers in Escherichia coli, 22:45445
effects on thymine dimers in human cell cultures, 22:28403 (ORNL-4100, pp 70-4)
effects on thymine in DNA, 22:36216
effects on thymine in DNA, effects of drying on dimerization, 22:23398 (IA-1128, pp 147-55)
effects on thymine in Escherichia coli DNA, effects of low temperature on photoproducts formation during, 22:51447
effects on thymine in nucleic acids of Streptococcus faecalis, protective effects of azathymine and azauracil against, 22:519
effects on tissue thromboplastin, inactivating, 22:47588
effects on tobacco mosaic viruses, effects of temperature on photoreactivation of, 22:4706(R) (RLO-1952-2)
effects on toxicity of biological insecticides, 22:8665
effects on toxicity of man to phenothiazine derivatives, effects of wavelength on, 22:33843
effects on transducing bacteriophage of Staphylococcus aureus, genetic study of, 22:51532
effects on transduction of resistance to penicillin and tetracyline, study of genetics of Staphylococcus aureus by, 22:51551
effects on transfer RNA in Escherichia coli, 22:33746
effects on transformation activity of bacterial DNA, effects of 5-bromouracil substitution on, 22:49185(R) (YALE-2653-33)
effects on transforming activity of DNA and RNA, effects of frequency on reversal of, 22:4580
effects on transforming activity of DNA in Haemophilus influenzae, 22:43490
effects on transforming and plaque-forming capacities of simian adenovirus SA7, 22:52040
effects on transforming DNA of Bacillus subtilis, combined effects of deoxyribonuclease, dimethylsulfate, and nitrous acid on, 22:30971
effects on transforming DNA of Hemophilus influenzae, effects of host-cell reactivation on assay of, 22:25715(R) (NYO-1371-51)
effects on transforming DNA of Micrococcus radiodurans, 22:51443
effects on transistors, 22:413 (AD-648236)
effects on treatment of vulcanized elastomers with acrylic acid to improve lubricity, 22:37816(P)
effects on tritium labeling of inositol in water, 22:12390
effects on tritium substitution in benzene and toluene, 22:16577
effects on trypsin, effects of exposure time and wavelength on, 22:12821
effects on tumor cells, 22:443
effects on tumor-producing capacity of Ehrlich ascites tumor cells in mice, combined effects of furocoumarins on, 22:25917
effects on ultrastructure of chloroplasts in radishes, 22:45727
effects on vapor-phase graft polymerization of solid acrylamide on polyethylene films, 22:27821
effects on vascular permeability in skin of guinea pigs, hairless mice, and rats, acute, 22:51996
effects on Verticillium sp., mutagenic, 22:43293
effects on vesicular stomatitis virus, mutagenic, 22:14995
effects on viral inflammation of cornea of man, therapeutic, 22:19389
effects on virulence of Ascochyta sp. for cultured leaves of plants, 22:28723
effects on viscosity of DNA solutions, 22:28382
effects on weight of swine, 22:8603
effects on wheat, combined effects of chemicals on mutagenic, 22:49317
effects on x-radiosensitivity of DNA synthesis in HeLa cells, 22:43209 (UCSF-10-P-2-39, pp 2-51)
effects on x-radiosensitivity of guinea pigs, 22:47571
effects on yeast, characterization of mutagenic, 22:51542
effects on yeast, effects of strain on repair of mutagenic, 22:51534
effects on yeast, mutagenic, 22:49285
effects on yeast, photoreactivation of, 22:26000
effects on yeasts, effects of thiopyronin on dark recovery of, 22:45644
effects on yeasts, lethal, 22:40638
effects on yeasts, mutagenic, 22:51506
effects on yeasts, RBE for, 22:12836
effects on Zea mays, photoreactivation of mutagenic, 22:40633
emission above active regions in solar corona, (E), 22:11182
emission from GX 3 + 1, (E), 22:41166
emission from stellar chromospheres, (T), 22:2770
emission from sun, history and spectrum of, 22:25787
emission from the Milky Way, (E), 22:36586
emission in space, effects of solar flares on, 22:6919
emission near Venus, (E), 22:8862
emission of far, from Milky Way, (E), 22:29051
energy distribution in solar continuum between 1550 and 2100 A, (E), 22:5011
generation in vivo, method for, 22:51882
hazards to eyes of industrial personnel, use of filter lenses for protection against, 22:40675
induced formation of cyclobutyl dimers and thymine photoproducts in DNA, 22:23409(R) (NYO-2798-32)
luminescence in x-irradiated, isolated rat brain, nitrogenic, 22:40923
measurement of solar, in USSR, 22:2729
polarization of synchrotron, reflecting polarimeter for measuring, 22:28202 (DESY-68/12)
production of solar, effect of magnetic channeling of conductive heat flow from corona in, (E/T), 22:41283
sorption by denatured x-irradiated DNA, 22:51407
spectra in aurorae, (E), 22:31703
spectra in aurorae, (E), 22:34380
spectra of early-type stars in for, (E), 22:47755
spectrum in extreme, intensities of carbon lines of solar, (E), 22:15301
spectrum of solar extreme, (E), 22:41168
use for detecting moisture-damaged wheat seeds, 22:12942
use for propylaxis and therapy of sunlight-deficiency diseases in underground personnel, 22:33837(T) (JPRS-41315, pp 26-35)
use for testing strains of Rhizobium meliloti for lysogenicity, 22:36418
use in detecting hot spots in electronic circuitry, 22:14738 (CONF-671011-, pp 247-55)

ULTRAVIOLET SOURCES
  development of microbeam, 22:17050(R) (EUR-3606)
  monochromators for xenon arc lamp, for biological material, development of, 22:38184

ULTRAVIOLET SPECTROSCOPY
  book: Vacuum Ultraviolet Spectroscopy, 22:24019
  developments in, review on, 22:25299
  equipment for aurora, engineering drawings for, 22:16378
  monochromator for, description of grazing incidence, 22:38139 (DESY-68/21)
  use for analysis of x-radiolysis products of aqueous solutions of aliphatic amino acids, 22:33763
  vacuum techniques in, development of ultrahigh, 22:16855

UMP
  see Uridine Monophosphates

2,8-UNDECADIENE-4,6-DIYNE
  fragmentation of, effects of deuterium on electron collision-induced, 22:37769

3,9-UNDECADIENE-5,7-DIYN-2-OL
  fragmentation of, effects of deuterium on electron collision-induced, 22:37769

UNDECANE
  stability in fuel reprocessing, chemical and radiolytic, 22:47226

UNDECANE, 2-METHYL-
  analysis of chemically degraded, for hydroxamic acids, methods for, 22:27557

Underground Bursts (Nuclear)
  see Nuclear Explosions, Underground

UNDERGROUND STRUCTURES
  blast response of concrete arches in, comparison of Snowball and laboratory-simulation tests on, 22:36013 (AD-665379)
  blast tests of aluminum-alloy arches buried in sand, scaling in, 22:36014 (AD-666204)
  construction of, use of radioisotopes in studies of, 22:37934(T) (AEC-tr-6933)
  design of, stress--strain analysis for, 22:6550 (NP-17183)
  response of small reinforced-concrete arches to 500-ton TNT surface burst in Snowball Project 3.2, 22:36012 (AD-661632)

Underwater Bursts (Nuclear)
  see Nuclear Explosions, Underwater

Underwater Thermoelectric Power Plant (Martin Co.)
  see Nuclear Auxiliary Power Systems

UNH (Uranyl Nitrate Hexahydrate)
  see Uranyl Nitrates

UNIMOD (Unified Modular Plant)
  see Reactors, Maritime

Unitary Symmetry
  see Symmetry Groups

United Arab Republic
see Egypt

UNITED KINGDOM
see also Great Britian
see also Scotland
cesium-137 content of brown trout in, 22:10773
cesium-137 content of drinking water in, during 1966, 22:15017
cesium-137 content of milk in, during 1958 to 1964 in relation to strontium-90 content, equation for calculation of, 22:6821
fallout monitoring in, 1967, 22:12439 (AERE-R-5575)
fuel consumption in, predictions of, 22:48957
iodine-131 content of thyroid gland of human children in, effects of nuclear testing on, 22:28467
isotopic-powered thermoelectric generator development in, RIPPLE program for, 22:8319
low-energy photon source development in, 22:258 (ORNL-IIC-10(Vol.2), pp 764-85)
nuclear energy research in, 22:30424
nuclear power program in, application of heavy water moderated reactors for, 22:25038
order regarding registration of fire detectors containing sealed radiation sources in, 22:31113
order regarding registration of instruments containing krypton-85, promethium-147, or tritium sources, 22:31112
ozone and strontium-90 contents of atmosphere of, seasonal variations in, 22:51102
production of radioisotopes in, use of power reactors for, 22:8313
production plant operation at Springfields, review, 22:28899
radiation processing of food in, 22:52123
radiation processing of foods in, 22:31304
radiation processing of foods in, restrictions on fast electron, γ and x, 22:15126
radiation processing of foodstuffs in, program of γ, 22:43511
radioactivity content of diet in, during 1965 to 1967, 22:40693
radioactivity in drinking water in, during 1965 and 1966, α, β, and γ, 22:40711
radioisotope content of diet in, during 1962 to 1964, barium-140, cesium-137, strontium-89 and strontium-90, 22:36256
radioisotope content of drinking water in, during 1965, cesium-137 and strontium-90, 22:28507
radioisotope content of human diet in, during 1965, 22:23518
radioisotope content of milk in, during 1962 to 1965, cesium-137, iodine-131, and strontium-90, 22:36258
research facilities for radioisotope applications in, 22:2315
safeguards in use of atomic energy in, agreement with IAEA and Japan on, 22:31073
shipping of radioactive materials in, insurance of, 22:28055
shipping regulations in, IAEA, 22:28050
strontium-90 content of brown trout in, 22:10773
strontium-90 content of drinking water in, during 1966, 22:15017
strontium-90 content of human bones in, during 1966, 22:19344
strontium-90 content of human bones in, during 1966, effects of age on, 22:15016
strontium-90 content of human bones in, effects of age and fallout on, 22:8533
strontium-90 content of milk in, during 1958 to 1964 in relation to cesium-137 content, equation for calculation of, 22:6821
uranium ore processing in, status of, 22:16990

UNITED STATES
beryllium toxicity case registry in, 22:49256
cerium-144 content of wheat and wheat products in, during 1962, 22:10775
cesium-137 content of foods imported from, 22:6827
cesium-137 content of milk in, during 1959 to 1963, 22:10775
cesium-137 content of wheat and wheat products in, during 1962, 22:10775
description of tour of portable cesium food irradiation facility in, 22:31311
electric power generation in, national policy for nuclear, 22:190
fallout distribution in stratosphere over western, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
fallout monitoring in, program of, 22:40661(R) (HASL-197)
incidence of leukemia, neoplasms, and malformations in human population of, exposed to fallout from nuclear weapons testing, 22:10775
iodine-131 content of bovine thyroid in, federal surveillance network for measurement of, 22:51570 (NP-17401)
iodine-131 content of milk in, during 1959 to 1963, 22:10775
iodine-131 content of non-milk food products in, during June to September 1962, 22:36282
iodine-131 content of thyroid gland of human children in, effects of nuclear testing on, 22:28467
iodine-131 content of thyroid in cattle in, during 1965, 22:28502
iodine-131 content of thyroid in cattle in, during 1966, 22:23520
iodine-131 content of thyroids of cattle in, during Jan. to March 1967, 22:28510
nuclear energy research in, 22:30424
ozone and strontium-90 contents of atmosphere of, seasonal variations in, 22:51102
plutonium content of airborne particulates in, during 1965, 22:25850
plutonium content of atmosphere in, during October to December 1966, 22:40690
plutonium deposition in, during 1965 to 1968, fallout, 22:40661(R) (HASL-197)
plutonium isotope content of atmosphere in, during Jan. to March 1967, 22:23515
plutonium isotopes content of precipitation in, during 1966 to 1967, 22:28506
plutonium-239 content of milk and total diet of man in, 22:28513
production of enriched uranium in, economics of, 22:23229
program of space radiobiology in, 22:47582
radiation chemistry in, review of industrial, 22:8153
radiation dose to human populations of, during 1962, effects of fallout from nuclear weapons testing on, 22:10775
radiation dose to population of, from diagnostic radiography, calculation of, 22:28531
radiation dose to thyroid in human children in, during 1952 to 1956, β and γ, 22:23510 (UCRL-70787)
radiation exposure of human populations in, from dental and medical sources, x, 22:28613
radiation processing of bacon and wheat for human consumption in, 22:33998
radiation processing of food in, 22:52123
radiation processing of foods in, 22:31304
radiation processing of foods in, roles of government an industry in, 22:19464
radiation processing of foodstuffs in, program of γ, 22:43511
radioactive content of atmosphere and precipitation in, during 1967, 22:28514
radioactive waste management in, policy for, 22:21299
radioactivity content of airborne particulates and precipitates in, during June 1967, 22:28506
radioactivity content of airborne particulates and precipitation in, during 1966, β, 22:28522
radioactivity content of atmosphere and precipitation in during May 1967, 22:23515
radioactivity content of atmosphere in, federal surveillance network for measurement of gross β, 22:51570 (NP-17401)
radioactivity content of atmosphere, precipitation, and surface waters in, during 1966, 22:28526
radioactivity content of diet in, during 1965 to 1967, 22:40693
radioactivity content of environs of, during 1966, effects of Chinese nuclear test on, 22:28505
radioactivity content of human diet in, during 1966, 22:28502
radioactivity content of surface waters in, during 1965, 22:28458
radioactivity content of surface waters in, during 1965, β, 22:36257
radioactivity content of surface waters in, during 1966, 22:28522
radioactivity content of surface waters in, during 1966, gross, 22:23518
radioactivity content of surface waters in, during 1967, alpha and beta, 22:28506
radioactivity content of surface waters in, during 1966, 22:28517
radioactivity content of surface waters in, during 1966, 22:28519
radioactivity content of surface waters in, during 1966, 22:28508
radioactivity content of surface waters in, during December 1966, 22:40697
radioactivity content of surface waters in, during February 1967, 22:40693
radioactivity content of surface waters in, during March 1967, 22:23515
radioactivity content of surface waters in, during November 1966, 22:40690
radioactivity content of surface waters in, during 1966, total, 22:23520
radioisotope content of atmosphere, milk, and precipitation in, during 1967, 22:28517
radioisotope content of diet of children in, during 1965, cesium-137, radium-226, and strontium-90, 22:28522
radioisotope content of diet of human adolescents in, during 1965, 22:25850
radioisotope content of diet, human bone, and milk in, during 1965, 22:28516
radioisotope content of human diet and of milk in, federal surveillance network for measurement of, 22:51570 (NP-17401)
radioisotope content of human diet in, during 1965, 22:28508
radioisotope content of human diet in, during 1965,

22:28458
radioisotope content of human diet in, during 1966, 22:28517
radioisotope content of human diet in, during 1966, 22:28519
radioisotope content of institutional diets in, during Jan. to March 1967, 22:28506
radioisotope content of institutional diets in, during 1966, 22:23520
radioisotope content of milk in, during 1965, 22:28458
radioisotope content of milk in, during 1966, 22:28519
radioisotope content of milk in, during 1966 to 1967, 22:28514
radioisotope content of milk in, during 1967, 22:28510
radioisotope content of milk in, during June 1967, 22:28506
radioisotope content of milk in, during May 1967, 22:23515
radioisotope content of surface waters in, during 1966 to 1967, 22:28514
radioisotope content of surface waters in, during Feb. 1967, 22:28510
radioisotope production in, reactor facilities for, 22:8316
reactor fuel burnup studies in, review of, 22:22733
role of government of, in problems of fallout, critical review of, 22:51635
shipping regulations in, implementation of IAEA, 22:28049
standards for maximum permissible whole-body radiation dose to man in, 22:38456
state regulations regarding use of dental x ray equipment in, 22:43325
strontium-89 content of milk in, during 1959 to 1963, 22:10775
strontium-90 content of bones of large game animals in Western, 22:8559
strontium-90 content of bones, diet, foodstuffs, and man in, 22:40699
strontium-90 content of fallout and human bones in, during 1965, 22:23522
strontium-90 content of foods imported from, 22:6827
strontium-90 content of foods in, 22:31077
strontium-90 content of human bone in, during Oct. to Dec. 1966, 22:23515
strontium-90 content of human bone in, federal surveillance network for measurement of, 22:51570 (NP-17401)
strontium-90 content of human bones in, during 1966, 22:28526
strontium-90 content of human bones in, during 1965, 22:36257
strontium-90 content of human bones in, during 1964 to 1965, 22:28512
strontium-90 content of human bones in, during 1965, 22:28502
strontium-90 content of human bones in, during 1966, 22:28508
strontium-90 content of human deciduous teeth in, effects of caries on, 22:51584
strontium-90 content of human diet in, during 1965, 22:36257
strontium-90 content of milk in, during 1959 to 1963, 22:10775
strontium-90 content of milk in, in relation to soil content during 1960 to 1963, 22:25852
strontium-90 content of precipitation in, during 1966 to 1967, 22:28506
strontium-90 content of surface waters in, during 1965 to 1966, 22:28510
strontium-90 content of surface waters in, during October 1965 to June 1966, 22:40693
strontium-90 content of wheat and wheat products in, during 1962, 22:10775
strontium-90 content of wheat in, during 1965, effects of geography on, 22:28528
tritium content of surface waters in, during 1964 to 1965, 22:28527
uranium ore deposits in, distribution of, 22:40276
uranium ore processing in, status of, 22:18991
uranium output of, 22:16726
uranium production and reserves in, 22:51111
uranium production and sales in, 22:10344
uranium reserves in, estimates of, 1967, 22:23174 (NP-17371)
uranium reserves in, estimation of, 22:6502

Unithiol
see 1-Propanesulfonic Acid, 2,3-Dimercapto-

UNIVERSE
abundance of deuterium, helium-3, and helium-4 in, primordial, (T), 22:34155
age of, (T), 22:43693
age of, (T), 22:5033
age of, (T), 22:29110
age of, (T), 22:43763
antimatter abundance in, (T), 22:52552
baryon inhomogeneity in early, 22:22334
black-body radiation in a cold, (T), 22:17313
charged-particle motion in conformally flat, (T), 22:35112
conference on, 22:43697
cosmic microwave background origin, 22:23950
cosmic-ray content of, (T), 22:8899
creation of matter in a closed, (T), 22:4987
de Sitter, compatibility with Mach's principle, (T), 22:38688
density inhomogeneities in, large-scale, (T), 22:17310
distances in, (T), 22:11154
Einstein equations for neutrino-filled, solution to, 22:29670
electromagnetic fields in, 22:49866
elementary particle creation in expanding, 22:44491
elementary particle creation processes in, (T), 22:43763
evolution of early, 22:34218
evolution of, (T), 22:41170
evolution of, (T), 22:45868
evolution of, early, (T), 22:15316
evolution of, solid state processes in, (T), 22:38696
expansion and geometry of, (T), 22:49969
expansion of very early, (T), 22:41233
expansion of, (T), 22:34154
expansion of, (T), 22:23927
expansion of, (T), 22:7092
expansion of, (T), 22:4924
expansion of, Hubble red shift in, 22:2737
formation of galaxies and galactic clusters, (T), 22:29060
formation of lithium, beryllium, and boron in expanding hot, (T), 22:15272
fragmentation of matter in early, (T), 22:36592
Friedmann models of, improved, (T), 22:47726
Friedmann, ghost images in inhomogeneous, 22:17220
galaxy formation in early, (T), 22:17248
galaxy formation in expanding, (T), 22:816
gravitational collapse of, (T), 22:2743
gravitational gas in, collective motions of relativistic, 22:20328 (LPTHE-TH-237)
gravitational instability in Einstein--de Sitter, (T), 22:47729
graviton density and accumulation in, (T), 22:22458
helium abundance in, (T), 22:17306
helium abundance in, origin of, (T), 22:5009
history of, (T), 22:4993
hydrogen recombination in hot model of, (T), 22:43751
isotropy of, (T), 22:17249
isotropy of, to red shift of Z approximately equal to 4, (T), 22:8872
kinetic theory of self-gravitating stellar system with uniform rotation, 22:17326
Lemaitre's model of, and log N--log S relation, (T), 22:11131
light propagation in inhomogeneous, (T), 22:11168
matter density in, (T), 22:29110
matter--energy density of, 22:15316
microwave background in Eddington--Lemaitre, (T), 22:5017
microwave background in steady-state, (T), 22:5020
microwave background in steady-state, (T), 22:13094
microwave background in, diffuse, (T), 22:808
model for, homogeneous, (T), 22:29114
model for, with pole at z approximately equal to 1.7, (T), 22:41269
model in pseudo-Euclidian space, imbedding of open magnetic, (T), 22:2735
model of, 22:2739
model of homogeneous and isotropic, evolving, (T), 22:13102
model of nonstationary, homogeneous, 22:34223
model of, Newtonian orbit in pulsating, 22:41174
model of, plane symmetric, (T), 22:52368
model of, singularity-free empty, 22:43752
model of, with magnetic field, (T), 22:21833
model with magnetic field in pseudo-Euclidian space, imbedding of, (T), 22:2732
model with time reversal, (T), 22:31574
models of the, (T), 22:5025
models of, numerical calculations on relativistic, 22:8870
models of, pressure effects on relativistic, (T), 22:23937
models of, relativistic, (T), 22:52427
models of, solutions for anisotropic, with and without magnetic field, (T), 22:43715
models of, spatially homogeneous, (T), 22:43788
models with both radiation and matter, Friedman, 22:840
neutrino temperatures in early, 22:22334
observable surface of part of Friedmann, (T), 22:52451
observational properties of homogeneous and isotropic expanding, (T), 22:31562
observations of parameters of, based on Lemaitre's model, (T), 22:11132
production and annihilation of matter in, (T), 22:52463
properties of matter at very early times in, equilibrium, (T), 22:17239
properties of the neutrino sea, (T), 22:21804
properties of, models for, 22:34224
radiation in, origin of black-body, (T), 22:52438
radiation polarization and spectrum in anisotropic, primeval, (T), 22:41189
relations among observable quantities in anisotropic and homogeneous, theoretical, 22:52459
relativistic models with both radiation and matter, (T), 22:52369

  scalar—tensor gravitation and the cosmic fireball, (T), 22:26120
  screening of remote objects by intervening galaxies in Eddington—Lemaitre, 22:43846
  self-consistent homogeneous isotropic models of, (T), 22:28980 (LPTHE-TH-68/7)
  singularities in, existence of space—time, (T), 22:26119
  space curvature as function of metagalactic radio background, (T), 22:13102
  spatial homogeneity in models of, (T), 22:29067
  speculations on the, (T), 22:17308
  stability of density waves in self-gravitating stellar system with uniform rotation, (T), 22:19714
  stability of isotropic, with cosmological constant, (T), 22:43760
  steady-state model of, relation to quantum electrodynamics, (T), 22:41171
  test of steady-state, (T), 22:26108
  theory of, principles of new, 22:8948
  thermal history of intergalactic hydrogen in, (T), 22:5032
  thermodynamic instabilities in an expanding, (T), 22:8920
  thermodynamics of, Dirac—Jordan hypothesis for, 22:49917
  time-symmetrical electrodynamics in expanding, (T), 22:52348
  topology of, 22:17319
  vibrations of, normal modes of, (T), 22:902
  vortical motions of photon gas in early, (T), 22:45879
  world models, dyadic analysis of spatially homogeneous, (T), 22:43764
  x-ray background in, diffuse, (T), 22:808

URACIL
  analysis for tritium distribution in, 22:47105
  decay of tritium-labeled, in Escherichia coli, degradation of DNA by, 22:19250
  effects on γ-radiosensitivity of hemin and yeasts, 22:51771
  effects on moths, mutagenic, 22:3974(R) (NYO-2902-11)
  effects on sexual differentiation in Allomyces arbusculus, 22:14981
  effects on uv-radioinduced photochemical reactions of RNA and psoralen, 22:47454
  effects on uv-radiosensitivity of Escherichia coli, deficiency of, 22:51683
  polymers, effects on x-radiosensitivity of uptake of phenylalanine by polysomes of rats, 22:45388
  production from gamma-irradiation of hydrouracil, 22:16595
  radiation effects from tritium decay in tritium-labeled, 22:14530
  radiation effects on aqueous solutions of, ionizing and uv, 22:45097
  radiation effects on powders of, free radical production in mixed γ and neutron, 22:21126
  radiation effects on uptake of, by Staphylococcus aureus, γ, 22:15125(R) (RLO-1730-2)
  radiation effects on, chemical analysis of uv, 22:19286
  radiation effects on, effects of ascorbic acid, nitrogen, and oxygen on x, 22:14530
  radiation effects on, electronic aspects of uv, 22:33786
  radiation effects on, in nucleic acids of Escherichia coli, comparison of ionizing, to effects of ozone and sodium hypochlorite, 22:51389
  radioinduced hydrogen cleavage from, descriptive model of γ, 22:45446
  radiolysis of de-aerated aqueous solutions of, γ, 22:458
  radiolysis of polynucleotides of, chemical analysis of γ, 22:30967
  starvation in Escherichia coli, effects of, on uv-radiosensitivity of Escherichia coli cultures, 22:40566
  starvation in Escherichia coli, effects of, on uv-radiosensitivity of synthesis of DNA, proteins, and RNA, 22:47451
  tritium exchange in aqueous solutions, effects of acidity on, 22:27699

URACIL, 5-AMINO-
  radiation effects on, electronic aspects of uv, 22:33786

Uracil, 6-Aza-
  see 6-Azauracil

URACIL, 5-BROMO-
  effects on dissociation in Bacillus brevis, 22:47504
  effects on plaque morphology of Serratiaphage kappa, mutagenic, 22:40637
  effects on transformation activity of uv-irradiated bacterial DNA, 22:49185(R) (YALE-2653-33)
  effects on uv- and x-radiosensitivity of chromosome replication in Escherichia coli, 22:6786
  effects on uv-radiosensitivity of HeLa cell DNA, 22:51838
  effects on uv-radiosensitivity of phi X 174 bacteriophage, mechanism of, 22:47558
  effects on uv-radiosensitivity of phi X 174, bacteriophage, 22:47560
  incorporation by DNA of bacteria, effects of, on uv-radiosensitivity, 22:33787
  photochemistry of derivatives of, in aqueous solution, 22:23409(R) (NYO-2798-32)
  role in repair of uv-irradiated DNA in Escherichia coli comparison of, to thymine, 22:19309(R) (SU-326-P-7-194)
  substitution in DNA of mammalian cells, effects of, on uv-radiosensitivity, 22:8588

Uracil, 5,6-Dihydro-
  see Hydrouracil

URACIL, 1,5-DIMETHYL-
  complexes with 9-methyladenine, radiation effects on, E studies on free radicals formed in γ, 22:23073

URACIL, 5-FLUORO-
  effects on γ-radiosensitivity of stomach cancer in man, 22:4679
  effects on synthesis of RNA in uv-irradiated Escherichi coli, 22:40969
  effects on uv-irradiated yeast, 22:40638
  effects on uv-radiosensitivity of Escherichia coli, 22:51683
  effects on x-radiosensitivity of bronchogenic carcinoma in man, 22:8570
  effects on x-radiosensitivity of carcinoma of bladder i man, 22:4644
  effects on x-radiotherapy of lung tumors in man, 22:12888
  radioprotective effects of, on uv-irradiated Escherichi coli, mechanisms for, 22:40782
  use for treatment of uv-induced keratosis, 22:51826

URACIL, 5-(HYDROXYMETHYL)-6-METHYL-
  radioprotective effects of, on rabbits, combined effect of immunization on, 22:49382
  treatment of radioinduced proctitis in man, 22:25918

URACIL, 6-METHYL-
  production from gamma-irradiation of 6-methylhydrouraci 22:16595
  radiation effects on, electronic aspects of uv, 22:337

URACIL, 6-METHYL-5-NITRO-
  radioinduced free radicals in monocrystals of, ESR spectral studies on γ, 22:35838

URACIL, 6-METHYL-2-THIO-
  effects on incidence of cords and tubules in thymus of rats, 22:31223
  effects on iodine-131 β-radiosensitivity of rats, 22:47594
  effects on iodine-131 content of body and thyroid of rats, 22:19254
  effects on weight of thyroid in rats, combined effects propylthiouracil and x radiation on, 22:33969

URACIL, 5-NITRO-
  radiation effects on, electronic aspects of, uv, 22:33786

URACIL, 6-PROPYL-2-THIO-
  effects on iodination and maturation of rat thyroglobulin, tracer study of, 22:14949
  effects on thyroid of chicks, effects of, on glycogen content and size of liver, 22:51815
  effects on weight of thyroid in rats, combined effects methylthiouracil and x radiation on, 22:33969
  radioprotective effects of, on development of hypothyroidism in man following iodine-131 therapy of thyrotoxicosis, β and γ, 22:15036

URACIL RIBOSIDES
  see also Uridine

URACIL, 2-THIO-
  4-methyl, effects on γ-radiosensitivity of hemin and yeasts, 22:51771
  effects on metabolism of calcium and strontium in Tetrahymena, 22:40515 (NYO-1822-25)
  effects on thyroid gland of rats, combined effects of iodine-131 on, 22:49628
  effects on thyroid of chicks, effects of, on glycogen content and size of liver, 22:51815

URACIL, 4-THIO-
  radiolysis of air-saturated solutions of, yields from x, 22:33460

Ural-1
  see Beloyarsk Power Reactor, Unit 1

URANATES
  see also Ammonium Uranates
  see also Barium Uranates
  see also Calcium Uranates
  see also Chlorouranates
  see also Cobalt Uranates
  see also Copper Uranates
  see also Magnesium Uranates
  see also Manganese Uranates
  see also Mercury Uranates
  see also Neodymium Uranates
  see also Nickel Uranates
  see also Praseodymium Uranates
  see also Samarium Uranates
  see also Scandium Uranates
  see also Silver Uranates
  see also Strontium Uranates
  see also Yttrium Uranates
  see also Zinc Uranates
  hydrazinium-, thermal decomposition of, weight loss during, 22:89
  hydroxyammonium pentafluoro-, thermal decomposition of, weight loss during, 22:89
  preparation and reactions of basic, in aqueous solutions 22:45034
  preparation from reaction of schoepite with sodium

hydroxide, 22:40084
solubility in sodium carbonate, effects of pH on, 22:40084
thermal capacities of, 22:10204(R) (COO-1149-102)

URANIC ACID
content of thallus of lichens, effects of, on strontium uptake, 22:15112
preparation of hydrolytic, 22:18754

URANINITES
see also Pitchblendes
see also Thucholite
age of Russian, krypton/xenon isotopic method for estimation of, 22:10367
argon-36, -38, and -40 content in, 22:10362
dissolution in sulfuric acid, kinetics of, 22:33519
effects of detrital, on carbonaceous materials in Witwatersrand, 22:2253
electric properties of ionized solution-immersed, potentiometric titration method for determining surface, 22:51107 (NIM-44)
formation of, geochemistry of, 22:47250
recovery from copper ores, method for, 22:51113
solubility in sulfuric acid, effects of ferric sulfate on, 22:33519

URANITES
see also Autunites
age of, description of microscope and ARL-microprobe for determination of, 22:27897 (NP-17358)
radiation effects on halo formation in, 22:10393

URANIUM
see also Actinides
absorption of fission products of, by plants, 22:51445
abundance in Canyon Diablo graphite, origin of noble gas anomalies from, (E/T), 22:8975
abundance in USA and world during 1980 to 2000 of, estimates of, 22:27428
abundance ratio to radium in minerals, β-γ method for determining, 22:30728 (JEN-167-SIG/1-5)
alloying with thulium, lutetium, and yttrium, use of carrier metals in, 22:28754 (LA-3911)
alpha spectra in tektites, 22:47077(R) (NYO-844-75)
alpha spectral distribution of depleted, effect of LET on, 22:10761 (MIT-952-4, pp 132-201)
aluminum precipitation from supersaturated alpha-phase, kinetics at 350 to 600°C, 22:43541 (RD/B/N-1013)
analysis for 14 trace elements by atomic absorption spectroscopy, 22:16411 (GAT-507)
analysis for aluminum, effects of thorium and zirconium on, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for aluminum, iron, and nickel in same sample by atomic absorption spectroscopy, 22:14460
analysis for boron by isotopic dilution, 22:16385 (CEA-R-3219)
analysis for boron isotopes by mass spectrometry, 22:16385 (CEA-R-3219)
analysis for chlorides, turbidimetric method for, 22:27530 (CEA-N-816, pp 9-65)
analysis for cobalt, spectrophotometric, 22:22930(R) (NBL-242)
analysis for gases, gas chromatographic, 22:33258
analysis for impurities by atomic absorption, 22:45014
analysis for impurities by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
analysis for impurities by fractional carrier distillation, spectrographic, 22:30483
analysis for impurities, spectrographic, 22:21645(R) (BMI-1826)
analysis for iron and nickel by atomic absorption spectrophotometry, 22:8026
analysis for iron by controlled-potential coulometry, 22:44976 (MLM-1543)
analysis for manganese, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for microgram quantities of rare earths, spectrochemical, 22:30440
analysis for molybdenum and zinc, colorimetric and polarographic methods for, 22:27530 (CEA-N-816, pp 9-65)
analysis for neodymium-148 by isotope-dilution mass spectrometry, 22:1949 (GEAP-5354)
analysis for niobium and zirconium by colorimetry after solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
analysis for nonmetallic elements, review of, 22:14463
analysis for oxygen by helium-3 activation methods, calculation of sensitivities for, 22:8022
analysis for palladium and rhodium after liquid-liquid extraction using Aliquat-336 by flame photometry, 22:8024
analysis for phosphorus, extraction method for spectrophotometric, 22:4043
analysis for plutonium-239 and uranium-235 using slowing-down-time lead spectrometer, 22:33221
analysis for silicon, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for sulfates, method for, 22:27530 (CEA-N-816, pp 9-65)
analysis for thorium, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for thorium by measurements of delayed neutrons following fission, 22:1977
analysis for trace amounts of sulfur, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for trace impurities by spectrographic, spectrophotometric, and activation methods, 22:4052
analysis for uranium isotopes by alpha spectroscopy and x-ray fluorescence, 22:50942
analysis for uranium-235 and uranium-238, 22:30444(P)
analysis for uranium-235 emission spectrometry, HYPEAC interferometer for, 22:37646 (CEA-R-3457)
analysis for uranium-235, feasibility of laser microprobe method for, 22:47070 (BMI-X-525)
analysis for uranium-235, spectrographic, 22:1982
analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
analysis for zinc, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis of enriched, for radioisotopes, methods for, 22:25236 (CEA-N-616, pp 20-71)
analysis of enriched, for uranium-235 relative content by alpha-gamma coincidence method using gridded ionization chamber, 22:30462
analysis of irradiated foils of, for neptunium-239, method for precise, 22:4041
analysis of irradiated, for fission products by radiochemical method, 22:40023
analysis of laser-sampled, matrix effect in spectrochemical, 22:47081
analysis of solutions of, for thiocyanate, spectrophotometric, 22:27542 (NIM-167)
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
analysis of, spectrographic, 22:16356 (KR-116)
atomic weight of, based on carbon-12 = 12, 22:42698
availability of, discussion of worldwide, 22:1823
base costs and enrichment fees for, tables of USAEC, 22:8690 (TID-21015(Rev.))
book: Effects of Irradiation on Materials, 22:34092
book: Formation of Exogenous Deposits of Uranium and Methods of Investigating Them, 22:30706
book: Nuclear Fuel Metallurgy. Uranium, Plutonium, and Thorium: Properties and Technology. (In Russian), 22:43574
book: Uncommon Metals, 22:10981
burnup of, determination of neodymium-148 as measure of, 22:1949 (GEAP-5354)
carburization with methane, 22:50950(T) (ANL-Trans-660)
carburization with methane, 22:30505 (JEN-177-DMe/1-22)
cases among Y-12 personnel showing long chest burden retentions, 22:40703
casting in sintered aluminum oxide crucibles, 22:45756 (UJV-1994)
casting of, uranium carbide segregation in, 22:15154(R) (NLCO-1010)
cavities in creep-deformed, electron microscopic study of intergranular, (E), 22:28801
cavity growth in, effects of thermal cycling on, 22:52166
chromatographic behavior of, in mixtures of hydrochloric or nitric acids in alcohols, 22:50974
classification of scrap of, guide for, 22:25469 (Y-MA-777)
coating of sintered, method for, 22:6946
coating with aluminum--uranium intermetallic compound by electrophoretic deposition, 22:8711
compatibility with yttrium at 1150 to 1400°C, 22:2560(R) (IS-RD-11)
complexes in blood, formation of, 22:49208
complexes with 1-(4-methoxy-5-benzofuranyl)-3-phenyl-1,3-propanedione, magnetic, spectral, and thermal properties of, 22:27705
complexes with 2,3-dimercaptosuccinonitrile, preparation of, 22:30515
complexes with 3-amino-5-hydroxy-2,7-naphthalenedisulfonic acid, formation and stability constants of, 22:45037
complexes with 6-hydroxy-2-methyl-7-oxo-1,3,5-cycloheptatriene-1-carboxylic acid, stability of, 22:10236
complexes with 8-quinolinol and its derivatives, infrared spectra of, 22:4090
complexes with 8-quinolinol, preparation, composition, and nonstoichiometry of, 22:35827
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with 8-quinolinol, structure of, 22:18768
complexes with 8-quinolinol, thermal conversion of, to bis(8-hydroxyquinolinato)dioxouranium(VI), 22:35827
complexes with acetoacetanilide and 2-chloroacetoacetanilide, structure of, 22:37771
complexes with bromine, Zeeman splitting of vibronic levels in UBr_6^{2-}, 22:35785
complexes with β-diketones and nitrogen-containing organic bases, uranyl ion excitation by intramolecular energy transfer in, 22:16548
complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with chloride- and oxygen-containing ligands, charge transfer transitions in, 22:37745
complexes with citric acid--hydrogen peroxide--water system, mechanism of formation and stability constants

of, 22:35805
complexes with cyclopentadiene, preparation, properties, and structure of, 22:45027(T) (RFP-Trans-41)
complexes with dibutyl phosphate and tributyl phosphate or trioctylphosphine oxide in hexane or carbon tetrachloride, formation of, 22:47217
complexes with diethyldithiocarbamate, preparation of, 22:27652
complexes with diethyldithiocarbamate, spectra of, ir, 22:27652
complexes with disodium 3-hydroxy-2,7-naphthalenedisulfonate, formation and stability constants of, 22:45037
complexes with disodium 4,5-dihydroxy-2,7-naphthalenedisulfonate, potentiometric studies on stability of, 22:40064
complexes with DTPA, toxicity of, in swine, 22:10677 (BNWL-480, pp 99-106)
complexes with EDTA, fluorescence spectra of, effects of uv radiation on, 22:21073
complexes with EDTA--hydrogen peroxide--water system, mechanism of formation of, 22:35804
complexes with ethyl xanthate, preparation of, 22:30515
complexes with fluorides, preparation in chloride--fluoride melts, 22:8078
complexes with lactic and tartaric acids, polarographic and potentiometric studies on stability of, 22:14490
complexes with N,N-diethyldithiocarbamic acid, preparation and infrared spectra of, 22:30515
complexes with N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine and [ethylenebis(oxyethylenenitrilo)]tetraacetic acid, potentiometric and spectrometric studies on, 22:8084
complexes with N-phenylbenzohydroxamic acid, formation of, 22:33332
complexes with organic acids, stability constants for, 22:47119
complexes with organic ammonium compounds, far infrared spectra of, 22:16516
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with oxalic acid, use of cerium in electromigration study of properties of, 22:8075
complexes with phosphinidynetripropionic acid, preparation of, 22:40059
complexes with rutin and quercetin, infrared study of structure of, 22:16493
complexes with thenoyltrifluoroacetone and phenanthroline, fluorescence of uranyl ion in, 22:16548
complexes with thiocyanates and trioctylamine, spectral studies on structure of, 22:18797
complexes with toluene-3,4-dithiol, preparation of, 22:30515
complexes with triphenylarsine oxide and triphenylphosphine oxide containing nitrate and oxygen groups, molecular structure of, 22:50973
complexes with tropolone with and without lithium, spectral studies on coordination in, 22:12286
complexes with tropolone, preparation of, 22:25440(R) (MLM-1443)
complexes with tropolone, x-ray diffraction studies on structure of, 22:1956(R) (MLM-1405)
complexes with TTA, crystalline forms in, 22:12285
complexes with TTA, effects of solvated alcohol on ir spectra of, 22:12285
compounds and complexes of, review of chemistry of, 22:45090
compounds of, analysis for impurities by atomic absorption, 22:45014
compounds of, analysis for uranium, 22:50904(T) (NP-tr-1687)
compounds of, analysis of, for trace impurities by spectrographic, spectrophotometric, and activation methods, 22:4052
compounds of, solubility in solvents containing hydrogen fluoride, 22:10320 (CEA-R-3205)
compounds of, solubility limits among solid-solution NaCl-type, 22:31469
compounds with hydrogen peroxide, composition and stability of, 22:30580
compounds with Schiff bases, preparation and properties of, 22:48854
compounds with selenium, sulfur, or tellurium and antimony, arsenic, bismuth, or phosphorus, preparation and structure of, 22:47118
compounds, analysis for selenium and tellurium, spectrophotometric, 22:48818 (NIM-244)
compounds, analysis for uranium by x-ray fluorescence methods, 22:40044
compounds, analysis for uranium-235 by emission spectrometry, 22:37646 (CEA-R-3457)
compounds, analysis of, for 14 trace elements by atomic absorption spectroscopy, 22:16411 (GAT-507)
compounds, isotopic frequency shifts in, calculation of reduced partition function ratios from, 22:33337
compounds, preparation of dried particulate slurries of, 22:47147(P)
compounds, volatilization by sulfur hexafluoride above 800°C, 22:33545
concentration in chlorinated uranium ores by fractional distillation of chloride vapors, 22:33510
concentration permissible for personnel, review of, 22:51559 (AHSB(RP)R-77)
contamination of man, treatment following, 22:28479
contamination of surfaces, determination of limits for, 22:23546
content and distribution in Adams County, Colorado surface soils, 22:27904
content in Antarctic marine glacial sediments, 22:6498
content in Aral Sea bottom silts, effects of organic matter on, 22:25548
content in Australian granitic rocks, 22:25521
content in Austrian lignites, 22:40277
content in Baltic Sea sediments, effects of organic material on, 22:33564
content in Bruderheim chondrite, (T), 22:34236
content in carbonaceous chondrites, 22:6461
content in carbonate fossils, use in age estimation, 22:6469
content in carbonate sediments, effect of salinity on, (E), 22:10386(R) (RPI-3836-1)
content in cassiterites, method for determination of, 22:18979
content in Caucasus neovolcanic rocks, age determination from, 22:18919
content in Chattanooga shale deposits, 22:18978 (BM-RI-6932)
content in coal from Dorenaz, optical studies on, 22:10388
content in crystals of Saint Severin meteorite, 22:6460
content in deposits along Luznice River in Czechoslovakia, 22:30701
content in eclogitic rock in Siberia, determination by (n,f) reactions, 22:48967
content in Estonian ground and surface waters, 22:25509
content in fallout from Chinese and Russian nuclear explosions, 22:42880
content in Finnish zircons, effects on age estimation, 22:21191
content in fission chambers, method for determining, 22:14807
content in French mineral water springs, 22:48932
content in granites of French Alps, use in age estimation, 22:6467
content in granitic rocks of western Aldan shelf, 22:27935
content in ground water sediments, use in age estimation, 22:10366
content in ground waters of Pripyat basin of Soviet Union, 22:27905
content in igneous rock samples from Pennsylvania and Tasmania, 22:48959
content in igneous rocks, determination of, 22:2213
content in igneous rocks, effects of volcanogenic processes on, 22:25506
content in Japanese rivers, 22:2206
content in land pebble phosphate rock of central Florida, 22:18900
content in lavas, 22:42851
content in man-made and natural glasses, use in fission track method of age estimation, 22:6470
content in marine environments, 22:8232 (ORO-2411-8)
content in meteorites, 22:6462
content in oceanic suspensions, relation of calcium carbonate, 22:10405
content in ores and rocks, fission fragment method for determination of, 22:18915
content in peat, effects of organic matter and water salinity on, 22:40214
content in peridotite inclusions and host basalts, neutron activation analysis and gamma spectrometry methods for determination of, 22:27899
content in phosphate rocks, radiation hazard from, 22:21193
content in Polish granites, 22:30702
content in potable natural waters in New York state, 22:30491
content in rocks from Carpathians, petrography of, 22:42860
content in rocks, use of lithium-drifted germanium gamma spectrometers for determining, 22:326
content in Rotondo granite, radiometric measurements on, 22:10391
content in sands of upper Arve Valley, France, 22:48962
content in sandstone at Shirley Basin, Wyo, 22:27929
content in seawater deposits, 22:25244(T) (KFK-tr-247)
content in Sierra Nevada biotites, 22:16701
content in soils of northeast and east-central Georgia, 22:48939
content in Swiss coal, (E), 22:10387
content in terrestrial material, use of gamma spectroscopy for determining, 22:2413
content in trophospheric aerosols, fluorometric determination of, 22:10376
content in Turkish hot springs, 22:181(R) (TAEÇ-D-5)
content in urine of man, method for determination of, 22:40717
content in volcanic rock of Oki Island, Japan, 22:51109
content in zircons from Sandia Mountain granite, use in age estimation, 22:6464
content in zircons from South African kimberlites and granites, 22:10399

content of atmosphere and water during 1966, 22:28523
content of biological materials in Chicago, New York City, and San Francisco, 22:28501
content of dusts of, in atmosphere, development of semiconductor detector for determining, 22:14817
content of feces, determination of enriched and natural, 22:43301 (AERE-R-5474)
content of fish and prawns used as food in India in relation to radioisotope contamination, 22:51656
content of freshwater, high sensitivity determination of, 22:43301 (AERE-R-5474)
content of human diet in Chicago, New York City, and San Francisco, 22:28501
content of nose-blow samples at AERE, method of determining, 22:38249 (BLG-371)
content of urine, method for determination of, 22:38270
content of water, effects of, on health of man, 22:12907
corrosion by hydrogen peroxide solutions at room temperature, 22:15138 (AWRE-O-9/65)
corrosion by potassium--sodium at 900°C, 22:13077 (BNWL-473, pp 6.1-20)
corrosion of defected Zircaloy-2-clad, by high-temperature steam--water mixtures, 22:49690
corrosion protection from water vapor by ion-plated aluminum coatings, 22:41008
corrosion resistance of nuclear materials containing, 22:31357
corrosive effects on uranium at less than 1300°C, 22:21651
cost factors for enriching, in form of UF_6, tables on, 22:18902
cost of, 1966 JCAE hearings on, 22:12217
creep effects on ovality of tubular, under external pressure, 22:41058
creep of mono- and polycrystalline, mechanisms at 150 to 760°C, 22:19514 (CEA-R-3187)
creep properties of, sagging bar method for determination of, 22:15199
creep-rupture mechanisms, description of, 22:48790
criticality studies of enriched rods of, in uranyl nitrate and water, 22:6377
crystal structure and properties of alpha-phase, 22:43590 (ANL-7299, pp 201-19)
crystal structure of alpha-phase, stacking faults in, 22:17141
crystal structure of α-, deformation twinning in, 22:28831
crystal structure of α-, dislocations and stacking faults in, 22:15217
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
crystal twinning modes of α-phase, for shear diagrams, 22:26055 (NLCO-988)
crystallization of β-quenched, effects of 700 ppM aluminum and 250 ppM iron on, 22:31384
crystallization of cold-worked α-, use of hardness variation in study of, 22:36462
deformation of alpha-, calculation of dislocation parameters for, 22:31350
deformation of alpha-, critical resolved shear stresses for slip in, 22:31349
deformation of alpha-, dislocation energies and mobilities in, 22:31352
deformation of alpha-, slip modes in, 22:31350
deformation of cast, at 885 to 1200°F, effects of aluminum, carbon, iron, and silicon on, 22:15154(R) (NLCO-1010)
deformation of polycrystalline α-phase, at 20 to 640°C, 22:2657
deformation of single crystals of alpha-, at 400 to 660°C, 22:31349
deformation texture of alpha, effects of impurities on, 22:36490(T) (JPRS-45470)
demand for, effects of 1970s nuclear power forecast growth on, 22:32832
density of liquid, 22:34065(R) (MLM-1445)
density of, effects of thermal cycling between 400 and 600°C on, 22:52167
deposition from ocean, 22:8233
deposition from urine, design of equipment for electrolytic, 22:14653
deposition in carbonaceous materials, determination by observation of radioinduced halos, 22:14585
deposition on cylinders, methods development for, 22:46729(R) (AECL-3157)
deposition on stainless steel neutron detector anodes, sputtering process for coating, 22:2587 (BNWL-553)
deposition on tungsten field emitters, effects of hydrogen contamination on work function of, 22:36481
deposition on tungsten, work function of thin-film, 22:28827
deposition with carbon on graphite substrates by pyrolysis of methane--uranium hexafluoride mixtures at 1420 to 1520°C, 22:52229
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination as thiocyanate complex by paper chromatography, 22:21040
determination as thiocyanate complex in acetone--water and water solutions, effects of gamma radiation on spectrophotometric, 22:4014
determination as thiocyanate complex, spectrophotometric, 22:14426 (ORNL-4196, pp 12-15)
determination as trace impurity in glass fragments by activation methods, 22:33205 (AWRE-O-3/68)
determination at 0.00001 to 5 percent in ores by polarography, 22:42596
determination at dropping mercury electrode in phosphoric acid, polarographic, 22:33282
determination by acetaldehyde content formed by photochemical oxidation of ethanol, 22:22947
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by amperometric titration, 22:25240 (PG-Report-827)
determination by controlled-potential coulometric titration, 22:10171 (CNEA-192)
determination by controlled-potential coulometry, 22:25236 (CEA-N-616, pp 20-71)
determination by extraction photometry using TPB, automation of, 22:27539 (NIM-156)
determination by potentiostatic coulometry, 22:14457
determination by precipitation with barium sulfate and alpha counting, 22:37656 (UCRL-18140, pp 101-2)
determination by precipitation with iron (III) hydroxide and spectrophotometry, 22:25244(T) (KFK-tr-247)
determination by redox method using neutron-activated silver, 22:40021
determination by titration using cerium sulfate, 22:7995
determination in acetic buffered solutions using 8-hydroxy-7-iodo-5-quinolinesulfonic acid, oscillopolarographic, 22:21035
determination in aluminum--uranium and uranium--zirconium alloys by volatilization of halides, 22:27847 (CEA-N-816, pp 324-58)
determination in aqueous nitric acid solutions by solvent extraction and polarography, 22:48822
determination in aqueous solution by x-ray fluorescence methods, 22:1952 (KFK-560)
determination in aqueous solutions by x-ray fluorescence methods, 22:14435(T) (EURFNR-365)
determination in aqueous solutions using sodium polyphosphates, fluorimetric, 22:30488
determination in aqueous uranium nitrate solutions, 22:47110(R) (BAW-3714-7)
determination in biological materials and chemicals, activation, 22:4042
determination in biological materials, automatic separation system for, 22:8020
determination in bismuth--tellurium ore, 22:18721
determination in calcium carbonate--uranium mixture by photoneutron counting, standards for activation, 22:24788 (IA-1128, pp 55-77)
determination in carbonaceous rocks and minerals, comparison of colorimetric and radiochemical methods for, 22:25288
determination in carnotite and coal by oscillopolarography using cupferron, 22:33243
determination in concentrated phosphoric acid media, method for, 22:27846 (CEA-N-816, pp 277-323)
determination in dissolver solutions in fuel reprocessing by isotopic-dilution mass spectroscopy, 22:22932 (NP-17233)
determination in environmental samples by alpha spectroscopy, 22:48839
determination in ethyl ether using tannin, 22:30488
determination in FFTF fuel materials, 22:5 (BNWL-SA-1388, pp 10.1-14)
determination in frittered uranium dioxide, polarographic, 22:27530 (CEA-N-816, pp 9-65)
determination in fuel reprocessing plant streams, 22:16356 (KR-116)
determination in fuel reprocessing solutions, 22:10171 (CNEA-192)
determination in fuel solutions by x-ray fluorescence techniques, 22:44974 (KFK-747)
determination in G-2 granite samples, isotopic-dilution technique for, 22:22957
determination in GSP-1 sample of granodiorites by isotope dilution, 22:22956
determination in hydrochloric acid by Kalousek polarography, 22:34
determination in hydrolyzed solution of uranium hexafluoride, potentiometric, 22:32
determination in impure materials, evaluation of methods for, 22:16412 (GAT-T-1475)
determination in iron by controlled-potential coulometry, 22:44976 (MLM-1543)
determination in iron meteorites, (E), 22:21797
determination in iron--plutonium uranium carbide cermets by electrochemical methods, 22:33215
determination in irradiated MTR fuel plates for burnup calculations, 22:24
determination in irradiated thorium dioxide--uranium dioxide fuel, separation procedures in, 22:37641(R) (BAW-3609-2)
determination in kerosene--TBP solutions at liquid nitrogen temperature, luminescence method for, 22:16426
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in lanthanum tungsten bronze, by thermal

neutron activation methods, 22:16446
determination in liquid and solid compounds, review on methods for, 22:27531 (GAT-T-1328)
determination in magnesium, activation, 22:27558
determination in meteorites by neutron activation techniques, 22:10195
determination in meteorites, activation, 22:20
determination in mineral spring waters in Japan, ion exchange and α spectrometry for, 22:50941
determination in minerals and rocks by ion exchange chromatography and colorimetry or isotope dilution, 22:30461
determination in molten fluoride fuels, spectrographic, 22:14430 (ORNL-4196, pp 55-9)
determination in molybdenum--uranium mixture by high-frequency titration with cupferron, 22:25281
determination in neptunium--uranium alloys by controlled potential coulometry, 22:1987
determination in nickel--uranium alloys and uranium salts, extraction-photometric, 22:16427
determination in niobium--uranium--zirconium alloy by x-ray absorption edge method, 22:8023
determination in nitrates, colorimetric, 22:33262
determination in nitric acid by amperometric titration, 22:25240 (PG-Report-827)
determination in nitric acid by ceric sulfate, volumetric, 22:40063
determination in nitric acid solutions by alkalimetric titration, 22:47096
determination in nitric acid solutions, spectrophotometric, 22:6255 (KFK-610)
determination in nitric acid solutions, spectrophotometric, 22:16416(T) (EURFNR-386)
determination in oceanic and continental peridotite nodules by neutron activation, 22:50947
determination in ores using thiobarbituric acid in ethanol solutions, spectrophotometric, 22:30572
determination in ores, colorimetric method using morin following ion exchange for, 22:42606
determination in organic solvents by solvent extraction using phosphorylated cellulose and scintillation counting, 22:39997
determination in Pacific Ocean corals, neutron activation method for, 22:47255
determination in perchloric acid solutions using Arsenazo III, 22:22986
determination in phosphate extracts, spectrophotometric, 22:7996
determination in phosphoric acid by potentiometric titration using titanium phosphate and potassium dichromate, 22:1968(T) (CEA-tr-X-630)
determination in plutonium by amperometric titration, 22:25240 (PG-Report-827)
determination in plutonium by differential linear sweep oscillographic polarography, 22:33242
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in presence of copper, polarographic, 22:14428 (ORNL-4196, pp 33-44)
determination in presence of iron and plutonium, amperometric, 22:27530 (CEA-N-816, pp 9-65)
determination in presence of molybdenum, polarographic, 22:25236 (CEA-N-616, pp 20-71)
determination in presence of plutonium by x-ray fluorescence techniques, 22:44974 (KFK-747)
determination in presence of plutonium in nitric acid solutions, by titration with hydrogen peroxide, potentiometric, 22:22938(T) (EURFNR-418)
determination in presence of rare earths and thorium using dihydroxymaleic acid in methanol, spectrophotometric, 22:33222
determination in production scrap, γ counting method for, 22:609 (CONF-661011, pp 92-103)
determination in proton-irradiated protactinium-231, 22:16668
determination in Purex waste solutions, polarographic, 22:8009
determination in reprocessing solutions, 22:39984 (KR-126, pp 153-71)
determination in rocks by alpha scintillation counting and gamma spectrometry, 22:33209(T) (NSJ-tr-103)
determination in rocks by carbonate precipitation, 22:42626
determination in rocks by high-resolution gamma spectroscopy, 22:44980 (NYO-3756-2, Sect. G)
determination in rocks of Canadian Shield, computer pulse analyzer system for analysis of gamma spectra from aerial surveying for, 22:28241
determination in ruthenium--uranium dioxide cermets, coulometric, 22:7986 (AERE-R-5617)
determination in seawater by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in seawater, separation and fluorometric methods for, 22:27564
determination in sediments and soils by paper chromatography, 22:18702
determination in soils and plants after concentration on sodium diethyl dithiocarbamate, 22:4057
determination in solutions and ores, fluorimetric, 22:27541 (NIM-163)
determination in sulfuric acid by comparative and direc polarography, 22:27547
determination in supporting electrolytes containing cupferron by oscillopolarography, 22:33243
determination in thorium--titanium--uranium--zirconium mixture by ring-oven method, 22:18708
determination in thorium--uranium mixtures by measurements of delayed neutrons following fission, 22:1977
determination in tissues and water, particle track analysis in polycarbonate plastics for, 22:16883
determination in tributyl phosphate, spectrophotometric 22:14436
determination in U_3O_8 by delayed neutron counting, activation, 22:24788 (IA-1128, pp 55-77)
determination in ultrabasic rocks, 22:12338(R) (COO-1167-3)
determination in ultrabasic rocks and carbonatites, 22:42887
determination in uranic--uranous oxide by colorimetry, 22:39978 (CNEA-209)
determination in uraniferous concentrates, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in uranium dioxide, effects of quenching and molybdenum and tungsten contaminants on, 22:2532 (ANL-7375, pp 95-134)
determination in uranium ores and ore processing solutions by x-ray fluorescence methods, 22:40044
determination in uranium oxides, polarographic, 22:357
determination in uranium--vanadium mixture by high-frequency titration with cupferron, 22:25281
determination in uranyl nitrate solutions in presence o metals, β-radiation reflection method for, 22:16464
determination in urine by alpha counting, radiochemical method for, 22:44970 (AERE-AM-103)
determination in urine, electrodeposition apparatus for, 22:10638 (Y-1599)
determination in urine, method for fluorimetric, 22:44970 (AERE-AM-103)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in water by measurement of alpha activity, 22:48834
determination in water, mass-spectrometric, 22:30491
determination of α-activity and isotopic composition of, in urine, method for simultaneous quantitative, 22:51654
determination of composition of, in fritted uranium dioxide by polarography, 22:25236 (CEA-N-616, pp 20-71)
determination of concentration of, in deposits, gamma spectrometric well logging method for, 22:22945
determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
determination of enriched, in urine by extraction using triisooctylamine and alpha counting, 22:35761
determination of enriched, in urine by reversed-phase partition chromatography and alpha counting, 22:39989 (RT/PROT-(68)6)
determination of enriched, in urine, method for, 22:21029 (SC-M-67-3044)
determination of extractable complexes of, with amines b paper chromatography, 22:14569
determination of hexavalent, as uranyl fluoride in uranous fluoride, polarographic, 22:27535 (NIM-129)
determination of hexavalent, volumetric method using cerium(IV) at room temperature with methyl red or methyl orange indicator for, 22:42628
determination of microamounts of, using Arsenazo III, photometric, 22:7997
determination of ratio of, with oxygen in sintered uranium dioxide pellets and powders, volumetric, 22:12237
determination of ratio of, with oxygen in uranium dioxid fuels, method for, 22:42593 (RT/ING-(67)7)
determination of trace amounts of, by oxidation of urany ferrocyanide complex with ceric sulfate, titrimetric, 22:22972
determination of trace amounts of, in hydrochloric acid solutions of rocks, 22:25287
determination of trace amounts of, in minerals and rocks by delayed neutron counting, 22:6272
determination of tracer of, in water by photometry following ion-exchange separation, 22:1980
determination of traces of, by solvent extraction using TTA and x-ray fluorescence, 22:25236 (CEA-N-616, pp 20-71)
determination of traces of, in neptunium oxide, fluorimetric, 22:25236 (CEA-N-616, pp 20-71)
determination of, accuracy of automatic colorimetric methods for, 22:16356 (KR-116)
determination of, automatic techniques for, 22:47211
determination of, efficiency of atomic fluorescence flam spectrometry for, 22:44992
determination of, factors affecting accuracy and sensitivity of fluorimetric, 22:42627
determination of, in field by gamma spectroscopy, 22:2414
determination of, portable gamma spectrometer for surfac and subsurface, 22:21337 (RISO-168)
determination of, procedures for geochemical, 22:48812 (CEA-R-3557)
determination of, radiometric, 22:27540 (NIM-162)

determination of, rapid and accurate methods for, 22:16412 (GAT-T-1475)
determination of, review of methods for, 22:4053
determination of, review on luminescence methods for, 22:30493
determination of, use of isotope dilution method for extraction-radiometric, 22:10180
determination of, use of refractive index in, 22:16356 (KR-116)
determination on fallout trays and in soils, urine, and water, method for, 22:21029 (SC-M-67-3044)
determination using 2',3',4'-trihydroxychalcone, amperometric, 22:1976
determination using 3-aminobenzoic acid and 1,10-phenanthroline, gravimetric and volumetric methods for, 22:33290
determination using 4,4-acetalidine-bis(3-methylisoxazolin-5-one), colorimetric, 22:27554
determination using Arsenazo III, photometric, 22:42625
determination using rhodamine C in presence of nitrate ions, extraction photometric method for, 22:33237
determination using rhodizonic acid, 22:7998
determination using sulfosalicylic acid, spectrophotometric, 22:21033
determination using Technicon autoanalyzer, colorimetric, 22:33262
deuteron reactions at 160 MeV, cross sections for inelastic, (E), 22:44650
deuteron reactions at 190 MeV, width of neutron angular distribution in, (E), 22:44650
development for reactor fuels, review, 22:12954
development of unalloyed, for reactor fuels, 22:734
diffusion from uranium carbide to tungsten, 22:7065
diffusion in aluminum at infinite dilution, 22:41050
diffusion in gamma, effects of hydrostatic pressure on self, 22:21686 (CEA-R-3316)
diffusion in iron and titanium, analysis of, 22:48790
diffusion in liquid sodium, 22:25334(T) (AEC-tr-6934)
diffusion in magnesium fuel element cladding during fusion, 22:27847 (CEA-N-816, pp 324-58)
diffusion in minerals, neutron activation method for determining, 22:33577
diffusion in minerals, radiographic determination of, 22:33574
diffusion in plutonium--uranium alloys at 400 to 550°C, 22:52164(T) (RFP-Trans-52)
diffusion in polycrystalline uranium dioxide at 1544 to 1915°C, measurement using uranium-235 tracer, 22:19638
diffusion in thorium dioxide and thorium dioxide--uranium dioxide, 22:28834
diffusion in tungsten at 1760 to 2730°C, 22:41016
diffusion in uranium carbide at 1100 to 2000°C, radioactive tracer measurements of, 22:47701 (AI-AEC-12726)
diffusion in uranium carbide, mechanism of, 22:49849
diffusion in uranium dioxide, coefficients of, 22:28955
diffusion in uranium monocarbide at 1450 to 1980°C, 22:13067(T) (LA-tr-68-3)
diffusion of fission product iodine from liquid, 22:5967
diffusion of krypton-85 from irradiated, during carbon dioxide oxidizing reactions, 22:19586 (RD/B/N-1008)
diffusion of very low concentrations of, in γ-iron and β-titanium, (E), 22:13000 (CEA-R-3253)
dissolution in nitric and sulfuric acids, kinetics of, 22:21167
dissolution in pilot-scale studies on nuclear fuels, 22:40189 (NP-17542)
dissolution of, 22:45146 (NP-17588)
dissolution of irradiated, 22:40165 (KR-126, pp 74-96)
dissolution of rods of enriched, criticality in, 22:6377
distribution between fused salts and liquid metals in fuel reprocessing, 22:51044 (ANL-7425, pp 19-41)
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in auriferous reefs, literature review of, 22:48955 (NIM-269)
distribution in Colorado Front Range, 22:2198
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in earth mantle basic rocks, 22:2201
distribution in hydrochloric acid, coefficients for, 22:42625
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in Italian volcanic rocks, effect of volcanic processes on, 22:30729
distribution in lungs and pulmonary lymph nodes of dogs, man, and rats following inhalation, 22:21507
distribution in metamorphic rocks of the Aldan Shield, 22:10403
distribution in mice, rabbits and swine, following application to skin or inhalation, relation of, to toxicity, 22:49242
distribution in New Hampshire granite, 22:2199
distribution in potassic alkalic rocks, 22:10394
distribution in rocks of Orenburg Province, USSR, 22:10390
distribution in stone meteorites, measurement by fission-track technique, 22:47744
distribution in U.S. Atlantic and Gulf beach sands, 22:2202
distribution in USSR granitoids, relation with depth of erosion, 22:10389
distribution over Indian Ocean floor, (E), 22:25553
distributions between liquid bismuth--uranium alloy and molten lithium fluoride--thorium fluoride system, 22:25374 (ORNL-4229, pp 22-49)
Doppler effect measurements in ZPR-9 assemblies 12-17 on enriched and depleted, 22:32734 (ANL-7310, pp 137-248)
economics in pressurized-water power reactor fuel cycles, effect of uranium-236 and neptunium-237 on, 22:37446 (MIT-2073-6(Vol.1))
economics in pressurized-water power reactor fuel cycles, effect of uranium-236 and neptunium-237 on, 22:37447 (MIT-2073-6(Vol.2))
effects of small additions on magnetic properties of Ni$_3$Fe, (E), 22:26523
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on colorimetric determination of zirconium, 22:48817 (MLM-1542)
effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
effects on corrosion of Type 430 stainless steel by acids and chlorides, 22:36438
effects on determination of phosphorus, 22:37639(T) (ANL-Trans-610, pp 1-56)
effects on determination of plutonium in aqueous solutions by liquid scintillation, 22:40018
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on hot working of alpha brass, 22:28762
effects on lungs of miners, review of carcinogenic, 22:45703
effects on man following ingestion of contaminated drinking water, 22:51380
effects on mechanical properties of irradiated sodium fluoride single crystals, (E), 22:22249
effects on photometric determination of indium, 22:2007
effects on photometric determination of thorium, 22:22946
effects on polarographic determination of nickel, 22:37639(T) (ANL-Trans-610, pp 1-56)
effects on potentiometric titration of molybdenum using potassium dichromate, 22:16418
effects on properties of carbon steels, 22:10947 (NP-17211)
effects on purification of fluorine by distillation, 22:21047
effects on solubility of aerosols, 22:10766
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of molybdenum, 22:18717
effects on spectrophotometric determination of nitrite ion by reaction with azulene and p-nitroaniline, 22:29
effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
effects on stress corrosion cracking of carbon steels by boiling nitrate solutions, 22:45753
effects on titrimetric determination of beryllium, 22:16444
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
electromigration of, effects of temperature on, 22:45765(R) (RPI-1044-18)
electron backscattering and secondary emission coefficients at 3.2 to 14.1 MeV, (E), 22:13969
electron exchange reactions between hexavalent and tetravalent, in anion exchange resin, TBP, and trioctylamine, mechanism of, 22:27736
electron fission at 1.5 and 3.0 GeV, fission-product yields from, (E), 22:14009
electron fission at 35 to 260 MeV, (E), 22:22586 (NP-17325)
electron reactions at 1.5 and 3.0 GeV, photofission in, (E), 22:35292 (ORNL-4217, pp 1-81)
electronic structure of, 22:30531
energy level multiplets of U I($5f^36d7s^2$ + $5f^36d^27s$), overlapping, 22:45936
enrichment in uranium-235, economics of, 22:10505 (PG-Report-824)
enrichment in US, economics of, 22:23175
enrichment of, cost data on, 22:14312
enrichment of, economics and methods of, 22:25619
enrichment of, legal aspects of private enterprise ownership of plants for, 22:47048
enrichment services criteria for, 1966 JCAE hearings on, 22:12217
enrichment services for, AEC criteria on toll, 22:18624
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
equilibrium concentration in sulfate solutions at 200 to 360°C, effects of sulfides of copper, iron, lead, and zinc on, 22:35935
etching of design of cathode for, 22:36456 (UCID-15327)

exploration in great Britian, review of methods for, 22:37892
exploration of, γ method for, 22:2252
export policy of Australia for, 22:10395
export policy of Australia for, 22:10396
extrusion of tubes of, causes of tube ovality from, 22:49718(R) (RMI-11)
extrusion of, lubricants for, 22:31335(R) (RMI-10)
fabrication by cold die sizing, 22:49718(R) (RMI-11)
fabrication by precision extrusion, feasibility of, 22:12987(R) (RMI-9)
fabrication by upset-forging, 22:49718(R) (RMI-11)
fabrication into NIE and NOE tubes by extrusion and forging, 22:31335(R) (RMI-10)
fabrication of fuels of enriched, economics in Great Britain during 1975-1980 of, 22:14208
fabrication of mixed powders of plutonium and enriched, 22:10075(R) (EURAEC-1929)
fabrication of pierced tubes of, 22:2588 (NLCO-991)
fabrication of trace-aluminum-containing clad fuel elements of, 22:38605(P)
fabrication of Zircaloy-clad rods of, 22:12999 (BNWL-473, pp 9.1-18)
fabrication of, review of methods for, 22:21676
fission by protons at 47 MeV, search for 5.3-hr isomer of molybdenum-103 in, 22:27836
fission fragments of, in thin mica plates, kinetics of healing of tracks produced by, 22:7379
fission gas bubbles in, effects of annealing on distribution of, 22:41077
fission of, review of research on, 22:40121
fission products of, clearance of, from lungs of rats, 22:8538
fission products of, contamination of terrain by, 22:8529(T) (JPRS-42929, pp 293-330)
fission products of, metabolism of unseparated, in dogs, guinea pigs, rabbits, and rats, 22:8473
fission products of, metabolism of unseparated, in rats, 22:8474
friction of allotropes of, 22:2612(R) (MLM-1402)
fuel assembly of natural, four-factor two-group analysis of lattice parameters for heavy water-moderated, (E/T), 22:22836
fuel burnup in graphite and heavy water moderated lattices of, computer analysis of, (E/T), 22:22832
fuel burnup in graphite and water moderated lattices of, computer analysis for optimum, (E/T), 22:22868
fuel burnup performance in water-cooled reactors, computer program for, (T), 22:44887 (EURAEC-2003)
fuel economics for heavy water-moderated reactors, 22:3812 (AECL-2947)
fuel elements of magnesium powder coated, fabrication of, 22:42489(P)
fuel elements of natural and enriched, burnup to 10,000 Mwd/t of, 22:1830
fuel elements of zirconium alloy-clad uranium alloy-insulated, configuration of, 22:42487(P)
fuel elements of, Monte Carlo calculation of neutron resonance escape probability in, 22:32989
fuel supply and demand for Europe power reactor development programs, economics of 40 year, 22:44833 (NP-17556)
fuels of, mathematical model for optimal long-range, 22:6168
gamma and neutron attenuation measurements in slab shields of, 22:2613 (NAA-SR-Memo-12440)
gamma backscattering at 0.412 to 1.25 MeV, 22:11489
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
gamma spectra of, 22:27540 (NIM-162)
geochemistry in carbonates using fission track method, (E), 22:10386(R) (RPI-3836-1)
geochemistry in phosphate rocks, 22:40218
grain growth in alpha, thermodynamics of, 22:31392
grain structure of, effects of high-temperature deformation on α-phase, 22:26055 (NLCO-988)
handling safety analysis at Rocky Flats Nuclear Safety Facility, 22:2273 (RFP-977)
hardening characteristics of polycrystalline α-phase, effects of polygonization on work, 22:2657
hardness of cast, at 885 to 1200°F, effects of aluminum, carbon, iron, and silicon on, 22:15154(R) (NLCO-1010)
hardness variations during annealing of worked, effects of impurities on, 22:6995
ignition in air, carbon dioxide, and oxygen, 22:37716 (RD/B/N-1134)
impurities in, use of vacuum spark source mass spectrometer for analysis of, 22:25702
incorporation in grain boundaries of uranium carbide, dihedral angles of, 22:41068
ingot preparation from uranium powder, methods for, 22:19500
iodine-131 specific activity in neutron-irradiated, method for determining, 22:21150
iodine-131 transport across vapor-liquid interface of liquid, analysis of, 22:1754 (BNL-11610)
ion ranges and stopping powers in, (T), 22:45926 (UCRL-18127)
ion reactions with Coulomb-induced fission, (T), 22:27336
isotope abundance ratios in, mass-spectrometric measurements of, 22:4016
isotope effect in superconducting α-, (T), 22:50118
isotopic analysis of fuel material for PCTR, 22:18545 (BNWL-622)
isotopic composition of natural and slightly enriched, use of alpha spectrometers for determining, 22:38075
isotopic distribution in soils formed from granitic materials in temperate climates, 22:27911
leaching from ores in mines by water, 22:18892
leaching from pyritized conglomerate by bacteria, 22:30685
leaching from sandstones, 22:8179
leaching from underground water-bearing uranium deposits method for, 22:42889
losses in fuel reprocessing, 22:33514
losses in melting of magnesium--zirconium alloy fuel cladding, 22:8175(T) (ANL-Trans-544)
machining behavior, 22:41028
machining hazards, 22:26032
magnetic susceptibility of single-crystal high-purity alpha, at 4 to 300°K, 22:11552
mass spectra of, equipment improvement for measurement of, 22:37690
measurement with pulse polarography, 22:31096
mechanical and physical properties of cast, enriched to 97.5 percent uranium-235, 22:15188 (Y-1593)
mechanical properties of, analysis of precision, 22:30386
mechanical properties of, effects of nickel plating on, 22:49708 (AWRE-O-38/68)
melting and casting of, crucible materials for, 22:637
melting nuclear grade, specifications and standards for, 22:641
melting of irradiated, in sodium, 22:53350
meson (K_2^0) reactions at 168 to 343 MeV/c, total cross sections for, (E), 22:34856
metallurgical properties of nuclear materials containing 22:31357
migration in ores stored in open, 22:18893
mineralization of coal by, autoradiographic and micrographic studies of, 22:21211
mining of, FRC guidance for control of radiation hazards in, 22:25828 (NP-17440)
mining output in Canada and United States, 22:16726
mixtures of scrap, methods for measurement of heterogeneous, 22:203 (CONF-661011, pp 104-14)
monitoring in personnel, development of formulas for, 22:51563 (CEA-R-3361)
neutron capture at 0 to 54 keV and at high temperature, Doppler effect on, (E), 22:14027
neutron capture in depleted, rate of radiative epithermal, (E), 22:32928 (NDA-2143-9)
neutron capture measurements below 30 keV for, effects o Doppler-effects of energy- and temperature-dependent, (E/T), 22:35626
neutron cross sections and strength functions for, collective and optical model analysis of, (E/T), 22:35337
neutron cross sections for, crystalline effects on Doppler-broadened, 22:33086 (ANL-7310, pp 431-511)
neutron decay constants in nonmultiplying spheres of depleted, fast, (E), 22:24787 (GA-8536)
neutron decay constants in spheres of depleted, (E/T), 22:20409(R) (GA-8449)
neutron differential elastic scattering cross section an polarization at 0.6 to 1.2 MeV, (E), 22:20578 (WASH-1079)
neutron fission at 14 MeV use of solid-state track detectors for studying, 22:25642
neutron fission at 15 MeV, fragment spectra from, (E), 22:1665
neutron fission measurements in reactors, corrections fo fast, 22:10565
neutron fission of, chemical states of iodine produced by, 22:12284
neutron fission of, gamma activities of products from thermal, (E), 22:24788 (IA-1128, pp 55-77)
neutron flux density in depleted, angular, energy, and spatial distribution of fast, (E), 22:13906 (RPI-328-100, pp 57-112)
neutron flux perturbation in single fuel elements of, method for calculation of, 22:1874
neutron flux spectra in depleted, position-dependent, (E), 22:48424 (RPI-328-133, pp 35-55)
neutron flux spectra measurements in depleted borated polyethylene slabs of, analysis of time-of-flight method for 0.001 keV to 2 keV, (E/T), 22:39930
neutron flux spectrum measurements in slabs of depleted, re-entrant hole effects on fast, (T), 22:48426 (RPI-328-133, pp 60-100)
neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
neutron multiplication factors for uranium--lithium supercell in PCTR, determination of infinite medium, (E/T), 22:27459 (BNWL-634, pp 3.1-27)
neutron multiplication in enriched metallic, one-velocit Monte Carlo method for calculating, 22:7919 (ORNL-P-2033)
neutron scattering at 4 MeV, polarization effects on Coulomb, (E), 22:20549
neutron scattering in, radiographic method for measuring (E), 22:49042

neutron spectra emerging from spherical shells of, time-of-flight measurements of fast, (E), 22:37276 (AERE-R-5364)
neutron spectra in depleted slabs of, spatially dependent resonance, (E/T), 22:5739
neutron spectra in depleted, position-dependent fast, (E), 22:20578 (WASH-1079)
neutron spectra in depleted, position-dependent fast, (E), 22:22526 (RPI-328-112, pp 16-59)
neutron spectra in depleted, time-of-flight measurements of fast, (E), 22:39548 (RPI-328-123, pp 18-25)
neutron spectra in lattice of small rods of, measurement of thermal, (E/T), 22:20934(R) (GA-8462)
neutron spectra in small rods of, thermal, (E), 22:5741
neutron spectra in spheres of depleted and enriched, pulsed-source measurements on fast, (E), 22:29829 (GA-8551)
neutron spectra measurement in a single rod of, in water moderator, thermal, (E/T), 22:20934(R) (GA-8462)
neutron spectra measurements in 3.063 percent enriched rod-shaped water-moderated, description of thermal, 22:53414 (GA-8805)
neutron total cross section at 27 GeV/c, (E), 22:44619
neutron total cross section at 4 MeV, measurement using polarized neutrons, (E), 22:20549
neutron transport in slab shields of, comparison of two-dimensional calculations with experiments on, 22:36960 (K-DP-3106)
neutron transport in, comparison of calculations and experiments on, 22:7338 (ORNL-TM-1965)
nickel plating on, use of Geiger--Mueller detector for measuring thickness of, 22:14867 (AWRE-O-2/65)
occurance of hexavalent, in Ukrainian shield rocks, 22:10363
occurrence in African carbonatites, 22:18993
occurrence in monazites of southern India, effect on environmental radioactivity, 22:6440
occurrence in uraniferous beds in Niigata Prefecture, Japan, 22:8230
opacity in gaseous-core rocket reactors, equipment for measurement of, 22:37513(R) (N-68-16664)
oxidation by ferrous-ferric system, 22:25486
oxidation by water, effects of pH on, 22:12961 (AWRE-O-44/65)
oxidation of metallic, activation energies and rates in air at 250 to 760°C, 22:28742
oxidation of metallic, activation energies and rates in oxygen at 250 to 400°C, 22:28742
oxidation of metallic, activation energies and rates in carbon dioxide at 500 to 1000°C, 22:28742
oxidation-reduction reactions of, kinetics of aqueous, 22:30520
performance of adjusted driver fuels of, analysis for FTR optimum, 22:27458 (BNWL-514)
phase diagram of, pressure-temperature, (E), 22:2651
phase studies using x-ray diffraction, 22:31382(T) (ANL-Trans-601)
phase transformations in, diffusion mechanisms of, 22:28838
phase transition below 43°K in alpha, evidence from elastic modulus measurements at 2 to 43°K, 22:31950
photo reactions with, scattering cross sections for, (E/T), 22:36701 (AD-663424)
photochemical effects on luminescent properties of, in sodium per chlorate solution, uv, 22:33389
photoelectric cross sections at 30, 40, and 50 keV, (E/T), 22:41347
photoelectric cross sections for 80 to 150 keV, table of calculated, 22:36725
photoelectric cross sections for K, L, and M shell of, for 412- to 1332-keV x rays, 22:5082
photoelectron attenuation length in thin films of, (E), 22:17776
photofission at 4.5 to 8.2 MeV, cross section and yields for, (E), 22:20497(R) (AECL-3009)
photofission at 6 to 8 MeV, radiative widths for, (E), 22:46729(R) (AECL-3157)
photofission of, mass distribution of fission fragments from, (E), 22:35292 (ORNL-4217, pp 1-81)
photon reactions (γ,n) at 55 to 85 MeV, neutron spectra from, (E), 22:44608
photon scattering at 662 keV by, Compton effect deviation for K-shell electrons in, (E), 22:36701 (AD-663424)
photoreactions at 10 to 300 keV, attenuation cross sections for, (E), 22:9020
physical properties and thermal treatment of nuclear materials containing, 22:31357
plasma of, diagnosis in dc electric arcs, 22:52749
plating with zirconium by electrolysis from alkali metal fluoride melts, 22:52143 (BNWL-825)
polarographic behavior in phosphoric and perchloric acid, 22:27535 (NIM-129)
polarographic behavior in sulfuric acid solutions, effects of gelatin and thymol on, 22:12319
polarography in acetate media, effects of hydrazine on complex formation in, 22:16547
positron annihilation in, total cross sections for single-quantum, (E), 22:36723
precipitation by urea at 85 to 110°C, mechanism of, 22:7037
precipitation of aluminum from α, kinetics of, 22:38580
precipitation of zirconium with, in copper--magnesium alloy, 22:25442 (ANL-7375, pp 19-45)
precipitation with iron(III) hydroxide, effects of carbonate ions on, 22:25244(T) (KFK-tr-247)
precipitation with molybdenum using lead acetate and 8-quinolinol, 22:48858
precipitation with plutonium in nitric acid solutions, effects of ammonia on, 22:25452 (CEA-N-616, pp 154-214)
preparation and properties of dispersion strengthened, 22:38602(T) (JPRS-45339)
preparation and properties of, for use as reactor fuels, 22:31339
preparation by dry electrolysis, method for, 22:25323 (CEA-N-616, pp 97-105)
preparation from uranium dioxide--niobium pentachloride mixture by hydrogen reduction, 22:38531
preparation from uranium trioxide by reduction with calcium vapor, 22:19500
preparation from uranyl nitrates, processes for, 22:4134
preparation of, 22:151
preparation of compact deposits of, by electrocrystallization, 22:27619 (CEA-N-816, pp 90-101)
preparation of radiation targets of, electrospray method for, 22:45759
processing in US, economics of, 22:23175
processing of enriched, methods for, 22:25450 (CEA-N-616, pp 86-96)
processing of irradiated natural and 5 percent-enriched, pilot plant for, 22:6430
processing of spent, isotopic composition along diffusion cascade in, 22:30681
processing of, chemical engineering equipment for, 22:25450 (CEA-N-616, pp 86-96)
processing of, economics of Ranstad plant in Sweden for, 22:25487
processing of, use of blending in, 22:30682
processing plants for irradiated, optical sizes and siting of, 22:10429 (CEA-R-3364)
processing solutions of, by vitrification, 22:27849 (CEA-N-816, pp 415-80)
procurement and reserves of, 1966 JCAE hearings on, 22:12217
production and demand for, world estimates of, 22:45204
production and prospecting for, review of 1967, 22:30731
production and sales of, survey of major producers at beginning of 1967 for, 22:10344
production by bacteria leaching, 22:30685
production by calcium reduction of uranyl oxide, 22:4754
production by in situ leaching, 22:18892
production by reduction of oxide in molten fluoride by aluminum, 22:42808 (CEA-R-3435)
production by reduction of uranium hexafluoride using calcium, 22:28760
production from reserves, effects of demands on, 22:27927
production in Canada and South Africa, 22:51110
production in France, 1966, 22:25550
production in South Africa, economics of, 22:10401
production of concentrates of, economics estimates for Argentina, 22:3837 (NP-16984)
production of enriched, description of Oak Ridge, Paducah, and Portsmouth plants for, 22:27976
production of enriched, economics estimates for Argentina, 22:3837 (NP-16984)
production of enriched, in US, economics of, 22:23229
production of high-purity, at South African gold mine, 22:18894
production of metallic, methods for, 22:19501
production of rolled rods of, method for reduction in machining stock for, 22:27544(R) (NLCO-1015)
production of small wires of, by swaging, 22:31335(R) (RMI-10)
production of sols of, design of Solex equipment for, 22:25585
production of sols of, design of Solex equipment for, 22:25586
production of spheroidal metal powder by calcium reduction of uranium dioxide, method for, 22:12998(P)
production of, design of tapered fluid-bed unit for, 22:19494
production of, method for remote starting of exothermic chemical reactions for, 22:14510(P)
production requirements by 1990 of, analysis of breeder reactor, 22:35691
properties and technology of, review of, 22:43574
properties and uses of, review of, 22:23803
properties as fuel material, chemical research on, 22:25144
properties for nuclear fuels, 22:19645
properties for use as fuel in heavy-water reactors, 22:8754
prospecting for, analytical methods used in, 22:48812 (CEA-R-3557)
proton fission at 10.5 GeV, cross sections for production of cesium isotopes and rubidium isotopes by, (E), 22:24879
proton fission at 14 GeV, use of semiconductor detectors for study of, 22:49104
proton fission at 450 MeV, fission-product recoil properties in, (E), 22:12338(R) (COO-1167-3)

proton fission at 450 MeV, recoil properties of fission products from, (E), 22:12338(R) (COO-1167-3)
proton fission at 5.5 GeV, carbon-17 production in, (E), 22:50542
proton reactions (p,xpyn) at 50 to 400 MeV, cross sections for, (E/T), 22:41953
proton reactions at 1, 2, and 3 GeV, cross sections for formation of neon-24 and sodium-24 in, (E), 22:42033
proton reactions at 10.5 GeV, cross sections for production of sodium isotopes by, (E), 22:24864
proton reactions at 3, 10, and 30 GeV, cross sections for formation of beryllium-7, sodium-22, and sodium-24 in, (E), 22:42032
proton reactions at 50 MeV with, production of neptunium-235 and plutonium-239 by, 22:48871 (AERE-R-5790)
proton reactions at 8 GeV/c, Cherenkov counter study of K^- and π^- production and relative yields from, (E), 22:13653 (RPP/H-28)
proton reactions at 8 GeV/c, K^- and π^- production in, (E), 22:22309
proton scattering at 19.3 GeV/c, eikonal optical model for, (T), 22:44452
proton spallation at 3 GeV, α and γ spectra from, (E), 22:7702(R) (PPAD-631-D)
purification by high-temperature slagging processes, 22:6383
purification by zone melting, 22:6383
purification following separation from spent fuels, 22:37837(R) (K-1744)
purification in sorption-desorption system using sodium fluoride, 22:27856(R) (K-1738)
purification of, transport mechanism in iodide process for, 22:12420
pyrophoric, packaging and shipping of chipped and powdered, 22:51567(R) (IN-1205)
quenching of, anomalous thermal arrest in, 22:15216
radiation damage at 7°K in zone-refined, annealing of 1.7-MeV electron, (E), 22:28671
radiation effects at 6500 MWd/t, neutron, 22:17153
radiation effects on electric conductivity of single-crystal, thermal neutron, 22:52219
radiation effects on electric resistivity and length of alpha, thermal neutron, (E), 22:44246
radiation effects on gaseous and solid fission product swelling in, thermal neutron, 22:38592
radiation effects on growth of alpha, at 25°C, in-pile, 22:52220
radiation effects on high-purity, at 500 and 1000 psi, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on spectrophotometric determination of, 22:14426 (ORNL-4196, pp 12-15)
radiation effects on, controlled pressure-temperature capsule for measurement of swelling, 22:6136 (BNWL-SA-1377)
radiation from x-ray anodes of, continuum, (E), 22:17395
radiation hazards during mining of, standards for control of, 22:33824
radiation monitoring in mining installations for, 22:21539
radiation monitoring of atmosphere in mines for, 22:8544
radioactivity growth to equilibrium in, 22:27540 (NIM-162)
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced breakaway swelling of, review of theories of, 22:28877
radioinduced chromosome aberrations in man following exposure to, in criticality accident, γ, 22:38246
radioinduced emission of atoms of, from sintered uranium oxide pellets, neutron, 22:8792
radioinduced growth of, rates and temperature effects on neutron, 22:43590 (ANL-7299, pp 201-19)
radioinduced length change in single-crystal, thermal neutron, 22:52219
radioinduced swelling by fission products with high atomic radius, 22:34089
radioinduced swelling in heavy-water reactors, 22:8754
radioinduced swelling of alpha phase, neutron, 22:34085
radioinduced swelling of, effects of annealing at 620°C on, 22:21743
radon inhalation during mining of, 22:19328(R) (COO-1500-5)
reaction rate measurements in DFR, use of fission chambers for, 22:30309 (TRG-Report-857)
reactions with amorphous carbon, anisotropic, 22:758(T) (LA-tr-67-92)
reactions with α-picolinic acid, thermal decomposition and solubility of chelates from, 22:16513
reactions with carbon dioxide at 200 to 700°C, effects of water vapor on, 22:16539
reactions with methane in fluidized bed, preparation of uranium carbide by, 22:25321 (ANL-7375, pp 95-134)
reactions with molten halides in graphite crucible, 22:42652(R) (NLCO-1020)
reactions with phosphonazo III, spectral studies on, 22:48867
reactions with phosphoric acid, spectral studies on existence of tetravalent plutonium in, 22:40057
reactions with picolinic acid and 8-quinolinol, thermal decomposition and solubility of chelates from, 22:16513
reactions with water vapor in presence of oxygen, equipment and method for studying, 22:14471 (AWRE-O-54/65)
reactions with water vapor, equipment and method for studying, 22:14471 (AWRE-O-54/65)
reactions with water, products and mechanisms of, 22:12268 (AWRE-O-45/65)
reactivity measurement of, in ARMF fast flux converter, 22:6096 (IN-1143)
reactivity measurements for heavy water-moderated reactor fueled with, analysis of infinite multiplication constant for, 22:37477
reactivity worth of depleted, effects on size on, 22:12006(R) (ANL-7399)
reactivity worth of depleted, in FTR core, (E/T), 22:27460 (BNWL-634, pp 4.1-55)
reactivity worth of, measurement in ZPR-3 of, 22:30118 (ANL-7438)
recovery from reactor fuels, pyrochemical process for, 22:21168
recovery from South African gold ores, 22:10400
recovery from uranium minerals, on-site dissolution processing method for, 22:27934
recovery from uranium ores from Elliot Lake, Ontario, column flotation method for, 22:30650 (NP-17459)
recovery from waste dumps or mines by bacterial leaching, 22:51077
recovery of enriched, from fuels, process for, 22:21167
recovery of enriched, from wastes, methods for, 22:27850 (CEA-N-816, pp 80-9)
reduction and precipitation from liquid copper--magnesium alloy at 750°C, effects of plutonium on concurrent, 22:25442 (ANL-7375, pp 19-45)
reduction in solutions, electrolytic, 22:10262(P)
refining by electrolysis of fused salts, equipment for, 22:38610(P)
reprocessing of fuels of natural, 22:47223
requirements for Czechoslovakian power reactors during 1970 to 1990, 22:50746 (ZJE-25)
requirements for nuclear power generation, predictions to 1980, 22:10397
resonance absorption of, analysis of neutron, 22:42428
resonance integrals for, crystalline effects on, 22:33086 (ANL-7310, pp 431-511)
resources and requirements for, review of, 22:25155
resources in Europe, 22:16727
resources of, comparison of forecast need for world power production with occurrence of natural, 22:32831
retention on alumina bed in fluoride volatility process, 22:40150 (ANL-7372)
sales to electric utilities, effects on prospecting, 22:10398
salts of tetravalent, dissolution of, potentiometric determination of acids or bases formed by, 22:40101
separation analysis of, in contaminated areas, 22:38298
separation as uranyl ion from iron, calcium, and magnesium by chromatography using chitin, 22:37852
separation by solvent extraction using 3,6-bis[(4-chloro-2-phosphonophenyl)azo]-4,5-dihydroxy-2,7-naphthalenedisulfonic acid, 22:6396
separation by solvent extraction using amides, spectral studies on, 22:6412
separation by solvent extraction using benzene, effects of complexing agents on, 22:18795
separation by solvent extraction using tridodecylamine, effects of dibutyl phosphate on, 22:27845 (CEA-N-816, pp 150-276)
separation from acidic solutions by basic precipitation in presence of acetic acid, 22:4266(P)
separation from actinium, protactinium, and thorium, 22:16668
separation from actinum, radium, and thorium by ion exchange, 22:42019(R) (MLM-1494)
separation from aluminum and nickel by chelating ion exchange and partition chromatography, 22:33289
separation from aluminum fuel sheath, cathodic and galvanic methods for, 22:23003 (IA-1128, pp 97-146)
separation from aluminum--uranium and uranium--zirconium fuels, 22:150
separation from aqueous fission product-containing solutions by low temperature crystallization, 22:45163
separation from aqueous nitric acid solutions by solvent extraction using bis(2-ethylhexyl) phosphate, mechanism of, 22:33497
separation from aqueous oxalate solutions by extraction using high-molecular-weight amines, 22:33531
separation from aqueous solutions by extraction after complexing with pyrocatechol and various quaternary salts, 22:48906
separation from aqueous solutions by extraction and soap formation using monocarboxylic acids, 22:42839
separation from aqueous solutions by solvent extraction using alkyl-substituted ammonium salts, 22:6376
separation from aqueous solutions by solvent extraction using butyl phosphates, 22:42837
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from aqueous solutions by solvent extraction using TBP, 22:7997
separation from aqueous solutions by solvent extraction using dibutyl phosphate, 22:47217

separation from arsenic by paper chromatography, 22:25257
separation from Australian ores, evaluation of methods for, 22:18889
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
separation from cerium by solvent extraction using phosphinates, phosphonates, or phosphine oxides, 22:42817 (UJV-1924)
separation from chloride melts by solvent extraction at 180°C, 22:4255
separation from chromium and cerium by ion exchange or extraction, review of methods for, 22:4258
separation from coated-particle fuels, use of oxidizing alkali salt melts in, 22:33515
separation from copper waste leach solutions by ion exchange, 22:25485
separation from di- and trivalent cations by ion exchange, 22:142
separation from dilute ammonium uranyl tricarbonate solutions, 22:167(P)
separation from dilute organic solutions, process for, 22:10351(P)
separation from EBR-II pyrochemical process streams, 22:8185
separation from erbium and magnesium by chelating ion exchange and partition chromatography, 22:33289
separation from europium, lanthanum, strontium, and yttrium using silicotungstate, paper chromatographic method for, 22:8176
separation from fast breeder fuels by salt transport, 22:51044 (ANL-7425, pp 19-41)
separation from fast breeder fuels, salt-transport process for, 22:33528
separation from fast breeder reactor fuels, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
separation from feed solutions by solvent extraction using tributyl phosphate, 22:21165
separation from fission products and plutonium by pyrochemical methods, 22:6383
separation from fission products and plutonium by ion exchange and fluoride volatility, 22:16695(P)
separation from fission products and plutonium by solvent extraction using TBP kerosene, 22:25484
separation from fission products by chlorination method using barium chloride as absorbant, 22:33524(P)
separation from fission products by fluoride volatility process, 22:51045 (ANL-7425, pp 42-93)
separation from fission products by ion exchange--solvent extraction, 22:21152 (ANL-7401)
separation from fission products by liquid metal extraction in molten salts, 22:51044 (ANL-7425, pp 19-41)
separation from fission products by molten salt--liquid metal extraction, 22:35880 (ANL-7450, pp 7-20)
separation from fission products by oxide slagging, 22:8187
separation from fission products by solvent extraction, 22:16356 (KR-116)
separation from fission products by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
separation from fission products by thin-layer chromatography, 22:12413
separation from fission products in irradiated fuels by dissolution in oxidizing alkaline earth melts, 22:35916(P)
separation from fission products in nitric acid solutions by solvent extraction using trioctylamine, 22:21166
separation from fission products using 18-stage centrifugal mixer-settler, 22:8250 (DP-MS-67-71)
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from fission products, design of centrifugal contactor for, 22:25590
separation from fuel cans by electrolytic dissolution, 22:8192
separation from graphite fuels by combustion-dissolution process, 22:4231(R) (IN-1087)
separation from graphite-base fuels by solvent extraction, 22:33529
separation from graphite-matrix fuels, 22:6382
separation from highly enriched uranium alloy fuels by fluidized-bed fluoride volatility process, 22:6384
separation from homogeneous solutions by decomposition of acetylacetone species in basic solution, 22:158
separation from hydrochloric acid solutions by partition chromatography using tridodecylamine, 22:40153 (CEA-R-3469)
separation from hydrochloric acid solutions by solvent extraction using neutral phosphoorganic compounds, 22:6406
separation from impurities by extraction using ethyl ether and tributyl phosphate, review of methods for, 22:4258
separation from iron and other impurities by ion exchange, 22:12427
separation from iron, rare earths, and thorium, ion exchange method for, 22:33550(P)
separation from irradiated aluminum--uranium and uranium--zirconium alloys by volatility process, 22:8175(T) (ANL-Trans-544)
separation from irradiated aluminum--uranium fuel using fluoride volatility process, 22:37825(T) (ANL-Trans-626, pp 36-58)
separation from irradiated ceramic fuel by fluoride volatility process, 22:30647 (EURAEC-1694)
separation from irradiated fuel, effects of solvent degradation on efficiency of Purex process for, 22:16650(T) (ORNL-tr-1902)
separation from irradiated fuels by fluidized-bed fluoride volatility process, 22:30664
separation from irradiated fuels by fluoride volatility process, 22:2173(R) (K-L-1780(Pt.21))
separation from irradiated fuels by salt-transport process, 22:8187
separation from irradiated fuels by solvent extraction, 22:16356 (KR-116)
separation from irradiated fuels by solvent extraction, 22:14562 (ORNL-4139, pp 4-18)
separation from irradiated fuels by solvent extraction, efficiency of stacked-clone contactor for, 22:12403 (ORNL-4094, pp 5-13)
separation from irradiated fuels by solvent extraction using TBP, 22:27857 (KFK-680)
separation from irradiated fuels by solvent extraction using TBP, 22:51046(T) (EURFNR-499)
separation from irradiated fuels by solvent extraction, 22:8185
separation from irradiated fuels by volatility techniques, pilot plant design studies for, 22:150
separation from irradiated fuels, electrolytic processes for, 22:6383
separation from irradiated fuels, Eurochemic process for, 22:33506
separation from irradiated fuels, fluoride volatility process for, 22:8203(P)
separation from irradiated fuels, hazards evaluation of fluidized-bed volatility pilot plant for, 22:33487 (ORNL-TM-2092)
separation from irradiated molybdenum--uranium fuels by Purex process, 22:27889
separation from irradiated reactor fuels, 22:35908(P)
separation from irradiated thorium dioxide--uranium dioxide fuel by chromatography and ion exchange, 22:17185(R) (BAW-3809-1)
separation from irradiated uranium dioxide fuel, fluid-bed fluoride-volatility process for, 22:51062
separation from lanthanum, samarium, scandium, thorium, ytterbium, or yttrium in hydrochloric acid solution, ion exchange, 22:40192
separation from leach liquors by precipitation, 22:18868 (RISO-166)
separation from leach solutions, review of methods for, 22:40273
separation from low enrichment fuels, use of fluoride volatility process for, 22:7788(R) (ANL-7382)
separation from low-grade ore, Swedish plant for, 22:18898
separation from low-grade ores by underground leaching, 22:18899
separation from low-grade ores containing coal and bentonitic loam, 22:18891
separation from low-grade ores, autocatalytic precipitation method for, 22:27663
separation from low-grade sandstone ores and phosphate rocks, 22:18900
separation from lutetium and thorium by thin-layer chromatography in dioxane--hydrochloric acid, 22:45176
separation from magnesium fluoride or calcium fluoride slag, nitric acid leaching process for, 22:21177(P)
separation from metals in acetic acid, paper electrochromatographic method for, 22:16672
separation from mixture of metals by ring-oven method, 22:18880
separation from mixture of plutonium and uranium hexafluorides by volatility process, 22:37825(T) (ANL-Trans-626, pp 36-58)
separation from mixtures with alumina, plutonium dioxide, and fission products by fluoride volatility process, 22:42806 (ANL-7412)
separation from molten fluoride mixtures, volatility process for, 22:6432(P)
separation from molten fluorides by reductive extraction using molten beryllium, 22:25374 (ORNL-4229, pp 22-49)
separation from molten-salt reactor fuel, 22:47204 (ORNL-4254, pp 241-78)
separation from molybdenum and vanadium by paper chromatography, 22:4248
separation from molybdenum, niobium, and zirconium in alloys by electrorefining in fused salts, 22:25454 (CEA-N-616, pp 246-94)
separation from molybdenum, tungsten, and vanadium by ion exchange on Amberlite IR-120 and zirconium phosphate, 22:40204
separation from monazites, Egyptian research on, 22:8179
separation from MSRE fuel by reductive extraction by bismuth, 22:47112 (ORNL-4254, pp 88-173)
separation from natural surface waters, processes for, 22:18872(T) (NSJ-tr-91)

separation from neodymium and plutonium by ion exchange, 22:1949 (GEAP-5354)
separation from neptunium by chromatography using tridodecylamine, 22:37640(T) (ANL-Trans-628, pp 2-50)
separation from neptunium by salt-transport processes, 22:6383
separation from neptunium, review of methods for, 22:16649(T) (ORNL-tr-1847)
separation from Ningyotoge uranium ore by chlorination, 22:33509
separation from Ningyotoge uranium ores by chlorination in moving bed pilot plant, 22:33513
separation from niobium and zirconium by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
separation from nitric acid solutions by solvent extraction using trioctylmethylammonium nitrate, 22:16686
separation from nitric acid solutions by solvent extraction using TBP, 22:14559 (KFK-671)
separation from nitric acid solutions by solvent extraction using phosphonates and TBP, comparison of, 22:33489
separation from nitric acid solutions by solvent extraction using bis(2-ethylhexyl) orthophosphate, 22:2179
separation from nitric acid solutions by solvent extraction using phosphonates and phosphinates, 22:16648 (UJV-1312)
separation from nitric acid solutions by solvent extraction using TBP, 22:33484(T) (EURFNR-463)
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from noble and refractory metals, method for, 22:37843(P)
separation from ores, 22:33551
separation from ores by bacterial leaching and gravitity-flotation procedures, 22:18890
separation from ores by solvent extraction, 22:18890
separation from ores by sulfuric acid elution and solvent extraction using tertiary amines, 22:18894
separation from ores from Elliot Lake district, 22:18890
separation from ores, method for, 22:6503(P)
separation from ores, milling technology for, 22:30686
separation from other actinides in hydrochloric or nitric acid, paper chromatographic and electrophoretic study of, 22:37832 (CEA-R-3411)
separation from other elements by ion exchange chromatography, 22:33502
separation from other materials by precipitation as carbonate, effects of thorium hydroxide on desorption of precipitate following, 22:42626
separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
separation from other metals by partition chromatography on silica gel columns, 22:33289
separation from phosphate ores, economics of, 22:27870
separation from plutonium, 22:33501
separation from plutonium and fission products by multistep, gradient concentration method, 22:6431(P)
separation from plutonium and fission products in fuel reprocessing by solvent extraction and fluoride volatility, 22:14577(P)
separation from plutonium and transplutonium elements by thin-layer chromatography using as solvent a tributyl phosphate--benzene mixture, 22:37851
separation from plutonium and zirconium by solvent extraction using TBP, effects of aluminum nitrate, nitric acid, and sodium tartrate concentrations on, 22:6409
separation from plutonium by fluid-bed fluoride volatility process, 22:6365 (ANL-7362)
separation from plutonium by fluoride volatility process, 22:6384
separation from plutonium by fluoride volatility process, 22:8175(T) (ANL-Trans-544)
separation from plutonium by oxalate precipitation, 22:33208(R) (MLM-1456)
separation from plutonium by oxalate precipitation, 22:42019(R) (MLM-1494)
separation from plutonium by selective reduction of plutonium hexafluoride, 22:27847 (CEA-N-816, pp 324-58)
separation from plutonium by solvent extraction, 22:18738(R) (MLM-1417)
separation from plutonium by solvent extraction, 22:45146 (NP-17588)
separation from plutonium by solvent extraction using TBP, 22:21176(P)
separation from plutonium by solvent extraction using amines and TBP, 22:16687
separation from plutonium by solvent extraction using nitromethane, 22:33521
separation from plutonium by TBP extraction, use of uranium(IV) nitrate in, 22:16680
separation from plutonium by volatilization, 22:27852(R) (EURAEC-2011)
separation from plutonium in reprocessing reactor fuels of high plutonium content, 22:51082
separation from plutonium in TBP by sorption on silica gel, 22:149
separation from plutonium in TBP extraction process, oxidation and complexing processes for, 22:40168 (KR-126, pp 172-200)
separation from plutonium using EDTA, 22:25440(R) (MLM-1443)
separation from plutonium, efficiency of methods for, 22:23103
separation from plutonium, extraction and oxidation method for, 22:25452 (CEA-N-616, pp 154-214)
separation from plutonium, rate of reactions of nitrous acid with hydrazine or sulfamic acid in nitric acid for control in, 22:40061
separation from plutonium, salt-transport step for, 22:151
separation from plutonium, use of tetravalent uranium ions as process reductant in, 22:16681
separation from plutonium, use of uranium(IV) as reductant in TBP extraction, 22:16682
separation from Portuguese ores by natural leaching, 22:18893
separation from protactinium by paper chromatography in hydrochloric acid mixtures with alcohols, 22:51060
separation from rare earths by hydrolytic precipitation, effects of pH on, 22:40196
separation from rare earths by ion exchange, 22:4054
separation from rare earths on sulfonic acid cation exchanger, 22:42835
separation from rare earths, scandium, and thorium by thin-layer chromatography, 22:51069
separation from reactor fuel elements, grind-leach method for, 22:16647 (ORNL-4075, pp 24-37)
separation from ruthenium by solvent extraction using phosphonates, phosphinates, and phosphine oxides, 22:42816 (UJV-1921)
separation from rutilo-zirconiferous quartzite, 22:18895
separation from samarium and thorium in hydrochloric acid solution, ion exchange, 22:40192
separation from scandium and yttrium by thin-layer chromatography in dioxane--nitric acid, 22:45176
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from seawater by sorption on hydrous titanium oxide, 22:25481
separation from seawater, economic feasibility of facility for, 22:47249 (AERE-R-5500(Vol.2), pp 387-98)
separation from slightly enriched uranium dioxide fuels, extraction cycles for, 22:27845 (CEA-N-816, pp 150-276)
separation from sodium fluoride beds, pyrochemical process for, 22:25442 (ANL-7375, pp 19-45)
separation from solution containing potassium thiocyanate, enthalpy of extraction using esters of phosphonic and phosphoric acids or trioctylphosphine oxide, 22:47209
separation from solutions, basic precipitation method for continuous, 22:30670(P)
separation from Spanish ores, evaluation of methods for, 22:18897
separation from Spanish ores, leaching methods for, 22:18896
separation from spent aluminum--uranium fuels by liquid--liquid extraction, effects of silicon on, 22:48907
separation from spent ceramic fuels by fluorination and volatilization, 22:25470(T) (ANL-Trans-590)
separation from spent ceramic fuels by salt transport process, 22:40184 (KR-126, pp 476-93)
separation from spent ceramic fuels, pyrochemical processes for, 22:35880 (ANL-7450, pp 7-20)
separation from spent fuel by chloride volatility process, 22:30673(P)
separation from spent fuel, development of methods for, 22:27856(R) (K-1738)
separation from spent fuels, 22:37837(R) (K-1744)
separation from spent fuels by aquafluor process, 22:40176 (KR-126, pp 361-84)
separation from spent fuels by fluidized-bed fluoride-volatility techniques, 22:33527
separation from spent fuels by fluoride volatility process, 22:40158(R) (K-L-1780(Pt.25))
separation from spent fuels by halide volatility process, 22:40174 (KR-126, pp 324-41)
separation from spent fuels by pyrometallurgical processes, 22:40182 (KR-126, pp 452-67)
separation from spent fuels, efficiency of dry process for, 22:48898(T) (KFK-tr-249)
separation from spent fuels, testing of Eurochemic plant for, 22:8171 (NP-17174)
separation from spent high-plutonium-content fuels by solvent extraction, criticality and toxicity problems in, 22:48897 (KFK-709)
separation from spent JEEP fuel elements by Purex process, 22:33508
separation from spent oxide fuels by fluoride volatility techniques, 22:35881 (ANL-7450, pp 21-38)
separation from spent pyrolytic-carbon-coated sol-gel oxide fuel, grind-leach process for, 22:18866 (ORNL-4213)
separation from sulfuric acid by solvent extraction using dibutyl phosphate in hexane, effects of TBP on, 22:6401
separation from sulfuric acid solutions by solvent

extraction using dioctylamine, 22:12411
separation from sulfuric acid solutions by solvent extraction using tridecylamine and trihexylamine, 22:4251
separation from sulfuric acid solutions by solvent extraction using long-chain aliphatic amines, mechanism of, 22:35915
separation from sulfuric acid solutions by solvent extraction using amines, 22:45161(P)
separation from TBP solutions containing dodecane by solvent extraction using nitrogen dioxide, 22:27845 (CEA-N-816, pp 150-276)
separation from thorium by anion exchange, 22:2175 (NP-17077)
separation from thorium by ion exchange, 22:16386 (CEA-R-3222)
separation from thorium by paper chromatography in hydrochloric or nitric acid mixtures in alcohols, 22:51060
separation from thorium by solvent extraction, 22:10196
separation from thorium by solvent extraction, 22:18738(R) (MLM-1417)
separation from thorium nitrate--uranium nitrate systems by solvent extraction using tributyl phosphate, 22:14579(P)
separation from thorium, solvent extraction process for, 22:10353(P)
separation from titanium by paper chromatography, 22:25257
separation from titanium by paper chromatography, 22:25258
separation from tributyl phosphate or tridodecylamine solutions from solvent extraction process, 22:37872(P)
separation from tungsten by paper chromatography, 22:25257
separation from uranium dioxide fuel pellets, fluid-bed fluoride volatility process for, 22:25443 (ANL-7375, pp 46-94)
separation from uranium mine waters and copper ore leaching solutions, 22:18901
separation from uranium ores by leaching using aqueous mixture of bicarbonate and oxalate, 22:4238
separation from uranium oxide fuels, 22:47222
separation from uranium--plutonium fuels, 22:6382
separation from uranium--zirconium fuel by fluoride volatility process, 22:37825(T) (ANL-Trans-626, pp 36-58)
separation from uranyl chloride and sulfate solutions by solvent extraction using trioctyl phosphate, 22:6399
separation from uranyl nitrates by solvent extraction, spectral studies on role of salting-out agent during, 22:35896
separation from waste solutions by solvent extraction, 22:25440(R) (MLM-1443)
separation from zirconium by solvent extraction, 22:37639(T) (ANL-Trans-610, pp 1-56)
separation from zirconium-alloyed fuels using boric acid in hydrofluoric acid, method for, 22:23095 (IN-1091)
separation of 30 percent uranium-235-enriched, from Masurca wastes, 22:37830 (CEA-N-856, pp 71-7)
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of alkali metals simultaneously from, ion exchange, 22:37866
separation of Arsenazo III complexes of, from acid solutions by solvent extraction using benzyl alcohol, 22:27882
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of embedded particles of, from graphite, process for, 22:30657(P)
separation of hexavalent from tetravalent, by ion exchange using divinyl benzene-containing resins, 22:23105
separation of hexavalent from tetravalent, by ion exchange using divinylbenzene-containing resins, 22:37836(T) (JPRS-45458, pp 6-10)
separation of lead, silver, and zinc from, by precipitation using sodium benzilate, 22:30660
separation of metals from, by solvent extraction using N-phenylbenzohydroxamin acid, 22:33238
separation of neptunium from, by reversed phase chromatography in nitric acid--tridodecylamine, 22:2171 (CEA-R-3245)
separation of plutonium from irradiated, by amine extraction, 22:40169 (KR-126, pp 201-28)
separation of plutonium from irradiated, review on, 22:8199
separation of plutonium from undissolved reactor fuel of, by solvent extraction, 22:45162(P)
separation of plutonium from, by ion exchange on zirconium phosphate silicate, 22:30678
separation of protactinium from irradiated, by sorption by glass, 22:8196
separation of thorium from, 22:33382
separation of thorium isotopes from, in sulfuric acid solutions by ion exchange, 22:37850
separation of thorium-232 from, in fission product solutions by ion exchange using anionite AV-17, 22:30687
separation of titanium and zirconium from, by precipitation using cinnamic acid, 22:37855
separation of trace amounts of rare earths from, by ion exchange, effects of fluorides on, 22:47215
separation of trace amounts of, from rare earths, thin-layer chromatographic, 22:27881
separation of traces of, from graphite, design of shaft furnace for, 22:27732(P)
separation of, continuous countercurrent solvent extraction processes using tributyl phosphate and trioctylamine for, 22:4257
shielding calculations for depleted, for high-energy mesons (μ), 22:29787 (UCRL-18117)
shielding calculations for depleted, for high-energy mesons (μ), 22:50502
shipping to fabrication plants, methods for, 22:295
solubility in bismuth at 500 to 800°C, 22:28788
solubility in liquid silver at 1180°C, effects of metal additions on, 22:24408 (IA-1128, pp 21-54)
solubility in nitrogen oxide--hydrogen fluoride or antimony fluoride--hydrogen fluoride systems, 22:10320 (CEA-R-3205)
solubility in uranium monocarbide, 22:41114 (JUL-516-RW)
solubility in zinc at 974 to 1125°K, 22:28786
solubility of irradiated, in liquid sodium, 22:25334(T) (AEC-tr-6934)
solutions of, luminescence of liquid and solid, 22:30493
solvent distribution between aqueous nitric acid solutions and tridodecylammonium nitrate in dodecane, 22:27845 (CEA-N-816, pp 150-276)
solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
solvent properties of alpha-phase, for plutonium at 565°C, 22:49710 (CEA-R-3439)
sorption by graphite, effects of heat treatment on, 22:27845 (CEA-N-816, pp 150-276)
sorption by ion exchange resins, effects of permanganate ions on, 22:47124
sorption by ion exchange resins, effects of potassium ferricyanide on, 22:30566
sorption by manganese dioxide from nitric acid, 22:157
sorption by peat, 22:8209
sorption by phosphorylated polyvinyl alcohol fibers from acetate and nitrate solutions, kinetics of, 22:27688
sorption by soils, effects of state of uranium in solutions on, 22:51076
sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
sorptive properties for hydrogen, use of uranium or titanium hydrides to increase, 22:13005(T) (UCRL-Trans-10180)
specific heat of, measurement to melting point, 22:4766 (CEA-R-3287)
specifications for nuclear-grade melt stock, for fuels, 22:23798
spectra in molten fluorides, effects of valence state on, 22:14427 (ORNL-4196, pp 15-32)
spectra of, electric field splitting of inner atomic levels observed from photoelectron and internal-conversion, (E), 22:52541
sublimation of, heat of, 22:42689
sublimation of, heat of, 22:21761(T) (ANL-Trans-561)
superconducting transition temperature of gamma-, 22:1111
superconductivity in filamentary α-, impurity effect in, (E), 22:46052
surface potential of hydrogen on vapor-deposited films of, 22:10964
surface preparation before electroplating, anodic polishing method for, 22:36450
surface treatment of workpieces of, electrolytic, 22:15167(P)
survey of U. S. market for, 22:18623
tensile properties at 20 to 200°C, 22:13007
tensile properties of reactor grade, effects of heat treatment on, 22:13007
thermal capacity and thermal conductivity at room temperature, (E), 22:31946
thermal diffusivity from 20 to 850°C, measurement by laser pulse method, 22:31946
thermal expansion behavior of α-, from 50°K down to liquid-He temperature, 22:38991
thermal expansion of alpha, below 10°K, (E), 22:31947
thermal expansion tensor of alpha-, effects of aluminum and silicon on, 22:27544(R) (NLCO-1015)
thermodynamic activity in oxygen-saturated liquid, 22:36543 (ANL-7450, pp 39-74)
thermodynamic properties, 22:52190
thermodynamics, 22:36541
toxicity to leukocytes of rabbits, determination of, by fluorescence microscopy, 22:21436
toxicity to personnel, development of formulas for determining, 22:51563 (CEA-R-3361)
transport from copper--magnesium alloy to magnesium--zinc alloy using magnesium chloride, 22:25442 (ANL-7375, pp 19-45)
tritiation for accumulation and storage of tritium, 22:18773
uptake by female rats from drinking water, effects of, on function of parathyroid and thyroid glands and sexual maturation, 22:51376

  - uptake by marine mollusks, 22:51329
  - uranium-235 concentration in, by gaseous diffusion process, production of feed material for, 22:30683
  - uranium-235 concentration in, methods and plants for, 22:40328
  - uranium-235/-238 ratios in, activation method for determining, 22:43089
  - use as international currency backing to supplement gold, economics of, 22:53506
  - use as target for high-yield neutron production with electron linac, 22:37250
  - use for neutron production, development of linac target for, 22:39522
  - use for power reactor fuel, economics of, 22:39814
  - use for studying effects of radiation on embryonated chicken eggs, 22:25980
  - use in physics parameter measurements in uranium oxide (UO_2) fuel rods, comparison of metal and oxide foils for, 22:32976(R) (MIT-2344-12)
  - use in polarographic determination of fluoride, 22:40010
  - use of laminated depleted, for fuel element shipping containers, 22:45265 (KY-F-96)
  - use of laminated, for fuel element shipping containers, 22:45264 (KY-D-2554)
  - use of laminated, for fuel element shipping containers, materials testing of, 22:45263 (KY-D-2553)
  - use of neutron-irradiated, in production of iodine isotopes by temperature-gradient chromatography, 22:8158(P)
  - uses of depleted, industrial, 22:19469
  - value in thermal power reactor fuel cycles, effect of neptunium-237 and uranium-236 on, (T), 22:46903 (MIT-2073-7)
  - vapor pressure over uranium--oxygen system at 1700 to 2500°K, 22:21761(T) (ANL-Trans-561)
  - viscosity of liquid, at 1133 to 1248°C, 22:2612(R) (MLM-1402)
  - volatilization by sulfur hexafluoride above 800°C, 22:33545
  - volatilization of, effects of plutonium on, 22:27852(R) (EURAEC-2011)
  - welding of, factors affecting electron bombardment, 22:17089
  - work functions of thin films of, on tungsten foil, effects of hydrogen surface potential on, 22:10963
  - x-ray emission by, use of, for estimation of plutonium compounds in human lungs, 22:21501
  - x-ray reactions at 3.1 to 26 keV, total absorption cross sections for, (E), 22:29208

URANIUM ACETATES
  - preparation by reduction of uranyl acetate by cadmium, iron, magnesium, or zinc, 22:45076
  - structure of, 22:16543

URANIUM ALLOYS AND SYSTEMS
  - analysis for aluminum and iron by atomic absorption spectroscopy, 22:50911
  - analysis for aluminum and tin, complexing methods for spectrophotometric, 22:50924
  - analysis for nonmetallic elements, review of, 22:14463
  - analysis of, 22:37639(T) (ANL-Trans-610, pp 1-56)
  - book: Effects of Irradiation on Materials, 22:34092
  - casting in sintered aluminum oxide crucibles, 22:45756 (UJV-1994)
  - cladding for, preparation of finned magnox, 22:8718(P)
  - creep properties of, sagging bar method for determination of, 22:15199
  - determination in sodium, colorimetric, 22:43629(R) (LA-3933)
  - development of alpha- and gamma-phase, for reactor fuels, 22:734
  - etching of, design of cathode for, 22:36456 (UCID-15327)
  - fuel elements of ceramic and cermet, fabrication of cylindrical Zircaloy 2-clad aluminum--uranium alloy-lined, 22:48769(P)
  - fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of natural and enriched, economic and technical analysis of, 22:50741 (WASH-1083)
  - grain structure of, by x-ray topography, 22:52198 (CEA-R-3494)
  - mechanical properties of α, epsilon, and γ phase, measurement of, 22:30386
  - melting and casting of, crucible materials for, 22:637
  - Mo--Pu--U, analysis of solutions of, for impurities, spectrographic, 22:22930(R) (NBL-242)
  - neutron decay constants at different bucklings in water-moderated, comparison of calculations and measurements of prompt, (E/T), 22:22833
  - neutron spectra measurements in water-moderated lattices of, analysis of thermal, (E/T), 22:22834
  - phase diagrams of, 22:11072 (ORNL-TM-2015)
  - preparation and properties of, for use as reactor fuels, 22:31339
  - preparation of specimens for x-ray analysis, spark-discharge method for, 22:34018 (Y-DA-1730)
  - properties and uses of, review of, 22:23803
  - properties as fuel material, chemical research on, 22:25144
  - radioinduced swelling at 500 MWd/t of Sicral F1 and Sicral F_2, in-pile, 22:49778
  - radioinduced swelling of, effects of other metals on in-pile, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  - separation of uranium from fuels of highly enriched, 22:6384
  - separation of zirconium from, by hydrochlorination in gas-fluidized bed, 22:33539
  - superconducting isotope effect in stabilized gamma-, (E)
22:1111
  - surface treatment of workpieces of, electrolytic, 22:15167(P)
  - thermal capacity of intermetallic UBe_{13}, at 0 to 100°C, 22:41043
  - uses of depleted, industrial, 22:19469
  - ^{239}Pu--U, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
  - Al--C--Fe--Si--U-base, thermal expansion tensor of, to 600°C, 22:27544(R) (NLCO-1015)
  - Al--C--Fe--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015
  - Al--C--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015
  - Al--Co--U, crystal structure of intermetallic U_2Co_2Al in
22:19565
  - Al--Co--U, phase diagrams of uranium-rich portion of, 22:19569
  - Al--Cr--Fe--Si--U-base, radioinduced swelling at 400 to 550°C of, neutron, 22:34090
  - Al--Dy--U, phase studies, 22:694
  - Al--Fe--Mn--U, phase studies of, 22:31383
  - Al--Fe--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015)
  - Al--Fe--U, oxidation of intermetallic $U(FeAl)_2$ at 400 to 700°C, 22:8699
  - Al--Fe--U, phase studies, 22:43590 (ANL-7299, pp 201-19)
  - Al--Fe--U, radioinduced swelling of Zircaloy-2-clad hollow core fuels of, in-pile, 22:12999 (BNWL-473, pp 9.1-18)
  - Al--Mn--U, oxidation of intermetallic $U(MnAl)_2$ at 400 to 700°C, 22:8699
  - Al--Mo--Sn--U, analysis for aluminum and tin, complexing methods for spectrophotometric, 22:50924
  - Al--Mo--Sn--U, radioinduced swelling at 500 MWd/t burnup, in-pile, 22:49778
  - Al--Mo--Sn--U-base, radioinduced swelling at 400 to 550°C of, neutron, 22:34090
  - Al--Mo--U, crystal structure of α-phase, effects of boron additions on, 22:28833
  - Al--Ni--U, phase diagram, 22:15170 (BMwF-FBK-67-88)
  - Al--Ni--U, phase studies of intermetallic compounds of, 22:11001
  - Al--Si--U, analysis by microanalyzer using emission spectroscopy, 22:42633
  - Al--Si--U, dissolution of, effects of copper on, 22:4231(R) (IN-1087)
  - Al--Sm--U, phase studies, 22:695
  - Al--U, analysis for uranium by volatilization of halides, 22:27847 (CEA-N-816, pp 324-58)
  - Al--U, casting and rolling of intermetallic UAl_4, for fuel elements, 22:49706(P)
  - Al--U, casting of, improved method for, 22:6973(P)
  - Al--U, cladding and extrusion of, single-operation method for aluminum-clad, 22:8716(P)
  - Al--U, cladding with aluminum, 22:6955
  - Al--U, description of 90-percent enriched plates of, for JRR-4, 22:1858 (JAERI-1141)
  - Al--U, destructive examination of MTR fuel plates of, 22:23762 (IN-1131, pp 101-15)
  - Al--U, dissolution by sodium hydroxide and nitric acid, conditions and equipment for, 22:27850 (CEA-N-816, pp 80-9)
  - Al--U, dissolution of, effects of silicon on, 22:48907
  - Al--U, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
  - Al--U, fabrication and reprocessing of, effects of silicon additions on, 22:23761 (IN-1131, pp 2-29)
  - Al--U, fabrication of dispersion fuel plates of, 22:8686
(ORNL-4170, pp 108-14)
  - Al--U, fabrication of irradiation test plates of, 22:6955
  - Al--U, fabrication process for extruded tubular fuel elements of, criticality safety requirements in, 22:10081 (NYO-9714)
  - Al--U, fuel elements of, description of fabrication of Kyoto University Reactor, 22:14272
  - Al--U, fuel elements of, description of improvements in PEGASE, 22:6089 (CEA-R-3213)
  - Al--U, lining of Zircaloy 2-clad cylindrical uranium ceramic and cermet fuel elements, fabrication of, 22:48769(P)
  - Al--U, mechanical properties of, effects of silicon additions on, 22:23761 (IN-1131, pp 2-29)
  - Al--U, oxidation of intermetallic UAl_2 at 400 to 700°C, 22:8699
  - Al--U, particle sizing of intermetallic compound, radiography of, 22:23235 (IN-1131, pp 116-22)
  - Al--U, phase diagram, 22:15170 (BMwF-FBK-67-88)
  - Al--U, precipitation of intermetallic UAl_2, from adjuste
alpha-uranium at 350 to 600°C, 22:43541 (RD/B/N-1013)
  - Al--U, preparation and properties of coatings of intermetallic UAl on uranium, 22:8711
  - Al--U, preparation and properties of intermetallic UAl_3 fuel compacts, 22:53418 (ORNL-4268)
  - Al--U, preparation and properties of intermetallic UAl_2, UAl_3, and UAl, 22:15135 (IN-1133)

Al--U, preparation of, 22:151
Al--U, processing by volatilization of halides, 22:25454 (CEA-N-616, pp 246-94)
Al--U, processing of enriched, methods for chemical, 22:25452 (CEA-N-616, pp 154-214)
Al--U, processing solutions of, by vitrification, 22:27849 (CEA-N-816, pp 415-80)
Al--U, production by reduction of uranium tetrafluoride with aluminum, 22:8187
Al--U, production of intermetallic UAl_3 from uranyl nitrate and aluminum, 22:4231(R) (IN-1087)
Al--U, radiation effects on dispersion fuel, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Al--U, radiation effects on fuel elements of, in-pile, 22:8686 (ORNL-4170, pp 108-14)
Al--U, radiation effects on, neutron, 22:15135 (IN-1133)
Al--U, radioinduced swelling of intermetallic compound, effects on void volume, 22:31527
Al--U, reprocessing of enriched uranium-containing fuels of, 22:47221
Al--U, reprocessing of fuels of, 22:47223
Al--U, reprocessing of fuels of, vitrification of wastes from, 22:37826(T) (ANL-Trans-628, pp 51-128)
Al--U, reprocessing of irradiated, volatility method for, 22:150
Al--U, separation of fission products from irradiated, fluidized-bed volatility process for, 22:8181
Al--U, separation of uranium from irradiated, 22:8175(T) (ANL-Trans-544)
Al--U, separation of uranium from irradiated, fluoride volatility process for, 22:37825(T) (ANL-Trans-626, pp 36-58)
Al--U, testing of intermetallic compound, for TRA fuel elements, 22:23844 (IN-1131, pp 56-82)
Al--U, thermal conductivity of fuels of, effects of gas-filled gaps on, 22:34110
Al--U, waste solutions from processing of, calcination of, 22:27849 (CEA-N-816, pp 415-80)
Al--U_3O_8, fabrication of aluminum-clad fuel elements of, 22:28895
Al--U--Zr, oxidation of intermetallic $U(ZrAl)_2$ at 400 to 700°C, 22:8699
Al--U--Zr, phase diagram, 22:15170 (BMwF-FBK-67-88)
Al--U--Zr, phase studies on, 22:13032
Al--U-base, deformation testing of α-phase, analysis of high-temperature, 22:26055 (NLCO-988)
Al--U-base, ductility at 800 to 1200°F, effects of composition on, 22:21650
Al--U-base, radiation effects on electric conductivity of, effects of annealing on neutron, 22:23847(T) (AERE-Trans-1093)
Al--U-base, radiation effects on phase composition, neutron, 22:23847(T) (AERE-Trans-1093)
Al-base--Dy--U, fabrication characteristics, 22:694
Al-base--U, fabrication for HFIR fuel element outer annulus, 22:632 (ORNL-4108)
Al-base--U, fuel element fabrication of, description of techniques for, 22:37541 (ORNL-TM-2197)
Au--U, dissociation energy of gaseous intermetallic UAu, 22:13011
B--Mo--U, analysis for boron, 22:37639(T) (ANL-Trans-610, pp 1-56)
B--U, analysis for boron, 22:37639(T) (ANL-Trans-610, pp 1-56)
Be--U, phase diagram, 22:10986(T) (JPRS-43479)
Be--U, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
Be--U, properties of intermetallic UBe_{13} at low temperatures, (E), 22:36985
Bi--U, distributions of protactinium and uranium between molten fluorides and liquid, 22:25374 (ORNL-4229, pp 22-49)
Bi--U, magnetic phase stability calculations for UBi_2, 22:5433
Bi--U, magnetic properties of intermetallic UBi, (T), 22:44262
Bi--U, preparation of intermetallic U_3Bi_4, 22:28788
Bi--U, thermodynamic properties of intermetallic UBi, UBi_2, and U_3Bi_4 in, emf studies of, 22:28789
Bi--U, thermodynamic properties of liquid, emf studies of, 22:28788
Bi--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
Bi--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
--Fe--Si--U-base, properties at 885 to 1200°F, drop hammer, hardness, and tensile, 22:27544(R) (NLCO-1015)
--Mo--Sn--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
--N, phase studies, 22:31471
--N--O--U, phase studies, 22:49680(R) (USBM-RC-1347)
--N--U, phase diagram, 22:52259 (CEA-R-3536)
--N--U, phase diagrams at 1500 to 1800°C, 22:48790
--N--U, phase studies of, 22:17140
--Nb--Sn--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
--Nb--U, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
--O--U, phase diagram, 22:4866 (BNWL-SA-1494)
--O--U, phase diagram at 1700°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
--O--U, phase diagrams, 22:11083
C--O--U, phase studies at 1573°K, 22:28959
C--O--U, phase studies at 1720 to 2070°K, 22:4896
C--Pu--U, phase diagram, 22:17113 (JAERI-1144)
C--Pu--U, transpiration of, 22:52257 (ANL-7425, pp 94-129)
C--Pu--U, vapor pressure of, 22:52257 (ANL-7425, pp 94-129)
C--Pu--U-base, preparation of deoxidized, method for, 22:21755(P)
C--Si--U, phases of, effects of carbon content on, 22:38637
C--Sn--Ti--U, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Sn--U--W, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Sn--U--Zr, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Th--U, casting and phase diagrams of, 22:11072 (ORNL-TM-2015)
C--Th--U, crystal structure of, 22:11072 (ORNL-TM-2015)
C--Th--U, hydrolysis of, formation of carbon hydrides by, 22:37710 (CEA-R-3215)
C--U, grain growth of, effects of thermal cycling on, 22:2653
C--U, oxidation by oxygen at high temperatures, 22:16495
C--U, phase diagram, 22:17175 (JAERI-4042)
C--U, phase diagrams, 22:11083
C--U, phase diagrams, 22:36548
C--U, preparation of impermeable, for dispersion-fuel elements, 22:23884(P)
C--U, preparation of UC--U cermet, 22:4852 (UJV-1356)
C--U--W, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
C--U--Zr, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
C--U-base, deformation testing of α-phase, analysis of high-temperature, 22:26055 (NLCO-988)
C--U-base, ductility at 800 to 1200°F, effects of composition on, 22:21650
$CaCO_3$--U, analysis for uranium by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
Co--Fe--U, superconducting transition temperature of, (E), 22:24202
Co--Mn--U, superconducting transition temperature of, (E), 22:24202
Co--Ni--U, superconducting transition temperature of, (E), 22:24202
Co--U, superconducting transition temperature of intermetallic U_6Co, 22:24202
Cr--Mo--U-base--Zr, crystal structure transformation kinetics of, 22:38576
Cr--Si--U--Zr, welding of, electron beam, 22:34057
Cr--Si--U-base--Zr, crystal structure transformation kinetics of, 22:38576
Cr--U, corrosive effects of eutectic, on tantalum and yttrium, 22:2560(R) (IS-RD-11)
Cr--U, crystal structure of α-phase, effects of boron additions on, 22:28833
Cr--U, grain structure in, bainitic, 22:24408 (IA-1128, pp 21-54)
Cr--U, growth rate of eutectoid decomposition product in, 22:24408 (IA-1128, pp 21-54)
Cr--U, martensite growth and nucleation in, effects of temperature on, 22:24408 (IA-1128, pp 21-54)
Cr--U, quenching of, anomalous thermal arrest in, 22:15216
Cr--U-base, crystal structure of alpha-phase, effects of compression on, 22:43603
Cr--U-base, heat treatment and properties of, 22:2618
Cr--U-base, phase transformation of, effects of compression on beta-to-alpha, 22:43603
Cr--U-base, phase transformation, dilatometric study of β → α, (E), 22:23813 (INR-874/XIV/PS)
Cr--U-base, phase transformation, metallographic and x-ray study of β → α, (E), 22:23812 (INR-873/XIV/PS)
Cu--Mg--U, containment of magnesium chloride systems of, by graphite at 800°C, 22:25442 (ANL-7375, pp 19-45)
Cu--Mg--U, corrosive effects of halide salt systems of, on vitreous carbon crucibles at 700°C, 22:25442 (ANL-7375, pp 19-45)
Cu--Mg--U, corrosive effects of, in chloride salt systems on molybdenum, niobium, and TZM alloy, 22:25442 (ANL-7375, pp 19-45)
Cu--U, performance of intermetallic UCu_5, in bearings, 22:28779 (NP-17422)
Cu--U, production of intermetallic UCu_5, by vacuum induction heating, 22:23761 (IN-1131, pp 2-29)
Cu-base--U, performance in bearings, 22:28779 (NP-17422)
Fe--Mn--U, oxidation of intermetallic $U(MnFe)_2$ at 400 to 700°C, 22:8699
Fe--Mn--U, phase studies of, 22:31383
Fe--Mn--U, superconducting transition temperature of, (E), 22:24202
Fe--Ni--U, superconducting transition temperature of, (E), 22:24202
Fe--Pu--U, analysis for carbon, impurities, iron, and plutonium, methods for, 22:25236 (CEA-N-616, pp 20-71)
Fe--Pu--U, phase studies of, 22:2655

Fe--Si--U, radiation effects on, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Fe--Si--U, radioinduced swelling of Zircaloy-2-clad hollow core fuels of, in-pile, 22:12999 (BNWL-473, pp 9.1-18)
Fe--U, analysis for impurities by solvent extraction using TBP, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
Fe--U, oxidation of intermetallic UFe_2 at 400 to 700°C, 22:8699
Fe--U, superconducting transition temperature of intermetallic U_6Fe, (E), 22:24202
Fe--U-base, deformation testing of α-phase, analysis of high-temperature, 22:26055 (NLCO-988)
Fe--U-base, ductility at 800 to 1200°F, effects of composition on, 22:21650
Fe--U-base, radiation effect on phase composition, neutron, 22:23847(T) (AERE-Trans-1093)
Fe--U-base, radiation effects on electric conductivity of, effects of annealing on neutron, 22:23847(T) (AERE-Trans-1093)
fissium--Pu--U, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
fissium--Pu--U, mechanical properties of, 22:2632
fissium--Pu--U, properties of unclad fuel elements of, 22:5945
fissium--U, dissolution by hydrochloric--nitric--perchloric acid solutions, 22:43629(R) (LA-3933)
fissium--U, fissium constituents in, analytical methods for determining, 22:9988(R) (ANL-7391)
fissium--U, fuels of, radiation effects on, 22:30118 (ANL-7438)
fissium--U, pressure, heat treatment, and burnup effects on swelling of, 22:22653(R) (ANL-7419)
fissium--U, radiation effects on thermal properties of, in-pile, 22:4826
fissium--U, reprocessing by melt refining, skull-oxidation equipment for, 22:12397 (ANL-7338)
fissium--U, swelling of irradiated, effect of heat treatment on, 22:24925(R) (ANL-7427)
fissium--U-base, thermal conductivity as function of burnup and temperature, 22:42994 (ANL-7299, pp 173-97)
fizzium--Pu--U, radiation effects on fuels of, review on, 22:8804
fizzium--Pu--U-base, enthalpy and thermal capacity of, 22:19538
fizzium--Pu--U-base, transformation kinetics during annealing, 22:19537
Ga--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
Ga--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
Ge--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
Ge--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
graphite--U, fuel elements of magnesium-spaced graphite-clad pellet-type, description of end-plug-sealed, 22:42532(P)
H--U, phase studies on, 22:13073
H--U--Zr, phase transformations in (α + delta) region of determination for SNAP fuel, 22:52284 (AI-AEC-12703)
H--U--Zr-base, properties of, thermophysical, 22:656 (NAA-SR-11959)
HCl--LiCl--U, ion exchange studies on, permselectivity in, 22:33363
In--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
In--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
Ir--U, phase diagrams, 22:19563
Ir--U, phase diagrams, illustrations of 500 to 2500°C, 22:48790
Li_2SnO_3--U, fluorescence of, 22:37768
Li_3NbO_4--U, fluorescence of, effects of chromium or rhodium ions on, 22:37768
Li_3SbO_4--U, fluorescence of, effects of chromium, europium, or rhodium ions on, 22:37768
$LiNbO_3$--U, fluorescence of, 22:37768
$LiSbO_3$--U, fluorescence of, 22:37768
$LiScO_2$--U, fluorescence of, 22:37768
Lu--U-base, production and properties of, using carrier metal, 22:28754 (LA-3911)
MgO--U, fluorescence of, 22:37768
Mn--U, oxidation of intermetallic UMn_2 at 400 to 700°C, 22:8699
Mn--U, superconducting transition temperature of intermetallic U_6Mn, (E), 22:24202
Mn--U-base, heat treatment and properties of, 22:2618
Mo--Nb--U-base, composition and preparation of, 22:28757(R) (UCRL-13341)
Mo--Nb--U-base, preparation and properties for reactor fuels, 22:23743(P)
Mo--Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)
Mo--Nb--U-base--Zr, preparation and properties for reactor fuels, 22:23743(P)
Mo--Pu--U, analysis for plutonium, accountability methods for, 22:6 (CONF-661011, pp 135-45)
Mo--Pu--U, ignition and combustion characteristics of reactor fuels of, (E), 22:30297 (ARH-471)
Mo--Pu--U, phase studies of, 22:2655
Mo--Pu--U, radiation effects on fuels of, review on, 22:8804
Mo--Pu--U, tensile strength and hardness of, 22:2632
Mo--Pu--U, thermal properties of, measurement of, 22:30386
Mo--Pu--U-base, fabrication into ZPPR fuel elements, 22:43627 (ANL-7299, pp 14-113)
Mo--Pu--U-base, stainless steel jacketed plates of, design and fabrication of, (E), 22:15153 (ANL-7313)
Mo--Si--U, crystal structure of α-phase, effects of bor additions on, 22:28833
Mo--Si--U, radioinduced swelling of, in-pile, 22:13077 (BNWL-473, pp 6.1-20)
Mo--U, analysis by carrier distillation technique, spectrographic, 22:27533 (JEN-187-DQ/I-63)
Mo--U, analysis for tin, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
Mo--U, crystal structure of α-phase, effects of boron additions on, 22:28833
Mo--U, crystal structure of, effects of electron bombardment welding on, 22:38577
Mo--U, decomposition of gamma phase in, kinetics of, 22:24408 (IA-1128, pp 21-54)
Mo--U, development for pulsed reactor, 22:37900 (BNL-50082, pp 153-80)
Mo--U, dissolution and processing of irradiated, 22:37824(T) (ANL-Trans-626, pp 1-35)
Mo--U, dissolution of, 22:45146 (NP-17588)
Mo--U, dissolution of irradiated, 22:40165 (KR-126, pp 74-96)
Mo--U, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
Mo--U, fuel performance in Aberdeen Fast Pulse Reactor Facility, pulse testing of, 22:32979
Mo--U, mechanical properties of, effects of electron bombardment welding on, 22:38577
Mo--U, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
Mo--U, plating of, using aluminum ions, 22:31348 (Y-1617)
Mo--U, processing irradiated fuels of, method for, 22:25453 (CEA-N-616, pp 215-45)
Mo--U, processing solutions of, by vitrification, 22:27849 (CEA-N-816, pp 415-80)
Mo--U, radiation effects on rate processes in, 22:1523
Mo--U, radioinduced swelling at 500 MWd/t burnup, in-pile, 22:49778
Mo--U, reprocessing of fuels of, vitrification of waste from, 22:37826(T) (ANL-Trans-628, pp 51-128)
Mo--U, reprocessing of irradiated, 22:27889
Mo--U, reprocessing of spent, 22:40178 (KR-126, pp 394-404)
Mo--U, separation of fission products from, by vitrification, method for, 22:25456 (CEA-N-616, pp 369-434)
Mo--U, separation of uranium from, by electrorefining i fused salts, 22:25454 (CEA-N-616, pp 246-94)
Mo--U, superprompt critical behavior of rod assemblies of, 22:6108
Mo--U, tensile properties between 100 and 1000°F in air and argon, 22:6107
Mo--U, tensile properties of, for SNAP-21 biological shield, 22:2309(R) (MMM-3691-23)
Mo--U, tensile properties, analysis at 200 to 1400°C cf, 22:48790
Mo--U, thermal capacity at 0 to 2000°C, 22:41043
Mo--U, welding of, electron beam, 22:34057
Mo--U, welds of, mechanical and tensile behavior of, 22:10955
Mo--U-base, analysis for aluminum, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
Mo--U-base, corrosion by seawater at ambient temperatur 22:28737 (USNRDL-TR-68-26)
Mo--U-base, creep at 150 to 760°C, 22:19514 (CEA-R-318
Mo--U-base, crystal structure and thermal stability of, 22:34006
Mo--U-base, electrochemical behavior of metastable beta-phase, effects of overheating on, 22:45784
Mo--U-base, formation of martensite structure in, mechanisms of, 22:31412
Mo--U-base, grain structure of cast, refining effects o beryllium, boron, carbon, phosphorus, and sulfur on, 22:43602
Mo--U-base, heat treatment and properties of, 22:2618
Mo--U-base, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Mo--U-base, phase studies, 22:34006
Mo--U-base, precipitation reactions in, continuous and discontinuous, 22:43610
Mo--U-base, processing fission product solutions from, vitrification by pot procedure, 22:27849 (CEA-N-816, pp 415-80)
Mo--U-base, processing fuel rods of, using anti-diffusi barrier, 22:27846 (CEA-N-816, pp 277-323)
Mo--U-base, radiation effects on fuel elements of, in-pile, 22:49859
Mo--U-base, radiation effects on properties and structu of, in-pile, 22:34006
Mo--U-base, radiation effects on, effect of ternary additions on, 22:25133 (NAA-SR-12549)
Mo--U-base, radioinduced swelling at 400 to 550°C,

neutron, 22:34090
Mo--U-base, transformation mechanisms in, during rapid cooling from gamma phase, 22:13031
Mo--U-base--Zr, fabrication of fine-grain cast, 22:8720(P)
N--Th--U, crystal structure of, 22:11072 (ORNL-TM-2015)
N--Th--U, fabrication by powder metallurgy, 22:11072 (ORNL-TM-2015)
N--Th--U, phase diagram at 1000°C, 22:48790
Na--U, radiation effects on paste fuels of, in-pile, 22:43613 (ANL-7299, pp 144-9)
$NaSbO_3$--U, fluorescence of, 22:37768
Nb--Mo--U-base, fabrication of fine-grain cast, 22:8720(P)
Nb--U, analysis for trace constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Nb--U, electrochemical behavior in citric acid, 22:31341
Nb--U, etching of, potentiostatic method for electrolytic, 22:31341
Nb--U, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
Nb--U, production of homogeneous, with predetermined void sizes, 22:15168(P)
Nb--U, separation of uranium from, by electrorefining in fused salts, 22:25454 (CEA-N-616, pp 246-94)
Nb--U, thermal capacity at 0 to 1000°C, 22:41043
Nb--U--Zr, analysis for components by x-ray absorption edge method, 22:8023
Nb--U--Zr, elasticity and shear of, measurements in vacuum at temperatures up to 2000°C, 22:52175
Nb--U--Zr, x-ray diffraction data at 150 to 573°C, 22:21389 (UCID-15254)
Nb--U-base, heat treatment and properties of, 22:2618
Nb--U-base, mechanical properties at 100 to 600°C, 22:21650
Nb--U-base, tensile properties of gamma quenched and aged, at ambient temperature, 22:34053
Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)
Nb--U-base--Zr, stress cracking of, effects of dry and wet air on delayed, 22:19479 (UCID-15256)
Nb-base--U, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Ni--U, analysis for uranium, extraction-photometric method for, 22:16427
Ni--U, phase diagram, 22:15170 (BMwF-FBK-67-88)
Ni--U, superconducting transition temperature of intermetallic U_6Ni, (E), 22:24202
Ni--U-base, heat treatment and properties of, 22:2618
Np--U, analysis for neptunium and uranium by controlled potential coulometry, 22:1987
O--Pu--U, phase diagram, 22:17113 (JAERI-1144)
O--Pu--U, phase diagram of, 22:43663
O--Pu--U, phase studies of, 22:31509
O--Pu--U, phase studies of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, phase studies of, 22:17168 (STI/DOC-10/79)
O--Pu--U, thermodynamic properties of, 22:17168 (STI/DOC-10/79)
O--Pu--U, thermodynamic properties of, 22:36543 (ANL-7450, pp 39-74)
O--Pu--U, transpiration of, 22:52257 (ANL-7425, pp 94-129)
O--Pu--U, vapor pressure of, 22:52257 (ANL-7425, pp 94-129)
O--S--U, crystal structure and phase studies of, 22:43631 (ANL-7299, pp 120-37)
O--Sr--U, chemical equilibria in, 22:35776 (ORNL-TM-2105)
O--Sr--U, phase studies of, 22:25333 (ORNL-4229, pp 162-79)
O--Sr--U, phases and vapor pressures of, at 2000 to 3000°K, 22:31490
O--U, chemical equilibria in, 22:35776 (ORNL-TM-2105)
O--U, phase diagram, 22:45815 (GEMP-439)
O--U, phase diagrams, 22:11083
O--U, phase studies on, at 1080 to 1200°C, 22:35786
O--U, thermodynamic properties of, 22:21761(T) (ANL-Trans-561)
Pb--U, performance of intermetallic UPb_3, in bearings, 22:28779 (NP-17422)
Pb--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
Pb--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
Pb-base--U, performance in bearings, 22:28779 (NP-17422)
Pd--Pu--Rh--Ru--U, formation in irradiated plutonium dioxide--uranium dioxide fuels, 22:17152
Pd--U, fission-fragment ranges and energy losses in, (E), 22:1350
Pd--U, production of thin foils of enriched, for use as chemonuclear fuels, 22:37775 (BNL-50082, pp 40-78)
Pu--Th--U, phase studies, 22:43520 (ANL-7299, pp 138-43)
Pu--Th--U, properties of unclad fuel elements of, 22:5945
Pu--Th--U, thermal conductivity at 300, 600, and 800°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Pu--Th-base--U, radioinduced swelling of, effects of cladding on, 22:43520 (ANL-7299, pp 138-43)
Pu--Th-base--U, thermal conductivity at 100 to 800°C, 22:43520 (ANL-7299, pp 138-43)
Pu--Ti--U, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--Ti--U, phase studies, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, compatibility with stainless steel and vanadium-base alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--Ti--U-base, enthalpy and thermal capacity of, 22:19538
Pu--Ti--U-base, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--Ti--U-base, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Pu--U, analysis for impurities, spectrographic, 22:21645(R) (BMI-1826)
Pu--U, burnup of, hot cells for study of, 22:4417
Pu--U, densities of liquid, effects of temperature on, 22:2612(R) (MLM-1402)
Pu--U, diffusion of plutonium and uranium in, at 400 to 550°C, 22:52164(T) (RFP-Trans-52)
Pu--U, fuel burnup in graphite and heavy water moderated lattices of, computer analysis of, (E/T), 22:22832
Pu--U, hardness of, 22:2632
Pu--U, mechanical properties of, summary of, 22:2632
Pu--U, neutron flux perturbation in single fuel elements of, method for calculation of, 22:1874
Pu--U, phase diagrams and properties, 22:36495
Pu--U, phase equilibria of, effects of zirconium on, 22:2612(R) (MLM-1402)
Pu--U, phase studies of, 22:2655
Pu--U, physical properties of, 22:2627
Pu--U, preparation of solutions of irradiated and reconstituted fuels of, for analysis, 22:25236 (CEA-N-616, pp 20-71)
Pu--U, radiation effects on fuels of, review on, 22:8804
Pu--U, reactions of, kinetics of solid-state, 22:2633
Pu--U, viscosity as a function of reciprocal temperature, 22:2612(R) (MLM-1402)
Pu--U, viscosity as function of composition, 22:2612(R) (MLM-1402)
Pu--U--Zr, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--U--Zr, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
Pu--U--Zr, phase diagram, 22:31385
Pu--U--Zr, phase equilibria of, 22:2612(R) (MLM-1402)
Pu--U--Zr, phase studies, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Pu--U--Zr, phase-equilibrium states for, measurement of, 22:30386
Pu--U--Zr, phases of solid-solution reactions of, 22:43627 (ANL-7299, pp 14-113)
Pu--U--Zr, power performance of fuels of, analysis of optimum, 22:46928 (WASH-1106)
Pu--U--Zr, radiation effects on, 22:16265(R) (ANL-7403)
Pu--U--Zr, radiation effects on, 22:7788(R) (ANL-7382)
Pu--U--Zr, radiation effects on, postirradiation analyses of, 22:12006(R) (ANL-7399)
Pu--U-base, diffusion at 410 to 640°C in, 22:49710 (CEA-R-3439)
Pu--U-base, enthalpy and thermal capacity of, 22:19538
Pu--U-base--Zr, compatibility with stainless steel and vanadium-base cladding materials at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, enthalpy and thermal capacity of, 22:19538
Pu--U-base--Zr, fabrication of fuel pins of, methods development, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--U-base--Zr, radiation effects on clad, at 4.7 to 5.1 at. percent burnup, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Rh--U, phase diagrams, 22:19562
Rh--U, phase diagrams, illustration of 500 to 2100°C, 22:48790
Ru--U, phase diagrams, 22:19561
Ru--U, phase diagrams, illustration of 600 to 2600°C, 22:48790
Ru--U, preparation and properties of intermetallic U_2Ru_3, 22:23739
Sb--U, crystal structure of intermetallic compounds in, 22:37720
Sb--U, magnetic phase stability calculations for USb_2, 22:5433
Sb--U, magnetic properties of intermetallic compounds in, model for, 22:15621
Sb--U, magnetic properties of intermetallic USb, (T), 22:44262
Sb--U, preparation, crystal structure, and melting points of, 22:8061
Si--U-base properties for high-temperature water reactors, 22:43642(P)
Si--U-base, deformation testing α-phase, analysis of high-temperature, 22:26055 (NLCO-988)
Si--U-base, ductility at 800 to 1200°F, effects of composition on, 22:21650
Si--U-base, heat treatment and properties of, 22:2618
Si--U-base, radiation effects on electric conductivity of, effects of annealing on neutron, 22:23847(T)

(AERE-Trans-1093)
  Si--U-base, radiation effects on phase composition, neutron, 22:23847(T) (AERE-Trans-1093)
  Sn--U, performance of intermetallic USn_3, in bearings, 22:28779 (NP-17422)
  Sn--U, spectra of Knight shift of tin-119 in, effects of temperature on NMR, 22:50234
  Sn--U, tin-119 NMR and magnetic susceptibility in intermetallic, 22:22232
  Sn--U, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
  Sn--U, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  Sn-base--U, performance in bearings, 22:28779 (NP-17422)
  Te--U, phase diagrams, 22:8842
  Te--U, phase studies of, 22:33299
  Th--^{233}U, breeding potential of fast reactor fuels of, analysis of, (E/T), 22:47051
  Th--^{233}U, physics measurements of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
  Th--Ti--U--Zr, analysis for individual elements by ring-oven method, 22:18708
  Th--U, cycle costs as HWOCR fuel, evaluation of, 22:23854 (CONF-660524-, pp 157-84)
  Th--U, deposition of pyrocarbon coating on, method for, 22:21757(P)
  Th--U, dissolution in molten alkali metal salts, 22:33515
  Th--U, fuel elements of Zircaloy 2-clad, fabrication of, 22:53456 (BNWL-861)
  Th--U, fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of, economic and technical analysis of, 22:50741 (WASH-1083)
  Th--U, fuels of enriched, physics parameters of, 22:20807 (DP-1125)
  Th--U, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
  Th--U, radiation effects on mechanical and physical properties of, analysis of thermal neutron, 22:53456 (BNWL-861)
  Th--U--Zr, burnup in fuel elements of, analysis of Zircaloy 2-clad, 22:53456 (BNWL-861)
  Th--U--Zr, radiation effects on fuel elements of, in-pile, 22:2662 (BNWL-479)
  Th--U--Zr, radiation effects on mechanical properties of fuel elements of, analysis of neutron, 22:30386
  Th--U--Zr, radiation effects on Zircaloy clad fuel elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  Th--U--Zr, radioinduced swelling of, effect of temperature on in-pile, 22:12999 (BNWL-473, pp 9.1-18)
  Th-base--U, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
  Th-base--U, radioinduced swelling of, effects of cladding on, 22:43520 (ANL-7299, pp 138-43)
  ThO_2--^{233}U, fuel system for fast reactors, calculation of optimum economic, (T), 22:46961
  ThO_2--U, fuels of enriched, physics parameters of, 22:20807 (DP-1125)
  Ti--U, yield surface of, effects of welds on, 22:45767 (UCID-15362)
  Ti--U-base, heat treatment and properties of, 22:2618
  Ti--U-base, wires of, ductility of swaged, 22:31335(R) (RMI-10)
  Tm--U-base, production and properties of, using carrier metal, 22:28754 (LA-3911)
  U--Mo, mechanical properties at 0 to 1400°F, for SNAP-23A heat sources, 22:14679(R) (WANL-3800-9)
  U--UAs, phase studies of, 22:19665
  U--UC, mechanical properties of dispersions of, 22:11062
  U--UC, phase diagram, 22:19642(P)
  U--UC, preparation and examination of cermets of, 22:4852 (UJV-1356)
  U--UO_2, analysis for uranium monocarbide, x-ray diffraction methods for, 22:16438
  U--UO_2, free energies of oxygen and uranium in, 22:52257 (ANL-7425, pp 94-129)
  U--UO_2, melting points of phases in, 22:8838
  U--UO_2, phase diagram of, 22:25321 (ANL-7375, pp 95-134)
  U--UO_2, phase studies of, 22:8838
  U--UP, phase diagram of, 22:40090
  U--UP, thermodynamic properties of, mass-spectrometric study of, 22:36543 (ANL-7450, pp 39-74)
  U--Y, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
  U--Y_6WO_{12}, fluorescences of, 22:37768
  U--Zircaloy, separation of fission products from irradiated, fluidized-bed volatility process for, 22:8181
  U--Zn, preparation of intermetallic U_2Zn_{17} in, thermodynamics of, 22:28786
  U--Zn, single crystal x-ray data for intermetallic, 22:2560(R) (IS-RD-11)
  U--Zn, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  U--Zn, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
  U--Zr, analysis for tin, polarographic, 22:37639(T) (ANL-Trans-610, pp 1-56)
  U--Zr, analysis for uranium by volatilization of halides, 22:27847 (CEA-N-816, pp 324-58)
  U--Zr, analysis for zirconium, comparison of chemical a
x-ray fluorescence, 22:4 (AERE-R-5452)
  U--Zr, dissociation pressures for hydrided, analysis of
22:30387
  U--Zr, dissolution in hydrofluoric acid, 22:8185
  U--Zr, dissolution in hydrofluoric acid--nitric acid solutions, 22:6382
  U--Zr, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
  U--Zr, fuel elements for HWCTR, fabrication of Zircaloy-2-clad driver, 22:44896 (NMI-4379)
  U--Zr, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
  U--Zr, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
  U--Zr, processing by volatilization of halides, 22:254
(CEA-N-616, pp 246-94)
  U--Zr, processing of enriched fuels of, methods for chemical, 22:25452 (CEA-N-616, pp 154-214)
  U--Zr, processing of irradiated highly enriched, nonaqueous methods for, 22:47213
  U--Zr, reprocessing of enriched uranium-containing fuels of, 22:47221
  U--Zr, reprocessing of fuels of, 22:47223
  U--Zr, reprocessing of irradiated, volatility method for
22:150
  U--Zr, separation of uranium from irradiated, 22:8175(T
(ANL-Trans-544)
  U--Zr, separation of uranium from irradiated, fluoride volatility process for, 22:37825(T) (ANL-Trans-626, p
36-58)
  U--Zr, separation of uranium from, by electrorefining in fused salts, 22:25454 (CEA-N-616, pp 246-94)
  U--Zr, thermodynamic properties of, effects of uranium content on, 22:52190
  U--ZrH, radiation effects at 1175°C on clad elements of, TRIGA pulse tests of in-pile, 22:31474
  U--$ZrH_{1.8}$, thermal capacity, 22:21749
  U-base--V, heat treatment and properties of, 22:2618
  U-base--Y, production and properties of, using carrier metal, 22:28754 (LA-3911)
  U-base--Zr, heat treatment and properties of, 22:2618
Uranium Ammonium Fluorides
    see Ammonium Uranium Fluorides
URANIUM ARSENIDES
  antiferromagnetism of, neutron diffraction study of, 22:52885
  crystal structure of, 22:37720
  magnetic phase stability calculations, 22:5433
  magnetic properties of, (T), 22:44262
  magnetic properties of, model for, 22:15621
  magnetic structure and moment of UAs, (E), 22:3190
  preparation and properties of monocrystals of U_3As_4, method for, 22:27718
  preparation and properties of UAs, 22:43631 (ANL-7299, pp 120-37)
  preparation, crystal structure, and melting points of, 22:8061
  U--UAs, phase studies of, 22:19665
  UAs--UC, solid-solubility relations, 22:11055
  UAs--UN, solid-solubility relations of, 22:11055
  UAs--UP, magnetic properties of solid solutions of, at 8
to 370°K, 22:19629
  UAs--UP, solid-solubility relations of, 22:11055
  UAs--UP, solubility of solid systems of, 22:43631 (ANL-7299, pp 120-37)
  UAs--US, solid-solubility relations of, 22:11055
  UAs--USe, magnetic properties of, 22:16490
URANIUM BORIDES
  burnable poison fabrication for NERO reactor uranium oxide (UO_2) fuel elements, description of, 22:42338
  thermodynamic properties of, empirical formulas for, 22:31481
  vaporization of, thermodynamics of, 22:59 (UJV-1783)
  vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  UB--UN, phase and solubility studies, 22:31469
URANIUM BROMIDE OXIDES
  crystallographic properties of, 22:16500
  preparation of, 22:16500
  spectra of, infrared, 22:16500
URANIUM BROMIDES
  preparation of anhydrous, by dehydration of hexahydrates
22:45046
  structure of anhydrous, crystal and molecular, 22:45046
URANIUM BROMIDES UBr_5
  complexes with hexamethylphosphoric triamide and triphenylphosphine oxide, preparation and properties of, 22:37722
Uranium Calcium Fluorides
    see Calcium Uranium Fluorides
URANIUM CARBIDE OXIDES
  carbon and oxygen deficiencies in, prepared at 1600°C with excess uranium, 22:19654
  crystal lattice parameters of, effects of carbon and oxygen deficiencies on, 22:19654
  formation of, heat of, 22:42657
  thermal capacity of, 22:42657
URANIUM CARBIDE SILICIDES
  preparation of fuel elements of $U_3C_3Si_2$, 22:45812(P)
URANIUM CARBIDES
  analysis by elastic neutron diffraction, 22:11041 (EUR-3655)

analysis for nitrogen, 22:42589 (JUL-517-RW)
analysis for oxygen by hot extraction method under vacuum or by carrier gas method, 22:42589 (JUL-517-RW)
analysis for uranium dicarbide and dioxide, x-ray diffraction methods for, 22:16438
anisotropy in sintered compacts of, 22:758(T) (LA-tr-67-92)
book: Effects of Irradiation on Materials, 22:34092
burnup of, bubble formation and swelling in, 22:31529
burnup properties of SAP-clad fuel elements of, CRAYON computer program for, 22:39899 (EUR-4031)
carbon content of nonstoichiometric, effects of carbon activity and temperature on, 22:612(R) (GEMP-69)
carbon-13 NMR in, Knight shifts in, (E), 22:31954
casting of apparatus for, continuous, 22:28903(P)
casting of rods of UC, characteristics of crystallization for continuous, 22:26078
coating methods for, 22:11046 (ORNL-TM-2061)
coating with pyrolyzed silicon carbide, equipment and method for, 22:743(P)
compatibility of hyperstoichiometric, with SAP cladding in HWOCR fuel elements, (E), 22:46857 (AI-CE-77)
compatibility with SAP 450 to 625°C, 22:8687 (ORNL-4170, pp 128-37)
compatibility with SAP at 450 to 625°C, 22:10913 (ORNL-TM-2010)
conversion from uranium oxide (UO_2) to, mechanisms and kinetics of, 22:42200(R) (ORNL-4200)
creep at 1200 to 1600°C, compressive, 22:49823
crystal structure of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
crystal structure of UC, 22:45805 (UJV-1962)
crystal structure of, effects of carbon content and heat treatments on, 22:41115 (ORNL-3515)
crystal structure of, effects of tungsten on, 22:45755 (NAA-SR-12629)
decomposition at 2190 to 2525°K, 22:42689
design of UC spheres of, for 1000 MW(e) OBFR, 22:9992 (BNL-50027)
determination in uranium ceramics and binary and multicomponent uranium ceramic mixtures, x-ray diffraction methods for, 22:16438
development for reactor fuels, review, 22:12954
diffusion of carbon and uranium in, radioactive tracer measurements of self-, 22:47701 (AI-AEC-12726)
diffusion of carbon and uranium, in, 22:49849
diffusion of carbon in, at 1525 to 1780°C, 22:38623 (LA-DC-8840)
diffusion of iodine in, at 1524 to 1760°C, 22:30513
diffusion of uranium in, at 1450 to 1980°C, 22:13067(T) (LA-tr-68-3)
dissolution in nitric acid solutions, 22:23108
dissolution of, electrolytic, 22:8187
effects of UC_2, on equilibrium concentrations in liquid metals and alloys, 22:52270
electric conductivity of, 22:26085
energy of stoichiometric, ratio of grain boundary to solid surface, 22:19661
enthalpy of, efficiency of high-temperature adiabatic drop calorimeter for measuring, 22:4881
entropy of, equipment for measuring, 22:4114
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
extrusion through graphite dies at 1600 to 2400°C, process for, 22:8811(P)
fabrication by high-temperature vacuum extrusion, equipment and methods for, 22:38606(P)
fabrication by vibratory compaction, 22:8809
fabrication into clad fuel elements, method for control of expansion during, 22:49802(P)
fabrication into fuel elements using niobium, tantalum, or tungsten diffusion barriers, 22:36533(P)
fabrication of bars and ingots of, design of electron beam furnaces for, 22:37919(P)
fabrication of dispersions of, in silicon carbide for fuel, 22:52241
fabrication of fuel elements of, methods for, 22:8816(P)
fabrication of high-density fuel pellets of, 22:53463(R) (UNC-5217)
fabrication of pellets of, 22:36543 (ANL-7450, pp 39-74)
fabrication of sheathed fuel elements of UC, 22:18632(P)
fabrication of spheroidal silicon carbide (SiC) coated pyrolytic carbon enclosed UC, mechanical process for, 22:27506(P)
fabrication of spheroidal UC_2, chemical process for, 22:27507(P)
fabrication of UC_2, into high-density fuel elements, 22:45808(P)
fabrication under static atmosphere, 22:50950(T) (ANL-Trans-660)
fabrication under static atmosphere, 22:30505 (JEN-177-DMe/1-22)
fission gas release at 1700 and 2000°C for silicon carbide (SiC)-coated, analysis of, 22:42200(R) (ORNL-4200)
fluorination of, 22:25470(T) (ANL-Trans-590)
fluorination of, 22:33527
formation energy, 22:49841
formation energy of, 22:2643
formation of, heat of, 22:42689
fuel elements of, description of Canadian, 22:3808 (AECL-2928)
fuel elements of, description of fabrication of metal-insulated stainless steel-clad, 22:42485(P)
fuel elements of, measurement of epithermal and thermal spectrum indices for, 22:16145 (EUR-3736)
fuel elements of, radiation effects in SAP-clad, 22:3813(R) (AI-CE-54)
fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of natural and enriched, economic and technical analysis of, 22:50741 (WASH-1083)
fuel module life tests on, 22:3813(R) (AI-CE-54)
fuel pellets of, description of clad cylindrical, 22:25067(P)
fuel pellets of, effects of temperature on uranium contamination in pyrolytic carbon coatings on, 22:39900 (GAMD-8325)
fuel pellets of, pressing and sintering of, 22:30118 (ANL-7438)
fuels of, fabrication of, 22:22877
graphite--UC, dissolution of niobium-coated, 22:22930(R) (NBL-242)
hydrolysis at 80°C, gaseous products from, 22:41115 (ORNL-3515)
hydrolysis of, effects of basic solution on, 22:47126
hydrolysis of, electrochemical mechanism for, 22:47134
hydrolysis with sulfuric acid at 80°C, oxidation potentials in, 22:47134
iodine diffusion in UC, at 1524 to 1760°C, 22:22989 (BNL-12212)
linear expansion coefficients for, 22:32735 (ANL-7310, pp 249-375)
loading irradiation capsules with pellets of, facility for, 22:43629(R) (LA-3933)
magnetic susceptibility of U_2C_3 up to 300°K, evidence for magnetic transition at 60°K in, 22:7355(T) (LA-tr-67-115)
neutron coherent elastic scattering cross section for UC_2, at 0.01, 0.011, and 0.012 eV, (E/T), 22:48414(R) (GA-8773)
neutron differential scattering cross sections at 0.134 eV, (E), 22:3592 (RPI-328-101)
neutron doubly differential inelastic scattering cross sections at 0.134 eV, (E), 22:13908 (RPI-328-100, pp 120-39)
neutron doubly differential inelastic scattering cross sections at 0.134 eV, 22:29864
neutron doubly differential scattering cross section at 0.134 eV, (E), 22:32438
neutron resonance Doppler broadening in, effect of optical mode parameters on effective temperature calculations for, (T), 22:22528 (RPI-328-112, pp 104-19)
neutron scattering law for, (E/T), 22:48425 (RPI-328-133, pp 56-9)
neutron scattering law for, (T), 22:29864
neutron total cross section at 0.1 eV, time-of-flight measurements on, (E), 22:39541(R) (GA-8626)
neutron total cross section of UC_2, at 0.001 to 10 eV, (E), 22:48414(R) (GA-8773)
nitridation at 700 to 1200°C, kinetics of, 22:42649 (CEA-R-3398)
oxidation by oxygen and water vapor, 22:7031
oxidation of pyrolytic-carbon-coated fuel particles of, by helium-water vapor mixtures at 1100 to 1400°C, 22:41084 (ORNL-TM-2199)
oxidation of, cleavages faces on monocrystalline, at 60 to 160°C, 22:32065
performance as fuel for organic cooled and moderated reactors, 22:49822
performance of driver fuels of, analysis for FTR optimum, 22:27457 (BNWL-513)
phase studies, 22:2643
phase studies, 22:49841
phase studies of heat treated, at room temperature, 22:41115 (ORNL-3515)
physical properties of reactor fuels of, 22:17113 (JAERI-1144)
physics measurements in fuels of, 22:18571
preparation and properties of tungsten-doped UC, for fuel rods, 22:45755 (NAA-SR-12629)
preparation and properties of UC, 22:38602(T) (JPRS-45339)
preparation and properties of, for use as reactor fuels, (E), 22:30155(R) (NAA-SR-12296)
preparation and stabilization of UC, 22:31449
preparation by conversion of oxides, 22:36543 (ANL-7450, pp 39-74)
preparation by fluidized-bed technique, 22:24925(R) (ANL-7427)
preparation by metal--methane reaction, 22:36543 (ANL-7450, pp 39-74)
preparation by reaction of aluminum with uranium halides, 22:8817(P)
preparation by reaction of uranium halides with carbon and reducing metal, 22:23883(P)
preparation by reactions between methane and uranium in fluidized bed, 22:25321 (ANL-7375, pp 95-134)
preparation by reactions with carbon in liquid magnesium--zinc alloy, 22:28897
preparation from uranium and graphite, stoichiometric, 22:758(T) (LA-tr-67-92)
preparation of deoxidized, method for, 22:21755(P)

preparation of fast reactor fuels of, techniques for, 22:12006(R) (ANL-7399)
preparation of fuel elements of, hot pressing method for, 22:52240
preparation of fuels of, in helium-atmosphere glove box, 22:25321 (ANL-7375, pp 95-134)
preparation of high-density low-oxygen, process for, 22:36529(P)
preparation of high-density UC, using UC_2 and uranium metal, 22:38599 (BARC-319)
preparation of high-purity, methods of controlling, 22:45805 (UJV-1962)
preparation of hypostoichiometric, method for, 22:43637(P)
preparation of plutonium phosphide mixtures of, for fast breeder reactor fuels, 22:11037(P)
preparation of rods of, using copper-bonded diamond saws and wheels, 22:23868
preparation of UC, by reaction of uranium tetrafluoride with silicon dioxide and carbon at 400 to 1300°C, 22:49787(P)
preparation of UC, from uranium dioxide, 22:41089(P)
preparation, crystal structure, and melting points of, 22:8061
production by chemical vapor deposition, mathematical analysis of, 22:7039
production by reactions of carbon and silicon with uranium fluorides, 22:26074 (SCNC-331)
production from uranium dioxide, mechanisms of, 22:8822 (ORNL-4170, pp 163-72)
production of fuel rods of, by automated arc melting and casting, 22:49790
production of insulator pellets of, for EBR-II irradiation pins, 22:38626(R) (WARD-3791-18)
production of pellets of, methods for, (E), 22:8807(R) (WCAP-3791-10)
production of SAP-coated pellets of, for organic-cooled heavy water reactor fuel, 22:13049
production of spheres of, methods for, 22:15238(T) (MLM-1480(tr))
production of stoichiometric, 22:13055(P)
properties and uses, 22:52275
properties as fuel material, chemical research on, 22:25144
properties of pyrolytic carbon coated, for fuel, 22:11046 (ORNL-TM-2061)
properties of, literature survey on, 22:21759 (LA-3799)
properties of, review of, 22:14463
pulverization of, 22:25470(T) (ANL-Trans-590)
radiation damage in, electron microscopy of fission-track, 22:15263
radiation effects at -195°C on density of, in-pile, 22:28856
radiation effects at 21°C on density of, neutron, 22:4903 (CEA-R-3289)
radiation effects enriched, neutron, 22:19671(R) (EURAEC-1980)
radiation effects on carbon-coated particulate, fast neutron, 22:4915
radiation effects on crystal structure of, in-pile, 22:45829(T) (EURFNR-503)
radiation effects on diffusion of krypton in powders at 430 to 1000°C, thermal neutron, 22:2708 (EUR-3556f)
radiation effects on enriched, at 1382 to 13,000 MWd/t burnup, 22:21726(R) (EURAEC-1979)
radiation effects on fuel assemblies of SAP clad UC, NRU Reactor, 22:47003 (AI-CE-75)
radiation effects on gaseous and solid fission product swelling in, thermal neutron, 22:38592
radiation effects on grain boundary porosity in, in-pile, 22:765 (AECL-2701)
radiation effects on lattice constants of, fast neutron, 22:41132 (KFK-745)
radiation effects on mechanical properties of uncoated, analysis of neutron, 22:42200(R) (ORNL-4200)
radiation effects on physical properties of, 22:15263
radiation effects on physical properties of pyrolytic carbon-coated particles of, in-pile, 22:23853 (CONF-660524-, pp 273-92)
radiation effects on silicon carbide-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
radiation effects on sintered carbon coated pellets of, in-pile, 22:11046 (ORNL-TM-2061)
radiation effects on, literature survey of in-pile, 22:21759 (LA-3799)
radiation stability of coated-particle, 22:26093 (ORNL-4229, pp 125-41)
radioinduced krypton sorption by, neutron fission, 22:49862
radioinduced swelling of, effects of fission gas retention on in-pile, 22:765 (AECL-2701)
reactions with ammonia at 25 to 600°C and 1 to 1500 kg/cm², 22:47130
reactions with aqueous sodium hydroxide solutions, 22:47126
reactions with austenitic steels at 650 to 1050°C, 22:23852 (CEA-R-3353)
reactions with chlorine trifluoride, 22:30647 (EURAEC-1694)
reactions with chlorine trifluoride, 22:25470(T) (ANL-Trans-590)
reactions with nitrogen at 400°C, 22:52259 (CEA-R-3536
reactions with nitrogen at room temperature to 1000°C, kinetics of, 22:6300
reactions with water, study of rate and products of, 22:77
reactivity measurements for heavy water-moderated reactc fueled with, analysis of infinite multiplication constant for, 22:37477
reactivity of heavy water systems with, (E), 22:26767
self-shielding factors for particles of, (T), 22:5720
separation of plutonium from neutron-irradiated, 22:33501
solvent properties for oxygen of lattices of, effects of temperature on, 22:28959
stabilization of fuel of, using chromium, 22:23840(P)
synthesis experiments under reactor conditions on, results of, 22:3813(R) (AI-CE-54)
thermal capacity and conductivity of UC, 22:43631 (ANL-7299, pp 120-37)
thermal conductivity at 100 to 500°C, 22:4867 (EUR-3644
thermal conductivity of, 22:26085
thermal conductivity of, effects of fission products, hydrogen, oxygen, porosity, and sintering on, 22:768 (LA-DC-9059)
thermal diffusivity of, (E), 22:22653(R) (ANL-7419)
thermal diffusivity, analysis at 500 to 1500°C of, 22:48790
thermodynamic behavior of nonstoichiometric, determination by carbon activity, 22:31450
thermodynamics, 22:17175 (JAERI-4042)
thermodynamics, 22:36541
uranium inclusions in, dihedral angles of grain boundary 22:41068
vaporization of, thermodynamics of, 22:42689
vaporization of, thermodynamics of, 22:59 (UJV-1783)
vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
wettability by bismuth, effects of nickel additions on, 22:23752 (AERE-M/R-1746)
wettability by liquid copper above 1200°C, effects of nickel additions on, 22:23752 (AERE-M/R-1746)
wettability by liquid sodium at 400°C, 22:23752 (AERE-M/R-1746)
wettability of silver-coated, by bismuth, 22:23752 (AERE-M/R-1746)
^{239}PuC--UC, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
Al--Al_2O_3--UC, radiation effects on, evaluation of neutron, 22:11087 (AI-CE-76)
C--UC--ZrC, phase studies of, 22:41114 (JUL-516-RW)
CeC--UC--Zr--C, phase studies, 22:31510
CeC--UC--ZrC, phase studies at 1500°C, 22:21700(T) (EURFNR-387)
Cr--PuC--UC, fuels of, composition optimization for cladding compatability, 22:19642(P)
Cr--ThC--UC, fuels of, composition optimization for cladding compatability, 22:19642(P)
graphite--UC, reprocessing of irradiated, volatility method for, 22:150
graphite--UC--UO_2, diffusion of nonvolatile fission products from neutron-irradiated, 22:45140 (BMwF-FBK-68-08)
HfC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
Mo--UC, fabrication and properties of isostatic-pressed cermet, 22:36524 (BMI-1842)
Mo--UC, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
MoC--UC--ZrC, fuel pellets of, description of cylindrica clad, 22:25067(P)
N--PuC--UC, phase diagram, 22:52259 (CEA-R-3536)
Na--UC, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
NbC--PuC--UC, preparation of improved fuels of, 22:52251(P)
NbC--TaC--UC, fuel pellets of, description of cylindrica clad, 22:25067(P)
NbC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
NbC--UC, preparation of improved fuels of, 22:52251(P)
NbC--UC--ZrC, phase studies, 22:15208 (IS-T-219)
Pu_2C_3--U_2C_3, compatibility with stainless steel at 800°C 22:53463(R) (UNC-5217)
Pu_2C_3--U_2C_3, radiation effects on thermal properties and stress analysis of Type 304 stainless steel- and Incoloy 800-clad mixed, calculation of neutron, (T), 22:46923 (UNC-5219)
PuC_2--UC_2, phase studies, 22:41122
PuC--Ru--UC, analysis for ruthenium, 22:7986 (AERE-R-5617)
PuC--UC, burnup and performance of sodium-bonded, in-pile, 22:8807(R) (WCAP-3791-10)
PuC--UC, burnup of chromium-modified fuel pins of, relations with power, 22:38626(R) (WARD-3791-18)
PuC--UC, burnup of fuel pins of, chemical analysis of, 22:7787 (AERE-R-5309)
PuC--UC, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
PuC--UC, burnup of, effects of fuel density on, 22:3038
PuC--UC, chemical properties of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, compatibility of sodium bonded fuels of, with

Type 316 stainless steel at 750°C, 22:43629(R) (LA-3933)
PuC--UC, compatibility of sodium-bonded fuels with cladding materials, 22:6138(R) (LA-3820)
PuC--UC, compatibility of sodium-bonded, with cladding materials, 22:27487(R) (LA-3880)
PuC--UC, compatibility with austenitic and nickel-base cladding alloys at high temperatures, 22:31458
PuC--UC, compatibility with cladding materials at 700 to 800°C, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, compatibility with Incoloy 800 and stainless steel cladding at 800°C, 22:4877
PuC--UC, compatibility with jacketing materials, 22:9988(R) (ANL-7391)
PuC--UC, compatibility with stainless steel at 800°C, 22:53463(R) (UNC-5217)
PuC--UC, compatibility with stainless steel, niobium, or vanadium cladding, 22:36509 (CONF-671005-7)
PuC--UC, compatibility with Type 316 stainless steel-cladding of sodium bonded, evaluation of, 22:50841(R) (LA-3993)
PuC--UC, corrosion by flowing and static sodium at 700°C in 2200 hr exposures, 22:43629(R) (LA-3933)
PuC--UC, densities for fuel pellets of, effects of processing on, 22:21674(R) (WARD-3791-12)
PuC--UC, fabrication and properties of compacted, effects of refractory metal additions on, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, fabrication and testing of high-density fuel pellets of, 22:53463(R) (UNC-5217)
PuC--UC, fabrication and welding of irradiation test pins of, 22:21674(R) (WARD-3791-12)
PuC--UC, fabrication of fuel elements of, methods for, 22:8816(P)
PuC--UC, fabrication of pellet-shaped, effects of techniques on quality, 22:50841(R) (LA-3993)
PuC--UC, fabrication of pellets of, 22:36543 (ANL-7450, pp 39-74)
PuC--UC, fission products diffusion from pelleted, in liquid sodium, 22:43629(R) (LA-3933)
PuC--UC, fuel element compatibility for liquid sodium-bonded, analysis of metal-clad, 22:39790(R) (UNC-5201)
PuC--UC, fuel element fabrication of, quality control in pellet-type, 22:39790(R) (UNC-5201)
PuC--UC, fuel elements of, design parameters for optimum fast breeder power reactor, (E/T), 22:39810
PuC--UC, high temperature properties of, 22:27487(R) (LA-3880)
PuC--UC, integrity of stainless steel clad, effects of bubble size in sodium bonding on, 22:4910
PuC--UC, loading into GETR irradiation pins, 22:38626(R) (WARD-3791-18)
PuC--UC, loading irradiation capsules with pellets of, facility for, 22:43629(R) (LA-3933)
PuC--UC, loading pellets of, into cladding tubes, (E), 22:8807(R) (WCAP-3791-10)
PuC--UC, performance of driver fuels of, analysis for FTR optimum, 22:27457 (BNWL-513)
PuC--UC, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
PuC--UC, phase relations and properties of, 22:2699
PuC--UC, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
PuC--UC, physical properties of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, physics parameters for Prototype Fast Reactor fuel of, analysis of, 22:18512
PuC--UC, power performance of, analysis of optimum, 22:46928 (WASH-1106)
PuC--UC, preparation and high-temperature properties, 22:43629(R) (LA-3933)
PuC--UC, preparation and properties of chromium carbide stabilized, 22:45806(R) (WARD-3791-21)
PuC--UC, preparation and properties of reactor fuels of, 22:6138(R) (LA-3820)
PuC--UC, preparation by hydrogen reduction method, 22:27487(R) (LA-3880)
PuC--UC, preparation by precipitation from plutonium nitrate--uranium nitrate using sucrose, 22:19609(R) (NYO-3713-3)
PuC--UC, preparation of, 22:52257 (ANL-7425, pp 94-129)
PuC--UC, preparation of fuels of, fluidized-bed process for, 22:25321 (ANL-7375, pp 95-134)
PuC--UC, production of pellets of, (E), 22:8807(R) (WCAP-3791-10)
PuC--UC, production of pellets of, methods for, 22:38626(R) (WARD-3791-18)
PuC--UC, radiation effects at 19,000 to 32,000 MWd/t, fast neutron, 22:4911
PuC--UC, radiation effects at 640°C on clad, in-pile, 22:4912
PuC--UC, radiation effects measurements on, 22:24925(R) (ANL-7427)
PuC--UC, radiation effects of pellets of, fast and thermal neutron, 22:36509 (CONF-671005-7)
PuC--UC, radiation effects on clad sodium bonded fuel elements of, in-pile, 22:45806(R) (WARD-3791-21)
PuC--UC, radiation effects on clad, at 5900 MWd/t burnup, 22:43629(R) (LA-3933)
PuC--UC, radiation effects on compacted, in-pile, 22:43627 (ANL-7299, pp 14-113)
PuC--UC, radiation effects on EBR-2 driver fuel elements, analysis of neutron, 22:50841(R) (LA-3993)
PuC--UC, radiation effects on fuels of, 22:7788(R) (ANL-7382)
PuC--UC, radiation effects on fuels of, review on, 22:8804
PuC--UC, radiation effects on niobium-zirconium clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, radiation effects on physical properties of metal-clad helium-bonded, analysis of fast neutron, 22:39789 (UNC-5198)
PuC--UC, radiation effects on physical properties of metal-clad, analysis of fast neutron, 22:39790(R) (UNC-5201)
PuC--UC, radiation effects on stainless steel clad compacts of, at 1.2 to 6.9 at. per cent burnup, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, radiation effects on thermal properties and stress analysis of Type 304 stainless steel- and Incoloy 800-clad, calculation of neutron, (T), 22:46923 (UNC-5219)
PuC--UC, radiation effects on, description of optical examination methods for neutron, 22:27497
PuC--UC, radiation effects on, literature survey of in-pile, 22:21759 (LA-3799)
PuC--UC, radioinduced swelling of, in-pile, 22:771
PuC--UC, reactions at 800°C with cladding materials, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuC--UC, reactions with methane, thermodynamics of, 22:25321 (ANL-7375, pp 95-134)
PuC--UC, reactivity of fluidized-bed powder of, with helium atmosphere in glove box, 22:25321 (ANL-7375, pp 95-134)
PuC--UC, thermal conductivity of, 22:768 (LA-DC-9059)
PuC--UC, thermal diffusivity of, (E), 22:22653(R) (ANL-7419)
PuC--UC, thermal diffusivity, analysis at 500 to 1500°C of, 22:48790
PuC--UC, thermal properties of, analysis at 1600 to 2500°C of, 22:50841(R) (LA-3993)
Ru--UC, analysis for carbon, ruthenium, and uranium, 22:7986 (AERE-R-5617)
SiC--UC_2, analysis for carbon using electron-probe microanalyzer, fluorescence correction in, 22:2458
TaC--UC, fabrication by powder metallurgy of fully dense, 22:36523 (BMI-1840)
TaC--UC, thermal stability of compounds in, 22:36523 (BMI-1840)
ThC_2--UC_2 preparation of spheres of, by the sol-gel process, 22:49788
ThC_2--UC_2, burnup characteristics of spherical pellets of, 22:6040
ThC_2--UC_2, fabrication of silicon carbide (SiC)-coated and -uncoated Fort St. Vrain Power Reactor proof test element number one of, method of, 22:44818 (GAMD-8552)
ThC_2--UC_2, fuel pellets of, effects of temperature on uranium contamination in pyrolytic carbon and silicon carbide (SiC) coatings on, 22:39900 (GAMD-8325)
ThC_2--UC_2, fuels of, burnup analysis at 1250 to 1400°C for small spheres of, 22:22688 (GA-7549)
ThC_2--UC_2, oxidation of pyrolytic-carbon-coated fuel particles of, by helium-water vapor mixtures at 1100 to 1400°C, 22:41084 (ORNL-TM-2199)
ThC_2--UC_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
ThC_2--UC_2, radiation effects on carbon-coated particulate, fast neutron, 22:4915
ThC--^{233}UC, physics measurements of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
ThC--UC, fabrication into pebble-type fuels, program development for, 22:23855 (CONF-660524-, pp 293-8)
ThC--UC, fuel particles of, development for Dragon project, 22:5932(R) (NP-17118)
ThC--UC, preparation by sol/gel method, 22:28912(P)
ThC--UC, preparation of carbon-coated microspheres of, 22:49789
ThC--UC, radiation effects on carbon-coated microspheres of, in-pile, 22:49789
ThC--UC, radiation effects on silicon carbide-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
ThC--UC, reactions of pyrolytic carbon-coated, with water vapor, 22:11046 (ORNL-TM-2061)
TiC--UC, fuel pellets of, description of cylindrical clad, 22:25067(P)
TiC--UC--WC, fuel pellets of, description of cylindrical clad, 22:25067(P)
U--UC, mechanical properties of dispersions of, 22:11062
U--UC, phase diagram, 22:19642(P)
U--UC, preparation and examination of cermets of, 22:4852 (UJV-1356)
UAs--UC, solid-solubility relations, 22:11055
UC--UN, analysis for nitrogen, 22:50904(T) (NP-tr-1687)
UC--UN, decomposition pressure and stability of solid-solution, 22:31466
UC--UN, phase studies of solid solutions of, in nitrogen, 22:19653
UC--UN, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
UC--UN, stability at 1350 to 1800°C, free carbon effects on, 22:31467
UC--UN, thermodynamic properties, 22:8739 (ORNL-4170, pp

97-102)
  UC--UN, thermodynamics of solid-solution, 22:31468
  UC--UN--UO, phase studies of, thermodynamic, 22:38635(T) (ORNL-tr-1918)
  UC--UP, phase and solubility studies, 22:31469
  UC--W, diffusion of uranium in, 22:7065
  UC--W, fuel dispersions of, irradiation swelling tests on, 22:27396(R) (AI-AEC-12638)
  UC--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
  UC--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
  UC--W, phase diagrams of, 22:7065
  UC--ZrC, diffusion through vapor deposited tungsten cladding, 22:7008
  UC--ZrC, fuel pellets of, description of cylindrical clad, 22:25067(P)
  UC--ZrC, fuels for thermionic reactors, physics measurements on, (T), 22:32946
  UC--ZrC, fuels of colloidal suspensions of, physics measurements on hydrogen moderated, 22:32943
  UC--ZrC, mechanical properties of carbon coated and uncoated, effects of temperature on, 22:35568 (LA-DC-9589)
  UC--ZrC, preparation and properties of solid-solution, 22:38602(T) (JPRS-45339)
  UC--ZrC, preparation of carbon-coated microspheres of, 22:49789
  UC--ZrC, radiation effects on carbon-coated microspheres of, in-pile, 22:49789
URANIUM CARBONITRIDES
  crystal structure, 22:45805 (UJV-1962)
  preparation by reaction of uranium carbide with ammonia, 22:47130
  preparation of high-purity, methods of controlling, 22:45805 (UJV-1962)
  PuCN--UCN, fabrication by arc melting and casting for use as reactor fuels, 22:28777(R) (BMI-1837)
  PuCN--UCN, preparation by arc melting and casting, 22:15261(R) (BMI-1819)
  PuCN--UCN, preparation by casting and melting, 22:720 (BMI-1809, Sect.A)
  PuCN--UCN, radioinduced swelling of, in-pile, 22:771
Uranium Cesium Chlorides
  see Cesium Uranium Chlorides
Uranium Cesium Fluorides
  see Cesium Uranium Fluorides
URANIUM CHLORIDE OXIDES
  crystallographic properties of, 22:16500
  preparation of, 22:16500
  spectra of, infrared, 22:16500
URANIUM CHLORIDE OXIDES $UOCl_3$
  hydrolysis of, spectral studies on, 22:45031
  production by reaction of uranium trioxide with molybdenum pentachloride, 22:33314
  properties of, 22:33314
URANIUM CHLORIDES
  see also Cesium Uranium Chlorides
  complexes with (ethylenebis[(carboxymethyl)imino]ethylenenitrilo])tetraacetic acid, formation, hydrolysis, and olation of, 22:10210
  conversion to uranium dioxide by reactions with hydrogen and water vapor, 22:8686 (ORNL-4170, pp 108-14)
  ion exchange studies on, permselectivity in, 22:33363
URANIUM CHLORIDES UCl_3
  fluorination with fluorine and interhalogens, 22:8186
  reactions with ammonia, products from, 22:50979
  reduction and ammonolysis of, production of uranium nitrides by, 22:13048
  separation from molten lithium chloride--potassium chloride eutectic by column crystallization and zone melting, 22:16670
  thermodynamic activity in molten sodium chloride, 22:16521
  $CaCl_2$--KCl--$MgCl_2$--$PuCl_3$--UCl_3, properties as breeder fuel, 22:4130
  $CaCl_2$--UCl_3, use in separation of uranium from molybdenum, niobium, and zirconium by electrolysis, 22:25454 (CEA-N-616, pp 246-94)
  KCl--LiCl--UCl_3, use in separation of uranium from molybdenum, niobium, and zirconium by electrolysis, 22:25454 (CEA-N-616, pp 246-94)
  $PbCl_2$--UCl_3, phase studies on, 22:23003 (IA-1128, pp 97-146)
URANIUM CHLORIDES UCl_4
  complexes with [(2-hydroxyethyl)imino]diacetic acid, formation, hydrolysis and olation of, 22:10210
  complexes with [(carboxymethylimino)bis(ethylenenitrilo)]tetraacetic acid, formation, hydrolysis, and olation of, 22:10210
  complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, formation, hydrolysis, and olation of, 22:10210
  complexes with (ethylenedinitrilo)tetraacetic acid, formation, hydrolysis, and olation of, 22:10210
  complexes with dimethyl sulfoxide, stability, properties, and infrared spectra of, 22:16522
  complexes with N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine, 22:10210
  complexes with nitrilotriacetic acid, formation, hydrolysis, and olation of, 22:10210
  compounds with aluminum chloride, spectra of volatile, 22:30558
  effects on electromotive force of lead chloride--potassium chloride--sodium chloride system, 22:33318
  evaporation of, thermodynamics of, 22:35807
  preparation and purification of, method for, 22:23003 (IA-1128, pp 97-146)
  reactions with alcohols, amines, esters, and phosphine oxides, properties of compounds from, 22:40063
  reactions with alkali metal amides, 22:4141
  reactions with aluminum and hydrogen sulfide to prepare uranium sulfide, 22:4103
  reactions with aluminum and nitrogen, preparation of uranium nitride by, 22:19612
  reactions with borane, 22:14476 (BMwF-FBK-67-87)
  reactions with tributylphosphine oxide, effects of media on, 22:33323
  separation from molten lithium chloride--potassium chloride eutectic by column crystallization and zone melting, 22:16670
  separation of fission products from, by zone melting, 22:23107
  vapor pressure at 279 to 423°C, 22:35807
  methanol--UCl_4, radiation effects on reactions of, to yield ethylene glycol and formaldehyde, thermal-neutron, 22:40110(P)
  $PbCl_2$--UCl_4, phase studies on, 22:23003 (IA-1128, pp 97-146)
URANIUM CHLORIDES UCl_5
  spectra in carbon tetrachloride and silicon tetrachloride, ir, 22:27651
  PCl_5--UCl_5, preparation of, 22:27651
  $SOCl_2$--UCl_5, preparation of, 22:27651
  $SOCl_2$--UCl_5, spectra of, ESR and ir, 22:27651
  trichloroacryloyl chloride--UCl_5, preparation of, 22:27651
  trichloroacryloyl chloride--UCl_5, spectra of, ESR and ir, 22:27651
URANIUM CONCENTRATES
  analysis for uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
  cost of, prediction to 1980 of, 22:2251
  processing of, design of plant at Kowary, Poland for, 22:4256
  processing to produce feed for gaseous diffusion process, 22:30683
  purification of, design of plant for, 22:8263
  shipping of low specific activity, IAEA regulations on, 22:28045
URANIUM COUPLES
  Al/U, corrosion in aqueous media, (E), 22:23718
  stainless steel/U, corrosion by aqueous media, (E), 22:23718
URANIUM DEPOSITS
  (This heading may be modified by location in the form Uranium Deposits (Morocco).)
  abundance of, estimates of free world requirements to 1985 for, 22:27420(T) (ORNL-tr-1825)
  age of hydrothermal, thorium-230 accumulation method for estimation of, 22:30695
  age of, radioactive disequilibrium method for estimation of, 22:6439
  analysis for uranium concentration, gamma spectrometric well logging method for, 22:22945
  detection of, design of gamma scintillation spectrometer for aerial, 22:19143
  distribution in United States, 22:40276
  mining of the Ningyotoge, hydraulic, 22:49003
  occurrence of, use of reductive properties of rocks for estimation of, 22:51112
URANIUM DEPOSITS (AFRICA)
  exploration and development program for, 22:40274
  prospecting for, in Arhlit region of Niger, Africa, 22:25549
URANIUM DEPOSITS (CANADA)
  exploration and geological survey programs for, 22:45204
URANIUM DEPOSITS (FRANCE)
  occurrence in Forez Tertiary Plain, 22:10385 (CEA-R-3117)
URANIUM DEPOSITS (JAPAN)
  distribution in Nakatsugo-Ombara area of, 22:48964
  minor element content in, methods for analysis of, 22:4290
  origin of Nakatsugo-Ombara area, 22:48960
  radioactivity from Yamaguchi Prefecture, 22:51114
  review of, 22:45200(T) (NSJ-tr-110)
URANIUM DEPOSITS (MEXICO)
  occurrence in Rodeo, Mexico, 22:25502 (NP-17345)
URANIUM DEPOSITS (N. MEX.)
  distribution and formation in southern San Juan basin of, 22:27926
  uranium mineralization in Burro Mountains, 22:33600
URANIUM DEPOSITS (SOVIET UNION)
  bitumens in, formation of solid, 22:42888
URANIUM ETHOXIDES
  reactions with acetyl chloride, products from, 22:2054
URANIUM FLUORIDE OXIDES
  preparation and properties of, 22:83
  preparation and properties of, 22:27692
  preparation of hydrated, methods for, 22:4096
URANIUM FLUORIDES
  see also Ammonium Uranium Fluorides
  see also Barium Uranium Fluorides

see also Calcium Uranium Fluorides
see also Cesium Uranium Fluorides
see also Lithium Uranium Fluorides
see also Potassium Uranium Fluorides
see also Rubidium Uranium Fluorides
see also Silver Uranium Fluorides
see also Thallium Uranium Fluorides
ompounds with other metal fluorides, preparation of, 22:8186
ormation of gaseous, heats of, 22:8045(T) (CEA-tr-R-1905)
roduction of, wet process for, 22:23003 (IA-1128, pp 97-146)
eactions to prepare oxides, 22:25470(T) (ANL-Trans-590)
eactions with carbon and silicon dioxide to produce uranium carbide, 22:13055(P)
eactions with chlorine fluorides, 22:27852(R) (EURAEC-2011)
olatility of, 22:8169(R) (EURAEC-1934)
eF$_3$--LiF--ThF$_4$--UF$_4$--ZrF$_4$, corrosive effects on Hastelloy N and type 304L stainless steel at 675 to 705°C, 22:8696 (ORNL-4170, pp 192-205)
NIUM FLUORIDES UF_3
ontent in MSRE fuel, effects of beryllium on, 22:25327 (ORNL-4229, pp 3-21)
rystal structure of, neutron diffraction study of, 22:47149
ffects on separation of rare earth trifluorides from molten fluorides, 22:23126(P)
NIUM FLUORIDES UF_4
nalysis for carbon by combustion and conductometric methods, 22:48819 (NIM-256)
nalysis for hexavalent uranium by polarography, 22:27535 (NIM-129)
nalysis for impurities by carrier distillation, spectrographic, 22:30431 (JEN-192-DQ/1-66)
nalysis for iron, colorimetric, 22:27530 (CEA-N-816, pp 9-65)
nalysis for oxygen, method for, 22:27530 (CEA-N-816, pp 9-65)
nalysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
ook: Uranium Tetrafluoride, in Russian, 22:30581
omplex formation in aluminum perchlorate solutions, 22:4072(T) (JPRS-43026)
rystal structure of hydrated, 22:40086
ehydration of crystal hydrates of, in flowing dehydrated hydrofluoric acid, 22:4139
ehydration of hydrated, crystal structures of products from, 22:40086
ission fragment transport in, mass dependence of stopping power for californium-252, 22:14751(R) (ORO-3638-1)
luorination to uranium hexafluoride, design of Portsmouth facility and equipment for, 22:27978
luorination with fluorine and interhalogens, 22:8186
luorination with liquid anhydrous hydrogen fluoride, 22:30555
aF--UF$_4$, corrosive effects of fused eutectic of, on metals, 22:15139 (AWRE-R-3/63)
hase transformations in, effects of pressure and temperature on, 22:15269
recipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
reparation by reaction of uranium hexafluoride with trichloroethylene at -50°C, 22:35811(P)
roduction by French reduction--hydrofluorination process, 22:35791
roduction by reduction of uranium hexafluoride by hydrogen or ammonia in presence of chlorine trifluoride, 22:94(P)
roduction in South Africa, development of plants and processes for, 22:10401
roduction of high-purity, by reduction of hexafluoride, 22:93(P)
eactions of, method for remote starting of exothermic, 22:14510(P)
eactions with bromine pentafluoride, 22:42806 (ANL-7412)
eactions with bromine trifluoride, effects of temperature and bromine trifluoride partial pressure on kinetics of, 22:27647
eactions with carbon and silicon to produce uranium carbide, 22:26074 (SCNC-331)
eactions with chlorine fluorides, ir spectral, microsublimation, and thermogravimetry studies on, 22:48847 (CEA-R-3558)
eactions with fluorine under pressure to produce uranium hexafluoride, 22:35774 (NIJS-R-525)
eactions with hydrated metal difluorides, study of complexes formed by, 22:27706
eactions with hydrazine, effects of water on, 22:45025 (NIJS-R-524)
eactions with silicon dioxide and carbon at 400 to 1300°C to produce uranium carbide, 22:49787(P)
eactions with uranium oxides to prepare uranyl fluorides, 22:27631
eduction by magnesium, heat distribution during preheating period of, 22:19495
eduction with aluminum, 22:8187
olubility in aluminum perchlorate solutions, 22:4072(T) (JPRS-43026)
olubility in aluminum perchlorate solutions, spectral studies on, 22:2039
solubility in sodium fluoroborates, 22:25327 (ORNL-4229, pp 3-21)
structure of UF$_4$.2.5H$_2$O and its dehydration products, 22:45082
thermodynamic functions of, at 298 to 2000°K, 22:37763
BeF$_2$--LiF--NaBF$_4$--ThF$_4$--UF$_4$, phase studies of, 22:25327 (ORNL-4229, pp 3-21)
BeF$_2$--LiF--NaF--ThF$_4$--UF$_4$, corrosive effects on Hastelloy N at 700°F, 22:30769
BeF$_2$--LiF--ThF$_4$--UF$_4$, physical properties for use as molten-salt reactor fuel mixtures, evaluation of, 22:44827 (ORNL-TM-2316)
BeF$_2$--LiF--UF$_4$--ZrF$_4$, irradiation testing of molten, as reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
BeF$_2$--LiF--UF$_4$--ZrF$_4$, performance of fused fuels of, in ORR in-pile loop, 22:7900 (ORNL-TM-1960)
BeF$_2$--LiF--UF$_4$--ZrF$_4$, radiation effects on fission product penetration in graphite from, analysis of, 22:48736 (ORNL-4254, pp 174-82)
CoF$_2$--UF$_4$, crystal structure of hydrated compounds in, 22:42690
CuF$_2$--UF$_4$, crystal structure of hydrated compounds in, 22:42690
LiF--UF$_4$, preparation and structure of, 22:30555
LiF--UF$_4$, preparation of lithium-7- and uranium-233-enriched, as fuel concentrate for MSRE, 22:47204 (ORNL-4254, pp 241-78)
NaF--UF$_4$, density of fused eutectic mixture of, at 686 to 882°C, 22:12269 (AWRE-R-6/58)
NaF--UF$_4$, preparation and structure of, 22:30555
NaF--UF$_4$, surface tension of fused eutectic mixture of, 22:14474 (AWRE-R-7/58)
NaF--UF$_4$, thermal conductivity of fused eutectic mixture of, at 650 to 750°C, 22:14472 (AWRE-R-1/62)
NaF--UF$_4$, vapor pressure of fused eutectic mixture of, at 700 to 1100°C, 22:14473 (AWRE-R-2/61)
NaF--UF$_4$, viscosity of fused eutectic mixture of, 22:14475 (AWRE-R-8/58)
NiF$_2$--UF$_4$, crystal structure of hydrated compounds in, 22:42690
SmF$_3$--UF$_4$, phase studies of, 22:2018(R) (BMwF-FBK-67-76)
UF$_4$--UF$_6$, phase studies at 26 to 200°C, by microcalorimetry, 22:43659(T) (ANL-Trans-654)
UF$_4$--UO$_2$, phase studies on, 22:33294(T) (NLCO-Tr-9)
UF$_4$--UO$_2$F$_2$, volatilization by chlorine mono- and trifluorides in presence of alumina, 22:4230(R) (EURAEC-1920)
URANIUM FLUORIDES UF_5
reactions with chlorine fluorides, ir spectral, microsublimation, and thermogravimetry studies on, 22:48847 (CEA-R-3558)
reactions with hydrated metal difluorides, study of complexes formed by, 22:27706
alkali metal fluorides--UF$_5$, preparation and structure of, 22:30555
URANIUM FLUORIDES UF_6
analysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
analysis for uranium-235, portable mass spectrometer for on-line, 22:38140 (GAT-571)
analysis for uranium-236 using double-standard interpolative method, 22:27544(R) (NLCO-1015)
analysis formolybdenum by atomic absorption spectrometry, 22:12261
analysis of process gases of, for halocarbon coolant leaks by gas chromatography, 22:21021 (K-L-6182)
analysis of uranium-235-enriched, isotopic, 22:37643 (CEA-R-3337)
analysis of, chromatographic, 22:21034
base costs and enrichment fees for, tables of USAEC, 22:8690 (TID-21015(Rev.))
chromatographic behavior of, at -10 to 40°C, gas, 22:21034
chromatography of, retention time for, 22:37648 (NP-17520)
conversion of enriched, to oxide or metal, method for, 22:27850 (CEA-N-816, pp 80-9)
cost factors for enriching, tables on, 22:18902
crystal structure of, electron-diffraction study of, 22:33436
determination in gases, method and apparatus for, 22:35748(P)
determination of trace amounts of, in decafluorobis(trifluoromethyl)cyclohexane at low pressure, performance of gas analyzer for, 22:14420 (K-1719)
determination of volatile, method for, 22:25454 (CEA-N-616, pp 246-94)
diffusion of gaseous, model of barrier surface, 22:10520
electron scattering on, differential cross sections for, (E), 22:17355
handling of, container criteria and procedures for, 22:33527
hydrolysis of, potentiometric determination of hydrogen fluoride and uranium from, 22:32
molecular interaction potentials of, 22:6294
molecular motion in, fluorine-19 relaxation studies of, 22:10250
packaging for shipment, economy and safety of, 22:282

(CONF-661011, pp 120-31)
- preparation by fluorination of uranium dioxide pellets, kinetics of, 22:14568
- preparation by reactions of uranium oxides or uranium tetrafluoride with fluorine under pressure, 22:35774 (NIJS-R-525)
- price schedule for high-enriched, slightly-enriched, and depleted, 22:6215 (ORNL-TM-2031)
- production and purchase price from USAEC, 22:42663
- production by fluorination of oxides, facility for, 22:35771 (GAT-P-43)
- production from irradiated uranium dioxide pellets by processing with hydrofluoric acid in oxygen and fluorination, 22:25443 (ANL-7375, pp 46-94)
- production from uranium ore concentrates, 22:30683
- production from uranium tetrafluoride, design of Portsmouth facility and equipment for, 22:27978
- production in Euratom countries, catalog of facilities for, 22:4303 (EUR-3568)
- production in South Africa, development of plants and processes for, 22:10401
- reactions of, design of apparatus for, 22:21085(P)
- reactions to produce ammonium diuranate, 22:50991(P)
- reactions with binary ionic chlorides, 22:47145
- reactions with carbon and silicon to produce uranium carbide, 22:26074 (SCNC-331)
- reactions with hydrazine dihydrofluoride and hydroxylamine hydrofluoride, properties of products of, 22:4102
- reactions with hydrogen and oxygen or water vapor at 1100°C, 22:4160(P)
- reactions with lithium and nitrogen to form uranium nitride, 22:8686 (ORNL-4170, pp 108-14)
- reactions with trichloroethylene at -50°C to produce uranium tetrafluoride, 22:35811(P)
- reactions with water, preparation of $U_3O_5F_8$ by, 22:83
- reactivity and thermal stability of, comparison of, 22:45072
- reduction by hydrogen or ammonia in presence of chlorine trifluoride, production of uranium tetrafluoride by, 22:94(P)
- reduction to metal by calcium, 22:28760
- reduction to tetrafluoride by hydrogen and chlorine trifluoride, 22:93(P)
- sampling and transfer facility for, equipment design for, 22:14639
- separation from bromine fluorides by sorption on sodium fluoride, 22:37864(P)
- separation from fission product fluorides, fluorination method for, 22:4268(P)
- separation from fluorine, nitrogen, and oxygen, design of cold trap for, 22:14651
- separation from metal fluoride mixtures using hydrofluoric acid, method for, 22:35886(P)
- separation from mixture of gases by continuous sorption--desorption method, 22:164(P)
- separation from neptunium fluorides, fluid-bed volatility process for, 22:30118 (ANL-7438)
- separation from neptunium hexafluoride by reactions with bromine, 22:25443 (ANL-7375, pp 46-94)
- separation from other metal fluorides, method for dissolution in anhydrous hydrogen fluoride for, 22:27895(P)
- separation from plutonium hexafluoride by selective reduction, 22:47213
- separation of impurities from, 22:23106
- separation of plutonium hexafluoride from, by selective reduction, 22:25454 (CEA-N-616, pp 246-94)
- separation of plutonium hexafluoride from, by selective thermodecomposition, 22:25454 (CEA-N-616, pp 246-94)
- separation of volatile impurities from, by selective sorption techniques, 22:4240
- separation of volatile impurities from, selective sorption techniques for, 22:4233 (K-L-6167-9)
- shipping containers for, design of 5, 8, 12 in. dia and 2.5 ton, 22:14745
- shipping of, testing of cylinders for, 22:30795 (KY-549)
- sorption of trace amounts of, by sodium fluoride, 22:42813(R) (K-L-1780(Pt.26))
- sorption on fluidized-bed in high gas flow, 22:12399 (K-L-1780(Pt.22))
- spectra of, vibrational, 22:33527
- thermal diffusion of, effects of temperature on, 22:6294
- thermodynamic properties of, at 337 to 1500°K and 1 to 300 bar, 22:33328
- thermodynamic stability of gaseous, 22:37763
- uranium dioxide production from, design of plant for, 22:12490
- uranium-235 distribution in 14-ton cylinder of, steam-bath cycle for homogeneous, 22:35773 (KY-556)
- HF--NaF--UF_6, criticality calculations for homogeneous, 22:45143 (K-1734)
- HF--UF_6, criticality calculations for homogeneous, 22:45143 (K-1734)
- HF--UF_6, criticality measurements on binary liquid mixtures of, 22:48735 (NP-17606)
- methane--UF_6, pyrolysis at 1420 to 1520°C, deposition of carbon and uranium from, 22:52229
- MoF_6--UF_6, analysis of, triple point depression curves for, 22:18689 (K-1697)
- MoF_6--UF_6, phase studies of, 22:30525
- MoF_6--UF_6, phase studies of, 22:150
- MoF_6--UF_6, phase studies of, triple point depression curves for, 22:18689 (K-1697)
- PuF_6--UF_6, phase studies of, 22:150
- PuF_6--UF_6, separation of plutonium and uranium from, volatility process for, 22:37825(T) (ANL-Trans-626, 36-58)
- UF_4--UF_6, phase studies at 26 to 200°C, by microcalorimetry, 22:43659(T) (ANL-Trans-654)
- UF_6--WF_6, analysis of, triple point depression curves for, 22:18689 (K-1697)
- UF_6--WF_6, phase equilibria of, liquid--solid, 22:52280
- UF_6--WF_6, phase studies of, liquid-vapor, 22:42671
- UF_6--WF_6, phase studies of, triple point depression curves for, 22:18689 (K-1697)

URANIUM FORMATES
- preparation and structure of allotropic forms of, 22:27644
- thermal decomposition of, mechanism of, 22:33364

URANIUM HALIDES
- reactions with carbon and reducing metal to yield uraniu carbides, 22:23883(P)

URANIUM HYDRIDES
- carburization with methane, 22:30505 (JEN-177-DMe/1-22)
- carburization with methane, 22:50950(T) (ANL-Trans-660)
- ignition of, 22:37716 (RD/B/N-1134)
- neutron scattering by, lattice dynamics from cold inelastic, (E/T), 22:5440
- nuclear magnetic resonance in, (E/T), 22:32011
- phase diagram at 400 to 850°C, 22:48789
- reactions with water, products and mechanisms of, 22:12268 (AWRE-O-45/65)
- thermal decomposition of, 22:30505 (JEN-177-DMe/1-22)
- thermal decomposition of, 22:50950(T) (ANL-Trans-660)
- thermodynamic properties from 1.4 to 23°K of beta, 22:7398
- use in increasing hydrogen sorption by palladium, palladium alloys, tantalum, titanium, and uranium, 22:13005(T) (UCRL-Trans-10180)
- yields from reactions of uranium with water, 22:12268 (AWRE-O-45/65)
- UH--Zr, ablation tests on, 22:6078

URANIUM HYDROXIDES
- precipitation from homogeneous solutions by decompositio of acetylacetone in basic solution, 22:158
- precipitation of, 22:28887 (ORNL-4204, pp 22-39)
- properties as ion-exchange material, 22:33552

URANIUM IODIDE OXIDES
- crystallographic properties of, 22:16500
- preparation of, 22:16500
- spectra of, infrared, 22:16500

URANIUM IODIDES
- formation of, emf measurements of standard free energy of, 22:47144
- iodine-127 nuclear quadrupole resonance spectra in, 22:11529
- iodine-127NQR at 1.4 to 2.4°K in, (E), 22:44274

URANIUM IODIDES UI_4
- transformation temperatures of radioactive, 22:2710

URANIUM IONS
- determination of trivalent, in fuels by hydrogen reduction, 22:14427 (ORNL-4196, pp 15-32)
- distribution between nitric acid and TBP, 22:14559 (KFK-671)
- distribution between nitric acid and TBP, 22:33484(T) (EURFNR-463)
- magnetic susceptibility of pentavalent, in ternary oxides, 22:12318
- polymerization in aqueous solutions of uranyl nitrate, 22:18780
- production of tetravalent, electrolytic, 22:8185
- reactions of tetravalent, with plutonium in TBP, 22:16682
- reactions with uranium at high energy, with Coulomb fission, (T), 22:27336
- reduction of hexavalent to tetravalent, in nitrate solution by formic acid, catalytic, 22:23023
- reduction of tetravalent, in molten fluorides, 22:14427 (ORNL-4196, pp 15-32)
- reduction on mercury electrode in sulfuric acid, 22:12319
- separation of hexavalent from tetravalent, by ion exchange using divinylbenzene-containing resins, 22:37836(T) (JPRS-45458, pp 6-10)
- spectra in potassium fluoride solutions, 22:30517
- spectra of hexavalent, in molten fluorides, absorption, 22:14427 (ORNL-4196, pp 15-32)
- spectra of tetravalent, in molten beryllium fluoride--lithium fluoride, effects of temperature on, 22:45035
- spectra of tetravalent, in molten fluorides, absorption, 22:14427 (ORNL-4196, pp 15-32)
- stability of tetravalent, in solutions, 22:45146 (NP-17588)
- use in spectrophotometric measurements of reactions of fluorides with silicon dioxide, 22:25328 (ORNL-4229, pp 50-67)
- use of tetravalent, as process reductant in separation o uranium from plutonium, 22:16681

URANIUM ISOPROPOXIDES
- reactions with acetyl chloride, products from, 22:2054

URANIUM ISOTOPES
- abundance ratios in MSRE fuel, 22:47112 (ORNL-4254, pp

88-173)
abundance ratios of, mass-spectrometric measurement of, 22:4016
analysis of, statistical problems in mass spectrometric, 22:21019 (BNWL-SA-1717)
book: Isotopic Separation of Uranium, 22:47298
composition in natural and slightly enriched uranium, use of alpha spectrometers for determining, 22:38075
concentration in Containment Systems Experiment of gaseous, effects of spray removal system on, 22:35591 (BNWL-SA-1863)
content in Romanian mineral waters, effects of rock structure on, 22:27896 (IFA-IS-44)
decay properties of, tables and charts on, (E), 22:7723
determination in carbonates by ion exchange and alpha spectrometry, 22:6271
determination in fuel elements by mass spectroscopy, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in natural uranium by alpha spectroscopy and x-ray fluorescence, 22:50942
determination in neutron-irradiated uranium dioxide by mass spectrometry, 22:4033
determination in reactor fuels, mass spectrographic, 22:25236 (CEA-N-616, pp 20-71)
determination of activity and composition of, in urine, method for simultaneous quantitative, 22:51654
determination of ratio of, in mineral spring waters in Japan, ion exchange and α spectrometry for, 22:50941
distribution in irradiated natural uranium dioxide fuel rods, (E/T), 22:20943
excretion in urine by man, methods for calculation of safe limits of, 22:6811
metabolism in mice, effects of diet on, 22:43210
neutron capture cross section calculations using revised mass formula, fast, (T), 22:30021
neutron capture in thermonuclear explosions, cross sections for, (T), 22:14003(T) (BNL-tr-174)
separation by diffusion of uranium hexafluorides, effects of surface diffusion on, 22:10520
separation by electromigration in cation exchange membrane, 22:42842
separation by ionization process, 22:42815(T) (K-Trans-36)
separation by nozzle process, 22:42982
separation during leaching from minerals, effects of oxidation processes on, 22:45203
separation in Pierlatte gaseous diffusion plant, technical problems in, 22:23231
separation of, 22:37938 (ORNL-4271)
separation of milligram quantities of, modification of ion source in calutron for, 22:2469
separation of, design and construction of 10-stage pilot plant for nozzle cascade, 22:35999 (KFK-702)
separation of, interpretation of experimental results on ion exchange method for, 22:51058
separation of, legal aspects of private enterprise ownership of plants for, 22:47048
separation of, review of methods for, 22:23230
Uranium Isotopes (U/sub II/)
see Uranium Isotopes U-234
Uranium Isotopes (UX$_1$)
see Thorium Isotopes Th-234
Uranium Isotopes (UX$_2$)
see Protactinium Isotopes Pa-234
Uranium Isotopes (UY)
see Thorium Isotopes Th-231
Uranium Isotopes (UZ)
see Protactinium Isotopes Pa-234
URANIUM ISOTOPES U-230
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
URANIUM ISOTOPES U-232
alpha spectra of, energies of intense lines in, (E), 22:35357
availability, characteristics, and cost of, for use as power sources, 22:8307
neutron cross sections and resonance parameters at 0.001 eV to 15 MeV, data sets for, 22:16001 (GA-7462)
neutron fission cross section at 5 to 1900 eV, (E), 22:27105
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
preparation by irradiation of protactinium-231, 22:8196
production by neutron irradiation of thorium-230--thorium-232 mixture, 22:45091 (BMwF-FBK-68-09)
URANIUM ISOTOPES U-233
alpha activity and half-life of, measurement using scintillation counting, (E), 22:1653 (JUL-491-PC)
alpha decay below 0.05°K of aligned, angular distribution from, (E), 22:32594
alpha fission of, angular anisotropy of, (E/T), 22:14095
alpha fission of, dependence of angular anisotropy on excitation energy, (T), 22:14080(T) (ANL-Trans-550)
alpha spectra of, energies of intense lines in, (E), 22:35357
alpha spectra, (E), 22:7737
burnup determination by isotope dilution mass spectrometry, 22:1880(R) (IN-1113)
carbon-12 reactions at 60 to 110 MeV, cross sections for production of californium isotopes for, (E), 22:30000
concentration in nitrate solutions, ion-exchange process for, 22:8185
content in Barbados Island corals, use in age estimation, 22:21189
critical experiments using seed-blanket assemblies of, 22:6103
criticality measurements for gas-fueled light bulb and open-cycle rocket reactor, analysis of, 22:35571 (N-68-10931)
criticality of cubic geometry of spheres of, Monte Carlo calculations for, 22:33055
criticality of interacting arrays of solutions of, (E/T), 22:18577
decay chain of, 22:33208(R) (MLM-1456)
decay of, effects on transformation temperatures of uranium tetraiodide, 22:2710
deposition on surface of rubidium uranyl nitrate single crystal, 22:25440(R) (MLM-1443)
determination in fuel materials, review of nondestructive methods for, 22:18705
deuteron inelastic scattering cross sections at 13 MeV, (E), 22:39642
deuteron reactions (d,p) at 13 MeV, cross sections for, (E), 22:50636
distribution in bone, kidney, and spleen of mice following injection, effects of, on toxicity, 22:45433
electron reactions at 20 to 60 MeV, neutron yields from, (E), 22:32584
energy levels in ground-state rotational bands from deuteron inelastic scattering, E2 transition probabilities for, (E), 22:39642
energy levels of, calculation of quadrupole, (T), 22:16041
energy-level lifetimes and M1 and E2 transition probabilities for, (E), 22:27124
energy-level transitions from protactinium-233 decay, conversion coefficients for, (E), 22:3744
fabrication into uranium dioxide fuel elements, direct, 22:23858 (CONF-660524-, pp 537-45)
fabrication processes for, description of, 22:30389
fission by 14-MeV neutrons, yields from symmetric, 22:20975(R) (BMwF-FBK-67-89)
fission of, low-mass atom production in fast-neutron, 22:46859 (ANL-7434)
fission of, production of K x rays by slow-neutron, 22:27836
fission of, yield of barium-138 and cerium-142 in thermal, 22:16316(R) (GEAP-5505)
fission resonance integrals of, 22:16316(R) (GEAP-5505)
fuel cycles in power reactors, description of optimum, 22:35497
fuel elements of, criticality measurement on water-moderated spherical, 22:33080
fuel performance in MSRE of, power level measurement with oscillation periods for, 22:12035(R) (ORNL-4191)
fuel plates of, fabrication of aluminum-clad oxide (UO$_2$), 22:14241 (AAEC/TM-404)
fuels for rocket reactors of, analysis of shutdown after-cooling rate of, (T), 22:18542 (HW-84412)
gamma spectra of, 22:14433 (ORNL-4196, pp 66-89)
gamma spectra, (E), 22:9860
half-life and specific power of, calorimetric determination of, 22:30788
handling of, equipment and procedures for, 22:4406
incorporation in thorium dioxide--uranium dioxide fuel, pilot plant design and operation for direct sol-gel, 22:23857 (CONF-660524-, pp 417-43)
isotopic shift measurements for, 22:13250
neutron capture and fission cross sections and resonance integrals at 0.4 to 1000 eV, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron capture and fission cross sections at 0.4 to 2000 eV, (E), 22:29986 (ORNL-TM-2140)
neutron capture and fission cross sections at 0.4 to 100 eV, (E), 22:18298
neutron capture and fission cross sections at 0.4 to 2000 eV, simultaneous measurements of, (E), 22:48558
neutron capture and fission cross sections at 20 eV to 1 MeV, (E), 22:18230
neutron capture and fission cross sections at 20 to 63 eV, (E), 22:39652
neutron capture and fission cross sections from thermal to 1 eV, (E), 22:20576 (ORNL-TM-2159)
neutron capture, fission, and total cross sections at 0.4 to 61.4 eV, single-level analysis of, 22:24861 (WANL-TME-1721)
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratio for, integral measurements of epithermal, (E), 22:5819 (WAPD-TM-613)
neutron capture-to-fission ratio for, resonance, (E), 22:42016 (KAPL-P-3438)
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross sections at 0.001 eV to 10 MeV, library of multigroup, 22:24861 (WANL-TME-1721)
neutron cross sections for, 2200-m/sec, 22:5995
neutron effective multiplication factors of uniform aqueous uranyl fluoride solutions of, calculation of,

(T), 22:1564 (ORNL-CDC-2)
neutron fission at 0 to 7 MeV, fission-fragment energy and yield in, (E/T), 22:18348
neutron fission at 0.025 eV, calculations of eta using RECAP 4C Monte Carlo program, (T), 22:32590
neutron fission at 0.1 to 2.0 MeV, average kinetic energy of fission fragments in, (E/T), 22:46766(T) (LA-tr-68-19)
neutron fission at 0.43, 0.63, and 1.10 MeV, fragment energy and mass distributions in, (E), 22:14064
neutron fission at 1.5 MeV, mean kinetic energy of fission fragments in, (E), 22:14063
neutron fission at 2 MeV, neutron spectra for, (E), 22:11948(R) (NP-17216)
neutron fission at thermal energies and at 0.4 and 2.6 MeV, fragment kinetic energies and yields from, (E), 22:5857
neutron fission cross section at 2 keV, measurements using fission chambers, (E), 22:32588
neutron fission cross section at 20 eV to 1 MeV, measurements using time-of-flight technique with nuclear explosion, (E), 22:39652
neutron fission cross sections at 0.3 to 2.5 MeV, relative, (E), 22:32621
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission in thermal reactions, absorption cross sections and yields of fission products for, (E/T), 22:18289
neutron fission of, absolute yields of stable isotopes from thermal, (E), 22:24855(R) (IN-1157(Rev.))
neutron fission of, analysis of mass balance in CANDU-type reactor, thermal, 22:37400 (AECL-3109)
neutron fission of, effects of nucleon pairing correlations on angular anisotropy of, (T), 22:14080(T) (ANL-Trans-550)
neutron fission of, fission-fragment energy-correlation measurements for thermal, (E), 22:53204
neutron fission of, fission-fragment energy-mass correlations in thermal, (E), 22:35293(R) (ORNL-4230)
neutron fission of, fission-neutron spectra from thermal, (E), 22:16046
neutron fission of, fission-product activities for, (T), 22:20569 (HNS-1229-77)
neutron fission of, fission-product yields from thermal, (E), 22:3690 (GEAP-5356)
neutron fission of, iodine-135 yield and fission-product absorption cross sections in, (E), 22:16045
neutron fission of, mass distribution of fragments for thermal, (E), 22:53216
neutron fission of, ν values for prompt neutron emission in, (E), 22:18250
neutron fission of, palladium-115 and silver-112 yields in thermal, (E), 22:32579 (TID-24500)
neutron fission of, survey of yields from fast and thermal, 22:20559 (AERE-R-5086)
neutron fission of, ternary thermal, (E), 22:9855(R) (ORO-2843-12)
neutron fission of, time dependence of fission-product β activity from thermal, (E), 22:7714
neutron fission of, tritium yields from, (T), 22:37312 (ANL-7450, pp 105-7)
neutron fission of, tritium yields in fast, (T), 22:53165 (ANL-7425, pp 190-2)
neutron fission parameters for, survey of, 22:22612
neutron reactions at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
neutron resonance parameters at 0 to 11 eV, single-level and multilevel, (T), 22:7708
neutron resonance parameters at 0.4 to 61.4 eV, 22:24861 (WANL-TME-1721)
neutron resonance parameters for, correlations of, (T), 22:14066
neutron scattering cross sections and resonance parameters at 1 to 30 eV, (E), 22:20577 (UCRL-70826)
neutron scattering cross sections and resonance spins at 1 to 30 eV, (E), 22:53193
neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
neutron yields from electron accelerator targets of, (E), 22:18557 (GA-8087)
nuclear safety of aqueous solutions of, 22:6118
oxygen-16 reactions (O-16,4n) and (O-16,5n) with, production of fermium-244 and -245 by, (E), 22:14016
production for MSRE, 22:14140 (ORNL-TM-2111)
proton fission at 13 MeV, neutron emission in, (E), 22:35293(R) (ORNL-4230)
proton fission at 20 to 85 MeV, isomeric yield ratios of zenon-133 in, (E), 22:35324
proton fission at 7 to 13 MeV, fission-fragment energy-mass correlations in, (E), 22:35293(R) (ORNL-4230)
proton fission at 8.5 and 13 MeV, dependence of prompt neutron emission on fragment energy and mass distributions in, (E), 22:50601 (ORNL-TM-2272)
proton reactions (p,4n) and (p,5n) at 33 and 41 MeV, production of neptunium-229 and -230 by, (E), 22:35292 (ORNL-4217, pp 1-81)
proton reactions (p,xn) at 32 and 42 MeV, production of neptunium-230 and -229 in, (E), 22:32661
proton reactions at 12 GeV, sodium-24 production cross sections for, (E), 22:9875
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements of hexagonal and rectangular arrays of, at 20°C, 22:14262 (WAPD-TM-614)
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
reactor physics parameter measurements in heavy water-moderated lattices of thorium dioxide and, 22:6104
recovery from dilute solutions, 22:10351(P)
recovery from spent fuels, 22:14562 (ORNL-4139, pp 4-1
recovery from spent fuels, flowsheets for, 22:23191 (CONF-660524-, pp 509-35)
reprocessing of fuels containing, in unshielded pilot plant, 22:23190 (CONF-660524-, pp 299-319)
separation from irradiated thorium oxide by solvent extraction using triisooctylamine, 22:23112
separation of thorium-229 from, by ion exchange at high temperatures, 22:1956(R) (MLM-1405)
shipping methods for, IAEA requirements for, 22:28041
shipping of, design of container and packaging for, 22:14744
uptake by fetuses and placenta of rats following injection, 22:30948
use as α source, 22:14680
use as fuel in light water-cooled breeder reactor, 22:1877(P)
use as reactor fuel, 22:49798
use as reactor fuel, potential for, 22:606 (CONF-66101 pp 8-10)
use in combination with glass fibers in radiation sources, 22:42979(P)
use in MSRE fuel salt, 22:46917 (ORNL-TM-2304)
x-ray spectra from μ-mesic, nuclear charge parameters f analyzing, (E/T), 22:20640
Th--^{233}U, management efficiency for reactor breeding cycle, 22:20970(P)
Th-232--U-233, neutron multiplication in light- and heavy-water-moderated assemblies of, 22:6105

URANIUM ISOTOPES U-234

abundance ratio to thorium-230 in crustal rocks, reference standard for, 22:23137
abundance ratio to uranium-238 in near-surface formatio in arid regions, 22:18914(T) (AWRE-Trans-55)
carbon-12 reactions at 60 to 110 MeV, cross sections fo production of californium isotopes for, (E), 22:3000
content in Barbados Island corals, use in age estimation 22:21189
content in Caucasus neovolcanic rocks, age determination from, 22:18919
content in fallout from Chinese and Soviet nuclear explosions, (E), 22:27920
content in Pleistocene shells, open system model for radioactive age estimation using, 22:6463
content in river sediments from eastern and southern US, 22:33557
content in seawater, 22:8233
content ratio to uranium-238 in Arabian Sea, 22:45206
content ratio to uranium-238 in fossil corals, 22:8213
content ratio to uranium-238 in waters of Pacific Antarctic and Red Sea, 22:10407
determination in natural materials by alpha spectroscopy 22:16455
determination of abundance ratio to uranium-238 in coatings, 22:50942
deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
energy levels from beta decay of protactinium-234, spin-parity assignment for, (E), 22:50635
energy levels from uranium-233 (d,p) and uranium-235 (d,t) reactions, spin-parity assignments and spectroscopic factors for, (E), 22:50636
energy-level transitions from protactinium-234 decay, (E), 22:53218
energy-level transitions in, total internal conversion coefficients for E2, (E), 22:50611
fluorescence, Auger, and Coster--Kronig yields from L_2 subshell of, 22:31646
isomeric transition in, from protactinium-234 decay, (E) 22:27184
isotopic shift measurements for, 22:13250
neutron capture by, γ spectra from thermal, (E), 22:20578 (WASH-1079)
neutron cross sections and resonance parameters at 0.001 eV to 15 MeV, data sets for, 22:16003 (GA-8135)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission at 0.004 to 20 keV, cross sections and resonance widths for, (E), 22:50634
neutron fission at 0.2 to 1.2 MeV, fission-fragment angular distributions for, (E), 22:42029
neutron fission at 0.2 to 1.2 MeV, fission-fragment angular distributions for, (E), 22:39635(R) (NYO-3938 1)
neutron fission at 0.2 to 1.2 MeV, fission-fragment angular distributions from, (E), 22:27231
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission of, fission barrier and compound-nucleus

quasistable states in, (T), 22:44711
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
oxidation of, compared with uranium-238 in minerals, 22:27665
production of, 22:33208(R) (MLM-1456)
production of high-purity, 22:42019(R) (MLM-1494)
recovery from plutonium-238 raffinate solutions by solvent extraction, 22:18738(R) (MLM-1417)
recovery from waste raffinate solutions, 22:25440(R) (MLM-1443)
separation from aged plutonium-238, ion exchange method for, 22:1956(R) (MLM-1405)
separation from uranium-238 during transfer from mineral to liquid phase, effects of oxidation on, 22:45203
spectra of fallout, from Chinese and Russian nuclear explosions, 22:42880
triton fission of, anisotropy as function of excitation energy for, (E), 22:20578 (WASH-1079)
use in ratio with uranium-238 for measuring accretion rates in manganese nodules, 22:16390 (COO-1540-8)
use in studying subsidence rates of Pacific atolls, 22:6465

URANIUM ISOTOPES U-235
abundance in homogeneous nitric acid solutions of uranyl nitrate, minimum critical, 22:21149
alpha decay of, conversion-electron spectra for, (E), 22:14000 (NP-17225)
alpha fission of, isomer yield ratio for krypton-85 from, (E), 22:35332
alpha inelastic scattering at 15 MeV, γ spectra for, (E), 22:39638 (UCRL-17989, pp 1-41)
alpha inelastic scattering at 15 to 19 MeV, conversion-electron and γ spectra from, (E), 22:42042
argon-40 inelastic scattering at 182 MeV with Coulomb excitation, conversion-electron and γ spectra for, 22:42042
argon-40 inelastic scattering at 182 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
burnup analyses for, 22:1778(R) (WCAP-6085)
burnup determination by isotope dilution mass spectrometry, 22:1880(R) (IN-1113)
cadmium ratios for, determination of neutron temperature and epithermal index from activation, 22:32960 (ANL-7310, pp 31-135)
carbon-12 reactions (C-12,5n) with, californium-242 production by, (E), 22:14060
carbon-12 reactions at 60 to 110 MeV, cross sections for production of californium isotopes for, (E), 22:30000
charged-particle fission of, α emission in, (E), 22:3720
concentration in uranium by gaseous diffusion process, production of feed material for, 22:30683
concentration in uranium, economics of, 22:10505 (PG-Report-824)
concentration in uranium, plants and methods for, 22:40328
content in fission chambers, method for determining, 22:14807
content in reactor fuel elements, design of self-correcting thallium-activated sodium iodide scintillation detector for determining, 22:30820 (NLCO-1011)
content in uranium samples relative to uranium-238, neutron activation method for determining, 22:43089
content of industrial personnel, assessment of, 22:25859 (UCLA-12-668, pp 1-28)
content of urine in man in relation to body burden, 22:2508 (SC-TM-67-405)
cores of reflected and unreflected, criticality data from, 22:32958 (AHSB(S)Handbook-5(Pt.2))
criticality analysis of moderated unit containing solutions of, 22:6378
criticality measurement for steel-moderated and oil-reflected hemispheres and spheres of, 22:2324 (RFP-1025)
criticality of beryllium-reflected 93.15 percent enriched, effects of cubical geometries on, 22:25089 (LA-DC-8521)
criticality of minimum-enriched cylinder of, measurement of, (E/T), 22:35637
criticality of unreflected arrays of, effects of unit shape on, (E/T), 22:1565 (ORNL-CDC-4)
determination by counting delayed neutrons after fission, 22:14433 (ORNL-4196, pp 66-89)
determination by emission spectrometry, HYPEAC interferometer for, 22:37646 (CEA-R-3457)
determination in fuel materials, review of nondestructive methods for, 22:18705
determination in irradiated samples using slowing-down-time lead spectrometer, 22:33221
determination in MTR-type fuel elements, safeguards inspection procedures for, 22:42393 (RISO-M-732)
determination in pitchblende using solvent extraction and ion exchange, 22:37676
determination in sheared cladding from fuel reprocessing steps, 22:12225 (ORNL-4135)
determination in uranium, feasibility of laser microprobe method for, 22:47070 (BMI-X-525)
determination in uranium, nondestructive method for, 22:30444(P)
determination in uranium, spectrographic, 22:1982
determination in Zircaloys by neutron activation, 22:50925
determination of relative content of, in enriched uranium by alpha-gamma coincidence method using gridded ionization chamber, 22:30462
determination of, design and evaluation of delayed-neutron minitor for, 22:12225 (ORNL-4135)
deuteron inelastic scattering cross sections at 13 MeV, (E), 22:39642
deuteron reactions (d,pf) at 10, 13, 15, and 21 MeV, fission-fragment angular distributions from, (E), 22:3717
deuteron reactions (d,pf) at 12.5 MeV, correlation of kinetic energy and fission-fragment angular anisotropy in, (E), 22:20643
deuteron reactions (d,t) and (d,tf) at 12 to 15 MeV, cross sections for, (E), 22:32512(R) (AECL-3108)
deuteron reactions (d,t) at 13 MeV, cross sections for, (E), 22:50636
distribution in 14-ton uranium hexafluoride cylinder, steam-bath cycle for homogeneous, 22:35773 (KY-556)
Doppler parameters for resonances in, method for measurement of, 22:30164(R) (WCAP-3703)
effects in reactor safety of use of fuels of, in place of plutonium, 22:53384
effects on reactivity of bare plutonium-239 critical sphere, analysis of, (E/T), 22:35636
electron reactions at 20 to 60 MeV, neutron yields from, (E), 22:32584
energy levels from charged-particle reactions, collective, (E), 22:5809(R) (ANL-7354)
energy levels from ion inelastic scattering with Coulomb excitation, (E), 22:39638 (UCRL-17989, pp 1-41)
energy levels from plutonium-239 alpha decay, spins and parities of, (E), 22:7715
energy levels from uranium-234 neutron fission, single-particle, (E), 22:27231
energy levels from uranium-234 neutron fission, spin-parity assignments for, (E), 22:42029
energy levels in ground-state rotational bands from deuteron inelastic scattering, E2 transition probabilities for, (E), 22:39642
energy levels in uranium-234 neutron fission, quasistable, (T), 22:44711
energy levels of, K = 1/2 rotational, (T), 22:20664
energy levels of, neutron single-particle, (E), 22:27087(R) (ANL-7405)
energy levels of, research using charged-particle reactions, (E), 22:20578 (WASH-1079)
energy-level spins and transitions in collective bands from Coulomb excitation, (E), 22:42042
enrichment by ion exchange process, 22:42818(P)
enrichment for hydrogenous systems, minimum critical, 22:6119
expansion effects on fast ZPR-6 reactivity, 22:32734 (ANL-7310, pp 137-248)
fission by fast neutrons, mass spectrometric determination of yields from, 22:42588(R) (IN-1207)
fission densities in, sodium void effects on absolute, 22:32734 (ANL-7310, pp 137-248)
fission fragment values for, mass-angle dependence of, 22:9988(R) (ANL-7391)
fission neutron spectrum at 6 to 20 MeV, (E), 22:5828
fission of, antineutrino spectra from fragments of binary, (T), 22:15737 (SRO-141)
fission of, low-mass atom production in fast-neutron, 22:46859 (ANL-7434)
fission of, mass-angle-energy determinations for neutron-induced, 22:30118 (ANL-7438)
fission of, production of K x rays by slow-neutron, 22:27836
fission of, production of xenon-133 in, 22:27638
fission of, total kinetic energy of fragments from, 22:32959 (ANL-7310, pp 1-30)
fission of, yield of barium-138 in thermal, 22:16316(R) (GEAP-5505)
fission of, yields of technetium isotopes from, 22:40054(R) (NYO-2269-12)
fission products of, activity of, (T), 22:29991
fission products of, nuclear data library for, 22:27091 (WANL-TME-574(Rev.1))
fission rate measurements in ZPR-6 using solid-state track recorders, 22:48747
fission rates for, measurement in Rapsodie of, 22:1871
fission ratio measurements in RB-1 using, 22:27473
fission ratio measurements of uranium-238 to, 22:33006
fission ratio to uranium-238 in natural uranium cluster heavy water lattices, fast, (E/T), 22:14269
fission ratio to uranium-238, measurement using solid-state track recorders, 22:48747
fission resonance integrals of, 22:16316(R) (GEAP-5505)
fission-fragment mass distribution for, measurement using ratio circuits, 22:32664
foil-backed fission sources of, preparation of, 22:248 (NP-17092)
foils of, measurement of ratio of radiative capture in uranium-238 to fissions in, 22:33006
foils of, measurement of ratio of subcadmium to epicadmium fissions in, 22:33006
fuel assemblies of low-enrichment, buckling measurements

for, 22:18575
fuel elements of, criticality measurement on water-moderated spherical, 22:33080
fuel loading of, calculation of MSRE critical, 22:16157 (ORNL-4233)
fuels for rocket reactors of, analysis of shutdown after-cooling rate of, (T), 22:18542 (HW-84412)
gamma spectra, (E), 22:28148
half-life of isomeric, effect of environment on, (E), 22:27134
isotopic shift measurements for, 22:13250
mechanical properties of high-purity cast, list of, 22:48790
neutron absorption and fission cross sections and resonance integrals for, thermal, (E), 22:27089 (DP-MS-67-118)
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture and fission cross sections and resonance integrals at 0 to 30 keV, (E), 22:42011(T) (BNL-tr-219)
neutron capture and fission cross sections at 0.0004 to 3 keV, (E), 22:3699 (ORNL-TM-1804)
neutron capture and fission resonance integrals at 0.15 eV to 30 keV, (E), 22:37364
neutron capture, fission, and total cross sections for, single-level analysis for resonance parameters, (T), 22:18299
neutron capture-to-fission ratio and fission integral at epithermal energies, variation from 293 to 1100°K, (E/T), 22:5824
neutron capture-to-fission ratio and resonance integrals at 20 to 600 keV, (E), 22:18298
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratio at 0 to 30 keV, (E), 22:42011(T) (BNL-tr-219)
neutron capture-to-fission ratio at 0.15 eV to 30 keV, measurements using time-of-flight method, (E), 22:37364
neutron capture-to-fission ratio for, calculation using channel theory, (T), 22:20655
neutron capture-to-fission ratio for, integral measurements of epithermal, (E), 22:5819 (WAPD-TM-613)
neutron capture-to-fission ratio for, low-flux measurements of epicadmium, (E), 22:16044
neutron capture-to-fission ratio for, measurement of thermal, 22:25129(R) (IN-1178)
neutron capture-to-fission ratio for, resonance, (E), 22:42016 (KAPL-P-3438)
neutron capture-to-fission ratio measurements in fast reactor spectra, (E/T), 22:35650
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross section analysis of, computer program for, 22:25075 (APDA-201)
neutron cross sections at 0.001 to 14 MeV, data compilation on, 22:50598 (LA-3527)
neutron cross sections at 1 to 10 MeV, calculations using local spherical optical model, (T), 22:35349
neutron cross sections for, 2200-m/sec, 22:5995
neutron cross sections for, effects on reactivity of variation of, 22:32960 (ANL-7310, pp 31-135)
neutron cross sections for, evaluation using least-squares method of correcting for integral data, (T), 22:35344
neutron cross sections for, resonance parameters for evaluating self-shielding effects on, (T), 22:32626
neutron effective multiplication factors of uniform aqueous uranyl fluoride solutions of, calculation of, (T), 22:1564 (ORNL-CDC-2)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission at 0 to 16 MeV using monoenergetic beams, fission-fragment energy and mass distributions in, (E), 22:48561
neutron fission at 0 to 7 MeV, fission-fragment energy and yield in, (E/T), 22:18348
neutron fission at 0.01 to 2.0 eV, anti ν values for, (E), 22:20578 (WASH-1079)
neutron fission at 0.012 to 2.0 eV, neutron emission in, (E), 22:14001 (RPI-328-100, pp 1-56)
neutron fission at 0.06 to 2.0 MeV, fission-fragment energy and mass distributions in p-wave, (E), 22:32631
neutron fission at 0.1 to 2.0 MeV, average kinetic energy of fission fragments in, (E/T), 22:46766(T) (LA-tr-68-19)
neutron fission at 0.10, 0.26, 0.70, and 1.30 MeV, fragment energy and mass distributions in, (E), 22:14064
neutron fission at 0.2 to 20 eV, fission-fragment kinetic energy in resonance, (E), 22:39672
neutron fission at 0.4 to 3.3 MeV, average number of prompt neutrons from, (E), 22:39643
neutron fission at 0.4 to 3.3 MeV, measurements of anti ν for prompt neutron emission in, (E), 22:42017(T) (LA-tr-68-20)
neutron fission at 1.5 MeV, mean kinetic energy of fission fragments in, (E), 22:14063
neutron fission at 1.5 to 15 MeV, prompt neutron emissi in, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission at 14 MeV, γ angular distribution from, (E), 22:46810
neutron fission at 2 MeV, neutron spectra for, (E), 22:11948(R) (NP-17216)
neutron fission at 3 and 14 MeV, absolute delayed neutr yields from, (E), 22:32591
neutron fission at 3 and 14 MeV, delayed neutron emissi in, (E), 22:20578 (WASH-1079)
neutron fission at 3 and 14 MeV, delayed neutron yields from, (E), 22:24859 (LA-DC-9403)
neutron fission at 3 MeV, angular anisotropy of fission fragments in binary and ternary, (E), 22:29979 (BARC-318)
neutron fission at 3 MeV, angular anisotropy of fission fragments in binary and ternary, (E), 22:32630
neutron fission at 3 MeV, fission-fragment angular anisotropy in ternary, (E), 22:27099
neutron fission at 3 MeV, fragment angular anisotropy from binary and ternary, (E), 22:7569(R) (BARC-291)
neutron fission at 5 to 9 MeV, mean kinetic energy of fission fragments in, (E), 22:44714
neutron fission at 6 MeV, fragment energy and mass distributions in, (E), 22:20578 (WASH-1079)
neutron fission at thermal energies to 2 MeV, fragment energy distribution from, (E), 22:7569(R) (BARC-291)
neutron fission at thermal energies, fine structure in fragment charge distribution from, (E), 22:30004
neutron fission at thermal energies, fractional cumulative yields of molybdenum-103, -105, and -106 from, (E), 22:18303
neutron fission at thermal energies, product yield studies for, (E), 22:29983 (MIT-905-108, pp 1-32)
neutron fission cross section and resonance integrals at 0 to 20 keV, (E), 22:18298
neutron fission cross section at 0.8 to 170 eV, measurement using time-of-flight method, (E), 22:1820 (IAE-1302)
neutron fission cross section at 1 to 5 MeV, (E), 22:18287
neutron fission cross section at 1 to 5 MeV, (E), 22:20572 (LA-DC-9205)
neutron fission cross section at 2 keV, measurements using fission chambers, (E), 22:32588
neutron fission cross section for, periodic autocorrelation effects in, (E/T), 22:50625
neutron fission cross section in fast reactor spectra, Doppler broadening of, (E), 22:35651
neutron fission cross section measurements from 30 to 1500 keV, 22:24925(R) (ANL-7427)
neutron fission cross section of isomeric, measurement program on thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission cross sections and resonance parameters at 0.006 to 3 keV, (E), 22:30005
neutron fission cross sections at 0.3 to 2.5 MeV, relative, (E), 22:32621
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission cross sections of, measurement in FR-0, 22:1873
neutron fission cross sections of, resonance and thermal, (E), 22:5812 (INR-817/IA/PL)
neutron fission in fast critical assembly, measurement of Doppler effect in, (E), 22:32562 (AE-314)
neutron fission in fast reactor spectrum, Doppler effect for, (E), 22:3706
neutron fission in heavy water, delayed photoneutron production from fission fragments in, (E), 22:37374
neutron fission in thermal reactions, absorption cross sections and yields of fission products for, (E/T), 22:18289
neutron fission near threshold energy, width for, (E/T), 22:53185
neutron fission of, absolute yields of molybdenum-99 and barium-139 from thermal, (E), 22:18268
neutron fission of, absolute yields of stable isotopes from thermal, (E), 22:24855(R) (IN-1157(Rev.))
neutron fission of, angular-energy correlation of light particles and fragments in ternary thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission of, anisotropy of γ emission in, (E), 22:48555
neutron fission of, antimony and arsenic delayed neutron precursors in thermal, (E), 22:48481
neutron fission of, antimony-134 cumulative fission yiel for thermal, (E), 22:50613
neutron fission of, asymmetry of thermal, (T), 22:27338
neutron fission of, average energy of prompt neutrons in thermal, (T), 22:32652
neutron fission of, α angular and energy distributions i thermal, (E), 22:24854 (IA-1128, pp 12-20)
neutron fission of, α angular distribution in thermal, (E), 22:9855(R) (ORO-2843-12)
neutron fission of, α energy spectra from thermal, (E), 22:5812 (INR-817/IA/PL)
neutron fission of, barium-140 yields from fast and thermal, (E), 22:22618
neutron fission of, charge and energy distribution in thermal, (T), 22:18339
neutron fission of, charged-particle emission in fast an slow, (E), 22:14023

neutron fission of, charged-particle spectra from thermal, (E), 22:3693 (INR-822/IA/PL)
neutron fission of, correlation between neutron and fission widths and compound nucleus spin in, (T), 22:5904
neutron fission of, decay properties and yields of gallium-77 and gallium-78 from thermal, (E), 22:32581 (USNRDL-TR-68-35)
neutron fission of, delayed γ energy spectra from, (E), 22:37337 (AD-801007)
neutron fission of, delayed neutron precursors in thermal, (E), 22:44708
neutron fission of, dependence of γ angular anisotropy on fragment energy and mass ratio in thermal, (E), 22:48562
neutron fission of, effect of fission-fragment mass distribution on total kinetic energy in fast and thermal, (E), 22:32563(T) (ANL-Trans-606)
neutron fission of, effects of nucleon pairing correlations on angular anisotropy of, (T), 22:14080(T) (ANL-Trans-550)
neutron fission of, emission of Z > 2 particles in ternary thermal, (E), 22:48556
neutron fission of, energetics of ternary thermal, (E/T), 22:37362
neutron fission of, energy distribution of long-range α particles in thermal, (E), 22:32634
neutron fission of, energy spectra of long-range α particles from thermal, (E), 22:42037
neutron fission of, fission-fragment charge distribution in, (E), 22:9907
neutron fission of, fission-fragment kinetic energy and mass distributions for, (E), 22:22604
neutron fission of, fission-fragment mass and energy distributions in symmetrical thermal, (E), 22:9846 (CEA-R-3309)
neutron fission of, fission-fragment masses from range measurements in thermal, (E), 22:32625
neutron fission of, fission-fragment range and mass distributions from thermal, (E), 22:44697
neutron fission of, fission-neutron spectra from thermal, (E), 22:16046
neutron fission of, fission-product activities for, (T), 22:20569 (HNS-1229-77)
neutron fission of, fission-product charge distributions and yields in, (E), 22:46761 (APED-5398)
neutron fission of, fission-product energy release rates for thermal, (E/T), 22:13990 (GEMP-579)
neutron fission of, fission-product gamma spectra from thermal, (E), 22:22613
neutron fission of, fission-product yields from thermal, (E), 22:3690 (GEAP-5356)
neutron fission of, fractional chain yield of 17-sec gallium-77 in thermal, (E), 22:44733
neutron fission of, fragment ranges in aluminum from thermal, (E), 22:39651
neutron fission of, γ angular anisotropy in thermal, (E), 22:18269
neutron fission of, γ angular distribution from thermal, (E), 22:11960
neutron fission of, γ energy release in thermal, (E), 22:3709
neutron fission of, identification of silver-118 fission product in thermal, (E), 22:44735
neutron fission of, K x-ray yield dependence on fission-fragment mass, (E), 22:20622
neutron fission of, low-energy α spectra from ternary, (E), 22:48557
neutron fission of, mass and time distributions of delayed neutron emission in thermal, (E), 22:46767 (NP-17532)
neutron fission of, molybdenum-isotope yields in thermal, (E), 22:9921 (JUL-Conf-1)
neutron fission of, nuclear charge distribution and arsenic-83 and arsenic-84 yields in thermal, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission of, ν values for prompt neutron emission in, (E), 22:18250
neutron fission of, palladium-115 and silver-112 yields in thermal, (E), 22:32579 (TID-24500)
neutron fission of, palladium-117 yield in thermal, (E), 22:29987 (USNRDL-TR-68-25)
neutron fission of, primary charge distribution in, (E), 22:11874(R) (JUL-463-NP)
neutron fission of, prompt gamma emission in, (E), 22:9921 (JUL-Conf-1)
neutron fission of, prompt neutron emission from fission fragments in, (E), 22:9899
neutron fission of, prompt x-ray spectrum from fission products of thermal, (E), 22:7714
neutron fission of, prompt-neutron emission from fission fragments in thermal, (E), 22:1645 (AWRE-O-43/67)
neutron fission of, ratio of binary to ternary, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission of, recoil studies on iodine-131 and -133 yields in thermal, (E), 22:24788 (IA-1128, pp 55-77)
neutron fission of, resonance parameters from multilevel analysis using R-matrix theory, (T), 22:48522 (LA-3917)
neutron fission of, search for A = 32 fission products from thermal, (E), 22:9855(R) (ORO-2843-12)
neutron fission of, survey of yields from fast and thermal, 22:20559 (AERE-R-5086)
neutron fission of, ternary thermal, (E), 22:42012 (INR-P-911)
neutron fission of, time dependence of fission-product β activity from thermal, (E), 22:7714
neutron fission of, tritium yields from, (T), 22:37312 (ANL-7450, pp 105-7)
neutron fission of, tritium yields in fast, (T), 22:53165 (ANL-7425, pp 190-2)
neutron fission of, yield of 5-sec palladium-117 in thermal, (E), 22:44736
neutron fission of, yields of ground-state and isomeric promethium-148 in thermal, (E), 22:42065
neutron fission parameters for, survey of, 22:22612
neutron fission rate in fast spectra, effects of system heterogeneity on, (E), 22:35333
neutron fission rates in core and blanket of Fermi fast breeder, 22:7791 (APDA-NTS-10)
neutron fission rates in EBR-2, (E/T), 22:24925(R) (ANL-7427)
neutron fission ratio to uranium-238, measurement by γ spectrometry, 22:32976(R) (MIT-2344-12)
neutron fission width for, energy and spin dependence of, (T), 22:20655
neutron fission with emission of Z > 2 particle, ternary, (E), 22:3703
neutron fission with four-particle emission, thermal, (E), 22:9878
neutron fission yields of krypton, xenon, rubidium, and ruthenium isotopes from, measurement of absolute thermal, 22:25129(R) (IN-1178)
neutron inelastic scattering at 0.1 to 1.8 MeV, cross sections and spectra for, (E), 22:18286
neutron inelastic scattering at 4.0, 6.0, and 7.5 MeV, γ production cross section for, (E), 22:18287
neutron reactions (n,α) with, survey on thermal, (E), 22:48521 (JAERI-1158, pp 123-4)
neutron reactions (n,α) with, upper limit of cross section for thermal, (E), 22:42012 (INR-P-911)
neutron reactions (n,α) with, upper limit to cross section for, (E), 22:48557
neutron reactions (n,f), mass-angle-energy correlation in thermal, 22:32959 (ANL-7310, pp 1-30)
neutron reactions (n,γ), production of plutonium-238 by, 22:18851
neutron reactions at 10 to 600 keV, instrumentation for measuring capture-to-fission cross sections for, 22:6601
neutron resonance absorption by, Doppler coefficient for, (E), 22:5743
neutron resonance spins and widths at 8.8 and 12.4 eV, (E), 22:18297
neutron resonance spins at 1 to 40 eV, (E), 22:29992
neutron resonance spins for, methods for determining, (E), 22:18294
neutron scattering cross sections and resonance spins at 1 to 30 eV, (E), 22:53193
neutron scattering cross sections at 1 to 30 eV, (E), 22:20577 (UCRL-70826)
neutron spectra in spheres of, (E), 22:20409(R) (GA-8449)
neutron total cross section and resonance parameters at 100 eV to 1 MeV, (E), 22:18283
neutron total cross section at 0.075 to 2.04 eV, spin dependence of, (E), 22:18255
neutron yields from electron accelerator targets of, (E), 22:18557 (GA-8087)
nuclear charge distribution in, measurement using K x-ray spectra, (E), 22:9921 (JUL-Conf-1)
nuclear level density in second potential minimum for uranium-234 neutron fission, (E), 22:50634
nuclear safety of aqueous solutions of, 22:6118
oxygen-16 inelastic scattering at 60 to 78 MeV with Coulomb excitation, conversion-electron and γ spectra for, (E), 22:42042
oxygen-16 inelastic scattering at 78 MeV, γ spectra from, (E), 22:39638 (UCRL-17989, pp 1-41)
photofission at 25 MeV bremsstrahlung endpoint energy, kinetic energy of fission fragments in, (E), 22:39645
photofission at 4.5 to 8.2 MeV, cross section and yields for, (E), 22:20497(R) (AECL-3009)
photofission at 5 to 8.3 MeV, yield curves for, (E), 22:32512(R) (AECL-3108)
photofission yields at 4.5 to 8.5 MeV, measurements using monochromatic γ beams, (E), 22:11944(R) (AECL-2780)
physical properties of high-purity cast, list of, 22:48790
production by US power reactors through 1990, 22:45245 (BNWL-716)
production facilities for, mathematical model for economics of, 22:14672 (K-1712)
production of, economic and legal analysis of European, 22:30209
production requirements in USA of, forecast of 1960 to 1973, 22:24976 (WASH-1084)
proton fission at 1 to 9 GeV, cross section for, (E, 22:46804
proton fission at 10 MeV, isomeric cross-section ratio for niobium-95 from, (E), 22:18218
proton fission at 20 to 85 MeV, isomeric yield ratios of xenon-133 in, (E), 22:35324

- proton fission at 7 to 13 MeV, fission-fragment energy-mass correlations in, (E), 22:35293(R) (ORNL-4230)
- proton reactions at 12 GeV, sodium-24 production cross sections for, (E), 22:9875
- reaction rate measurements in DFR, use of fission chambers for, 22:30309 (TRG-Report-857)
- reactivity effect in ERMINE fast--thermal flux assembly in MINERVE, 22:14263(T) (AEC-tr-6910)
- reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
- reactivity measurements of hexagonal and rectangular arrays of, at 20°C, 22:14262 (WAPD-TM-614)
- reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
- reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
- reactivity worth of, temperature coefficient of, (E), 22:5744
- reactivity worth, effects of enrichment on fast neutron, (E/T), 22:35667 (NAA-SR-Memo-12288)
- recovery from dilute solutions, 22:10351(P)
- resonance integrals of, description of computer programs for absorption and fission, 22:39897 (EUR-3936)
- resonance parameters for, 22:33086 (ANL-7310, pp 431-511)
- safety effects of cadmium, gadolinium, and samarium additives in, during fabrication of fuel elements, 22:22886(P)
- separation from other uranium isotopes by gas centrifugation, economic evaluation of, 22:51149
- separation of cyclotron-irradiated, from plutonium-237, methods for, 22:28385
- shipping containers for, safety evaluation and testing of M-101 and M-102, 22:51207 (Y-DD-19)
- shipping methods for, IAEA requirements for, 22:28041
- shipping of, design of container and packaging for, 22:14744
- temperature coefficient of reactivity for, effects of thermal expansion on, (E/T), 22:32977 (NAA-SR-Memo-12289)
- thermal neutron fission of, analysis of mass balance in CANDU-type reactor, 22:37400 (AECL-3109)
- uptake by man following inhalation, 22:33715 (SZS-15/67)
- use as source for radioinduced reactions, review on, 22:23063
- use as tracer to measure self-diffusion of uranium into uranium carbide, 22:47701 (AI-AEC-12726)
- use for fast fission measurements, 22:16270 (BNWL-633)
- use in combination with glass fibers in radiation sources, 22:42979(P)
- use in neutron fluence measurements in fast reactors, 22:48746
- use in nuclear fuel rods, 22:49817(R) (EURAEC-2036)
- x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640

URANIUM ISOTOPES U-236
- buildup in MSRE, use for integrated power production indication of, 22:48651 (ORNL-4254, pp 1-49)
- burnup analyses for, 22:1778(R) (WCAP-6085)
- carbon-12 reactions at 60 to 110 MeV, cross sections for production of californium isotopes, (E), 22:30000
- content in reactor fuels obtained by recycling of spent uranium, effects on separative work, 22:30681
- determination in uranium hexafluoride using double-standard interpolative method, 22:27544(R) (NLCO-1015)
- deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
- economic effects on uranium as feed for pressurized-water reactor fuel cycles, 22:37447 (MIT-2073-6(Vol.2))
- economic effects on uranium as feed for pressurized-water reactor fuel cycles, 22:37446 (MIT-2073-6(Vol.1))
- effects on fuel cycle of pressurized-water reactors, 22:32907
- energy-level transition in, internal conversion coefficient for 45-keV E2, (E), 22:35336
- energy-level transitions in, internal conversion coefficient for 45-keV E2, (E), 22:1646 (IS-1683)
- energy-level transitions in, total internal conversion coefficients for E2, (E), 22:50611
- fission of, moment of inertia at saddle point of low-energy, (T), 22:50661
- fission probability of, intermediate structure of correlation with excitation energy, (E/T), 22:53185
- fission with emission of Z > 2 particle, ternary, (E), 22:3703
- fluorescence, Auger, and Coster--Kronig yields from L_2 subshell of, 22:31646
- isotopic shift measurements for, 22:13250
- neutron absorption and capture resonance integrals for, (E), 22:24876
- neutron absorption and fission resonance integrals for, thermal, (E), 22:27089 (DP-MS-67-118)
- neutron capture cross section and resonance parameters at 5 to 124 eV, (E), 22:20578 (WASH-1079)
- neutron capture rate in zero-power fast reactor, coincidence method for measuring, (E), 22:46809
- neutron cross sections and resonance parameters at 0.001 eV to 15 MeV, data sets for, 22:16003 (GA-8135)
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- neutron fission cross section at 1 to 5 MeV, (E), 22:20572 (LA-DC-9205)
- neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
- neutron resonance self-shielding in foils of, (E), 22:24876
- neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
- neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
- production by US power reactors through 1990, 22:45245 (BNWL-716)
- reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
- recovery from power reactor fuels, economics of, 22:49032

URANIUM ISOTOPES U-237
- activity of, from third Chinese nuclear explosion, γ spectrometry measurement of, 22:16719
- beta decay of, γ--γ angular correlations from, (E), 22:50631
- beta decay rate, measurements using γ--γ coincidence technique, (E), 22:46809
- content and distribution in fallout from third Chinese nuclear explosion, May 9, 1966, 22:12450
- content in fallout from June 1967 Chinese nuclear explosion, 22:42877
- content in fallout from third Chinese nuclear explosion 22:4284
- content in German atmosphere following third Chinese nuclear explosion, 22:18975
- energy levels from plutonium-241 decay, spin--parity assignments and lifetimes for, (E), 22:53182
- energy levels from uranium-238 (He-3,α) reactions, (E), 22:39635(R) (NYO-3938-1)
- energy levels in rotational bands from uranium-238 (He-3,α) reactions, (E), 22:35326
- energy levels of, K = 1/2 rotational, (T), 22:20664
- energy levels of, neutron single-particle, (E), 22:27087(R) (ANL-7405)
- gamma dose rates from, in plutonium dioxide, 22:31060 (MLM-1460)
- neutron absorption cross section for, (E), 22:9876
- neutron absorption cross section for, thermal, (E), 22:27089 (DP-MS-67-118)
- neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
- separation from plutonium and its isotopes by solvent extraction using tridodecylammonium chloride, 22:2784 (CEA-N-816, pp 359-414)
- uptake by man following inhalation, 22:33715 (SZS-15/6
- use as tracer in measurement of grain-boundary diffusio 22:28834

URANIUM ISOTOPES U-238
- abundance ratio to uranium-234 in near-surface formatio in arid regions, 22:18914(T) (AWRE-Trans-55)
- alpha elastic scattering at 43 MeV, angular distributio for, (E), 22:5809(R) (ANL-7354)
- alpha fission at 20 to 120 MeV, ternary, (E), 22:44741
- alpha fission at 20 to 120 MeV, ternary, (E), 22:11946(R) (COO-1716-4)
- alpha fission cross sections at 40 MeV, ternary, (E), 22:7736
- argon-40 reactions (Ar-40,f) with, fission-fragment mas distribution for, (E), 22:24857 (JINR-P7-3732)
- argon-40 reactions (Ar-40,f) with, yields of astatine isotopes and polonium isotopes from, (E), 22:22582 (JINR-P7-3710)
- argon-40 reactions with, production of Z = 110 compound nuclei by, 22:48544
- binding effects on reactivity change for uranium oxide (UO_2) fuel melting in fast reactors, (T), 22:27402 (BNWL-717)
- carbon-12 elastic scattering cross section for, angular distribution of, (E), 22:18215(T) (BNL-tr-192)
- carbon-12 reactions (C-12,4n) with, production of spontaneously fissioning isomeric californium-246 by, (E), 22:16010 (JINR-P7-3673)
- carbon-12 reactions at 60 to 110 MeV, cross sections fo production of californium isotopes, (E), 22:30000
- charged-particle fission of, α emission in, (E), 22:37
- content in fallout from Chinese and Soviet nuclear explosions, (E), 22:27920
- content in Mexican apatite, use in age estimation, 22:6479
- content in Pleistocene shells, open system model for radioactive age estimation using, 22:6463
- content in river sediments from eastern and southern US 22:33557
- content in seawater, 22:8233
- content in selected Florida minerals, 22:40209 (SC-RR-68-196)
- content in uranium samples relative to uranium-235, neutron activation method for determining, 22:43089
- content in volcanic rocks, age estimation from, 22:189
- content ratio to lead-204 in eclogite inclusions in dee seated pipes, 22:42857
- content ratio to lead-204 in rocks and minerals, use of concordia plots to determine, 22:18921
- content ratio to lead-204 in volcanic rocks of Oki Island, Japan, 22:51109

content ratio to lead-206 in zircons, use in age estimation, 22:51089
content ratio to thorium-230 in fossil chitons and corals, 22:8213
content ratio to thorium-230 in stalactites and stalagmites, 22:35930
content ratio to thorium-232 in eclogite inclusions in deep-seated pipes, 22:42857
content ratio to thorium-232 in volcanic rocks of Oki Island, Japan, 22:51109
content ratio to uranium-234 in Arabian Sea, 22:45206
content ratio to uranium-234 in fossil corals, 22:8213
content ratio to uranium-234 in waters of Pacific Antarctic and Red Sea, 22:10407
crystalline binding effects of, on Doppler coefficient measurements in a uranium oxide (UO_2) lattice, 22:12086 (BNWL-472, pp 4.1-43)
determination in natural materials by alpha spectroscopy, 22:16455
determination in pitchblende using solvent extraction and ion exchange, 22:37676
determination in uranium, nondestructive method for, 22:30444(P)
determination of abundance ratio to uranium-234 in coatings, 22:50942
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 22 MeV, angular distributions for, (E), 22:5809(R) (ANL-7354)
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron fission at 11.5 MeV, nuclear charge distribution in, (E), 22:22588 (ORO-1797-11, pp 114-64)
deuteron reactions (d,p) and (d,t) with, Q-values for, (E), 22:11945(R) (ANL-7384)
Doppler activation measurements on, analysis of ZEBRA, (T), 22:35652
Doppler coefficient for, fast reactor temperature and environment effects on, 22:33038
Doppler effect in uranium oxide (UO_2) blanket of Russian BR-1, (E/T), 22:35640
Doppler effect in, measurement of, 22:18570
electron fission at 250 and 500 MeV, cross section and fission-fragment angular distributions for, (E), 22:27112
electron reactions at 20 to 60 MeV, neutron yields from, (E), 22:32584
energy level transitions following Coulomb excitation, (E), 22:30027
energy levels in μ-mesic atoms of, effects of nuclear polarization on, (T), 22:22590 (PUC-937-291)
enrichment by ion exchange process, 22:42818(P)
fission by 14-MeV neutrons, yields from symmetric, 22:20975(R) (BMwF-FBK-67-89)
fission by 5.6 MeV neutrons, mass-energy-angle correlation for, 22:22653(R) (ANL-7419)
fission densities in, sodium void effects on absolute, 22:32734 (ANL-7310, pp 137-248)
fission fragment tracks of, use in age estimation, 22:6446
fission fragments of, angular distribution of, 22:16265(R) (ANL-7403)
fission in minerals, xenon accumulation method for determination of rate constant for, 22:25505
fission in uranium minerals and salts, strontium-89 and strontium-90 yields from spontaneous, (E), 22:39656
fission of, decay constant for spontaneous, (E), 22:53201
fission of, testing time invariance of unit charge by spontaneous, (E/T), 22:14033
fission of, use in age estimation of muscovite, 22:18917
fission of, use of track density in age estimation of obsidian, 22:8212
fission rate measurements in ZPR-6 using solid-state track recorders, 22:48747
fission rates for, measurement in Rapsodie of, 22:1871
fission ratio measurements in RB-1 using, 22:27473
fission ratio measurements of uranium-235 to, 22:33006
fission ratio to uranium-235 in natural uranium heavy water lattices, fast, (E/T), 22:14269
fission ratio to uranium-235, measurement using solid-state track recorders, 22:48747
fission tracks from, use in age estimation of fossils, 22:6471
fission tracks from, use in age estimation of rocks and minerals, 22:51085
fissions in low-enriched rods of, method of calculating fast, (T), 22:6170
foils of, measurement of epicadmium to subcadmium radiative capture ratios in, 22:33006
foils of, measurement of ratio of fissions in uranium-235 to radiative capture in, 22:33006
fuel cost uncertainties for, effects on liquid sodium-cooled fast power reactor development of, 22:50733 (GEAP-5635)
fuel elements of, configuration of multi-zone, 22:42486(P)
half-life and type of decay of, 22:42698
helium-3 elastic scattering at 33 MeV, angular distributions for, (E), 22:5809(R) (ANL-7354)
helium-3 fission at 32 MeV, mass yield distribution for ternary, (E), 22:11946(R) (COO-1716-4)
helium-3 fission cross sections at 40 MeV, ternary, (E), 22:7736
helium-3 reactions (He-3,α) at 30 MeV, α spectra from, (E), 22:39635(R) (NYO-3938-1)
helium-3 reactions (He-3,α) at 30 MeV, α spectra for, (E), 22:35326
isotopic shift measurements for, 22:13250
Moessbauer effect following alpha scattering with Coulomb excitation, (E), 22:7695 (NYO-2028-2, pp 12-17)
Moessbauer effect for 45-keV transition in, measurement using Coulomb excitation, (E), 22:46801
neon-20 reactions (Ne-20,f) with, fission-fragment mass distribution for, (E), 22:24857 (JINR-P7-3732)
neon-20 reactions (Ne-20,f) with, yields of astatine isotopes and polonium isotopes from, (E), 22:22582 (JINR-P7-3710)
neon-22 elastic scattering cross section for, angular distribution of, (E), 22:18215(T) (BNL-tr-192)
neon-22 reactions (Ne-22,5n) with, cross sections for, (E), 22:3696 (JINR-P7-3556)
neon-22 reactions (Ne-22,5n) with, production of nobelium-255 by, (E), 22:39646
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron absorption in diphenyl-cooled heavy water-moderated natural uranium lattice, resonance, (E), 22:5818 (RT/FI-(67)13)
neutron absorption resonance integrals for, parameters for calculation by intermediate resonance approximation, (T), 22:35330
neutron absorption resonance self-shielding factor near sodium resonance, effect of 1/E spectrum on effective, (T), 22:32620
neutron capture at 0 to 54 keV in uranium and uranium dioxide at high temperature, Doppler effect on, (E), 22:14027
neutron capture at 25 to 500 keV, cross section for, (E), 22:35346
neutron capture at 25 to 500 keV, cross section for, (E), 22:37373
neutron capture by, potential, (E), 22:3686 (BNL-11903)
neutron capture cross section and resonance parameters at 0.03 to 2.05 keV, measurement using time-of-flight method with nuclear explosion, (E), 22:22584 (LA-DC-9181)
neutron capture cross section at 25 to 500 keV, (E), 22:3687 (EURFNR-404)
neutron capture cross section in fast reactor spectra, Doppler broadening of, (E), 22:35651
neutron capture cross section of, error analysis for, 22:32970(R) (GEAP-5584)
neutron capture cross section of, measurement in FR-0, 22:1873
neutron capture densities in, sodium void effects on absolute, 22:32734 (ANL-7310, pp 137-248)
neutron capture in fast critical assembly, measurements of Doppler effect in, (E), 22:32562 (AE-314)
neutron capture in fast reactor spectrum, Doppler effect for, (E), 22:3706
neutron capture in thermal reactors, methods for measuring rho$_{28}$ ratio for, (E), 22:24858 (KR-124)
neutron capture rates at 0.2 to 30 keV, temperature-dependent, (E), 22:5811 (EURFNR-400)
neutron capture rates in core and blanket of Fermi fast breeder, 22:7791 (APDA-NTS-10)
neutron capture-to-fission ratio as function of position in EBR-II, (E/T), 22:53165 (ANL-7425, pp 190-2)
neutron capture-to-fission ratios in EBR-II, position-dependent, (E/T), 22:27086 (ANL-7375, pp 176-7)
neutron cross section analysis of, computer program for, 22:25075 (APDA-201)
neutron cross section evaluation for, total inelastic, 22:14129(R) (APDA-212)
neutron cross section for, use of optical model for evaluation of, 22:27396(R) (AI-AEC-12638)
neutron cross sections at 0.001 to 14 MeV, data compilation on, 22:50598 (LA-3527)
neutron cross sections at 0.05 to 15 MeV, analysis using generalized optical model, (T), 22:50605
neutron cross sections for, calculated effects of reactor environment on absorption, 22:32734 (ANL-7310, pp 137-248)
neutron cross sections for, Doppler-broadened p-wave, (T), 22:48426 (RPI-328-133, pp 60-100)
neutron cross sections for, effects on reactivity of variation of, 22:32960 (ANL-7310, pp 31-135)
neutron cross sections for, evaluation using least-squares method of correcting for integral data, (T), 22:35344
neutron cross-section data at 0.001 eV to 15 MeV, ENDF/B, 22:7689 (BAW-316)
neutron decay constants in spheres of, (E/T), 22:20409(R) (GA-8449)
neutron Doppler effect at 300 to 2000°K in, (E/T), 22:7920(T) (ANL-Trans-540)
neutron elastic and inelastic scattering at 14 MeV, cross

sections for, (E), 22:53167 (CEA-R-3503)
neutron elastic and inelastic scattering by, fast, (T), 22:18204 (BMwF-FBK-67-90)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron fission at 0 to 7 MeV, fission-fragment energy and yield in, (E/T), 22:18348
neutron fission at 1.4, 1.6, 1.9, 5.0, 5.5, and 6.9 MeV, fission-fragment energy and mass distributions in, (E), 22:42018(T) (LA-tr-68-21)
neutron fission at 1.5 to 15 MeV, prompt neutron emission in, (E), 22:37340(R) (EANDC(E)-89(U))
neutron fission at 1.5 to 18 MeV, fission-fragment mass distributions from, (E), 22:1668
neutron fission at 14 MeV, asymmetry of angular distribution for, (E), 22:35261
neutron fission at 14 MeV, cumulative yields of isotopes in, (E), 22:35325
neutron fission at 18 to 21 MeV, delayed neutron yields in, (E), 22:24869
neutron fission at 3 and 14 MeV, absolute delayed neutron yields from, (E), 22:32591
neutron fission at 3 and 14 MeV, delayed neutron emission in, (E), 22:20578 (WASH-1079)
neutron fission at 3 and 14 MeV, delayed neutron yields from, (E), 22:24859 (LA-DC-9403)
neutron fission at 5 to 9 MeV, mean kinetic energy of fission fragments in, (E), 22:44714
neutron fission at 6 to 9 MeV, fission-fragment kinetic energy from, (E), 22:22603
neutron fission at thermal energies and at 2.5 and 7 MeV, fragment kinetic energies and yields from, (E), 22:5857
neutron fission cross section at 1 to 5 MeV, (E), 22:18287
neutron fission cross section at 1 to 5 MeV, (E), 22:20572 (LA-DC-9205)
neutron fission cross sections at 1 keV to 10 MeV, (E), 22:24873
neutron fission during thermonuclear explosions, fission-product activities for, (T), 22:20569 (HNS-1229-77)
neutron fission factor for, use of foils for measuring fast, 22:10565
neutron fission in uranium dioxide single crystal, fission-fragment angular distribution in thermal, (E), 22:35308
neutron fission of, analysis of mass balance in CANDU-type reactor, fast, 22:37400 (AECL-3109)
neutron fission of, barium-140 yields from fast and thermal, (E), 22:22618
neutron fission of, fission-product charge distributions and yields in, (E), 22:46761 (APED-5398)
neutron fission of, survey of yields from fast, 22:20559 (AERE-R-5086)
neutron fission of, tritium yields from, (T), 22:37312 (ANL-7450, pp 105-7)
neutron fission of, tritium yields in fast, (T), 22:53165 (ANL-7425, pp 190-2)
neutron fission rate in fast spectra, effects of system heterogeneity on, (E), 22:35333
neutron fission rate in FTR core, (E/T), 22:27460 (BNWL-634, pp 4.1-55)
neutron fission rates in core and blanket of Fermi fast breeder, 22:7791 (APDA-NTS-10)
neutron fission rates in EBR-2, (E/T), 22:24925(R) (ANL-7427)
neutron fission rates in ZPR-3, 22:14251(R) (BNWL-534)
neutron fission ratio to uranium-235, measurement by γ spectrometry, 22:32976(R) (MIT-2344-12)
neutron inelastic scattering cross section at high energy, testing by neutron pulse decay in nonmultiplying assembly, (E), 22:24787 (GA-8536)
neutron inelastic scattering cross sections for, calculation of fast, (T), 22:18081
neutron production by, in soils, 22:30705
neutron reactions (n,2n) with, effective cross section for fast, (E), 22:40376
neutron reactions (n,f) at 4.65 and 15.3 MeV with, fission fragment track analysis in solid-state detectors for, 22:14792
neutron reactions in thermonuclear explosions, production of heavy elements by, (E), 22:32619
neutron reactions with, production of neptunium-239 by, 22:18841
neutron resonance absorption by, Doppler coefficient for, (E), 22:5743
neutron resonance absorption by, effects of resonance scattering by sodium on, (T), 22:18247
neutron resonance absorption in cylindrical cell, epithermal, (T), 22:44581
neutron resonance absorption in FRO core for, cross section for, (T), 22:46703
neutron resonance absorption of, measurement of square lattices in carbon and water of 6.7 eV, 22:18607
neutron resonance cross sections at 347.9, 661.2, and 1523.1 eV, Doppler-broadened, (T), 22:32438
neutron resonance escape probability for, 22:53454 (BNWL-828)
neutron resonance integral, use of modified Dancoff correction for two-region analysis of aluminum, iron
and zirconium cladding effects on, 22:42401
neutron resonance integrals at surface/mass ratios of 1
to 10, Doppler effect on, (E), 22:32587
neutron resonance integrals for, (T), 22:5992
neutron resonance integrals for, determination of effective, (E/T), 22:32976(R) (MIT-2344-12)
neutron resonance integrals in square lattices containing, Dancoff correction effects on, 22:12085 (BNWL-472, pp 3.1-33)
neutron resonance parameters at 0 to 200 eV, transmissi
measurements of p-wave, (E), 22:42036
neutron resonance parameters for, measurement using tim
of-flight method with nuclear explosion, (E), 22:205
(WASH-1079)
neutron resonance self-shielding factors at high temperature, calculations using ladder method, (T), 22:35348
neutron scattering by, adiabatic coupled-channel calculations for fast, (T), 22:27209
neutron scattering by, adiabatic coupled-channel calculations of cross sections for, (T), 22:37340(R) (EANDC(E)-89(U))
neutron spectra and kinetics in spheres of, calculation
of fast, (T), 22:11873(R) (GA-8085)
neutron spectra distribution in slab of, comparison of transport theory with spatially dependent, (E/T), 22:22871
neutron spectra in slabs of, surrounded by borated polyethylene, (E/T), 22:11873(R) (GA-8085)
neutron spectra in spheres of, (E), 22:20409(R) (GA-8449)
neutron strength functions for, calculation using deformed nucleus optical model, (T), 22:27093
neutron strength functions for, effect of nuclear deformation on, (T), 22:18211 (NAA-SR-Memo-12538)
neutron total cross section and resonance parameters at
100 eV to 1 MeV, (E), 22:18283
neutron total cross section at 100 to 150 MeV, (E), 22:53140
neutron total cross section at 14 MeV, (E), 22:53167 (CEA-R-3503)
neutron yields from electron accelerator targets of, (E
22:18557 (GA-8087)
nitrogen-14 elastic scattering cross section for, angul
distribution of, (E), 22:18215(T) (BNL-tr-192)
nuclear deformation energies of, (T), 22:30077
nuclear dynamics from muonic x-ray spectra of, (T), 22:20700
nuclear polarization effect in μ-mesic atoms of, (T), 22:30048(R) (PUC-937-307)
oxidation of, compared with uranium-234 in minerals, 22:27665
oxygen-16 elastic scattering cross section for, angular
distribution of, (E), 22:18215(T) (BNL-tr-192)
oxygen-16 reactions (O-16,f) at 39 MeV, fission-fragmen
angular distributions for, (E), 22:18215(T) (BNL-tr-
192)
oxygen-16 reactions (O-16,f) with, fission-fragment angular distributions from, (E), 22:1669
perturbations in BN-350 type critical assembly from, analysis of, 22:18570
photofission at 4.5 to 6.5 MeV, asymmetry in, (E), 22:32593
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:42010(T) (ANL-Trans-639)
photofission at 5 to 8 MeV, fission-fragment angular distributions from, (E), 22:3688 (FEI-73)
photofission at 5 to 8 MeV, fission-fragment angular distribution near threshold for, (E), 22:18275
photofission at 5.4 to 6.5 MeV, cadmium-115 yield in, (E), 22:3711
photofission at 5.4 to 9.0 MeV, angular distributions for, (E), 22:37340(R) (EANDC(E)-89(U))
photofission cross section at 5.1 to 9.7 MeV, measuremen
using monochromatic gamma radiation, (E), 22:7735
photofission yields at 4.5 to 8.5 MeV, measurements usin
monochromatic γ beams, (E), 22:11944(R) (AECL-2780)
physics parameters of fuel assemblies of, analysis of Doppler effects in ZPR-III, 22:30303 (GEAP-5271)
proton fission at 0.45 and 12 GeV, energy dependence of recoil properties of fission products in, (E), 22:37338(R) (COO-1505-26)
proton fission at 0.6 to 29 GeV, excitation functions for, (E), 22:14513 (BNL-50057, pp 60-78)
proton fission at 12 GeV, charge distribution and recoil properties in, (E), 22:37338(R) (COO-1505-26)
proton fission at 12 MeV in uranium dioxide single crystal, lifetime of compound nucleus in, (E), 22:35308
proton fission at 12 MeV, dependence of prompt neutron emission on fragment energy and mass distributions in, (E), 22:50601 (ORNL-TM-2272)
proton fission at 12 MeV, prompt-neutron emission in, (E), 22:37369
proton fission at 150 MeV, production of short-lived cesium and rubidium isotopes by, (E), 22:30033
proton fission at 156 MeV, cross sections and fission-fragment angular and energy distributions for, (E), 22:9900
proton fission at 156 MeV, delayed neutron emission in, (E), 22:9877
proton fission at 2.2 GeV, angular distributions and

differential range curves for products of, (E), 22:53198
proton fission at 20 to 85 MeV, isomeric yield ratios of zenon-133 in, (E), 22:35324
proton fission at 3 GeV/c, fission-fragment angular correlations and kinetic energies from, (E), 22:14513 (BNL-50057, pp 60-78)
proton fission at 450 MeV, charge distribution in symmetric, (E), 22:48537
proton fission at 450 MeV, recoil studies of symmetric, (E), 22:48536
proton fission at 7 to 13 MeV, fission-fragment energy-mass correlations in, (E), 22:35293(R) (ORNL-4230)
proton fission at 9.5 and 11.3 MeV, nuclear charge distribution in, (E), 22:22588 (ORO-1797-11, pp 114-64)
proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
proton reactions (p,xpyn) at 50 to 400 MeV, cross-section calculations using cascade-evaporation model, (T), 22:26832 (ORNL-4105)
proton reactions at 12 GeV, sodium-24 production cross sections for, (E), 22:9875
radiation dose to laboratory animals and man following ingestion of carbide-incorporated, effects of gastrointestinal retention time on, 22:49228
reaction rate measurements in DFR, use of fission chambers for, 22:30309 (TRG-Report-857)
reactivity effect in ERMINE fast--thermal flux assembly in MINERVE, 22:14263(T) (AEC-tr-6910)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
reactivity temperature coefficient of, effects of thermal expansion on, (E/T), 22:32977 (NAA-SR-Memo-12289)
reactivity worth determination in ZPR-3, 22:32734 (ANL-7310, pp 137-248)
reactivity worth measurements in fast spectrum reactor, 22:27396(R) (AI-AEC-12638)
reactivity worth of, analysis of, (E/T), 22:32969 (GA-8468)
resonance parameters for, 22:33086 (ANL-7310, pp 431-511)
separation from uranium-234 during transfer from mineral to liquid phase, effects of oxidation on, 22:45203
spectra of fallout, from Chinese and Russian nuclear explosions, 22:42880
uptake by inhalation, equations for calculation of systematic retention and urinary excretion rate following, 22:30934 (RT/PROT-(67)15)
use for fast fission measurements, 22:16270 (BNWL-633)
use in neutron fluence measurements in fast reactors, 22:48746
use in ratio with uranium-234 for measuring accretion rates in manganese nodules, 22:16390 (COO-1540-8)
x-ray spectra from μ-mesic, nuclear charge parameters for analyzing, (E/T), 22:20640
x-ray spectra of μ-mesic, electric quadrupole effects in, (E), 22:5817(R) (NYO-GEN-72-28)

URANIUM ISOTOPES U-239
beta decay in solutions of, distribution of valence forms of neptunium-239 in, 22:27843
beta decay of, 22:18841
beta decay scheme of, γ spectra for, (E), 22:11961
energy levels of, $K = 1/2$ rotational, (T), 22:20664
energy levels of, neutron single-particle, (E), 22:27087(R) (ANL-7405)
neutron resonance spins and widths at 8 to 300 eV, (E), 22:18295
nuclear level densities in, testing random-matrix model by, (T), 22:27378
proton fission at 1 to 9 GeV, cross section for, (E, 22:46804

URANIUM LEACH SOLUTIONS
analysis for phosphates, colorimetric, 22:25236 (CEA-N-616, pp 20-71)
analysis for uranium, spectrophotometric, 22:7996
separation of uranium from, by precipitation, 22:18668 (RISO-166)

Uranium Lithium Fluorides
see Lithium Uranium Fluorides

URANIUM MINERALS
see also Autunites
see also Becquerelites
see also Carnotites
see also Coffinites
see also Jachimorites
see also Metatorbernites
see also Pyrochlores
see also Schoepites
see also Thucholites
see also Tyuyamunites
see also Uraninites
see also Uranium Ores
see also Uranophanes
abundance and composition of, in Mecsek Mountains of Hungary, 22:23177
age of Austrian, method for estimation of, 22:40277
age of, argon/potassium method for estimation of, 22:10402
age of, lead/uranium method for estimation of, 22:25505
age of, radioactive disequilibrium method for estimation of, 22:6439
alpha activity in vicinity of, fossil alpha-recoil method for determination of, 22:33556
analysis for gold by neutron activation, 22:42629
analysis for uranium, comparison of colorimetric and radiochemical methods for, 22:25288
crystal structure of trahyliparitic porphyries, effects of hydrothermal metamorphic processes on, 22:27933
crystal structure of, role of alpha particles in metamictization of, 22:27931
determination by gamma spectrometry, 22:42610
equilibrium in, gamma spectrometric method for determining radioactive, 22:30734
formation in Burro Mountains, New Mexico, 22:33600
formation of, geochemistry of, 22:47250
leaching of, effects of bacteria on iron sulfate and sulfuric acid, 22:27850 (CEA-N-816, pp 80-9)
leaching of, effects of oxidation on isotope separation during, 22:45203
luminescence of, review on, 22:30493
occurrence in Congo Republic, 22:48956
occurrence in Niger and Central African Republic, 22:45201
occurrence of andersonite, in Austria, 22:48961
oxidation of uranium-234 and uranium-238 in, comparison of rates of, 22:27665
processing for uranium recovery, on-site dissolution method for, 22:27934
processing of, control and regulation of, 22:19017
processing of, review of, 22:25158
processing, methods for, 22:25450 (CEA-N-616, pp 86-96)
production of new, hydrothermal alteration process for, 22:27932
production of uranothorianite in 1967, review of, 22:30730
radiation effects on inclusions in, anomalies of, 22:10393
radon-222 release from, method for measurement of, 22:33567
stability of uranium molybdate in, x-radiographic study of thermal, 22:6500
strontium-89 and strontium-90 formation in, by uranium-238 spontaneous fission, (E), 22:39656
structure of thucholite, microscopic study of, 22:12454
trace element content in, of Federal Republic of Germany, 22:6501
uranium content in, effect of organic compounds on, 22:4293
xenon content in, mass spectrometric method for measurement of, 22:25505

URANIUM MOLYBDATES
stability of natural, x-radiographic study of thermal, 22:6500
UMo$_2$O$_8$--UW$_2$O$_8$, crystal lattice parameters and solid solution stoichiometry at 850 to 1000°C, 22:52295

URANIUM NIOBATES
preparation and crystal structure of, 22:8048

URANIUM NITRATES
see also Uranyl Nitrates
analysis for plutonium and its isotopes, accountability methods for, 22:6 (CONF-661011, pp 135-45)
analysis of, 22:5 (BNWL-SA-1388, pp 10.1-14)
analysis of aqueous solutions of, for uranium, 22:47110(R) (BAW-3714-7)
conversion to uranium oxide, equipment design for, 22:14643
criticality parameters of reflected and unreflected arrays of aqueous uranium-233, 22:6117
distribution between TBP and nitric acid, 22:51046(T) (EURFNR-499)
effects on kidneys of dogs, necrotic, 22:28313
preparation by electrolytic reduction of uranyl nitrate, 22:12274 (NP-17197)
preparation of, electrolytic, 22:45146 (NP-17588)
reactions with plutonium ions, 22:45146 (NP-17588)
use in second cycle of plutonium purification by TBP, 22:16680
Th(NO$_3$)$_4$--U(NO$_3$)$_4$, separation of uranium and thorium from, by solvent extraction using tributyl phosphate, 22:14579(P)

URANIUM NITRIDE OXIDES
formation in vaporization of uranium nitride--uranium dioxide system, 22:16527
production of, 22:33368

URANIUM NITRIDES
analysis for nitrogen, 22:38635(T) (ORNL-tr-1918)
analysis for nitrogen, 22:50904(T) (NP-tr-1687)
analysis for nitrogen, 22:42589 (JUL-517-RW)
binding in, review on, 22:28942 (PEL-165)
compacting and sintering high-density, method for, 22:21756(P)
compatibility of UN and U$_2$N$_3$, with type 304 stainless steel at 700 to 1000°C, 22:28777(R) (BMI-1837)
creep of UN at 1500 to 1800°C in nitrogen, compressive, 22:41103
cross sections of, effects on space power reactor reactivity of uncertainties in, 22:20899 (UCRL-70797)
crystal structure of, 22:37720
crystal structure of U$_2$N$_3$, disorder in cubic, 22:31504
deformation of single crystals of, determination by electron microscopy, 22:23888
density of hot-pressed, 22:28777(R) (BMI-1837)

development for reactor fuels, review, 22:12954
diffusion of nitrogen in UN, 22:8825 (UCID-15238(Pt.1))
diffusion of nitrogen in, neutron activation methods for studying, 22:12
dissolution of, sealed-tube techniques for, 22:14428 (ORNL-4196, pp 33-44)
effects of U_2N_3, on sinterability of mixed plutonium nitride--uranium nitride powders, 22:28777(R) (BMI-1837)
enthalpy of formation of UN, UN_2 and U_2N_3, 22:31465
entropy of, equipment for measuring, 22:4114
fabrication by hot pressing, at 1850° at 11,000 psi, 22:28777(R) (BMI-1837)
fabrication by vibratory compaction, 22:8809
fabrication of fuel elements of, methods for, 22:8816(P)
fabrication, properties, and structure of, 22:64
fission product release from carbon-coated microspheres of, 22:15261(R) (BMI-1819)
formation in reactions of ammonia with uranium carbide, 22:47130
fuel cycle economics of, for fast breeder reactors, (T), 22:22659 (BNWL-606)
fuels of, fabrication of, 22:22877
grain growth in, effects of nitrogen at 1950°C on, 22:8825 (UCID-15238(Pt.1))
helium-bubble diffusion in, at 985 to 1585°C, 22:8824 (ORNL-TM-2016)
magnetic properties of, model for, 22:15621
oxidation by oxygen and water vapor, 22:7031
oxidation of single crystals of, determination by electron microscopy, 22:23888
oxidation of, kinetics of, 22:25345
phase studies of, 22:38635(T) (ORNL-tr-1918)
preparation by reaction of uranium tetrachloride with aluminum and nitrogen, 22:19612
preparation of, 22:38635(T) (ORNL-tr-1918)
preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
preparation, crystal structure, and melting points of, 22:8061
production by reduction of uranium trichloride by hydrogen and ammonolysis, 22:13048
production by vapor deposition from uranium hexafluoride reactions with lithium and nitrogen, 22:8686 (ORNL-4170, pp 108-14)
properties as fuel material, chemical research on, 22:25144
properties for use as reactor fuel, 22:7069
properties of, review of, 22:14463
radiation damage in, electron microscopy of fission-track, 22:15263
radiation effects on ceramic coated spheres of, in-pile, 22:15261(R) (BMI-1819)
radiation effects on chemical properties of fuels of, reactor, 22:64
radiation effects on coated, in-pile, 22:15261(R) (BMI-1819)
radiation effects on lattice constants of, fast neutron, 22:41132 (KFK-745)
radiation effects on physical properties of, 22:15263
radiation effects on, during burnup, 22:7069
reactions with carbon at 1100°C, 22:52259 (CEA-R-3536)
reactions with Incoloy, Inconel, and stainless steel cladding at high temperatures, 22:720 (BMI-1809, Sect.A)
sintering to high density, method for, 22:52248(P)
thermal conductivity, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
thermal conductivity of UC, 22:8820 (ORNL-4170, pp 32-3)
thermochemical stability of coated, 22:15261(R) (BMI-1819)
thermodynamic properties at 1300 to 1500°C, 22:21764
thermodynamic properties of, 22:38635(T) (ORNL-tr-1918)
thermodynamic properties of $UN_{1.5}$ to $UN_{1.75}$, 22:4119
ThN--UN, phase relations at 1000°C, 22:49852
use in preparation of uranium dioxide sols, 22:13056(P)
vaporization of, thermodynamics of, 22:59 (UJV-1783)
vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
CeN--UN, phase studies of, 22:21700(T) (EURFNR-387)
CeN--UN--ZrN, phase studies, 22:31510
Cr--UN, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
Cr--UN, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
HfN--UN, phase studies at 1700 and 2000°C, 22:43664
HfN--UN, phase studies of, 22:31487 (KFK-721)
Mo--UN, crystal lattice parameters of, effects of heat treatment on, 22:8739 (ORNL-4170, pp 97-102)
Mo--UN, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
Mo--UN, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Na--UN, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
Nb--UN, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
PuN--UN, analysis for nitrogen content, Micro-Kjeldahl, 22:28777(R) (BMI-1837)
PuN--UN, burnup under fast reactor conditions, testing of, 22:28777(R) (BMI-1837)
PuN--UN, compatibility of clad, with sodium at 650°C, 22:13044 (BNWL-473, pp 3.1-21)
PuN--UN, compatibility of sodium-bonded fuels with cladding materials, 22:6138(R) (LA-3820)
PuN--UN, compatibility of sodium-bonded, with cladding materials, 22:27487(R) (LA-3860)
PUN--UN, compatibility with cladding materials at 1000°
22:21645(R) (BMI-1826)
PuN--UN, compatibility with Incoloy 800 cladding, in sodium bonded test capsules at 1000°C, 22:28777(R) (BMI-1837)
PuN--UN, compatibility with Inconel 625 cladding in sodium bonded test capsules at 1000°C, 22:28777(R) (BMI-1837)
PuN--UN, compatibility with liquid sodium and stainless steel at high temperatures, 22:15261(R) (BMI-1819)
PuN--UN, compatibility with niobium--zirconium cladding in liquid sodium, 22:15261(R) (BMI-1819)
PuN--UN, compatibility with ORNL stainless steel claddi
in sodium bonded test capsules at 1000°C, 22:28777(R
(BMI-1837)
PuN--UN, compatibility with Type 304 stainless steel, through sodium bond, 22:41085 (BNWL-SA-1666)
PuN--UN, compatibility with Type 316 stainless steel-cladding of sodium bonded, evaluation of, 22:50841(R
(LA-3993)
PuN--UN, compatibility with types 304 and 316 stainless steel cladding in sodium bonded test capsules, at 1000°C, 22:28777(R) (BMI-1837)
PuN--UN, development and preparation for fast breeder reactor fuel, 22:8739 (ORNL-4170, pp 97-102)
PuN--UN, electric and thermal properties of fuel specimens of, 22:720 (BMI-1809, Sect.A)
PuN--UN, fabrication for reactor fuels by sintering, 22:720 (BMI-1809, Sect.A)
PuN--UN, fabrication of fuel elements of, methods for, 22:8816(P)
PuN--UN, fabrication of fuels of, effects of ball-millin
at 32 to 64 hr on, 22:28777(R) (BMI-1837)
PuN--UN, fabrication of irradiation specimens of, 22:72
(BMI-1809, Sect.A)
PuN--UN, melting behavior, 22:41085 (BNWL-SA-1666)
PuN--UN, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
PuN--UN, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
PuN--UN, preparation by carbothermic reduction of oxides
22:41085 (BNWL-SA-1666)
PuN--UN, preparation of fuel elements of, description of
carbothermic reduction process for, 22:32815
PuN--UN, properties for use in fuels, review, 22:21650
PuN--UN, properties of sintered fuels of, 22:21645(R) (BMI-1826)
PuN--UN, radiation effects on fuels of, review on, 22:8804
PuN--UN, radiation effects on, at sodium-cooled fast reactor temperatures, 22:21645(R) (BMI-1826)
PuN--UN, radiation effects under fast reactor operating conditions, in-pile, 22:720 (BMI-1809, Sect.A)
PuN--UN, radiation testing of fuel pins of, in ETR, 22:13044 (BNWL-473, pp 3.1-21)
PuN--UN, radioinduced swelling during 12 MTR cycles, in-pile, 22:28777(R) (BMI-1837)
PuN--UN, radioinduced swelling of, in-pile, 22:771
PuN--UN, reactions with Incoloy, Inconel, and stainless steel cladding at high temperatures, 22:720 (BMI-1809
Sect.A)
PuN--UN, sintering behavior of carbothermic and metal-derived, 22:41085 (BNWL-SA-1666)
PuN--UN, sintering mixed powdered, effects of uranium nitride additions on, 22:28777(R) (BMI-1837)
PuN--UN, sintering techniques for fabrication of fuels of, 22:15261(R) (BMI-1819)
PuN--UN, thermal conductivity, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuN--UN, thermal conductivity at 200 to 1600°C, 22:4108
(BNWL-SA-1666)
PuN--UN, thermal diffusivity at 300 to 1100°C, 22:28777(R) (BMI-1837)
PuN--UN, thermal diffusivity of, effects of stoichiometr
on, 22:21645(R) (BMI-1826)
PuN--UN, thermal expansion at 20 to 1175°C, 22:28777(R) (BMI-1837)
PuN--UN, thermal performance of, analysis of fast reacto
fuel, 22:32818
PuN--UN, thermal stability at 1300 to 2000°C, 22:720 (BMI-1809, Sect.A)
PuN--UN, vapor pressure at 2020, 2050, 2120, and 2130°K, 22:28777(R) (BMI-1837)
PuN--UN, wetting by liquid sodium, 22:15261(R) (BMI-1819)
ThN--UN, phase formation in, mechanisms of thorium-rich oxide, 22:8739 (ORNL-4170, pp 97-102)
TiN--UN, phase studies at 1700 to 2400°C, 22:43664
TiN--UN, phase studies of, 22:31487 (KFK-721)
UAs--UN, solid-solubility relations of, 22:11055
UB--UN, phase and solubility studies, 22:31469
UC--UN, analysis for nitrogen, 22:50904(T) (NP-tr-1687)
UC--UN, decomposition pressure and stability of solid-solution, 22:31466
UC--UN, phase studies of solid solutions of, in nitrogen
22:19653

- UC--UN, stability at 1350 to 1800°C, free carbon effects on, 22:31467
- UC--UN, thermodynamic properties, 22:8739 (ORNL-4170, pp 97-102)
- UC--UN, thermodynamics of solid-solution, 22:31468
- UC--UN--UO, phase studies of, thermodynamic, 22:38635(T) (ORNL-tr-1918)
- UN--UO$_2$, vaporization of, mass-spectrometric evidence for uranium nitride oxide molecule in, 22:16527
- UN--UP, phase and solubility studies, 22:31469
- UN--UP, phase studies, 22:43631 (ANL-7299, pp 120-37)
- UN--USi, phase and solubility studies, 22:31469
- UN--W, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
- UN--ZrN, phase studies at 1700 and 2000°C, 22:43664
- UN--ZrN, phase studies of, 22:31487 (KFK-721)

URANIUM NITRIDES UN
- analysis for nitrogen and oxygen by modified vacuum-fusion and wet-chemical methods, 22:33263
- crystal structure, 22:45805 (UJV-1962)
- electric conductivity of, 22:26085
- fabrication methods for, description of, 22:30386
- fabrication of sintered powder, description of, 22:44876(R) (UCRL-50004-68-1(Pt.1))
- fuel element of molybdenum-clad depleted and enriched, description of fabrication of, 22:37561 (N-68-22587)
- magnetic properties of, (T), 22:44262
- preparation of high-purity, methods of controlling, 22:45805 (UJV-1962)
- radiation effects on crystal structure of, in-pile, 22:45829(T) (EURFNR-503)
- reactions with metal oxides at 600 and 1100°C, mechanism and products of, 22:48849 (KFK-771)
- reactions with uranium dioxide, formation of oxynitrides in, 22:33368
- thermal conductivity of, 22:40087
- thermal conductivity of, 22:26085
- thermal diffusivity at 20 to 1000°C by laser pulse method, 22:40087
- UC--UN, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)

URANIUM ORE PROCESSING PLANTS
- description of French, using ion exchange equipment, 22:12487
- design and operation of Spanish, 22:8263
- operation of, flowsheet design for, 22:33581 (CONF-680426-1)

URANIUM ORES
- (Including tailings, etc., being reworked for uranium; see also specific uraniferous materials.)
  - see also Carnotites
  - see also Fluorospars
  - see also Uranium Concentrates
  - see also Uranium Minerals
- age and source of Jackpile Sandstone deposits of, in New Mexico, 22:23176
- analysis for 0.00001 to 5 percent uranium by polarography, 22:42596
- analysis for uranium by colorimetric method using morin following ion exchange, 22:42606
- analysis for uranium by fluorimetry, 22:27541 (NIM-163)
- analysis for uranium using dihydroxymaleic acid in methanol solution, spectrophotometric, 22:33222
- analysis using gamma scintillation spectrometers, 22:6619
- beneficiation of low-grade Indian, by flotation process, 22:40149 (AEET/Met.-9)
- chlorination of Ningyotoge, uranium concentration by fractional condensation of chloride vapors in, 22:33510
- conference on processing for reactor fuels, Oklahoma City, Oklahoma, May 23 to 24, 1968, 22:51108
- conference on processing of low-grade, Vienna, June 27 to July 1, 1966, 22:18869 (STI/PUB-146)
- cost and production in France and French territories during 1966, review of, 22:25550
- depositional epochs of, 22:35952
- deposits at Blind River and Elliot Lake, inventory of, 22:35951
- deposits in Shirley Basin Area (Wyo.), analysis of, 22:27929
- deposits of, availability in non-communist countries, 22:27937
- detection of deposits of, logging equipment and ratemeters for, 22:27936
- exploration policies for, in Australia, 22:10396
- exploration policies for, in Australia, 22:10395
- formation and distribution of, mechanisms for, 22:47245
- geochemical survey of western Sicily for, 22:40278
- geology of deposits of hydrothermal, mathematical model of, 22:51119
- iron selenide content in roll-type deposits of, in Powder River Basin, Wyoming, 22:27930
- leaching for uranium oxide U$_3$O$_8$, underground, 22:18879
- leaching in Pachuca tanks, efficiency of, 22:10936
- leaching of low quality, method for underground, 22:33576
- leaching of Spanish, static, 22:18897
- leaching of uranium from pyritized conglomerate, by bacteria, 22:30685
- migration of uranium in, during open storage, 22:18893
- milling of, control of radiological pollution of drainage waters from, 22:18890
- milling of, waste disposal methods associated with, 22:51050
- milling technology for, 22:30686
- mineral contents in neogene sediments of Niigata Prefecture, Japan, 22:51118
- mineralization and origin in Witwatersrand conglomerate, relations of heavy minerals and carbonaceous matter to, 22:2253
- mining at Shirley Basin, Wyoming, by in-place leaching, 22:40275
- mining deposits of the Ningyotoge type, hydraulic, 22:49003
- mining in relation to hazards to personnel, 22:15002 (SC-M-67-2959)
- mining of underground, cold acid solution method for, 22:4291
- minor element content in Japanese, 22:4290
- occurrence in Rodeo, Mexico, 22:25502 (NP-17345)
- occurrence in Spain, 22:4274
- occurrences in San Juan basin of New Mexico, 22:27926
- processing by bacterial leaching, 22:18890
- processing by solvent extraction, 22:18890
- processing facilities in South Africa, 22:39837
- processing in Spain, 22:33551
- processing in United States, methods for, 22:18991
- processing of Australian, evaluation of methods for, 22:18889
- processing of Australian, facilities and methods for, 22:18980
- processing of Australian, flotation method for, 22:4292
- processing of Canadian, facilities and methods for, 22:18981
- processing of Canadian, from Elliot Lake district, 22:18890
- processing of French, facilities and methods for, 22:18983
- processing of low grade, review of technology for, 22:40273
- processing of low-grade Angola, methods for, 22:18985
- processing of low-grade Czechoslovakian, facilities and methods for, 22:18982
- processing of low-grade Indian, facilities and methods for, 22:18984
- processing of low-grade South African, methods for, 22:18986
- processing of low-grade Swedish, methods for, 22:18988
- processing of low-grade United Kingdom, methods for, 22:18990
- processing of low-grade Yugoslavian, methods for, 22:18992
- processing of low-grade, by underground leaching, 22:18899
- processing of low-grade, commercial experience in United States in, 22:18900
- processing of low-grade, containing coal and bentonitic loam, 22:18891
- processing of low-grade, Swedish plant for, 22:18898
- processing of phosphate, economics of, 22:27870
- processing of Portuguese, by natural leaching, 22:18893
- processing of Russian, methods for, 22:18989
- processing of Spanish, evaluation of methods for, 22:18896
- processing of Spanish, methods for, 22:18987
- processing of, control and regulation of, 22:19017
- processing of, conversion from ball mill to ore-pebble grinding for, 22:19018
- processing of, development of simplified concentration method for, 22:4259
- processing of, effects of pH on radium release into surface streams from, 22:25477
- processing of, effects of various inorganic salts on radium release into surface streams from, 22:25478
- processing of, efficiency of gravity-flotation procedure for, 22:18890
- processing of, use of bacteria for capillary lixiviation in, 22:25486
- processing of, use of x-ray fluorescence analysis in control of plant for, 22:40044
- processing plant and equipment for, 22:12487
- procurement programs for, 1964 JCAE hearings on, 22:12218
- production and demand for, world estimates of, 22:45204
- properties of precambrian, metamorphic, and ultramorphic, in western Aldan shelf, 22:27935
- properties of rutilo-zirconiferous quartzite from Santa Elena, Spain, 22:18895
- prospecting for Canadian and US, effect of increased uranium sales on, 22:10398
- prospecting for South African, economic analysis of, 22:10397
- prospecting for, by Tunisian CEA 1966-1967, 22:14875(R) (NP-17229)
- prospecting for, gamma spectrometric method for, 22:51117
- prospecting for, mathematical model for, 22:51119
- prospecting in South Africa, economics of, 22:10400
- prospecting in South Africa, economics of, 22:10401
- radioactivity of Ehime Prefecture, Japan, 22:8231
- reserves and resources of, effect of breeder reactors on cost and supply, 22:2251

reserves in U. S., estimation of, 22:6502
reserves of, estimates and exploration of, 22:23173 (67-CNA-410)
separation of radium from, by coprecipitation with barium and fatty acid, 22:23124(P)
separation of uranium from, 22:30686
separation of uranium from, 22:33551
separation of uranium from Ningyotoge, by chlorination, 22:33509
separation of uranium from, by chlorination in moving bed pilot plant, 22:33513
separation of uranium from, by leaching using aqueous mixture of bicarbonate and oxalate, 22:4238
separation of uranium from, evaluation of methods for, 22:18897
shipping to processing plants, methods for, 22:295
solubility in water in mines, 22:18892
strontium content in Japanese, relations with uranium content, 22:4290
uranium concentration in, method for, 22:6503(P)
uranium extraction from, bacterial leaching method for, 22:10392
uranium leaching from, underground method for, 22:42889
uranium recovery from low-grade, autocatalytic precipitation method for, 22:27663
uranium recovery from, in Elliot Lake, Ontario, column flotation method for, 22:30650 (NP-17459)
yttrium content in Japanese, relations with uranium content, 22:4290
zirconium content in Japanese, relations with uranium content, 22:4290

URANIUM OXALATES
see also Potassium Uranium Oxalates

URANIUM OXIDE SILICIDES
formation and existence of, in uranium silicide, mechanism of, 22:12312

URANIUM OXIDE SULFIDE
UO_2--UOS--US, oxygen potentials in, measured by solid-state galvanic cells at 1050 to 1350°K, 22:4161

URANIUM OXIDES
see also Uranium Peroxides
analysis for fluorides, electrolytic, 22:18686 (BNWL-601)
analysis for nitrogen, 22:42589 (JUL-517-RW)
analysis for oxygen/uranium ratio, polarographic, 22:35754
analysis for oxygen/uranium ratio, polarographic, 22:37639(T) (ANL-Trans-610, pp 1-56)
analysis for selenium and tellurium, spectrophotometric, 22:42
analysis for zirconium, spectrographic, 22:27538 (NIM-153)
analysis of sintered, for inclusions by spectrochemical methods using laser sampling, 22:35759
book: Effects of Irradiation on Materials, 22:34092
crystal structure of, effects of nonstoichiometry on, 22:41098 (JAERI-4045)
deposition from molten salt bath, electro-, 22:151
development for reactor fuels, 22:734
dissociation energies of gaseous, 22:4117
dissolution and boiling of, formation of hexavalent plutonium during, catalytic effects of iron on, 22:27845 (CEA-N-816, pp 150-276)
dissolution of, 22:45146 (NP-17588)
electric properties of, effects of nonstoichiometry on, 22:41098 (JAERI-4045)
emissivity at 0.656 μ and 0.70 μ wave lengths, 22:36486
emittance from, measurement of, 22:2560(R) (IS-RD-11)
fabrication of beryllium oxide powder mixtures of, by high-energy impaction, 22:746(P)
fabrication of fuel rods of, welding method for, 22:19506(P)
fabrication of powdered, using simplified method for fuels, 22:19508(P)
fluorination of all enrichments of, facility for, 22:35771 (GAT-P-43)
fluorination of fuels of, using chlorine fluorides, 22:21078
fuels of, economics of high-heat conductivity, 22:19619(P)
machining behavior, 22:41028
molding of, method for high-temperature, 22:49810(P)
neutron resonance absorption of, analysis of, 22:42428
oxygen potentials of nonstoichiometric, galvanic cells and gas-equilibration techniques for measuring, 22:4116
particle size measurement of colloidal, using alpha spectrometry, 22:42953
performance as fuel for organic cooled and moderated reactors, 22:49822
phase diagrams, 22:13044 (BNWL-473, pp 3.1-21)
phase studies following thermal decomposition of U_3O_8, 22:8046(T) (JPRS-42561)
phase transitions in, effects of nonstoichiometry on, 22:41098 (JAERI-4045)
physical properties of reactor fuels of, 22:17113 (JAERI-1144)
precipitation from carbonate solutions by hydrogen reduction, autocatalytic, 22:27663
preparation from fluorides, 22:25470(T) (ANL-Trans-590)
preparation of standardized dusts of, 22:23550
preparation of $UO_{2.37}$ at high pressure, 22:19617
production in Australia, flotation method for, 22:429
properties as anode layer in batteries of solid electrolyte fuel cells, 22:42697
properties as ion-exchange material, 22:33552
radiation damage in, electron microscopy of fission-track, 22:15263
radiation effects on physical properties of, 22:15263
radiation effects on solubility of mixed, in dilute sulfuric acid, γ, 22:27764
radioinduced uranium emission from sintered pellets of neutron, 22:8792
reactions with carbon and silicon at 1700 to 1800°C to produce uranium monocarbide, 22:41089(P)
reactions with chlorine fluorides, 22:27852(R) (EURAE 2011)
reactions with rare earth oxides, phases formed in, 22:4108
reduction in molten fluoride mixture by aluminum, 22:42808 (CEA-R-3435)
reprocessing of fuels of enriched, 22:47223
separation of molybdenum from irradiated, by solvent extraction, 22:51066
solubility in sulfuric acid solutions, review on kinet of, 22:10209
spectra of UO_2^+, prepared by electrolysis of uranyl nitrate in dimethylsulfoxide solution, 22:45067
structure from low-energy electron diffraction studies (E/T), 22:41658
thermal decomposition of, 22:51066
thermodynamic properties of, 22:21761(T) (ANL-Trans-5
thermodynamic properties of nonstoichiometric, 22:488
thermodynamic properties of, at high temperatures, met for measuring, 22:35782
vaporization of, partial pressures at 1700 to 2350°K i 22:4117
vaporization of, thermodynamics of, 22:59 (UJV-1783)
vaporization of, thermodynamics of, 22:36543 (ANL-745 pp 39-74)
vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
$4UO_{2.3}$--Y_2O_3, diffusion of xenon-133 at 900 to 1350°C 22:19624 (CONF-650513-10)
CeO_2--UO_2, radiation effects on stainless steel clad f elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
ethylene gycol--uranium oxides--vinyl alcohol polymers, sintering for production of nuclear fuel pellets of, 22:19507(P)
Sc_2O_3--UO/sub 2+x/, phase studies on, 22:21057
ThO_2--UO/sub 2+x/, magnetic properties of, 22:48177
$UO_{2.2}$--$1.5Y_2O_3$, diffusion of xenon-133 at 900 to 1350° in, 22:19624 (CONF-650513-10)
$UO_{2.2}$--Y_2O_3--ZrO_2, diffusion of xenon-133 at 900 to 1500°C in, 22:19624 (CONF-650513-10)

URANIUM OXIDES UO
dissolution of irradiated, 22:40165 (KR-126, pp 74-96
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
vapor pressure over uranium--oxygen system at 1700 to 2500°K, 22:21761(T) (ANL-Trans-561)
UC--UN--UO, phase studies of, thermodynamic, 22:38635 (ORNL-tr-1918)
UO--UP, phase and solubility studies, 22:31469

URANIUM OXIDES UO_2
analysis for microdiffusions of tungsten, laser samplin techniques for spectroscopic, 22:35759
analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
analysis for oxygen, method for, 22:27530 (CEA-N-816, 9-65)
analysis for oxygen/uranium composition, effects of quenching and molybdenum and tungsten contaminants on 22:25321 (ANL-7375, pp 95-134)
analysis for oxygen/uranium ratio, method for, 22:4259 (RT/ING-(67)7)
analysis for trace impurities, 22:12256
analysis for tungsten by optical emission spectroscopy, 22:25236 (CEA-N-616, pp 20-71)
analysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
analysis of fritted, for oxygen and uranium compositio by polarography, 22:25236 (CEA-N-616, pp 20-71)
analysis of frittered, for nitrogen, colorimetric, 22:27530 (CEA-N-816, pp 9-65)
analysis of frittered, for uranium, polarographic, 22:27530 (CEA-N-816, pp 9-65)
analysis of irradiated fuel pins of, electron probe, 22:25321 (ANL-7375, pp 95-134)
analysis of irradiated, by alpha, gamma, and mass spectrometry or neutron activation, laser--microscope system of sampling for, 22:47104
analysis of irradiated, electron-microprobe, 22:36543 (ANL-7450, pp 39-74)
analysis of irradiated, for fission product and heavy element isotopic composition changes by microdrilling 22:25321 (ANL-7375, pp 95-134)
analysis of irradiated, use of laser beam in, 22:2532 (ANL-7375, pp 95-134)
analysis of laser-sampled, matrix effect in spectrochemical, 22:47081
analysis of neutron-irradiated, for plutonium by mass spectrometry, 22:45004

annealing effects on microstructure of irradiated, 22:11088 (BNWL-536)
burnup in neutron-irradiated, mass-spectrometric isotopic analyses for calculating, 22:4033
burnup in zero-power experiment, gamma-spectrometric determination of, 22:10181
burnup of enriched stainless steel clad, 22:11007(R) (WCAP-3850-1)
burnup of enriched zirconium clad, 22:11007(R) (WCAP-3850-1)
burnup of fuel elements of, metallurgical effects from, 22:22810 (DP-995)
burnup of heavy water-moderated fuel rods of, analysis of, 22:25082 (DP-1122)
burnup of natural, to 22,000 MWd/MTU, plutonium and uranium isotopic distributions in, (E/T), 22:20943
burnup of, analysis of gaseous fission product release in, 22:24978 (WCAP-6087)
carbon reduction for metal preparation, 22:2560(R) (IS-RD-11)
cavity formation in, effects of radial temperature gradient on axial, (E/T), 22:44856
characteristics of vaporized aerosols of, 22:5949
coating by vapor deposition of niobium or tantalum on spheres of, for cermet preparation, 22:26076
coating methods for, 22:11046 (ORNL-TM-2061)
coating spheres of, by vapor deposition of molybdenum, 22:23871
coating spheres of, by vapor deposition of tungsten, 22:23871
coating spheres of, with molybdenum, 22:34100(T) (MLM-1508(tr))
coating with beryllium oxide by chemical vapor deposition, 22:45810(P)
coating with rhenium--tungsten alloy by hydrogen reduction of hexafluorides, 22:7044
compacting and sintering kinetics for production of high and low density, 22:49793
compatibility with dysprosium oxide dispersions at high-temperatures, 22:43661
compatibility with niobium hydride and tantalum hydride at 650 to 700°C, 22:11066
conversion to uranium carbide (UC) of, mechanisms and kinetics of, 22:42200(R) (ORNL-4200)
conversion to uranium monocarbide, mechanisms of, 22:8822 (ORNL-4170, pp 163-72)
criticality measurement of water-moderated type 304 stainless steel-clad 5 per cent enriched, effects of core configuration on, (E/T), 22:35594 (EURAEC-1882(Annex))
criticality measurements of water-moderated type 304 stainless steel-clad 5 per cent enriched, effects of core configuration on, (E/T), 22:35593 (EURAEC-1882)
criticality of rods of, effects of superheat regions on, 22:1855 (CEND-115)
crushing of, design of device for, 22:12497(P)
crystal defects in, calculations of formation energy, 22:52287
crystal growth by in-crucible centrifugal motion, 22:52289
crystal lattice dynamics of, Coulomb contribution to dynamical matrix for, (T), 22:39541(R) (GA-8626)
crystal structure of powder-compacted, effects of center melting and formation of central voids, 22:7062
crystal structure of, effect of annealing at 1200, 1500 and 1700°C on, 22:38621(T) (KFK-tr-252)
crystal structure of, effects of burnup and fission products on unit cell dimension in, 22:15260 (AERE-M-1612)
crystal structure of, effects of sintering by rapid heating in hydrogen on, 22:31493
crystallization by electrolysis of chloride melts, effects of concentration, current density, and temperature on, 22:52236
decanning of fuel assemblies of, effects of alumina on, 22:45141(R) (EURAEC-2030)
decladding of stainless steel-clad fuels of, 22:150
defects in hyperstoichiometric, statistical model of partially ordered, (T), 22:50238
deformation activation energy for stoichiometric, effects of temperature on, 22:41105
deformation at 1100°C of monocrystals of, pneumatic impaction, 22:36534 (BNWL-724)
deformation under strain at 600 to 2000°C of polycrystalline, effects of oxygen content on, 22:41105
densification by sintering at 1600°C, effects of microstructure on, 22:19558
density and grain growth of sintered, effects of non-stoichiometry on, 22:45809
density of compacted, effects of power and vibrational frequency on, 22:2680
density of sintered, effects of atmosphere at 1300 to 1550°C on, 22:45820
density of sintered, effects of porosity and temperature on, (E/T), 22:31513
deposition from chemical vapors, 22:7042
deposition of, flame reactor technique for thermochemical, 22:8686 (ORNL-4170, pp 108-14)
determination in uranium carbides, x-ray diffraction methods for, 22:16438
determination in uranium monophosphide and triuranium tetraphosphide, gravimetric, 22:33267
determination of composition of sintered pellets and powders of, volumetric, 22:12237
development for reactor fuels, review, 22:12954
diffuse transition and melting in, 22:23013
diffusion at surfaces of, effects of annealing on self, 22:752
diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
diffusion of fission products from irradiated, 22:11042(R) (EURAEC-1933)
diffusion of fission products in, electric resistivity measurements for determining, 22:49829
diffusion of helium in single crystals of, at 700 to 1300 psi and 1200 to 1500°C, 22:52290
diffusion of iodine from broken coated-particle, 22:26093 (ORNL-4229, pp 125-41)
diffusion of oxygen in, 22:19628(T) (WAPD-Trans-83)
diffusion of uranium in polycrystalline, measurement at 1544 to 1915°C, 22:19638
diffusion of uranium in, cationic, 22:28955
diffusion of xenon from lightly sintered, at 400 to 800°C, 22:17169
diffusion through vapor deposited tungsten cladding, 22:7008
diffusive properties for oxygen in electric fields at 900 to 1100°C, 22:4874
dispersion in graphite, method for reactor fuels, 22:8815(P)
dissolution in nitric acid solutions, 22:23108
dissolution in nitric acid, mechanism of, 22:33362
dissolution of fuel elements of, by chop-leach process, 22:51048(T) (ORNL-tr-1974)
dissolution of Zircaloy-clad, 22:33529
distribution in mixed-oxide fuel elements, variation of radial, (E), 22:30343(R) (EURAEC-1992)
drying of sol-gel microspheres of, steam process for removal of organics, 22:8823 (ORNL-4170, pp 211-26)
drying prior to sintering of extruded rods of, process for, 22:36531(P)
effects on pH functions of glass electrodes, 22:16536
elastic constants at 4.2 to 300°K, (E), 22:31957
elastic modulus of hyperstoichiometric, Young's, (E), 22:28928
elastic properties of, calculation of temperature-dependent, 22:2695
electric conductivity, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
electric conductivity at 300 to 3000°K, 22:11064
electric conductivity of single crystal and polycrystalline, from room temperature to 3000°K, 22:7055 (BNWL-296(Pt.2))
electric conductivity of, measurement to 3000°K of, 22:30386
electric properties of ionized solution-immersed, potentiometric titration method for determining surface, 22:51107 (NIM-44)
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
electron diffraction on single-crystal surfaces of, effects of crystal surface on, 22:36549
emission of bromine and iodine from, during irradiation, 22:41126 (CEA-R-3446)
enthalpies of oxygen in sintered, microcalorimetric method for determining, 22:31462
enthalpy and heat capacity at 1200 to 3260°K, 22:19515 (GEMP-578)
enthalpy and specific heat of solid-solution, 22:31480
enthalpy at 1200 to 3100°K, 22:15256
enthalpy at 1200 to 3270°K, (E), 22:31460
enthalpy changes above 2000°K in, determination method for, 22:31498
enthalpy changes during fusion of, 22:21710
enthalpy measurements of liquid, use of tungsten powder for, 22:30118 (ANL-7438)
enthalpy values from 500 to 2300°K, (T), 22:6138(R) (LA-3820)
equation of state of, 22:2026 (FOA-2-2496-44)
equations of state for, constants for, 22:32735 (ANL-7310, pp 249-375)
etching of, 22:36526 (LA-DC-9616)
fabrication and production of sintered, economics of, 22:49791
fabrication by vibratory compaction, 22:8809
fabrication for Canadian reactors, 22:36449
fabrication into fuels, review, 22:21650
fabrication of annular and tube-in-shell fuel elements from spherical particulate, description of vibratory compaction method for, 22:28891
fabrication of clad fuel elements of incorporating metal powder, 22:49814(P)
fabrication of fuel elements of, methods for, 22:8816(P)
fabrication of fuel elements of, process facility description and cost estimates for, 22:18581 (BNWL-273(Vol.2))
fabrication of fuel elements of, vibratory compacting and swaging methods for, 22:28893
fabrication of fuel rods of, vibratory compaction method for, 22:2679
fabrication of fused enriched fuel rods of, 22:13063(R) (EURAEC-1885)

fabrication of high-density, to accurate dimensions from fine powders, 22:7049
fabrication of molybdenum-coated, isostatic hot pressing method for, 22:49813
fabrication of niobium-coated pellets of, into fuel pins by hot isostatic pressing, 22:34097 (GMAD-3078-25)
fabrication of pellets of, 22:16356 (KR-116)
fabrication of pyrolytic carbon-coated spherical fuel pellet of, description of, 22:27512(P)
fabrication of Zircaloy-2 clad four rod cluster fuel elements with compacted powder and cored pellets of, description of, 22:16279 (GEAP-5100-2)
fabrication of Zircaloy-2 clad four rod cluster fuel elements with hollow sintered pellets of, description of, 22:16282 (GEAP-5100-L)
fabrication of Zircaloy-2-clad, for EPW-6/8A reactor fuel assemblies, 22:4868 (GEAP-5100-G)
fabrication of, effects of storage on, 22:28938
fabrication process for pellet-type fuels of, criticality safety requirements in, 22:10081 (NYO-9714)
fission gas diffusion from irradiated high-density powders and grains of, at 1400°C, 22:43666(R) (EURAEC-2039)
fission gas diffusion from irradiated pellets of, at 1400°C, 22:43665(R) (EURAEC-2038)
fission gas pressure in fuel elements of, calculation of, 22:1779
fission gas release at 1400°C from irradiated, effects of burnup on, 22:27484(R) (EURAEC-1978)
fission gas release at 1700 and 2000°C for single-crystal, analysis of, 22:42200(R) (ORNL-4200)
fission gas release from, 22:23907
fission gas release from coated, 22:11046 (ORNL-TM-2061)
fission gas release from fissioning, at approximately 2000°C, 22:41136
fission gas release from, during fissioning, 22:26093 (ORNL-4229, pp 125-41)
fission gas retention in irradiated, annealing measurements of, 22:49861
fission product behavior in high-temperature treatment of neutron-irradiated, 22:25476
fission product diffusion from, effects of irradiation time on, 22:2709 (RT/FIMA-(67)2)
fission product distribution in irradiated, 22:19680
fission product monitoring from melted stainless steel clad, effects of humidity on aerial, 22:14294 (ORNL-4198)
fission product release from heated, gamma scan analysis of, 22:25098(R) (ORNL-TM-2164)
fission product release from Zircaloy-clad, 22:25333 (ORNL-4229, pp 162-79)
fission product release from, effects of coolant loss accident on, (T), 22:27399(R) (BMI-1835)
fission products distribution in irradiated natural, 22:52297
fission ratio uranium-238/uranium-235 in light-water cores of, space-dependent, (E), 22:5722
fission-gas release from, effects of fission density on fractional, 22:30356
fluorination by bromine pentafluoride, 22:6365 (ANL-7362)
fluorination by chlorine fluorides, fluidized-bed, 22:8169(R) (EURAEC-1934)
fluorination by chlorine trifluoride, 22:40156(R) (EURAEC-2031)
fluorination by chlorine trifluoride or fluorine, 22:30647 (EURAEC-1694)
fluorination of pellets of, by fluorine at 500 to 540°C, kinetics of, 22:14568
fluorination with chlorine trifluoride, 22:33527
fluorination with fluorine and interhalogens, 22:8186
fracture of, effects of heat treatment and precipitation on, 22:8819 (KAPL-P-3395)
fuel assemblies for thermal reactor, description of seed-type, 22:42269(P)
fuel assemblies of Zircaloy-2 clad, post-irradiation analysis of performance of, 22:32821
fuel assemblies of, radiation effects on HBWR Zircaloy 2-clad IFA-10, 22:46898 (HPR-101)
fuel burnup of, METHUSELAH--AIMAZ calculation of SGHW-type reactor, 22:30319
fuel configurations for BORAX-5 and Hi-C water-moderated assemblies of Type 304 stainless steel- and aluminum-clad, criticality calculations of, 22:53432
fuel configurations for Hi-C water-moderated assemblies of Type 304 stainless steel- and aluminum-clad, physics measurements for multiple, 22:53433
fuel element assemblies of Zircaloy-2 clad, analysis of burnup of heavy water-moderated reactor, 22:30263
fuel element cluster of, physics measurement analysis of gas-cooled reactor two- and three-ring, (E/T), 22:22762
fuel element fabrication of helical plutonium wire with sintered pellet and granular, description of, 22:25194(P)
fuel element fabrication of pellet-type 97- and 78-percent density, description of Type 304 stainless steel-clad, 22:39793 (WCAP-3269-64)
fuel element of molybdenum-clad depleted and enriched, description of fabrication of, 22:37561 (N-68-22587)
fuel element of, measurement of temperature distributi in Halden Boiling Reactor, 22:44804 (AE-318)
fuel elements of Incoloy 800- and chromium--nickel--stainless steel-clad pellet-type and vibratory compacted, fabrication of, 22:42213 (WCAP-3374-5)
fuel elements of niobium--zirconium clad, design and performance parameters for WR-1, 22:35415 (AECL-275
fuel elements of sintered pellets and compacted powder of, fabrication of Zircaloy-2 clad, 22:27415(R) (GE 5585)
fuel elements of Zircaloy 2-clad, burnup performance o HBWR, 22:48646 (HPR-102)
fuel elements of Zircaloy-2 clad, effects of transient irradiations on, 22:32984
fuel elements of Zircaloy-2 clad, effects of water at 2200°C on meltdown of, 22:30388
fuel elements of Zircaloy-clad bundle-type, fabricatio of CANDU Reactor, 22:42152 (AECL-3067, pp 45-52)
fuel elements of Zircaloy-clad, burnup in boiling and pressurized water reactors of, 22:32894
fuel elements of zirconium-clad, fabrication of, 22:49804(P)
fuel elements of, analysis of burnup of Halden Boiling Reactor, 22:35464(R) (HPR-99)
fuel elements of, analysis of lattice parameters for heavy water-moderated, (E/T), 22:22838
fuel elements of, development of Zircaloy-clad, 22:783
fuel elements of, fabrication for PM-1 and PM-3A reactors, 22:14229 (HIT-242)
fuel elements of, fabrication of titanium nitride-coate zirconium-clad, 22:42553(P)
fuel elements of, fabrication of Type 2 core assemblies for PM-1, PM-2, and PM-3 reactors, 22:14231 (NYO-10743)
fuel elements of, fission product analysis from failure of, 22:20909(R) (ORNL-TM-2095)
fuel elements of, inspection and evaluation of Incoloy-800-clad superheating clustered, for EVESR Mark-3 cor 22:3830 (GEAP-5481)
fuel elements of, method of fission product analysis fo power distribution in cylindrical, (E), 22:37621
fuel elements of, Monte Carlo calculation of neutron resonance escape probability in, 22:32989
fuel elements of, radiation effects on Icebreaker Lenin type of, neutron, 22:22830
fuel elements of, review of Canadian development of zirconium clad, 22:3808 (AECL-2928)
fuel fabrication for NERO reactor of uranium boride (UB_4)-containing, description of, 22:42338
fuel fabrication of resin-bonded silicon carbide (SiC)-coated spheres, description of, 22:42200(R) (ORNL-4200)
fuel loading for PRCF reactor of, physics measurement f critical, (E/T), 22:32743(R) (BNWL-739)
fuel movement effects on reactivity of compact-core rocket reactors, computer program for calculation of, (T), 22:46998 (N-68-23894)
fuel of zirconium alloy-clad nickel--iron--chromium alloy-brazed stainless steel-spaced multiple pellet-type, fabrication of, 22:42503(P)
fuel pellets of, fabrication of Zircaloy-2 clad axial void, 22:30392(P)
fuel pellets of, results of fluorination of, 22:9988(R (ANL-7391)
fuel pellets of, temperature effects on radial expansion of axial constrained, 22:32734 (ANL-7310, pp 137-248)
fuel rod fabrication costs for boiling and pressurized-water reactors, RODCOST computer program for, 22:4480 (BNWL-789)
fuel rod of, analysis of lattice parameters for heavy water-moderated, (E/T), 22:22837
fuel rods of 18-element Zircaloy-4-clad CANDU-BLW assembly, neutron flux peaking in, 22:44883 (AECL-3143)
fuel rods of Zircaloy-2 clad 87 percent density, vibratory compaction fabrication of, 22:16280 (GEAP-5100-H)
fuel rods of Zircaloy-2 clad, fabrication of, 22:16281 (GEAP-5100-K)
fuel rods of Zircaloy-2-clad pelletized and vibra-packed performance during water-submerged meltdown of, 22:53260 (ANL-7425, pp 130-71)
fuel rods of, measurement of specific power distribution in, 22:37542 (RT/FI-(68)13)
fuel swelling of Type 304 stainless steel- and Zircaloy 4-clad, effects of burnup on, 22:53422 (WCAP-3269-61-A)
fuel system for fast reactors, calculation of optimum economic enriched, (T), 22:46961
fuels in exponential piles, use of aqueous suspension, 22:25107
fuels of enriched, fabrication of pressurized-water reactor pellet-type, 22:30165(R) (WCAP-3706)
fuels of enriched, fabrication of pressurized-water reactor pellet-type, 22:30164(R) (WCAP-3703)
fuels of, economic aspects of efficiency of, 22:5914 (AECL-2944)
fuels of, fabrication of, 22:22877
fusion heat, (E), 22:31460
grain growth at 1100 to 1700°C, effects of surface diffusion on, 22:21707
grain growth in swaged, effects of particle size and temperature on, 22:21774

grain growth in, control by addition of silicon carbide or nitride, 22:23880(P)
grain growth in, effects of additions of yttrium oxide on columnar, 22:41093(P)
grain growth in, effects of iridium additions on columnar, 22:23877(P)
grain growth of sintered, effects of density in reheated specimens, 22:52234 (RT/ING-(68)3)
grain structure of single-phase, effect of processing on, 22:31514
growth on cleavage faces of uranium carbide monocrystals, measurement of, 22:32065
hardness at -180 to 800°C, 22:38621(T) (KFK-tr-252)
hardness of, effects of porosity on, 22:8819 (KAPL-P-3395)
heat capacity of liquid, (E), 22:27397 (ANL-7375, pp 135-59)
heat capacity of, analysis of, 22:53260 (ANL-7425, pp 130-71)
heat content of, calibration of high temperature calorimetric system for analysis of, 22:37402 (ANL-7450, pp 75-89)
heat transfer in Spert 3 E-core Zircaloy-2-clad fuel elements of, analysis of, (T), 22:35596(R) (IDO-17260)
heat transfer in, effects of departures from stoichiometry on, 22:11088 (BNWL-536)
heat treatment effects on carbon-coated particles of, 22:8822 (ORNL-4170, pp 163-72)
heating sol-gel microspheres of, gas evolution in, 22:33295 (ORNL-TM-1809)
homogeneity of vibratory-compacted, γ-attenuation method for inspection of, 22:14739
hydrofluorination kinetics of, 22:19042
inspection of irradiated fuel elements of, x-ray, 22:51194
internal friction of hyperstoichiometric, (E), 22:28928
ion channeling at 2 to 30 MeV, 22:11537
lattice parameters for water-moderated superheating assembly of, (E), 22:22760
leaching from aluminum oxide beds, 22:149
magnetic excitations in, (T), 22:17738
magnetic excitations of, neutron-scattering study of temperature dependence of, 22:15591
magnetic ordering in, orbital effects on ionic exchange interactions causing, (T), 22:15614
magnetic phase transitions in, mechanism of, 22:15611
mass calculation for Ressuco subcritical assembly, 22:27463 (IEA-130)
mechanical properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)
mechanical properties of, description of, 22:50732(R) (GEAP-5631)
mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
mechanical properties of, evaluation of, 22:35461 (GEMP-482)
mechanical properties of, review on, 22:52261 (KFK-729)
mechanical properties of, testing to failure at 25 to 1900°C, 22:43631 (ANL-7299, pp 120-37)
meltdown of fuel elements of, Bethe--Tait analysis of parameters for energy release from, 22:1761 (GEAP-4809)
meltdown of, effects on reactor power limit, 22:19669 (BNWL-624, pp 2.1-32)
melting by passing electric current through pellets of, method and apparatus for, 22:744(P)
melting by resistive current flow, equipment for, 22:36530(P)
melting equipment for, design of electric, 22:38615(P)
melting in fast reactor cores, effects on reactivity changes of, (T), 22:27402 (BNWL-717)
melting of Zircaloy-clad, fission product release during in-pile, 22:27490 (ORNL-4229, pp 149-55)
melting point of, 22:8838
melting point of, 22:43648(R) (GEAP-5634)
microstructure of center-melted, powder compacted fuels of, 22:45823(T) (NSJ-tr-124)
molecular configuration of, polarity in, 22:4873
neutron capture at 0 to 54 keV and at high temperature, Doppler effect on, (E), 22:14027
neutron diffraction patterns at 5.4°K, 22:43646 (ANL-7299, pp 220-6)
neutron doubly differential inelastic scattering cross sections at 0.134 eV, (E), 22:13908 (RPI-328-100, pp 120-39)
neutron doubly differential inelastic scattering cross sections for depleted, at 0.134 and 0.341 eV, (E), 22:29864
neutron fast fission ratio in light water-moderated assemblies of, (E), 22:39651
neutron fission of, chemical states of iodine produced by, 22:12284
neutron propagation in, analysis of BN-350 type critical assembly, 22:18570
neutron resonance flux spectra for, calculation method for, (E/T), 22:30357
neutron resonance integral calculations for exponential piles fueled with, effects of resonance overlap on uranium-238, 22:33009
neutron scattering kernels for, formulation of, (T), 22:48414(R) (GA-8773)
neutron scattering law for, (T), 22:29864
neutron spectra from fully enriched, in reactors, 22:7897 (LA-DC-9110)
neutron spectral measurements in water-moderated, 22:1868
neutron spectrum in reflectors of, analysis of, (E/T), 22:53425
nuclear magnetic resonance studies on hydrated, 22:14479 (NIJS-R-509)
oxidation at 25°C, 22:28938
oxidation by air, mechanisms of, 22:8835
oxidation by ferric ions in sulfuric acid, effects of diffusion on, 22:10216
oxidation by oxygen at 66 to 80°C, 22:47693
oxidation by steam at 885 to 1000°C of, measurement of, 22:30386
oxidation by steam at 885 to 1830°C of Zircaloy-4 clad fuel elements of, 22:15143 (GEMP-1002, pp 123-36)
oxidation by steam of, analysis of, (E/T), 22:35461 (GEMP-482)
oxidation kinetics of sintered, 22:31475
oxidation of pyrolytic-carbon-coated fuel particles of, by helium-water vapor mixtures at 1100 to 1400°C, 22:41084 (ORNL-TM-2199)
oxidation of silicon carbide-coated, in helium-water vapor mixtures at high temperatures, 22:41084 (ORNL-TM-2199)
oxidation of, analysis of simulation of coolant-loss accident at 885 to 1835°C of steam, 22:53459 (GEMP-619)
oxidation of, by steam, 22:12954
oxidation of, effects of pressure and pretreatment with hydrochloric acid on, 22:27858(R) (K-L-1780(Pt.24))
oxidation of, equipment and process for batch, 22:21078
oxidation of, stoichiometry of U$_3$O$_8$ from, 22:2021 (CEA-R-3218)
oxygen partial molar free energy in, showing small variations from stoichiometry, measurement of, 22:50977
particle size measurement of powders of, comparison of β scattering, Coulter Counter A, and centrifugal photosedimentometry, 22:1781
performance in power reactors, 22:19669 (BNWL-624, pp 2.1-32)
performance of Zircaloy-2-clad power reactor fuels of, under central melting conditions, 22:50736(R) (GEAP-5661)
phase diagrams, 22:11088 (BNWL-536)
phase studies, 22:8835
phase studies of substoichiometric, 22:15258
phase transition in, magnetic point groups and selection rules in theory of antiferromagnetic, (T), 22:9449
phase transitions in, theory of first-order, 22:17740
physical properties of liquid, 22:7788(R) (ANL-7382)
physical properties of, evaluation of, 22:35461 (GEMP-482)
physics measurements for uniform rod clusters of, 22:18471
porosity of sintered, effects on grain growth in reheated specimens, 22:52234 (RT/ING-(68)3)
powder properties and sintering kinetics of non-stoichiometric, 22:11082
precipitation from molten chloride salts, effects of fluoride ions on electrolytic, 22:33313
preparation and properties of ADU-derived, 22:45800 (AAEC/TM-439)
preparation and properties of enriched pellets of, 22:52127(R) (RISO-179)
preparation and properties of, for use as reactor fuels, 22:31339
preparation and testing coated fuel particles of, 22:11046 (ORNL-TM-2061)
preparation and testing pyrolytic carbon-coated sol-gel particles of, for ETR X-basket-2 experiment, 22:26082 (ORNL-TM-2097)
preparation by calcination of ammonium diuranate, 22:52238
preparation by ignition and vacuum distillation of uranyl nitrate--TBP solutions, 22:21754
preparation by reaction of hydrogen and oxygen or water vapor with uranium hexafluoride at 1100°C, 22:4160(P)
preparation by sol-gel process, 22:47110(R) (BAW-3714-7)
preparation by sol-gel process, 22:49798
preparation by sol-gel process for use in industry, 22:11031
preparation by uranium hexafluoride--ammonium diuranate process, flowsheet for, 22:50750
preparation by uranyl nitrate hexahydrate and ammonium diuranate processes, 22:7048
preparation for electron microscopy, 22:13060 (BNWL-473, pp 4.1-9)
preparation from ammonium diuranate, effects of sintering temperature and heat treatment on, 22:38598 (BARC-314)
preparation from hydrated compacts of uranium trioxide, density of, 22:38601 (DP-1085)
preparation of aquasol of, 22:23028(P)
preparation of aqueous sols of, 22:30564(P)
preparation of chloride-stabilized sols of, 22:14484 (ORNL-TM-2056)
preparation of dense compacts of, by hydrogen reduction of ammonium diuranate, 22:23873(P)
preparation of dense, hollow spheres of, 22:28907(P)

preparation of fuel pellets of, for Trino Power Reactor, 22:50751
preparation of gel microspheres from sols of, 22:4151(P)
preparation of high-density pellets of, 22:4131
preparation of high-density pellets of, from high- and low-density powders of, 22:49793
preparation of hypostoichiometric reactor fuels of, incorporating lanthanum, niobium, or yttrium additive, 22:38611(P)
preparation of irradiated thin disks of, for electron microscopy, 22:43670
preparation of low-density for testing shockwave propagation, 22:43629(R) (LA-3933)
preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
preparation of microspheres and sols of, methods and equipment for, 22:12476 (ORNL-TM-1978)
preparation of microspheres of, 22:12275 (ORNL-4094, pp 28-39)
preparation of microspheres of, by sol-gel process, 22:47698
preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
preparation of microspheres of, for use as reactor fuels, 22:13057(P)
preparation of microspheres of, from sols, 22:17159 (ORNL-4075, pp 38-42)
preparation of pellets of, by dry granulation, 22:49795
preparation of shaped particles of, for reactor fuel, 22:11036(P)
preparation of sol of, 22:13056(P)
preparation of sol-gel microspheres of, 22:25330 (ORNL-4229, pp 105-11)
preparation of sols of, 22:17159 (ORNL-4075, pp 38-42)
preparation of sols of, 22:28887 (ORNL-4204, pp 22-39)
preparation of sols of, 22:47110(R) (BAW-3714-7)
preparation of sols of, by precipitation, peptization, and countercurrent decantation, 22:12275 (ORNL-4094, pp 28-39)
preparation of sols of, by solvent extraction, 22:26073 (ORNL-TM-2205)
preparation of sols of, continuous evaporation and peptization in, 22:28887 (ORNL-4204, pp 22-39)
preparation of sols of, using palladium-on-thoria catalyst and uranyl formate, 22:10201(P)
preparation of stoichiometric, thermochemical requirements for, 22:45813 (AECL-3072)
preparation of thin sintered foils of, 22:38613
preparation of, equipment for continuous sol-gel process, 22:37839 (ORNL-TM-2227)
preparation of, sol-gel process for, 22:738
pressing mechanisms of powdered, 22:4850 (RT/ING-(67)6)
processing for production of fuel, PCUT plant capability for, 22:49799
processing fuel pellets of, development studies on, 22:25443 (ANL-7375, pp 46-94)
processing irradiated pellets of, using hydrofluoric acid in oxygen followed by fluorination, 22:25443 (ANL-7375, pp 46-94)
production by electrochemical reduction of carbonate melts of uranium(IV), 22:23867
production by hydrothermal reduction of uranyl nitrate, 22:33316
production by oxidation of uranium sulfides at 225 to 500°C, 22:4149
production by reduction of U_3O_8 using cracked ammonia, 22:26072 (NP-17350)
production from uranium hexafluoride, design of plant for, 22:12490
production in reactions of uranium carbide with water, 22:77
production method for dense compacts of, 22:28914(P)
production of dry granular, methods for, 22:21758(P)
production of frittable, by igneous electrolysis, 22:37704(T) (ANL-Trans-610, pp 57-63)
production of frittable, optimum conditions for, 22:37830 (CEA-N-856, pp 71-7)
production of fuel elements of, method for, 22:34105(P)
production of fuel pellets of, by sintering in carbon dioxide, 22:49794
production of microspheres of, 22:28887 (ORNL-4204, pp 22-39)
production of pellets and powders of, from ammonium uranyl carbonate, method for, 22:2034 (RISO-153)
production of pellets of, development of process for, 22:10401
production of powders and pellets of, from ammonium diuranate, 22:49807
production of single-crystal, centrifugal floating-zone method for, 22:8840 (ORNL-4170, pp 3-7)
production of sols and spheres of, 22:36522(R) (BAW-3714-6)
production of stoichiometric products of, by sintering and reduction of U_3O_8, 22:21762(T) (ORNL-tr-1866)
production process for, using of uranium hexafluoride in flame reactor, 22:31443
properties as fuel material, chemical research on, 22:25144
properties of pyrolytic carbon coated, for fuel, 22:11046 (ORNL-TM-2061)
properties of stainless steel- and Zircaloy-clad, as water-moderated reactor fuel, 22:6017
properties of, effects of oxygen on, 22:8829
properties of, effects of structure on catalytic, 22:22988 (BARC-307)
properties of, effects of water at nonisothermal and quasi-isobaric conditions on chemical and physical, (E), 22:52255(T) (AEC-tr-6960)
pulverization of, 22:27852(R) (EURAEC-2011)
purification of slightly enriched, irradiated, 22:4722
pyrolysis of beads and gels of, analysis of off-gases from, 22:33296 (TID-24524)
pyrophoricity of powdered, effects of specific surface on, 22:28938
radiation damage in, electron microscopy of fission-track, 22:15263
radiation effect on grain growth in sintered specimens of, 22:52234 (RT/ING-(68)3)
radiation effects at -195°C on density of, in-pile, 22:28856
radiation effects at 1500 to 2100°C on tungsten-encapsulated, 22:36552 (GEAP-5100-10)
radiation effects at 21°C on density of, neutron, 22:4903 (CEA-R-3289)
radiation effects at burnup of 3000 MWd/t at 1400°C, 22:41135
radiation effects at high temperatures on fuels of, 22:41130 (CONF-670967-1)
radiation effects in carbon dioxide below 450°C on, 22:18583 (CEA-R-3329)
radiation effects on boron carbide-containing, 22:4909
radiation effects on boron-containing fuel compacts of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on carbon-coated, in-pile, 22:8822 (ORNL-4170, pp 163-72)
radiation effects on clad rods of, at 7000 MWd/tU, 22:49857 (GEAP-5626)
radiation effects on crystal structure of, in-pile, 22:45829(T) (EURFNR-503)
radiation effects on fuel assemblies of Zircaloy-4 clad, in NRU Reactor, 22:47003 (AI-CE-75)
radiation effects on gaseous and solid fission product swelling in, thermal neutron, 22:38592
radiation effects on grain growth, recrystallization, a uranium precipitation in, 22:11088 (BNWL-536)
radiation effects on mechanical properties of silicon carbide (SiC)-coated and uncoated, analysis of neutro 22:42200(R) (ORNL-4200)
radiation effects on microstructure of, 22:11088 (BNWL-536)
radiation effects on microstructure of fuel pellets of, transmission electron microscopy studies on, 22:38636
radiation effects on multirod clusters of SAP clad, in-pile, 22:49859
radiation effects on oxygen redistribution in fuels of, 22:38642
radiation effects on pellets and powders of, transient in-pile, 22:19669 (BNWL-624, pp 2.1-32)
radiation effects on pellets of, 22:19520(R) (RISO-151)
radiation effects on pellets of, in-pile, 22:13079
radiation effects on physical properties of, 22:15263
radiation effects on properties of pyrolytic carbon-coated particles of, in-pile, 22:23853 (CONF-660524-, pp 273-92)
radiation effects on pyrolytic-carbon-coated particles of, in-pile, 22:26093 (ORNL-4229, pp 125-41)
radiation effects on silicon carbide-coated, in-pile, 22:26093 (ORNL-4229, pp 125-41)
radiation effects on sintered carbon coated pellets of, in-pile, 22:11046 (ORNL-TM-2061)
radiation effects on sol-gel carbon coated, in-pile, 22:11046 (ORNL-TM-2061)
radiation effects on Spert 4 Capsule Driver Core Zircaloy-2-clad fuel elements of, measurement of neutron, (E), 22:35596(R) (IDO-17260)
radiation effects on temperature distribution on molten-center, as a function of composition, 22:11088 (BNWL-536)
radiation effects on Zircaloy-2 clad 87 percent density, neutron, 22:16280 (GEAP-5100-H)
radiation effects on Zircaloy-2 clad sintered pellets of in-pile, 22:17186 (GEAP-5100-M)
radiation effects on Zircaloy-2 clad, with central melting, neutron, 22:16281 (GEAP-5100-K)
radiation effects on Zircaloy-2-clad fuel elements of, a 27,000 MWd/t, 22:41131(R) (GEAP-5598)
radiation effects on Zircaloy-2-clad vibrationally packed, in-pile, 22:41124 (BNWL-SA-1674)
radiation effects on Zircaloy-2-clad vibrationally compacted, transient in-pile, 22:19669 (BNWL-624, pp 2.1-32)
radiation effects on Zircaloy-2-clad vibrationally compacted powders of, in-pile, 22:17186 (GEAP-5100-M)
radiation effects on Zircaloy-2-clad, in EPW-6/8A fuel assemblies, 22:4868 (GEAP-5100-G)
radiation effects on Zircaloy-4-clad fuel pellets of, in pile, 22:41133 (WAPD-TM-596)
radiation effects on Zircaloy-4-clad, in-pile, 22:49858 (WAPD-TM-631)
radiation effects on Zircaloy-clad, at 27,200 MWd/t burnup, 22:49712(R) (GEAP-5624)
radiation effects on, at 1000°C, fast neutron, 22:1856 (EUR-3626)

radiation effects on, electron microprobe analysis of, 22:7788(R) (ANL-7382)
radiation effects on, methods of determining, 22:767 (GEMP-557)
radiation effects on, neutron, 22:7070
radiation effects on, relations of excess oxygen with in-pile, 22:28938
radiation effects on, relations with temperature, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
radiation effects on, review, 22:21650
radiation effects on, review of, 22:52261 (KFK-729)
radiation stability of coated-particle, 22:26093 (ORNL-4229, pp 125-41)
radiation testing of aluminum alloy clad fuel elements of, in Halden Boiling Water Reactor, 22:44824 (HPR-100)
radiation testing of MCR fuels of, 22:32924 (GMAD-3078-30)
radiation testing of Zircaloy-2-clad, analysis of performance of centermelt during, 22:35460(R) (GEAP-5605)
radioinduced defects in, electron microscopic study of neutron, (E), 22:28961
radioinduced electromotive force during neutron irradiation of pellet of, 22:43669
reaction with carbon powder, preparation of hypostoichiometric uranium carbide by, 22:43637(P)
reactions of, effects of structure on surface, 22:22988 (BARC-307)
reactions with aluminum oxide or graphite, behavior of fission products in, 22:25476
reactions with aluminum-base cladding at 500 to 1200°C, 22:612(R) (GEMP-69)
reactions with bromine pentafluoride, 22:42806 (ANL-7412)
reactions with bromine pentafluoride, kinetics of, 22:12288
reactions with chlorine trifluoride or fluorine, 22:25470(T) (ANL-Trans-590)
reactions with chlorine trifluoride, effects of temperature on rate of, 22:45141(R) (EURAEC-2030)
reactions with fission products, heats of immersion and heterogeneous isotopic exchange methods for studying, 22:48853 (RT/CHI-(68)18)
reactions with fluorine under pressure to produce uranium hexafluoride, 22:35774 (NIJS-R-525)
reactions with hydrofluoric acid--oxygen mixture during decanning tests on stainless steel, 22:4230(R) (EURAEC-1920)
reactions with U_3O_8 at 30 to 40 kbars and 500 to 1400°C, 22:19617
reactions with uranium mononitride, formation of oxynitrides in, 22:33368
reactions with uranium tetrafluoride to prepare uranyl fluorides, 22:27631
reactions with water, 22:734
reactivity measurement of, in ARMF fast flux converter, 22:6096 (IN-1143)
reactivity measurements for heavy water-moderated reactor fueled with, analysis of infinite multiplication constant for, 22:37477
reactivity of plutonium dioxide--water lattices with, temperature coefficients of, (E/T), 22:5746
reduction by calcium for production of metal powder, 22:12998(P)
reduction by copper--magnesium alloy in molten salt mixtures, 22:25442 (ANL-7375, pp 19-45)
reduction in molten salt--liquid metal system, 22:151
reduction of, evaluation of processes for, 22:35880 (ANL-7450, pp 7-20)
reduction to metal by reactions with calcium, mechanisms and temperatures of, 22:11032
reprocessing of clad irradiated, Aquafluor process for, 22:23106
reprocessing of highly irradiated fuels of enriched, 22:37823(T) (ANL-Trans-619)
reprocessing of irradiated, efficiency of fluidized-bed fluoride volatility process for, 22:30664
reprocessing of irradiated, fluoride volatility process for, 22:12399 (K-L-1780(Pt.22))
reprocessing of irradiated, using bromine pentafluoride, distribution of actinides and fission products in process stream during, 22:25443 (ANL-7375, pp 46-94)
reprocessing of Zircaloy-clad irradiated, Nitrofluor process for, 22:23106
reprocessing of zirconium-clad fuel elements of, 22:23121(P)
research programs on, personnel exchange with Japan for, 22:36534 (BNWL-724)
sampling of irradiated, by laser--microscope system, 22:47104
separation from plutonium dioxide by electrolysis in fused salt baths, 22:30669
separation of carbonaceous material from sol-gel microspheres of, 22:25330 (ORNL-4229, pp 105-11)
separation of fission products from, by volatilization, 22:25476
separation of plutonium and uranium from fuel pellets of, fluid-bed fluoride volatility process for, 22:25443 (ANL-7375, pp 46-94)
separation of plutonium and uranium from fuels of slightly enriched, extraction cycles for, 22:27845 (CEA-N-816, pp 150-276)
separation of plutonium and uranium from irradiated fuels of, fluid-bed fluoride-volatility process for, 22:51062
sintering at 700 to 850°C, Dorn determination of initial-phase activation energy of, 22:28896
sintering kinetics at 900 to 1400°C, 22:52238
sintering kinetics of sol-gel, 22:8823 (ORNL-4170, pp 211-26)
sintering of crystalline, reactions of grain boundaries and pore size in, 22:31492
sintering of high-density pellets of, use of carbon monoxide in low-temperature, 22:15241
sintering of pellets of, method using water as binder, 22:2685
sintering of stoichiometric, 22:16356 (KR-116)
sintering on nonstoichiometric, thermodynamics of, 22:19659
sintering powdered, effects of powder characteristics on, 22:49828
sintering properties as function of preparation conditions, 22:8830
sintering properties of calcined powders of, effects of powder grain diameter on, 22:49821
sintering thermodynamics of powdered, 22:31451
solubility in nitric acid, effects of crystallographic orientation on, 22:17180
solubility in nitric acid, effects of crystallographic orientation on, 22:8057
solubility in sulfuric acid, effects of iron ions on, 22:37757
solubility of helium in single crystals of, at 700 to 1300 psi and 1200 to 1500°C, 22:52290
sorptive properties for plutonium, 22:2016(R) (BAW-3714-4)
specifications for compactible, 22:641
specifications for nuclear-grade compactable, for fuels, 22:23798
specifications for nuclear-grade sinterable, for fuels, 22:23798
specifications for sinterable, 22:641
spin wave dispersion relations in, measurement using inelastic neutron scattering, 22:17738
spin--lattice interaction effects on ground-state and spin-wave excitations in, microscopic theory, 22:17804
stability of stoichiometric, at 1200 to 2800°C, 22:45815 (GEMP-439)
storage behavior of, 22:13059 (AAEC/TM-396)
structure of antiferromagnetic, 22:44253
surface energies of, estimation of, 22:23752 (AERE-M/R-1746)
surface properties of, heats of immersion and heterogeneous isotopic exchange methods for studying, 22:48853 (RT/CHI-(68)18)
surface tension of, 22:11057
temperature coefficients of reactivity for simulated burned-up fuel elements of, measurement of, 22:16144(R) (DPST-68-83-1)
thermal capacity at 300 to 1100°K, 22:2612(R) (MLM-1402)
thermal conductivity, 22:11088 (BNWL-536)
thermal conductivity at 2200°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
thermal conductivity at 300 to 2000°C, 22:13068(T) (WAPD-Trans-82)
thermal conductivity at 300 to 2000°C and temperature gradients at 30 to 5000°C/cm, 22:15190(T) (EURFNR-382)
thermal conductivity at 800 to 1900°C, 22:19625 (GEAP-4879)
thermal conductivity at 800 to 2000°C, density and temperature dependences of, 22:41097 (GEAP-5493)
thermal conductivity in compacted powder reactor fuels of, (E/T), 22:27485 (EURAEC-1998)
thermal conductivity of, 22:8731 (ORNL-4170, pp 37-41)
thermal conductivity of crystalline, at high temperature gradients, 22:28935
thermal conductivity of sintered, at 970 to 2020°K, 22:41110
thermal conductivity of varying stoichiometry of, measurement of, 22:48790
thermal conductivity of Zircaloy-2-clad, at 2750°C, 22:35457 (GEAP-5100-6)
thermal conductivity of, analysis of mathematic models for, (T), 22:44804 (AE-318)
thermal conductivity of, comparison of measured with theoretical, 22:44804 (AE-318)
thermal conductivity of, effect of porosity on, 22:2694
thermal conductivity of, effects of lanthanum oxide on, 22:13070(P)
thermal conductivity of, effects of niobium oxide on, 22:13070(P)
thermal conductivity of, effects of temperature on, (E/T), 22:50731 (GEAP-5556)
thermal conductivity of, in-pile, 22:26093 (ORNL-4229, pp 125-41)
thermal expansion of Zircaloy-clad, effects on voids in, 22:612(R) (GEMP-69)
thermal performance of center-melting Zircaloy-2 clad fuel rods of, analysis of, 22:22698 (GEAP-5591)
thermal performance of fuel rod cluster with compacted powder and cored pellets of, analysis of effects of central melt conditions on, 22:16279 (GEAP-5100-2)

thermal performance of fuel rod cluster with hollow sintered pellets of, analysis of effects of central melt conditions on, 22:16282 (GEAP-5100-L)
thermal properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)
thermal properties of, effects of heat treatments on, 22:53459 (GEMP-619)
thermodynamic properties of nonstoichiometric, statistical analysis of data on, 22:45813 (AECL-3072)
thermodynamic properties of, at high temperatures, 22:25321 (ANL-7375, pp 95-134)
thermodynamic properties of, measurement by solid state emf coulometry, 22:52268
ThO_2-base--UO_2, fabrication of low-density fuel pellets of, using dextrose to produce porosity, 22:41088 (WAPD-TM-721)
ultrasonic attenuation at 4.2 to 300°K in, (E), 22:31957
use in cerium-stabilized UO_2^{2+}:Nd^{3+} laser glass, (E), 22:26510
use in fuel rods, economic comparison with mixed plutonium--uranium oxide fuels, 22:7048
use in physics parameter measurements in uranium oxide (UO_2) fuel rods, comparison of metal and oxide foils for, 22:32976(R) (MIT-2344-12)
use in preparation of luminescent glass, 22:42693
vapor pressure of hypostoichiometric, temperature dependence of, (E), 22:31459
vapor pressure over uranium--oxygen system at 1700 to 2500°K, 22:21761(T) (ANL-Trans-561)
vaporization of, aerosol agglomeration and formation from, 22:15141 (BNL-50057, pp 79-100)
viscosity of sols of, effects of uranium trioxide on, 22:14484 (ORNL-TM-2056)
washing of precipitates of, 22:28887 (ORNL-4204, pp 22-39)
weighing of 10 to 30 gram batches of, system for, 22:49152(P)
wettability by liquid sodium at 400°C, 22:23752 (AERE-M/R-1746)
yields from reactions of uranium with water, 22:12268 (AWRE-O-45/65)
yields from thermal decomposition of uranyl oxalate, 22:45047
Young's modulus of, effects of density on isothermal, 22:52256(T) (AERE-Trans-1094)
$^{233}UO_2$--ZrO_2, blanket elements of, reactivity measurements of hexagonal and rectangular arrays of, at 20°C, 22:14262 (WAPD-TM-614)
$^{239}PuO_2$--UO_2, physics parameters of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
Al_2O_3--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
Al_2O_3--UO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
Al_2O_3--UO_2, grain growth in presence of liquid phase, kinetics of, 22:45824
Al_2O_3--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
Al--UO_2, fabrication into fuel elements having aluminum cladding, 22:26025(P)
Al--UO_2, radiation effects on dispersion fuels of, in-pile, 22:23843 (IN-1131, pp 37-55)
Al--UO_2--Zr, radiation effects on, neutron, 22:11007(R) (WCAP-3850-1)
B_2O_3--UO_2, rods of, measurement of specific power distribution in, 22:37542 (RT/FI-(68)13)
B_4C--UO_2, sintering of pellets of, loss of boron by, 22:19623(R) (CEND-3107-328)
B_4C--UO_2-base, reactions in sintered pellets of, at 625 to 1250°C, 22:19622(R) (CEND-3107-324)
BaO--Fe_2O_3--UO_2, crystal structure of Ba_2UFeO_6 in, 22:16538
BeO--PuO_2--ThO_2--UO_2, reprocessing fuel of, 22:149
BeO--ThO_2--UO_2, radiation effects on dispersions of, fast and thermal neutron, 22:19587
BeO--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
C--ThO_2--UO_2, preparation of pyrolytic carbon coated microspheres of, design of equipment for, 22:25591
C--UO_2, preparation of organosol of, 22:25370(P)
CaO_2--UO_2--ZrO_2, radiation effects on mechanical properties of PBF type 304 stainless steel-clad fuel elements of, measurement of neutron, (E/T), 22:35596(R) (IDO-17260)
CaO--UO_2--ZrO_2, dissolution of carbon-coated in nitric acid, 22:22930(R) (NBL-242)
CaO--UO_2--ZrO_2, neutron total cross section at 2 keV and 0 to 700°C, (E), 22:20578 (WASH-1079)
CaO--UO_2--ZrO_2, phase stability at 1000 to 2450°C, 22:11068
CaO--UO_2--ZrO_2, phase studies of, 22:41113 (CEND-2936-335, I.1-22)
CaO--UO_2--ZrO_2, radiation effects on mechanical properties of, analysis of neutron, 22:32789(R) (WAPD-MRP-124)
CaO--UO_2--ZrO_2, radiation effects on stainless steel clad fuel elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
CeO_2--UO_2, cerium migration in thermal-gradient heated pellets of, (E), 22:27397 (ANL-7375, pp 135-59)
CeO_2--UO_2, corrosion by flowing hot water and steam, 22:41086 (CEND-2936-335, II.1-20)
CeO_2--UO_2, crystal structure of nonstoichiometric phase in, 22:4897
CeO_2--UO_2, diffusion in, at 2050°K, 22:31476
CeO_2--UO_2, pressing and sintering for radiation test specimens, 22:41087 (CEND-2936-335, III.1-10)
CeO_2--UO_2, radiation effects at high burnups on clad, postirradiation evaluation of, 22:41128 (CEND-2936-335, V.1-25)
CeO_2--UO_2, radiation effects on 347 stainless steel cla in-pile, 22:766 (BMI-1809, Sect.F)
CeO_2--UO_2, radiation effects on fission gas release at high burnup, evaluation of in-pile, 22:41129 (CEND-2936-335, VI.1-7)
CeO_2--UO_2, radiation effects on swelling and thermal conductivity at high burnup, evaluation of in-pile, 22:41129 (CEND-2936-335, VI.1-7)
CeO_2--UO_2--ZrO_2, phase studies, 22:31510
CeO_2--UO_2--ZrO_2, phase studies at 1600 to 1800°C, 22:21700(T) (EURFNR-387)
CeO_2-base--UO_2, preparation and properties of compacts of, 22:41113 (CEND-2936-335, I.1-22)
CeO_2-base--UO_2, radiation effects at 40 to 70 percent burnup, 22:41127 (CEND-2936-335, IV.1-41)
CeO_2-base--UO_2, thermal conductivity as function of temperature, 22:41086 (CEND-2936-335, II.1-20)
Cr--UO_2, mechanical and physical properties of, 22:472 (BMI-X-455(Pt.1))
Dy_2O_3--UO_2, distribution of dysprosium oxide in, contro by autoradiography, 22:36011
Dy_2O_3--UO_2, solid solution formation above 1900°C in, 22:43661
Eu_2O_3--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
Fe--UO_2, radiation effects on, description of optical examination methods for neutron, 22:27497
fission products--PuO_2--UO_2, fluorination of pellets of, in fluidized bed, 22:25443 (ANL-7375, pp 46-94)
Gd_2O_3--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
Gd_2O_3--UO_2, behavior at high temperatures, 22:17129
graphite--UC--UO_2, diffusion of nonvolatile fission products from neutron-irradiated, 22:45140 (BMwF-FBK-68-08)
graphite--UO_2, production of fuel of, methods for, 22:8815(P)
graphite--UO_2, stability of fuel elements of, at high temperatures, 22:38597 (AECL-2783)
H_2O--UO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
Ho_2O_3--UO_2, phase diagrams, 22:2703 (KFK-597)
Ho_2O_3--UO_2, phase studies of, 22:2018(R) (BMwF-FBK-67-76)
LaO_2--UO_2, oxygen partial pressure over solid solutions of, at 1100 to 1400°C, 22:11053
Mg--UO_2, extrusion of aluminum-clad fuel elements of, 22:7047
MgO--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
Mo--UO_2, dissolution of, factors affecting acid, 22:33529
Mo--UO_2, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
Mo--UO_2, fabrication of gridded fuel elements of, method for, 22:8816(P)
Mo--UO_2, fission gas retention in, measurement of, 22:4907
Mo--UO_2, fuels for 0.05 MW(e) thermionic reactors, physics measurements on, (T), 22:32946
Mo--UO_2, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Mo--UO_2, metallography of tungsten-coated, 22:36526 (LA-DC-9616)
Mo--UO_2, polishing of tungsten-coated, 22:36526 (LA-DC-9616)
Mo--UO_2, preparation and testing for thermionic fuel elements, 22:23730 (DLR-MITT-66-07, pp 69-72)
Mo--UO_2, properties of, fabricated by isostatic hot pressing method, 22:34099 (KFK-708)
Mo--UO_2, solubility in nitric acid, effects of ultrasoun on, 22:2174 (KFK-573)
Mo--UO_2, solubility in nitric acid, effects of ultrasoun on, 22:12408(T) (EURFNR-319)
Mo--UO_2, Young's modulus of, effects of density on isothermal, 22:52256(T) (AERE-Trans-1094)
Mo--UO_2--W, growth of cermets of, during thermal cycling 22:21684 (BMI-1824)
MoB_2--TiB_2--UO_2-base--ZrB_2, sintering method for dense, 22:36532(P)
Na--PuO_2--UO_2, aerosol behavior simulation for accidents in liquid sodium-cooled fast breeder, analysis of, 22:53262 (BNL-12757)
Na--UO_2, corrosive effects of pastes of, on type 304 stainless steel at 1400°F, 22:2573
Nb--UO_2, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
Nb--UO_2, physical properties of sintered fuels of, 22:34096 (GMAD-3078-21)
Nb--UO_2, preparation of cermets of, by hot pressing and vapor deposition, 22:26076
Nb--UO_2, radiation effects on fuel elements of, in-pile, 22:4831

Nb--UO_2, radiation testing of MCR fuels of, 22:32924 (GMAD-3078-30)
Nb--UO_2, sintered fuels of, fabrication of, 22:34096 (GMAD-3078-21)
$NbCl_5$--UO_2, reduction by hydrogen to prepare uranium, 22:38531
PuO_2--stainless steel--UO_2, fabrication of cermet fuels of, 22:8810
PuO_2--UO_2, analysis for characterizing FFTF fuels of, 22:5 (BNWL-SA-1388, pp 10.1-14)
PuO_2--UO_2, analysis for zirconium, spectrographic, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, analysis of irradiated, electron-microprobe, 22:36543 (ANL-7450, pp 39-74)
PuO_2--UO_2, analysis of irradiated, for solid fission products, 22:4023
PuO_2--UO_2, burnup analysis of NaK-cooled type-316 and type--347 stainless steel clad fuel rods of, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, burnup characteristics in BR-5 (USSR) Reactor fuel elements of, during 1964, 22:18571
PuO_2--UO_2, burnup of fuel elements of, calculation from isotopic composition in Saxton Power Reactor, (E/T), 22:27417(R) (WCAP-3385-14)
PuO_2--UO_2, burnup of irradiated, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, burnup of liquid sodium-cooled fast reactor fuel of, analysis of, 22:18511
PuO_2--UO_2, burnup of type 316 stainless steel clad fuel pins of, analysis of, 22:17189
PuO_2--UO_2, burnup of type 316 stainless steel-clad, gamma scan analysis of, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, burnup of vibrationally compacted, effects of internal pressure buildup on, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, burnup performance of stainless steel-clad tungsten carbide (W_2C)-coated pellet-type, effects of fabrication and stoichiometry on, 22:39783(R) (NUMEC-3432-32)
PuO_2--UO_2, burnup performance of Type 316 stainless steel-clad, analysis of 125,000 MWd/Te, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, compaction of powdered, into fuel test bodies, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, compatibility of clad, with sodium at 650°C, 22:13044 (BNWL-473, pp 3.1-21)
PuO_2--UO_2, compatibility of sodium-bonded Type 316 stainless steel-clad, analysis of interface, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, contamination of equipment and laboratory by, from glove box explosion and fire, 22:2320 (BNWL-464)
PuO_2--UO_2, criticality of water-moderated lattices of, 22:49817(R) (EURAEC-2036)
PuO_2--UO_2, cycle management of sodium-cooled fuel rods of, economics of, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, cycle performance in European fast reactors, development program for optimum, 22:35500
PuO_2--UO_2, decomposition pressures of, 22:43663
PuO_2--UO_2, density control in mixed fuels of, 22:4860
PuO_2--UO_2, density control of, using 5 to 20 percent precursor additive, 22:7032(R) (NUMEC-3524-43)
PuO_2--UO_2, design of driver fuel pins of, for FTR, 22:1848 (BNWL-SA-1388, pp 3.1-41)
PuO_2--UO_2, design of pellets of, for FTR fuel elements, 22:1848 (BNWL-SA-1388, pp 3.1-41)
PuO_2--UO_2, development and fabrication of sol-gel, for fast reactor fuel, 22:8704 (ORNL-4170, pp 124-7)
PuO_2--UO_2, development and testing for fast reactor fuel, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, development and testing for fast reactor fuel, review of, 22:49800
PuO_2--UO_2, development for reactor fuels, 22:13063(R) (EURAEC-1885)
PuO_2--UO_2, diffusion in, 22:43663
PuO_2--UO_2, diffusion in fuels of, effects on liquid sodium-cooled fast reactor kinetics of, 22:37402 (ANL-7450, pp 75-89)
PuO_2--UO_2, diffusion in, at 2673°K, 22:31476
PuO_2--UO_2, diffusion of fission products from irradiated, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, dissolution in molten chlorides, 22:8187
PuO_2--UO_2, dissolution in nitric acid solutions, effects of sintering conditions on, 22:25460 (KFK-673)
PuO_2--UO_2, dissolution in nitric acid solutions, effects of sintering conditions on, 22:42810(T) (EURFNR-471)
PuO_2--UO_2, dissolution of clad ceramic, by liquid ammonia and mineral acids, 22:19670 (BNWL-624, pp 6.1-20)
PuO_2--UO_2, dissolution of irradiated fuels of, by nitric acid, 22:27845 (CEA-N-816, pp 150-276)
PuO_2--UO_2, dissolution of Zircaloy-clad, in nitric acid--nitrate--hydrochloric acid systems, 22:6382
PuO_2--UO_2, effects of zoning of, on performance as reactor fuel, 22:6016
PuO_2--UO_2, fabrication and coating of fuel particles of, 22:8810
PuO_2--UO_2, fabrication and properties of nuclear fuels of, 22:8810
PuO_2--UO_2, fabrication and testing of fuel rods of, 22:34125 (EURAEC-1999)
PuO_2--UO_2, fabrication and testing of high-density fuel pellets of, 22:53463(R) (UNC-5217)
PuO_2--UO_2, fabrication and testing of, for use as reactor fuel, 22:30343(R) (EURAEC-1992)
PuO_2--UO_2, fabrication by vibratory compaction, 22:8809
PuO_2--UO_2, fabrication for FFTF fuel, criticality safety in, 22:748 (BNWL-SA-1388, pp 11.1-26)
PuO_2--UO_2, fabrication into nuclear fuel rods, 22:49817(R) (EURAEC-2036)
PuO_2--UO_2, fabrication into rods for in-pile radiation testing, 22:732 (EURFNR-318)
PuO_2--UO_2, fabrication of, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, fabrication of clad fuel elements of, incorporating metal powder, 22:49814(P)
PuO_2--UO_2, fabrication of fuel elements for Prototype Fast Reactor, 22:14209
PuO_2--UO_2, fabrication of fuel elements of, description of, 22:27423
PuO_2--UO_2, fabrication of fuel elements of, methods for, 22:8816(P)
PuO_2--UO_2, fabrication of fuel pellets of, description of, 22:30200
PuO_2--UO_2, fabrication of pellets of, by cold pressing and sintering, 22:725 (BMI-1809, Sect.E)
PuO_2--UO_2, fabrication of sintered flat cylindrical rings of, description of vibration-compaction, 22:37577(P)
PuO_2--UO_2, fabrication of sintered spherical pellets of, quality control using autoradiography of, 22:27489(R) (NUMEC-3524-47)
PuO_2--UO_2, fabrication of, density control in, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, fast fission factor for water-cooled graphite-moderated lattice of, calculation of, 22:42164(R) (BNWL-775)
PuO_2--UO_2, fission product aggregates in, composition of, 22:17152
PuO_2--UO_2, fission product distribution in Incoloy 800-clad and Type 316 and Type 347 stainless steel-clad, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, fission product release from Type 316 and Type 347 stainless steel-clad sodium-bonded, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, fluorination by bromine pentafluoride or chlorine trifluoride, 22:6384
PuO_2--UO_2, fluorination by bromine pentafluoride or chlorine trifluoride, 22:8186
PuO_2--UO_2, fluorination by chlorine fluorides, fluidized-bed, 22:8169(R) (EURAEC-1934)
PuO_2--UO_2, fluorination by chlorine trifluoride, 22:40156(R) (EURAEC-2031)
PuO_2--UO_2, fluorination of fuels of, using bromine pentafluoride, 22:21078
PuO_2--UO_2, fluorination of irradiated, 22:51045 (ANL-7425, pp 42-93)
PuO_2--UO_2, fluorination of irradiated, minimization of retention of plutonium and uranium on alumina bed in, 22:40150 (ANL-7372)
PuO_2--UO_2, fluorination of irradiated, techniques of fluidized-bed, 22:21172
PuO_2--UO_2, fluorination with fluorine, chlorine trifluoride, or bromine trifluoride, fluidized-bed, 22:150
PuO_2--UO_2, fuel burnup of, METHUSELAH--AIMAZ calculation of SGHW-type reactor, 22:30319
PuO_2--UO_2, fuel cladding failure of, analysis of Incoloy 800 and Hastelloy, 22:25083(R) (GEAP-5541)
PuO_2--UO_2, fuel cycle management of, comparison of zoned and unzoned core, 22:42164(R) (BNWL-775)
PuO_2--UO_2, fuel element cluster of, physics measurement analysis of gas-cooled reactor two- and three-ring, (E/T), 22:22762
PuO_2--UO_2, fuel element conceptual design development for FFTF, literature survey discussion of, 22:50795 (BNWL-645)
PuO_2--UO_2, fuel elements of Zircaloy 2-clad, burnup performance of HBWR, 22:48646 (HPR-102)
PuO_2--UO_2, fuel elements of, analysis of burnup in ingot from EBR-2, 22:32817
PuO_2--UO_2, fuel elements of, analysis of burnup of Halden Boiling Reactor, 22:35464(R) (HPR-99)
PuO_2--UO_2, fuel elements of, design parameters for optimum fast breeder power reactor, (E/T), 22:39810
PuO_2--UO_2, fuel elements of, effects of burnup on gas pressure buildup in, 22:32814
PuO_2--UO_2, fuel fabrication for SEFOR hexagonal channel, description of pellet-type, 22:44889(R) (GEAP-5629)
PuO_2--UO_2, fuel loading for PRCF reactor of, physics measurements for critical, (E/T), 22:32743(R) (BNWL-739)
PuO_2--UO_2, fuel meltdown simulation of Fast Test Reactor, use of MARS computer code for effects of configuration and enrichment on, 22:37554 (APDA-209)
PuO_2--UO_2, fuel performance in fast reactors, analysis of, 22:48657 (TID-24680)
PuO_2--UO_2, fuel pin center temperature measurement, thermocouple configuration for DFR and DMTR, 22:44811 (CONF-660521-6)
PuO_2--UO_2, fuel pins of, electron microprobe analysis of irradiated, 22:12006(R) (ANL-7399)
PuO_2--UO_2, fuel rod fabrication costs for boiling and pressurized-water reactors, RODCOST computer program for, 22:44809 (BNWL-789)
PuO_2--UO_2, fuel system for fast reactor, calculation of optimum economic, (T), 22:46961

PuO_2--UO_2, fuels elements of, physics measurements on water-moderated, (E/T), 22:20779 (BNWL-624, pp 3.1-159)
PuO_2--UO_2, fuels of, economic aspects of efficiency of, 22:5914 (AECL-2944)
PuO_2--UO_2, fuels of, fabrication of FTR and Nuclear Proof Test Facility, 22:30299 (BNWL-SA-1750)
PuO_2--UO_2, grinding to produce controlled-size particles for fuel elements, mill for, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, heat of fission of, analysis of, 22:50841(R) (LA-3993)
PuO_2--UO_2, homogeneity of 2 and 3 wt percent plutonium dioxide additive, (E), 22:7032(R) (NUMEC-3524-43)
PuO_2--UO_2, integrity of stainless steel clad, effects of bubble size in sodium bonding on, 22:4910
PuO_2--UO_2, irradiation testing of FTR fuel pins of, in EBR-2, 22:42358 (BNWL-650)
PuO_2--UO_2, irradiation testing of particulate fields of, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, kinetics for trisected FTR core of, calculation of optimum, 22:42164(R) (BNWL-775)
PuO_2--UO_2, mechanical mixing and precipitation of, for fabrication into fuels, 22:7048
PuO_2--UO_2, meltdown of vibrationally compacted, relations with reactor power limit, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, melting behavior of nonstoichiometric, (E/T), 22:11044 (GEAP-5358)
PuO_2--UO_2, melting behavior of solid solutions of, 22:43648(R) (GEAP-5634)
PuO_2--UO_2, melting by passing electric current through pellets of, method and apparatus for, 22:744(P)
PuO_2--UO_2, melting failure of, effects of power transients on fuel element, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, melting of, 22:8837
PuO_2--UO_2, melting point of, effects of burnup on, 22:33172
PuO_2--UO_2, melting point of, nonstoichiometric effects on, 22:33171
PuO_2--UO_2, melting point of, radiation effects on, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, microstructure of, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, microstructure of compacted, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, neutron buckling measurements in heavy water moderated exponential piles fueled with, effects of coolants on, 22:33027
PuO_2--UO_2, neutron distribution in heavy water-moderated fuel rods of, foil activation analysis of thermal, 22:25082 (DP-1122)
PuO_2--UO_2, oxidation and sintering of, role of oxygen-metal ratio in, 22:7036
PuO_2--UO_2, particle size distribution in sintered powders of, 22:737
PuO_2--UO_2, performance at 50,000 MWd/t burnup, 22:4913
PuO_2--UO_2, performance in power reactors, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, performance of fuels of, at 120,000 MWd/t burnup, 22:4914
PuO_2--UO_2, performance of Type 304 and Type 347 stainless steel-clad mixed, metallographic analysis of 27 to 36 kW/ft power level, 22:50731 (GEAP-5556)
PuO_2--UO_2, performance potential as fast breeder reactor fuel, 22:30123 (BNWL-SA-1550)
PuO_2--UO_2, phase studies, 22:21650
PuO_2--UO_2, phase studies of, 22:52257 (ANL-7425, pp 94-129)
PuO_2--UO_2, physical properties for reactor fuels, data manual on, 22:43651 (TRG-Report-1601)
PuO_2--UO_2, physics measurements for uniform rod clusters of, 22:18471
PuO_2--UO_2, physics parameters for Prototype Fast Reactor fuel of, analysis of, 22:18512
PuO_2--UO_2, plutonium distribution in molten, 22:8837
PuO_2--UO_2, plutonium homogeneity in, determination by autoradiography, 22:8847(R) (NUMEC-3524-37)
PuO_2--UO_2, porosity and density of irradiated sintered powder of, effects of organic additives on, 22:27488(R) (NUMEC-3524-39)
PuO_2--UO_2, power performance of, analysis of optimum, 22:46928 (WASH-1106)
PuO_2--UO_2, preparation and high temperature properties of, 22:27487(R) (LA-3880)
PuO_2--UO_2, preparation and high-temperature properties of, 22:43629(R) (LA-3933)
PuO_2--UO_2, preparation by sol-gel process, 22:47110(R) (BAW-3714-7)
PuO_2--UO_2, preparation of fast reactor fuels of, using gel-addition process, 22:19608(R) (BAW-3714-5)
PuO_2--UO_2, preparation of irradiated thin disks of, for electron microscopy, 22:43670
PuO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:43643
PuO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
PuO_2--UO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
PuO_2--UO_2, preparation of, gel-addition process for, 22:2016(R) (BAW-3714-4)
PuO_2--UO_2, preparation of, sol-gel process for, 22:738
PuO_2--UO_2, preparation, properties, and phase relations of, 22:2699
PuO_2--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
PuO_2--UO_2, processing of irradiated stainless steel-clad, nonaqueous methods for, 22:47213
PuO_2--UO_2, production method for dense compacts of, 22:28914(P)
PuO_2--UO_2, production of blended powders of, 22:19618(P
PuO_2--UO_2, production of dry granular fuels of, methods for, 22:21758(P)
PuO_2--UO_2, production of fuel elements of, method for, 22:34105(P)
PuO_2--UO_2, production of particulate fuel of, by gel-addition process, 22:36522(R) (BAW-3714-6)
PuO_2--UO_2, properties of stainless steel- and Zircaloy-clad, as water-moderated reactor fuel, 22:6017
PuO_2--UO_2, radiation effects on assemblies of sintered pellet fuel elements of, 22:32985
PuO_2--UO_2, radiation effects on clad, in-pile, 22:43627 (ANL-7299, pp 14-113)
PuO_2--UO_2, radiation effects on compacts of, in-pile, 22:21725 (BNWL-SA-1624)
PuO_2--UO_2, radiation effects on fuel pins of, fast-flux in-pile, 22:19672 (GEAP-5570)
PuO_2--UO_2, radiation effects on fuels of, review on, 22:8804
PuO_2--UO_2, radiation effects on high power density fuels of, in-pile, 22:19513 (BNWL-SA-1623)
PuO_2--UO_2, radiation effects on hot pressed pellets of, in-pile, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on mechanical properties of Hastelloy X- and Type 316 stainless steel-clad, analysis of fast neutron, 22:42200(R) (ORNL-4200)
PuO_2--UO_2, radiation effects on neutron, 22:21776(R) (EURAEC-1937)
PuO_2--UO_2, radiation effects on pellets and powders of, transient in-pile, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on stainless steel-clad rods of, transient in-pile, 22:31526 (GEAP-4469)
PuO_2--UO_2, radiation effects on Type 316 or Type 347 stainless steel clad fuel elements on, in-pile, 22:27423
PuO_2--UO_2, radiation effects on vibrationally compacted fuels of, 22:53454 (BNWL-828)
PuO_2--UO_2, radiation effects on vibrationally compacted, fast neutron, 22:19669 (BNWL-624, pp 2.1-32)
PuO_2--UO_2, radiation effects on, analysis of neutron, 22:32743(R) (BNWL-739)
PuO_2--UO_2, radiation effects on, description of optical examination methods for neutron, 22:27497
PuO_2--UO_2, radiation effects on, effects of method of preparation on, 22:11090 (NUMEC-3432-24)
PuO_2--UO_2, radiation effects on, electron microprobe analysis of, 22:24925(R) (ANL-7427)
PuO_2--UO_2, radiation effects on, in-pile, 22:2707 (BNWL-SA-1346)
PuO_2--UO_2, radiation effects on, relations of pellet stoichiometry with in-pile, 22:49772(R) (NUMEC-3432-44)
PuO_2--UO_2, radiation effects testing fast reactor fuels, in-pile, 22:8845 (EURFNR-423)
PuO_2--UO_2, radioinduced gas release and pressure buildup in, relations with burnup and specific power under in-pile conditions, 22:2707 (BNWL-SA-1346)
PuO_2--UO_2, reactions with chlorine trifluoride or fluorine, 22:25470(T) (ANL-Trans-590)
PuO_2--UO_2, reactions with Incoloy-800 and stainless steel at 1400°F, 22:4739
PuO_2--UO_2, reduction by copper--magnesium alloy in molten salt, 22:51044 (ANL-7425, pp 19-41)
PuO_2--UO_2, reprocessing fuel of, by chloride-volatility techniques, 22:150
PuO_2--UO_2, reprocessing fuel of, by fluoride-volatility techniques, 22:150
PuO_2--UO_2, reprocessing fuels of, salt-cycle methods for, 22:6383
PuO_2--UO_2, reprocessing irradiated Zircaloy-clad fuels of, distribution of ruthenium hexafluoride in process stream during, 22:25443 (ANL-7375, pp 46-94)
PuO_2--UO_2, reprocessing of fuels of, 22:47223
PuO_2--UO_2, reprocessing of irradiated, 22:33527
PuO_2--UO_2, reprocessing of irradiated, fluidized-bed process for, 22:23099(R) (K-L-1780(Pt.23)
PuO_2--UO_2, reprocessing of irradiated, salt-transport process for, 22:33528
PuO_2--UO_2, reprocessing of stainless steel-clad fast breeder fuels of, 22:23108
PuO_2--UO_2, reprocessing of stainless steel-clad, salt-transport techniques for, 22:23107
PuO_2--UO_2, reprocessing using chlorine trifluoride and fluorine, effects of fission products on, 22:4230(R) (EURAEC-1920)
PuO_2--UO_2, separation of contaminants from fuels of, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
PuO_2--UO_2, separation of plutonium from, by fusion and ion exchange, 22:22930(R) (NBL-242)
PuO_2--UO_2, sintering behavior of, effect of stoichiometry on, 22:24925(R) (ANL-7427)
PuO_2--UO_2, surface areas of coprecipitated and mechanically blended, effects of zirconium dioxide on,

22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2, thermal conductivity at 800 to 1900°C, 22:19625 (GEAP-4879)
PuO_2--UO_2, thermal conductivity for 1000 MW(e) LMFBR fuel of, at 0 to 5000°F, 22:9990(R) (BAW-1312)
PuO_2--UO_2, thermal conductivity in compacted powder reactor fuels of, (E/T), 22:27485 (EURAEC-1998)
PuO_2--UO_2, thermal conductivity of, 22:28934
PuO_2--UO_2, thermal conductivity of, 22:43663
PuO_2--UO_2, thermal conductivity of Type 316 and Type 347 stainless steel-clad, analysis of, 22:50732(R) (GEAP-5631)
PuO_2--UO_2, thermal conductivity of varying stoichiometry of, measurement of, 22:48790
PuO_2--UO_2, thermal conductivity of, effects of temperature and stoichiometry on, (E/T), 22:50731 (GEAP-5556)
PuO_2--UO_2, thermal expansion of fuel elements of, effects of stoichiometry on, 22:4878
PuO_2--UO_2, thermal expansion of stoichiometric, 22:13060 (BNWL-473, pp 4.1-9)
PuO_2--UO_2, thermal migration studies of, analysis of, 22:53260 (ANL-7425, pp 130-71)
PuO_2--UO_2, thermal properties of pellets of, 22:30200
PuO_2--UO_2, thermal properties of, effects of stoichiometry on, 22:30386
PuO_2--UO_2, thermodynamic properties of nonstoichiometric solid solutions in, 22:4882
PuO_2--UO_2, thermodynamic properties of solid-solution, 22:31479
PuO_2--UO_2, thermodynamic properties of, for reactor fuels, 22:31480
PuO_2--UO_2, transient radiation effects on, neutron radiography analysis of, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, transient radiation effects on, temperature distribution from, 22:32970(R) (GEAP-5584)
PuO_2--UO_2, use in fuel rods, economic comparison with uranium dioxide fuel, 22:7048
PuO_2--UO_2, volatility of, effects of plutonium concentration on, 22:45141(R) (EURAEC-2030)
PuO_2--UO_2--ZrO_2, crystal structure of, effects of annealing, oxidation, and sintering on, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, phase studies of, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, physical properties of sintered pellets of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
PuO_2--UO_2--ZrO_2, properties as reactor fuel, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, radiation effects on, tests for evaluation of, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2, surface areas of coprecipitated and mechanically blended, 22:45816(R) (NUMEC-3505-27)
PuO_2--UO_2--ZrO_2-base, phase diagrams and thermal properties of, 22:19649(R) (NUMEC-3505-30)
PuO_2--UO_2-base, radiation effects on low-density rods of, at 12,000 MWd/t, 22:41125 (BNWL-SA-1679)
PuO_2--UO_2-base, thermal conductivity of stoichiometric and nonstoichiometric, at 0 to 2000°C, 22:41096 (CEA-R-3488)
PuO_2--UO_2-base--ZrO_2, analysis for carbon, by gas chromatography, 22:19649(R) (NUMEC-3505-30)
PuO_2--UO_2-base--ZrO_2, radiation effects on, in-pile, 22:19649(R) (NUMEC-3505-30)
SiO_2--UO_2, mechanical properties of fuel elements of, for heavy water-moderated reactors, 22:30262
SiO_2--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
SiO_2--UO_2, radioinduced volume changes in, annealing effects on fast neutron, 22:17155
SiO_2--UO_2, thermal conductivities at 100 to 800°C, 22:49832
SmO_2--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
stainless steel--UO_2, fabrication of, 22:7050
stainless steel--UO_2, fabrication of zirconium boride-bearing cermet fuels of, 22:4856
stainless steel--UO_2, fuel plate core density, effects of cold rolling on, 22:23761 (IN-1131, pp 2-29)
stainless steel--UO_2, irradiation testing of dispersion-type fuels of, 22:32973 (IN-1160)
stainless steel--UO_2, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
stainless steel--UO_2, performance as reactor fuels, 22:11058
stainless steel--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
stainless steel--UO_2, radiation effects on dispersion fuels of, in-pile, 22:23843 (IN-1131, pp 37-55)
stainless steel--UO_2, radiation effects on fuel elements of, in-pile, 22:49859
stainless steel--UO_2, radiation effects on fuel performance of, relations of uranium dioxide density with in-pile, 22:4830
stainless steel--UO_2, radiation effects on, description of optical examination methods for neutron, 22:27497
Ta--UO_2, preparation of cermets of, by hot pressing and vapor deposition, 22:26076
TaB_2--UO_2, reactions with steam at high temperatures, 22:17173
Th--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
ThO_2--$^{233}UO_2$, blanket elements of, reactivity measurements of hexagonal and rectangular arrays of, at 20°C, 22:14262 (WAPD-TM-614)
ThO_2--$^{233}UO_2$, physics measurements of core and blanket of fast breeder reactor, calculation of, (T), 22:47052
ThO_2--UO_2 preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
ThO_2--UO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
ThO_2--UO_2, analysis for trace impurities, preconcentration procedures for spectroscopic, 22:14430 (ORNL-4196, pp 55-9)
ThO_2--UO_2, analysis of irradiated, procedures for, 22:37641(R) (BAW-3809-2)
ThO_2--UO_2, burnup of Indian Point Power Reactor Unit 1 Core A Type 304 stainless steel-clad Zircaloy 2-clad fuel elements of, profilometer and metallographic analysis of, 22:53261(R) (BAW-3809-4)
ThO_2--UO_2, crystal growth by in-crucible centrifugal motion, 22:52289
ThO_2--UO_2, crystal structure of nonstoichiometric phases in, 22:4897
ThO_2--UO_2, crystal structure, (E), 22:8818 (BMI-X-447)
ThO_2--UO_2, cycle costs as HWOCR fuel, evaluation of, 22:23854 (CONF-660524-, pp 157-84)
ThO_2--UO_2, diffusion coefficient of protactinum in sintered, analysis of lattice, 22:48790
ThO_2--UO_2, diffusion of gases from sol-gel, 22:35778 (ORNL-TM-2268)
ThO_2--UO_2, diffusion of krypton and tritium from, in shear-leach process, 22:149
ThO_2--UO_2, diffusion of protactinium in solid solutions of, 22:15255
ThO_2--UO_2, diffusion of uranium in, grain boundary, 22:28834
ThO_2--UO_2, extrusion method for mixed, 22:49797
ThO_2--UO_2, fabrication and properties of reactor fuels of, 22:49798
ThO_2--UO_2, fabrication into pebble-type fuels, program development for, 22:23855 (CONF-660524-, pp 293-8)
ThO_2--UO_2, fuel assembly of, four-factor two-group analysis of lattice parameters for heavy water-moderated, (E/T), 22:22836
ThO_2--UO_2, fuel element performance of, analysis of void migration and cracking in, (E/T), 22:47047 (WAPD-TM-794)
ThO_2--UO_2, fuel elements of Zircaloy-clad, effects of time and temperature on failures of, 22:33174
ThO_2--UO_2, fuel for 1000 MW(e) heavy water-moderated organic-cooled power reactors of, economic and technical analysis of, 22:50741 (WASH-1083)
ThO_2--UO_2, fuel particles of, development for Dragon project, 22:5932(R) (NP-17118)
ThO_2--UO_2, fuel rods of heavy water-moderated 19-element critical assembly, physics measurements in CANDU-type, (E/T), 22:44882 (AECL-2779)
ThO_2--UO_2, fuel suspension flow at 250°C, analysis of optimum, 22:35531
ThO_2--UO_2, fuels in exponential piles, use of aqueous suspension, 22:25107
ThO_2--UO_2, fuels of, burnup analysis at 1250 to 1400°C for small spheres of, 22:22688 (GA-7549)
ThO_2--UO_2, hardness of, effects of composition and temperature on, (E), 22:8818 (BMI-X-447)
ThO_2--UO_2, heating gels of, effects of particle size on gases from, 22:33295 (ORNL-TM-1809)
ThO_2--UO_2, homogeneity of vibratory-compacted, γ-attenuation method for inspection of, 22:14739
ThO_2--UO_2, lattice parameter measurements in heavy water moderated 19-rod clusters of uranium-235 enriched, 22:7890 (AECL-2778)
ThO_2--UO_2, measurements of reflector savings in, computer analysis of radial-flux distributions for, (E), 22:35633
ThO_2--UO_2, mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
ThO_2--UO_2, melting point diagram for, thermodynamics for calculating, 22:2689
ThO_2--UO_2, neutron multiplication in light- and heavy-water-moderated assemblies of, 22:6105
ThO_2--UO_2, neutron physics of uranium-233 and -235 seed blankets of, 22:6116
ThO_2--UO_2, physical properties of solid solutions of, (E), 22:8818 (BMI-X-447)
ThO_2--UO_2, preparation and properties of compacted fuel pellets of, 22:49808
ThO_2--UO_2, preparation by sol-gel process, equipment and flowsheets for, 22:12476 (ORNL-TM-1978)
ThO_2--UO_2, preparation of fuel spheres of, by KEMA sol-gel process, 22:23856 (CONF-660524-, pp 377-90)
ThO_2--UO_2, preparation of microspheres of, by sol-gel process, 22:26073 (ORNL-TM-2205)
ThO_2--UO_2, preparation of microspheres of, design of equipment for, 22:25591
ThO_2--UO_2, preparation of microspheres of, from solvent extraction sols, 22:12476 (ORNL-TM-1978)
ThO_2--UO_2, preparation of thin sintered foils of, 22:38613
ThO_2--UO_2, preparation of uranium-233-enriched, pilot plant design and operation for direct sol-gel,

22:23857 (CONF-660524-, pp 417-43)
ThO_2--UO_2, processing for production of fuel, PCUT plant capability for, 22:49799
ThO_2--UO_2, production of ceramic grade, method for, 22:741(P)
ThO_2--UO_2, production of fuels of, using recycle method, 22:49796
ThO_2--UO_2, production of gels of, 22:33301
ThO_2--UO_2, radiation effects on beryllium oxide dispersions of, beta, fission fragment, and neutron, 22:774
ThO_2--UO_2, radiation effects on carbon-coated particulate, fast neutron, 22:4915
ThO_2--UO_2, radiation effects on crack healing and void movement of, in-pile, 22:21775 (AECL-3008)
ThO_2--UO_2, radiation effects on fuels of, in-pile, 22:17185(R) (BAW-3809-1)
ThO_2--UO_2, radiation effects on pyrolytic carbon coated, in-pile, 22:11046 (ORNL-TM-2061)
ThO_2--UO_2, radiation effects on sol-gel carbon coated, in-pile, 22:11046 (ORNL-TM-2061)
ThO_2--UO_2, radiation testing of metal-clad fuels of, in-pile, 22:8823 (ORNL-4170, pp 211-26)
ThO_2--UO_2, reactor physics parameter measurements in heavy water, 22:6104
ThO_2--UO_2, separation of beryllium oxide from fuels of, leaching and solvent extraction method for, 22:51061
ThO_2--UO_2, solubility of irradiated and unirradiated, in nitric and hydrofluoric acids, (E), 22:47702(R) (BAW-3809-3)
ThO_2--UO_2, sorptive properties of gels of, for carbon dioxide, 22:33295 (ORNL-TM-1809)
ThO_2--UO_2, thermal conductivity of, 22:8731 (ORNL-4170, pp 37-41)
ThO_2--UO_2, thermal conductivity of, effects of lanthanum oxide and niobium oxide on, 22:13070(P)
ThO_2--UO_2, thermal conductivity of, effects of lanthanum oxide and yttrium oxide on, 22:13070(P)
ThO_2--UO_2, thermal properties of fuels of, at 300 to 2000°C, 22:47703 (BMI-X-10210)
ThO_2--UO_2, thermodynamic properties of nonstoichiometric solid solutions in, 22:4882
ThO_2--UO_2--W, stability of molybdenum--rhenium--tungsten alloy-clad, in pure nitrogen at 3500°F, 22:37775 (BNL-50082, pp 40-78)
Tm_2O_3--UO_2, phase studies, 22:4890 (KFK-521)
U--UO_2, analysis for uranium monocarbide, x-ray diffraction methods for, 22:16438
U--UO_2, free energies of oxygen and uranium in, 22:52257 (ANL-7425, pp 94-129)
U--UO_2, melting points of phases in, 22:8838
U--UO_2, phase diagram of, 22:25321 (ANL-7375, pp 95-134)
U--UO_2, phase studies of, 22:8838
UF_4--UO_2, phase studies on, 22:33294(T) (NLCO-Tr-9)
UN--UO_2, vaporization of, mass-spectrometric evidence for uranium nitride oxide molecule in, 22:16527
UO_2--^{184}W, fuel element of multiple plate tungsten-clad, description of rocket reactor, 22:50785(P)
UO_2--^{184}W, fuel elements for rocket reactors of cermets of, description of tungsten-clad, 22:42349(P)
UO_2--MoB_2, fabrication of fuel elements of, 22:11034(P)
UO_2--ThO_2--UO_2, physical properties of solid solutions of, (E), 22:8818 (BMI-X-447)
UO_2--TiB_2, fabrication of fuel elements of, 22:11034(P)
UO_2--UOS--US, oxygen potentials in, measured by solid-state galvanic cells at 1050 to 1350°K, 22:4161
UO_2--V_2O_5, phase structure at 900 to 1200°C, x-ray analysis of, 22:45826
UO_2--W, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
UO_2--W, extrusion and oxide deformation of fiber-reinforced composites of, 22:41012 (N-68-18610)
UO_2--W, fabrication and properties of hot-isostatic-pressed cermet, 22:36524 (BMI-1842)
UO_2--W, fabrication of gridded fuel elements of, methods for, 22:8816(P)
UO_2--W, fuel element assemblies of, description of rocket reactor tungsten-clad multi-plate, 22:35574(P)
UO_2--W, fuel fabrication by hot isostatic compaction of, description of thin plate and rod, 22:39905 (N-68-21705)
UO_2--W, growth of cermets of, during thermal cycling, 22:21684 (BMI-1824)
UO_2--W, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
UO_2--W, recrystallization kinetics at 600 to 1800°C, 22:36550
UO_2--W, temperature gradients for fuel elements of, determination of allowable, (E), 22:39904 (N-68-14986)
UO_2--WB_2, reactions with steam at high temperatures, 22:17173
UO_2--Y_2O_3, preparation and properties of high-temperature reactor fuels of, 22:23879(P)
UO_2--Yb_2O_3, phase studies, 22:4890 (KFK-521)
UO_2--Yb_2O_3, phase studies of, 22:2018(R) (BMwF-FBK-67-76)
UO_2--YH, fuel--moderator elements of, description of enamel-coated refractory metal-clad, 22:42556(P)
UO_2--YO_2, oxygen partial pressure over solid solutions of, at 1100 to 1400°C, 22:11053
UO_2--Zircaloy-4, radiation effects on, evaluation of neutron, 22:11087 (AI-CE-76)
UO_2--Zr, oxidation of, effects of temperature on, 22:53459 (GEMP-619)
UO_2--ZrB_2, fabrication of fuel elements of, 22:11034(P)
UO_2--ZrO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
UO_2--ZrO_2, corrosion of calcium oxide stabilized, by flowing hot water and steam, 22:41086 (CEND-2936-335, II.1-20)
UO_2--ZrO_2, creep swelling in fuels of, continuum dilatation model for, 22:2688 (WAPD-TM-649)
UO_2--ZrO_2, dissolution of Zircaloy-4-clad, 22:4231(R) (IN-1087)
UO_2--ZrO_2, dissolution of Zircaloy-clad, aqueous-fused salt process for, 22:33529
UO_2--ZrO_2, fracture of, effects of heat treatment and precipitation on, 22:8819 (KAPL-P-3395)
UO_2--ZrO_2, hardness of, effects of porosity on, 22:8819 (KAPL-P-3395)
UO_2--ZrO_2, mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
UO_2--ZrO_2, preparation of aquasol of, 22:23028(P)
UO_2--ZrO_2, pressing and sintering for radiation testing specimens, 22:41087 (CEND-2936-335, III.1-10)
UO_2--ZrO_2, radiation effects at high burnups on clad, post irradiation evaluation of, 22:41128 (CEND-2936-335, V.1-25)
UO_2--ZrO_2, radiation effects on 347 stainless steel clad, 22:766 (BMI-1809, Sect.F)
UO_2--ZrO_2, radiation effects on fission gas release at high burnups, evaluation of in-pile, 22:41129 (CEND-2936-335, VI.1-7)
UO_2--ZrO_2-base, radiation effects on calcium oxide-stabilized at 40 to 70 percent burnup, 22:41127 (CEND-2936-335, IV.1-41)
UO_2--ZrO_2-base, thermal conductivity as function of temperature, effects of calcium oxide stabilizer on, 22:41086 (CEND-2936-335, II.1-20)
UO_2-base--Y_2O_3, fabrication and properties of reactor fuels of, 22:41093(P)

URANIUM OXIDES UO_3
  analysis for nonuranic alpha emitters, 22:21022 (PG-Report-823)
  effects on viscosity of uranium dioxide sols, 22:14484 (ORNL-TM-2056)
  electric conductivity of amorphous and alpha, in vacuum and carbon monoxide at temperatures to 640°C, 22:43657
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  fluorination with fluorine and interhalogens, 22:8186
  formation of gaseous, heat of, 22:25321 (ANL-7375, pp 95-134)
  nuclear magnetic resonance study of hydrated, 22:31991
  preparation and properties of crystalline hydrates of, 22:45068
  preparation and properties of hydrates of, 22:45073
  preparation of aquasols of, 22:21086(P)
  preparation of hydrated, 22:18754
  production from uranium nitrate hexahydrate, design of gas cooler for use in plant for, 22:25589
  production from uranium nitrates, equipment design for, 22:14643
  reaction with carbon powder, preparation of hypostoichiometric uranium carbide by, 22:43637(P)
  reactions of gaseous, with oxides, effects of structure on surface, 22:22988 (BARC-307)
  reactions with alkali metal halides, properties of diuranates from, 22:40089
  reactions with antimony pentachloride, 22:27651
  reactions with bromine pentafluoride, 22:42806 (ANL-7412)
  reactions with bromine pentafluoride, kinetics of, 22:12288
  reactions with molybdenum pentachloride, production of uranium chloride oxide by, 22:33314
  reactions with silicon tetrachloride, 22:27651
  reactions with titanium tetrachloride, 22:27651
  reactions with uranium tetrafluoride to prepare uranyl fluorides, 22:27631
  reduction by hydrogen, equipment for recovery of excess hydrogen in, 22:25325 (NP-17354)
  reduction by methane at 400 to 600°C, kinetics of, 22:7057
  reduction of gamma, by carbon monoxide, hydrogen, and their mixtures, effects of temperature on, 22:33352
  reduction to metal by calcium vapor, 22:19500
  reduction to uranium by calcium vapor, 22:4754
  separation from dilute ammonium uranyl tricarbonate solutions, 22:167(P)
  sintering hydrated compacts of, for production of dense uranium dioxide, 22:38601 (DP-1085)
  solubility in hydrochloric, nitric, and sulfuric acids, kinetics of diffusion-controlled, 22:4091
  thermal capacities of α-, β-, and γ-, 22:10204(R) (CCO-1149-102)
  thermal properties of monohydrate of, role of hydrogen bonds in, 22:18781
  thermodynamic properties of crystalline hydrates of, 22:45068
  thermodynamic properties of gaseous, 22:35776 (ORNL-TM-2105)

use in electrochemical production of electricity from heat, 22:27723(P)
vapor pressure over uranium--oxygen system at 1700 to 2500°K, 22:21761(T) (ANL-Trans-561)
yields from thermal decomposition of uranyl oxalate, 22:45047
H_2O--KF--UO_3, phase studies and compound formation in, 22:45080
H_2O--NH_4F--UO_3, phase studies and compound formation in, 22:45080
HF--H_2O--UO_3, complexing in, solubility studies on, 22:45071
La_2O_3--UO_3, molecular structure of hydrated, 22:34119
Nd_2O_3--UO_3, molecular structure of hydrated, 22:34119
Pr_2O_3--UO_3, molecular structure of hydrated, 22:34119
Pr_2O_3--UO_3, molecular structure of hydrated, 22:34119
Sc_2O_3--UO_3, molecular structure of hydrated, 22:34119
Sm_2O_3--UO_3, molecular structure of hydrated, 22:34119
ThO_2--UO_3, compound formation in aqueous solutions of, 22:12289
ThO_2--UO_3, preparation of microspheres and sols of, by sol-gel methods, 22:23860 (ORNL-TM-2128)
ThO_2--UO_3, preparation of microspheres of, 22:28887 (ORNL-4204, pp 22-39)
ThO_2--UO_3, preparation of sols of, by solvent extraction, 22:26073 (ORNL-TM-2205)
ThO_2--UO_3, preparation of sols of, from nitrate solutions by solvent extraction using amines, 22:57 (ORNL-4095)
UO_3--V_2O_5, phase studies on compound formation in, 22:35808
UO_3--Y_2O_3, molecular structure of hydrated, 22:34119
UO_3--ZrO_2, preparation of aquasols of, 22:21086(P)

URANIUM OXIDES U_2O_5
magnetic properties of, 22:12318
Bi_2O_3--U_2O_5, magnetic properties of, 22:12318
Bi_2O_3--U_2O_5, phase studies of, 22:12317
CdO--U_2O_5, compound formation and structure in, 22:12316
CdO--U_2O_5, magnetic properties of, 22:12318
CoO--U_2O_5, compound formation and structure in, 22:12316
Cr_2O_3--U_2O_5, phase studies of, 22:12317
Eu_2O_3--U_2O_5, phase studies of, 22:12317
Fe_2O_3--U_2O_5, phase studies of, 22:12317
Gd_2O_3--U_2O_5, phase studies of, 22:12317
K_2O--U_2O_5, compound formation and structure in, 22:12316
K_2O--U_2O_5, magnetic properties of, 22:12318
La_2O_3--U_2O_5, magnetic properties of, 22:12318
La_2O_3--U_2O_5, phase studies of, 22:12317
Li_2O--U_2O_5, compound formation and structure in, 22:12316
Li_2O--U_2O_5, magnetic properties of, 22:12318
MgO--U_2O_5, compound formation and structure in, 22:12316
MgO--U_2O_5, magnetic properties of, 22:12318
MnO--U_2O_5, compound formation and structure in, 22:12316
Na_2O--U_2O_5, compound formation and structure in, 22:12316
Na_2O--U_2O_5, magnetic properties of, 22:12318
Nd_2O_3--U_2O_5, phase studies of, 22:12317
NiO--U_2O_5, compound formation and structure in, 22:12316
PbO--U_2O_5, compound formation and structure in, 22:12316
PbO--U_2O_5, magnetic properties of, 22:12318
Rb_2O--U_2O_5, compound formation and structure in, 22:12316
Rb_2O--U_2O_5, magnetic properties of, 22:12318
Sc_2O_3--U_2O_5, magnetic properties of, 22:12318
Sc_2O_3--U_2O_5, phase studies of, 22:12317
Sm_2O_3--U_2O_5, phase studies of, 22:12317
SrO--U_2O_5, magnetic properties of, 22:12318
U_2O_5--V_2O_5, phase studies in, effects of temperature on, 22:34122
U_2O_5--Y_2O_3, magnetic properties of, 22:12318
U_2O_5--Y_2O_3, phase studies of, 22:12317
U_2O_5--Yb_2O_3, phase studies of, 22:12317

URANIUM OXIDES U_3O_8
analysis for fluorides using fluoride-sensitive electrodes, 22:30428 (BNWL-SA-1790)
analysis for impurities using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
analysis for impurities, spectrochemical method for, 22:50937
analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
analysis for phosphorus, extraction method for spectrophotometric, 22:4043
analysis for traces of lithium using hollow-cathode discharge tube, spectrographic, 22:12245
analysis for uranium by colorimetry, 22:39978 (CNEA-209)
analysis for uranium by delayed neutron counting, activation, 22:24788 (IA-1128, pp 55-77)
analysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
analysis for water, microchemical method for, 22:9(R) (NBS-TN-425)
content in Japanese granites, in Hyogo prefecture, 22:6451
content in Japanese Igu lignite, 22:8217
content in land pebble phosphate rock of central Florida, 22:18900
content in lithium and aluminum phosphates in Congo, 22:27932
content in Nakatsugo-Ombara area ores of Japan, 22:48964
content in sands of Nettuno, Rome, 22:37891
content in sediments in Niigata Prefecture, Japan, 22:8230
cost of, effect of supply and demand on, 22:2251
decomposition in air to 1250°C, derivatographic studies on, 22:45074
decomposition in vacuum at 300 to 900°C, 22:8046(T) (JPRS-42561)
dissociation in vacuum at 300 to 900°C, 22:19660
economics for fast breeder reactor fuels of, analysis from 1972 to 2000 of, 22:37448 (NP-17521)
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
fabrication of multi-density plates of, effects of metallurgical properties on, 22:37566
fluorination by bromine pentafluoride, 22:6365 (ANL-7362)
fluorination by bromine pentafluoride, effects of process variables on, 22:25443 (ANL-7375, pp 46-94)
fluorination with bromine pentafluoride, 22:35881 (ANL-7450, pp 21-38)
fluorination with fluorine and interhalogens, 22:8186
magnetic properties of, 22:12318
neutron fission of, chemical states of iodine produced by, 22:12284
oxidation by ferric ions in sulfuric acid, effects of diffusion on, 22:10216
phase studies on, 22:19660
preparation of layers of, by high voltage electrophoresis for neutron physics experiments, 22:18046
production and prospecting for, review of 1967, 22:30731
production by oxidation of uranium sulfides at 225 to 500°C, 22:4149
production from uranium leached from waste rock at copper mines, 22:18901
production from uranium recovered from mine waters in New Mexico, 22:18901
production in world's capitalistic countries, 22:48965
production of, economics of Bufflex process for, 22:18894
production of, economics of natural leaching method for, 22:18893
production of, effects of ore processing method on economics of, 22:18890
production using solution mining and direct precipitation, 22:4291
radiation effects on solubility of powders of, in dilute sulfuric acid, 22:27764
radioinduced swelling of, effects on void volume, 22:31527
reaction with carbon powder, preparation of hypostoichiometric uranium carbide by, 22:43637(P)
reactions with alkali metal halides, properties of diuranates from, 22:40089
reactions with boric oxide at 900 to 1100°C, 22:30559
reactions with bromine pentafluoride, 22:42806 (ANL-7412)
reactions with bromine pentafluoride, kinetics of, 22:12288
reactions with bromine trifluoride at 100 to 400°C, kinetics of, 22:25443 (ANL-7375, pp 46-94)
reactions with fluorine under pressure to produce uranium hexafluoride, 22:35774 (NIJS-R-525)
reactions with oxygen-deficient zirconia, determination of oxygen--zirconium ratio by, 22:8021
reactions with uranium dioxide at 30 to 40 kbars and 500 to 1400°C, 22:19617
reactions with uranium tetrafluoride to prepare uranyl fluorides, 22:27631
recovery from copper ores, method for, 22:51113
recovery from mining ore and waste materials by underground leaching, 22:18879
reduction and sintering of superstoichiometric, production of stoichiometric dioxide products by, 22:21762(T) (ORNL-tr-1866)
reduction in molten salt--liquid metal system, 22:151
reduction to dioxide using cracked ammonia, 22:26072 (NP-17350)
reserves in underground mines, DOLLAR computer program for calculation of, 22:16723 (RME-142)
reserves of, estimates of global, 22:51110
separation from dilute ammonium uranyl tricarbonate solutions, 22:167(P)
separation from low-grade Indian uranium ore by flotation method, 22:40149 (AEET/Met.-9)
separation from spent fuels by fluoride volatility process, 22:40158(R) (K-L-1780(Pt.25))
solubility in sulfuric acid, variation in oxide composition during, 22:2036
stoichiometry of, effects of temperature and oxygen pressure on, 22:2021 (CEA-R-3218)
thermal capacities of hyperstoichiometric, 22:10204(R) (COO-1149-102)
use as temporary standard sample, 22:2250
use of uranium-235-enriched, in combination with glass fibers in radiation sources, 22:42979(P)
volatilization by bromine pentafluoride and chlorine monofluoride, comparison of, 22:4230(R) (EURAEC-1920)
Al_2O_3--U_3O_8, drying of powdered, equation for gaseous closed-loop, 22:2300
Al--B_4C--U_3O_8, fabrication for HFIR fuel element inner annulus, 22:632 (ORNL-4108)
Al--U_3O_8, fabrication into fuel elements having aluminum

cladding, 22:26025(P)
  Al--U_3O_8, fuel elements of aluminum-clad, fabrication procedures for HFIR, 22:35603 (ORNL-4242)
  Al--U_3O_8, radioinduced swelling of dispersion fuels of, in-pile, 22:23843 (IN-1131, pp 37-55)
  Al-base--U_3O_8, fuel element fabrication of, description of techniques for, 22:37541 (ORNL-TM-2197)
  Co_2O_3--U_3O_8, preparation and properties of, 22:31454
  Cr_2O_3--U_3O_8, preparation and properties of, 22:31454
  CuO--U_3O_8, preparation and properties of, 22:31454
  Fe_2O_3--Nb_2O_5--TiO_2--U_3O_8--Y_2O_3, reactions with chlorine gas, avoidance of $NbOCl_3$ formation in, 22:50984
  Fe_2O_3--U_3O_8, preparation and properties of, 22:31454
  MnO_2--U_3O_8, preparation and properties of, 22:31454
  Na_2SO_4--U_3O_8, phase studies, 22:27687
  NiO--U_3O_8, preparation and properties of, 22:31454
  ThO_2--U_3O_8, preparation of powdered, by dissociation of thorium sulfate and ammonium diuranate, 22:49808
  U_3O_8--ZnO, preparation and properties of, 22:31454
URANIUM OXIDES U_4O_9
  crystal structure cubic--rhombohedric transition at 65°C, 22:698
  crystal structure of, disorder-order transformation at 1125°C, 22:698
  crystal structure of, effects of temperature on, 22:47150
  entropy of, magnetic contribution to, 22:50243
  magnetic ordering of, neutron diffraction studies of, 22:26081 (AERE-R-5707)
  oxidation below 300°C, mechanism of, 22:30569
  oxidation by heating in air, 22:7029
  phase studies on oxidized, 22:7029
  phase transitions in, 22:52286
  reduction by carbon monoxide, kinetics of, 22:45057
  thermal capacity at 1.6 to 24°K, (E), 22:50243
Uranium(VI) Oxybromides
    see Uranyl Bromides
URANIUM OXYCARBIDES
  thermal conductivity, 22:4866 (BNWL-SA-1494)
  thermal diffusivity at 100 to 1500°C, 22:13060 (BNWL-473, pp 4.1-9)
Uranium(VI) Oxychlorides
    see Uranyl Chlorides
Uranium(VI) Oxyfluorides
    see Uranyl Fluorides
URANIUM OXYSULFIDES
  magnetic phase stability calculations, 22:5433
URANIUM OXYTELLURIDES
  magnetic phase stability calculations, 22:5433
URANIUM tert-PENTYLOXIDES
  reactions with acetyl chloride, products from, 22:2054
URANIUM PEROXIDES
  solubility in sulfuric acid, effects of acid concentration on, 22:16486(T) (LA-tr-68-4)
  solubility in water, effects of temperature on, 22:16486(T) (LA-tr-68-4)
  structure of, Raman spectral studies on, 22:40067
URANIUM PHOSPHATES
  formation and stability constants for, 22:12283
URANIUM PHOSPHIDES
  analysis for uranium dioxide, gravimetric, 22:33267
  compatibility with heat resisting metals at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
  crystal structure of, 22:37720
  enthalpy of formation of UP, 22:31465
  enthalpy of, measurement of, by drop calorimetry, 22:14495
  fabrication, properties, and structure of, 22:64
  interaction between jacketing alloys and, 22:12006(R) (ANL-7399)
  magnetic phase stability calculations, 22:5433
  magnetic properties, 22:43646 (ANL-7299, pp 220-6)
  magnetic properties of, model for, 22:15621
  phosphorus-31 NMR in paramagnetic, Knight shift as function of temperature in, (E), 22:3182
  phosphorus-31 NMR in paramagnetic, Knight shift in, (E), 22:3181
  preparation, crystal structure, and melting points of, 22:8061
  radiation effects on chemical properties of fuels of, reactor, 22:64
  thermal capacity and conductivity of UP, 22:43631 (ANL-7299, pp 120-37)
  vaporization of, thermodynamics of, 22:59 (UJV-1783)
  vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  ThP_2--UP_2, magnetic properties of solid solutions of, 22:44243
  ThP--UP, magnetic properties of solid solutions of, 22:44243
  U--UP, phase diagram of, 22:40090
  U--UP, thermodynamic properties of, mass-spectrometric study of, 22:36543 (ANL-7450, pp 39-74)
  UAs--UP, magnetic properties of solid solutions of, at 85 to 370°K, 22:19629
  UAs--UP, solid-solubility relations of, 22:11055
  UAs--UP, solubility of solid systems of, 22:43631 (ANL-7299, pp 120-37)
  UC--UP, phase and solubility studies, 22:31469
  UN--UP, phase and solubility studies, 22:31469
  UN--UP, phase studies, 22:43631 (ANL-7299, pp 120-37)
  UO--UP, phase and solubility studies, 22:31469
  UP--US, thermal capacity of solid-solution, at 11 to 320°K, 22:31470
  UP--USi, phase and solubility studies, 22:31469
URANIUM PHOSPHIDES UP
  electric conductivity of, 22:26085
  enthalpy of formation of, 22:25321 (ANL-7375, pp 95-13
  magnetic properties of, (T), 22:44262
  thermal conductivity of, 22:26085
  vaporization at high temperature, 22:25321 (ANL-7375, 95-134)
URANIUM PHOSPHIDES UP_2
  preparation of monocrystals of, method for, 22:27718
URANIUM PHOSPHIDES U_3P_4
  preparation of monocrystals of, method for, 22:27718
Uranium Potassium Fluorides
    see Potassium Uranium Fluorides
Uranium Potassium Oxalates
    see Potassium Uranium Oxalates
URANIUM PYROPHOSPHATES
  solubility in perchloric acid or sodium perchlorate at 25°C, 22:27691
URANIUM RESERVES
    (This heading may be modified by location in the form Uranium Reserves (U. S.)
  calculation in underground mines, DOLLAR computer progr for, 22:16723 (RME-142)
  calculation of, GRADE computer program for, 22:14593 (RME-145)
  development of Japanese, 22:51115
  development of U. S, 22:6502
  estimates for electric power generation, 22:51110
  estimates for reactor requirements to 1990, 22:23173 (67-CNA-410)
  estimates for world's capitalistic countries, 22:48965
  estimates of Australian, 22:10395
  estimates of Australian, 22:10396
  estimates of global, 22:51111
  estimates of Swiss, 22:30733
  estimates of world's, 22:47251
  estimates of world's, 22:48963
  estimates of world's, to 1980, 22:51108
  estimates of, 1967, 22:23174 (NP-17371)
  estimates of, in Niger, Africa, 22:25549
  estimates of, in non-communist countries, 22:27937
  estimates to 2000, 22:27927
  estimation of Spanish, 22:4274
  estimation of western USA, computer program for statistical, 22:4289 (RME-146)
  estimation of world's, mathematical model for, 22:16725
  evaluation of, statistical method for, 22:30735
  prediction to 1980, 22:2251
URANIUM RESERVES (U. S.)
  estimates to 1980, 22:23175
  estimation of, use of computers for, 22:16724 (RME-144)
Uranium Rubidium Fluorides
    see Rubidium Uranium Fluorides
URANIUM SELENIDES
  crystal structure of, 22:37720
  magnetic properties of, (T), 22:44262
  magnetic properties of, model for, 22:15621
  magnetic susceptibility at -185 to 445°C, 22:47125
  phase studies of, 22:47125
  preparation, crystal structure, and melting points of, 22:8061
  UAs--USe, magnetic properties of, 22:16490
URANIUM SILICATES
    see also Jachimovites
    see also Uranium Ores
URANIUM SILICIDES
  composition of USi_2, 22:12312
  corrosion behavior of defected Zircaloy-clad U_3Si in pressurized and boiling water coolants, (E), 22:47038 (AECL-3106)
  crystal structure of α-phase, effects of boron additions on, 22:28833
  fuel elements of, description of Canadian, 22:3808 (AECL-2928)
  oxidation at 400 to 700°C, kinetics of, 22:8699
  production of U_3Si, by vacuum induction heating, 22:23761 (IN-1131, pp 2-29)
  production techniques for reactor fuels of U_3Si, 22:25157
  properties of, review of, 22:14463
  radiation testing of Zircaloy-clad cored fuel elements U_3Si, rate of swelling during, 22:18603
  reactivity measurements for heavy water-moderated reacto fueled with, analysis of infinite multiplication constant for, 22:37477
  vaporization of, thermodynamics of, 22:59 (UJV-1783)
  vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  UN--USi, phase and solubility studies, 22:31469
  UP--USi, phase and solubility studies, 22:31469
  US--USi, phase and solubility studies, 22:31469
URANIUM SULFATES
  complexes, formation by polarographic reduction of urany ions in sulfuric acid, 22:18782
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
URANIUM SULFATES $U_2(SO_4)_3$
  preparation and properties of hydrates of, 22:10231

URANIUM SULFIDES
- see also Uranium Oxysulfides
- analysis for sulfur, 22:37639(T) (ANL-Trans-610, pp 1-56)
- crystal structure of, 22:37720
- electric conductivity and thermoelectric power of, near Curie temperature, 22:39175
- electric conductivity of, 22:26085
- enthalpy of formation of, 22:25321 (ANL-7375, pp 95-134)
- enthalpy of formation of US, 22:31465
- enthalpy of, efficiency of high-temperature adiabatic drop calorimeter for measuring, 22:4881
- fabrication by vibratory compaction, 22:8809
- fabrication, properties, and structure of, 22:64
- magnetic properties of, (T), 22:44262
- magnetic properties of, model for, 22:15621
- magnetic susceptibility at -185 to 445°C, 22:47125
- oxidation at 100 to 700°C, 22:11027
- oxidation at 225 to 500°C, thermodynamics of, 22:4149
- phase studies of, 22:47125
- precipitation in monocrystals of, mechanisms of, 22:28953
- preparation from uranium tetrachloride, 22:4103
- preparation, crystal structure, and melting points of, 22:8061
- radiation effects at burnups of 4.5 to 7.4 at. percent, in-pile, 22:43613 (ANL-7299, pp 144-9)
- radiation effects measurements on, 22:24925(R) (ANL-7427)
- radiation effects on chemical properties of fuels of, reactor, 22:64
- slip of monocrystals of, 22:28952
- thermal capacity and conductivity of US, 22:43631 (ANL-7299, pp 120-37)
- thermal conductivity of, 22:26085
- thermodynamic properties at 1.5 to 350°K, relation to magnetic ordering, (E), 22:17811
- thermodynamic properties of US$_2$ and US$_3$ at 5 to 350°K, 22:47137
- vaporization of, thermodynamics of, 22:59 (UJV-1783)
- vaporization of, thermodynamics of, 22:25335(T) (ANL-Trans-584)
- CeS--US, crystal structure, 22:31523
- GdS--US, crystal structure, 22:31523
- PuS--US, analysis for sulfur, amperometric, 22:8015
- PuS--US, crystal structure, 22:31523
- ThS--US, magnetic properties of, 22:46276
- UAs--US, solid-solubility relations of, 22:11055
- UO$_2$--UOS--US, oxygen potentials in, measured by solid-state galvanic cells at 1050 to 1350°K, 22:4161
- UP--US, thermal capacity of solid-solution, at 11 to 320°K, 22:31470
- US--USi, phase and solubility studies, 22:31469
- US--ZrS, oxidation at 100 to 700°C, 22:11027

URANIUM TANTALATES
- preparation and crystal structure of, 22:8048

URANIUM TELLURIDES
- crystal structure of, 22:37720
- magnetic properties of UTe$_2$ and UTe$_3$ single crystals, anisotropy, 22:48161
- magnetic properties of, (T), 22:44262
- magnetic properties of, model for, 22:15621
- phase studies of, 22:33299
- preparation, crystal structure, and melting points of, 22:8061

URANIUM, TETRAKIS(BIPYRIDYL)-
- reactions with alkali metals and tetrahydrofuran, 22:14494

URANIUM TUNGSTATES
- electric conductivity of single-crystal, 22:4872
- UMo$_2$O$_8$--UW$_2$O$_8$, crystal lattice parameters and solid solution stoichiometry at 850 to 1000°C, 22:52295

URANIUM TUNGSTEN BRONZE
- analysis for uranium, by thermal neutron activation methods, 22:16446
- electric properties of, 22:4872

URANIUM VANADATES
- phase studies of UVO$_5$ and UV$_3$O$_{10}$, effects of temperature on, 22:34122
- preparation and crystal structure of, 22:8048

URANOPHANES
- age of, thorium-230 accumulation method for estimation of, 22:30695

URANUS B6
- corrosion by nitric acid containing hydrofluoric acid and hydrogen peroxide, 22:25452 (CEA-N-616, pp 154-214)

URANUS 65
- corrosion by nitric acid containing hydrofluoric acid and hydrogen peroxide, 22:25452 (CEA-N-616, pp 154-214)

URANYL ACETATES
- see also Sodium Uranyl Acetates
- complexes of, formation of, in aqueous and nonaqueous solutions, 22:30519
- complexes of, stability of, 22:10235
- complexes with organic addends, intramolecular vibrations in luminescence spectra of, 22:4075
- complexes with triphenylarsine oxides, crystal structure of, 22:48860
- complexes with triphenylphosphine oxide, crystal structure of, 22:27716
- complexes, binding energy of, estimation of, from infrared absorption data, 22:4106
- effects on creatinine and inulin clearance in kidney of rabbits, 22:14911(R) (COO-1691-1)
- effects on permeability of tubular epithelium in kidney of rabbits, 22:14911(R) (COO-1691-1)
- effects on photoinitiated homopolymerization and copolymerization of hydroxypropyl acrylate and tetraethylene glycol dimethacrylate, 22:33333
- effects on stability of DNA in relation to alcohol extraction, 22:49255
- effects on transport of paraminohippurate in kidneys of rabbits, 22:14911(R) (COO-1691-1)
- electronic structure of, 22:25336
- preparation of anhydrous, 22:23000 (CONF-670502-, pp 366-73)
- reduction by cadmium, iron, magnesium, or zinc to uranium(IV) acetate, 22:45076
- spectra of, analysis of electronic vibrational, 22:25336
- stability constants for, paper electrophoretic studies on, 22:8051
- use as stain for examination of malarial parasites in mosquitoes, 22:49255

Uranyl Ammonium Carbonates
- see Ammonium Uranyl Carbonates

Uranyl Ammonium Fluorides
- see Ammonium Uranyl Fluorides

Uranyl Ammonium Nitrates
- see Ammonium Uranyl Nitrates

Uranyl Ammonium Oxalates
- see Ammonium Uranyl Oxalates

Uranyl Ammonium Sulfates
- see Ammonium Uranyl Sulfates

URANYL ARSENITES
- preparation by reactions between sodium arsenites and uranyl nitrates, 22:30535

URANYL BORATES
- preparation from uranium(IV-VI) oxide and boric oxide at 900 to 1100°C, 22:30559

URANYL BROMIDES
- see also Cesium Uranyl Bromides
- see also Potassium Uranyl Bromides
- complexes with tetradecylammonium bromide in benzene solution and other ligands, spectral studies on, 22:27681
- complexes with triphenylarsine or triphenylphosphine oxide, ir spectral studies on, 22:16559

URANYL BUTYL PHOSPHATE
- effects on photoinitiated homopolymerization and copolymerization of hydroxypropyl acrylate and tetraethylene glycol dimethacrylate, 22:33333

URANYL CARBONATES
- see also Ammonium Uranyl Carbonates
- preparation from anhydrous acetates, 22:23000 (CONF-670502-, pp 366-73)

Uranyl Cesium Chlorides
- see Cesium Uranyl Chlorides

Uranyl Cesium Nitrates
- see Cesium Uranyl Nitrates

URANYL CHLORIDES
- see also Cesium Uranyl Chlorides
- see also Potassium Uranyl Chlorides
- complexes with triisooctylamine, dissociation constants for, 22:16654
- complexes with triphenylarsine or triphenylphosphine oxide, ir spectral studies on, 22:16559
- compounds with alkali metal and alkyl ammonium cations, ir spectral studies on bonds and interactions in, 22:12299
- crystal structure of, 22:27645
- crystal structure of hydrates of, 22:27645
- decomposition in molten lithium chloride--potassium chloride eutectic, chronopotentiometric study of, 22:25343
- fluorescence of, effects of impurities on, 22:42667
- hydrolysis of, spectral studies on, 22:45031
- oxidation of, thermoanalytical and x-ray diffraction studies of, 22:40088
- properties of hydrated, in ethyl acetate solutions, acidic, 22:30565
- reactions with alcohols, amines, esters, and phosphine oxides, properties of compounds from, 22:40063
- reactions with pyridine, production of complex compounds in, 22:10215
- reduction of, kinetics of electrochemical, 22:25343
- separation by solvent extraction using N-phenyloctylamine, mechanism of, 22:33533
- separation from aqueous solutions by solvent extraction using butyl phosphates, 22:42837
- separation from aqueous solutions by solvent extraction using triisooctylamine, 22:16654
- separation of uranium from, by solvent extraction using trioctyl phosphate, 22:6399
- solvation energy of aqueous, in butyl phosphate systems, use of plutonium-239 electrode for measuring, 22:23010
- spectra of hydrated, effects of deuterium on, 22:16517

URANYL COMPOUNDS
- (For U(VI) compounds only)
- analysis for thorium, 22:10196
- analysis for trace amounts of chloride, electrometric, 22:1974
- analysis of fuel solutions of, for chlorides, spectrophotometric, 22:33232

  binding energy of, estimation of, from infrared absorption data, 22:4106
  coordination, containing acetate, arsenic oxide, and phenyl groups, crystal structure of, 22:18746
  coordination, containing acetate, phenyl, and phosphine oxide groups, crystal structure of, 22:18746
  fluorescence decay of, effects of temperature on lifetimes and quantum yields in, 22:37738
  fluorescence spectra of, 22:30544
  irradiation to produce neptunium-239, 22:18841
  luminescence of, review on, 22:30493
  molecular structure of, vibrational spectral investigations of, 22:4132
  oscillator model for structure of, 22:30544
  spectra of, effects of deuterium on electron vibrating, 22:40058
  tetramethylammonium uranyl tris(diethyldithiocarbamate), crystal structure of, 22:33338
  with ammonium, cesium, guanidine, potassium, pyridine, and rubidium and bromine and/or chlorine, infrared spectra of, 22:2042
URANYL FLUORIDES
  see also Ammonium Uranyl Fluorides
  see also Potassium Uranyl Fluorides
  complexes with tributyl phosphate or tributylphosphine oxide in benzene solution, spectral studies on structure of, 22:16544
  compounds with hydrogen peroxide, mechanism of formation and stability constants of, 22:35806
  corrosive effects on metals, thermodynamics of, 22:15139 (AWRE-R-3/63)
  criticality of cylindrical aqueous, effects of Type 304 stainless steel and water reflectors on, (E), 22:35599 (K-D-2006)
  fluorination with fluorine and interhalogens, 22:8186
  neutron effective multiplication factors of uniform aqueous solutions of, calculations for uranium-233 and uranium-235 enriched, (T), 22:1564 (ORNL-CDC-2)
  preparation of, 22:27631
  reactions with bromine pentafluoride, 22:42806 (ANL-7412)
  reactions with chlorine trifluoride, 22:2074
  reactions with rubidium fluoride in aqueous solutions, chemical, ir, and x-ray spectrographic study of compounds from, 22:45086
  UF_6--UO_2F_2, volatilization by chlorine mono- and trifluorides in presence of alumina, 22:4230(R) (EURAEC-1920)
URANYL FORMATES
  thermal decomposition of, mechanism of, 22:33364
Uranyl Hydroxides
  see Uranic Acid
URANYL IODIDES
  hydrolysis of, effects of urea in alcohol and aqueous solutions on, 22:33324
URANYL IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  chromatographic behavior on cerium phosphate paper, 22:153
  complexes in chloride, nitrate, and perchlorate solutions, formation of, 22:25338
  complexes with 2,3,4-trihydroxybenzenesulfonic acid, spectrophotometric studies of, 22:30479
  complexes with 2,4-pentanedione, reactions with 2,4-pentanedione, and tributyl, tricyclohexyl, and triphenyl phosphates, products in, 22:27894
  complexes with 2,4-pentanedione, solubility of, in organic solvents, 22:12298
  complexes with 3,3',4',5,6,7-hexahydroxyflavone, absorption spectra of, 22:33239
  complexes with 3,3',4',5',7-pentahydroxyflavone, spectrophotometric study of, 22:42680
  complexes with 3,4',5,7-tetrahydroxyflavone, spectrophotometric study of, 22:42680
  complexes with 3-nitro- and 4-nitrophthalic acids, preparation and stability of, 22:27655
  complexes with 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione and 1,10-phenanthroline or bipyridine, preparation and properties of, 22:18795
  complexes with 8-quinolinol, solubility of, in organic solvents, 22:12298
  complexes with acrylic acid (or acrylonitrile)--divinylbenzene--vinylpyridine copolymer, 22:45059
  complexes with Arsenazo III, potentiometric and spectrophotometric studies of, 22:37739
  complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
  complexes with diethyldithiocarbamate, separation on silica gel by thin-layer chromatography, 22:35900
  complexes with dihydroxybenzoic acids, preparation of, 22:37723
  complexes with EDTA, stability constants for, 22:40081
  complexes with fumaric acid and maleic acid, polarographic study of, 22:45075
  complexes with hydrogen peroxide, use in colorimetric determination of hydrogen peroxide in carbonate mediu 22:21030(T) (RFP-Trans-29)
  complexes with iminodiacetic acid, polarographic behavi of, 22:10243
  complexes with tropolone, preparation of, 22:48859
  complexes with TTA, fractional sublimation of, 22:3591
  complexes with various organic acids, stability constan for, 22:47129
  concentration by ion-exchange membrane diffusion proces 22:33348
  decomposition by acid solutions, spectral studies on mechanism of, 22:48866
  determination by amperometric titration, theoretical corrections for, 22:4037
  determination by displacement chromatography on acidic cation exchange resin, 22:12416
  determination by photometry using 2,3,4-trihydroxybenzenesulfonic acid, 22:30479
  determination in acetate, chloride, metal, and sulfate ions using benzamidoxime, spectrophotometric, 22:2771
  distribution in 2,4-pentanedione--phosphoric acid ester, effects of benzene, chloroform, and cyclohexane and inorganic anions on, 22:27894
  effects on contraction of cardiac muscle of amphibians, mammals, and reptiles, 22:10713
  effects on contraction of uterus of guinea pigs, 22:25724
  effects on determination of free acid in nitric and hydrochloric acid systems, 22:14448
  effects on electrolyte coagulation and stability of aquosol of antimony trisulfide, 22:4095
  effects on fluorine determination by titration with thorium nitrate, 22:48815 (FOA-4-4363)
  effects on inverse polarographic determination of technetium, 22:40039
  effects on potentiometric determination of trace fluorid in various solutions, 22:33244
  effects on response of nerves in frogs, 22:40577
  effects on sorption of biologically-important ions by plants, 22:8494
  effects on spectrophotometric determination of iron usin 2,4-dihydroxypropiophenone oxime, 22:36
  effects on spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
  effects on stability of hydrosol of arsenic trisulfide, 22:12280
  effects on synergism in solvent extraction of cesium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6394
  effects on uptake of various ions by barley roots, 22:422 (RLO-1547-4)
  electrophoresis in semicarbazide hydrochloride solution, effects of electroosmotic flow on paper, 22:2069
  electrophoretic behavior of, dissolved in molten alkali nitrates, 22:14493
  exchange with ammonium ions on polystyrene, thermodynamics of, 22:21160
  exchange with hydrogen ions on polystyrene, thermodynamics of, 22:21160
  excitation by intramolecular energy transfer, 22:16548
  hydrolysis at 100 to 200°C, mechanisms of, 22:33311
  hydrolysis in acidic, aqueous solutions, pressure-jump study of kinetics of, 22:2056
  hydrolysis in magnesium nitrate solutions, 22:27677
  ion exchange with polymeric resins of divinylbenzene--styrene containing phosphonic groups, 22:4086
  luminescence spectra in hydroxo complexes in solution, 22:2048
  photochemical reduction by acetaldehyde and propionaldehyde in aqueous and nonaqueous solutions, mechanism of uv, 22:35871
  polarographic behavior in acetate buffer, 22:10235
  polarographic reduction in sulfuric acid solutions, formation of uranium sulfate complexes by, 22:18782
  protective effects of lysis of yeast cells by cationic dyes and surfactants, 22:10730
  reactions with barbituric and thiobarbituric acids in aqueous, ethanol, and methanol solutions, spectral studies on, 22:30572
  reactions with bases in ammonia solutions, 22:45034
  reactions with benzamidoxime, spectral studies on, 22:27715
  reactions with sulfosalicylic acid, spectrophotometric studies of, 22:21033
  reduction by tridecylamine in benzene or carbon tetrachloride, spectral studies on, 22:35794
  reduction in perchloric acid, disproportionation and electrochemical mechanisms in, 22:40091
  reduction of solutions of, with and without plutonium ions, electrolytic, 22:10261(P)
  separation by ion exchange, role of complexation reactions in, 22:33517
  separation by solvent extraction using 2,4-pentanedione--phosphoric acid ester, 22:27894
  separation from alkali metal and alkaline earth metal ions by sorption on zirconium phosphate, 22:47227(P)
  separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
  separation from nitric acid by solvent extraction using phosphoorganic compounds, 22:6413
  separation from thallium by solvent extraction using glycine and phenol in petroleum ether, 22:160

sorption by phosphoorganic compounds, correlation of density with, 22:33354
sorption by zirconium phosphates at high temperature, 22:35809
spectra in dihydroxymaleic acid in acetone, ethanol, and methanol solutions, 22:33222
spectra in perchlorate media, ultraviolet, 22:16502
spectra of ν_3 vibration in nitrate and thiocyanate media, 22:47127
use for estimating metal—oxygen force constants of americyl, neptunyl, and plutonyl ions, 22:14497
URANYL NITRATES
see also Ammonium Uranyl Nitrates
see also Cesium Uranyl Nitrates
see also Rubidium Uranyl Nitrates
analysis for antimony and ruthenium, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
analysis for chlorine by linear chronoamperometry, 22:25236 (CEA-N-616, pp 20-71)
analysis for nonuranic alpha emitters, 22:21022 (PG-Report-823)
analysis for trace impurities, comparison of spectrographic methods for, 22:1999
analysis for uranium, review on methods for, 22:27531 (GAT-T-1328)
analysis of concentrated solutions of, for halides, chronoamperometric, 22:27530 (CEA-N-816, pp 9-65)
analysis of solutions of, for uranium in presence of metals, β-radiation reflection method for, 22:16464
complexes with 2-benzylpyridine, bipyridine, 1,10-phenanthroline, 2-picoline, and luminescence spectra of, 22:33304
complexes with diphosphine oxides, gas chromatographic behavior of, 22:6289 (IS-T-184)
complexes with heterocyclic amines, infrared spectra of, 22:14502
complexes with organic addends, intramolecular vibrations in luminescence spectra of, 22:4075
complexes with tetrabutyl pyrophosphate, spectral studies on, 22:27853 (INP-591/C)
complexes with tributyl phosphate, dielectric constants of, 22:4133
complexes with triphenylarsine or triphenylphosphine oxide, ir spectral studies on, 22:16559
complexes with triphenylarsine oxide, crystal structure of, 22:27716
complexes with triphenylphosphine oxide, crystal structure of, 22:27716
complexes with tropolone, NMR spectral studies on, 22:1956(R) (MLM-1405)
complexes, binding energy of, estimation of, from infrared absorption data, 22:4106
concentration by ion-exchange membrane diffusion process, 22:33348
corrosive effects of concentrated solutions of boiling, on stainless steel, 22:26026 (CEA-N-616, pp 106-44)
critical configurations of multiple intersecting pipes containing enriched, parameters for, (T), 22:50807 (RFP-1197)
critical enrichment of hydrogenous systems of, determination of minimum, 22:12087 (BNWL-472, pp 5.1-16)
critical uranium-235 enrichment for solutions of, determination of minimum, 22:14251(R) (BNWL-534)
criticality of nitric acid solutions of, minimum uranium-235 enrichment for, 22:21149
crystal structure of hydrated, neutron diffraction studies of, 22:43596 (ANL-7299, pp 280-9)
crystallization characteristics of nitric acid solutions of, effects of impurities on, 22:4085
crystallization in acidic solutions, 22:48861
crystallization of aqueous solutions of, behavior of americium and plutonium in directed, 22:2038
dehydration of hexa-, tri-, and dihydrates of, enthalpy of thermal, 22:45084
denitration by electrodialysis, 22:25450 (CEA-N-616, pp 86-96)
denitritation by electrodialysis, efficiency of, 22:27850 (CEA-N-816, pp 80-9)
distillation and ignition of TBP solutions of, preparation of uranium dioxide by, 22:21754
distribution between TBP and nitric acid, 22:27857 (KFK-680)
drying solutions of, modifications of drum dryers for, 22:14656
effects on corrosion of aluminum/stainless steel couples by boiling nitric acid, 22:26026 (CEA-N-616, pp 106-44)
effects on enzyme activity in liver and kidneys of mice and rats, 22:40554
effects on γ-induced polymerization of substituted oxetane, 22:35848(P)
effects on L-glutaminase activity in kidneys of mice and rats, 22:38219
effects on photoinitiated homopolymerization and copolymerization of hydroxypropyl acrylate and tetraethylene glycol dimethacrylate, 22:33333
electrolysis in dimethylsulfoxide solutions, preparation of UO_2^+ by, 22:45067
electronic structure of, 22:25336
evaporation of aqueous solutions of, 22:22990 (CEA-R-3265)
excursion in Oak Ridge Critical Experiments Facility on January 30, 1968 of aqueous solution of, analysis of, 22:35607 (ORNL-TM-2207)
fluorescence decay in frozen solutions of, 22:37738
fluorescence in aqueous solutions at 293°K, 22:16548
freezing fission product-containing aqueous solutions of, purification of uranium by eutectic, 22:45163
handling and storage of uranium-235-enriched, effects of crystallization on criticality control in, 22:48861
ion exchange on divinylbenzene—styrene polymeric resins containing phosphonic groups, effect of porosity on, 22:4092
luminescence yield and quenching in, experimental confirmation of exciton migration theory of, 22:13558
molecular structure of, vibrational spectral investigations of, 22:4132
physical properties of aqueous solutions of, 22:22990 (CEA-R-3265)
preparation of monohydrate of, by thermal decomposition of hexahydrate, 22:40069
processing and transport of enriched, effects of solution crystallization on safety in, 22:4085
properties of hydrated, in ethyl acetate solutions, acidic, 22:30565
reactions with 4-[(2-hydroxy-1-naphthyl)azo]-1-naphthalenesulfonic acid—water, spectrophotometric studies on, 22:16497
reactions with aluminum, 22:4231(R) (IN-1087)
reactions with ammonia, preparation of ammonium uranate by, 22:16498
reactions with ammonium bisulfite, preparation of uranyl sulfite by, 22:12303
reactions with dimedon and 1,3-indandione, structure of compounds formed by, 22:10228
reactions with formic acid, catalytic, 22:23023
reactions with sodium arsenites, formation of uranyl arsenites by, 22:30535
reduction of, procedure and equipment for continuous, 22:12275 (ORNL-4094, pp 28-39)
reduction to high-density pellets of uranium dioxide, 22:4131
reduction to metallic uranium, processes for, 22:4134
reduction to produce uranium dioxide, hydrothermal, 22:33316
reduction to uranium nitrate, electrolytic, 22:12274 (NP-17197)
reduction to uranium nitrate, hydrogen flow rate in, 22:17159 (ORNL-4075, pp 38-42)
separation from aqueous solutions by solvent extraction using butyl phosphates, 22:42837
separation from aqueous solutions by solvent extraction using TBP, compound formation in, 22:27885
separation from aqueous solutions by solvent extraction using butyl phosphinates, butyl phosphonates, and trialkylphosphine oxides, 22:21158 (UJV-1148)
separation from nitric acid solutions by solvent extraction using carbon tetrachloride—TBP, spectral studies on competition in, 22:30674
separation of ammonium uranates from, by precipitation, equipment and method for, 22:12428(P)
separation of fission products of neutron-activated, by sorption on magnesium dioxide, 22:157
separation of niobium-95 and zirconium-95 from, by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
separation of uranium from, by solvent extraction, spectral studies on role of salting-out agent during, 22:35896
separation of, enthalpy of extraction using esters of phosphonic and phosphoric acids or trioctylphosphine oxide, 22:47209
solubility in systems of water with dibutyl, diethyl, and diisopropyl ethers, 22:35795
solubility of di- and hexahydrates of, in acetone—carbon tetrachloride mixture, 22:30573
solvation by ethylenebis[dioctylphosphine oxide], 22:16545
spectra of hydrated, far infrared, 22:47140
spectra of hydrates of, effects of deuterium on infrared, 22:12292
spectra of monohydrate, infrared, 22:40069
spectra of, analysis of electronic vibrational, 22:25336
stability of monohydrate, 22:40069
strontium-89 and strontium-90 formation in, by uranium-238 spontaneous fission, (E), 22:39656
thermal dehydration of, thermodynamics of, 22:1956(R) (MLM-1405)
toxicity in mice, effects of, on α-hydroxybutyrate dehydrogenase activity in kidneys, 22:40527
uranium ion polymerization in aqueous solutions of, cryoscopic studies of, 22:18780
uranium-235 enrichment of, minimum critical, 22:6119
use in separation of uranium and thorium from thorium nitrate and uranium nitrate, 22:14579(P)
$Al(NO_3)_3$—$UO_2(NO_3)_2$, analysis for uranium, β-radiation reflection method for, 22:16464
butyl dibutylphosphinate—H_2O—$UO_2(NO_3)_2$, phase studies on solubility in, as function of temperature, 22:6407
butyl dibutylphosphinate—H_2O—$UO_2(NO_3)_2$, thermodynamic properties of, 22:50976
$Co(NO_3)_2$—$UO_2(NO_3)_2$, analysis for uranium, β-radiation

reflection method for, 22:16464
$Cu(NO_3)_2$--$UO_2(NO_3)_2$, analysis for uranium, β-radiation reflection method for, 22:16464
$Fe(NO_3)_2$--$UO_2(NO_3)_2$, analysis for uranium, β-radiation reflection method for, 22:16464
H_2O--HNO_3--TBP--$UO_2(NO_3)_2$, effects of nitric acid on activity coefficients of diluents in, 22:6405
H_2O--TBP--$UO_2(NO_3)_2$, phase studies on activity coefficients of TBP in, 22:6404
H_2O--$UO_2(NO_3)_2$, phase studies and thermodynamics of, at 25 to 300°C, 22:30503 (AAEC/TM-447)
HNO_3--TBP--$UO_2(NO_3)_2$, phase studies on, by distribution coefficient measurements, 22:6408
$NaNO_3$--tributyl phosphate--$UO_2(NO_3)_2$, flow in stacked-clone contactors, 22:16645 (ORNL-4075, pp 4-21)
$Ni(NO_3)_2$--$UO_2(NO_3)_2$, analysis for uranium, β-radiation reflection method for, 22:16464
$Pb(NO_3)_2$--$UO_2(NO_3)_2$, analysis for uranium, β-radiation reflection method for, 22:16464

URANYL OXALATES
see also Ammonium Uranyl Oxalates
complexes with ammonium, potassium, and sodium sulfites, preparation and properties of solid, 22:10256
complexes with N,N-dimethylformamide, preparation and properties of, 22:47143
thermal decomposition of, effects of air on products from, 22:45047

URANYL PERCHLORATES
complexes of, reduction by tridecylamine in benzene or carbon tetrachloride, spectral studies on, 22:35794
complexes with tropolone, NMR spectral studies on, 22:1956(R) (MLM-1405)
complexes, binding energy of, estimation of, from infrared absorption data, 22:4106
properties of hydrated, in ethyl acetate solutions, acidic, 22:30565
spectra of hydrated, effects of deuterium on, 22:16517
use in photochemical oxidation of 2-propanol in aqueous acid medium, kinetics of, 22:10234

URANYL PERRHENATES
complexes with tributylphosphine oxide, preparation and properties of, 22:16488

URANYL PHOSPHATES
complexes in phosphoric acid solutions, stability of, 22:12320
properties as ion-exchange material, 22:33552
solubility constant of hydrated, effects of temperature on, 22:12320

Uranyl Potassium Bromides
see Potassium Uranyl Bromides

Uranyl Potassium Chlorides
see Potassium Uranyl Chlorides

Uranyl Potassium Fluorides
see Potassium Uranyl Fluorides

Uranyl Potassium Sulfates
see Potassium Uranyl Sulfates

Uranyl Rubidium Nitrates
see Rubidium Uranyl Nitrates

Uranyl Sodium Acetates
see Sodium Uranyl Acetates

URANYL STEARATES
use as synchrocyclotron targets for production and continuous extraction of noble gases for isotope separation, 22:29803

URANYL SULFATES
see also Ammonium Uranyl Sulfates
see also Potassium Uranyl Sulfates
complexes in nonaqueous solutions, spectral studies on composition and structure of, 22:35803
complexes with triisooctylamine, dissociation constants for, 22:16654
effects on photoinitiated homopolymerization and copolymerization of hydroxypropyl acrylate and tetraethylene glycol dimethacrylate, 22:33333
electronic structure of, 22:25336
fluorescence decay of, 22:37738
fluorescence of, effects of deuterium from heavy water on, 22:42667
separation from aqueous solutions by solvent extraction using triisooctylamine, 22:16654
separation of uranium from, by solvent extraction using trioctyl phosphate, 22:6399
spectra of hydrated, effects of deuterium on, 22:16517
spectra of, analysis of electronic vibrational, 22:25336

URANYL SULFITES
preparation of, by potentiometric titration of ammonium bisulfite and uranyl nitrate, 22:12303
properties of ionic and molecular, 22:12303

URANYL THIOCYANATES
complexes with triphenylarsine or triphenylphosphine oxide, ir spectral studies on, 22:16559

URATE OXIDASE
radiation effects on production of, in rat fetus following maternal exposure, whole-body x, 22:12897 (SZS-12/67)

Uravan Ores
see Carnotites

Urbaryons
see Elementary Particles (Triplet)

UREA
bisulfite, solvent properties for γ-irradiated wool, effects of nitrogen or oxygen during irradiation on, 22:47174
complexes of, radioinduced polymerization of acrylonitrile in, at -35 to -78°C, kinetics of, 22:30621
complexes of, radioinduced polymerization of acrylonitrile in, kinetics of γ, 22:30620
complexes with sodium thorium hydroxide sulfite and sodium thorium sulfite, preparation and properties of, 22:10245
diffusion through membranes and in solutions, measurement of, 22:36169
effects on enzymes, effects of photodynamic inactivation on, 22:14907 (COO-875-80)
effects on flux ratios of solutes through semi-permeable membranes, 22:50891(R) (RLO-1754-11)
effects on γ-radiosensitivity of RNAase, 22:4574
effects on hydrolysis of uranyl iodide, 22:33324
effects on radioinduced polymerization of butadiene, 22:33387
effects on reduction of uranyl nitrates to uranium dioxide, 22:4131
effects on Rhizobium mutants, correlation of, with uv radiation, 22:40653
effects on ribosomes from rat liver, 22:7953(R) (NYO-910-61)
effects on voluntary consumption of range grass by sheep, 22:6774(R) (UCD-34-P-104-8)
formation in α and γ-radiolysis of thymine, 22:51040
precipitation of uranium at 85 to 110°C, mechanism of, 22:7037
preparation of carbon-14-labeled, by isotopic exchange with carbon dioxide, 22:23009
radioprotective effects of, on barley seeds, cesium-137 β and γ, 22:23580
radioprotective effects of, on Vicia faba cells, 22:49459
reactions with hydrated electrons, activation energy for, 22:23034 (IA-1128, pp 78-96)
reactions with nitric acid, mechanism of, 22:25452 (CEA-N-616, pp 154-214)
solvent properties for γ-irradiated wool, effects of nitrogen or oxygen during irradiation on, 22:47174
ethylene oxide--urea, radiolysis at low temperature, ESR studies of free radicals from, 22:42720(T) (AEC-tr-6937, pp 184-91)
ethylene oxide--urea, radiolysis at low temperatures, ESR spectral studies on free radicals formed by, 22:8134

UREA, 1-ALLYL-2-THIO-
radiation effects on, ESR study of ions from x, 22:25381
radioprotective effects of, on cytoplasm and nuclei of plant cells, α and γ, 22:49388

Urea, 1-[3-(Chloromercuri)-2-methoxypropyl]-
see Chlormerodrin

UREA, 1,3-DIMETHYL-2-THIO-
radiation effects on, ESR study of ions from x, 22:25381

UREA, HYDROXY-
effects on chromosomes of Vicia faba following exposure to x rays or radiomimetic chemicals, 22:31022
effects on cultured mammalian cells, 22:28289 (ORNL-4100, pp 178-201)
effects on cytaster formation in amphibian eggs, 22:43448
effects on DNA synthesis and x-radiosensitivity of HeLa cells, 22:8436(R) (NYO-910-58)
effects on mammalian cells, 22:14912(R) (NYO-3834-1)
effects on survival of irradiated HeLa cells in relation to DNA synthesis, 22:40603
effects on uv-radiosensitivity of cultured Chinese hamster cells, 22:36361
effects on x-radiosensitivity of carcinomas in man, 22:25920
effects on x-radiosensitivity of Chinese hamster cells, 22:28660
effects on x-radiosensitivity of chromosomes of Vicia faba, 22:47505
effects on x-radiosensitivity of HeLa cells, 22:36185

UREA, 1-METHYL-1-NITROSO-
effects on pea plants, mutagenic, 22:51523

UREA, NITRO-
radiation effects on, study of radicals from, 22:21093(R) (TID-24147)

UREA, SELENO-
radioprotective effects of, on rats in comparison with effects of cysteine, γ, 22:33884

UREA, SULFONYL-
effects on uv-radiosensitivity of skin, 22:40770

UREA, THIO-
complexes with cobalt nitrates, crystal structure of, 22:12174(R) (NYO-3675-4)
complexes with cyclopentadiene, gamma-radioinduced polymerization of, spectral studies on, 22:8115
complexes with rhenium and technetium in hydrochloric and nitric acid solutions, chemistry of, 22:50954
effectiveness for polonium-210 removal from human skin, 22:43333
effects on content of ammonia in brain tissue of rats, 22:19394
effects on electron- and uv-radiosensitivity of bacteria, 22:19366
effects on electron-radiolysis of erythrocytes, 22:33716(R) (UCB-34-P-136-2)

- effects on survival of thyroidectomized newts, 22:19239(R) (ORO-3564-3)
- metabolism of sulfur-35-labeled, in man, effects of thyroid diseases on, 22:14918
- radiation effects on aqueous and solid, oxidation states of phosphorus-32 produced by neutron, 22:111
- radiation effects on, ESR study of ions from x, 22:25381
- radioinduced formation of, from ammonium thiocyanate, 22:2122
- radioprotective effects of, on barley seeds, γ, 22:31053
- radioprotective effects of, on chromosomes in cultured human fibroblasts, γ, 22:21555
- radioprotective effects of, on cytoplasm and nuclei of plant cells, α and γ, 22:49388
- use in spectrometric determination of molybdenum in ores, 22:33235

UREASE
- effects on γ-radiosensitivity in mice, 22:49413
- radiation effects on activity of, in black spruce humus, γ, 22:49674
- radiation effects on activity of, protective effects of 2-amino-4,5-dimethylselenazol hydrochloride against x, 22:25904

α-Ureidopropionic Acid
- see Alanine, N-Carbamoyl-

URETER
- physiology of muscles of, in guinea pigs, effects of barium and strontium ions on, 22:43240
- radiation effects on distal, of man following therapy for uterine carcinoma, surgical repair of, 22:47605
- radiation effects on, following therapy of uterine carcinomas, γ, 22:4681
- radioinduced fistula of, following radium therapy of endometrial carcinomas, α and γ, 22:6887
- radioinduced lesions of, following therapy of cervical carcinomas, 22:31127
- radioinduced obstructions of, in man following therapy of cervical neoplasms, 22:10852
- radioinduced tumors of human, following thorotrast pyelography, α and γ, 22:36305
- radiosensitivity in rabbits, γ and x, 22:19449
- reflux in dogs and rats, use of technetium-99-labeled colloidal sulfur to study, 22:28330
- scanning of, use of iodine-131-labeled hippuran for, 22:36339

Urethan
- see Ethyl Carbamate

URETHAN POLYMERS
- casting foams of, design and testing of Hydrospenser for, 22:10127 (GEPP-3)
- radiation effects on creep of, 22:19682(R) (UCRL-13328)
- radioinduced polymerization of vinyl monomers on, electron and γ, 22:6351
- use as core material for spark chamber plates, 22:23325
- use for protection of SLAC waveguides during transportation and installation, 22:11766
- cyclopentadieneethanol, iron derivatives--polyurethane, preparation of foams of, 22:6218 (SC-DC-67-2060)

URETHANS
- effects on immune reactions of spleen, combined effects of x radiation on, 22:6713(R) (COO-1455-2)
- effects on Schizosaccharomyces pombe, combined effects of caffeine on lethal and mutagenic, 22:28416
- effects on structure of nucleoproteins in lungs and spleen of mice, 22:25768
- effects on x-radiosensitivity of intestines of rats, histopathologic study of, 22:36316
- polymers, pressure generation during foaming of resin-containing, 22:3979 (R-67-ND-8)

URIC ACID
- determination in urine by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)
- production in man with hyperuricemia, 22:12743 (ACRH-1000-32)

Uricase
- see Urate Oxidase

URIDINE
- analysis for tritium distribution in, 22:47105
- effects on growth of cultured corn root tips, 22:23674(R) (NYO-3561-4)
- incorporation in LM-induced tumor cells in mice, 22:28289 (ORNL-4100, pp 178-201)
- incorporation of tritium-labeled, in lens cells of amphibia, 22:28283 (ORNL-4100, pp 75-96)
- incorporation of Tritium-labeled, into RNA of wheat roots, 22:28285 (ORNL-4100, pp 135-40)
- radiation effects on aqueous solutions of, ionizing and uv, 22:45097
- radiation effects on incorporation of tritium-labeled, into DNA of splenic lymphocytes from hamsters, x, 22:23604
- radiation effects on powders of, free radical production in mixed γ and neutron, 22:21126
- radiation effects on survival of cultured hamster fibroblast cells following incorporation of tritium-labeled, β, 22:45382 (EUR-3290f-e, pp 73-7)
- radiation effects on uptake of, by Escherichia coli, effects of mutants of bacteriophages T3 and T7 on uv, 22:14937
- stability of tritium-labeled, in metabolic processes, 22:51461
- toxicity of tritium-labeled, in Escherichia coli, 22:51458
- toxicity of tritium-labeled, to cultured Chinese hamster cells and human leukocytes, 22:51458
- tritium exchange in aqueous solutions, effects of acidity on, 22:27699
- uptake of tritium-labeled, by cytoplasm and nucleus of oocytes of mice, 22:28405 (ORNL-4100, pp 110-16)
- use of carbon-14-labeled, for pulse labeling RNA, 22:28283 (ORNL-4100, pp 75-96)
- use of tritium-labeled, to study killing efficiency of beta particles on cultured mammalian cells, 22:43456

URIDINE, 5-BROMO-2'-DEOXY-
- effects on β-radiosensitivity of mammalian cell cultures, 22:52013
- effects on γ- and uv-irradiated wheat, mutagenic, 22:49317
- effects on hemolysin response in rabbits, 22:28621 (ANL-7278, pp 1-94)
- effects on immune response of transplanted spleen cells in x-irradiated mice, 22:43217
- effects on mutagenic neutron-radiosensitivity of silkworm gonial cells, 22:47501 (NP-17136)
- effects on Neurospora crassa, mutagenic, 22:17018
- effects on radiosensitivity of human malignant brain tumor cells, 22:31186
- effects on uv-radiosensitivity of mitosis, 22:21410(R) (YALE-2653-30)
- effects on x-radiolysis of DNA in human amnion cells, 22:49212
- effects on x-radiosensitivity of human neoplasms following intra-arterial infusion, 22:49395
- incorporation into DNA of sand dollar zygotes, effects of, on uv radiosensitivity, 22:43432
- radiation effects on incorporation of carbon-14- and tritium-labeled, into HeLa cells, uv and x, 22:38200 (UCSF-10-P-2-41)
- radiosensitizing effects of, on bacterial and brain tumor cells, 22:49237
- uptake of tritium-labeled, into DNA in mitochondria and nuclei of Tetrahymena, 22:12744 (BL-207)

URIDINE, 2'-DEOXY-
- radiation effects on metabolism of, in isolated perfused rat intestine, x, 22:49227
- radiation effects on urinary excretion of, by rats, effects of adrenalectomy on, 22:28655

URIDINE, 2'-DEOXY-5-FLUORO-
- effects on DNA synthesis in phage-infected Escherichia coli, 22:28289 (ORNL-4100, pp 178-201)
- effects on DNA synthesis, combined effects of chloramphenicol on, 22:30414 (ORNL-4100, pp 148-51)
- effects on fast neutron-radiosensitivity of chromosomes in Vicia faba following seed exposure, 22:21466
- effects on grasshopper neuroblast, 22:28407(R) (ORO-2575-41)
- effects on Neurospora crassa, mutagenic, 22:17018
- effects on neutron and x-radiosensitivity of bone marrow CF cells, in vivo, 22:49583
- effects on survival of irradiated HeLa cells in relation to DNA synthesis, 22:40603
- effects on x-radioinduced chromosome aberrations in microspores of Tradescantia, 22:19322
- effects on x-radiosensitivity of ascites tumor cells in vivo, 22:38493
- effects on x-radiosensitivity of chromosomes of Vicia faba, 22:47505
- effects on x-radiosensitivity of HeLa cells, 22:36185

URIDINE, 2'-DEOXY-5-IODO-
- effects on β-radiosensitivity of mammalian cell cultures, 22:52013
- effects on x radiosensitivity of lymphoma cells, 22:40779
- effects on x-radiosensitivity of cultures of murine leukemic lymphoblasts, 22:25912
- uptake of iodine-125-labeled, by DNA of corneal epithelial cells of dogfish, 22:12769
- use of iodine-125-labeled, to study DNA metabolism in mammary tumors of mice, 22:23412 (NYO-3924-1)
- use of tritium-labeled, for therapy of neoplasms, 22:17030

URIDINE 5'-DIPHOSPHATE
- radiation effects on polymers of, protective effects of cysteamine hydrochloride against, 22:51800

URIDINE, 5-FLUORO-
- effects on in vivo radiosensitivity of rhabdomyosarcomas, 22:33876

URIDINE MONOPHOSPHATES
- (Uridine 2'-, 3'-, or 5'-monophosphates)
- radiation effects on aqueous solutions of, ionizing and uv, 22:45097
- radiation effects on polymers of, uv, 22:43223
- radiation effects on, chemical analysis of uv, 22:19286

URIDINE PYROPHOSPHATE, D-GLUCOSYL ESTER
- radiation effects on incorporation of carbon-14-labeled, into glycogen of bone marrow in rats, x, 22:33728

URIDINE, 4-THIO-
- radiolysis of air-saturated solutions of, yields from x, 22:33460

URIDINE 5'-TRIPHOSPHATE
- radiosensitivity of, comparison of, with adenosine, cytidine, and guanosine triphosphates, γ, 22:33770

URINARY TRACT

- see also Bladder
- see also Kidneys
- see also Ureter
- radiation effects on, of animals and man, histopathology of, 22:36377
- radiodiagnosis of diseases of, in man, review of advances in, 22:28602
- radiography of, effects of incorporation of radioisotopes in contrast media on resolution during, 22:25957
- radioinduced fistulas in, of man following cobalt-60, radium, and x-ray therapy of neoplasms of cervix, γ and x, 22:12914
- radioinduced infections of human, following intracavitary therapy of bladder tumors, radium α and γ, 22:31152

URINE

- see also Creatinine
- see also Diuretics
- see also Urea
- see also Uric Acid
- alpha activity in, methods for determination of gross, 22:43301 (AERE-R-5474)
- americium-241 content of, new method for determination of, 22:43301 (AERE-R-5474)
- analysis for actinides, method for alpha spectrometric, 22:21029 (SC-M-67-3044)
- analysis for actinium-227 by chemical separation and α-counting, 22:25264
- analysis for arsenic, colorimetric, 22:21029 (SC-M-67-3044)
- analysis for beryllium, fluorometric, 22:18683 (AAEC/TM-87)
- analysis for bromine and iodine by neutron activation methods, effects of isomeric transition on, 22:44989
- analysis for cadmium using dithizone, colorimetric, 22:21029 (SC-M-67-3044)
- analysis for cadmium, indium, and lead by atomic absorption spectrophotometry, 22:16369 (SC-TM-68-4)
- analysis for calcium-45 by sorption on ''Chelex 100'' and counting, 22:16454
- analysis for cesium-137, method for, 22:21029 (SC-M-67-3044)
- analysis for chromium, method for, 22:21029 (SC-M-67-3044)
- analysis for copper by flame photometry, 22:25236 (CEA-N-616, pp 20-71)
- analysis for copper by neutron activation methods, 22:33253
- analysis for enriched uranium, method for, 22:21029 (SC-M-67-3044)
- analysis for fluoride by ion exchange and colorimetry, 22:21029 (SC-M-67-3044)
- analysis for gross beta activity, method for, 22:21029 (SC-M-67-3044)
- analysis for lead, photometric, 22:21029 (SC-M-67-3044)
- analysis for mercury, method for, 22:21029 (SC-M-67-3044)
- analysis for neptunium, plutonium, and enriched uranium by extraction using triisooctylamine and alpha counting, 22:35761
- analysis for plutonium by alpha counting, surface-adsorption and ion-exchange procedures in, 22:16384 (AERE-R-5637)
- analysis for plutonium by ion exchange, automatic method for, 22:3998 (CEA-N-819)
- analysis for plutonium, use of cellulose ester filtering membranes in, 22:47072 (CEA-R-3492)
- analysis for polonium-210 by alpha counting, 22:21029 (SC-M-67-3044)
- analysis for radioisotopes, radiochemical methods for, 22:44970 (AERE-AM-103)
- analysis for sodium-24, gamma spectrometric, 22:21029 (SC-M-67-3044)
- analysis for strontium-90 by reverse-phase partition chromatography, 22:12254
- analysis for thallium, polarographic, 22:21029 (SC-M-67-3044)
- analysis for thorium and uranium, activation, 22:4042
- analysis for thorium, enriched uranium, and total beta activity by reversed-phase partition chromatography, colorimetry, and counting, 22:39989 (RT/PROT-(68)6)
- analysis for trichloroacetic acid, method for, 22:21029 (SC-M-67-3044)
- analysis for tritium using scintillation spectrometer, 22:21029 (SC-M-67-3044)
- analysis for ultraviolet-absorbing constituents, 22:14429 (ORNL-4196, pp 44-54)
- analysis for uranium by alpha counting, radiochemical method for, 22:44970 (AERE-AM-103)
- analysis for uranium, electrodeposition apparatus for, 22:10638 (Y-1599)
- analysis for uranium, method for, 22:21029 (SC-M-67-3044)
- analysis for uranium, method for fluorimetric, 22:44970 (AERE-AM-103)
- analysis of components by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)
- analysis of human, for bromine and iodine by neutron activation, 22:25250
- bioassay sampling of, evaluation of programs for, probabilistic method for, 22:51634
- calcium-47 content of, in rats, effects of hyperthyroidism on, 22:10697
- carbon-14 content of, methods for determination of, 22:43301 (AERE-R-5474)
- cesium-137 content of human, in northern Canada during 1963 to 1965, 22:28491
- cesium-137 content of, in man, 22:38218
- cesium-137 half-life determination from, of human children, 22:28475
- collection and waste management system for human, during space flight, 22:16745
- collection from human infants for strontium balance studies, use of paper diaper for, 22:40732
- content of 17-ketosteroids in human, effects of uranium ingestion on, 22:51380
- content of 5-hydroxyindole acetic acid and serotonin in, during light- and uv-radioinduced erythema, 22:21586
- content of mercury-203-labeled chlormerodrin in human, in relation to hypertension and renal disease, 22:15034
- content of phenols in human, effects of electromagnetic waves and vibration on, 22:25970
- content of taurine in, from γ-irradiated rats, 22:36181
- content of taurine in, of rats, effects of cortisone and methotrexate on, 22:10825 (BNWL-480, pp 55-83)
- determination of sodium/potassium ratio of, of mice in relation to x-radioinduced leukocytopenia, 22:40901
- europium content of human, determination of, by liquid scintillation, 22:47543
- examination of human, for clinical diagnosis in Japan, 22:19355 (JAERI-1150)
- excretion of calcium and strontium-90 in, of rats, effects of calcium content of diet on, 22:30959
- excretion of steroids in, of beagle dogs, effects of ACTH on, 22:25216 (LF-38, pp 118-22)
- excretion of zinc in, of rats, use of carbon-14-labeled chelates of EDTA and DTPA to study, 22:40521
- flow from kidneys, use of isotope nephrogram for study of, 22:36293
- fractionation by gel-permeation chromatography, 22:14429 (ORNL-4196, pp 44-54)
- iodine-131 content of, in man, development of ion-exchange technique to determine, 22:19270
- iodine-131 excretion in, of man, following chronic, low-level exposure, 22:21431
- iron-59 content of human, effects of psoriasis on turnover rate of, 22:30992
- iron-59 content of, in rats following intratracheal injection, 22:21451
- lead-210 excretion in, of rats, 22:38203
- magnesium-28 content of, to determine magnesium turn over rate in man, measurement of, 22:25774
- mercury content of, determination of, by double isotope technique, 22:40526
- neptunium-237 content of, rapid method for determination of, 22:43301 (AERE-R-5474)
- plutonium content of human, for use in computer calculation of whole-body content, 22:6803 (ORNL-4168, pp 231-88)
- plutonium content of human, in relation to body burden, 22:38265 (UCRL-18140, pp 103-22)
- plutonium-239 analysis in, AERE program for, 22:49174 (AERE-M-2005)
- plutonium-239 content of human, following Palomares nuclear accident, 22:43318
- plutonium-239 content of, methods for determining, 22:51468
- potassium content of human, 22:51297 (COO-119-238)
- potassium content of, in man, 22:38218
- potassium-42 content of, in dogs, effects of rate of exchange of potassium in kidneys on, 22:28319
- potassium-42 excretion in, of guinea pigs, 22:12761(T) (UCRL-Trans-10179)
- radiation dosimetry in human, performance of spectrometer for carbon-14 and tritium β, 22:28494
- radiation effects on β-glucuronidase activity in, of rats, whole-body x, 22:33755
- radiation effects on content of 17-hydroxycorticosteroid and ketosteroid in, of man, microwave, 22:21623
- radiation effects on content of adrenal hormones in, of dogs, chronic β, 22:33961
- radiation effects on content of β-aminoisobutyric acid and taurine in, of rats, 22:31264
- radiation effects on content of deoxycytidine in, of man and rats, γ and x, 22:43461
- radiation effects on content of deoxyribosides and nucleases in human, effects of radium and supervoltage therapy of cervical carcinoma on γ and x, 22:28325
- radiation effects on content of deoxyuridine and thymidine in, of rats, effects of adrenalectomy on γ, 22:28655
- radiation effects on content of taurine in, of rats, 22:28374
- radiation effects on content of testosterone in, of man, effects of testicular exposure on x, 22:6877
- radiation effects on creatinine, potassium, and sodium levels in, of man following radon inhalation therapy for hypertension, 22:51959
- radiation effects on DNAase content of rat, diagnostic value of neutron, 22:33919
- radiation effects on end products in, of sheep, whole-body γ, 22:40830 (ORO-657, pp 35-45)
- radiation effects on excretion of 2'-deoxycytidine in, of rats, effects of age, dose, and splenectomy on whole-

body x, 22:12916
  radiation effects on excretion of β-aminoisobutyric acid in, of cancer patients, acute tritium β, 22:45704
  radiation effects on excretion of calcium-45 and phosphorus-32 in, of rats, effects of dose on x, 22:51482
  radiation effects on excretion of chlorides, rubidium-86, and sodium-22 in, of rats, x, 22:51483
  radiation effects on excretion of deoxycytidine in, of man and rats, effects of dose on ionizing, 22:51478
  radiation effects on excretion of sulfur in, of rats, ionizing, 22:51485
  radiation effects on excretion of taurine in, of mice, x, 22:36314
  radiation effects on iodine-131 content of guinea pig, ultrasonic radiation, 22:49594
  radiation effects on taurine content of, in beagle dogs, effects of plutonium-239 inhalation on α, 22:10825 (BNWL-480, pp 55-83)
  radiation effects on taurine content of, in man following extracorporeal lymphocyte therapy, x, 22:10825 (BNWL-480, pp 55-83)
  radiation effects on xylose content of human, following therapy, x, 22:28650
  radioactivity content of, determination of, by sorption on glass fiber filter paper, α, 22:51633
  radioisotope content in, of man, 22:40717
  radioisotope content of human, following intravenous injection, calcium-47, radium-223, and strontium-85, 22:36213
  radioisotope content of, in cattle, effects of diet on, 22:30978
  radioisotope content of, in man, estimation of body burden from, 22:2508 (SC-TM-67-405)
  radioisotope excretion in, of man, methods for calculation of safe limits of, 22:6811
  radioisotopes content of human, following inhalation of plutonium, 22:28351
  radium content of human, maximum permissible limits for, 22:10766
  rubidium content of human, 22:51297 (COO-119-238)
  rubidium-85 excretion in, of guinea pigs, 22:12761(T) (UCRL-Trans-10179)
  selenium excretion in, by rats, tracer studies of, 22:49278
  separation of corticosteroids from, of beagle dogs, 22:25215 (LF-38, pp 113-17)
  separation of iodine from, by ion exchange, 22:19270
  separation of tritium-labeled organic metabolites from, method for, 22:47446 (CONF-680503-3)
  separation of uv-absorbing constituents of, by zonal centrifugation, 22:12748(R) (ORNL-4171)
  separation of water from human, during space flight, radioisotope-fueled reclamation system for, 22:16745
  sodium-24 content of human, use of, for dosimetry of neutrons, 22:23504 (HW-76823)
  strontium-87 excretion in human, effects of sodium alginate on, 22:8444
  strontium-90 content of human, as measure of content of diet, 22:51645
  strontium-90 content of, from teenagers, 22:28449 (NYO-2147-13, pp 122-33)
  thorium content of human, neutron activation for determination of, 22:15000 (NLCO-1007)
  tritium content of, measurement of, by liquid scintillator, 22:14999 (AECL-2699)
  tritium content of, measurement of, for monitoring work areas, 22:21525
  tritium determination in human, equipment for, 22:23267 (SC-M-68-245)
  uranium content of human, in Chicago, New York City, and San Francisco, 22:28501
  uranium content of human, maximum permissible limits for, 22:10766
  uranium content of human, method for determination of, 22:38270
  uranium isotope activity, composition, and content of, method for simultaneous determination of, 22:51654
  uranium removal from, design of equipment for, 22:14653
  use of pooled samples of, for estimation of cesium-137 and strontium-90 content of man, 22:28450 (NYO-2147-13, pp 134-40)
  water recovery from, in aerospace, radioisotope life support system for, 22:37953
UROCHORDATA
    see also Vertebrata
  Dendrodoa grossularia, iodine metabolism in, tracer study of, 22:51427
  Salpa sp., zinc-65 content of, in Oregon, effects of diel, geographic location, and season on, 22:31015
URONIC ACIDS
    see also Glucuronic Acid
    see also Hyaluronic Acid
Urotropin (R)
    see Hexamethylenetetramine
U.S.S.R.
    see Soviet Union
UTAH
  incidence of thyroid disease in human children in, during 1952 through 1955, 22:15084
  population dynamics of jackrabbits in Curlew Valley, 22:1918(R) (COO-1329-6)
  radiological survey of granitic rock tunnel near Salt Lake City, 22:45181
  radium-226 content in ground waters of, 22:2209
  radon-222 content in ground waters of, 22:2209
  volcanic rocks in, argon/potassium method of dating, 22:48914(R) (COO-689-100)
UTERUS
  blood circulation in human, measurement of, using xenon-133 and external counting, 22:25948
  contraction of guinea pig, effects of metal ions on, 22:25724
  iodine-131 uptake by, in ovariectomized rats, effects of progesterone and related steroids on, 22:8472
  radiation dose to man during examination of, x, 22:51660
  radiation dose to, of man, electronic calculation of x, 22:15045
  radiation effects on carcinoma of, in man, effects of arteriosclerosis and hypertension on ionizing, 22:2528
  radiation effects on human, following medical sterilization, latent x, 22:51977
  radiation effects on muscular tone of, of guinea pigs, x, 22:38426(R) (NYO-3698-1)
  radioinduced cancer of human, Thorotrast, 22:2552
  radioinduced carcinomas in, of man, effects of dose on incidence of Thorotrast, 22:10872
  radioinduced tumors in, of rats, 120 MeV proton, 22:23668
  radiotherapy of cancer in cervix of human, effects of, on lymphatic system, cobalt-60 γ and radium, 22:49627
  radiotherapy of cancer of cervix of, effects of dose on γ, 22:19395
  radiotherapy of cancer of cervix of, effects of tumor cell radiosensitivity and virulence on, 22:36311
  radiotherapy of cancer of cervix of, in man, development of hydronephrosis following cobalt-60 and radium γ, 22:47597
  radiotherapy of cancer of human, arrangement and dosimetry of sources for radium or cobalt-60γ, 22:28547
  radiotherapy of cancer of, effects of, on incidence of intestinal lesions, 22:2550
  radiotherapy of cancer of, of man, histological analysis of preoperative γ, 22:23626
  radiotherapy of carcinoma of cervix of human, incidence of occurrence of carcinoma of vagina following, 22:47602
  radiotherapy of carcinoma of endometrium of, development of injuries to intestine following intracavitary radium, 22:2551
  radiotherapy of carcinoma of human, effects of oxygen abundance on γ, 22:33868
  radiotherapy of carcinoma of human, protective effects of magnesium against thrombo-embolitic complications following γ, 22:36317
  radiotherapy of carcinoma of, in man, development of complications in pelvic region following radium γ or x, 22:8618
  radiotherapy of carcinomas in cervix and endometrium of, of man, development of bowel injuries following combined radium and external, 22:51766
  radiotherapy of carcinomas in cervix of human, effects of dose on development of complications following radium and x, 22:47599
  radiotherapy of carcinomas in, of man, combined effects of radium on cobalt-60 γ and x, 22:15028
  radiotherapy of carcinomas in, of man, complications following cobalt-60 γ, radium, and x, 22:15027
  radiotherapy of carcinomas of human, effects of, on kidneys, γ, 22:51956
  radiotherapy of carcinomas of, design of colpostat to facilitate radium insertion in, 22:28590
  radiotherapy of carcinomas of, development of side effects following, 22:31127
  radiotherapy of carcinomas of, effects of estrogens on cobalt-60 and radium γ, 22:6852
  radiotherapy of carcinomas of, effects of, on kidneys and ureters, γ, 22:4681
  radiotherapy of carcinomas of, in man, development of bladder malfunctions following radium γ, and x, 22:28569
  radiotherapy of carcinomas of, in man, γ, 22:28583
  radiotherapy of carcinomas of, in man, radium γ and x, 22:31163
  radiotherapy of carcinomas of, protection of ovaries during x, 22:10833
  radiotherapy of cervical cancer in, of man, review of leukemia incidence following β, cobalt-60γ, radium and x, 22:33858
  radiotherapy of cervical cancer of, γ and supervoltage x, 22:45596
  radiotherapy of cervical cancer of, in man, development of proctitis following, 22:31149
  radiotherapy of cervical carcinoma of human, effects of, on excretion of estriol in relation to vaginal cytology, γ, 22:51928
  radiotherapy of cervical carcinoma of, development of osteosarcoma following x, 22:45668
  radiotherapy of cervical carcinoma of, effects of, on urinary excretion of deoxyribosides and nucleases, 22:28325
  radiotherapy of cervical carcinoma of, in man, effects

- of, on histology of lymph nodes, cobalt-60 γ, 22:8581
- radiotherapy of cervical carcinomas in pregnant human, combined effects of surgery on high-energy electron, 22:51718
- radiotherapy of cervical carcinomas of, development of peritonitis following, 22:31190
- radiotherapy of cervical carcinomas of, effects of, on histology of cervix, effects of dose on γ, 22:45669
- radiotherapy of cervical carcinomas of, in man, development of bladder complications following postoperative radium and x, 22:31133
- radiotherapy of neoplasms in, of man, betatron β, 22:10794
- radiotherapy of neoplasms of, development of obstructions of ureters following, 22:10852
- radiotherapy of neoplasms of, in man, incidence of fistulas in intestines and urinary tract following cobalt-60 and radium γ and x, 22:12914

UTP
- see Uridine 5'-Triphosphate

V

VACCINES
- effects on antibody production in atomic bomb survivors, Asian influenza, 22:571
- effects on x-radiosensitivity of lymphocytes and plasma cells in mice and rats, typhoid-paratyphoid, 22:436
- immunity to hepatomas induced by pertussis, in rats, 22:6709 (ACRH-1000-21)
- preparation of bacterial and virus, use of irradiated microorganisms for, 22:52086
- preparation of helminth, for cattle, sheep, and rodents, using x-irradiated larvae, 22:52085
- preparation of Leptospira pomona, using γ-irradiated, killed, or streptomycin-treated bacteria, 22:25732
- preparation of paratyphoid and typhoid, use of γ-irradiated bacteria for, 22:52084
- preparation of psittacosis virus, use of γ-radioinduced mutation for, 22:49296
- preparation of x-irradiated hookworm, 22:14939
- preparation of, use of radiation for, 22:31310
- production of foot-and-mouth, using photodynamically inactivated virus, 22:14944
- purification using K-II high-capacity zonal ultracentrifuge, 22:30746 (K-L-2532(Rev.)(Add.1))
- radiation effects on antigenicity to Q fever, in guinea pigs, x, 22:51469
- radiation effects on immune reactions of guinea pigs to viable Pasteurella tularensis, x, 22:38205
- radiation effects on immune reactions to live Brucellosis, in guinea pigs, x, 22:23449
- radiation effects on virulence of coccidioidomycosis, γ, 22:8492
- radiation preparation of coccidial, for cattle, γ, 22:43268
- radiation processing of typhoid antigen, effects of, on antigenicity, γ, 22:49671
- radiation processing of, of internal parasites, 22:31305
- radioprotective effects of measle and mump, on erythropoiesis in spleen of mice, 22:10842
- radioprotective effects of sensitized plague, on mice, 22:49392
- radioprotective effects of typhoid, on leukocyte count and survival of dogs, x, 22:4631 (USNRDL-TR-67-87)
- radioprotective effects of typhoid-paratyphoid, in dogs, x, 22:40889
- radiosterilization of erysipelas and purified tuberculin, combined effects of freeze-drying on γ, 22:8669
- radiosterilization of, review of, γ, 22:15128
- Salmonella breslau, effects on γ- and x-radiosensitivity of mice, 22:45694
- typhoid-paratyphoid, effects of, on abundance of antibody plaque forming cells in spleen of mice, 22:38223

VACUUM
- ball bearing testing in 10^{-10} torr, development of method for, 22:40334
- bibliography on surface and vacuum physics, 22:52479 (NP-17636)
- book: High Vacuum Technique. Theory, Practice, and Properties of Materials. Fourth Edition, 22:2339
- book: Vacuum as an Insulator, An Indexed Bibliography, 22:10536
- conference on sorption--desorption phenomena in high, Rome, March 14 to 17, 1967, 22:10535
- conference on ultrahigh, Paris, June 28 to 30, 1967, 22:16829
- effects of high, on microelectronic device materials, 22:10673
- effects of ultrahigh, on outgassing rates of stainless steel, copper, and copper alloys, 22:23256
- effects on densification of uranium dioxide sintered in, at 1300 to 1500°C, 22:45820
- effects on deposition rate of thorium in iodide decomposition process, 22:23733
- effects on effectiveness of radiation processing of seafoods, 22:26017(R) (TID-23835)
- effects on γ-radioinduced formation of free radicals in corn starch, 22:45466
- effects on sintering zirconium iodide spheres at 1200 to 1800°C, 22:45777
- effects on uv-radioinduced fluorescence and phosphorescence in tryptophan, 22:12822
- electric properties in, high-frequency high-voltage sparking, 22:9724(T) (ANL-Trans-535)
- manipulators for use in ultrahigh, design of thermal, 22:19089
- measurement of high, design of electron beam-photoelectric gage for, 22:43023(P)
- measurement of ultrahigh, equipment and method for, 22:30815
- measurement of ultrahigh, performance of low x-ray limit Bayard--Alpert gage for, 22:16832
- production and measurement of high, equipment and methods for, 22:2339
- production by cryopumping, molecular-beam study of condensation during, 22:45271
- production of high, design and performance of cryopumps for, 22:301
- production of oil-free ultrahigh, using sorption and sputter-ion pumps, 22:16852
- production of ultrahigh, by titanium ionic pumps, effect of sorbed gases on, 22:16851
- production of ultrahigh, design and construction of turbomolecular pump for, 22:16842
- production of ultrahigh, design and performance of glass orbitron pump for, 22:19090
- production of ultrahigh, development of equipment and materials for, 22:21305
- production of ultrahigh, development of seals for, 22:16844
- production of ultrahigh, development of sublimation pumps for, 22:16846
- production of ultrahigh, equipment and method for, 22:30816(P)
- production of ultrahigh, outgassing and backstreaming tester for vacuum pumps for, 22:43021 (UCRL-18213)
- production of ultrahigh, performance of molecular sieves in, 22:300
- production of ultrahigh, performance of turbomolecular pumps for, 22:16841
- production of ultrahigh, use of cryotitanium pump and liquid nitrogen trap for, 22:16840
- production of ultrahigh, use of double-chambered frame for, 22:16839
- production of ultrahigh, use of radial electric field and Penning pumps for, 22:16838
- production of ultrahigh, use of titanium deposition on cold surfaces for, 22:16835
- production of ultrahigh, use of titanium deposition on cold surfaces for, 22:16836
- production of ultrahigh, using getter-ion pumps, effects of pre-evacuation cycle on, 22:16849
- production using ion pumps, 22:37967
- ultrahigh, ultraviolet spectroscopy in, 22:16855
- use as insulating medium, bibliography on, 22:10536
- use of ultrahigh, in measurement of optical constants, 22:15569 (ORNL-TM-2114)

Vacuum Furnaces
- see Furnaces

VACUUM FUSION ANALYSIS
- metal bath techniques in, use in determination of oxygen in manganese steel by isotopic dilution method, 22:42623

VACUUM GAGES
- see also Pressure Gages
- calibration and certification of, equipment and facilities for, 22:6226 (SC-TM-67-775)
- calibration at pressures below 10^{-10} torr, 22:30818
- control and indicating circuit for, design of, 22:28213
- design and calibration of, for measurements to 10^{-13} torr, 22:49065
- design for measuring pressures less than 10^{-10} torr, 22:8411
- design of electron beam-photoelectric, 22:43023(P)
- design of high-pressure ionization, 22:6698
- design of small volume orbitron, with stable current characteristics, 22:19215
- design of, combined with leak detector, 22:19219
- development of ionization, theoretical treatment of ion storage in three-dimensional rotationally-symmetric quadrupole fields for, 22:30909
- modulation characteristics of Bayard--Alpert ionization, use of argon and oxygen to study, 22:16831
- performance of low x-ray limit Bayard--Alpert, for ultrahigh vacuum measurements, 22:16832
- use of Bayard--Alpert and omegatron, in ultrahigh vacuum systems, 22:16854
- use of Bayard--Alpert ionization, in dynamic gas flowmeter for ultrahigh vacuum, 22:33682 (LA-DC-9000)

VACUUM PUMPS
- air sorption in nitrogen-cooled ultrahigh, kinetics of, (E), 22:33626 (IAE-1300)
- baffles for oil diffusion, fabrication of, 22:16845
- description of fast cryo-, for ultrahigh vacuum, 22:12566
- design and construction of small turbomolecular, for ultrahigh vacuum systems, 22:16842
- design and performance of beam line liquid helium cryo-, for Alice thermonuclear reactor, 22:213 (UCRL-70590)
- design and performance of glass orbitron, for production of ultrahigh vacuum, 22:19090

design and performance of low-temperature, for fusion research, 22:301
design of beam line liquid helium cryo-, for Alice thermonuclear reactor, engineering drawings for, 22:14652
design of ultrahigh cryogenic, 22:43022(P)
development of cryosorption, for ultrahigh vacuum systems, 22:300
development of ionic and titanium, for study of degassing phenomena, 22:16840
developments in sputter-ion, in Poland, 22:23255
isolation in ultrahigh vacuum systems, use of molecular sieves for, 22:19091
oil reflux in diffusion, use of bromine-82-labeled oil for detection of, 22:19055
operating characteristics of two-electrode getter-ion, at very low pressures, 22:30814
operation and performance of ion, for production of ultrahigh vacuum, 22:37967
performance and testing of, for Omnitron Accelerator, 22:16830
performance in high vacuum systems, measurement of, 22:2339
performance of getter and sputter-ion, for hydrogen pumping in ultrahigh vacuum systems, 22:23254
performance of high-speed cryotitanium, for production of ultrahigh vacuum, 22:16839
performance of oil diffusion, titanium sublimation, and getter-ion, in ultrahigh vacuum system for space simulation, 22:23252
performance of Penning ionic, in ultrahigh vacuum systems, 22:16834
performance of sorption and sputter-ion, for production of oil-free ultrahigh vacuum, 22:16852
performance of turbomolecular, derivation of equations to determine, 22:16841
performance testing using outgassing and backstreaming tester, 22:43021 (UCRL-18213)
preheater for diffusion, design of, 22:37966(P)
pressure rise above titanium ionic, in ultrahigh vacuum systems, effect of sorbed gases on, 22:16851
silicone use in, 22:11104
titanium wires for sublimation, fabrication of, 22:16846
use of calcium getter-ion, in calutrons, 22:30793(P)
use of getter-ion and mercury diffusion, in ultrahigh vacuum systems, 22:21305
use of getter-ion, in ultrahigh vacuum systems, 22:16849
use of oil diffusion, sputter-ion, and titanium sublimation, in ultrahigh vacuum system, 22:16853
use of sputter-ion and oil diffusion, in ultrahigh vacuum systems, 22:16854
use of sputter-ion, in ultrahigh vacuum metal systems, 22:16850
use of triode ion, for pumping deuterium, 22:24779
vacuum chamber for sputter-ion, reduction of stray currents in, 22:16827

Vacuum Seals
  see Seals and Glands

ACUUM SYSTEMS
  see also Leak Detectors
  see also Vacuum Vessels
  book: Handbook of Materials and Techniques for Vacuum Devices, 22:16828
  components for Omnitron Accelerator, development and testing of, 22:16830
  contamination control in, 22:21304 (GEPP-21)
  control system for, design of automatic pressure, 22:43185
  coupling for, design of, 22:53058
  cryopump for Alice high energy injection device, design and performance of beam line liquid helium, 22:213 (UCRL-70590)
  description of ultrahigh, 22:30815
  design and operation of probe for surface microbiological sampling, 22:1932 (SC-RR-67-688)
  design and operation of ultrahigh, for ultrasonic welding, 22:10440 (UCRL-13331)
  design and performance of, for 25-MeV proton linear accelerator, 22:32400
  design for 2-MeV Van De Graaff accelerator, 22:46669
  design for 300-GeV proton synchrotron, 22:1521 (CERN-563(Vol.1))
  design for accelerators, 22:9755(P)
  design for cascade and three-stage mass spectrometers, 22:14874 (KAPL-3382)
  design for heavy-ion linear accelerators, 22:9724(T) (ANL-Trans-535)
  design for linear accelerators, 22:46670
  design for microbalance for weighing radioactive materials, 22:4504 (MLM-290)
  design for NINA 4-GeV electron synchrotron, 22:12653
  design in combination with microscope for reading rod dosimeter, 22:10667(P)
  design of cold trap for high-pressure gas radiation target, 22:10599
  design of differential pumping tubes for electrostatic particle accelerators, 22:1556(P)
  design of high, 22:2339
  design of ultrahigh sputter-ion pump, with baffle to reduce stray currents, 22:16827
  design of ultrahigh, for electron diffraction camera, 22:15193
  design of ultrahigh, for simulation of plasma in outer space, 22:16853
  design of ultrahigh, for studies of clean metallic surfaces, 22:16854
  development for Oregon State University cyclotron, 22:50560(R) (RLO-1062-681)
  development for production of ultrahigh vacuum, 22:21305
  development for testing foil-type thermal insulation for radioisotope power systems, 22:51177(R) (ALO-3634-10)
  development of ultrahigh, for space simulation, 22:23252
  development of ultrahigh, from evaporating system, 22:16845
  development of ultrahigh, to study sorptive properties of metallic films, 22:23253
  development of ultrahigh, use of cryosorption pumps and molecular sieves for, 22:300
  elastic joints in ultrahigh, stability and stress resistance of, 22:16843
  evacuation of, effect on residual atmosphere of getter-ion pumps, 22:16849
  gas flow in ultrahigh, design and performance of dynamic flowmeter for measuring, 22:33682 (LA-DC-9000)
  gas flow in, with local temperature variations for molecular flow range, 22:33628
  hydrogen pumping in ultrahigh, performance of getter and sputter-ion pumps for, 22:23254
  leak detection in, testing of krypton-85 method for, 22:21286 (AWRE-O-22/68)
  mask changer for thin film deposition in 2 x 10^{-10} torr, 22:23258
  performance of ultrahigh titanium-sublimination-supplemented ion pumping, during SNAP-2 DRM-1 testing, 22:37517 (NAA-SR-12186)
  pumpdown testing of, use of sputter--ion pumps for helium, 22:33629
  pumpdown time in molecular flow range, scaling laws for determination of, 22:33627
  pumping of deuterium and hydrogen on liquid helium-cooled surfaces in, performance of condensation, 22:23257
  pumping speed of ultrahigh, for Omnitron synchrotron, use of quadrupole mass filter for measuring, 22:37965 (UCRL-17845)
  residual gas analysis in ultrahigh, design of fast response mass spectrometer for, 22:16833
  residual gas analysis in ultrahigh, use of ionic traps for, 22:16837
  sorption and sputter-ion pump performance in, 22:16852
  surface phase theory for ultrahigh, testing of, 22:30817
  ultrahigh, performance of metal and double O ring seals in, 22:16844
  ultrahigh, performance of Penning ionic pump in, 22:16834
  ultrahigh, performance of sputter-ion pumps in, 22:23255
  ultrahigh, residual hydrogen gas sorption in, 22:16850
  ultrahigh, trapping of cesium vapor in, 22:16848
  universal motion device for use in ultrahigh, design and fabrication of, 22:33591
  window for ultrahigh, fabrication of infrared, 22:12567

VACUUM TECHNIQUES
  bibliography on, 22:34244 (NP-17494)
  bibliography on, 22:34243 (NP-17493)
  bibliography on, 22:38726 (NP-17522)
  book: Handbook of Materials and Techniques for Vacuum Devices, 22:16828
  development for radiation target can temperature control, 22:22850
  development of ultrahigh, to study liquid--solid adhesion behavior of indium--aluminum system, 22:28059
  use for distillation of yttrium, description of improved, 22:52152
  use for preparation of beta-spectroscopy thin film samples, 22:8366 (NP-17188)
  use in inspection of pressure vessels, 22:40343
  use in metallurgy, review of, 22:47668

Vacuum Tubes
  see Electron Tubes

VACUUM VALVES
  (Including stopcocks.)
  design of hermatically sealed glass, for automated vacuum analytical system, 22:2276 (UCRL-50317)
  design of wedge gate, with tetrafluoroethylene coated seat seal, 22:42946(P)
  use in atomic and vacuum industries, 22:47268

VACUUM VESSELS
  degassing of stainless steel, effect of metal cleaning methods on, (E), 22:48979 (CLM-R-93)
  description of ultrahigh, for simulation of plasma in space, 22:16853
  design, operation, and performance of, containing parallel-plate electrodes for spectral measurements of electrons liberated by x radiation, 22:43092
  development of vacuum chamber as interface dosimeter, 22:38118
  isolation of ultrahigh, from oil diffusion pumps, 22:19091
  theory of, with parallel-plate and spherical electrodes used as detectors in attenuated radiation fields, Greening's, 22:43061

VAGINA
  radioinduced carcinoma of human, following therapy for carcinoma of cervix, 22:47602

radioinduced fistula in, following therapy of gynecologic cancer, 22:6883
radioinduced fistula of, following radium therapy of endometrial carcinomas, α and γ, 22:6887
radioinduced fistulas in human, following therapy for cervical carcinomas, radium, 22:47599
radioinduced necrosis in, following therapy of carcinomas, radium γ and x, 22:6888
radiotherapy of carcinoma of, in man, radium and x, 22:40737
radiotherapy of carcinomas of, fast electron, 22:28587
radiotherapy of carcinomas of, in man, development of bladder injuries during radium γ, 22:28563
silver-110 removal from, of rats, effects of estradiol and inflammation on, 22:14960
VAK REACTOR
coolant processing for, analysis of operation safety of, 22:7825
fuel element radiation testing in, Grosswelzheim Superheat Reactor, 22:25006
fuel elements in, temperature excursion effects on superheater, 22:16263(R) (AEG-E-31-873)
operating characteristics of, tabulation of, 22:39828
power density of, use of experimental fuel assembly with gyratory coolant flow for increasing, 22:25021
safety systems for, operating experience with, 22:22720
use for irradiation testing of twisted tape prototype fuel clusters, 22:9996(R) (EUR-3651)
VALENCY
see also Bonds, Chemical
effects on cohesion of transition metal carbides, nitrides, and oxides, 22:8828
Valeric Acid, 2-Amino-5-guanidino-
see Arginine
Valeric Acid, 2-Amino-3-methyl-
see Isoleucine
Valeric Acid, 2-Amino-4-methyl-
see Leucine
VALERIC ACID, 5-[BIS(CARBOXYMETHYL)AMINO]-
complexes with americium, californium, and curium, stability constants for, 22:18744(T) (ORNL-tr-1854)
complexes with americium, californium, and curium, stability constants for, 22:6291 (KFK-580)
VALERIC ACID, 5-PHENOXY-
deuterium exchange between heavy water and, 22:12327
VALINE
determination of carbon-14-labeled, in ninhydrin reaction products from amino acid analyzer by scintillation counting, 22:37659
inhibition of photoreactivation in Hemophilus influenzae, 22:25715(R) (NYO-1371-51)
radiation effects on acceptor function of RNA specific to, x, 22:23421
radioinduced formation of free radicals in, ESR analysis of effects of heat treatment on x, 22:45462
radiolysis of aqueous solutions of, method for determining formation of radicals in γ, 22:35828 (BNWL-SA-1841)
radiolysis of oxygenated aqueous solutions of, ESR spectral studies on free radicals produced by γ, 22:2147
reactions with hydrogen peroxide and titanium trichloride, ESR spectral studies on free radicals produced by, 22:2147
Valine, 3-Mercapto-
see Penicillamine
VALLECITOS BOILING-WATER REACTOR
fuel elements for, residual stress measurements for Type 304 stainless steel-clad uranium oxide (UO_2), 22:50730 (GEAP-4221)
operations history of, total, 22:1821
VALLECITOS SUPERHEAT REACTOR
core analysis for, thermal-hydraulic, 22:1792
excursions in, semi-empirical approach for estimating vessel motion during, 22:3891 (GEAP-5164)
fuel element assembly for, description of uranium dioxide Mark II, 22:5925 (GEAP-5510)
fuel element failures in, effects of, 22:1762(R) (GEAP-5485)
fuel elements for, design and fabrication of Mark-5, 22:3930 (GEAP-5408)
fuel rod clusters for, inspection and evaluation of Mark-3 superheating, 22:3830 (GEAP-5481)
history of, 22:1762(R) (GEAP-5485)
operation and construction of, history of, 22:16184
operations history of, total, 22:1821
Valve Packing
see Seals and Glands
VALVES
bellows failure in Fermi Fast Breeder sodium service system, 22:46860 (APDA-CFE-21)
configuration of coolant loss-actuated water pressure-closed and gravity-opened safety, for swimming-pool reactors, 22:53437(P)
configuration of quick-acting-turbine flow-, for by-pass lines in power reactors, 22:48664(P)
defects in ATR cooling system check, analysis and correction of, 22:32974 (IN-1186)
description for liquid sodium environment, 22:18504
description of cryogenic globe, 22:22741
description of externally controlled pressure regulating coolant channel gag, 22:20972(P)
description of hydraulically operated common by-pass and cut-off steam pipe control, 22:16337(P)
description of liquid metal-heated shutdown-drain, for liquid metal-reactor cooling system, 22:18654(P)
description of NERVA turbine power control, 22:22790 (CONF-661204-(Vol.2), pp 91.1-12)
description of overpressure release, for organic-cooled reactor cooling systems, 22:20869(P)
description of pressure relief, for reactor, containment structures, 22:20955(P)
description of simultaneous quick closing inlet and outlet, for steam--water densimeters, 22:20838
design and materials for, for use in sodium-cooled reactor systems, 22:8269
design and operation of fast-acting electromagnetic, for plasma physics studies, 22:2266 (IPP-1/68)
design criteria for nuclear installation, 22:7816(R) (ORNL-TM-2057)
design of 4 in. exhaust control, for plutonium fabrication hood, engineering drawings for, 22:14654
design of 6-way pneumatically actuated diaphragm, 22:14427 (ORNL-4196, pp 15-32)
design of butterfly, for use in sodium, 22:206(R) (NAA-SR-12520)
design of electromagnetically-operated gas, for ion source of Van de Graaff accelerator, 22:11764
design of fast-acting relief, for reactor containment system, 22:14661(P)
design of gas lock, for radioactive materials, 22:25596(P)
design of high-pressure, for small tubing, (E), 22:1049 (WAPD-TM-386)
design of high-speed, for theta pinch devices, 22:47438
design of improved radiochemical processing, 22:21381 (ORNL-4219, pp 68-74)
design of vacuum-jacketed cryogenic globe, 22:22110
design of Y-type, for use in sodium, 22:206(R) (NAA-SR-12520)
development for power reactor cooling systems, 22:39825
development of LMFBR cooling system, analysis of problems in, 22:53333
engineering requirements for reactor cooling system, analysis of, 22:42224
fabrication of austenite, description of forging and casting, 22:39909
fluid flow characteristics of automatic, for PRO organic cooled reactor, 22:3868
friction and wear properties of, for nuclear rockets, 22:8752
leak testing at 140 atmospheres and 300ºC of water, analysis of, 22:42378
operation in sodium loops, 22:12971
operation of heat exchanger control, effects of fluid oscillation on, 22:45241 (LA-DC-9781)
performance of liquid metal-cooled reactor cooling system, analysis of operation of, 22:53333
pressure-relief-, description of boiling region, 22:37490(P)
removal from HNPF heat transfer system of throttle, 22:12030 (NAA-SR-8492)
steam bypass, description of boiling power reactor peak-pressure, 22:37468(P)
use for steam pressure regulation to fossil fuel-fired superheater from pressurized water reactor, 22:53325(P)
vortex breakdown in, 22:244
VAN ALLEN RADIATION BELTS
see also Cosmic Radiation
absence of Venus, (E), 22:8861
absence of Venusian, (E), 22:13147
alpha particles in, Injun-4 observations of, 22:5249
alpha-particle distribution and energy spectra in, 22:34509
atmosphere, 22:11317
book: Dynamics of Radiation Belts of the Earth (In Russian), 22:47912
book: Introduction to Space Science, 22:19898
book: The Radiation Belt and Magnetosphere, 22:26319
boundaries for different electron energies of outer, asymmetries in, (E), 22:13372
boundary of outer, (T), 22:34443
boundary of outer, for 40-keV electrons, (E), 22:47891 (N-68-23254)
boundary of outer, local time asymmetries near high-latitude, 22:34515
boundary position and particle observations by IMP-B satellite, 22:5268
charged particle fluxes in inner, on Dec. 19, 1961, (E), 22:34374
charged particle intensities in South Atlantic anomaly region, (T), 22:17494
charged-particle flux in, relation of polar substorm to changes in, 22:5225
charged-particle fluxes in inner, (E), 22:34352 (AD-660911)
charged-particle fluxes in, origin of, (T), 22:41471
charged-particle motion in, 22:1046 (N-67-18704)
charged-particle motion in, resonance phenomena and nonapplicability of third integral, (T), 22:50270
charged-particle radial diffusion in, (E), 22:34508
charged-particle radial diffusion in, violation of third

adiabatic invariant during, 22:34507
charged-particle reactions with neutral hydrogen in, Lyman-alpha emission from, 22:5238
current effects in Akasofu--Chapman model, on cosmic-ray cutoff rigidity, 22:11255
cyclotron instability of, nonlinear theory of, 22:15455
decay of Starfish-produced, (E), 22:50083 (N-68-11826)
deformation by magnetosphere, (T), 22:31729
discharge of outer, effects on nuclear explosions on, (T), 22:15446
dose rates to Black Arrow satellites due to, (T), 22:26268 (RAE-TR-67206)
effects of interplanetary magnetic fields on, (T), 22:28984
effects of Io on Jovian, (T), 22:19722
effects of protons of, on lifetimes of solar cells, computer calculations of, 22:39148
effects of South Atlantic anomaly on, (T), 22:11311 (CEA-Bib-103)
effects on cosmic radiation dose to man during space flight, 22:6829
effects on nuclear explosions on, (T), 22:11311 (CEA-Bib-103)
effects on space vehicles, 22:11331
electromagnetic wave emission from, satellite measurement of vlf, 22:34495
electron and gamma-ray intensities beneath inner, 22:38835
electron and proton flux in outer, rapid increases of, (E), 22:31711
electron bunching in drift in outer, (E), 22:24145
electron diffusion processes in outer, relativistic, (T), 22:34375
electron distribution in inner, (E), 22:44008
electron energy spectra at 0.1 to 5 MeV in, (E), 22:34452
electron energy spectra in outer, variations in relativistic, 22:34517
electron energy spectra of, relativistic, (E), 22:9224
electron flux and spectra in inner zone, 22:34519
electron flux and spectra in, efficiency of strontium-90--yttrium-90 beta source for simulation of, 22:30786
electron flux in outer, at synchronous altitude, 22:34516
electron flux variations in, effects of interplanetary field during magnetic storms on, (T), 22:36851
electron intensities at low and high altitudes following magnetic storms, (E), 22:47974
electron intensities in outer, (E), 22:29379
electron intensity at 6.6 R/sub E/ in outer, (E), 22:38918
electron intensity contours in outer, at magnetic equator, (E), 22:13348
electron intensity in, (E), 22:9224
electron intensity variations at 6.6 R/sub E/, effects of magnetospheric substorms on, (E), 22:38919
electron loss from outer, (E), 22:9224
electron loss from, radio noise theory of, 22:24145
electron measurements from Starfish, Oct. 1963--Oct. 1965, 22:34514
electron precipitation from outer, (E), 22:9189
electron precipitation from outer, (E/T), 22:9228
electron precipitation in, (E), 22:36838
electron radial diffusion across low L shells, (T), 22:15418
electron radial diffusion at L = 1.15 to 1.21, empirical values for coefficient of, 22:34504
electron scattering by transverse waves in magnetic field, (T), 22:5228
electron spectra in lower edge of inner, evidence for nonfission, (E), 22:31707
electron spectrum and intensity at boundary of, (E), 22:34483
electron spiraling in, effects of superimposed electric fields on, (T), 22:24181
electron trapping in, at low and high altitudes, (E), 22:41441 (N-68-18182)
electron variations at 10 to 100 keV in outer, spectral, spatial, and temporal, (E), 22:29381
electron--proton entry into outer, theory of, 22:24145
electrons from, Coulomb relaxation in dense layers of atmosphere, (T), 22:15451
energy fluxes of protons and positive ions in inner, (E), 22:13368
enhancement of F2-layer electron concentration from, (E), 22:52645
experiments on, survey of Soviet, 22:15412(T) (AD-655364)
flux contours in, ambiguities of, (T), 22:31712
formation of storm-time, properties of, 22:34498
growth of storm-time, (T), 22:43992
hydromagnetic wave--proton interactions in, (T), 22:48022
intensity increase in inner, after solar flare event, (E), 22:47985
interaction of inner, with the atmosphere, (E), 22:15434
interaction of neutral hydrogen and charged particles in, Lyman-α emission from, (T), 22:36861
ionization intensity at boundary of outer, (E), 22:52646
Lyman-α emission from, as result of neutral hydrogen--charged particle interactions, (T), 22:52625
Lyman-α emission from, due to neutral hydrogen--proton interactions, (T), 22:31720
microwave emission from Saturn's, (E), 22:36654
particle acceleration and deceleration in, bimodal diffusion mechanism for, (T), 22:52676
particle fluxes in inner, rocket measurements of, 22:38836
particle precipitation into atmosphere from, (E), 22:47905
plasma drift instabilities in, nonlinear limit of, 22:1275
plasma properties of, calculation using self-consistent methods, 22:13379
production of, (T), 22:31730
properties of magnetospheric radiation belt and tail plasma sheet, (T), 22:36807 (N-68-15296)
properties of, (T), 22:11311 (CEA-Bib-103)
proton charge-exchange lifetimes in outer, (E), 22:36800 (AD-666964)
proton density measurement in inner zone, by nuclear emulsions, 22:34518
proton energy spectra in, at 0.52 to 4.0 MeV, 22:34512
proton escape from, (T), 22:9315
proton flux and spectra in inner zone, 22:34519
proton flux in inner, effects of solar cycle on, 22:22069
proton fluxes in inner, nuclear emulsion study of, 22:40365
proton kinetics in inver, (E), 22:47894(R) (N-68-23790)
proton lifetimes in outer, (E), 22:47973
proton motion in, (T), 22:48006
proton spectra in, low-energy, (E), 22:47924
protons in inner, albedo neutron source for, (E/T), 22:26316
radiation flux density distributions in inner, from Explorer IV data, (E), 22:29382
radiation hazards to manned space mission, cosmic, 22:6919
radio emission from Jovian, (T), 22:17324
radio emission from particles in inner, (T), 22:9190
review of, 22:9227
ring currents in, magnetic energy of, (T), 22:29383
size of outer, relation to geomagnetic field pulsations, (E), 22:17537
stability of, effects of wave absorption on, (T), 22:15448
structure of, and trapped-particle origin and acceleration mechanisms, 22:50065
synchrotron emission from electrons trapped in, (T), 22:26317
use for study of geomagnetic field, (E), 22:15457

VAN DE GRAAFF ACCELERATORS
acceleration tube design for, 22:35177(P)
acceleration tube design for, 22:35176(P)
beam analyzer for tandem, automatic control system for, 22:1598(R) (COO-1265-49)
beam bunching system for tandem, design of solid-state, 22:37260
beam bunching system for tandem, for producing nsec beam pulses of heavy ions up to mass 32, 22:7593
beam centering in, used for neutron production, 22:15890
beam current regulator for, 22:46652
beam energy of 2-MeV proton, NMR magnetometer for measuring, 22:29805
beam energy resolution of, improvement of, 22:18061
beam energy spread of, 1.75-MeV proton reactions (p,γ) with carbon-13 for measuring, 22:18060
beam focusing in high-current, 22:7573 (LYCEN-6767)
beam loading in accelerating tubes of positive-ion, x-ray intensity measurements for determining electron, 22:44561
beam optics in accelerator tube of tandem, computer program for calculating, 22:29791
beam pulsing equipment for tandem, description of subnanosecond, 22:22488 (ORNL-4219, pp 110-13)
beam pulsing system for, design and performance of microwave, 22:5700
beam pulsing system for, tandem, design of, 22:1598(R) (COO-1265-49)
beam transport system for 4-MeV electron, description of feedback, 22:20382
beams from 3-MV, methods for sine and square wave modulation of, 22:13884
belts for, design of cotton--rubber, 22:11867(P)
bremsstrahlung distribution from positive ion, 22:9729
conversion of Argonne tandem, 22:4455 (ANL-7355)
data acquisition and analysis at NSRL tandem, design of on-line computer for, 22:29812
data acquisition system for tandem, development of CAE 510 computer-based, 22:18050
data acquisition system for tandem, development of CAE 510 computer-based, 22:18049
description and operation of 5.5-MeV, at Trombay, 22:7569(R) (BARC-291)
description of Kyoto University tandem, 22:20393
description of Notre Dame Univ. 15-MeV tandem, for electrons and protons, 22:53050
description of ORNL King Tut, for transuranium research, 22:29796
design for producing nanosecond-pulsed beams of alpha particles, 22:29815
design modifications for 100--400-keV electron, for

- precise atomic displacement threshold energy determinations, 22:39526
- design of 3-MeV Dynamitron, 22:29785 (NP-17359)
- design of folded tandem, with accelerating tubes side by side, 22:37261
- design of spatially alternating gradient voltage system for, 22:13892(P)
- design, installation, and application of West Virginia University, 22:35182
- design, operation, and maintenance of 2.5 MeV positive ion, at Naval Ordinance Laboratory, 22:35165 (AD-661794)
- development of tandem, using cyclotron injectors, 22:22560(R) (ORO-1067-2)
- electrode design for pressurized, 22:9725(T) (LB/G-2577)
- equipment for, design of electromechanical switch for remote control of high-voltage, 22:11765
- experimental facilities for 3-MeV Dynamitron, description of spectrograph, 22:29785 (NP-17359)
- experimental facilities for 5-MeV, design of time-of-flight spectrometer, 22:21335 (CEA-R-3325)
- experimental facilities for, design of 85-cm scattering chamber, 22:11948(R) (NP-17216)
- experimental facilities for, radiation target chamber for studying ionospheric reactions, 22:48408
- gas storage system for sulfur hexafluoride, installation of, 22:18123(R) (RLO-1925-11)
- gas valve for ion source of pressurized, design of electromagnetically-operated, 22:11764
- gas-handling system for sulfur hexafluoride insulating gas, development of, 22:27087(R) (ANL-7405)
- ion source development for, (E), 22:5817(R) (NYO-GEN-72-28)
- ion source for pressurized, design of compact polarized, 22:5699
- ion source for tandem, design of universal Penning-type negative, 22:7594
- ion source for, design of polarized negative-hydrogen, 22:5698
- ion source modification to produce negative helium-ion beams of 1.5 to 2.5 μA, 22:5701
- ion sources for tandem, development of, 22:7629(R) (COO-7-0440)
- ion sources for tandem, ungridded electrostatic mirror for bending ions from off-axis, 22:13885
- ion sources for, control systems for, 22:23386(P)
- ion sources for, design of PIG bivalent helium-3, 22:41910
- ion sources for, development of negative lithium, 22:24778
- modification at Columbia University, 22:37281(R) (NYO-72-191)
- neutron dose rates from tandem, angular distributions of, 22:1598(R) (COO-1265-49)
- neutron dosimetry near 20-MeV, multisphere scintillation detector using Block--Shon technique for, 22:47384 (UR-49-894)
- neutron monitoring at, boron trifluoride proportional counter system for, 22:47315 (BNWL-715(Pt.1), pp 54-60)
- neutrons from concrete shielding of LRL, use of gold activation detectors for detection of, 22:9720 (UCID-15235)
- operating characteristics of Brookhaven 3.5-MeV, (E), 22:15955
- operation of positive ion, for neutron production, 22:13887
- pumping tubes for, design of differential, 22:1556(P)
- radiation fields near, method for inferring quality factor of mixed, 22:8364 (CONF-670305-, pp 255-68)
- radiation monitoring system for ORNL 5-MV, operation and maintenance of gamma--neutron, 22:25632 (ORNL-TM-2137)
- research at SUNI 5.5-MeV, 1967, 22:26932(R) (NP-17434)
- transient species produced by, ESR detection of, 22:37780(R) (RRL-2310-242)
- use for teaching and research, conference on, 22:50487 (CONF-680411)
- use of two tandem, for multiple acceleration of charged particles, 22:9721 (UJV-1854)
- uses in pulse radiolysis, 22:4174
- uses of 2-MV electron, nonnuclear, 22:37211 (AD-660658)
- uses of NRL 5-MV positive ion, nonnuclear, 22:37211 (AD-660658)
- vacuum system for 2-MeV, design of, 22:46669
- vacuum system for, use of triode ion pumps for pumping deuterium in, 22:24779

VANADATES
    - see also Cerium Vanadates
    - see also Dysprosium Vanadates
    - see also Erbium Vanadates
    - see also Gadolinium Vanadates
    - see also Holmium Vanadates
    - see also Lanthanum Vanadates
    - see also Lutetium Vanadates
    - see also Neodymium Vanadates
    - see also Praseodymium Vanadates
    - see also Rare Earth Vanadates
    - see also Samarium Vanadates
    - see also Scandium Vanadates
    - see also Terbium Vanadates
    - see also Thorium Vanadates
    - see also Uranium Vanadates
    - see also Yttrium Vanadates
    - see also Zirconium Vanadates
- analysis for molybdenum, ion exchange and extraction methods for colorimetric, 22:22939
- complexes with diethyldithiocarbamate, separation on silica gel by thin-layer chromatography, 22:35900
- determination in natural waters by radio-release metho using silver-110, 22:16421
- effects on colorimetric determination of zirconium in alloys using gallocyanine, 22:33287
- effects on defect formation in gamma-irradiated calcium molybdates and calcium tungstates, ESR studies of, 22:41664

VANADIUM
- abundance in γ Capricorni, (E), 22:38692
- abundance in HD 122563, (E), 22:869
- abundance in HR 774, (E), 22:23983
- abundance in K-giant stars, (E), 22:45851
- analysis for hydrogen, spectral-isotopic method for, 22:19534
- analysis for impurities by optical emission spectroscop 22:25236 (CEA-N-616, pp 20-71)
- analysis for molybdenum, ion exchange and extraction methods for colorimetric, 22:22939
- analysis for nitrogen and oxygen, method for, 22:27530 (CEA-N-816, pp 9-65)
- analysis for nitrogen, fusion method for, 22:27530 (CE N-816, pp 9-65)
- analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
- atomic weight of, based on carbon-12 = 12, 22:42698
- bonding to zirconium, methods and quality of diffusion, 22:28818 (BARC-303)
- book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
- book: Uncommon Metals, 22:10981
- chromatographic behavior on thin layers of cellulose an silica gel impregnated with tributyl phosphate, 22:23115
- complexes with 2,4-pentanedione, effects on radioinduce polymerization of butadiene, 22:33387
- complexes with 8-quinclinol, solvent extraction and polarographic studies on, 22:50930
- complexes with β-ketoenols, preparation and properties of, review of, 22:2061
- complexes with organic compounds, tables of thermodynam stability constants for, 22:58 (UCRL-50200)
- corrosion by 700ºC sodium, effects on nitrogen and oxyg concentration of, 22:22653(R) (ANL-7419)
- corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
- corrosion by low-oxygen sodium at 900ºC, 22:43629(R) (LA-3933)
- corrosion by oxygen-contaminated sodium at 650ºC, 22:28731 (ANL-6982)
- corrosion by sodium, effects of calcium on, 22:23723
- corrosion by sodium, effects of calcium on, 22:52130(T (ANL-Trans-666)
- corrosion resistance of nuclear materials containing, 22:31357
- creep mechanisms at low temperatures, 22:41055
- creep of, relation with grain size and strain rate, 22:23792
- crystal stacking fault energies at 300ºK, 22:38570
- crystal structure, 22:34070
- crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:171
- Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
- detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
- detection of, use of separated acetylene--air or acetylene--nitrous oxide flames for, 22:37664
- determination as ascorbate, spectrophotometric, 22:200
- determination as impurity in amorphous boron, spectrographic, 22:16429
- determination as impurity in thorium and thorium dioxide spectrographic, 22:1994
- determination as impurity in uranium by carrier distillation, spectrographic, 22:30430 (JEN-191-DQ/1-65)
- determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
- determination as trace impurity in calcium, 22:1967 (Y-1590)
- determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
- determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
- determination by atomic absorption or fluorescence spectroscopy, microwave-excited electrodeless discharg tubes for, 22:48844
- determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
- determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
- determination in acetic buffered solutions using 8-hydroxy-7-iodo-5-quinolinesulfonic acid, oscillopolarographic, 22:21035
- determination in alloys with gallium, comparison of

chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
determination in aluminum by activation method using special system of coordinates, 22:33268
determination in atherosclerotic arteries of man and rats by neutron activation methods, 22:30497
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in corrosion water and sodium sulfate by x-ray fluorescence spectrometry, 22:33280
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in highly alloyed steels by x-ray fluorescence spectrometry, 22:30432 (MG/D-201/62)
determination in iron meteorites and sulfide nodules, neutron activation, 22:30474
determination in iron ores, spectrochemical, 22:27615
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in metallic, phosphide, and sulfide phases of iron meteorites by neutron activation methods, 22:37671
determination in mild steel, x-ray fluorescence, 22:50938
determination in niobium alloys, ion-exchange separation in, 22:48838
determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in phosphoric acid medium by potentiometric titration using potassium dichromate, 22:16418
determination in plutonium--vanadium alloys, spectrophotometric, 22:14421 (LA-3843)
determination in rocks and meteorites by neutron activation methods, 22:44975 (MIT-905-125)
determination in scandium, spectroscopic, 22:18727
determination in seawater by ion exchange and photometry, 22:16445
determination in silicates, spectrometric, 22:22960
determination in sodium chloride, neutron activation method for, 22:27560
determination in solutions of refractory materials, spectrographic, 22:21032
determination in standard steels by neutron activation methods, 22:7992(R) (NBS-TN-428)
determination in sulfuric acid by coulometric titration with molybdenum, 22:10187
determination in uranium oxide using strontium fluoride--gallium oxide carrier, spectrographic, 22:22977
determination in uranium--vanadium mixture by high-frequency titration with cupferron, 22:25281
determination in vanadium oxides by neutron activation methods, 22:37686
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in various metals by direct amperometry, 22:45016
determination in zone-refined tungsten, mass spectrographic, 22:25316
determination of oxidation states of, by high-frequency titration with cupferron, 22:25281
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace impurities of, in uranium materials by fractional carrier distillation, spectrographic, 22:30483
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of, review of methods for, 22:18728
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using phosphoric acid, potentiometric, 22:22948
determination using sulfuric acid, spectrophotometric, 22:14467
diffusion in niobium and zirconium, effects of temperature on, 22:10977
diffusion in titanium--vanadium alloys, 22:8728 (ORNL-4170, pp 15-18)
diffusion in, effects of temperature on self, 22:10977
diffusion of iron in, 22:40993(R) (COO-1198-534)
diffusion of iron in, isotope effect tracer technique for studying, 22:30562
diffusion of, dependence on temperature of self, 22:686
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
ductility of, effects of hydrogen on, 22:43591 (ANL-7299, pp 227-37)
effects on caries and arteriosclerosis, 22:14525
effects on determination of plutonium by amperometric titration, 22:39987 (PG-Report-832)
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on electronic specific heat of iron, 22:41049
effects on gamma radiation effects on electric properties of glass, 22:21097
effects on magnetic and superconducting properties of antimony--palladium alloys, (E), 22:29393
effects on neutron activation analysis of fuels for silicon, 22:8028
effects on properties of niobium and tantalum alloys, 22:23706 (BM-RI-7116)
effects on radioinduced embrittlement of A302-B steel, 22:43615(R) (BNWL-710)
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of molybdenum, 22:18717
effects on spectrophotometric determination of titanium using sulfosalicylic acid, 22:16443
effects on strength of niobium, 22:2641
effects on superconducting transition temperature of aluminum, (E), 22:7217
effects on superconductivity and transition temperatures of intermetallic Nb_3Sn, 22:6984(T) (CONF-640310-1)
effects on titrimetric determination of uranium, 22:22972
electric conductivity and dissipation in mixed state of superconducting, nonlinear, (E/T), 22:24218
electron tunneling in superconducting thin-film junctions with oxides, (T), 22:46056
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electronic structure, x-ray isochromat spectral study of, 22:17747
fabrication and mechanical properties of, 22:2560(R) (IS-RD-11)
flux flow resistance and temperature dependence for Type-II superconducting, (E), 22:50103
fluxoid quantization in superconducting, (E), 22:24233
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
Hall effect in superconducting mixed state of, purity dependence of, (E), 22:34564
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
ion recoil ranges in, at 0.22 to 5.2 MeV, (E), 22:11968
ionization by electron impact, calculations of cross sections and rate coefficients of, 22:43856 (IPP-1/76)
iron-57 Moessbauer effect in, effect of high pressure on, 22:17722 (COO-1198-512)
iron-57 Moessbauer effect in, effects of force-constant changes and localized modes on, (E/T), 22:11521
iron-57 Moessbauer effect in, effects of pressure on f number and isomer shift in, (E), 22:46229
magnetic flux transport noise in superconducting, 22:17599
magnetic properties of superconducting, anomalous, (E), 22:19909
magnetic resonance of VO^{2+} in Tutton salt crystals, relaxation in extra ENDOR spectrum for, (E), 22:34742 (COO-1112-161)
metallurgical properties of nuclear materials containing, 22:31357
neutron cross sections and scattering law parameters for, ENDF/B data compilation for, 22:50559 (ANL-7387)
neutron cross sections for, compilation of ENDF/B, 22:32959 (ANL-7310, pp 1-30)
neutron cross sections of, differential elastic-scattering and total, 22:22653(R) (ANL-7419)
neutron differential elastic and inelastic scattering cross sections for, fast, (E), 22:20578 (WASH-1079)
neutron elastic scattering from, measurement of, 22:32959 (ANL-7310, pp 1-30)
neutron total cross section at 30 to 650 keV, average, (E), 22:22560(R) (ORO-1067-2)
neutron total cross section for, 22:32959 (ANL-7310, pp 1-30)
neutron total cross sections at 2 to 10 MeV, (E), 22:11936
nuclear spin--lattice relaxation in superconducting, 22:11398
photon reactions (γ,n) at 22 MeV, neutron angular distributions from, (E), 22:44656
physical properties and thermal treatment of nuclear materials containing, 22:31357
porosity of catalysts of, for oxidation of sulfur dioxide, 22:60(T) (TT-65-50400/4-6)
preparation of high-purity, by electrorefining, 22:49680(R) (USBM-RC-1347)
preparation of metallic, by aluminothermic process, 22:2560(R) (IS-RD-11)
preparation of metallic, by carbon reduction of vanadium oxide, 22:2560(R) (IS-RD-11)
production and properties of high-purity, 22:28753(R) (CEND-3742-329)
production and purity of melt ingots of, 22:15172(R) (CEND-3742-325)
production of high purity, by electrorefining, 22:10930
proton stopping at 559, 1776, and 1984 keV in, cross sections for, 22:11538
purification by electrotransport, 22:2560(R) (IS-RD-11)
radiation damage in microstructure of commercial, annealing of fast neutron, 22:43621 (RCN-96)
radiation effects on corrosion of electrodes of, in basic

solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39790(R) (UNC-5201)
radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39789 (UNC-5198)
radiation effects on properties of, neutron, 22:21746
radiation effects on rate controlling mechanism of slip in polycrystalline, neutron, 22:2667(R) (ORO-3612-4)
radiation effects on slip in, neutron, 22:716
radiation effects on, neutron, 22:15226 (ORNL-TM-2059)
radioinduced corrosion by sodium, in-pile, 22:17082
radioinduced defects in, annealing of fast-neutron, 22:52850 (GEMP-612)
radioinduced defects in, trapping of nitrogen and oxygen at fast neutron, 22:31427 (ORNL-4246, pp 51-5)
radioinduced embrittlement of, mechanisms of in-pile, 22:31421 (ORNL-4246, pp 1-6)
radioinduced trapping of nitrogen and oxygen in, mechanisms of fast neutron, 22:43615(R) (BNWL-710)
reactions with lithium and oxygen, vacuum distillation technique for recovery of products from, 22:25342
reactions with silicon dioxide glass at 800 to 1200°C, kinetics of, 22:2704
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
separation from aqueous solutions by extraction after complexing with pyrocatechol and various quaternary salts, 22:48906
separation from arsenic by paper chromatography, 22:25257
separation from iron and titanium by paper chromatography, 22:4248
separation from iron by anion exchange, 22:10328
separation from iron in hydrochloric acid solution, ion exchange, 22:40192
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from mixture of metals by ring-oven method, 22:18880
separation from molybdenum and uranium by paper chromatography, 22:4248
separation from rhenium by solvent extraction using quinoline, 22:16463
separation from sulfuric acid by solvent extraction using TBP, 22:23119
separation from titanium by paper chromatography, 22:25257
separation from titanium by paper chromatography, 22:25258
separation from tungsten by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by ion exchange on Amberlite IR-120 and zirconium phosphate, 22:40204
separation from uranium by solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
separation of lead from, by complexing with thionalide, 22:4024
solubility in liquid plutonium at 700 to 1000°C, 22:38555
solubility in liquid plutonium, enthalpy of, 22:40053 (LA-3951)
solubility in magnesium, 22:19524(T) (UCRL-Trans-10219)
solubility in mercury at 500 to 750°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
solvent properties for cerium, copper, and lanthanum, 22:10994
sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
sorption by manganese dioxide from nitric acid, 22:157
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
spectral lines for center of solar disk of, curve of growth for, (E), 22:52443
Stark effect constants for, quadratic, 22:7136
superconducting energy gaps in thick films of, measurement using far-infrared absorption spectra, 22:17549
superconducting transition temperature of, effects of pressure up to 45 kbar on, (E), 22:7232
superconductivity of, critical temperature of, 22:15497
thermal conductivity at room temperature, 22:679
thermal expansion at -180 to 1500°C, 22:34070
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
use as stabilizing additive to uranium monocarbide, 22:31449
use in reduction of trivalent mendelevium ions to divalent state, 22:10255
xenon ion ranges at 500 keV to 1.75 MeV in, (E), 22:11538
zero point energy of crystals of, 22:20051

VANADIUM ALLOYS AND SYSTEMS
see also B-66 (Niobium Alloy)
see also Cb-753 (Nicbium Alloy)
see also Croloy
see also Vanstar-7
see also Vanstar-9
cladding materials of, mechanical properties of fuel, 22:12006(R) (ANL-7399)
cladding performance for fast reactor fuels of plutoniu oxide (PuO_2)--uranium oxide (UO_2), analysis of, 22:48657 (TID-24680)
compatibility with carbide and oxide fuels, test planni for, 22:8710(R) (WCAP-3791-9)
corrosion of binary and ternary, by flowing sodium at 5 to 600°C, 22:27418(T) (ANL-Trans-600)
corrosion protection by coating with aluminum vanadium silicides, 22:34014(P)
creep, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
effects on steels for steam turbine components, 22:476 (CONF-671007-5)
mechanical and physical properties of, comparison with stainless steel, 22:8710(R) (WCAP-3791-9)
mechanical properties of, radiation effects on, 22:16265(R) (ANL-7403)
performance as cladding for LMFBR fuel, comparison with stainless steel, 22:8710(R) (WCAP-3791-9)
preparation by vacuum melting, addition agents for, 22:28759
radiation effects on fuel element claddings of, 22:3277 (KFK-700(Pt. X))
radiation effects on fuel element claddings of, 22:53273(T) (EURFNR-472)
radiation effects on properties of, neutron, 22:21746
tensile properties, review, 22:21651
Al--Cr--Ti-base--V, crystallization of, effects of temperature on, 22:21711
Al--Cr--Ti-base--V, fracture toughness of forged, effect of alpha and beta structure on, 22:45769
Al--Cr--Ti-base--V, properties for fabrication into sheets, 22:4763 (AD-648245)
Al--Cr--V-base, corrosion by sodium at 650°C, 22:43627 (ANL-7299, pp 14-113)
Al--Fe--Mo--Ti-base--V, physical properties of, 22:4762 (AD-648244)
Al--Fe--Mo--Ti-base--V, properties for mill production o sheets of, 22:4763 (AD-648245)
Al--Mo--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Mo--Ti--V, corrosion cracking by hydrogen chloride, stress, 22:19474 (DP(NASA)-1130)
Al--Mo--Ti--V, texture strengthening methods for, 22:52185
Al--Mo--Ti-base--V, continuous-cooling transformation diagrams of, heated to 2100 and 2400°F, 22:47687
Al--Mo--Ti-base--V, corrosion cracking by hot salts, mechanism studies of stress, 22:28734(R) (DP(NASA)-961)
Al--Mo--Ti-base--V, corrosion cracking by hot sea salts, studies of stress, 22:28733 (DP(NASA)-941)
Al--Mo--Ti-base--V, corrosion cracking by hot-salt solutions, stress, 22:34010(R) (DP(NASA)-1005)
Al--Mo--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Mo--Ti-base--V, corrosion cracking of, effects of aqueous environments on stress, 22:45747
Al--Mo--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Mo--Ti-base--V, properties of, effects of fabricatio and heat treatment on, 22:45771
Al--Mo--Ti-base--V, welding to Inconel 600, solid-state methods for, 22:629(R) (N-67-19274)
Al--Mo--Ti-base--V, welding to stainless steel, solid-state methods for, 22:629(R) (N-67-19274)
Al--Sn--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Sn--Ti-base--V, crack propagation in delayed failures of, 22:649 (BNWL-SA-1134)
Al--Sn--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Sn--Ti-base--V, properties for aerospace uses, 22:45775
Al--Ti--V, plasticity of α and β, phase analysis at 990°C of, 22:702
Al--Ti--V, properties of, 22:31321
Al--Ti--V, stresses in, measurement of residual surface, 22:14737 (CONF-671011-, pp 168-83)
Al--Ti--V, texture strengthening of, methods for, 22:52185
Al--Ti--V, welding of, explosive techniques for, 22:38528
Al--Ti-base--V, corrosion cracking of plates and weldments of, stress, 22:2619
Al--Ti-base--V, fracture toughness of beta-phase forged, 22:45768
Al--Ti-base--V, fracture toughness of forged, effect cf alpha and beta structure on, 22:45769
Al--Ti-base--V, mechanical properties of plates and weldments of, 22:2619
Al--Ti-base--V, radiation effects on mechanical properties of, cryogenic-neutron, 22:41075(R) (N-68-

13825)
Al--Ti-base--V, stress corrosion cracking of, 22:52170
Al--Ti-base--V, tensile properties of, effects of cobalt on, 22:28792
Al--Ti-base--V, thermal stability of, effects of cobalt on, 22:28792
Al--Ti-base--V--W, failure behavior of tungsten fiber-reinforced, (E), 22:26046
Al--Ti-base--V--Zr, mechanical properties of plates and weldments of, 22:2619
Au--Nb--V, magnetic properties of, atomic environment effects on, (T), 22:7374
Au--Ta--V, magnetic properties of, atomic environment effects on, (T), 22:7374
Au--V, gold-197 Moessbauer spectra in intermetallic Au_4V, (E), 22:26501
Au--V, magnetic properties of VAu_4, atomic environment effect on, (T), 22:7374
Au--V, Moessbauer effect in ferromagnetic intermetallic Au_4V, hyperfine field of, (E), 22:1341
Au--V, vanadium-51 NMR study of localized moment in, 22:22245
Be--V, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
C--Cr--Fe--V--Zr, cost of LMFBR fuel cladding of, 22:21699(R) (WARD-3791-13)
C--Cr--Fe--V--Zr, performance as fuel cladding for LMFBR, physics calculations for evaluation of, 22:21699(R) (WARD-3791-13)
C--Cr--Fe--V-base--Zr, fabrication of Vanstar-7, for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Cr--Fe--V-base--Zr, mechanical properties of Vanstar-7, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Cr--Fe--V-base--Zr, preparation and properties, 22:8710(R) (WCAP-3791-9)
C--Cr--Mn--Mo--N--Ni--Si--steel--V, transformations in TRIP alloy III, effects of strain on martensitic, 22:45745 (UCRL-18043, pp 107-53)
C--Cr--Ta--V-base--Zr, fabrication of Vanstar-8 for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, mechanical properties of Vanstar-8, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, preparation and structure, 22:8710(R) (WCAP-3791-9)
C--Cr--Ta--V-base--Zr, radiation effects on mechanical properties of Vanstar-8, in-pile, 22:34046(R) (WARD-3791-17)
C--Cr--V, phase equilibria, (E), 22:28950
C--Fe--Nb--V-base--Zr, fabrication of Vanstar-9, for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, mechanical properties of Vanstar-9, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, preparation and properties, 22:8710(R) (WCAP-3791-9)
C--Fe--Nb--V-base--Zr, preparation and properties of Vanstar-9, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--Fe--Nb--V-base--Zr, radiation effects on mechanical properties of Vanstar-9, in-pile, 22:34046(R) (WARD-3791-17)
C--Fe--V-base--Zr, preparation and properties of Vanstar-7, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--H--V, crystal and electronic structure of solid-phase, 22:15215
C--Hf--V, phase studies at 1000°C of, 22:19667
C--Ta--V-base--Zr, preparation and properties of Vanstar-8, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--V, phase diagram revision, 22:31489
C--V--Zr, phase studies at 1000°C of, 22:19667
Cd--V, phase diagrams and thermodynamic properties of, 22:4803
Ce--V, phase field distribution in, 22:10994
Co--Cr--Fe-base--Mo--V--W, wear in sliding and static contact with metals in sodium at high temperatures, 22:657 (NAA-SR-12446)
Co--V-base, spectra of sigma-phase in, x-ray, 22:49758
Cr--Fe--V--Zr, cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
Cr--Mo--Nb--Ni-steel--V, creep and stress-rupture of Type 1613, effects of sodium at 700°C on, 22:38532(T) (ANL-Trans-594)
Cr--Mo--Ni--steel--V, radiation effects on ductility of, 22:36508(R) (AD-661229)
Cr--Mo--Ni--steel--V, radiation effects on ductility of, fast neutron, 22:31417 (BNWL-532, pp 9.1-23)
Cr--Mo--Ni--steel--V, uses in rotors of hydrogen-cooled electric generators powered by steam turbines, 22:47672 (CONF-671007-5)
Cr--Mo--steel--V, fatigue testing at 80°F of, analysis of, (E), 22:35414 (AD-663133)
Cr--Nb--Ti--V--W, elasticity, 22:10959
Cr--Ti--V, mechanical properties, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Cr--Ti--V, mechanical properties of, effects of neutron fluence and temperature on, 22:12006(R) (ANL-7399)
Cr--Ti--V, radiation effects on mechanical properties of, measurement at 510 to 704°C of neutron, 22:32741 (BNWL-532, pp 3.1-17)
Cr--Ti--V, radiation effects on tangential rupture strength of, analysis of neutron, 22:48788
Cr--Ti--V, radiation effects on tensile properties of, fast-neutron, 22:647(R) (BNL-50077)
Cr--Ti--V-base, compatibility of cladding of, with LMFBR carbide fuels, 22:30118 (ANL-7438)
Cr--Ti--V-base, compatibility with uranium-base fuel alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, corrosion by low-oxygen sodium at 850°C, 22:43629(R) (LA-3933)
Cr--Ti--V-base, corrosion by sodium at 650°C, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, creep strength of, effects of annealing temperature on, 22:7788(R) (ANL-7382)
Cr--Ti--V-base, fabrication for fuel element cladding, 22:34046(R) (WARD-3791-17)
Cr--Ti--V-base, fabrication of improved AM-75, for fast reactor fuel element cladding, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, mechanical properties of 1050°C-annealed sheet, 22:49692(R) (CEND-3742-342)
Cr--Ti--V-base, mechanical properties of, effects of heat treatments on, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, mechanical properties of, testing for cladding uses, 22:34046(R) (WARD-3791-17)
Cr--Ti--V-base, preparation and properties for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
Cr--Ti--V-base, production of high-purity sheet, 22:49692(R) (CEND-3742-342)
Cr--Ti--V-base, production of high-purity, commercial melting method for, 22:43539(R) (CEND-3742-336)
Cr--Ti--V-base, properties and crystal structure of, 22:43539(R) (CEND-3742-336)
Cr--Ti--V-base, radiation effects on mechanical properties of, in-pile, 22:43627 (ANL-7299, pp 14-113)
Cr--Ti--V-base, radiation effects on tensile properties of, fast neutron, (E), 22:19573 (BNWL-455, Paper 3.1-8)
Cr--Ti--V-base, thermal conductivity of, measurement of, 22:7788(R) (ANL-7382)
Cr--Ti-base--V, wettability of, 22:8737 (ORNL-4170, pp 65-79)
Cr--V, analysis for chromium, spectrographic, 22:25236 (CEA-N-616, pp 20-71)
Cr--V, analysis for silicon by atomic absorption spectrophotometry, 22:30436(R) (UCRL-50006-68-1)
Cr--V, Hall effect and specific heat measurements on, 22:28812
Cr-base--Ti--V, fabrication into fuel cladding for breeder reactors, 22:4753
Cr-base--V, hardness of extruded, effects of temperature on, 22:15179 (GEMP-1002, pp 83-93)
Cu--V, phase field distribution in, 22:10994
Fe--Nb--V--Zr, cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
Fe--Nb--V--Zr, mechanical properties of, for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)
Fe--Nb--V--Zr, production for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)
Fe--V, analysis for aluminum using stilbazo, photometric, 22:18700
Fe--V, analysis for iron in presence of hydrogen peroxide by high-frequency titration with cupferron, 22:25281
Fe--V, analysis for phosphorus, extraction method for spectrophotometric, 22:4043
Fe--V, chemical and magnetic ordering in, Moessbauer spectral studies of, 22:5456
Fe--V, nuclear magnetic resonance of iron-57 in, (E), 22:7384
Fe--V--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe-base--V, diffusion of iron in, at 900 to 1500°C, 22:38540 (UCRL-50314)
Ga--V, analysis for vanadium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
Ga--V, superconducting critical fields of intermetallic V_3Ga, (E), 22:22080
Ga--V, superconducting transition temperature of V_3Ga, effects of composition, structure, and production on, 22:48055
Ga--V, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
H--V, phase diagram, 22:26059(T) (AD-663333)
Hf--Mo-base--rare earth--Ti--V, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
In--V, superconducting properties of intermetallic V_3In, 22:9262
La--V, phase field distribution in, 22:10994
Mn--V, phase diagrams and thermodynamic properties of, 22:4803
Mn-base--V, spectra of sigma-phase in, x-ray, 22:49758
Mo--Nb-base--V--W, mechanical properties of, 22:52174
Mo--Ti--V--W, corrosion protection of niobium and tantalum alloys by coatings of, 22:41007
Mo-base--rare earth--Ti--V--Zr, mechanical properties of,

effects of carbide, nitride, or oxide phases on, 22:23788
Nb--Ta--V, phase diagrams for, analysis of high-temperature equilibrium, 22:52202
Nb--Ti--V, creep at >650°C, 22:49747
Nb--Ti--V, creep at 650 to 800°C, effects of titanium content on, 22:2578
Nb--Ti--V, stress rupture at >650°C, 22:49747
Nb--Ti--V, tensile properties at 650 to 800°C, effects of titanium content on, 22:10953(T) (ORNL-tr-1790)
Nb--Ti--V, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
Nb--Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
Nb--Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
Nb--V, creep and heat resistance of, 22:10993
Nb--V, creep mechanisms at low temperatures, 22:41055
Nb--V, superconductivity of, 22:15497
Nb--V--Zr, phase studies at 500, 700, and 1000°C, 22:19550
Nb--V--Zr-base, performance as braze alloy for joining beryllium oxide to niobium--zirconium alloys, 22:652(R) (N-67-22066)
Nb-base--Ti--V, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--V--Zr, oxidation by air at 900 to 1200°C, mechanisms of, 22:2581
Nb-base--V--Zr, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
Ni--Ti--V, corrosion by liquid sodium at 500 to 600°C, 22:23768
Ni--V, preparation and properties of, 22:2560(R) (IS-RD-11)
Ni-base--V, diffusion of deuterium and hydrogen in, at 180 to 460°C, 22:35813
Ni-base--V, neutron magnetic scattering by, (E), 22:24809
Ni-base--V, solvent properties of, for deuterium and hydrogen at 180 to 460°C, 22:35813
Nn-base--V, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
O--P--V, electric conductivity of semiconducting glasses of, 22:40993(R) (COO-1198-534)
O--Si--V, phase diagram and thermodynamics of, 22:2704
O--V--W, crystal structure of WV$_2$O$_7$ phase in, 22:34120
Pu--V, analysis for vanadium, spectrophotometric, 22:14421 (LA-3843)
Pu--V, phase diagrams and properties, 22:36495
Pu--V, phase studies of, 22:2655
Pu--V--Zr, phase studies, 22:34065(R) (MLM-1445)
Sb--V, structure of intermetallic V$_5$Sb$_4$, 22:28835
Sc$_2$O$_3$--V--Y$_2$O$_3$, exchange reactions of, thermodynamics of, 22:23717
Si--V, magnetic flux distribution in superconducting, effects of grain boundaries and surface scratches on, (E), 22:34527
Si--V, metallography of intermetallic superconducting, optical stage for study of, 22:1120
Si--V, phase transformations in, low-temperature, 22:11524
Si--V, properties of, effect of silicon content on, 22:2560(R) (IS-RD-11)
Si--V, superconductivity and transition temperatures of fused, 22:6984(T) (CONF-640310-1)
Sn--V, vanadium-51 nuclear spin--lattic relaxation time in intermetallic V$_3$Sn as function of magnetic field and temperature, (E), 22:34544
steel--V, impurities in Grades C. 4736 and C. 4737, determination of nonmetallic, 22:28783(T) (TT-66-59003-4/A)
Ta--V--W, crystal structure of intermetallic compound TaV$_2$ in, 22:45788
Ta--V--Zr, phase diagrams of, 22:17144
Ta--V--Zr, properties of, effects of composition on corrosion and tensile, 22:52186
Tc--V, crystal structure of phases in, 22:31400
Tc--V, phase diagram of, 22:31400
Tc--V, superconducting properties of, 22:1079
Tc--V, superconductivity of, 22:8734 (ORNL-4170, pp 49-50)
Tc--V, superconductivity of, 22:31400
Ti--V, analysis for minor constituents, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
Ti--V, analysis for titanium, spectrophotometric, 22:27530 (CEA-N-816, pp 9-65)
Ti--V, creep at >650°C, 22:49747
Ti--V, creep at 650 to 800°C, effects of titanium content on, 22:2578
Ti--V, mechanical properties, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Ti--V, mechanical properties of, effects of surface defects on, 22:27479 (BNL-50096)
Ti--V, radiation effects on mechanical properties of, measurement at 510 to 704°C of neutron, 22:32741 (BNWL-532, pp 3.1-17)
Ti--V, radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39790(R) (UNC-5201)
Ti--V, radiation effects on physical properties of plutonium carbide (PuC)--uranium carbide (UC) fuel cladding of, analysis of fast neutron, 22:39789 (UNC-5198)
Ti--V, radiation effects on tensile properties of, fast neutron, 22:647(R) (BNL-50077)
Ti--V, radiation effects on, neutron, 22:52126 (BNL-50127)
Ti--V, radioinduced corrosion by sodium, in-pile, 22:17082
Ti--V, stress rupture at >650°C, 22:49747
Ti--V, superconducting critical current densities in, 22:29445
Ti--V, tensile properties at 650 to 800°C, effects of titanium content on, 22:10953(T) (ORNL-tr-1790)
Ti--V, tensile properties of, effects of annealing at 900 and 1000°C on, 22:27479 (BNL-50096)
Ti--V, vanadium-51 nuclear spin--lattice relaxation times in superconducting, 22:31780
Ti--V, wear in liquid sodium, effects of oxygen and temperature on sliding, 22:12952
Ti--V-base, compatibility with uranium-base fuel alloys at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, corrosion by low-oxygen sodium at 900°C, 22:43629(R) (LA-3933)
Ti--V-base, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Ti--V-base, corrosion by sodium, effects of calcium on, 22:52130(T) (ANL-Trans-666)
Ti--V-base, corrosion by sodium, effects of calcium on, 22:23723
Ti--V-base, corrosion by sodium, effects of trace oxygen on high-temperature, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, creep of sodium-exposed, at 650°C, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, fabrication for fuel element cladding, 22:34046(R) (WARD-3791-17)
Ti--V-base, fabrication of improved AM-82, for fast reactor fuel element cladding, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, mechanical properties of, effects of heat treatment on, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, mechanical properties of, testing for cladding uses, 22:34046(R) (WARD-3791-17)
Ti--V-base, penetration by liquid uranium-base fuel alloys, 22:43526 (ANL-7299, pp 114-19)
Ti--V-base, preparation and properties for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
Ti--V-base, radiation effects on mechanical properties of, in-pile, 22:43627 (ANL-7299, pp 14-113)
Ti--V-base, radiation effects on tensile properties of, fast neutron, (E), 22:19573 (BNWL-455, Paper 3.1-8)
Ti--V-base, yield points of, effects of strain, temperature, and titanium content on, 22:2616(T) (ORNL-tr-1791)
Ti--Va-base, oxidation by oxides in liquid sodium, kinetics of, 22:45752
Ti-base--V, production of niobium-plated Ti28V strip, 22:47670
U-base--V, heat treatment and properties of, 22:2618
V--Ti, spin--lattice relaxation processes in superconducting, (E), 22:31739
V--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
V--Zr, dissociation pressures for hydrided, analysis of, 22:30387
V--Zr, superconducting critical fields and transition temperatures of, (E), 22:48041
V--Zr, superconducting transition temperature of intermetallic ZrV$_2$, effects of niobium on, (E), 22:31754

VANADIUM BORIDES
preparation of VB$_2$, from vanadium pentoxide by boron reduction, 22:36528
properties for incorporation in control elements, 22:21749
thermal conductivity at room temperature, 22:679
thermodynamic properties of, 22:749 (COO-1140-164)
thermodynamic properties of, equipment and procedures for determining, 22:749 (COO-1140-164)
vaporization kinetics of, 22:749 (COO-1140-164)

VANADIUM CARBIDE OXIDES
preparation by decomposition of hexacarbonyl, 22:34104

VANADIUM CARBIDES
crystal and electronic structure of solid-phase, 22:15215
diffusion of carbon in, 22:15201
effects on creep strength of niobium--tungsten and niobium--tantalum--tungsten alloys, 22:26049
electric conductivity of, temperature coefficient, (E), 22:28932
mechanical behavior of, review of, 22:49826
properties and uses, 22:52275
properties of, analysis of physico-mechanical, 22:52271
reactions with liquid platinum, 22:12287
superconductivity in interstitial, 22:22117
thermodynamic properties of nonstoichiometric, at 973 to 1223°K, 22:31472
thermodynamics, 22:36541
wettability by sodium at 200 to 500°C, 22:23752 (AERE-M/R-1746)

HfC--VC, phase studies and solubilities of systems of, 22:49850
LaC--VC, miscibility at 1200°C to critical point, 22:43653
NbC--VC, miscibility at 1200°C to critical point, 22:43653
Ta$_2$C--V$_2$C, thermodynamics of, 22:28943
VC--ZrC phase studies and solubilities of systems of, 22:49850
VANADIUM CHLORIDES
chlorine-35 NMR spectra in liquid, 22:45029 (UCRL-18043, pp 7-105)
NbTaCl$_5$--VCl$_4$, phase studies on, 22:18794
VANADIUM HYDRIDES
Moessbauer effect of iron-57 in, 22:24408 (IA-1128, pp 21-54)
solvent properties for hydrogen, 22:13033
VANADIUM IONS
chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
determination by displacement chromatography on acidic cation exchange resin, 22:12416
effects on spectrophotometric determination of tungsten by molybdotungstic acid formation, 22:22979
energy levels in aluminum oxides, far-infrared spectroscopy of low-lying, 22:46199 (UCRL-18043, pp 183-98)
radiation effects on ESR spectra in calcium tungstate crystals, neutron and x, (E), 22:20052
radiolysis of aqueous solutions of, effects of oxidation state on yields from γ, 22:37792
spectra in aluminum oxide, at 4.2°K in magnetic field, far-infrared, 22:39970 (UCRL-18229)
VANADIUM ISOTOPES V-46
beta decay of, coupling constants and ft values for, (T), 22:32698
beta decay of, Fermi function for superallowed, (T), 22:5891
beta transitions in, ft values for superallowed 0-0, (T), 22:5887
energy levels of, spin-parity assignments for, (E), 22:30048(R) (PUC-937-307)
VANADIUM ISOTOPES V-47
energy levels from Coriolis coupling model, (T), 22:16096
energy levels from titanium-46 (p,γ) reactions, (E), 22:20514
energy-level transitions from titanium-47 (p,n) reactions, internal conversion coefficients and multipolarities for, (E), 22:11935
VANADIUM ISOTOPES V-48
beta decay of, beta--gamma circular polarization correlation in, (E), 22:7682
content in dusts near CERN Proton Synchrotron, 22:1545
cosmogenic activity in stone meteorites, (E), 22:2742
determination in Saint Severin meteorite, (E), 22:7080
energy level at 305 keV, g-factor for, (E/T), 22:48509(R) (BMwF-FBK-68-22)
energy level at 305 keV, parity determination by γ linear polarization correlation measurements, (E), 22:7668
energy levels from chromium-50 (d,α) and titanium-46 (He-3,p) reactions, (E), 22:20521
energy levels from titanium-47 (He-3,d) reactions, isobaric analog, (E), 22:26937
VANADIUM ISOTOPES V-49
cosmogenic activity in stone meteorites, (E), 22:2742
distribution in stone meteorites, 22:34215
energy levels from chromium-50 (d,He-3) reactions, (E), 22:1598(R) (COO-1265-49)
energy levels from chromium-50 (t,α) and titanium-48 (He-3,d) reactions, (E), 22:7667
energy levels from titanium-48 (He-3,d) reactions, (E), 22:26939
energy levels from titanium-48 (p,γ) reactions, branching ratios and transition widths for, (E), 22:44631
energy levels from titanium-48 (p,γ) reactions, isobaric analog and virtual, (E), 22:41991
energy levels from titanium-48(He-3,d) reactions at 17 MeV, (E), 22:15969
energy-level spins and transitions from chromium-50(t,α) and titanium-48 (He-3,d) reactions, (E), 22:3639 (BMwF-FBK-67-75)
energy-level transitions from titanium-48 (p,γ) reactions, (E), 22:20502
energy-level transitions from titanium-49 (p,n) reactions, internal conversion coefficients and multipolarities for, (E), 22:11935
formation rate of cosmogenic, in iron meteorites, calculation of, 22:25514
radioactivity in Granes meteorite, cosmic-ray-induced, (E), 22:47743
VANADIUM ISOTOPES V-50
deuteron elastic and inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:50593
energy levels from deuteron scattering at 7.5 MeV, deformation parameters and spin--parity assignments for, (E), 22:50593
VANADIUM ISOTOPES V-51
alpha inelastic scattering at 42 MeV, angular distributions for, (E/T), 22:44668
alpha reactions (α,t) at 29 MeV, angular distributions for, (E), 22:50595
alpha reactions at 10 to 120 MeV, recoil level densities from, (E), 22:37316(R) (UR-3591-9)
alpha reactions at 10 to 80 MeV, recoil ranges from, (E), 22:11968
carbon-12 reactions (C-12,N-13) with, proton transfer in, (E/T), 22:26881
deuteron elastic and inelastic scattering at 7.5 MeV, angular distributions for, (E), 22:50593
deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E/T), 22:20505
deuteron reactions (d,p) at 10 MeV, angular distributions for, (E), 22:32515 (JEN-181-DF/1-55)
energy levels from α inelastic scattering, spin-parity assignments for, (E/T), 22:44668
energy levels from chromium-51 decay, branching ratio for, (E), 22:35255
energy levels from chromium-52 (d,He-3) reactions at 34.4 MeV, (E), 22:20505
energy levels from chromium-52 (t,α) reactions, spins and spectroscopic factors for, (E), 22:20532
energy levels from deuteron scattering at 7.5 MeV, deformation parameters and spin--parity assignments for, (E), 22:50593
energy levels from electron-capture decay of chromium-51, (E), 22:7674
energy levels from neutron inelastic scattering at 1.0 to 3.1 MeV, (E), 22:7673
energy levels from neutron inelastic scattering at 1 to 3.8 MeV, spin assignments for, (E), 22:48495
energy levels from neutron inelastic scattering spins and parities of, (E), 22:20578 (WASH-1079)
energy levels from titanium-50 (He-3,d) reactions at 10 MeV, (E), 22:3677
energy levels from titanium-50 (He-3,d) reactions, (E), 22:26939
energy levels from titanium-50 proton elastic scattering, spin--parity assignments and widths of isobaric analog, (E), 22:53139
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, g-factor measurements using Coulomb excitation in alloys, (E), 22:46786
energy-level spins and transition strengths from proton inelastic scattering, (E), 22:30048(R) (PUC-937-307)
energy-level transition in, conversion coefficient for, (E), 22:22566
energy-level transition in, internal conversion coefficient for, (E), 22:20570 (ITEF-52)
energy-level transitions from neutron inelastic scattering, (E), 22:26941
meson (π^+) reactions (π^+,π^-) at 200 MeV, differential cross sections for, (E), 22:53118
meson (π^+) reactions (π^+,π^-) at 200 MeV, double charge exchange in, (E), 22:13933 (PPAD-633-F)
meson (π^+) reactions (π^+,π^-) at 200 MeV, magnetic spectrometer with wire spark chamber study of double charge exchange in, (E), 22:37090
meson (π^+) reactions (π^+,π^-) at 31 MeV with, differential cross sections for, (E), 22:53093
meson (π^+) reactions (π^+,π^-) at 31 MeV, differential cross section for, (E), 22:53117
neutron capture at 0.1 to 2 MeV, cross section for, (E), 22:37312 (ANL-7450, pp 105-7)
neutron capture by, γ spectra from thermal, (E), 22:1635
neutron capture by, γ spectra from thermal, (E), 22:9921 (JUL-Conf-1)
neutron capture resonance integrals and resonance parameters for, tables of Doppler-broadened, (T), 22:47318 (EURFNR-527)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron inelastic scattering at 0.4 to 1.0 MeV, γ angular distributions and yields from, (E), 22:26941
neutron inelastic scattering at 0.8 at 1.8 MeV, γ angular distributions and production cross sections for, (E), 22:20578 (WASH-1079)
neutron inelastic scattering at 1.0 to 3.8 MeV, angular distributions and excitation functions for, (E), 22:48495
neutron reactions (n,α) at 13.5 to 14.7 MeV, cross sections for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron resonance integral for, (E), 22:11925
neutron strength function and scattering radius at 0 to 130 keV, (E), 22:37340(R) (EANDC(E)-89(U))
neutron total cross section at 0.4 to 1.2 MeV, 22:39575 (CEA-R-3279)
neutron total cross sections up to 200 keV, resonances in, (E), 22:1626
nuclear magnetic resonance study of localized moment in gold--vanadium alloys, 22:22245
nuclear radii of, from optical model analysis of proton elastic scattering, (T), 22:50662
nuclear spin--lattice relaxation time in intermetallic V$_3$Sn as function of magnetic field and temperature, (E), 22:34544
nuclear spin--lattice relaxation time in superconducting

    vanadium--titanium alloys, 22:31780
  photon reactions (γ,α), (γ,αn), (γ,2n), (γ,3n), and (γ,2p) at 25, 29, and 37 MeV bremsstrahlung endpoint energy, cross sections for, (E), 22:27077
  photon reactions (γ,π^+) at 750 MeV, yields and cross sections for, (E), 22:48207
  photon reactions (γ,π^-2n) at 750 MeV, yields and cross sections for, 22:48207
  proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
  proton elastic scattering at 4.0 to 5.5 MeV, fluctuation analysis of excitation functions for, (E), 22:27064
  proton elastic scattering at 4.00 to 5.52 MeV, excitation function for, (E), 22:24835(R) (BARC-305)
  proton elastic scattering by, fluctuation analysis of chromium-52 levels from, (E), 22:7569(R) (BARC-291)
  proton elastic scattering by, isobaric analog resonances in, (E), 22:27052
  proton elastic scattering cross section at 4.0 to 5.5 MeV, fluctuation analysis of, (E/T), 22:32532
  proton elastic scattering cross sections at 4.005 to 5.515 MeV, (E), 22:20529
  proton inelastic scattering at 17.5 MeV, (E), 22:30048(R) (PUC-937-307)
  proton reactions (p,γ) and (p,n) with, isobaric analog resonances in, (E), 22:37315 (KFK-704)
  proton reactions (p,γ) and (p,n) with, isobaric analog resonances in, (E), 22:27052
  proton reactions (p,n) at 1.5 to 5.5 MeV, integrated cross section for, (E), 22:32533
  proton reactions (p,n) at 1.56 to 5.53 MeV with, cross sections for, 22:7569(R) (BARC-291)
  proton reactions (p,n) at 1.56 to 5.53 MeV, excitation function for, (E), 22:24835(R) (BARC-305)
  proton reactions (p,n) at 2 MeV with single crystals of, use for studying channeling effects, 22:18197
  proton reactions (p,n) at 94 MeV, analysis of isobaric analog resonances in, (E/T), 22:16072
  proton reactions (p,n) at 94 MeV, isobaric analog states in, (E), 22:29952
  proton reactions (p,n) at low energies, analysis of fluctuations of neutron excitation function for, 22:46754
VANADIUM ISOTOPES V-52
  beta decay scheme of, γ spectra and log-ft values for, (E), 22:35264
  description using shell model with configuration mixing, (T), 22:27305
  energy levels from vanadium-51 (d,p) reactions, (E), 22:32515 (JEN-181-DF/1-55)
  energy-level transitions from vanadium-51 thermal neutron capture, (E), 22:1635
  half-life of, (E), 22:24845
  neutron separation energy from vanadium-51 thermal neutron capture, (E), 22:1635
  nuclear spin and parity of ground state of, (E), 22:35264
  production by neutron irradiation of element, minimizing cost function for, 22:30609
  production in alpha reactions with titanium-50, (E), 22:11956
VANADIUM NITRIDES
  cadmium ion sputtering at 100 to 500 eV, (E), 22:36727
  superconductivity in interstitial, 22:22117
VANADIUM OXIDES
  analysis for constituents by neutron activation methods, 22:37686
  analysis for impurities by activation methods, 22:37681
  analysis for iron traces, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
  analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  crystal defects in, calculations of formation energy, 22:52287
  crystal growth by arc transfer method, 22:52289
  crystal structure of, research using neutron inelastic scattering, (E), 22:20497(R) (AECL-3009)
  dissociation energies of gaseous, 22:4117
  effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  neutron scattering by V_2O_3, (E), 22:24810
  oxygen isotope exchange between molecular oxygen and, rate of, 22:27675
  phase transitions in, research using neutron scattering, (E), 22:32512(R) (AECL-3108)
  reactions with americium oxides, solid-state, 22:30548
  reduction of V_2O_5, aluminothermic, 22:28753(R) (CEND-3742-329)
  spectral absorption lines in red giant stars due to, (E), 22:52343
  thermodynamic properties of VO_2, measurement by solid state emf coulometry, 22:52268
  volatility of, effects of steam pressure on, (E/T), 22:51095(R) (NDL-SP-16)
  Al_2O_3--V_2O_5, radiation effects on catalytic dehydrogenation efficiency of, for butane, 22:25384
  P_4O_{10}--V_2O_5, radiation effects on electric conductivity of semiconducting glass of, gamma, 22:15264
  Ti_2O_3--V_2O_3, analysis for constituents by neutron activation methods, 22:37686
  U_2O_5--V_2O_5, phase studies in, effects of temperature on 22:34122
  UO_2--V_2O_5, phase structure at 900 to 1200°C, x-ray analysis of, 22:45826
  UO_3--V_2O_5, phase studies on compound formation in, 22:35808
VANADIUM PHOSPHIDES
  electron band structure of, magnetic susceptibility and NMR studies of, 22:17807
VANADIUM SILICIDES
  electron band structure of V_3Si, 22:5285
  lattice softening in, relation to superconductivity of, 22:19907
  neutron scattering in V_3Si, absence of paramagnetic, 22:37035
  production by auxiliary metal bath procedure, 22:38614
  properties of VSi_2 as coating material on tantalum alloy 22:40998(R) (N-68-19623)
  superconducting critical fields of, (E), 22:22080
  superconducting properties of, relation to lattice stability, (T), 22:44034
  superconductivity and lattice instability in, (E/T), 22:26340
VANADIUM STEEL
  corrosion by liquid sodium, 22:12966
  Al--Cr--Mo--V, corrosion by carbon dioxide at less than or equal to 550°C, 22:17075
  C--Cr--Mn--Mo--Ni--Si--V--W, radiation effects on mechanical properties of, 2.5-MeV electron, 22:8790
  Cr--Mn--Mo--Ni--Si--V, mechanical properties of nitrogen containing, effects of strain-induced transformations on, 22:692 (UCRL-17849)
  Cr--Mo--Nb--V, mechanical properties and structure of, a 500 to 550°C, 22:21723
  Cr--Mo--Ni--U, analysis for niobium, photometric extraction method for, 22:6275
  Cr--Mo--V--W, welding to chromium steel, factors affecting joint stability, 22:15159
  Cr--V, analysis for phosphorus, extraction method for spectrophotometric, 22:4043
  Mn--Mo--Ni--V, corrosion by carbon dioxide at less than or equal to 550°C, 22:17075
VANADIUM SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
VANADIUM SULFIDES
  dissociation energies of gaseous, 22:4117
VANADIUM THIOCYANATES
  chemical bonding and structure in, 22:4138
VANADIUM TUNGSTEN OXIDES
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
VANADYL IONS
  complexes of, oxygen-17 NMR studies on water exchange in partial, 22:45029 (UCRL-18043, pp 7-105)
  complexes with Arsenazo III, potentiometric and spectrophotometric studies of, 22:37739
VANILLIC ACID
  determination in urine by least-squares resolution of uv spectra, 22:44955 (ORNL-4232)
VANILLIN
  yields in nitrobenzene oxidation of gamma-radioinduced graft polymerization of hydrochloric acid lignin onto styrene, 22:33403
VANSTAR-7
  cladding economics and performance testing of, analysis of LMFBR fuel element, 22:46925 (WARD-3791-19)
  mechanical properties of, effects of temperature and thickness on, 22:46925 (WARD-3791-19)
VANSTAR-9
  cladding economics and performance testing of, analysis of LMFBR fuel element, 22:46925 (WARD-3791-19)
  mechanical properties of, effects of temperature and thickness on, 22:46925 (WARD-3791-19)
VAPOR PRESSURE
    see also Dew Point Temperature
  book: The Characterization of High-Temperature Vapors, 22:30553
  determination of, molybdenum cup apparatus for, 22:14476 (BMwF-FBK-67-87)
  isotope effects on liquid and solid, 22:14513 (BNL-50057, pp 60-78)
  isotope effects on, theory of, 22:42672
  measurement method for very low, 22:12214(T) (UCRL-Trans-10198)
VAPORIZATION
    see also Evaporation
  research progress on, 22:6288(R) (COO-1140-167)
VAPORS
  book: The Characterization of High-Temperature Vapors, 22:30553
  interactions with aerosols, tracer studies of, 22:6804 (ORNL-4168, pp 289-311)
  production for heat transfer systems, design of vessel for, 22:49001(P)
Vapotron, Nuclear
    see Reactor Fuel Elements
Varidase (R)

  see Streptodornase--Streptokinase
Vaseline
  see Petrolatum
VBWR
  see Vallecitos Boiling-Water Reactor
Vector Mesons
  see Mesons
VEGETABLES
  analysis for plutonium, method for, 22:1945 (CEA-R-3220)
  analysis for strontium by flame photometry after ion exchange separation, 22:10192
  analysis of ashed, for strontium by atomic adsorption spectrophotometry, 22:6256 (PG-Report-775)
  analysis of ashes of, for strontium by ion exchange separation and flame photometry, 22:22934 (PG-Report-815)
  arracacia, radiation processing of tubers of, effectiveness of cobalt-60 γ, 22:45740
  arracacia, radiation processing of, for extension of shelf life, γ, 22:43504
  asparagus, radiation processing of, 22:52061 (CONF-670945)
  asparagus, radiation processing of, effectiveness of γ, 22:33994(R) (COO-1592-25)
  asparagus, radiation processing of, γ, 22:17061(R) (COO-1592-10-A)
  barium-140 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  beans, iron-59 uptake from, by rats, 22:45400
  beans, radiation effects on productivity of, 22:12942
  beans, radiation processing of, effects of, on organoleptic properties, 22:52123
  beans, radiation processing of, factors affecting formation of gases in package during γ, 22:601
  beets, radiation processing of dehydrated, determination of dose for, 22:19464
  beets, radiation processing of, effects of, on microbiological properties and sugars, x, 22:40991
  bell peppers, radiation processing of dehydrated, determination of dose for, 22:19464
  beryllium-7 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  broccoli, radiation processing for blanching of, effects of, on ascorbic acid, chlorophyll, and pH in comparison to water method, microwave, 22:52109
  cabbages, radiation processing of dehydrated, determination of dose for, 22:19464
  calcium content of, grown in strontium enriched soils, 22:28521
  carrots, cesium-137 content of, in Norway during 1964 to 1967, 22:38259 (NYO-3364-42)
  carrots, radiation effects on ascorbic acid activity in, effects of dose on, 22:40550
  carrots, radiation processing of dehydrated, determination of dose for, 22:19464
  carrots, radiation processing of, effects of, on acetate metabolism, γ, 22:8671
  carrots, radiation processing of, effects of, on glyoxylate metabolism, 22:52061 (CONF-670945)
  carrots, radiation processing of, effects of, on wholesomeness in mice, 22:19462
  carrots, radioactivity content of, in USSR potassium-40, β and natural, 22:43326
  celery, radiation processing of dehydrated, determination of dose for, 22:19464
  cesium-137 content in Indian, methods for measuring, 22:6488
  cesium-137 content in Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
  cesium-137 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  cesium-137 content of, in Germany during 1963, 22:10775
  cesium-137 content of, in Netherlands during 1964, 22:4616
  cesium-137 uptake from podzolic turf soils by, 22:25799 (A-AC-82/G/L-1187)
  collards, radioisotope content of Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
  corn, radiation processing of dried, nutritive value of meal following γ, 22:23705
  corn, radiation processing of, effectiveness of γ, 22:33994(R) (COO-1592-25)
  corn, radiation processing of, γ, 22:17061(R) (COO-1592-10-A)
  corn, radioisotope content of Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
  cucumbers, radiation processing of, effects of temperature and polyethylene wrapping on storage life following, 22:52065
  garlic, radiation processing of, effects of, on sprouting, 22:23694 (IA-1128, pp 168-84)
  garlic, radiation processing of, inhibitory effects of, on sprouting, 22:52123
  green beans, radiation processing of dehydrated, determination of dose for, 22:19464
  iodine-131 content of, effects of climatological, geographical, and meteorological factors on, 22:504
  iodine-131 content of, in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
  iodine-131 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  lead-210 content of, in Japan, effects of, on uptake by man, 22:45520
  leeks, radiation processing of dehydrated, determination of dose for, 22:19464
  legumes, radioisotope content of, in Italy, cesium-137 and strontium-90, 22:51588
  lentils, radiation processing of, effects of, on organoleptic properties, 22:52123
  lettuce, cesium-137 content of, in Germany during 1960 to 1964, 22:15006
  lettuce, radiation processing of, effects of, on intermediary metabolism, 22:52061 (CONF-670945)
  lettuce, selection of ripened, design of gamma source detector for, 22:4361
  lettuce, strontium-90 content of, in Germany during 1960 to 1964, 22:15006
  lima beans, radiation processing of dehydrated, determination of dose for, 22:19464
  manganese-54 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  mushrooms, radiation processing of, 22:52061 (CONF-670945)
  mushrooms, radiation processing of, effectiveness of γ, 22:33994(R) (COO-1592-25)
  mushrooms, radiation processing of, effectiveness of, 22:17063
  mushrooms, radiation processing of, effects of temperature on storage life following, 22:52065
  mushrooms, radiation processing of, effects of, on storage life and quality, γ, 22:23696
  mushrooms, radiation processing of, effects of, on ascorbic acid content and organoleptic properties, γ, 22:23695(R) (UCD-34-P-80-5)
  mushrooms, radiation processing of, γ, 22:17061(R) (COO-1592-10-A)
  okra, radiation processing of dehydrated, determination of dose for, 22:19464
  onions, radiation effects on population control of onion maggots on, γ, 22:4725
  onions, radiation effects on yield of, following seed exposure, 22:23694 (IA-1128, pp 168-84)
  onions, radiation processing of dehydrated, determination of dose for, 22:19464
  onions, radiation processing of, effectiveness of, 22:17063
  onions, radiation processing of, effects of temperature on Botrytis alii infection and sprouting following, 22:52065
  onions, radiation processing of, effects of, on beagle dogs and rats following ingestion, γ, 22:43496 (NYO-3422-1(Suppl.)(Vol.2))
  onions, radiation processing of, effects of, on beagle dogs and rats following ingestion, γ, 22:43494 (NYO-3422-1(Suppl.)(Vol.1))
  onions, radiation processing of, effects of, on dogs and rats following ingestion, 22:47649 (NYO-3422-1(Suppl.)(Vol.3))
  onions, radiation processing of, effects of, on germination, γ, 22:23695(R) (UCD-34-P-80-5)
  onions, radiation processing of, effects of, on rats following ingestion, γ, 22:23693 (AECL-2706, pp 114-21)
  onions, radiation processing of, effects of, on sprouting, 22:23694 (IA-1128, pp 168-84)
  onions, radiation processing of, for human consumption in IAEA member states, 22:33998
  onions, radiation processing of, inhibitory effects of, on sprouting, 22:52123
  onions, radioactivity content of, in USSR, potassium-40, β and natural, 22:43326
  peas, analysis for mercury by neutron activation methods, 22:30502
  peas, preservation by canning with x-irradiated beet sugar, 22:40991
  peas, radiation processing of dehydrated, determination of dose for, 22:19464
  peas, radiation processing of dried, nutritive value of meal following γ, 22:23705
  peas, radiation processing of, effects of, on organoleptic properties, 22:52123
  Peruvian carrots, radiation processing of, effects of, on nutritive value and storage life, γ, 22:45740
  phosphorus-32 content of, in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
  polonium-210 content of fresh, 22:38287
  potassium-40 content in Indian, methods for measuring, 22:6488
  potatoes, analysis for mercury by neutron activation methods, 22:30502
  potatoes, cesium-137 content of, in Germany during 1963, 22:10775
  potatoes, cesium-137 content of, in Germany during 1960 to 1964, 22:15006
  potatoes, cesium-137 content of, in Netherlands during 1966, 22:15001 (RA-30)
  potatoes, cesium-137 content of, in Norway during 1964 to 1967, 22:38259 (NYO-3364-42)
  potatoes, cesium-137 content of, in Norway, effects of boiling on, 22:494 (NYO-3364-29)
  potatoes, inhibition of sprouting during storage of,

effectiveness of Fusarex for, 22:21641 (RISO-163)
potatoes, radiation effects on ascorbic acid activity in, effects of dose on, 22:40550
potatoes, radiation effects on enzymes of, γ, 22:52123
potatoes, radiation effects on productivity of, ultrasonic, 22:12942
potatoes, radiation effects on starch from, in vacuo cobalt-60 γ, 22:28320
potatoes, radiation effects on tuber development of, γ, 22:52061 (CONF-670945)
potatoes, radiation processing of dehydrated, effects of dose and temperature on β and γ, 22:12950(P)
potatoes, radiation processing of Spanish, effects of, on ascorbic acid and carbohydrate content, sprouting, and weight, γ, 22:52062 (JEN-189-SI/I-18)
potatoes, radiation processing of, delayed effects of, on casein content, 22:43514
potatoes, radiation processing of, economic feasibility of, in Spain, 22:33995 (JEN-184-SI/I-17)
potatoes, radiation processing of, effectiveness of ionizing and microwave, 22:8668
potatoes, radiation processing of, effectiveness of γ, 22:10898
potatoes, radiation processing of, effectiveness of, 22:17063
potatoes, radiation processing of, effectiveness of, for sprout-inhibition during storage, 22:21641 (RISO-163)
potatoes, radiation processing of, effects of dose and temperature on efficiency of γ, 22:34000
potatoes, radiation processing of, effects of, on sprouting, 22:23694 (IA-1128, pp 168-84)
potatoes, radiation processing of, effects of, on wholesomeness in mice, 22:19462
potatoes, radiation processing of, effects of, on sprouting in comparison to effects of chemical inhibition, γ, 22:49661 (CNEA-231)
potatoes, radiation processing of, effects of, on germination and yield, 22:23694 (IA-1128, pp 168-84)
potatoes, radiation processing of, effects of, on germination, γ, 22:23695(R) (UCD-34-P-80-5)
potatoes, radiation processing of, for human consumption in IAEA member states, 22:33998
potatoes, radiation processing of, for sprout inhibition, γ, 22:40988
potatoes, radiation processing of, in Pakistan, storage evaluation of γ, 22:43507
potatoes, radiation processing of, inhibitory effects of, on sprouting, 22:52123
potatoes, radioactive contamination of Moscow, 1965 to 1966, 22:23163 (A-AC-82/G/L-1192)
potatoes, radioactivity content of, in USSR, potassium-40, β and natural, 22:43326
potatoes, radioisotope content of, in countries of EAEC during 1965, cesium-137 and strontium-90, 22:40660 (EUR-3640)
potatoes, radioisotope content of, in Netherlands during 1963, cesium-137 and strontium-90, 22:33817 (RA-32)
potatoes, radioisotope transport by, following contamination of tubers, cesium-137 and strontium-85, 22:40529
potatoes, separation from rocks and soil, gamma absorption coefficient for use in, 22:37941
potatoes, strontium-90 content of, in Germany during 1963, 22:10775
potatoes, strontium-90 content of, in Germany during 1960 to 1964, 22:15006
potatoes, strontium-90 content of, in Netherlands during 1966, 22:15001 (RA-30)
radiation effects on physiological responses of, effects of fungicidal doses on γ, 22:4715(R) (UCD-34-P-73-20)
radiation processing of dehydrated, commercial evaluation of, 22:49670
radiation processing of fresh, 22:33998
radiation processing of fresh, in Asia, Europe, and North America, 22:31304
radiation processing of, bibliography on, 22:599 (LS-173)
radiation processing of, conference on, 22:17065
radiation processing of, development of tests for detection of, 22:52123
radiation processing of, dose requirements for, 22:31301
radiation processing of, dosimetry for γ, 22:52061 (CONF-670945)
radiation processing of, during tour of portable cesium irradiator in USA, 22:31311
radiation processing of, effectiveness of γ, 22:10898
radiation processing of, effects of, on content of pectinesterase, effects of state of purification on, γ, 22:30954
radiation processing of, effects of, on organoleptic properties and safety for consumption, 22:15134
radiation processing of, effects of, on respiration, γ, 22:8671
radiation processing of, effects of, on storage life, 22:17050(R) (EUR-3606)
radiation processing of, for control of postharvest diseases, review of, 22:52125
radiation processing of, for insect pest control, review of, 22:47658
radiation processing of, in Hawaii for control of insects, γ, 22:43516
radiation processing of, in OECD member countries, programs for γ, 22:43511
radiation processing of, in relation to biochemical alterations, γ, 22:8671
radiation processing of, review of γ, 22:23702
radiation processing of, review of microwave, 22:49672
radioactive contamination content of, in India during 1963 to 1965, 22:40656 (AEET-273)
radioactivity content in Hungarian, from 1960 to 1965, 22:48946
radioactivity of India, 22:2222
radioinduced mutations in, for increase in productivity, γ and x, 22:45489
radioisotope content of, during 1965 to 1966, effects of cultivation on cesium-137 and strontium-90, 22:28454 (NYO-2147-13, pp 168-74)
radioisotope content of, in countries of EAEC during 1965, cesium-137 and strontium-90, 22:40660 (EUR-3640
radioisotope content of, in Italy, cesium-137 and strontium-90, 22:51588
radioisotope uptake by, in monazite area of India, 22:6440
radiomimetic effects of irradiated sugars on cultured tissues of, 22:43261
radishes, radioactivity content of, in USSR, potassium-40, β and natural, 22:43326
rhodium-106 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
ruthenium-103 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
soybeans, cesium-137 content of, imported from United States, 22:6827
soybeans, radioisotope content of imported, cesium-137 and strontium-90, 22:25846
soybeans, strontium-90 content of, imported from United States, 22:6827
soybeans, strontium-90 content of, in relation to soil contamination, 22:12854
spinach, cesium-137 content of, in Germany during 1960 to 1964, 22:15006
spinach, strontium-90 content of, in Germany during 1960 to 1964, 22:15006
strontium content of, grown in strontium-enriched soils, 22:28521
strontium-90 content in Chicago, New York City, and San Francisco, comparison of predicted and measured values for, 1967, 22:25529 (HASL-193, pp I.217-22)
strontium-90 content in Indian, methods for measuring, 22:6488
strontium-90 content in Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
strontium-90 content of, 22:28453 (NYO-2147-13, pp 160-7)
strontium-90 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
strontium-90 content of, in Germany during 1963, 22:10775
strontium-90 content of, in Netherlands during 1964, 22:4616
sweet potatoes, radiation processing of, effects of, on composition and storage life, γ, 22:34001
sweet potatoes, radiation processing of, effects of, on storage qualities, γ, 22:40986
tomatoes, cesium-137 content of, in Germany during 1960 to 1964, 22:15006
tomatoes, radiation effects on weight of, effects of pollen exposure on x, 22:21635
tomatoes, radiation processing of dehydrated, determination of dose for, 22:19464
tomatoes, radiation processing of, effectiveness of ionizing and microwave, 22:8668
tomatoes, radiation processing of, effects of temperature on storage life following, 22:52065
tomatoes, radiation processing of, effects of, on ripening, γ, 22:43518
tomatoes, radiation processing of, effects of, on susceptibility to transit injury, γ, 22:23695(R) (UCD-34-P-80-5)
tomatoes, strontium-90 content of, in Germany during 1960 to 1964, 22:15006
turnips, radiation effects on peroxidase activity in, effects of ferric chloride, glucose, heat, 3-indolylacetic acid, pH, and sodium bisulfite on electron and gamma, 22:30973
turnips, radioactivity content of, in USSR, potassium-40, β and natural, 22:43326
zinc-65 content of, in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
zirconium-95 content of, in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)

VEHICLES
see also Space Vehicles
see also Tires
cargo shipment on flatbed truck, vibration testing during, 22:21005 (SC-DR-67-3003)
description of shipping, for feed materials, 22:295
design for shipping radioactive materials by road, 22:297
design for use in decontamination operations after atomic, bacterial or chemical attack, 22:6522(P)
fallout protection by transportation, measurement of, (E), 22:10528 (EGG-1183-1334)

  - shielding calculations for, considering infinite surface contaminated with radioactive materials, 22:41638
  - use of flatbed tractor-trailer, for shipping radioactive materials, 22:284 (SC-RR-66-677)
- Vela Hotel Project (High Altitude)
  - see Vela Project
- **VELA PROJECT**
  - construction of large diameter spherical cavity in salt dome for, description of Project Payette for, 22:42921 (CONF-680908-2)
  - construction of large diameter spherical cavity to Tatum Salt Dome for, geologic studies for, 22:42922 (CONF-680908-3)
  - construction of large diameter unsupported cavities in salt domes for, description of Project Payette for, 22:42925 (TID-24625)
  - damage to surface structures from Salmon Event in, survey of, 22:37899 (VUF-1029)
  - decoupling of seismic waves by nuclear explosion-generated cavities in, 22:25561 (VUF-3026)
  - effects of Sterling Event of, on gas and oil well equipment, 22:25559 (VUF-1041)
  - ground motion and containment in Sterling event, analysis of, 22:25558 (VUF-1035)
  - nuclear explosion detection in, Salmon event ground motion studies for, 22:35967 (VUF-3012)
  - nuclear explosion detection in, use of seismological methods for, 22:10414
  - reflection signals in Tatum salt dome from Salmon event, 22:8246
  - safety evaluation of, in relation to ecology of animals in vicinity of Amchitka Island, Alaska, 22:23482 (TID-24291)
  - seismic waves from Sterling Event of, analysis and measurement of, 22:25560 (VUF-3025)
  - stability of large diameter cavities in salt domes for, description of Project Payette for determination of, 22:42920 (CONF-680908-1)
  - thermal effects of nuclear explosions in salt domes, 22:33580
- Vela Satellite Project (Space)
  - see Vela Project
- Vela Sierra Project (Surface)
  - see Vela Project
- Vela Uniform Project (Underground)
  - see Vela Project
- Velocitrons
  - see Mass Spectrometers
- **VELOCITY**
  - see also Acceleration
  - measurement for air flowing through randomly packed beds, use of pitot tubes for, 22:229 (AAEC/E-178)
  - profiles in thin turbulent films, analytical studies of, 22:8299
- **VENEZUELA**
  - earthquakes in, damage survey from 1967, 22:39963 (NVO-99-25)
  - granites of, rubidium/strontium method for age estimation of, 22:6435 (MIT-1381-15)
- **VENTILATION**
  - see also Exhaust Systems
  - see also Laboratories
  - air cleaning facilities at Y-12 Plant, survey of, 22:42938 (Y-EF-170)
  - design for plastic protective suits, 22:10765(T) (LB/G-2598)
  - effects on radioactive contamination of air in laboratories, 22:45560
  - efficiency in installations for processing radioactive materials, 22:8331
  - equipment and methods for Karlsruhe Research Center hot cell, 22:51142
  - equipment for radiochemical laboratory, design and operation of, 22:25582
  - method for underground cavities, use of cooled compressed air in, 22:42923 (NVO-38-14)
  - methods for safe, of radioactive materials handling facilities, 22:51217
  - rate, use of radioisotopes to measure, review of, 22:30976
  - requirements for aboveground fallout shelter, analysis of, 22:4395
  - requirements for cooling radioactive wastes stored in mines, 22:16821
  - requirements for discharge of toxic and radioactive gases in Franscati linac tunnel, calculation of, 22:47528(T) (NRC-TT-1332)
  - system design for plutonium fabrication hood, 22:14654
  - system for Melusine Reactor, description of, 22:22807 (CEA-R-3131(Vol.2))
  - systems for fallout shelters, 22:8528(T) (JPRS-42929, pp 208-65)
- **VENUS (PLANET)**
  - airglow of, search for, (E), 22:23961
  - atmosphere and ionosphere of, radio occulation measurements of, (E), 22:8864
  - atmosphere of, as observed by Mariner 5 and Venus 4, (T), 22:13204
  - atmosphere of, model of upper, (T), 22:17211
  - atmosphere, hydrogen corona, gravitational field, and ionosphere of, Mariner V observations of, (E), 22:8859
  - clouds of, composition and structure of, (T), 22:29039
  - energetic particle intensity associated, (E), 22:13147
  - hydrogen density and temperature in upper atmosphere of, atomic, (E), 22:21791
  - magnetic dipole moment of, (E), 22:8861
  - magnetic dipole moment of, (E), 22:13147
  - magnetic dipole moment of, (T), 22:34135 (AD-662227)
  - magnetic field strength at equatorial surface of, (E), 22:13147
  - magnetic field strength at surface of, (T), 22:34135 (AD-662227)
  - magnetic fields observed near, (E), 22:8860
  - microwave emission from, (T), 22:29039
  - microwave emission from, electric discharge model for, (T), 22:4972
  - oxygen abundance in atmosphere, (E), 22:17202
  - radio brightness temperature at 49.1 cm, (E), 22:17203
  - solar wind interaction with atmosphere and ionosphere of, (E), 22:8863
  - solar-wind interactions with, (T), 22:34135 (AD-662227)
  - spectrum of, sodium resonance lines in, (E), 22:11188
  - ultraviolet emissions observed near, (E), 22:8862
  - x-ray emission from, upper limits for hard, (E), 22:15292
- VERA (Versatile Experimental Reactor Assembly)
  - see Critical Assemblies
- **VERMICULITES**
  - alkali metal and alkaline earth ion mobility in, 22:139 (HMI-B-54)
  - cesium distribution in interlayers of flakes of, electron microprobe and x-ray diffraction studies on, 22:35923(R) (NYO-2955-15)
  - cesium fixation by, 22:42850
  - effects on uptake of cesium-137 and strontium-90 from soils by beans, 22:30974
  - ion diffusion in, isotopic exchange method for studies of, 22:16801
  - performance in two-stage processing of radioactive wastes, 22:23087 (BARC-315)
  - radioinduced thermoluminescence of, gamma, 22:44261
  - rubidium fixation by, 22:42850
  - sorption of cations on, effects of fixation reactions on availability of cation for ion exchange following, 22:40516 (ORO-657, pp 65-92)
  - sorptive properties for cesium, 22:12438
  - sorptive properties for cesium in dilute solutions, collapse of interlayers in, 22:35923(R) (NYO-2955-15)
  - sorptive properties for cesium in dilute solutions, effects of aluminum and calcium ions on, 22:35923(R) (NYO-2955-15)
  - sorptive properties for cesium, effects of calcium and potassium ions and hydration on, 22:35923(R) (NYO-2955-15)
  - use for insulating open-ended water-cooled access duct in concrete pressure vessel, 22:37606(P)
  - use with cement for fixation of low- and intermediate-level radioactive waste, report of 1966 IAEA panel on, 22:25464 (STI/DOC-10/82)
- **VERMONT**
  - aeroradioactivity survey and areal geology of, 22:169 (CEX-58.4.6)
- Versene Acid
  - see Acetic Acid, (Ethylenedinitrilo)tetra-
- **VERTEBRAL COLUMN**
  - radiation effects on, of chinook salmon, low-dose chronic γ, 22:49489(R) (RLO-2056-3)
  - radiotherapy of cancer of human, development of erythema multiforme following x, 22:36384
  - scintiscanning using iodine-131-labeled human serum albumin, 22:25928
- **VERTEBRATA**
  - immune reactions in, genetic factors affecting, 22:12160(R) (CALT-642-3)
  - radiation effects on bones of, review of carcinogenic, 22:51947
  - radiation effects on central nervous system of, low-intensity microwave, 22:10823 (ATD-66-133)
  - retention of foreign tissue grafts by, effects of injected antigen fragments on, 22:12160(R) (CALT-642-3)
- VESR
  - see Vallecitos Superheat Reactor
- **VESSELS**
  - (This heading is reserved for containers of various kinds.)
  - see also Dewar Vessels
  - see also Dissolvers
  - see also Mixer-Settlers
  - see also Mixers
  - see also Packaging
  - see also Pressure Vessels
  - see also Radiation Target Cans
  - see also Shielded Containers
  - see also Ships
  - see also Tanks
  - see also Vacuum Vessels
  - closures for, design of gas-tight, 22:12507(P)
  - closures for, design of releasable, 22:8292(P)
  - contactor for gaseous coating of fuel particles for fluidized-bed reactors, description of, 22:44933(P)
  - description of core-containing caisson, for swimming-pool reactors, 22:3919(P)

- design and fabrication of containment, for control of beryllium particulates, 22:6515 (SC-TM-67-827)
- design and performance of floating roof containment, 22:10431(R) (HUX-3807-1)
- design and performance of stacked-clone contactor, 22:37838 (ORNL-4267)
- design development of stacked-clone contactors, 22:149
- design evaluation for solvent extraction in reprocessing of LMFBR fuels, 22:47205 (ORNL-TM-2290)
- design for containment of radioactive materials, 22:43020(P)
- design for EBR-II waste handling, 22:4408
- design for γ-radioinduced sulfochlorination of alkanes, 22:51019
- design for use as continuous radiation chemical reactor, 22:30598
- design for use in liquid scintillation spectroscopy, 22:12591(P)
- design of 18-stage solvent-extraction stacked-clone contactor, 22:27862 (ORNL-4204, pp 4-15)
- design of 304 stainless steel storage, for uranium-233, -235, or plutonium-239, engineering drawings for, 22:14744
- design of bell, for underwater irradiation facility, 22:266(P)
- design of concrete and steel, for deep sea disposal of radioactive waste, 22:16746
- design of expendable, for shipping low-level radioactive materials, 22:294
- design of fast contactors for fuel reprocessing, 22:40180 (KR-126, pp 415-24)
- design of gas-solid contactor, for chemical reactions, 22:42941(P)
- design of shipping, for uranium hexafluorides, engineering drawings for, 22:14745
- design of stirred reaction, for molten fluorides, 22:47112 (ORNL-4254, pp 88-173)
- design of tight sealing, for damaged fuels, 22:49050(P)
- design standards for safe radioactive material transport, 22:299
- efficiency of stacked-clone contactors, effects of solution viscosity on, 22:12403 (ORNL-4094, pp 5-13)
- evaluation of high density polyethylene, for shipping and storage of plutonium nitrate, 22:45212 (ARH-SA-18)
- flow capacity of stacked-clone, 22:16645 (ORNL-4075, pp 4-21)
- gas flow in reaction, use of krypton-85 as tracer to study, 22:14719
- gas pressure in sealed, device for measuring, 22:14380 (MLM-1446)
- helium-3 interactions with walls of, effects on nuclear spin relaxation times in gaseous helium-3, (E), 22:1009
- iodine-131 sorption on, from perchloric acid solutions, 22:42656 (UCRL-13352)
- material flow through reaction, connected in series, use of radioactive tracer techniques to measure, 22:14705
- opening of sealed, in hot cells, design device for, 22:49051(P)
- opening of sealed, in hot cells, design of device for, 22:49052(P)
- operation of stacked-clone contactor with organic phase continuous in countercurrent zone, 22:14562 (ORNL-4139, pp 4-18)
- packaging design for uranium hexafluoride shipping, engineering drawings for, 22:14745
- performance of stacked-clone solvent-extraction, 22:16645 (ORNL-4075, pp 4-21)
- positioning of ultracentrifuge, method for at-start horizontal, 22:45224(P)
- shock resistant properties of concrete, for ocean disposal of radioactive waste, 22:23237
- testing of stacked-clone contactor in fuel-reprocessing systems, 22:14562 (ORNL-4139, pp 4-18)
- welding for encapsulation of plutonium and other radioactive materials, 22:43540 (LA-3937)
- welding of stainless-steel linings for reactor, 22:2601

Vibrating Conveyers
- see Conveyers

VIBRATING REED ELECTROMETERS
- performance for tritium monitoring in air, 22:8527 (SC-DC-67-2191)

VIBRATION TESTING
- effects on Fast Test Reactor fuel elements of, analysis of, 22:25076 (BNWL-599)
- equipment and methods for, of cargo on flatbed trucks, 22:21005 (SC-DR-67-3003)
- fuel element, analysis of sodium flow induced, 22:25083(R) (GEAP-5541)
- specifications for, using input force and motion method, 22:10151 (SC-TM-67-2938)

VIBRATIONS
- ASME conference on, 22:33196
- detection and measurement of acoustic and structural, in high pressure gases, design of instrumentation for, 22:7842
- effect on performance of heat pipes, 22:19033(R) (LA-3881)
- effects of axial flow on flexible cylinder, analysis of, (E), 22:33178
- effects of flow induced, on rocket reactor core failure 22:32950
- effects of satellite, on performance of water heat pipe (E), 22:23210 (LA-DC-9028)
- effects on bioelectric activity of muscles of guinea pigs, combined effects of radiation on, 22:12758(T) (NASA-TT-F-413, pp 212-28)
- effects on conditioned reflexes of rats, combined effec of x radiation on, 22:12759(T) (NASA-TT-F-413, pp 22 43)
- effects on development of x-irradiated Tribolium, 22:31208 (UCRL-17751, pp 41-51)
- effects on fuel assemblies of water-cooled marine reactors of lateral, model studies for, (E/T), 22:48718
- effects on histamine content of rat tissues, comparison of, to radiation and radiomimetics effects, 22:25964
- effects on leukocyte count in guinea pigs, combined effects of γ radiation on, 22:12758(T) (NASA-TT-F-41 pp 212-28)
- effects on nervous system of mammals, whole-body, 22:12935
- effects on ORGEL-type fuel rods of parallel flow, model studies for, (E/T), 22:48688
- effects on pulsed fast reactors, analysis of repeated thermal shocks amplifying, (T), 22:53413 (EUR-4060)
- effects on water heat pipes during missile launch, 22:4339 (LA-3798)
- instruments for ATR startup, 22:33068
- measurement of small amplitude, use of Moessbauer effec for, 22:38134
- radioinduced production of elastic, in animal tissues, liquids, and solids, laser, 22:43467
- truck-bed, effects of road surfaces on, 22:21005 (SC-D 67-3003)

Vicia
- see under Angiospermidae

Vidicon Tubes
- see Television Equipment

VINBLASTINE
- effects on bone marrow cells of normal and x-irradiated mice, 22:45711
- effects on colony-forming units following transplantati into γ-irradiated mice, 22:28357
- effects on Hodgkin's disease in man, combined effects o x radiation on, 22:31199
- radioprotective effects of, on hematopoiesis and surviva in mice, γ, 22:8566

VINCRISTINE
- effects on colony-forming units following transplantati into γ-irradiated mice, 22:28357
- radioprotective effects of, on hematopoiesis and surviva in mice, γ, 22:8566

VINYL ALCOHOL
- butene--vinyl alcohol, polymers of, radioinduced grafti to conjugated dienes, electron, 22:16631(P)
- ethylene--vinyl alcohol, polymers of, radioinduced grafting to conjugated dienes, electron, 22:16631(P)
- propene--vinyl alcohol, polymers of, radioinduced grafting to conjugated dienes, electron, 22:16631(P)

VINYL ALCOHOL POLYMERS
- effects on pine wood, combined effects of γ radiation o 22:28713
- graft polymerization of irradiated, to styrene, oxygen consumption during, 22:8118
- polymerization of irradiated, with styrene, oxygen consumption during, 22:42704(T) (AEC-tr-6937, pp 12-20)
- radiation effects on tensile strength of benzalized or benzoylated films of, in air and vacuum, γ, 22:8121
- radiation effects on tensile strengtn of benzalized or benzoylated films of, in air and vacuum, γ, 22:42706(T) (AEC-tr-6937, pp 45-53)
- radiation effects on, at 25, 40, and 60°C, oxygen consumption during γ, 22:8118
- radiation effects on, at 25, 40, and 60°C, oxygen consumption during γ, 22:42704(T) (AEC-tr-6937, pp 1 20)
- radiation effects on, oxygen uptake in γ, 22:8093(T) (AEC-tr-6908, pp 33-41)
- radioinduced graft polymerization of styrene on, effects of carbon tetrachloride on γ, 22:33465
- radioinduced polymerization of, with olefins, 22:8159(
- radioinduced polymerization with acrylonitrile to produ spinning dope for fiber manufacture, 22:47185(P)
- radiolysis of deuterated and normal, at 12 to -196°C, isotope effects on gaseous products of γ, 22:8120
- radiolysis of deuterated and normal, at 12 to -196°C, isotope effects on gaseous products from, 22:42705(T (AEC-tr-6937, pp 33-44)
- radiolysis of, ESR studies on reactions of gases with free radicals produced by, 22:37779(T) (ORNL-tr-1969
- sorptive properties of fibers of phosphorylated, for uranium and acetate and nitrate solutions, kinetics o 22:27688
- use for preparation of films of gold, lanthanum, and sulfur for neutron detection, 22:14814
- ethylene gycol--uranium oxides--vinyl alcohol polymers, sintering for production of nuclear fuel pellets of, 22:19507(P)

Vinyl Chloride
- see Ethylene, Chloro-

VINYL COMPOUNDS

  (See also specific compounds.)
  coatings of, penetration of iodine into protective, 22:2713 (IN-1095)
  radiation effects on subsequent polymerization of, 22:35842(P)
  radioinduced addition of mercaptans to, in liquid and solid state, effects of temperature, composition, and dose on γ, 22:6340
  radioinduced grafting to copolymers of polyoxymethylene, 22:51037(P)
  radioinduced polymerization of solutions of, review on kinetics of, 22:21124
  radioinduced polymerization with itaconic acid, 22:8157(P)
VINYL RADICALS
  decay in irradiated polymers, 22:14515(R) (COO-1614-1)
  radiation effects on, in butadiene polymers, 22:6345
  radioinduced grafting of monomers containing, onto ester- or phenyl-activated halogen-containing polymers, 22:14554(P)
VINYLENE (FREE RADICAL)
  decay in irradiated polymers, 22:14515(R) (COO-1614-1)
  radiation effects on, in butadiene polymers, 22:6345
VINYLIDENE (FREE RADICAL)
  radioinduced grafting of monomers containing, on ester- or phenyl-activated halogen-containing polymers, 22:14554(P)
Vinylidene Fluoride Polymers
  see Ethylene, Difluoro-, Polymers
VIPER Pulsed Fast Reactor
  see Reactors, Research
Virginium
  see Francium
VIRULENCE
  see also Pathogenicity
  radiation effects on, of foot-and-mouth disease virus, cobalt-60 γ, 22:52045
  radiation effects on, of Fusarium for cattle, uv, 22:25757
  radiation effects on, of granulosis virus of butterflies, photoreactivation of uv, 22:2558
  radiation effects on, of hookworm larvae for young dogs, x, 22:14939
  radiation effects on, of Mycobacterium tuberculosis in relation to acid-fastness and isoniazid sensitivity, 22:31297
  radiation effects on, of nuclear-polyhedrosis virus for eastern tent caterpillar, γ, 22:6906
  tumor cell, effects of, on radiosensitivity of tumor, 22:36311
VIRUSES
  see also Bacteriophages
  adeno, growth in cultures of kidney cells, effects of deuterium oxide on, 22:23688
  adeno-, radiation effects on replication of, in human kidney cells in vitro, x, 22:51457
  adenovirus 7-simian virus 40 hybrid, radiation effects on, effects of, on transformation of African green monkey kidney cells, γ, 22:45731
  adenovirus, radiosensitivity of, use of, to isolate hybrid population, uv, 22:8661
  antigenicity of γ-irradiated interferon for, 22:47467
  Coxsackie A-9, radioinduced mutations in human, γ, 22:49643(R) (COO-1645-2)
  Coxsackie B-2, radioinduced mutations in human, γ, 22:49643(R) (COO-1645-2)
  coxsackie, radiation effects on incidence of, in tissues of dogs, cerium-144 and strontium-90 β and γ, 22:19236 (LF-36)
  Coxsackie, radioinduced mutations in, 22:52061 (CONF-670945)
  Coxsackie, radioinduced mutations of, affecting antigen and host specificity, γ, 22:36239
  distribution of antibody to, in experimental mice, 22:28630 (ORNL-4100, pp 118-26)
  Echo type 6, radioinduced mutations in human, γ, 22:49643(R) (COO-1645-2)
  echo, radiation effects on incidence of, in tissues of dogs, cerium-144 and strontium-90 β and γ, 22:19236 (LF-36)
  Echo, radioinduced mutations in, 22:52061 (CONF-670945)
  ectromelia, effects on leukemogenesis in x-irradiated mice, 22:36189
  effects on cells of allogenic radiation chimeras, leukemogenic, 22:6889
  effects on Chinese hamster cells, neoplastic, 22:6868(R) (NYO-910-60)
  effects on production of mucopolysaccharides in myxofibrosarcomas, 22:28284 (ORNL-4100, pp 127-34)
  encephalomyocarditis, radiation effects on capacity of L cells to support growth of, uv, 22:10861
  encephalomyocarditis, radiation effects on infectivity of, effects of, on inhibition of RNA synthesis by host cell, uv, 22:8659
  encephalomyocarditis, radiation effects on resistance of mice to, effects of neutralizing antibody injections on x, 22:30965
  foot-and-mouth disease, determination of electrophoretic mobility of, use of phosphorus-32 tracer techniques for, 22:14932
  foot-and-mouth, radiation effects on infectivity of, cobalt-60 γ, 22:52045
  foot-and-mouth, radiation effects on multiplication of, in hamsters and rats, x, 22:51429
  foot-and-mouth, radioinduced inactivation of, visible light and uv, 22:14944
  Friend, effects on induction of resistance in mice to transplantation of Friend-virus-induced lymphomas, 22:36166
  Friend, infectivity in mice, effects of adjuvant formalin on, 22:36166
  Friend, radioinduced inhibition of, reversal of, by syngeneic spleen cells, x, 22:45732
  granulosis, radiation effects on toxicity of, for saltmarsh caterpillar, uv, 22:8665
  granulosis, radiation effects on virulence of, photoreactivation of uv, 22:2558
  Gross leukemogenic, radiation effects on transforming ability of, in mice, γ, 22:49651
  Hemagglutinating, radiation effects on, effects of, on induction of Rous Sarcoma Virus in γ-irradiated mixed cell cultures, uv, 22:8660
  Herpes virus hominis, radiation effects on, effects of pH and temperature on, 22:15042
  Herpes zoster, radiation effects on susceptibility of man to, following therapy for malignant lesions, 22:23642
  herpes, radiotherapy of inflammation of cornea of man caused by, uv, 22:19389
  HVJ, radiation effects on fusion activity of, for cultured cells, uv, 22:52043
  incidence in mammary tumors of mice, effects of urethane on, 22:15062
  influenza A, antigens of, effects of, on strontium-90 deposition in bones of rats, 22:6745
  influenza, effects on nucleic acid synthesis in lung cells of mice, combined effects of x radiation on, 22:31012
  influenza, purification by zonal centrifugation, 22:12748(R) (ORNL-4171)
  influenza, radiation effects on immune reactions to, in mice, x, 22:51999
  influenza, radiation effects on survival of, effects of strain on γ, 22:52083
  influenza, radiation effects on, effects of dose on uv, 22:4710
  inhibition of vesicular stomatitis, by interferon in x-irradiated cultures of chicken fibroblast cells, effects of dose and time on, 22:47642
  isolation by zonal centrifugation, 22:7984
  leukemia, effects on esterase zymograms, 22:28284 (ORNL-4100, pp 127-34)
  LPP-1, growth in blue-green algae, effects of acriflavine and caffeine on, 22:25720(R) (ORO-3630-2)
  measles, radioinduced increase in replication of, in cultured human amniotic FL cells, uv, 22:45736
  Mengo, growth in cultures of L cells, effects of deuterium oxide on, 22:23688
  murine sarcoma, radioinduced reproduction of, following transplantation as mixed cultures with fibroblasts and hamster tumor cells, 22:31299
  myxoviruses, radiation effects on growth of, in tissue culture systems, γ, 22:23415(R) (SAN-733-1)
  Newcastle Disease, radiation effects on interferon production induced by, in mice, x, 22:598
  Newcastle Disease, radioinduced inactivation of interference activity of, in kidney cells from calves, uv, 22:17059
  Newcastle, injection into mice, synthesis of interferon following, 22:45425
  nuclear-polyhedrosis, radiation effects on toxicity of, for cabbage looper, uv, 22:8665
  nuclear-polyhedrosis, radiation effects on virulence of, in eastern tent caterpillar, γ, 22:6906
  papilloma virus, activity of arginase in, effects of mutants of Shope virus on, 22:28289 (ORNL-4100, pp 178-201)
  parainfluenza, radiation effects on, effects of, on interferon response of cultured bovine cells to, 22:52049
  polio type I, radioinduced mutations in human, γ, 22:49643(R) (COO-1645-2)
  polio, radioinduced mutations in, 22:52061 (CONF-670945)
  polio, radiosensitivity of, fast electron, 22:19463
  poliomyelitis, radiation effects on antigenic properties and virulence of, α, γ, and neutron, 22:52086
  polyhedrosis, radiation effects on liberation of latent, in silkworm larvae, x, 22:36423
  Polyoma, radiation effects on infecting and transforming ability of, γ, uv, and x, 22:21640
  Polyoma, radioinduced breaks in DNA chains of, γ, uv, and x, 22:21640
  polyoma, transformation of cultured hamster cells by, 22:38193(R) (EUR-3912)
  preparation of vaccines against, use of γ-radioinduced mutants for, 22:49296
  production of antibodies against Asian influenza, in Hiroshima and Nagasaki survivors exposed in utero and postnatally, 22:571
  protein synthesis in, 22:2502 (AECL-2665)
  psittacosis, radioinduced mutations in, γ, 22:49296
  psittacosis, reproduction in L-cells, ultramicroautoradiographic analysis of, 22:28332
  purification of influenza, design of KII high-capacity

  zonal centrifuge for, 22:14650
  radiation effects on antigenic properties and virulence of foot and mouth disease, α, γ, and neutron, 22:52086
  radiation effects on formation of antibodies for influenza, in human infants, 22:6837
  radiation effects on immune response of chimeric mice to cytomegalic, effects of thymectomy on, 22:8483
  radiation effects on interference induction in cultured cells by uv, 22:49647
  radiation effects on leukemia, review of, 22:49586
  radiation effects on nucleic acids of, review of, 22:14916
  radiation effects on production of, by human leukocytes in culture with human lymphoma cells, x, 22:36349
  radiation effects on replication of, in thymus grafts in kidneys of mice, 22:23633
  radiation effects on RNA of, effects of riboflavin and vitamin A on light and uv, 22:4708
  radiation effects on survival of, in human blood plasma, γ, 22:52094
  radiation effects on vesicular stomatitis, effects of peptone on x, 22:595
  radiation effects on, review of, 22:49224
  radiation effects on, uv, 22:23672
  radioinduced loss of reproductive ability of, 22:21410(R) (YALE-2653-30)
  radioinduced transformation of tumor, in fibroblasts from man and mice, x, 22:49655
  radiosensitivity in relation to base composition of nucleic acids, 22:47478
  release in mice, effects of urethan on leukemogenic, 22:25877
  Rift Valley Fever, radiation effects on infectivity of, for mice, combined effects of cortisone on x, 22:23639
  RNA-oncogenic, effects on protein synthesis in cells from chicks, 22:51302(R) (HUX-2643-42)
  role in etiology of human leukemia, 22:36349
  role in induction of neoplastic diseases, 22:6767
  Rous Sarcoma, isolation of RNA from, 22:7953(R) (NYO-910-61)
  Rous sarcoma, radiation effects on activity of, in mixed cultures of chick embryo fibroblasts and virogenic tumor cells from rats, x, 22:33991
  Rous Sarcoma, radioinduced, in mixed cell cultures, effects of addition of uv-irradiated Hemagglutinating Virus on γ, 22:8660
  Rous sarcoma, transfer from cells from virogenic tumor of rats to cells of chick embryo fibroblasts, 22:33991
  Shope papilloma, effects on lipoprotein synthesis by rabbits, 22:28289 (ORNL-4100, pp 178-201)
  sigma, effects on expression of x-radioinduced mutations for developmental delay in Drosophila, 22:10749
  sigma, effects on x-radioinduced mutations in gametes of Drosophila, 22:33780(R) (NYO-3905-2)
  Simian 40, radiation effects on transformation of human amnion cells by, x, 22:31033
  simian adeno-7, radiation effects on transforming and plaque-forming capacities of, uv, 22:52040
  Sindbis, effects on x-radiosensitivity of interferon response in mice and rats, 22:52000
  Sindbis, injection into mice, synthesis of interferon following, 22:45429
  Sindbis, radiation effects on interferon production induced by, in mice, x, 22:598
  SV40, radiosensitivity of, use of, to isolate hybrid population, uv, 22:8661
  SV40-adenovirus, radiation effects on hybrid population of, uv, 22:8661
  TMV, effects on γ-radiosensitivity of tobacco cells in vitro, 22:40961
  tobacco mosaic, growth on γ-irradiated tobacco leaves, 22:52027
  tobacco mosaic, incorporation of RNA into, 22:28289 (ORNL-4100, pp 178-201)
  tobacco mosaic, labeling with iodine-125, method for, 22:28346
  tobacco mosaic, molecular weight of protein of, determination of, using ultracentrifugation, 22:16974(R) (ORO-2832-56)
  tobacco mosaic, radiation effects on infectivity of RNA of, uv, 22:28321
  tobacco mosaic, radiation effects on properties and structure of, use of electron microscopy for detection of uv, 22:8663
  tobacco mosaic, radiation effects on survival of, space flight and uv, 22:33988
  tobacco mosaic, radiation inactivated RNA from, multiplicity reactivation of uv, 22:51529
  tobacco mosaic, radioinduced inactivation of RNA of, effects of frequency on reversal of uv, 22:4580
  tobacco mosaic, radioinduced inactivation of strains of, effects of coat protein on uv, 22:49266
  tobacco mosaic, radioinduced inactivation of, photoreactivation of uv, 22:4706(R) (RLO-1952-2)
  tobacco mosaic, RNA synthesis in, effects of actinomycin D, cytochrome C, and kinetin on, 22:4706(R) (RLO-1952-2)
  tobacco necrosis, radiation effects on infectivity of, in beans, Chenopodium, and tobacco, dark reactivation of uv, 22:52056
  vaccinia, infections in γ-irradiated rats, effects of, o survival, 22:49534
  vaccinia, radiation effects on, in L cells, multiplicity reactivation of γ and x, 22:19368
  varicella-zoster, radioinduced activation of, in man following therapy, x, 22:51936
  Venezuelan equine encephalomyelitis, radiation effects o infectivity of, in guinea pigs and mice, γ, 22:15124
  vesicular stomatitis, radioinduced mutations in, pathogenicity of uv, 22:14995
VISCERA
  see also Abdominal Viscera
  radiation effects on, of human children, effects of, on excretion of uropepsin, therapeutic x, 22:51770
  radioinduced inversion of, in embryos of toads, calcium-45 and iron-59 β and γ, 22:10857
VISCOMETERS
  design for measuring viscosity of terphenyl OM2, 22:49140 (CONF-660553-11)
Viscosimeters
  see Viscometers
VISCOSITY
  calculation of liquid metal, from self-diffusion data, 22:26044
  calculations for pure and monatomic gas mixtures as function of temperature, 22:45243 (TID-24636)
  determination of heavy water, at 1 to 1200 kg/cm^2 at 4 t 100°C, 22:4128
  effect of low kinematic, on operation of process-fluid lubricated bearings, (E/T), 22:8277
  measurement of, calculation of gaseous diffusion coefficients from, 22:16772 (MLM-1451)
  prediction of alkali metal, at 900 to 1500°K, 22:8753
  radiation effects on hydraulic fluid, 22:8852
  radiation effects on, of aqueous solutions of pharmaceuticals, effects of glass and polyethylene packaging on γ, 22:40599
  radiation effects on, of blood serum of rabbits, whole-body x, 22:10680
  radiation effects on, of corn and potato starch, effects of dose on γ, 22:49238
  radiation effects on, of DNA solutions, uv, 22:28382
  thin turbulent film eddy, analytical studies of, 22:8299
Viscous Flow
  see Fluid Flow (Laminar)
VISION
  see also Eyes
  see also Phosphenes
  book: Comprehensive Biochemistry, Vol. 27. Photobiology, Ionizing Radiations, 22:49222
  measurement in human population of Marshall Islands exposed to fallout during 1954, 22:43360
  radiation effects on critical flicker frequency in, of rats, x, 22:19421
  radiation effects on system for, in Heliothis zea, ionizing, 22:49488(R) (ORO-2903-43)
  radiation effects on, in rabbits, γ, 22:40916
  radiation effects on, of infants of human survivors of nuclear explosions, survey of, 22:4655
  radiation effects on, of man following therapy of chromophobe adenomas, combined effects of surgery on, 22:31140
  radiation effects on, of man following therapy of diabetes retinitis, proton, 22:31150
  radiation effects on, of radio and television personnel, microwave, 22:28695
  radioinduced disturbances of, in man following yttrium-90 implant therapy of pituitary carcinomas, γ, 22:51820
Vistanex
  see Plastics
VITAMIN A GROUP
  content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
  effects on fetuses of mice, incidence of micromelia following, 22:38478
  effects on light- and uv-radiosensitivity of RNA in virus, 22:4708
  effects on malformations of bones of fetuses of pregnant mice, effects of strain on, 22:33968
  radioinduced loss of, in irradiated food, 22:43514
  radioprotective effects of palmitate of, on chromosomes of onion root tip cells, x, 22:49320
VITAMIN B GROUP
  antagonist of, effects of, on calcium and strontium metabolism in Tetrahymena, 22:40515 (NYO-1822-25)
  B_1, radiation effects on activity of, effects of dose and moisture on, 22:40550
  B_1, radiation effects on content of, in stored wheat flour, γ, 22:43500
  B_1, radioinduced loss of, in irradiated food, 22:43514
  B_1, radioinduced mutation for deficiency of, in yeasts, γ, 22:21470
  B_{12}, clearance of cobalt-57-labeled, from kidney of hypertensive patients, 22:14953
  B_{12}, determination in Wisconsin lake waters, 22:16697(R) (COO-1281-9)
  B_{12}, distribution in extravascular tissues, tracer study of, 22:467
  B_{12}, effects on growth rate of cultured marine algae, 22:42576(R) (NYO-3497-13)
  B_{12}, metabolism of cobalt-58 or -60-labeled, use of whole-body scintillation counters for study of, 22:38405

B_{12}, radiation effects on absorption of, by rat intestine, x, 22:49544
B_{12}, radiation effects on sorption of, by rat intestine, x, 22:49545
B_{12}, radiation effects on sorption of, in human intestine, γ, 22:49547
B_{12}, radiation effects on sorption of, in intestines of rats, x, 22:10824 (BNWL-480, pp 1-19)
B_{12}, radioassay of cobalt-57-labeled, in human blood serum, 22:21442
B_{12}, radioinduced mutation for synthesis of, in Actinomyces aureofaciens, combined effects of ethylenimine on uv, 22:40654
B_{12}, radioinduced mutations for deficiency of, in Escherichia coli K_{12}, combined effects of penicillin on uv, 22:21469
B_{12}, radioprotective effects of, against diarrhea in mammals, 22:51896
B_{12}, radioprotective effects of, on healing wounds of rats, x, 22:36303
B_{12}, radioprotective effects of, on immune response of rats, γ, 22:10853
B_{12}, radioprotective effects of, on morphology of gonads and survival of rats, ionizing lethal, 22:31157
B_{12}, radioprotective effects of, on rabbits, combined effects of immunization on, 22:49382
B_{12}, radioprotective effects of, on rats and Vietnamese swine, x, 22:47549
B_{12}, radioprotective effects of, on survival of mice, γ, 22:38415
B_{12}, sorption by anemia patients, use of cobalt isotopes for determining, 22:45434
B_{12}, sorption of cobalt-58-labeled, by man, design of whole-body counter for determination of, 22:14761
B_{12}, sorption of iron-59-labeled, from intestines of man, double isotope tracer technique for measurement of, 22:6725
B_2, effects on light- and uv-radiosensitivity of RNA in viruses, 22:4708
B_2, radiation effects on activity of, effects of dose and moisture on, 22:40550
B_2, radioinduced loss of, in irradiated food, 22:43514
B_6, content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
B_6, radiation effects on activity of, effects of dose and moisture on, 22:40550
B_6, radioprotective effect of, on mice and rabbits, x, 22:6850
B_6, radioprotective effects of, against diarrhea in mammals, 22:51896
B_6, radioprotective effects of, on chromosomes of onion root tip cells, x, 22:49320
B_6, radioprotective effects of, on eyes of rabbits, γ and neutron, 22:12875
biotin, effects on radiosensitivity of yeast cells, 22:10815
biotin, radioprotective effects of, on healing wounds of rats, x, 22:36303
choline, radiation effects on permeability of human erythrocytes to, x, 22:23426
Co-35, effects on peripheral blood of rats with radiation sickness, 22:36331
cobalamines, use of cobalt isotope-labeled, to determine sorption of vitamin B_{12}, 22:45434
content of man, effects of uranium ingestion on, 22:51380
cyanocobalamin, metabolism of cobalt-60-labeled, by clover and wheat, 22:6765
derivatives of, effects of, on calcium and strontium metabolism in Tetrahymena, desthiobiotin and oxythiamine, 22:40515 (NYO-1822-25)
folic acid, content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
folic acid, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
folic acid, radiation effects on formation of derivatives of, in pigeon liver, protective effects of β-mercaptopropylamine against γ, 22:47627
folic acid, radiation effects on, effects of liquid or solid state on lytic γ, 22:52104
folic acid, radioprotective effects of, against diarrhea in mammals, 22:51896
folic acid, radioprotective effects of, on phosphoprotein metabolism and survival of guinea pigs, x, 22:19454
folic acid, radioprotective effects of, on survival of mice, γ, 22:38415
folinic acid, effects on x-radiosensitivity of human neoplasms, combined effects of methotrexate on, 22:49395
niacin, radioprotective effects of, on healing wounds of rats, x, 22:36303
nicotinamide copper complexes with, radioprotective effects of, on immune responses of rats, γ, 22:10853
nicotinamide ferric sulfide complexes with, radioprotective effects of, on immune responses of rats, γ, 22:10853
nicotinamide, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
nicotinamide, effects on peripheral blood of rats with radiation sickness, 22:36331
nicotinamide, effects on x-radiosensitivity of Ehrlich carcinomas in liver of animals, 22:28646
nicotinamide, effects on x-radiosensitivity of NAD content of host liver and solid Ehrlich carcinomas in animals, 22:28646
nicotinamide, radioprotective effects of, on survival of mice, γ, 22:38415
nicotinic acid, effects on radiosensitivity of yeast cells, 22:10815
nicotinic acid, radiation effects on incorporation of, into NAD in livers of mice, x, 22:45396
P, radioprotective effects of, on oxidative phosphorylation in mitochondria from liver, 22:51385
pantetheine, effects of, on platelet count of irradiated rats, 22:47578
pantothenate, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
pantothenic acid, content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
pantothenic acid, radioprotective effects of, against diarrhea in mammals, 22:51896
PP, radiation effects on activity of, effects of dose and moisture on, 22:40550
pyridoxamine, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
pyridoxamine, radioprotective effects of, on rats, whole-body x, 22:31137
pyridoxine, effects on mitochondria of intestinal cells in mice, mercapto-, 22:49414
pyridoxine, radiation effects on, effects of liquid or solid state on lytic γ, 22:52104
pyridoxine, radioprotective effects of, on mammalian tissues, x, 22:19383
pyridoxine, radioprotective effects of, on mice and rats, combined effects of cystamine against γ, 22:4658
pyridoxine, radioprotective effects of, on rats, whole-body x, 22:31137
pyridoxine, radioprotective effects of, on rats, x, 22:15041
pyridoxine, use for treatment of radiation sickness in man, 22:4639
pyriodoxine, effects on radiosensitivity of yeast cells, 22:10815
riboflavin, content of milk, effects of strontium-90 decontamination by resin treatment on, 22:15008
riboflavin, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
thiamine, effects on calcium and strontium metabolism in Tetrahymena, 22:30932 (NYO-1822-24)
thiamine, effects on radiosensitivity of yeast cells, 22:10815
thiamine, radiation effects on synthesis of, by peas, effects of seed exposure on γ, 22:6758
thiamine, radiation effects on, in culture media, uv, 22:28338
thiamine, radioprotective effects of, on healing wounds of rats, x, 22:36303
thiamine, stability in sea water, effects of concentration of organic matter and trace metal ions, pH, and temperature on, 22:33711(R) (NYO-3658-9)

Vitamin C
see Ascorbic Acid

VITAMIN D GROUP
calciferol-3,5-dinitrobenzoate, separation from 3,5-dinitrobenzoate ergosterol, use of aluminum oxide columns for chromatographic, 22:21425
D_2, effects on x-radiosensitivity of growing bones in rabbits, combined effects of egg shells on, 22:38366
D_2, radiolysis of, sorption curves for products of, on aluminum and silicon oxides, 22:12788
D_3, content of diet, effects of, on strontium-89 metabolism in chickens, 22:36215
effects on bone metabolism in rats, effects of parathormone and thyrocalcitonin on, 22:7939 (COO-1668-4)
effects on calcium and phosphate content of blood of rats, 22:6200(R) (COO-1668-3)
effects on formation of calcium-binding protein in intestine and kidney of rachitic animals, 22:30408 (NYO-2147-13, pp 28-52)
ergosterol, radiation effects on content of, in yeast, γ, 22:52020
ergosterol, radiolysis of aqueous solutions of, products of uv, 22:12788
ergosterol, radiolysis of, use of aluminum oxide columns for chromatographic analysis of uv, 22:21425
ergosterol, synthesis in yeasts, feed-back inhibition of, 22:12158 (BNWL-480, pp 107-26)
ergosterol-3,5-dinitrobenzoate, separation from 3,5-dinitrobenzoate of vitamin D2, use of aluminum oxide columns for chromatographic, 22:21425
radiation effects on stability of, in yeast cells, effects of cholesterol and oxygen on uv, 22:8448
radiation effects on synthesis of, in swine, uv, 22:8603
vitamin D, radiation effects on synthesis of, in rat skin, role of uv, 22:51328

VITAMIN E GROUP
radiation effects on, content of animal food, γ, 22:17069
radioinduced loss of, in irradiated food, 22:43514
radioprotective effects of, on chromosomes of onion root tip cells, x, 22:49320
selenium interrelations with, 22:51325

- VITAMIN K GROUP
  - 4-amino-1-naphthol, radioprotective effects of, on activity of lysosomal enzymes in rats, γ, 22:10738
  - K_3, radiosensitizing effects of, on rats, x, 22:49396
  - menadione, determination of, spectrophotometric, 22:60(T) (TT-65-50400/4-6)
  - naphthidone, radioprotective effects of, on rats, x, 22:45604
  - radiation effects on activity of, effects of dose and moisture on, 22:40550
  - radiation effects on aqueous solutions of, effects of dose on ionizing, 22:43272
  - separation from blue-green algae, 22:4699(R) (RLO-1783-13)
  - synkavit, effects on oxygen tension in neoplastic and normal tissues, 22:19382
  - synkavit, effects on x-radiosensitivity of carcinoma of lung of man, combined effects of oxygen on, 22:19385
  - synkavit, use of tritium-labeled, for radiotherapy of malignant diseases of man, 22:19384
  - vikasol, radioprotective effects of, on rats, x, 22:49436
- VITAMINS
  - development of chemical model for estimating antioxidative and anti-radical activity of, 22:28303
  - effects on treatment of γ- and x-radiation injuries in dogs, 22:38408
  - galascorbin, radioprotective effects of, on oxidation phosphorylation in mitochondria from liver, 22:51385
  - radiation effects on, 22:4216
  - radiation effects on, in food, 22:31306
  - radiation effects on, in food, 22:31301
  - radiation effects on, in food, review of, 22:49676
  - radiation processing of solutions of, evaluation of γ, 22:52067
  - radiation processing of, combined effects of storage on, 22:52123
  - radioinduced loss of, from foods, 22:47659
  - radioprotective effects of, on solutions of oleic acid in relation to oxidation and production of peroxide radicals, 22:28303
  - use for treatment of acute radiation sickness in dogs, 22:49387
  - use for treatment of radiation sickness in mammals, 22:51861
  - use for treatment of radiation sickness in man, 22:524
- Viton
  - see Plastics
- Vitreous Enamels
  - see Porcelain Enamels
- VITREOUS MATERIALS
  - see also Glass
- VOID FRACTION
  - calculation in two-phase systems, equations for, 22:14664 (KAPL-3358)
  - calculation in two-phase systems, equations for, 22:16104 (ACNP-64546(Add.))
  - calculation of steam, in subcooled boiling, 22:16764
  - effect on heat transfer in rectangular tubes, 22:4340(R) (NYO-3679-2)
  - effects on liquid film thickness in adiabatic two-phase flow, (T), 22:35995
  - formation and initial development of, in low pressure boiling water, 22:16755(R) (NYO-3679-3)
  - measurement in argon--sodium--potassium two-phase flow, description of methods for, (E), 22:51172
  - measurement in boiling water reactors, ring-electrode meter for, 22:21390(T) (AEC-tr-6930)
  - measurement in channels under steady state and dynamic conditions, dilatation technique for, 22:4350
  - measurement in liquid boiling, development of methods for, (E), 22:238
  - measurement in two-phase flow under atmospheric pressure, use of capacitance-type void meter for, 22:33598
  - measurement in two-phase flow, design of hot film anemometer for, 22:4310 (TID-24104)
  - measurement in two-phase subcooled boiling water systems, 22:42963(R) (NYO-3679-5)
  - measurement in two-phase subcooled boiling water systems, 22:42962(R) (NYO-3679-4)
  - measurement in vertical boiling channels at atmospheric pressure, (E), 22:6532
  - measurement in water due to boiling, sonic equipment for, 22:51276(R) (IDO-17269)
  - measurement of axial, in one- and two-component two-phase critical flows, gamma attenuation method for, 22:49013 (ANL-7430)
  - measurement of steady state and transient, in two-phase flow systems, (E), 22:27993 (GEAP-5417(Vol.1))
  - measurement of steady state and transient, in two-phase flow systems, (E), 22:27994 (GEAP-5417(Vol.2))
  - measurements in boiling liquid metals using x-ray attenuation method, (E), 22:21283
  - prediction in liquid boiling, development of equations for, (T), 22:242
  - prediction in subcooled boiling, method for, 22:21279
  - transient response of, in boiling two-phase flow, (T), 22:241
- VOLATILITY SEPARATION PROCESSES
  - see also Fluoride Volatility Processes
  - development for fuel reprocessing, 22:23106
  - development of, 22:150
  - filter evaluation for use in, 22:23099(R) (K-L-1780(Pt.23)
- Volatilization
  - see Vaporization
- Volcanic Pumice
  - see Pumice
- VOLCANOES
  - see also Lava
  - basalts ages from Kilauea, Hawaii, effects of excess argon-40 content on estimation of, 22:51090
  - eruption of subterranean Iceland, role in formation of Surtsey Island, 22:21180 (CONF-670646)
  - gases from Icelandic, content of radon and water in, 22:42859
  - gases from Surtsey, Iceland, deuterium--hydrogen ratio in, 22:42861
  - gases from USSR, isotopic composition of, 22:12434
  - magma from Italian, distribution of thorium and uranium in, 22:30729
- Voltage
  - see Electric Potential
- Voltage Doubler
  - see Cockcroft-Walton Accelerators
- VOLTAGE REGULATORS
  - see also Power Supplies
  - design for use with AEC standard bins, (E), 22:5817(R) (NYO-GEN-72-28)
  - maintenance manual for +10 and -10 Volt, ORNL Model Q-2621, 22:16935 (ORNL-TM-1638(Pt.21))
  - maintenance manual for +15 and +25 Volt, ORNL Model Q-2619, 22:16933 (ORNL-TM-1638(Pt.19))
  - maintenance manual for -15 and -25 V, 22:16934 (ORNL-TM-1638(Pt.20))
- Voltameters
  - see Coulometers
- VOLTMETERS
  - calibration of Kerr cell pulse-measuring, 22:14393 (SC-CR-67-2751)
  - design and performance for monitoring oxygen content in liquid sodium, 22:12953
- VOLUMETRIC ANALYSIS
  - see also Gasometric Analysis
  - developments in inorganic, review on, 22:25313
  - developments in organic, review on, 22:25303
- Vortex Tubes
  - see Hilsch Tubes
- VSR
  - see Vallecitos Superheat Reactor
- VULCAIN MARITIME REACTOR
  - description of, 22:18495
  - fuel elements for, neutronic measurements on, 22:49817(R) (EURAEC-2036)
- VVPR-1
  - see Novo Voronezh Power Reactor, Unit 1
- VVR-type Reactors
  - see Reactors, Research

W

- W Mesons
  - see Bosons, Intermediate Vector
- Wagner Rearrangement
  - see Molecular Rearrangements
- Wagon Project
  - see Plowshare Project
- WALTER REED RESEARCH REACTOR
  - radiation doses in modified thermal column of, mixed, 22:47028
- WANL Submerged Reactor Unit (Westinghouse)
  - see Nuclear Auxiliary Power Systems
- WARFARE
  - see also Civilian Defense
  - see also Nuclear Weapons
  - see also Thermonuclear Weapons
  - dosimetry equipment for tactical, 22:8396
  - fallout contamination of civil and military personnel under conditions of, criteria for protection against, 22:10757 (FOA-4-4491-24)
  - nuclear, civil defense program for recovery from, 22:33809 (BNWL-SA-1509)
  - nuclear, management of surgical casualties in, 22:31126
  - radioactive contamination of food during nuclear, agricultural measures for reducing, 22:45516
  - treatment of casualties following nuclear, training of medical and military personnel for, 22:45536
- WASHINGTON
  - see also Richland Area (Wash.)
  - cesium-137 content of milk in, during 1965, 22:36257
  - geology of Pasco Basin in, 22:21178 (BNWL-662)
  - radioactive waste disposal in Rattlesnake Hills, well logging for, 22:35920 (BNWL-776)
  - radioactivity content of precipitation in, during 1966, 22:28458
  - radioactivity content of surface waters in, during 1964 to 1965, 22:28458
  - radioactivity content of surface waters in, during 1965 to 1966, 22:28510
  - radioactivity content of surface waters in, during July 1965 to June 1966, 22:40693
  - radioisotope content of milk in, during 1966, 22:23518

radioisotope content of milk in, during Jan. to March 1967, 22:23515
strontium-90 content of milk in, during 1965, 22:36257
WASPALOY
dislocations in crystal matrices of, mechanism of carbide precipitation at, 22:49851
fabrication of strip and sheet, by slip casting, 22:10978
forging of, for large equipment components, 22:23789
mechanical and physical properties at high temperatures, 22:41040
Waste (Radioactive)
see Radioactive Waste
Waste (Sewage)
see Sewage
WATER
(H_2O)
see also Body Fluids
see also Dehydration
see also Desalting
see also Ground Waters
see also Ice
see also Industrial Water
see also Natural Waters
see also Radioactive Waters
see also Rainwater
see also Steam
see also Surface Waters
see also Water Waves
absorption efficiency of, effects of boric acid concentration on neutron, (E/T), 22:32972 (IN-1139)
abundance in atmospheres of Mira variables, (E), 22:43828
acidity control at pH 8.5 to 10.0 using mixed-bed ion-exchange resin, 22:14470 (AERE-M-1829)
activity in salt solutions, effects of, on survival of bacteriophage, 22:30412 (ORNL-4100, pp 141-5)
addition of agar-agar to biological shielding of, to minimize leakage, 22:3963(P)
analysis, 22:14433 (ORNL-4196, pp 66-89)
analysis for ammonium sulfate by neutron activation, 22:4308 (TID-24029)
analysis for beryllium, fluorometric, 22:18683 (AAEC/TM-87)
analysis for boron by neutron activation and prompt γ detection, 22:44
analysis for boron, colorimetric, 22:27530 (CEA-N-816, pp 9-65)
analysis for bromine by neutron activation methods for use in tracer study of river flow, 22:41
analysis for cesium-137, method for, 22:21029 (SC-M-67-3044)
analysis for chloride and oxygen, design of portable apparatus for radiochemical, 22:22941
analysis for chlorine and oxygen, radiometric, 22:40034
analysis for chromium by neutron activation methods, 22:40033
analysis for chromium, method for, 22:21029 (SC-M-67-3044)
analysis for deuterium and tritium, 22:42831
analysis for deuterium by microwave spectroscopy, 22:30436(R) (UCRL-50006-68-1)
analysis for deuterium by photoneutron method, 22:30434(T) (ORNL-tr-1925)
analysis for deuterium content, spectrophotometric, 22:1953 (KFK-570)
analysis for fallout nuclides by sequential separation and β counting, 22:12248
analysis for gases dissolved in, by gas chromatography, 22:23003 (IA-1128, pp 97-146)
analysis for gold by neutron activation methods, 22:4030
analysis for gross beta activity, method for, 22:21029 (SC-M-67-3044)
analysis for heavy water, 22:16356 (KR-116)
analysis for heavy water by fluorine-19 NMR shifts, 22:8011
analysis for heavy water by infrared spectrometry using dimethyl sulfoxide as solvent, 22:4048
analysis for heavy water by polarography, 22:25324 (JEN-172-DQ/I-61)
analysis for heavy water using gamma--neutron reactions, 22:30693
analysis for heavy water, photometric apparatus for, 22:18733(P)
analysis for hydrogen isotopic composition in, method for, 22:23003 (IA-1128, pp 97-146)
analysis for iodine-131, 22:2011
analysis for iodine-131, gamma spectrometric, 22:12238
analysis for metal ions and radioisotopes in reactors, 22:12258
analysis for organic materials by gas chromatography, 22:18738(R) (MLM-1417)
analysis for oxygen, 22:16356 (KR-116)
analysis for oxygen by neutron activation, 22:30457
analysis for oxygen isotopes, mass-spectrometric, 22:7990 (IS-T-209)
analysis for plutonium, review on radiochemical methods for, 22:8034
analysis for silver by neutron activation methods, 22:40002
analysis for sodium-24, gamma spectrometric, 22:21029 (SC-M-67-3044)
analysis for solutes in pipelines by neutron activation methods, 22:4022
analysis for strontium by atomic absorption spectrophotometry, 22:25245
analysis for strontium-90, method for, 22:21029 (SC-M-67-3044)
analysis for thorium and uranium, activation, 22:4042
analysis for tritium and krypton-85 by liquid scintillation counting, 22:12234
analysis for tritium by conversion to ethane and counting, 22:35762
analysis for tritium using scintillation spectrometer, 22:21029 (SC-M-67-3044)
analysis for uranium as thiocyanate complex, effects of gamma radiation on spectrophotometric, 22:4014
analysis for uranium by measurement of alpha activity, 22:48834
analysis for uranium traces by photometry following ion-exchange separation, 22:1980
analysis for uranium, mass-spectrometric, 22:30491
analysis for uranium, method for, 22:21029 (SC-M-67-3044)
analysis for various radioactive elements by gamma spectroscopy, 22:18722
analysis of coolant, from EL4 reactor for boron, spectrophotometric, 22:25236 (CEA-N-616, pp 20-71)
analysis of corrosion, for niobium, titanium, vanadium, and zirconium by x-ray fluorescence spectrometry, 22:33280
analysis of distilled, for cadmium, copper, lead, and zinc, polarographic, 22:9(R) (NBS-TN-425)
analysis of distilled, for oxygen by isotope dilution method, 22:22987
analysis of high-purity, for cobalt, copper, iron, nickel, and zirconium, 22:27552
analysis of industrial, portable devices for radiometric, 22:40034
analysis of primary cooling, of WWRS-type reactor for iodine and iodine-131, method for, 22:16460
analysis of reactor, for aluminum, cadmium, copper, iron, and lead, polarographic, 22:9(R) (NBS-TN-425)
analysis of swimming pool reactor coolant, for radioisotopes, method for, 22:35760
analysis of swimming pool reactor, for boron, coulometric method for, 22:25236 (CEA-N-616, pp 20-71)
analysis of, spectrographic, 22:16356 (KR-116)
anion transfer energies in, effects of deuterium on, 22:37740
availability to man during fallout emergency, analysis of, 22:51657
behavior of partially confined, in rapidly heated tubes, (E), 22:8293 (ANL-7337)
boiling burnout heat flux for, in subcooled forced-convection systems, 22:51174
boiling detection in, acoustic resonance frequency analysis for, (E/T), 22:22653(R) (ANL-7419)
boiling heat transfer to, measurements of transition and film, 22:42960 (GEAP-5563)
boiling intensity of, equipment for measuring, 22:51276(R) (IDO-17269)
boiling on exponentially heated nickel plates, bubble growth rate in, (E/T), 22:22873
boiling on exponentially heated nickel plates, maximum attainable superheat of, (E/T), 22:22874
book: Action of Ionizing Radiations on Water and Aqueous Solutions, 22:18858
book: Chemistry of Dissociated Water Vapor and Related Systems, 22:25366
bubble formation in superheated, effects of radiation on, 22:10487(R) (SU-326-P-13-2)
bubble production by ultrasonic cavitation and fast neutrons in, micro-, 22:362
capillary equilibrium heights of, in packed beds, 22:14666(R) (ORO-3411-10)
cerium-144 content of, effects of, on content of fish following ingestion, 22:49205
cesium equilibrium distribution coefficients between soils and, batch and column studies of, 22:25446 (BNWL-481-3, pp 48-53)
cesium-137 content of Danish, 1966, 22:10358 (RISO-155)
cesium-137 content of drainage, from soils, 22:38257 (FOA-4-4357-28)
cesium-137 content of drinking, in the United Kingdom during 1966, 22:15017
cesium-137 content of, in Greenland, 1966, 22:10359 (RISO-156)
cesium-137 content of, in Netherlands during 1966, 22:15001 (RA-30)
chemical analysis of pressurized-water reactor coolant, use of ion exchange analysis for, 22:30166(R) (WCAP-3707)
chemical analysis of pressurized-water reactor, for coolant loop corrosion studies, 22:30164(R) (WCAP-3703)
chemical analysis of pressurized-water reactor, for coolant loop corrosion studies, 22:30167(R) (WCAP-3708)
chemical analysis of pressurized-water reactor, for coolant loop corrosion studies, 22:30165(R) (WCAP-3706)
chemical analysis of reactor coolant, Institute of Atomic

Energy (USSR) standards for, 22:20942 (ZFK-RN-31, pp 284-98)
chemistry in boiling- and pressurized-water reactors, 22:26029 (ORNL-4229, pp 71-83)
chemistry in reactors, conference on, Rome, May 20 to 22, 1963, 22:27740
cobalt-60 content of harbor, effects of waste disposal from nuclear powered ships on, 22:28457
cobalt-60 content of, effects of, on content of fish following ingestion, 22:49205
complexes with copper, spectra of ions of, in water, effects of temperature on, 22:45029 (UCRL-18043, pp 7-105)
concentration in Bradwell Reactor cooling systems of, analysis of chemistry of, 22:42218
condensation in underground nuclear explosion cavity, effect on pressure from, 22:200
conference on resource development, San Francisco, Nov. 8 to 10, 1967, 22:51087
content in concrete, parameters affecting, 22:2715
content in magma released from volcano at Surtsey, Iceland, 22:42859
content in ore, use of americium-241 in radiometric method for determination of, 22:6531
content in snow, use of natural radioactivity for measuring, 22:16699
content in soil, measurement using neutron-radiometric gage, 22:23352
content in soil, measurement using neutron-radiometric gage, 22:23353
content in soils, calibration of neutron detection instruments for determining, 22:8404
content in soils, computer program for calculating effective volume for neutron radiometric measurements of, 22:30874 (RISO-M-637)
content in soils, description of neutron radiometric method for measuring, 22:30879
content in soils, description of radiometric gages for measuring, 22:30878
content in soils, development of neutron radiometric moisture gages for measuring, 22:30877
content in soils, development of radiometric moisture gage for measurement of, 22:19069
content in soils, effects of bulk density on calibration of neutron moisture gages used for determining, 22:28195
content in soils, performance of radiometric gages for measuring, 22:30880
content in soils, radiometric method for measurement of, 22:48938
content in soils, use of americium-241--beryllium neutron source for measurement of, 22:25511
content in structural concrete, effect on deformation behavior of, (E), 22:18679(T) (ORNL-tr-1792)
content in various media, use of neutron slowing-down method for determining, 22:25686
content of elements in, effects of, on mineral content of calcareous skeletons, 22:30421
content of embryos of barley, effects of, on γ- and x-radiosensitivity of phosphate uptake, 22:6723
content of frog muscle, effects of quinine on, 22:14970
content of leaves, calibration of β radiometric gages for measurement of, 22:33680
content of leaves, effects of growth on, 22:33680
content of maize seeds, effects of, on x-radiosensitivity, 22:45491
content of plants, effects of, on cesium-137 transport in soil, 22:10739 (BNWL-480, pp 127-51)
content of seed, effects of, on incidence of mutations in fission neutron- and γ-irradiated seeds of hybrid cotton, 22:40952 (ORO-657, pp 93-120)
content of seeds in relation to x-radiosensitivity, 22:21627
content of seeds, effects of, on free radical recombination in γ-irradiated seeds, 22:28707
content of Serratia marcescens, effects of, on uv radiosensitivity, 22:589
content of soil samples, use of γ-scintillation detector systems to measure, 22:6796 (COO-1269-15)
content of soils, effects of, on γ-radioinduced accumulation of nitrite, 22:10731
content of spores of Bacillus megaterium, effects of, on x-radiosensitivity, 22:38507
content of stable elements in pond, in relation to content of aquatic plants, use of activation analysis for determining, 22:19301
coolant for WWR-M research reactor, effects of power level on radiolytic hydrogen concentration in, 22:35609
corrosive and embrittling effects on 17-4 PH stainless steel at 600°F, 22:620 (KAPL-M-6580)
corrosive and hydriding effects on Zircaloy-4 at high temperatures, 22:4740
corrosive effects at 600 to 800, on Inconel 625, 22:2572
corrosive effects in boiling and pressurized-water reactors of, 22:3844 (ORNL-4173)
corrosive effects of acidic chlorinated, on stainless steel at 150 to 200°C, 22:21653 (EURAEC-1947(Pt.1))
corrosive effects on aluminum, 22:16356 (KR-116)
corrosive effects on brass--iron couples, electrochemical, 22:38512 (BNWL-763)
corrosive effects on brazing alloys at high temperatures, 22:8703(R) (IITRI-578-P-29-17)
corrosive effects on chromium--iron--nickel alloys, 22:8697
corrosive effects on chromium--iron--nickel alloys, 22:19481(T) (BNWL-tr-25)
corrosive effects on hafnium alloys at 350 to 450°C, description of, 22:30387
corrosive effects on oxide-coated Zircaloy-2, 22:10922(P)
corrosive effects on PRTR reflector, description through December 1967 of, 22:42163 (BNWL-726)
corrosive effects on steel at 240 to 250°C, 22:16356 (KR-116)
corrosive effects on steel at 300 to 500°C, effects of aluminum, molybdenum, nickel, silicon, and tungsten on, 22:626
corrosive effects on thorium and thorium alloys, 22:53456 (BNWL-861)
corrosive effects on Zircaloy-2 and Zircaloy-4 at 300 to 400°C, analysis of, 22:32895
corrosive effects on Zircaloy-2 and zirconium alloys at 300 to 450°C, 22:617 (EURAEC-1894)
critical temperature of, effects of electrolytes on, 22:25329 (ORNL-4229, pp 84-104)
decontamination methods for reactor coolant, description of, 22:20936 (Zfk-RN-31)
decontamination of cobalt-60-containing reactor coolant, filtration through iron filings for, 22:51205 (SZS-9/68, pp 27-33)
decontamination of radioactive, sorption process for, 22:30671(P)
decontamination of, separation of polonium-210 by coagulation with metal hydroxides in, 22:51067
decontamination of, survey of methods for, 22:8173 (SZS-13/67)
deionization using hydrated tantalum oxide, 22:21173(P)
desalination of salt, economic comparison of methods for, 22:51145
desalination using multiflash distillation units with two-phase cocurrent flow, 22:12530
determination in boron oxides by gas chromatography, 22:25236 (CEA-N-616, pp 20-71)
determination in coke by fast neutron absorption, 22:4047
determination in concrete, 22:2715
determination in FFTF fuel materials, 22:5 (BNWL-SA-1388, pp 10.1-14)
determination in gases by radio-release method using carbon-14, 22:16421
determination in gases, radiometric method for, 22:14698
determination in heavy water, accuracy of infrared analyzer for, 22:32976(R) (MIT-2344-12)
determination in inorganic materials, microchemical method for, 22:9(R) (NBS-TN-425)
determination in molten lithium, potassium, and sodium nitrates, voltammetric, 22:23003 (IA-1128, pp 97-146)
determination in porous material by gamma absorption, 22:40043
determination in porous material by neutron moderation, 22:40043
determination of desorbed, during shrinkage of thoria gels, chromatographic, 22:21055 (TID-24336)
determination on sintered thorium dioxide by coulometric electrolytic measurement with electronic integration, 22:10191
deuterium concentration in, electrolytic, 22:42831
deuterium concentration in, using solid hydrate-forming compounds, 22:30658(P)
deuterium enrichment by exchange between hydrogen sulfide and, at high and low temperatures, 22:25490(P)
deuterium exchange between aromatic compounds and isotopic, production of labeled compounds by metal-catalyzed, 22:4121
deuterium exchange between hydrogen and, 22:14570
deuterium exchange between hydrogen and, catalytic effects of transition metal chromates and oxides on, 22:37737
deuterium exchange reactions between propyne and, enrichment of water-d by, 22:135 (CU-755-4, Paper IIIB)
deuterium exchange reactions with hydrogen sulfide or propyne, enrichment of water-d by, 22:134 (CU-755-4, Paper IIIC)
dielectric properties of, calculation of, from significant structure theory, 22:4156
dielectric saturation of solvated electrons in, 22:42784
diffusion of nitric acid in, at 25°C, 22:10158 (UCRL-17768)
discharge of saturated, from long tubes, (E), 22:8297(T) (AEC-tr-6928)
discrimination from heavy water by mice, 22:43213
dissociation constant of, equipment for determining, 22:25329 (ORNL-4229, pp 84-104)
distillation of, oxygen isotope separation in countercurrent, 22:48903
distribution of hydrochloric acid between tributyl phosphate and, 22:42820
economics of irrigation, for use in agriculture, 22:23205
effect of untreated well, on scale build-up in coolant tubes of NERVA engine test stand exhaust duct, (E),

22:21267 (BNWL-632)
effect on corrosion of aluminum, magnesium, and titanium, 22:4748
effect on methyl iodide deposition on reactor containment system coatings, (E), 22:42161(R) (BMI-X-10237)
effects as diluent on solvent properties of nitric acid--TBP--water for actinide and rare earth nitrates, gas chromatographic studies on, 22:6405
effects of high-purity, on sliding wear of materials, 22:15145 (WAPD-T-1977)
effects of irreversibly adsorbed, on thorium dioxide surfaces, 22:25330 (ORNL-4229, pp 105-11)
effects of moderating properties on optimum fuel burnup in plutonium and uranium lattices, (E/T), 22:22868
effects of moderating properties on uranium fueled lattice prompt neutron decay constants at different bucklings, (E/T), 22:22833
effects on aerosols filtration, 22:25333 (ORNL-4229, pp 162-79)
effects on carbon steel and stainless steel oxidation of high-temperature, analysis of, 22:48786
effects on chemical and physical properties of uranium dioxide, under nonisothermal and quasi-isobaric conditions, (E), 22:52255(T) (AEC-tr-6960)
effects on diffusion coefficient of polonium-218 in relation to hazards on inhalation in mines, 22:31092
effects on electron- and γ-radiosensitivity of Aspergillus spores, 22:52044
effects on enrichment of carbon-13 and oxygen-18 by chemical exchange of carbon dioxide with amines, 22:14578
effects on gamma-radioinduced polymerization of ethylene, 22:8136
effects on germination of Salsola kali seeds, 22:40957
effects on γ- and x-radiosensitivity of survival of yeast cells, 22:21475
effects on γ-induced formation of centers of delayed electron emission in silica gels, 22:42776
effects on γ-radiosensitivity of barley seeds, 22:28542
effects on γ-radiosensitivity of barley seeds, 22:49640
effects on γ-radiosensitivity of yeasts, 22:25891
effects on hydrolysis of trifluoroacetates, thermodynamic studies on, 22:73
effects on inhibitory action of phosphoryl chloride on air oxidation of graphite, 22:779 (AERE-R-5552)
effects on meltdown of Zircaloy-2 clad uranium oxide (UO_2) fuel elements at 2200°C, 22:30388
effects on mercury-203 and sodium-22 sorption by skin of guinea pigs, distilled, 22:14976
effects on neutron flux peaking in uranium oxide (UO_2)-fueled 18-element CANDU-BLW rod-type assemblies, analysis of, 22:44883 (AECL-3143)
effects on physics measurements of thorium oxide (ThO_2)--uranium oxide (UO_2)-fueled heavy water-moderated 19-element CANDU rod-type assembly, analysis of, (E/T), 22:44882 (AECL-2779)
effects on polarographic behavior of trivalent dysprosium and samarium in dimethyl sulfoxide, 22:47084
effects on polarographic reduction of anthraquinone derivatives, 22:47179
effects on radioinduced electric conductivity of cyclohexane, isobutyl vinyl ether, α-methylstyrene, and styrene, 22:8100(T) (AEC-tr-6908, pp 97-116)
effects on radioinduced formation of radicals in DNA, 22:47480
effects on radioinduced free radicals in lyophilized tissues of rats, 22:28369
effects on radioinduced graft polymerization of acrylonitrile with New Zealand wool, 22:48875 (INS-R-58)
effects on radioinduced grafting of acrylonitrile to cellulose, 22:10309
effects on radioinduced oxidation of hydrocarbons, 22:25382
effects on radioinduced oxidation of hydrocarbons, 22:16575
effects on radioinduced polymerization of styrene, 22:8099(T) (AEC-tr-6908, pp 79-96)
effects on radiometric determination of calcium in cement raw mix, 22:40022
effects on radiosensitivity of cells and man, review of, 22:12786
effects on reactions of hydrazine with uranium tetrafluoride, 22:45025 (NIJS-R-524)
effects on retention of lead-210, polonium-210, and strontium-89 by kidney bean plants, deionized, 22:6728
effects on sorption of carbon monoxide by zinc oxide, 22:42730(T) (RFP-Trans-34)
effects on sorptive properties of charcoal for iodine, 22:6805 (ORNL-TM-2040)
effects on thermal neutron space-energy distribution in graphite--water system, 22:22828(T) (AERE-Trans-1085)
effects on uv- or x-radiosensitivity of yeasts, distilled, 22:31292
effects on wear of journal-sleeve combinations, effects of acidity on, 22:17071 (AECL-2784)
effects on x-radiosensitivity of dormant seeds of Crepis capillaris, 22:8508
effects on x-radiosensitivity of RNAase, 22:30972
effects on x-radiosensitivity of sunflower seeds, 22:21495
effects on Zircaloy-2 in fast neutron flux, 22:34084(T) (WAPD-Trans-87)
electric conductivity at 25°C of Saxton Power Reactor coolant, effects of crud chemistry during December 1967 and February 1968 on, (E), 22:35477(R) (WCAP-3696-7)
electrochemical behavior of cadmium in, effects of deuterium on, 22:25324 (JEN-172-DQ/I-61)
electron and photon energy losses in semi-infinite slab of, calculation of 0.1- to 20-GeV, 22:2507 (ORNL-TM-2026)
electron dose distribution in, at 5 to 35 MeV, 22:51577
electron drift velocity and scattering cross sections in, (E), 22:43859 (ORNL-TM-2257)
electron energy absorption rates and charge distribution in, calculated, 22:52490
electron reactions near excitation threshold with, detection of triplet and temporary negative ion states from, 22:17399
energy spectra of electrons in, effects of depth on, 22:31079
evaporation from plants in arid regions, methods for measurement of, 22:23350
exchange with hydrogen, use in separation of deuterium by continuous column, 22:50993 (IFA-IS-52)
fallout contamination of, 22:6828
fallout content of Danish, 1966, 22:10357 (RISO-154)
fallout content of drinking, in USSR during 1963 to 1966, cesium-137 and strontium-90, 22:45539
fission product maximum permissible concentration in, for occupational exposure, 22:6812
fission products in WWR-S research reactor coolant, gamma spectroscopy analysis of, 22:30306 (IFA-FR-59)
flow and mixing in dual channels of HWOCR, measurement of cross, 22:2291 (AI-CE-TDR-1038)
flow in circular pipes, diffusion and mixing during turbulent, 22:47280 (AERE-R-5569)
flow in crystalline rock, 22:21183 (HNS-38)
flow in pipes, use of hot-film sensor for heat transfer measurements in, 22:16766
flow in smooth tubes, heat transfer coefficients for turbulent, 22:12528
flow of Eggborough Power Plant cooling, sodium-24 tracer method for measurement of, 22:47279 (AERE-R-5390)
flow rate of, use of radioisotopes for measurement of, 22:33201
flow through turbines, radioactive tracer method for measurement of, 22:14718
force constant displays for, 22:35798
force constants for, spectral determinations of, 22:12332
gamma and neutron dose rates in, from point sources of californium-252 and uranium-235, (T), 22:29839
gamma attenuation coefficients for, 22:33827
gamma buildup factors for, 6-MeV, 22:1289 (WAPD-T-2057)
gamma buildup factors in iron/water stratified shielding, (E), 22:13531
gamma buildup factors in shields of Fe/H_2O and Pb/H_2O, (T), 22:5404
gamma dose buildup factors in laminated shields with iron, 22:13528(T) (ORNL-tr-1856)
gamma dose growth factors from 0.5 to 15 MeV in layered shields of iron and, (E), 22:3146 (ABS-THH-1029)
gamma energy flux at large penetration depths in, calculation of, 22:7339(T) (ORNL-tr-1793)
gamma penetration in slabs of lead and, V^0 importance function for Monte Carlo calculation of, 22:52846
gamma penetration through two-layer slabs of lead and, calculation of, 22:31913
gamma ray penetration through lead/water barrier, application of perturbation theory to, (T), 22:39149
gamma scattering from, differential albedo for, 22:7341
gamma scattering on air--water boundaries, properties of, 22:7343
gamma transmission in, in lead/steel/water layers, buildup factors for, (E/T), 22:52841(T) (ORNL-tr-1906)
gamma transport in, polynomial approximation in moments method calculations of buildup factors for, 22:31892
gas injection into, for simulation of hydrogen generation in sodium, 22:52158 (APDA-226)
group cross sections for, tables of, 22:44895 (IN-1067)
heat transfer in boiling, effects of voids on, 22:42963(R) (NYO-3679-5)
heat transfer in boiling, effects of voids on, 22:42962(R) (NYO-3679-4)
heat transfer in low pressure, development and initiation of subcooled voids in, 22:16755(R) (NYO-3679-3)
heat transfer in pressurized, design of 2.4 MW loop to measure, 22:6510 (EUR-3605)
heat transfer properties of boiling additive-containing, testing of water-cooled reactor emergency coolant, 22:42206(R) (SNE-40)
heat transfer properties of variable temperature, effects of heated metal on, (E/T), 22:37402 (ANL-7450, pp 75-89)
heat transfer to droplets of, effect of surface material, roughness, and temperature on, (E), 22:10485(R) (SAN-677-15)
heat transfer to, in sodium-heated steam generator, (E/T), 22:12482
heat transfer to, in vertical circular cylinders, (E), 22:6530
helium-ion reactions at 40 to 1500 eV, charge exchange

cross sections for, 22:13234
hydrogen atoms in, kinetic energy of, (T), 22:20409(R) (GA-8449)
hydrogen exchange with deuterium or tritium between succinates and, catalytic effects of succinate dehydrogenase on, 22:35789
hydrogen ion (H_2^+) reactions with, cross section for elastic and charge-rearranging, 22:36745
hydrogen-ion reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
iodine-131 content of, in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
ion energy loss in, calculations for track pattern of heavy, 22:29272
ion ranges and stopping powers in, (T), 22:45926 (UCRL-18127)
Kerr constants at 365 mμ, effects of temperature on, 22:42683
leak detection in ammonia plants using krypton-85, 22:16781
leak detection in Banbury mixer using sodium-24, 22:16781
light scattering by solutions of organic compounds in, effects of deuterium on, 22:16506
lubricating properties of turbulent films of, in steam driven helium circulator, design analysis of, 22:8279
mass transfer from thoria sol droplets in 2-ethyl-1-hexanol, 22:30507 (ORNL-TM-2163)
meson (K^-) scattering in, cross sections for cosmic, (T), 22:22299
meson (K^+) scattering in, cross sections for cosmic, (T), 22:22299
meson (μ) energy loss by Cherenkov radiation in, 22:48213
meson (μ^-) depolarization in, 22:21860
meson (μ^-) residual polarization in, at -196 to +100°C, temperature dependence of, (E), 22:41723 (JINR-P14-3832)
meson (π^-) depth--dose distribution in, calculated and measured, 22:33828
meson (π^-) dose distribution at 65 and 91 MeV in, 22:49127 (ORO-3343-2)
meson (π^+) scattering in, cross sections for cosmic, (T), 22:22299
meson (π^-) scattering in, cross sections for cosmic, (T), 22:22299
metabolism in deer and sheep, 22:6774(R) (UCD-34-P-104-8)
metal atom quenching in, cross sections for, (E), 22:29289
mixing between flow channels in rod bundles during boiling, 22:4349
mixing in rod bundles, determination by activation of dysprosium tracer, 22:4344
moderating properties on type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled assemblies of, effects of core configuration on, (E/T), 22:35593 (EURAEC-1882)
moderating properties on type 304 stainless steel-clad 5 per cent enriched uranium oxide (UO_2)-fueled assemblies of, effects of core configuration on, (E/T), 22:35594 (EURAEC-1882(Annex))
moderating properties on uranium oxide (UO_2) fueled superheat lattice parameters, effects of, (E), 22:22760
moderator temperature reactivity coefficient for pressurized-water reactor coolant, effects of boron concentration on, 22:30165(R) (WCAP-3706)
molecular force constants and deformation vibrations, effects of deuterium on, 22:16550
molecular structure of, effects of alkali halides on, 22:47148
monitoring in sodium loops, rhometer for, 22:12953
monitoring of reactor coolant, device for flow delay during, 22:10106(P)
monitoring of surface of splash protection for large-area detector for, 22:47348
movement in soils, determination by radiometric method, 22:30693
neutron absorption time distribution in boron-bearing, (T), 22:20406 (FEI-85)
neutron absorption time distribution in slabs of boron-bearing, (T), 22:44572(T) (ANL-Trans-638)
neutron age in, effects of empty channels on, (E), 22:15933
neutron ages in tungsten--water mixtures, from d--D and d--T sources, 22:48417 (N-68-25058)
neutron ages in, from d--D and d--T sources, (E/T), 22:48417 (N-68-25058)
neutron attenuation in water and aluminum-water slabs, (E), 22:32447
neutron decay constants for cadmium-bearing, thermal, (E), 22:13893 (AE-309)
neutron decay constants from pulsed-source experiments in poison-bearing water, (E), 22:41931
neutron decay constants in pulsed spherical geometry of, use of discrete-ordinates method for, (E/T), 22:35711
neutron decay constants in spherical geometry for various bucklings, (T), 22:29868
neutron differential scattering cross section at 0.006 to 10 eV, (E), 22:13910
neutron diffusion and thermalization parameters in pure and poison-bearing, research program on, (E), 22:37281(R) (NYO-72-191)
neutron diffusion coefficients for, pulsed and static measurements of thermal, (E), 22:41923
neutron diffusion coefficients for, thermal, (E), 22:22521 (DP-1090)
neutron diffusion length and streaming factors for, effects of voids on, (E), 22:11882
neutron diffusion lengths in pure and poison-bearing, thermal, (E), 22:29874
neutron diffusion parameters at 21.7°C, thermal, (E), 22:1559 (CTH-RF-12)
neutron diffusion parameters for, at 253 to 294°K, 22:1861(R) (TID-24058)
neutron diffusion parameters for, measurements using pulsed source technique, (E), 22:29886
neutron diffusion parameters in spherical geometry, (T), 22:29868
neutron diffusion parameters in, determination by pulsed method and spherical geometrics of thermal, 22:44201
neutron diffusion wave reflection and refraction at interface between two semi-infinite media, (T), 22:32473
neutron distributions from tritium (p,n) reaction source in, spatial, (E), 22:1581
neutron doubly differential inelastic scattering cross sections at 0.23, 0.33, 0.50, and 0.63 eV, (E), 22:13908 (RPI-328-100, pp 120-39)
neutron doubly differential inelastic scattering cross sections at 0.05 eV, (E/T), 22:37279 (IN-1141)
neutron doubly differential inelastic scattering cross sections at 0.232, 0.332, and 0.504 eV and 200°C, (E), 22:22528 (RPI-328-112, pp 104-19)
neutron doubly differential inelastic scattering cross sections at 0.05 eV, (E), 22:41926
neutron doubly differential scattering cross sections at 0.056 and 0.101 eV, (E), 22:53064 (AERE-R-5832)
neutron doubly differential scattering cross sections at high temperature, research program on, (E/T), 22:39550 (RPI-328-123, pp 32-8)
neutron doubly differential scattering cross sections for molecules of, thermal, (E), 22:18082
neutron energy spectra at room temperature as a function of slowing-down time in, (E), 22:48412(T) (AERE-Trans-1088)
neutron extrapolation length in, measurements using pulsed-source technique, (E), 22:32449
neutron flux distributions in, time-of-flight measurements of angle- and energy-dependent, (E), 22:32443
neutron flux in aluminum--water slab lattice exponential experiments, (T), 22:44586
neutron flux in, calculations of time-dependent thermal, (T), 22:48426 (RPI-328-133, pp 60-100)
neutron inelastic scattering at 23 and 234°C, cold, (E/T), 22:29871
neutron inelastic scattering at 27, 170, and 270°C, (E/T), 22:48425 (RPI-328-133, pp 56-9)
neutron inelastic scattering at 273.4°K, cold, (E), 22:35205
neutron inelastic scattering cross sections for, at 0.304 eV, (E), 22:20779 (BNWL-624, pp 3.1-159)
neutron inelastic scattering in, thermal, 22:22804(R) (BNWL-685)
neutron mean slowing down time to indium resonance in, 22:6159
neutron pulse decay constants in spherical geometry, effects of scattering anisotropy on thermal, (T), 22:29867
neutron scattering at low energy, (T), 22:7622
neutron scattering by, calculation of differential cross sections using modified Nelkin model with hindered rotations, (T), 22:53073
neutron scattering by, cold, (E), 22:32429(T) (KFK-tr-235)
neutron scattering by, dynamics studies from inelastic epithermal, (E), 22:26199 (BNWL-SA-1535)
neutron scattering cross section and kernels for, thermal, (E/T), 22:41924
neutron scattering in, cross sections for cosmic, (T), 22:22299
neutron scattering law at 0.05 eV, (E), 22:41926
neutron scattering law at 16°C, (E/T), 22:37279 (IN-1141)
neutron scattering law for mixture of light and heavy, (E), 22:53064 (AERE-R-5832)
neutron scattering law for, calculations using exact formalism and short collision approximation, (T), 22:39541(R) (GA-8626)
neutron scattering law for, correction for multiple scattering, (E), 22:1583
neutron scattering measurements in reactor moderator, neutron spectral density determination from, 22:30378
neutron slowing down in aluminum--water plate lattices of, anisotropy of, (E), 22:32475
neutron slowing down in aluminum--water slab systems, Monte Carlo calculations of anisotropy of, (T), 22:32474
neutron slowing down in zirconium-water lattices, measurement using accelerator sources, (E), 22:5710 (WAPD-T-2015)

neutron slowing down in, from tritium (p,n) reaction source, (E), 22:1581
neutron slowing down time in, measurements using pulsed source technique, (E), 22:48412(T) (AERE-Trans-1088)
neutron spatial distribution in zirconium lattices in, (E), 22:5727
neutron spectra in graphite-water assemblies with temperature discontinuity, thermal, (E), 22:29877
neutron spectra in graphite-water systems with temperature discontinuity between graphite and water, thermal, (E/T), 22:20418(T) (JPRS-43682, pp 123-36)
neutron spectra in iron--water slab shields, fast, 22:44589
neutron spectra in slabs of, measurements of time-dependent thermal, (E), 22:39549 (RPI-328-123, pp 26-31)
neutron spectra in slabs of, time-dependent, (E), 22:22525(R) (RPI-328-112)
neutron spectra in slabs of, time-dependent, (E), 22:32459
neutron spectra in, chopper for measuring time-dependent, 22:13907 (RPI-328-100, pp 113-19)
neutron spectra in, fast, (E), 22:26787
neutron spectra in, near plane cadmium surface, (E), 22:20415(T) (JPRS-43682, pp 63-80)
neutron spectra in, near plane cadmium surface, (E), 22:20411 (IAE-1216)
neutron spectra measurements in uranium fueled lattices with, analysis of thermal, (E/T), 22:22834
neutron spectra near absorbing plane cadmium surface in, anisotropy of, (E), 22:44573(T) (ANL-Trans-648)
neutron spectra near plane cadmium surface in, anisotropy of, (E/T), 22:29876
neutron spectra near probe tubes in, space-dependent thermal, (T), 22:29880
neutron thermalization in spheres of, (E/T), 22:11892
neutron thermalization in, measurements using pulsed source technique, (E), 22:50516
neutron thermalization in, modified Nelkin model with hindered rotations for, (T), 22:53073
neutron thermalization in, research progress on, (E), 22:39549 (RPI-328-123, pp 26-31)
neutron thermalization in, time-dependent, (E), 22:20421(T) (JPRS-43682, pp 165-78)
neutron thermalization in, time-dependent, (E), 22:29888
neutron thermalization in, time-dependent, (E), 22:32459
neutron thermalization measurements in, using pulsed source and non 1/v absorber method, 22:35697
neutron total cross section at 0.0025 to 10 eV, time-of-flight measurements of, (E), 22:41924
neutron total cross section at 0.01 to 15 eV, measurement using time-of-flight method, (E), 22:7612 (GA-7581)
neutron total cross section at 1 to 9 MeV in reactor spectrum, (E), 22:7619
neutron total cross section at 14.7 MeV, (E), 22:44649
nuclear magnetic resonance of, flowing in magnetic field, design and performance of magnetometer based on, 22:30918
optical properties of liquid, in vacuum ultraviolet region, (E), 22:49987 (ORNL-TM-2261)
oxidation by hypochlorites, persulfates, and transition metal ions, oxygen-18 isotope effects in, 22:27660
oxygen isotopic exchange between calcium carbonate and, fractionation factors for, 22:18752
oxygen isotopic exchange between carbon dioxide and, fractionation factors for, 22:18752
oxygen-18 enrichment in, by distillation in packed vacuum column, 22:10327
oxygen-18 exchange between 2,4,6-trimethylpyrylium perchlorate and, effects of pH on, 22:4140
oxygen-18 exchange between aquopentamminechromium ions and, 22:12331
oxygen-18 exchange between chromium ammines and, 22:8042(R) (ORO-2842-6)
oxygen-18 exchange between dipropyl phosphonate and, 22:27639
oxygen-18 exchange between glycerophosphoric acid and, 22:14506
oxygen-18 exchange between sodium pentacyanonitrosylferrate and, rate of, 22:40056
oxygen-18 exchange between sodium rhodium oxalate and, exchange of outer and inner oxygens in, 22:37731
oxygen-18 exchange between substituted benzophenones and, 22:16485(R) (ORO-3234-6)
petrochemical pollution of, carbon isotope ratios as indexes of, 22:35928
phase transformations in insulators of, detection by dielectric constant measurement of pressure-induced, 22:48985 (SC-DC-68-2410)
photoionization cross sections for molecular, (E), 22:5809(R) (ANL-7354)
photolysis of, 22:2099(R) (TID-24136)
photolysis of, effects of isotopic variations on uv, 22:21081
photon absorption at 15 keV to 3 MeV by, calculated data on energy deposition by, 22:36274
photon mass attenuation coefficients for, tables of, 22:5869 (LA-3753)
photon transport in, calculations using invariant imbedding theory, 22:52844
plutonium content of fresh, high sensitivity determination of, 22:43301 (AERE-R-5474)
plutonium-238 content of, in Mound Laboratory environs during 1967, 22:21205(R) (MLM-1464)
polonium-210 content of, in Mound Laboratory environs during 1967, 22:21205(R) (MLM-1464)
positron lifetime in, temperature dependence of, 22:17415
pressure in ultrahigh vacuum systems, effect of cesium vapor on partial, 22:16848
production from seawater, economics of dual-purpose reactors for, 22:10445
production from seawater, economics of dual-purpose reactors for, 22:10446
production of muonic molecule of, possibility of, 22:17418
properties at critical point to melting point, data on, 22:2268 (MND-3288)
protection of swimmers from cold, plutonium-238-heated survival suit for, 22:37949
proton reactions (p,x) with, chemical state of carbon-11 recoil produced by, 22:10264(R) (ORO-3602-1)
proton reactions at 158 MeV, differential cross sections for proton production by, (E), 22:18136
proton reactions at 40 to 1500 eV, charge exchange cross sections for, 22:13234
proton reactions with, cross sections for elastic and charge-rearranging, 22:36745
proton rouges in, at 260 and 660 MeV, (E), 22:1287 (JINR-P9-3369)
proton scattering in, cross sections for cosmic, (T), 22:22299
pumps for, description of hermetically sealed, 22:22784
purification by electrodialysis, 22:14430 (ORNL-4196, pp 55-9)
purification by filtration in soils, 22:16700
purification for CEA research reactors, 22:27871
purification for use as reactor coolant by filtration, filter bed expansion in backwashing in, 22:12398 (BNWL-565)
purification of boiler feed, for conventional and nuclear power plants, 22:10443
purification of radioactive solutions of, equipment and method for, 22:18904
purification of, use of nuclear energy in, 22:23080
radiation attenuation in, method of calculation of, 22:26446
radiation chemistry of, 22:27832
radiation chemistry of, 22:47182
radiation chemistry of solutions in, comparison of, with results from photochemistry, 22:2151
radiation chemistry of, review of, 22:27777
radiation chemistry of, review on, 22:40119
radiation dosimetry in, β, 22:12841 (AECL-2793)
radiation effects on absorption and excretion of, by rats, effects of dose on x, 22:49233
radiation effects on coagulation of colloids in drinking, combined effects of alum on γ, 22:25727
radiation effects on consumption of, by rats, effects of age on fast neutron, 22:33896 (AD-662222)
radiation effects on content of, in hybrids of Datura, x, 22:14991
radiation effects on content of, in liver of rats, acute x, 22:25969
radiation effects on distribution of, in tissues of mice, combined effects of tourniquet injury on x, 22:25979
radiation effects on flux of, in excised onion roots, micropotometric determination of x, 22:28705
radiation effects on nickel- or tungsten-adsorbed, low-energy electron, 22:11015
radiation effects on oxygenated, effects of pH and radiation dose on hydrogen peroxide yield from pulsed-electron, 22:16627
radiation effects on oxygenated, reactions of hydroxide ions from pulsed-electron, 22:16627
radiation effects on transport of, by intestine in rats, whole-body x, 22:45647
radiation effects on transport of, by rat intestine, x, 22:49544
radiation from, at 6000 to 12000°K, 22:44125
radiation intensity distributions from a plane parallel beam in shields containing, measurement of γ and neutron, 22:14162
radiation monitoring of Shippingport Pressurized-Water Reactor cooling, during October to December 1967, 22:18359(R) (DLCS-5000467)
radiation monitoring of SNAP-8 heat transfer system, analysis of, 22:18543 (NAA-SR-Memo-11131)
radiation monitoring of waste, system for low-level, 22:36022 (AE-317)
radiation monitoring of, in Federal Republic of Germany during 1967, 22:51598
radiation monitoring of, in vicinity of Paducah Plant during 1965 to 1966, 22:491 (KY-543)
radiation monitoring of, methods for, 22:45563
radiation monitoring of, near Beloyarsk power reactor during 1963 to 1966, 22:17027
radiation processing of, after use for washing of grain, combined effects of chemicals on, 22:31307
radioactive contamination in drinking and waste, radiometric device for monitoring, 22:10615 (IFA-IS-45)
radioactive contamination of, methods for removal of,

22:8530(T) (JPRS-42929, pp 331-58)
radioactive contamination of, review of, 22:47541
radioactivity content of, in North and South America during 1967, α and β, 22:28523
radioactivity in Federal Republic of Germany during first quarter of 1967, 22:38290
radioactivity in Federal Republic of Germany during second quarter of 1967, 22:33820
radioactivity in waste, equipment and procedures for monitoring, 22:4288
radioactivity measurements in, sampling methods for, 22:40268
radioactivity monitoring in Juelich Nuclear Research Center, 1966, 22:2193(R) (JUL-485-ST)
radioactivity monitoring of, development of scintillation detector system for low-level x, 22:30825(R) (UCRL-50007-67-3)
radioactivity of drinking, in United Kingdom during 1965 and 1966, α, β, and γ, 22:40711
radioactivity of Indian, 22:2222
radioinduced aversion to, in mice, x, 22:23613
radioinduced decontamination of chemically polluted, 22:6324
radioinduced excitation of, spectra from, 22:25400
radioinduced free radicals in, effects of oxygen on toxicity of, for yeasts, 22:25738
radioinduced increase of, in corn and radishes, effects of seed exposure on x, 22:38499(T) (JPRS-44845)
radioinduced production from fats, 22:42788
radioinduced reduction of nitrates to ammonia and nitrites in, γ, solar, and uv, 22:23078
radioisotope content of Brazilian, 22:2217
radioisotope content of drinking, in Netherlands during 1963, cesium-137 and strontium-90, 22:33817 (RA-32)
radioisotope content of drinking, maximum permissible, 22:51651
radioisotope content of drinking, standards for maximum permissible concentration of, 22:19330 (NP-17180)
radioisotope content of, determination of, cesium-137, iodine-131, strontium-89, and strontium-90, 22:33835
radioisotope content of, in Italy, cesium-137 and strontium-90, 22:51588
radioisotope content of, methods of determining and separating cerium-144, cesium-137, and strontium-90, 22:33818 (UCLA-12-676)
radioisotope distribution in German drinking, 1956 to 1963, 22:10368
radiolysis in Beloyarsk nuclear power station, effects of hydrogen on suppression of, 22:48889
radiolysis in Halden Boiling Reactor, effects of deuterium and ammonia on, 22:1765 (HPR-55)
radiolysis in ORNL High-Flux Isotope Reactor, 22:26029 (ORNL-4229, pp 71-83)
radiolysis of, 22:2099(R) (TID-24136)
radiolysis of, 22:40127
radiolysis of, 22:4216
radiolysis of air-saturated, effects of p-nitrosodimethylaniline on hydroxide radicals from, 22:2167
radiolysis of alkaline or neutral solutions of, yields in, 22:21134
radiolysis of Beloyarsk Power Reactor Unit 1 coolant, use of hydrogen for suppression of, 22:35527
radiolysis of zeolite-adsorbed, EPR spectra of free radicals produced by, 22:125
radiolysis of, effects of alkali salts on yields in, 22:23034 (IA-1128, pp 78-96)
radiolysis of, effects of deuterium on γ, 22:16629
radiolysis of, effects of LET on gamma and proton, 22:23034 (IA-1128, pp 78-96)
radiolysis of, effects of LET on yields in, 22:2103
radiolysis of, effects of nitrous oxide on yields in γ, 22:122
radiolysis of, effects of pH on yields from, 22:25410
radiolysis of, effects of products of, on γ-radiosensitivity of hyaluronic acid, 22:10710
radiolysis of, effects of temperature and pressure on yields from γ, 22:25407
radiolysis of, electron spin resonance determination of, 22:30937 (UCRL-17751, pp 1-26)
radiolysis of, hydroxyl radicals from, 22:25409
radiolysis of, ionizing, 22:52003
radiolysis of, mechanism of hydrogen production from, 22:2164
radiolysis of, molecular and radical yields in, 22:40114
radiolysis of, nature of precursor of molecular hydrogen in, 22:2163
radiolysis of, primary processes in, 22:35873
radiolysis of, production of hydrated electrons and hydrogen atoms in pulse, 22:25408
radiolysis of, pulse, 22:42799
radiolysis of, pulse, 22:14513 (BNL-50057, pp 60-78)
radiolysis of, reaction of hydrated electron produced by pulse, 22:40126
radiolysis of, reactions of electrons in, 22:48882
radiolysis of, review on mechanism of, 22:27744 (NYO-3242-25)
radiolysis of, yield of OH radicals from γ, 22:10302
radioprotective effects of content of, on wheat seeds, γ, 22:36405
radioprotective effects of, on Serratia marcescens, x, 22:43492
radium-226 and stable strontium content of drinking, in Wisconsin, relation of, to human skeleton content, 22:38267 (UCRL-18140, pp 175-95)
radium-226 content of, permissible limits for, 22:31061 (NP-17201)
reactions with aluminum hydroxide, sodium hydroxide, and silica to yield radiation-resistant anion-exchange material, 22:18911(P)
reactions with ammonia, deuterium, and methane, cross sections and rate constants for, 22:25347
reactions with chlorine fluorides, 22:6384
reactions with electrons during γ-radiolysis of methanol, 22:37796
reactions with hydrated electrons, 22:12387
reactions with hydrated electrons, activation energy of, 22:12308
reactions with lanthanides, spectral studies on effects of solvents on, 22:45010
reactions with liquid aluminum and lead, analysis of, 22:18574
reactions with liquid sodium, 22:1750(R) (APDA-206)
reactions with sodium in reactor, gas—water simulation studies of, (E/T), 22:52158 (APDA-226)
reactions with sodium in sodium-heated boilers, leak detection of, 22:12672 (ANL-7380, pp 75-8)
reactions with sodium in sodium-heated steam generator, mechanisms of tube wastage from, (E), 22:47040(R) (APDA-228)
reactions with sodium in steam generators, tube wastage rates from, 22:24926(R) (APDA-214)
reactions with sodium, analysis of corrosion products from, 22:14129(R) (APDA-212)
reactions with sodium, effects on boiler tubes, 22:4744
reactions with thorium oxide sols, spectral studies of surface, 22:27727
reactions with tributyl phosphate, proton magnetic resonance studies of, 22:27860(R) (NYO-1922-43)
reactions with uranium and uranium hydrides, products and mechanisms of, 22:12268 (AWRE-O-45/65)
reactions with uranium hexafluoride, preparation of $U_3O_5F_8$ by, 22:83
reactions with uranium monocarbide, study of rate and products of, 22:77
reactions with water, surface temperature measurements of, 22:5968
reactions with Zircaloy-2 at 200 to 300°C, 22:19489
reactivity effect in ERMINE fast—thermal flux assembly in MINERVE, 22:14263(T) (AEC-tr-6910)
reactivity effects of losses in graphite of, 22:33044
recovery from human urine during space flight, radioisotope-fueled reclamation system for, 22:16745
recovery from urine in aerospace, radioisotope life support system for, 22:37953
reflectors of Type 304 stainless steel and, effects on criticality of aqueous uranyl fluoride (UO_2F_2) of cylindrical, (E), 22:35599 (K-D-2006)
refractive properties of, piezo-optic coefficients of, 22:23003 (IA-1128, pp 97-146)
removal from gas-coolant of reactors, use of lime filters for, 22:25053(P)
removal from saturated atmospheres, methods for, 22:2225(R) (NYO-841-11)
reservoirs for, radioactive tracer method for location of leaks from large, 22:19071
resource development using nuclear explosions, 22:8245 (UCRL-70762)
seepage through dams, use of radioactive tracer method for control of, 22:19072
separation by solvent extraction using methylenebis[di-n-hexylphosphine oxide] in carbon tetrachloride, ir spectral studies on, 22:6402
separation by solvent extraction using trioctylphosphine oxide in carbon tetrachloride, ir spectral studies on, 22:6402
separation from sediments using flocculents, tracer techniques using gamma emitters, 22:28020
separation from steam, design and testing of steam separators for, 22:12475(R) (EURAEC-1945)
separation from steam—water mixtures in boiling water reactors, design and testing of radial vane separator for, 22:48980(R) (GEAP-5567)
separation from steam—water mixtures in boiling water reactors, design and testing of radial vane separator for, 22:48981(R) (GEAP-5655)
separation from steam—water mixtures, in boiling water reactors, design and testing radial vane separator for, 22:2265(R) (GEAP-5524)
separation of cesium-137, strontium-90, and yttrium-91 from, by synthetic zeolites, effects of sodium chloride and humus materials on, 22:35903
separation of perchloric acid from, by solvent extraction using 1-decanol in 1,2-dichloroethane or 2-methylheptane, proton solvation in, 22:37718 (UCRL-17989, pp 181-252)
separation of poisons from EL-4 reactor moderating, kinetics and thermodynamics of ion exchange, 22:16110 (CEA-R-3274)
separation of radioactive waste from, evaluation of materials for ion-exchange, 22:33552
separation of radioisotopes from, by slurrying with Yazoo and Zilpha clays, 22:25482

separation of radioisotopes from, effects of colloidal hydrous ferric oxide on, 22:14512
separation of strontium-90 from, using gelatin and foam formation, 22:51071
separation of uranium from mine, 22:18892
separation of uranium from, from uranium mines in New Mexico, 22:18901
separation of zinc radioisotopes from reactor cooling, by amalgam exchange, 22:10338
shielding configuration of borated, economics of 1.5 to 15 MW(e) MCR, 22:50779 (GMAD-3078-20(Vol.3))
shielding during loading of water-cooled reactor, use of hot water-layer and spray for, 22:44938(P)
shielding properties of multi-layer materials with, calculation of gamma, (T), 22:18602
shielding properties of slab geometry of, analysis of spent fuel γ radiation, 22:48750 (DF-67-CAP-24)
solubility in dioctylarsinic acid, 22:22901(R) (ORO-2733-13)
solubility in molten lithium, potassium, and sodium nitrates, voltammetric studies on, 22:23003 (IA-1128, pp 97-146)
solubility in nitrate solutions of tridodecylamine, 22:27620 (CEA-N-816, pp 481-8)
solubility in tributyl phosphate, mechanism of, 22:27612
solvent properties for hydrogen and nitrogen, 22:4084
solvent properties for sulfur-35-labeled strontium sulfate precipitates, kinetics of, 22:33475
solvent properties for TBP, 22:27845 (CEA-N-816, pp 150-276)
solvent properties for uranium, 22:18892
sorption by sands, radioactive tracer studies of, 22:19073
sorption of methyl iodide by, from wind-tunnel gases, 22:5966
sorption on graphite, effects of sample geometry and temperature on, 22:30527
sorption on plutonium dioxide at 25 to 75°C, 22:12963 (RFP-1056)
sorption on thorium dioxide, electron-microscopic studies of, 22:14432 (ORNL-4196, pp 63-6)
sorption on thorium dioxide, heat of, 22:25330 (ORNL-4229, pp 105-11)
sorption on thorium oxide powders, effects of porosity on, 22:37741
sorptive properties of drops of, for methyl iodide in wind tunnel gases, 22:25333 (ORNL-4229, pp 162-79)
spectra at 7 to 55°C, effects of deuterium on ir, 22:37735
spectra in polycrystalline solid films of, ir, 22:27700
spectra of isotopic species in organic solvents, ir, 22:27685
spectra of, measurement of absolute absorption intensities and optical constants for, 22:25337
spin--rotation constants of, (T), 22:972
stability in mica, effects of dehydration kinetics on, 22:27912
strontium equilibrium distribution coefficients between soils and, batch and column studies of, 22:25446 (BNWL-481-3, pp 48-53)
strontium-90 content in New York City tap, 1954 to 1968, 22:25531(R) (HASL-193(App.))
strontium-90 content of Danish, 1966, 22:10358 (RISO-155)
strontium-90 content of drinking, in United Kingdom during 1966, 22:15017
strontium-90 content of potable, in New York City during 1954 to 1968, 22:40661(R) (HASL-197)
strontium-90 content of, in Greenland, 1966, 22:10359 (RISO-156)
strontium-90 content of, in Netherlands during 1966, 22:15001 (RA-30)
temperature of maximum density of solutions of alkali chlorides in, effects of deuterium on, 22:42684
thermodynamic properties of, calculation of, from significant structure theory, 22:4156
thermodynamic properties of, effects of pressure and temperature on density and enthalpy, (T), 22:32768 (KAPL-M-6734)
thermodynamics of thorium dioxide immersion in, effects of specific surface area and outgassing temperature on, 22:17174
transport during drying of thin peat layers on moist soil, radioactive tracer studies of, 22:25620
transport through tropical rain forest ecosystem, 22:49282(R) (PRNC-119)
treatment in Herald Research Reactor, 22:28743
treatment of salt and waste, economic potential of nuclear energy for, 22:30691 (ORNL-TM-2160)
treatment of waste, use of γ radiation for, 22:10515
tritium concentration in, electrolytic, 22:42831
tritium content in, comparison of Triton-X emulsion systems with dioxane solutions in liquid scintillation determination of, 22:6580
tritium content in, liquid scintillation system for determining, 22:25641
tritium content of, in Mound Laboratory environs during 1967, 22:21205(R) (MLM-1464)
tritium content of, methods for measurement of, 22:45563
tritium exchange between aromatic compounds and isotopic, production of labeled compounds by metal-catalyzed, 22:4121
tritium exchange between meso-2,3-ditritiosuccinate and, catalytic effects of succinate dehydrogenase on, 22:35788
uranium content of fresh, high sensitivity determination of, 22:43301 (AERE-R-5474)
uranium content of, in Chicago, New York City, and San Francisco, 22:28501
use as lubricant in helium circulator thrust bearings, 22:8273
use as lubricant in journal and thrust bearings, bearing performance in the turbulent regime from, (E), 22:8274
use as substitute for liquid metal in flow tests, 22:21272 (LMEC-68-4)
use efficiency of, use of radiation techniques to study, 22:6450
use for cosmic-ray shielding for reducing background of gamma detectors, 22:23259 (BNWL-SA-1516)
use for scalding of γ-irradiation processed papayas, effects of, on shelf life, 22:45742
use in phase analysis of calcium oxide--silicon dioxide--zirconium dioxide system for compound formation, 22:50920
use of oxygen-18 labeled, for study of anaerobiosis in maize and sunflower plants, 22:12766
use of phantom equivalent to, for dosimetry of γ rays, electrons, and photons, 22:36285
use of phantoms of, to determine x radiation dose to gonads of man during therapy for hemangiomata, 22:38285
use of tritium for determining space of blood and brain, in rats, 22:40572
use of tritium-labeled, to study radial exchange in corn roots of Zea, 22:25729
vapor pressure from -9 to 114°C, effects of deuterium and tritium on, 22:16489
vapor pressure of oxygen-16-labeled, 22:23012
vapor pressure of oxygen-17-labeled, 22:23012
vapor pressure of, between 230 and 400°K, effects of isotopes on, 22:23012
vibrational frequencies and symmetry force constants for, effects of deuterium on, 22:35798
viscosity at 0 to 150°C and 1 to 1200 kg/cm^2, 22:42692
void fractions due to boiling in, sonic equipment for measuring, 22:51276(R) (IDO-17269)
void fractions in subcooled boiling, method for prediction of, 22:21279
void profiles in subcooled low pressure, development and initiation of, 22:4340(R) (NYO-3679-2)
volume of high-pressure phase of, effects of pressure on, 22:35797
x-ray scattering by, small-angle, (E), 22:9078
yields in gamma radiolysis and uv photolysis of nitroethane, 22:10298
yields in γ radiolysis of crystalline and liquid acetamide, 22:33450
zinc-65 distribution in, of aquatic ecosystems, 22:14980
(ethylenedinitrilo)tetraacetic acid--H_2O--H_2O_2, complexes with uranium, mechanism of formation of, 22:35804
4-methyl-2-pentanone--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-T-259)
acetic acid--4-methyl-2-pentanone--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-T-259)
acetone--H_2O, analysis for uranium as thiocyanate complex, effects of gamma radiation on spectrophotometric, 22:4014
air--H_2O, eddy diffusivities in annular flow, analysis of two-phase, (E/T), 22:42398 (WAPD-TM-727)
air--water, shock wave propagation in two-phase flowing, 22:4325
alcohol--H_2O, separation of rare earth isotopes by ion exchange in, containing aluminum or lithium nitrates or nitric acid, 22:35905
Ar--D_2O--H_2O, photolysis of, ir spectra of matrix-isolated OH radical from uv, 22:21081
argon--water, flow in circular tubes, isokinetic sampling probe for measurement of velocity distribution in, 22:21282
argon--water, phase and velocity distribution in adiabatic flow of, in tubes, method for measurement of, (E), 22:21269 (EURAEC-1091)
$BaCl_2$--H_2O, phase studies on, dehydration and polymorphism boundaries in, 22:50971
BaF_2--HF--H_2O, complexing in, solubility studies on, 22:45071
benzene--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-T-259)
butyl dibutylphosphinate--H_2O, phase studies on mutual solubility in, as function of temperature, 22:6407
butyl dibutylphosphinate--H_2O--H_2SO_4, phase studies on solubility in, 22:6407
butyl dibutylphosphinate--H_2O--$UO_2(NO_3)_2$, phase studies on solubility in, as function of temperature, 22:6407
butyl dibutylphosphinate--H_2O--$UO_2(NO_3)_2$, thermodynamic properties of, 22:50976
butyl dibutylphosphinate--HNO_3--H_2O, phase studies on solubility in, 22:6407
butyl ether--H_2O, solvent properties for uranyl nitrate, 22:35795
C_2H_4--H_2O, effects on thermal-electron capture by oxygen,

(E), 22:5117
CaF_2--HF--H_2O, complexing in, solubility studies on, 22:45071
carbon tetrachloride--H_2O, work regions in horizontal pulse extractor for, 22:25468 (UJV-1929)
citric acid--H_2O--H_2O_2, complexes with uranium, mechanism of formation and stability constants of, 22:35805
CO--H_2O, radiation effects on binding energy in solutions of, γ, 22:12389
CO--H_2O--O, radiation effects on binding energy in solutions of, x, 22:12389
concrete--water, shielding of, effectiveness for epithermal, fast, and thermal neutrons and γ-radiation, 22:7925
CsF--H_2O--MoO_3, phase studies and compound formation in, 22:45080
CsF--H_2O--WO_3, phase studies and compound formation in, 22:45080
$CuSO_4$--H_2O, effects on laminar free convection at vertical electrode, 22:45029 (UCRL-18043, pp 7-105)
$CuSO_4$--H_2O--H_2SO_4, effects on laminar free convection at vertical electrode, 22:45029 (UCRL-18043, pp 7-105)
D_2O--H_2O, autoprotolysis of, measurement of, 22:10221
D_2O--H_2O, diffusion in capillaries, equation for transient convective, 22:47117
D_2O--H_2O, electrochemical behavior of cadmium in, polarographic study of, 22:25324 (JEN-172-DQ/I-61)
D_2O--H_2O, neutron differential scattering cross sections at 0.404 eV, (E/T), 22:7611(R) (GA-7105)
D_2O--H_2O, neutron diffusion in, parameters of pulsed thermal, (E), 22:3933 (TID-24100)
D_2O--H_2O, neutron diffusion parameters for, at 253 to 294°K, 22:1861(R) (TID-24098)
D_2O--H_2O, radiolysis of, isotopic distribution in hydrogen atoms from, 22:2159
D_2O--H_2O, vapor pressure of, significant structure theory of, 22:4155
D--H_2O, deuterium exchange and equilibration reactions on nickel catalysts in, mechanisms of, 22:12314
$DClO_4$--$HClO_4$--H_2O, molecular state and thermodynamics of, 22:45029 (UCRL-18043, pp 7-105)
dioxane--H_2O, radiolysis of, mechanism of hydrogen formation in γ, 22:37790
dioxane--H_2O, reactions with (2-bromoethyl)benzene, mechanisms of isotope effects in elimination, 22:4105
DNO_3--HNO_3--H_2O, molecular state and thermodynamics of, 22:45029 (UCRL-18043, pp 7-105)
dodecane--H_2O, work regions in horizontal pulse extractor for, 22:25468 (UJV-1929)
ethanol--H_2O, radiolysis of, effects of nitrous oxide on γ, 22:16592
ethanol--H_2O, vapor pressure of, effects of deuterium on, 22:37742
ethanol--hydrazine chloride--H_2O, phase studies of, 22:30545
ether--H_2O, content ratios in, design and use of radiation scatter gage for determining, 22:384 (ORNL-IIC-10(Vol.2), pp 870-902)
ethyl dibutylphosphinate--H_2O, phase studies on mutual solubility in, as function of temperature, 22:6407
ethyl ether--H_2O, solvent properties for uranyl nitrate, 22:35795
Fe--water, shielding of, effectiveness for epithermal, fast, and thermal neutrons and γ-radiation, 22:7925
H_2--H_2O, deuterium enrichment in, bithermal process for, 22:14735(P)
H_2O--4-[(2-hydroxy-1-naphthyl)azo]-1-naphthalenesulfonic acid, reactions with uranyl nitrate, spectrophotometric studies on, 22:16497
H_2O--H_2S, deuterium enrichment in, bithermal process for, 22:14735(P)
H_2O--H_2SO_4, effects on hydration of derivatives of propiolic acid at 25°C, mechanism of, 22:4104
H_2O--HNO_3--TBP--$UO_2(NO_3)_2$, effects of nitric acid on activity coefficients of diluents in, 22:6405
H_2O--isopropyl ether, solvent properties for uranyl nitrate, 22:35795
H_2O--KF--MoO_3, phase studies and compound formation in, 22:45080
H_2O--KF--UO_3, phase studies and compound formation in, 22:45080
H_2O--KF--WO_3, phase studies and compound formation in, 22:45080
H_2O--methanol, effects on electron radioinduced polymerization of cellulose and styrene, 22:42703(T) (AEC-tr-6937, pp 21-32)
H_2O--methanol, effects on electron radioinduced polymerization of cellulose and styrene, 22:8119
H_2O--methanol--NO, radiation effects on binding energy in solutions of, γ, 22:12389
H_2O--methyl dibutylphosphinate, phase studies on mutual solubility in, as function of temperature, 22:6407
H_2O--methylsilane, radiolysis of, 22:21091 (JLI-3655)
H_2O--MoO_3--NH_4F, phase studies and compound formation in, 22:45080
H_2O--MoO_3--RbF, phase studies and compound formation in, 22:45080
H_2O--Ne, radiation effects on, effects of deuterium on spectra of OH from x, 22:21080
H_2O--NH_3, nitrogen-15 exchange reactions in, 22:16659
H_2O--NH_3, radiation effects on binding energy in vaporous, γ, 22:12389
H_2O--NH_3--O, radiation effects on binding energy in vaporous, γ, 22:12389
H_2O--NH_4F--UO_3, phase studies and compound formation in, 22:45080
H_2O--NH_4F--WO_3, phase studies and compound formation in, 22:45080
H_2O--NO, radiation effects on binding energy in solutions of, γ, 22:12389
H_2O--O--trichloroethylene, radiolysis of, yields in, 22:42701 (AD-664757)
H_2O--propyl dibutylphosphinate, phase studies on mutual solubility in, as function of temperature, 22:6407
H_2O--PuO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
H_2O--RbF--WO_3, phase studies and compound formation in, 22:45080
H_2O--sodium o-nitrobenzoate--$Th(NO_3)_4$, phase studies on acidity, concentration, and electronegativity of, 22:12302
H_2O--sodium p-nitrobenzoate--$Th(NO_3)_4$, phase studies on acidity, concentration, and electronegativity of, 22:12302
H_2O--steam, critical heat flux in two phase flow of, analysis of nine-rod square lattice Inconel-X tubes, 22:53275 (GEAP-5616)
H_2O--steam, film thickness measurements on spray annular flow through tubes and rod bundles, 22:42958 (CONF-680903-1)
H_2O--steam, flow at 50 to 150 psia, equations for calculation of critical, 22:51168
H_2O--steam, flow in long tubes at low qualities, analysis of critical, (E/T), 22:49013 (ANL-7430)
H_2O--steam, flow in nine-rod channel at 1000 psia, determination of vertical structure of, (E), 22:2293 (GEAP-5480)
H_2O--steam, flow metering by sharp-edged orifices, effects of dryness fraction on, 22:2280
H_2O--steam, heat transfer crisis in upward flow in round tubes, 22:40304 (EUR-3920)
H_2O--steam, heat transfer in, prediction of critical, 22:33599
H_2O--steam, void fraction measurements in flowing, design of fast neutron densimeter for, 22:30875
H_2O--TBP, mineral acid properties in, 22:154
H_2O--TBP, phase studies on mutual solubility in, as function of temperature, 22:6407
H_2O--TBP--$UO_2(NO_3)_2$, phase studies on activity coefficients of TBP in, 22:6404
H_2O--ThO_2, thermodynamics of net differential heat of adsorption with specific surface area, 22:33342
H_2O--tributylphosphine oxide, melting diagram for, 22:6407
H_2O--tributylphosphine oxide, phase studies on mutual solubility in, as function of temperature, 22:6407
H_2O--UO_2, criticality calculations for homogeneous, 22:45143 (K-1734)
H_2O--$UO_2(NO_3)_2$, phase studies and thermodynamics of, at 25 to 300°C, 22:30503 (AAEC/TM-447)
H--H_2O--H_2O_2--O, radiolysis of, yields of hydrogen peroxide in, 22:33423
HCl--H_2O--LiCl, Hammett acidity function of, 22:25209(R) (COO-1712-1)
HClO--H_2O--trifluoroacetic acid, effects on deuterium exchange in benzenoid hydrocarbons, 22:27632
heptane--H_2O, use in pulsed extraction columns, correlation of drop sizes in, 22:45142 (IS-T-259)
HF--H_2O--KF, fluorine-19 NMR chemical shift in, effects of deuterium on, 22:27673
HF--H_2O--MoF_6, complexing in, solubility studies on, 22:45071
HF--H_2O--SrF_2, complexing in, solubility studies on, 22:45071
HF--H_2O--Ta_2O_5, complexing in, solubility studies on, 22:45071
HF--H_2O--UO_3, complexing in, solubility studies on, 22:45071
HF--H_2O--ZrO_2, complexing in, solubility studies on, 22:45071
HNO_3--H_2O--TBP, effects of nitric acid on activity coefficients of diluents in, 22:6405
HNO_3--H_2O--TBP, solvent properties for cerium, lanthanum, thorium, yttrium, and zirconium nitrates, chromatographic studies on effects of diluents on, 22:6405
Pb--water, shielding of, effectiveness for epithermal, fast, and thermal neutrons and γ-radiation, 22:7925
phenol--water, density isotherms for, (E), 22:12951 (NYO-2731-3)
steam--water, densimeters for, description of simultaneous quick-closing valves inlet and outlet for, 22:20838
steam--water, density in steam boilers, use of radioactive tracers to measure, 22:14725
steam--water, flow in circular tubes, critical heat flux in, 22:19041
steam--water, heat transfer in horizontal tubes effect of gravity on boiling, 22:14670
steam--water, heat transfer in two-phase flow in vertical pipes, of boiling reactors, (T), 22:14299
steam--water, separators for, description of variable speed centrifugal, 22:20875(P)

steam--water, turbulent flow in fuel element pressure tubes for critical heat flux efficiency, description of rings to impart, 22:22786(P)
steam--water, vapor volume measurement of in-tube flowing, by dilatation, 22:4350
steam-water, heat transfer in, design of test loop for measurement of, 22:21275 (SGAE-RT-13/1967)
ATER-d
(HDO)
determination in heavy water, method for mass spectrometric, 22:9(R) (NBS-TN-425)
effects on alkaloid formation in Claviceps sp., combined effects of substrate on, 22:8456
force constant displays for, 22:35798
hyperfine structure measurement by maser beam spectroscopy, 22:21906
Raman spectra from 16 to 97°C, argon-ion laser- and mercury excited, 22:16519
separation of deuterium from, by isotope exchange between propyne and water, 22:135 (CU-755-4, Paper IIIB)
separation of deuterium, by isotope exchange between hydrogen sulfide or propyne and water, 22:134 (CU-755-4, Paper IIIC)
spectra in organic solvents, ir, 22:27685
spectra in polycrystalline solid films of, ir, 22:27700
spectra in water at high pressures and temperatures, infrared, 22:12277
spectra of, effects of freezing on line shape of OD absorption in ir, 22:45054
spin--rotation constants of, (T), 22:972
vapor pressure of, between 230 and 400°K, 22:23012
ATER-d$_2$
(D_2O)
absorption efficiency of, effects of boric acid concentration on neutron, (E/T), 22:32972 (IN-1139)
accountability of CVTR, procedures and data for, 22:39739 (CVNA-176)
acidity of, relation between standardized pD and operational pH in measurement of, 22:23025
acidity of, use of glass electrode in measurement of, 22:23025
analysis for deuterium content, spectrophotometric, 22:1953 (KFK-570)
analysis for fission products in HIFAR, 22:27528 (AAEC/TM-427)
analysis for iodine-131, 22:16356 (KR-116)
analysis for oxygen-17 and oxygen-18, mass-spectrometric, 22:3997 (AEEW-R-550)
analysis for trace impurities, spectrophotometric method for, 22:22970
analysis for water concentration, accuracy of infrared detector for, 22:32976(R) (MIT-2344-12)
analysis for water-d, method for mass spectrometric, 22:9(R) (NBS-TN-425)
analysis of Carolinas--Virginia Tube Reactor, chemical, 22:27404 (CVNA-285)
autoprotolysis of, measurement of, 22:10221
boron deposition on container surfaces for, in PRTR, 22:10911 (BNWL-520)
compatibility with vinyl paint, 22:36554 (BARC-322)
cooling system, operation of Halden Boiling Reactor core 2, 22:16150 (HPR-92)
corrosive effects on PRTR moderator, description through December 1967, 22:42163 (BNWL-726)
decontamination process for PRTR coolant, description of, 22:22816 (HW-75557(Rev.)(Del.))
decontamination process for PRTR coolant, description of, 22:22805 (BNWL-711)
determination in water, 22:16356 (KR-116)
determination in water by fluorine-19 NMR shifts, 22:8011
determination in water by infrared spectrometry using dimethyl sulfoxide as solvent, 22:4048
determination in water by polarography, 22:25324 (JEN-172-DQ/I-61)
determination in water using gamma--neutron reactions, 22:30693
determination in water, photometric apparatus for, 22:18733(P)
determination of, accuracy of standards for, 22:2 (AEEW-M-745)
deuterium exchange between 2,4,6-trimethylpyrylium perchlorate and, NMR study of, 22:6306
deuterium exchange between benzene and, in presence of platinum oxide, effects of γ-rays and uv on rate of, 22:8058
deuterium exchange between benzene and, using homogeneous platinum catalyst, 22:27649
deuterium exchange between cytidine and, 22:2050
deuterium exchange between dipropyl phosphonate and, 22:27639
deuterium exchange between hydroquinone and, measurement of equilibrium constants by NMR, 22:8064
deuterium exchange between molecular hydrogen and, catalytic effects of hydrogenase on, 22:27657
deuterium exchange between ovalbumin and, 22:35818
deuterium exchange between picolines, lutidines, thiophene, or furan and, on Group VIII metal catalysts, 22:50988
deuterium exchange between porous silicas and, study of internal hydroxyl groups by, 22:45060
deuterium exchange between various carboxylic acids and, 22:12327
deuterium exchange between, and methylpyridazines or their N-oxides, 22:37727
deuterium exchange between, and polyazaindenes, 22:6307
dielectric properties of, calculation of, from significant structure theory, 22:4156
discrimination from water by mice, 22:43213
economics in Canada of power reactor coolant-moderator, analysis of, 22:30250
effects of concentration of, on protonation of organometallic derivatives of indole, 22:2049
effects of moderating properties on criticality measurements of uranium and thorium oxide (ThO_2)--uranium oxide (UO_2) fueled assemblies, (E/T), 22:22836
effects of moderating properties on fuel burnup in uranium and plutonium--uranium lattices, (E/T), 22:22832
effects of moderating properties on lattice parameters of uranium oxide (UO_2) fuel rod cluster, (E/T), 22:22838
effects of moderating properties on lattice parameters of plutonium oxide (PuO_2), thorium oxide (ThO_2), and uranium oxide (UO_2) fuel rods, (E/T), 22:22837
effects on behavior of giant axon of squid nerve cells, 22:45455
effects on circadian rhythyms in deer mice, 22:33909
effects on criticality of FRO Core 9 critical assembly, analysis of, E/T), 22:50788 (AE-330)
effects on division and macromolecular protein synthesis in synchronized Tetrahymena pyriformis, 22:35812
effects on DNA synthesis in amphibian eggs, formation of cytasters following, 22:43448
effects on eggs of amphibians, cytological analysis of, 22:40576
effects on far-infrared sorption spectra of strong electrolytes, 22:16520
effects on formation of aconitate from isocitrate, 22:28273 (ANL-7278, pp 219-49)
effects on germination rate of seeds, 22:40954
effects on griseofulvin synthesis and growth of Penicillium janczewskii, effects of culturing technique and nutrients on, 22:10887
effects on growth of Claviceps purpurea, 22:38228
effects on growth of Penicillium janczewskii, 22:33722
effects on growth of viruses in cell cultures, 22:23688
effects on high resolution spectra of adenine, cytosine, guanine, and thymine, 22:28274 (ANL-7278, pp 250-82)
effects on hydrolysis of trifluoroacetates, thermodynamic studies on, 22:73
effects on neutron flux peaking in uranium oxide (UO_2)-fueled 18-element CANDU-BLW rod-type assemblies, analysis of, 22:44883 (AECL-3143)
effects on oxidative phosphorylation in comparison to oligomycin, 22:47477
effects on oxygen uptake by mitochondria, 22:45452
effects on physics measurements of thorium oxide (ThO_2)--uranium oxide (UO_2)-fueled heavy water-moderated 19-element CANDU rod-type assembly, analysis of, (E/T), 22:44882 (AECL-2779)
effects on pigment dispersal in melanocytes of fish, effects of pressure and temperature on, 22:19273
effects on polymerization of G-actin--adenosine 5'-diphosphate, 22:16563
effects on radiolysis of water in Halden Boiling Reactor, 22:1765 (HPR-55)
effects on sedimentation coefficient of DNA, 22:28274 (ANL-7278, pp 250-82)
effects on spermatogenesis in mice following oral administration, 22:36342
effects on stability of steam-cooled fast breeder reactors, 22:5921 (EURFNR-398)
effects on synthesis of histones and RNA in erythroblasts of chickens, 22:12802
effects on vibrational relaxation time of carbon dioxide, 22:33356
electric field gradient for deuteron sites of, one-center expansion wave functions in calculation of, 22:12279
electrolyte potentials in, 22:37740
electron reactions near excitation threshold with, detection of triplet and temporary negative ion states from, 22:17399
force constant displays for, 22:35798
force constants for, spectral determinations of, 22:12332
group cross sections for, tables of, 22:44895 (IN-1067)
hyperfine structure measurement by maser beam spectroscopy, 22:21906
Kerr constants at 365 and 436 mμ, effects of temperature on, 22:42683
leakage in NPD Reactor during 1962 to 1968 of, loss rate analysis for, 22:30224
leakage of Carolinas-Virginia Tube Reactor coolant, analysis of March 1963 to May 1967, 22:37408 (CVNA-282)
molecular structure of, effects of alkali halides on, 22:47148
monitoring in heavy water-moderated reactors for radioactive impurities, 22:25146
neutron coherent scattering by, at low energy, (T), 22:20431
neutron diffusion coefficients for, pulsed and static measurements of thermal, (E), 22:41923

neutron diffusion coefficients for, thermal, (E), 22:22521 (DP-1090)
neutron diffusion coefficients for, thermal, (E), 22:29884
neutron diffusion in, age and fast-effect for fission and monoenergetic, (T), 22:11878
neutron diffusion parameters for, at 253 to 294°K, 22:1861(R) (TID-24098)
neutron doubly differential inelastic scattering cross sections at 0.101 and 0.213 eV, (E), 22:39557
neutron doubly differential inelastic scattering cross section at 300°K, thermal, (E), 22:41925
neutron doubly differential scattering cross sections at 0.15 to 0.65 eV, (E), 22:22522 (GA-8283)
neutron doubly differential scattering cross sections at 0.056 and 0.101 eV, (E), 22:53064 (AERE-R-5832)
neutron inelastic scattering and dynamics in, thermal, 22:22804(R) (BNWL-685)
neutron inelastic scattering by, thermal, (E/T), 22:9760(R) (GA-8116)
neutron scattering at low energy, (T), 22:7622
neutron scattering by, dynamics studies from inelastic epithermal, (E), 22:26199 (BNWL-SA-1535)
neutron scattering kernels for, testing of, (E/T), 22:29875
neutron scattering law at 299°K, (E), 22:39557
neutron scattering law at 300°K, (E), 22:41925
neutron scattering law for liquid, at 0.157, 0.206, 0.304, 0.370, and 0.404 eV, (E/T), 22:7611(R) (GA-7105)
neutron scattering law for mixture of light water and, (E), 22:53064 (AERE-R-5832)
neutron scattering law for, (E/T), 22:22522 (GA-8283)
neutron scattering measurements in reactor moderator, neutron spectral density determination from, 22:30378
neutron spectra in cadmium-bearing, space-dependent, (E/T), 22:29875
neutron wave propagation in, thermal, (E), 22:29884
photolysis of, effects of isotopic variations on uv, 22:21081
preparation by oxidation of deuterated methane, 22:23029(P)
production at Mazingarbe, industrial process for, 22:35894
production by ammonia--hydrogen exchange process, Mazingarbe plant for, 22:27697
production by bithermal isotopic exchange, design of heat recovery system for, 22:37948(P)
production by deuterium exchange between ammonia and hydrogen, 22:27698
production by dual temperature exchange process, thermal control in equipment for, 22:23224(P)
production in Canada, developments in, 22:40194
production of, 22:14570
production of, comparison of ammonia--hydrogen exchange process and water--hydrogen sulfide processes for, 22:118
production of, development of plant for, 22:27696
production of, effect of bitterns on cost of, 22:6518
production of, French process and plants for, 22:47218
production of, improvements in ammonia--hydrogen exchange processes for, 22:14580(P)
production of, study of ammonia--hydrogen exchange for, 22:18803 (AECL-3044)
properties of mixtures of hydrogen bearing substance with, for reactor moderators, 22:20971(P)
pumps for, description of hermetically sealed, 22:22784
purification for CEA research reactors, 22:27871
purification system for Halden Boiling Reactor, description of, 22:16150 (HPR-92)
quality control of Carolinas--Virginia Tube Reactor, analysis during 1963 to 1967 of, 22:27404 (CVNA-285)
radiation effects on Halden Boiling Water Reactor, 22:30222
radiolysis at various pD, effects of various scavengers on γ, 22:16629
radiolysis of, 22:27871
radiolysis of mixtures of, with cyclohexane, cyclopentane, methane, and other hydrocarbons, yields of labeled compounds in, 22:30615
radiolysis of, primary radical yields from x, 22:25379
radiolysis of, reactions of deuterated electron from pulsed-x or -electron, 22:16630
radiolysis of, recombination on fixed catalytic bed of gaseous products from, 22:27769
reactions with β-phenethyl derivatives, mechanisms of isotope effects in elimination, 22:4105
reactions with hydrated electrons, 22:12387
reactions with thorium oxide sols, spectral studies of surface, 22:27727
reactions with unsaturated hydrocarbons on titanium dioxide, kinetics of, 22:2066
reactivity of uranium carbide systems with, (E), 22:26767
reflecting properties of cubical, effects on 93.15 percent enriched uranium-235 criticality of, 22:25089 (LA-DC-8521)
separation of carbon dioxide from, use of ion exchange for, 22:25074 (AAEC/TM-411)
separation of colloidal aluminum oxide from, 22:27871
solubility in carbon tetrachloride, reverse isotopic dilution measurement of, 22:45033
solvent properties for silver chloride in sodium chlori solutions, radiochemical technique for measuring, 22:16523
spectra at 7 to 55°C, ir, 22:37735
spectra in organic solvents, ir, 22:27685
spectra in polycrystalline solid films of, ir, 22:2770
spectra of, in solid nitrogen at 5°K, ir, 22:12315
spectra of, measurement of absolute absorption intensities and optical constants for, 22:25337
spin--rotation constants of, (T), 22:972
temperature of maximum density of solutions of alkali chlorides in, 22:42684
thermodynamic properties of, calculation of, from significant structure theory, 22:4156
uptake by elymoclavine during synthesis in Claviceps purpurea, effects of growth in deuterium-labeled medi on, 22:38228
uptake by ergot alkaloids during synthesis in Claviceps purpurea grown on deuterium oxide-labeled media, 22:38228
uptake by griseofulvin during synthesis by Penicillium janczewskii, effects of deuterium-labeled media on, 22:33722
use as coolant in steam-cooled fast breeder reactor, 22:32857
use as tracer to measure underground water movement, 22:14694
use in measurement of body water, 22:14462
use with boric acid and cadmium sulfate for reactor regulating and safety control system, 22:20973(P)
vapor pressure from 4 to 114°C, 22:16489
vapor pressure of, between 230 and 400°K, 22:23012
viscosity at 0 to 150°C and 1 to 1200 kg/cm², 22:42692
viscosity at 1 to 1200 kg/cm² at 4 to 100°C, 22:4128
viscosity of liquid, at 5 to 100°C, bulk, 22:30521
volume of high-pressure phase of, effects of pressure on 22:35797
Ar--D_2O--H_2O, photolysis of, ir spectra of matrix-isolated OH radical from uv, 22:21081
$BaCl_2$--D_2O, phase studies on, dehydration and polymorphism boundaries in, 22:50971
D_2O--D_2SO_4, effects on hydration of derivatives of propiolic acid at 25°C, mechanism of, 22:4104
D_2O--dioxane, reactions with (2-bromoethyl)benzene, mechanisms of isotope effects in elimination, 22:4105
D_2O--ethanol--hydrazine chloride, phase studies of, 22:30545
D_2O--H_2O, autoprotolysis of, measurement of, 22:10221
D_2O--H_2O, diffusion in capillaries, equation for transient convective, 22:47117
D_2O--H_2O, electrochemical behavior of cadmium in, polarographic study of, 22:25324 (JEN-172-DQ/I-61)
D_2O--H_2O, neutron differential scattering cross sections at 0.404 eV, (E/T), 22:7611(R) (GA-7105)
D_2O--H_2O, neutron diffusion in, parameters of pulsed thermal, (E), 22:3933 (TID-24100)
D_2O--H_2O, neutron diffusion parameters for, at 253 to 294°K, 22:1861(R) (TID-24098)
D_2O--H_2O, radiolysis of, isotopic distribution in hydrogen atoms from, 22:2159
D_2O--H_2O, vapor pressure of, significant structure theor of, 22:4155
D_2O--tributylphosphine oxide, melting diagram for, 22:6407
dimethyldodecylamine oxide--D_2O, phase relations in, deuterium and proton magnetic resonance studies on, 22:33343
dimethyldodecylamine oxide--D_2O, phase relations in x-ra diffraction studies on, 22:33344
dioxane--D_2O, deuterium exchange between methyl alkyl ketones and, relative rates of base-catalyzed, 22:45050

WATER-dt
(DTO)
vapor pressure of, between 230 and 400°K, 22:23012

WATER-t
(HTO)
dose to man, determination of maximum permissible levels of, 22:45543
dose to man, permissible limits for, 22:2502 (AECL-2665
dose to NRU reactor personnel, 22:2503 (AECL-2756)
effects on cardiovascular, nervous, and respiratory systems of rats, 22:19412
measurement in atmosphere at Chalk River by ionization chambers and scintillation detectors, 22:14999 (AECL-2699)
movement from cisterna magna into cerebrovascular circulation of monkeys, 22:12762
RBE in relation to ICRP recommendations on quality factor, review of, 22:51632
release from tritium-labeled compounds during storage in refrigerators, 22:31102
uptake by Hydrogenomonas facilis from culture media, 22:52059
uptake by unwetted skin, 22:2503 (AECL-2756)
vapor pressure of, between 230 and 400°K, 22:23012

WATER-t_2
(T_2O)
activity in, use of gas flowing detector for measurement of, 22:4056
activity of, water-vapor radiation detector for

- measuring, 22:36075
- beta emission from, effects of, on growth rate of HeLa cells and roots of Vicia faba, 22:40874
- clearance from skin tissues of mice, effects of estradiol and hyaluronidase on, 22:51314
- evaporation from loamy sand at various depths, rate of, 22:35921 (DP-MS-67-95)
- metabolism in man, tracer techniques for study of, 22:47446 (CONF-680503-3)
- metabolism in rats, use of liquid scintillation counter to determine, 22:430
- radiation effects on transport of, in intestines of rats, x, 22:10824 (BNWL-480, pp 1-19)
- radiolysis of mixtures of, with cyclohexane, cyclopentane, methane, and other hydrocarbons, yields of labeled compounds in, 22:30615
- storage in refrigerators, safety of, 22:31102
- transport in intestines of rats, effects of nitrogen mustards on, 22:10824 (BNWL-480, pp 1-19)
- tritium exchange between organic compounds and, in presence of platinum oxide, effects of internal radiation on rate of, 22:8058
- uptake by Hydrogenomonas facilis from culture media, 22:52059
- use in measurement of body water, 22:14462
- vapor pressure from -9 to 114°C, 22:16489
- vapor pressure of, between 230 and 400°K, 22:23012

Water-Cooled Reactors
- see Reactors, Water-Cooled

Water Gas
- see Manufactured Gas

WATER HAMMER
- analysis for in-pile loop piping design, 22:10057 (ANL-7336)
- analysis of blowdown-induced, in LOFT, two-phase, 22:6517 (TID-24137)

Water-Moderated Reactors
- see Reactors, Water-Moderated

Water Pipes
- see Pipes

WATER PURIFICATION EQUIPMENT
- description of activated carbon aluminum hydroxide, 22:20941 (ZFK-RN-31, pp 217-29)
- description of filter for 10 MW WWR-S reactor, 22:20914 (ZFK-RN-31, pp 55-68)
- description of Hanford pilot plant, for water filtration research, 22:25569 (BNWL-709)
- description of WWR-M electrophoresis filter, 22:20915 (ZFK-RN-31, pp 110-21)
- design of filter plant, 22:12410
- filter bed conditioners in, evaluation of polyelectrolytes as, 22:42933 (BNWL-734)
- hydraulic parameters of reactor mobile, description of, 22:20912 (ZFK-RN-31, pp 28-44)

WATER SUPPLIES
(Including plants, sources, distribution, storage, etc.)
- see also Water Purification Equipment
- analysis for iodine-131, gamma spectrometric, 22:12238
- analysis for radioisotopes, 22:45199
- analysis for radium-226 and radon-222, methods for, 22:2210
- cesium-137 content in Australian, 22:8215
- cesium-137 content in New York City, data tabulations on, 1954 to 1967, 22:14588(R) (HASL-184(App.))
- cesium-137 content of drinking, in United Kingdom during 1965, 22:28507
- cesium-137 content of, in Finland during 1966, 22:10764 (SFL-A-8)
- cesium-137 content of, in Japan during 1966, 22:4605 (NP-17083)
- contamination of, methods for minimizing, 22:42876
- decontamination of, design of filter plant for, 22:12410
- evaluation of Argentine, for reactor cooling, 22:3835 (NP-16982)
- fallout contamination of, in USSR during 1964 and 1965, 22:33802 (A-AC-82/G/L-1186)
- iodine-131 content of, at Richland, Washington in relation to thyroid dose of human children, 22:19326 (BNWL-665)
- lead-210 content in Illinois, 22:2207
- manganese removal from, efficiency of sand filters for, (E), 22:25580
- monitoring of Spanish, for radioactivity, 22:2224
- polonium-210 content in Illinois, 22:2207
- radiation monitoring of Italian, July to Dec. 1966, 22:23165 (PROT.-SAN.-12/67)
- radioactive iodine in, methods for measurement and separation of, 22:6815
- radioactivity content of, in California during January to June 1966, 22:40697
- radioactivity content of, in Mexico during 1965 to 1966, measurement of, 22:23514
- radioactivity content of, in Minnesota during 1965, β, 22:28522
- radioactivity content of, in Minnesota during 1966, β, 22:23520
- radioactivity of UK drinking, 1965, 22:18943
- radioisotope content of, state and territorial regulations and standards for, 22:28504
- radium content in midwest USA, 22:2208
- radium content of artesian basin, in middle Asia, 22:18944
- strontium-90 content in Australian, 22:8215
- strontium-90 content in New York City, data tabulations on, 1954 to 1967, 22:14588(R) (HASL-184(App.))
- strontium-90 content of drinking, in United Kingdom during 1965, 22:28507
- strontium-90 content of, in Finland during 1966, 22:10764 (SFL-A-8)
- strontium-90 content of, in Japan during 1966, 22:4605 (NP-17083)
- strontium-90 content of, in New York City during 1965 to 1966, 22:23518
- strontium-90 content of, in New York City during March to November 1966, 22:40697
- strontium-90 content of, in New York during 1965, 22:36257
- strontium-90 content of, in New York during 1966, 22:28514
- strontium-90 removal from, effectiveness of soil filtration for, 22:30696
- treatment and storage of natural, feasibility of using nuclear explosions in, 22:27942 (PNE-3008)
- uranium contamination of, effects of on man, 22:51380
- uranium content of, effects of, on health of man, 22:12907

WATER TUNNELS
- performance in closed jet, analysis of optimum, 22:25203 (AAEC/TM-410)

WATER VAPOR
- see also Steam
- book: Chemistry of Dissociated Water Vapor and Related Systems, 22:25366
- content in ANL atmosphere, fifteen year data compilation on, 22:40256 (ANL-7084, pp 275-497)
- content in ANL atmosphere, fifteen-year data compilation on, 22:40255 (ANL-7084, pp 31-274)
- content in ANL atmosphere, in relation to Chicago Midway and O'Hare International Airports, fifteen-year data compilation on, 22:40257 (ANL-7084, pp 499-671)
- corrosive effects on niobium--zirconium alloys, effects of cold deformation on, 22:36431(T) (JPRS-45460)
- determination in high-fired thorium oxide by gas chromatography, 22:14423 (NLCO-1006)
- deuterium exchange between, and hydrogen on alumina-promoted nickel, 22:2028 (IFA-IS-48)
- diffusion from sol-gel thorium dioxide and thorium dioxide—uranium dioxide particles, 22:35778 (ORNL-TM-2268)
- effects on corrosion of iron and low-alloy and rimmed steels by carbon dioxide, 22:52135
- effects on cracking of steel under static load, 22:52170
- effects on fallout deposition on mountainous area of Colorado, 22:40269
- effects on γ radioinduced surface activity of octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine, 22:40111
- effects on opacity in atmospheres of late-type stars, (T), 22:24001
- effects on opacity in ir spectra of late-type stars, (T), 22:23994
- effects on oxidation of sintered beryllium at 600 to 800°C, 22:36435
- effects on products in radioinduced graft polymerization of cellulose with 2-vinylpyridine, 22:21115
- effects on reactions of carbon dioxide with uranium at 200 to 700°C, 22:16539
- effects on volatility of tellurium dioxide, 22:25333 (ORNL-4229, pp 162-79)
- efficiency of jet of, for decontamination of surfaces, 22:31114
- electron impact spectra at 33 to 100 eV and scattering angles up to 16°, (E), 22:43881
- interaction of solar radio waves with tropospheric, (T), 22:19897
- mass transfer mechanisms for, through isothermal noncondensable gas, 22:40316
- measurement in high-temperature reactor gas coolant, optical dewpoint detector for, 22:28244
- oxidizing effects on iron silicide, effects of temperature on, 22:11022(R) (NYO-1710-71)
- proton and hydrogen reactions with, charge transfer cross sections for, 22:38794
- radiation effects on binding energy in, γ, 22:12389
- radiolysis of, effects of temperature and pressure on yields from γ, 22:25407
- radiolysis of, effects of various electron scavengers on x, 22:27798
- reactions with hydrogen and gaseous plutonium hexafluoride to produce plutonium dioxide, 22:45026 (ORNL-TM-2306)
- reactions with hydrogen and uranium hexafluoride to yield uranium dioxide, 22:4160(P)
- reactions with pyrolytic-carbon-coated fuel particles, 22:26070 (ORNL-4229, pp 119-24)
- reactions with thulium at 650 to 850°C, kinetics of oxidation, 22:2570
- reactions with uranium carbides and nitrides, 22:7031
- reactions with uranium chlorides in hydrogen for production of uranium dioxide, 22:8686 (ORNL-4170, pp 108-14)
- reactions with uranium in presence of oxygen, equipment and method for studying, 22:14471 (AWRE-O-54/65)

  reactions with uranium, equipment and method for studying, 22:14471 (AWRE-O-54/65)
  reactions with zirconium, effects of noble metal coatings on, 22:21667
  sampling of tritiated, design of bubbler collector for, 22:43155 (LA-3916)
  sorption on niobium—rhenium alloy surfaces at high temperatures, work function of, 22:28803
  transfer of tritium-labeled, to rough surfaces, effects of molecular diffusivity on, 22:43300 (AERE-PR/HPM-12)
  use in cleaning sodium system components, 22:33143
  air--water vapor, oxidizing effects on aluminum--zirconium alloys, 22:2565 (AECL-2776)
  He--H_2O vapor, corrosive effects on pyrolytic-carbon-coated fuel particles at 1100 to 1400°C, 22:41084 (ORNL-TM-2199)
  methanol--H_2O, radiolysis of, effects of scavengers on x, 22:35853
  O--water vapor, reactions with thulium at 650 to 850°C, kinetics of oxidation, 22:2570
WATER WAVES
  damage from nuclear explosion-generated, during excavation of interoceanic canal, 22:30736 (NVO-99-24)
  measurement of low-frequency deep, in Pacific Ocean off Hawaii, 22:22892 (HIG-67-11)
  model of ocean floor, 22:42910 (CU-2663-9, App.T)
  run-up of nonbreaking, effect of underwater explosions on, 22:10417 (NVO-289-1)
WAUKESHA 23
  wear of journal sleeve combinations of, with stainless steel or Waukesha 88 in water, effects of acidity on, 22:17071 (AECL-2784)
WAUKESHA 88
  wear of journal-sleeve combinations of, with stainless steels or Waukesha 88 in water, effects of acidity on, 22:17071 (AECL-2784)
  wear of journal-sleeve combinations of, with Waukesha 23 or 88 in water, effects of acidity on, 22:17071 (AECL-2784)
Wave Mechanics
    see Quantum Mechanics
Waveguides
    see Microwave Equipment
WAXES
    see also Greases
    see also Oils
    see also Paraffin
  performance as binder for plutonium carbide--uranium carbide fuel pellets, 22:45806(R) (WARD-3791-21)
  synthesis in lantern fish, 22:33717 (UCLA-12-640, pp 81-90)
WC-222 (Tantalum Alloy)
    see T-222 (Tantalum Alloy)
Weak Bosons
    see Bosons, Intermediate-Vector
WEAPONS
    see also Nuclear Weapons
    see also Thermonuclear Weapons
WEAR
    see also Abrasion
  effect on selection of materials for sodium-cooled reactor components, 22:8269
  effects on mechanical system failure, 22:14606 (CONF-671011-, pp 284-313)
  measurement in nuclear rocket valve materials, test procedures for, 22:8752
  measurement of bearing surface, in liquid potassium in high vacuum to 1200°F, 22:8826
  measurement of combustion engine, tracer method for, 22:14687
  measurement of engine component, tracer method for simultaneous, 22:14686
  measurement of engine, radioactive tracer method for, 22:14684
  measurement of engine, radioisotope tracer techniques for, 22:8320
  measurement of grinding element, during pulverization of solid fuels, tracer method for, 22:28024
  measurement of high-speed, in materials for steam-lubricated bearings, 22:17073 (MTI-68-TR-13)
  measurement of machine part, use of radioisotope tracers in, 22:14682
  measurement of piston ring, radioactive tracer method for, 22:49031
  measurement of piston surface, activation method for continuous, 22:2281
  measurement of rubber tire tread, use of radioactive tracer techniques for, 22:10518
  measurement of rubber tire, using thallium-204 beta source, 22:45251
  measurement of sliding contact, in liquid sodium, 22:48982(R) (LMEC-68-20)
  measurement of tappet, radioisotope technique for, 22:47301
  measurement of turbine blade, use of kryptonate tracer technique for, 22:14685
  measurement of, development of radiometric instruments for, 22:8323
  measurement of, use of molybdenum-99 for, 22:4363
  measurement of, use of radioisotope tracer method for, 22:10507 (SGAE-IB/IA-15/1967)
  measurement using γ-x-ray fluorescence, equipment and method for, 22:4353 (EUR-3627)
  radiation effects of on dry film lubricant, electron and γ, 22:8851
  radiation effects of on, of solid and bonded film lubricants, 22:8850
  rates of alloys and metals in liquid sodium at high temperatures, 22:657 (NAA-SR-12446)
  rates of bearing material, in lithium and potassium--sodium at 1000°F, 22:2576
  resistance of electrodeposited composite coatings to, 22:2590
  testing self-lubricating bearing cage material at 60°R and 500 and 700°F, 22:8268
Weighing
    see Balances
WEIGHT
  effects on long-term retention of cesium-137 by rats, 22:6714(R) (LF-35)
  loss in man with thyroid disease, continuous measurement of, 22:40517(R) (ORO-1643-89)
  measurement of body, of dogs, effects of irradiated fruit diet on, 22:47648 (NYO-3422-1(Vol.3))
  measurement of swine, effects of thyroid hormones on, 22:51298(R) (COO-1484-3)
  radiation effects on birth, of swine, genetic x, 22:10869
  radiation effects on body, of chickens following destruction of thyroid, iodine-131 β and γ, 22:43453
  radiation effects on litter, of mice, effects of crossbreeding on x, 22:49288
  radiation effects on litter, of mice, prenatal x, 22:49293
  radiation effects on rabbit, protective effects of bathing in thermal springs during autumn or spring and cysteamine against γ, 22:8641
  radiation effects on, of adrenal glands of rats, strontium-90 β, 22:51967
  radiation effects on, of black-eyed pea seedlings, effects of seed exposure on fission neutron and γ, 22:21638
  radiation effects on, of guinea pigs, acute fission neutron and x, 22:49553
  radiation effects on, of guinea pigs, protective effects of gibberellic acid against x, 22:51843
  radiation effects on, of mice and rabbits, protective effects of glutathione against chronic x, 22:49464
  radiation effects on, of progeny of swine, x, 22:33970
  radiation effects on, of rat embryos, protective effects of cysteamine against x, 22:47635
  radiation effects on, of rats following exposure of females for nine generations, cumulative x, 22:40652
  radiation effects on, of rats following intramuscular injection of strontium-90, β, 22:43395 (CEA-R-3388)
  radiation effects on, of rats, effects of dose on x, 22:49233
  radiation effects on; of rats, effects of fractionated dose on x, 22:23656
  radiation effects on, of rats, effects of local hypoxia on x, 22:40949
  radiation effects on, of rats, effects of oxygen uptake on, 22:47547
  radiation effects on, of rats, γ and x, 22:51775
  radiation effects on, of rats, protective effects of groundnut oil against γ, 22:49494
  radiation effects on, of salivary glands in rats, γ, 22:33925
  radiation effects on, of seedlings of Vicia faba, comparison of photon and x, 22:40960
  radiation effects on, of Spanish potatoes, γ, 22:52062 (JEN-189-SI/I-18)
  radiation effects on, of spleen in mice, effects of hematoporphyrin on x, 22:10801
  radioinduced increase in, of swine, uv, 22:8603
  radioinduced loss in, of small intestines, combined effects of hematoporphyrin on x, 22:10800
  radioinduced loss of body, of mice, effects of dose on x, 22:8586
  radioinduced loss of, in mice, lethal x, 22:12906
  trace element content of organisms in relation to dry and wet, 22:43311(R) (PRNC-85)
WELDED JOINTS
    see also Welds
  fabrication of mild steel--stainless steel by friction welding, 22:21672 (TRG-Report-1157)
  mechanical properties of Ozhennite-stainless steel, 22:21703
  strength of alloyed steel-to-chromium steel, 22:15159
  testing of fuel rod and irradiation capsule, nondestructive, 22:40341
WELDING
    see also Brazing
    see also Soldering
  cold method for, SNAP-19 eject system, 22:10435 (MND-3169-66)
  development of apparatus and methods of explosive, for metals, 22:38528
  development of friction method for steel, 22:21672 (TRG-Report-1157)
  development of methods for SNAP-23A, 22:12536(R) (WANL-3800-4)
  diffusion method for, development of, 22:6943

diffusion, electron theory of, 22:6943
effects of electron beam, gas metal arc, and plasma arc, on mechanical properties of titanium alloy welds, 22:2619
electric current and electrode force measurements in resistance, instruments for, 22:14405 (Y-1580)
electron beam method for, large radioisotope heat source fuel capsules, 22:33602(R) (AI-AEC-12676)
electron beam, fabrication of plate-type fuel assemblies using, 22:8290(P)
equipment and method for, thermocouple sheaths to thermocouples, 22:4330(P)
equipment and methods for joining of fuel tubes and end plugs, 22:49694
equipment and procedure for encapsulating plutonium and other radioactive materials, 22:43540 (LA-3937)
equipment for arc, under gas pressure, 22:47667(T) (RFP-Trans-37)
equipment for electric, under inert gas, 22:19010
equipment for electron beam, 22:34057
equipment for pulsed arc spot, design and operation of, 22:7961 (SC-DR-67-725)
equipment for repairing open-circuited thermocouples, adjustable capacitive discharge, 22:40479 (AI-AEC-Memo-12710)
explosive method for metal, 22:42952
fabrication of stainless steel pressure vessels by, description of, 22:39797
fabrication technique for ATR and HFIR fuel elements, description of, 22:37541 (ORNL-TM-2197)
fluxes and temperatures of, tables on, 22:36453 (LMEC-Memo-68-10)
friction method for metal, 22:45229(P)
friction methods of, for bimetallic studs, 22:17091
inert gas arc spot method for, design of pulsed-arc welder for, 22:14657
machines and techniques for construction of EL-4 power reactor, 22:2279(T) (WAPD-Trans-76)
materials and methods for metal and alloy, reference data on, 22:10907
method for automated remote, for MSBR maintenance, 22:47675 (ORNL-4254, pp 183-240)
method for beryllium--copper alloy pellets on stainless steel wear plates, cold molecular, 22:628(R) (N-67-18942)
method for Hastelloy N, use of narrow-gap, 22:47675 (ORNL-4254, pp 183-240)
method for HFIR cylindrical aluminum control plates, gas tungsten-arc, 22:2591
method for joining dissimilar metals, by gas-tungsten arc, 22:23740
method for large stainless-steel nuclear pump case, electroslag, 22:2286
method for percussion coating tool steel with tungsten carbide, 22:19613
method for reactor materials, review of, 22:12956
method for refractory and conventional metals, using liquid nitrogen cooled electrodes, 22:41015
method for refractory metals using an electron beam, 22:19505
method for SNAP-23A thermoelectric converter components, 22:51180(R) (MMM-3824-23)
method for spot, using expendable copper wire inserts, 22:28758 (Y-1613)
method for stainless steel, as cladding on steel, 22:21690(R) (EURAEC-1960)
method for ZPPR fuel element jackets, 22:12477 (RFP-1078)
methods for 0.01 mm metal-clad fuel element end-plugs, description of, 22:42464(P)
methods for annular end-cap placement on tubular sheath-enclosed fuel elements, description of, 22:42482(P)
methods for Dounreay Fast Reactor thermocouple block, description of remote, 22:42219
methods for end-plugs and sheaths for fuel elements, description of argon-arc Y-shaped groove, 22:42467(P)
methods for end-plugs and thin-walled sheaths for pin-type helium-filled fuel elements, description of argon-arc and helium-arc, 22:42465(P)
methods for fuel capsules, 22:4355(R) (NAA-SR-12578)
methods for fuel element sintered aluminum powder sheath and end-plug, description of circumferential hammering, 22:42473(P)
methods for graphite, 22:15242
methods for joining HFIR fuel plates, electron beam and pulsed-arc, 22:8706 (ORNL-4170, pp 173-83)
methods for large radioisotope heat source capsules, 22:23216(R) (AI-AEC-12642)
methods for molybdenum--rhenium--tungsten alloys, testing of, 22:44876(R) (UCRL-50004-68-1(Pt.1))
methods for nuclear power plant boilers, 22:25578
methods for power reactor fuel element end closures, description of, 22:33170
methods for precipitation-hardening stainless steel, review of, 22:21671 (NASA-SP-5087)
methods for reactor components, review of, 22:19499
methods for reactor materials fabrication, review of, 22:217
methods for reactor materials, review, 22:21676
methods for SAP, 22:23747(P)
methods for SNAP-23A components, 22:14679(R) (WANL-3800-9)
methods for stainless steel linings of reactor vessels, 22:2601
methods for steam plant pipes, 22:52191
methods for strip cladding of steel by nickel-based alloys and stainless steel, 22:15164
methods for TZM and Hastelloy C fuel capsules, 22:8707 (ORNL-4170, pp 229-32)
methods of high-temperature, for nuclear and space uses, 22:12991
performance of solid-state, in joining dissimilar alloys, 22:629(R) (N-67-19274)
procedures for first Czechoslovakian reactor pressure vessel, 22:7812 (NUCLEX-66, Paper 4)
quality control in steam generator, 22:52154
shielding for electron beam, calculations for x-ray, 22:44204
techniques evaluation for FTR closed loop components remote, 22:16271(R) (BNWL-666)
temperature distribution data for, computer programs for generating, 22:53505 (Y-1627)
torch for, coolant tube seal design for, 22:45228(P)
tungsten inert gas method for cobalt-60 heat source capsule, 22:42971 (DP-1145)
tungsten inert gas method for, cobalt-60 fuel capsules, 22:30773(R) (DP-1155-1)
use for fabricating instrumented fuel elements and in-pile capsules, 22:8708 (ORNL-4190)
use in fabricating reactor pressure vessels, 22:633

WELDS
  corrosion tests on Inconel 600, 22:49683 (CONF-671007-4)
  crack detection in, use of acoustic emission for, 22:269 (BNWL-SA-1262)
  cracking of steel storage tank, methods of retarding stress, 22:36437
  defects in reactor pressure vessels, liner examination for, 22:19511 (BNWL-455, Paper 7.1-6)
  defects in stainless steel plate, acoustic emission method for detection of, (E), 22:47303 (BNWL-817)
  development and testing of cold aluminum--copper, for SNAP-8 electric terminals, 22:630 (N-67-22856)
  evaluation of Croloy tube, for 3000 kW sodium-heated boilers, 22:45764 (NAA-SR-Memo-4998)
  evaluation of type 304 H stainless steel pipe, (E), 22:19580 (BNWL-455, Paper 12.1-100)
  fracture of aluminum--titanium--zirconium, effects of hydrogen and oxygen on delayed, 22:6997 (KFK-638)
  inspection of Dresden Power Reactor Unit 1 pressure vessel and pipes, description of nondestructive in-service, 22:53343
  inspection of SNAP-15A fuel capsule, ultrasonic, 22:10499 (BNWL-529)
  inspection of thick-plates, radiographic, 22:40342
  integrity of copper, formed by ultrasonic welding, 22:10440 (UCRL-13331)
  mechanical and physical properties of, used in fabricating high-pressure vessels for reactors, 22:634
  mechanical properties of titanium alloy, effects of welding and heat treatment on, 22:2619
  mechanical properties of, formed explosively in alloys and metals, 22:6944
  production of high-purity, electron beam method for, 22:19505
  production of seam and spot, design of pulsed-arc welder for, 22:14657
  quality control of reactor fuel rod end cap, x-ray equipment and method for, 22:43560(P)
  radiation effects on Elk River reactor pressure vessel, neutron, (E), 22:30159 (SWRI-1228-P-9-15)
  strength of overlapping, in EL-4 power reactor, 22:2279(T) (WAPD-Trans-76)
  tensile properties of electron-beam, for stainless steel, 22:31340
  tensile properties of molybdenum--uranium, 22:10955
  tensile testing of magnetic force, results of, 22:3813(R) (AI-CE-54)
  testing of fuel capsule, for large radioisotope heat sources, 22:33602(R) (AI-AEC-12676)
  testing of pressure and safety vessel, 22:27499
  testing of ship hull, guide for radiographic, 22:19077 (AD-639053)
  testing of SNAP fuel capsule, ultrasonic equipment and method for, 22:25624 (BNWL-649)
  testing pressure vessel, methods for, 22:40343
  tests on impact strength of, in plates of AMMO and SUPERELSO steel, 22:6981 (EURAEC-1927)
  ultrasonic testing of SNAP-21 and -23 fuel capsule, 22:12557 (BNWL-528)

WELL LOGGING
  borehole case filter location in, using gamma probe, 22:48927
  borehole dilution method of, for ground water flow measurements, 22:19070
  borehole models for nuclear, 22:12432
  developments in nuclear, for industrial uses, survey of, 22:23136
  distribution of natural gamma radiation in, mathematical methods for calculating, 22:48921
  effects of rock chemical composition on, use of filter to decrease, 22:48919
  equipment and method for analysis for hydrogen compounds, fast-neutron radiometric, 22:38122(P)

- equipment and method for gamma--gamma, in Czech lead deposits, 22:42858
- equipment and methods for gamma, for petroleum exploration, 22:2375
- equipment and techniques for studying dump leaching processes, radiometric, 22:40431
- equipment for determining ground water filtration direction in drill holes, description of radiometric, 22:43135
- equipment for γ--γ, resolution of detection, 22:43139
- equipment for in-place density and moisture measurements on soils, 22:6441
- equipment for measuring flow direction of underground water, design of radiometric, 22:33678
- equipment for neutron--gamma, shielding of, 22:52848(P)
- equipment for oil, use of pulsed neutron generating tube, 22:30886
- equipment for petroleum prospecting, neutron generator, 22:11754
- equipment for radiation, for ground water hydrology studies, design and development of, 22:19066
- equipment for rock density, design and performance of double-beam gamma--gamma densimeter, 22:2440
- equipment for thermal and epithermal neutron, design of detector, 22:40477
- equipment for, design and performance of, 22:12662(T) (AD-662764)
- equipment for, design of 14-MeV neutron sources and detectors as, 22:28189
- equipment for, design of epithermal neutron scintillation detector, 22:38013(P)
- equipment for, design of fast neutron generator, 22:43134
- equipment for, design of thallium-activated sodium iodide gamma spectrometer, 22:12601
- equipment for, use of radiometric, 22:43136
- evaluation of gamma radiation, use of computers for, 22:33561
- gamma radiation logs in gas and oil drillholes, effects of drilling solution and natural rock radioactivity on, 22:30712
- gamma spectra in bore-holes for, design and performance of spectrometric logging device for, 22:6639
- gamma--gamma and sonic methods for, of underground oil shales, 22:48935
- gamma-log data from, punching IBM cards for utilization of, 22:16724 (RME-144)
- measurement of potassium content in ores by, effects of effective atomic number of mineral deposits on conversion coefficient for, 22:35934
- measurements in Nevada Test Site hole Ue19N, 22:35927 (UCID-15233)
- method for measuring Project Gasbuggy cavity, 22:45210 (UCRL-50425)
- method for neutron-gamma, for prospecting for natural gas, 22:27910
- method for soil density and moisture using isotopes, 22:48922
- method for uranium deposit location, gamma spectrometric, 22:22945
- method for waste disposal by hydraulic fracturing, gamma ray, 22:48916 (ORNL-4259)
- methods for basalt, at Rattlesnake Hills Washington, 22:35920 (BNWL-776)
- methods for neutron moisture measurements, continuous- and point-logging, 22:28191
- methods for, based on gamma rays from neutron inelastic scattering and capture, 22:30886
- neutron source for, with automatic flux control, 22:26786(P)
- radiation hazards to personnel in, from use of neutron radiometric gages, 22:28489
- radioactive materials handling during, problems of, 22:28510
- radioisotope tracer techniques in oil field, 22:14689
- radiometric methods of natural gas, 22:25621
- testing technique for deep drill holes at Pahute Mesa, 22:10361 (TID-24209)
- use in locating magnesium--potassium deposits in Poland using gamma radiation, 22:48923
- use of radiation, in ground water hydrology studies, 22:19066
- use of radioactive materials in gas and oil, handling and storage problems in, 22:40696
- use of small computers in gamma, 22:40272(T) (AEC-tr-6942)
- water flow and velocity in Adamow Mine in Poland, isotope labeling method for, 22:48924
- x-ray radiometric method for, 22:14587
- x-ray radiometric method for, effect of selenium-75 and thulium-170 multidispersion in, 22:14586

WELLS
- see also Ground Water
- casings for, effect of cement rings on collapse resistance of, (E), 22:12209(T) (UCRL-Trans-10163)
- ground water flow in, use of radiographic techniques to determine direction of, 22:12437
- radioactive waste disposal in deep, feasibility of gaseous and liquid, 22:16822
- radioactive waste disposal in deep, in France, feasibility studies of, 22:16823
- records of Nevada Test Site, tabulation of hydrogeologi data from, 22:10360 (TEI-872)

WEST VALLEY PROCESSING PLANT
- design modifications of, amendments to safety analysis reflecting, 22:33482 (DOCKET-50201-6)
- equipment and procedures for, safety analysis of, 22:33480 (DOCKET-50201-4)
- neptunium recovery facility at, economic and technical feasibility of, 22:27859 (NP-17418)
- neptunium recovery facility for, application for licensing amendment for, 22:33481 (DOCKET-50201-5)
- neptunium recovery facility for, application for license amendment for, 22:33483 (DOCKET-50201-7)
- neptunium recovery facility for, safety analysis of, 22:33479 (DOCKET-50201-1)
- personnel protection in, 22:33480 (DOCKET-50201-4)
- safety analysis of, 22:33480 (DOCKET-50201-4)
- safety analysis of neptunium recovery in, 22:33479 (DOCKET-50201-1)
- safety analysis of, amendments to, 22:33482 (DOCKET-50201-6)

Westinghouse Test Reactor (WTR)
- see Reactors, Test

WETTING
- effects on efficiency of Teflon and polypropylene fiber beds for removing aerosol particles from gas streams, (E), 22:25567 (BNWL-481-3, pp 94-6)

WHALES
- radioinduced oxidation of myoglobin from sperm, effects of pH on, 22:49183(R) (UCB-34-P-95-15)
- radioisotope content of milk from beluga and fin, cesium-137 and strontium-90, 22:49367

Wheat (Triticum)
- see Triticum under Angiospermidae

Wheatstone Bridge
- see Impedance Bridges

Wheeler Burst
- see Plumbob Operation

WHEELS
- lubrication of railway, tracer method for investigation of, 22:14688
- uses of diamond abrasive, for tungsten carbide removal, 22:43640

WHISTLERS
- amplification of ulf and vlf, by cyclotron resonance in magnetosphere, (T), 22:43980 (D-1-82-0713)
- characteristics of ion-cyclotron, in solar wind, (T), 22:17475
- cutoff at the plasmapause, (E), 22:29331
- cutoff during magnetic storms, effects of ring current on, (T), 22:17483
- detection of, associated with magnetospheric electric fields, (E), 22:17528
- dispersion of proton, (T), 22:15458
- duct formation for propagation of, during magnetic storms, (T), 22:36814
- observation with Ariel III, (E), 22:17488
- observations of ducted and nonducted, OGO 1, (E), 22:13331
- propagation in homogeneous plasma waveguides, (T), 22:47926
- propagation in ionosphere, (T), 22:9216
- propagation in magnetosphere, 22:1042(R) (AD-648675)
- propagation in magnetosphere, (E), 22:36798 (AD-666648)
- propagation in magnetosphere, upper intensity cutoff and wave-amplitude changes, (T), 22:29342
- propagation in warm magneto-ionic medium, electrostatic field effects on, (T), 22:24189
- propagation through region of evanescence in magnetosphere, micropulsation, (T), 22:22026
- properties of subprotonospheric, (T), 22:19876
- recording at three adjacent stations at high magnetic latitudes in Sweden, (E), 22:9209
- resonant particle interactions between unducted magnetospherically reflected, and the ambient plasma, (E), 22:41477
- study of subprotonospheric, at ground level and mean latitude, 22:44007
- temperatures of proton, in ionosphere, (E/T), 22:31701
- use for determination of electron vertical distribution in magnetosphere, (E), 22:24132
- use in plasma diagnostics, temperature effects on, 22:1160

WHITE OAK LAKE
- cesium metabolism by fish in, 22:6772 (ORNL-4168, pp 61-118)
- cesium-137 distribution in arthropod food chains on bed of, 22:6772 (ORNL-4168, pp 61-118)
- cesium-137 distribution in dissolved and suspended particles in, 22:48915 (K-1758)
- cobalt-60 distribution in arthropod food chains on bed of, 22:6772 (ORNL-4168, pp 61-118)
- cobalt-60 distribution in dissolved and suspended particles in, 22:48915 (K-1758)
- potassium metabolism by fish in, 22:6772 (ORNL-4168, pp 61-118)
- radiation effects on growth of algae in, 22:6772 (ORNL-4168, pp 61-118)
- ruthenium-106 distribution in arthropod food chains on bed of, 22:6772 (ORNL-4168, pp 61-118)
- ruthenium-106 distribution in dissolved and suspended particles in, 22:48915 (K-1758)

White Sands Fast Burst Reactor
    see Fast Burst Reactor Facility
WHITESHELL REACTOR NO. 1
  coolant for, technological developments in organic, 22:16261 (AECL-2943)
  emergency cooling systems for, description of, 22:32852
  fuel elements for, design and performance parameters of niobium--zirconium clad uranium oxide (UO_2), 22:35415 (AECL-2758)
  loading system for, description of off-load, 22:46921 (TID-24679(Vol.2))
  loading system for, operation and performance of, 22:46920 (TID-24679(Vol.1))
  materials for, development of pressure tubes and fuel, 22:16261 (AECL-2943)
  performance of, description of operation, 22:30327
  radiation dosimetry measurements in, 22:3884 (AECL-2763)
Whitney Burst
    see Plumbob Operation
WHOLE-BODY COUNTERS
  book: Instrumentation in Nuclear Medicine, 22:45299
  calibration for cesium-137 and potassium-42 measurements in man, physiological factors affecting, 22:21460(R) (COO-1171-82)
  calibration of standard chair human geometry for, 22:21460(R) (COO-1171-82)
  clinical uses of, 22:51305 (LA-3848, pp 75-96)
  comparison with scintillation types, 22:47576
  design, 22:6590
  design and construction for clinical use, 22:4614
  design and operation of 4π liquid scintillation, 22:19104
  design and performance, 22:10567
  design and performance of liquid scintillation, 22:14758
  design for determination of cobalt-58-labeled vitamin B_{12} sorption in man, 22:14761
  design for measuring small quantities of γ-emitting radioisotopes in man, comparison of plastic and scintillation, 22:49420
  design of 4π plastic scintillation, for determination of cesium-137 and potassium-40 in infants, 22:36074
  design of scintillation, for determining lean-meat content in animals, 22:28130(P)
  design of scintillation, for metabolic studies of laboratory animals, 22:6567
  design of stable low-background, for uniform detector geometry, 22:51232
  development for clinical use, review of, 22:23285
  development of mobile shadow-shield, for iron-59 scanning, 22:12855
  estimation of potassium content of man using, formula for, 22:38297
  fabrication and performance of scintillation, 22:33654
  performance for assay of radium at nanoCurie levels in man, 22:51579
  performance for measurement of iron-59 retention by swine, 22:38220
  performance for study of radioisotope metabolism, 22:43300 (AERE-PR/HPM-12)
  performance for use in clinical studies, 22:25959
  performance in relation to spatial parameters, 22:6848
  performance of AAEC tilting chair scintillation, 22:37969 (AAEC/TM-450)
  performance of multi-crystal γ spectrometer, methods for evaluation of, 22:38406
  safety of organic phosphors in scintillation, 22:33654
  use for clinical studies on man, review of, 22:38405
  use for determination of strontium-85 retention by man, 22:38232
  use for determining body composition and cesium-137 content of college age women in comparison to densitometric techniques and skin-fold measurements, 22:28448 (NYO-2147-13, pp 64-71)
  use for diagnosis and research, 22:43355
  use for examining personnel in contaminated areas, 22:38298
  use for measurement of internal radiation dose, 22:23526
  use for potassium-40 measurements for determining lean body mass of man, 22:25636
  use for study of calcium-47 and strontium-85 metabolism in man, 22:38233
  use in sodium-24 activation analysis, 22:6652 (ORNL-4168, pp 183-230)
  use of anthropomorphus phantom for calibration of, 22:36278
  use of thallium-activated sodium iodide scintillation, for gamma sources in man and phantoms, 22:25646
  use of thallium-activated sodium iodide scintillation, for gamma sources in man and phantoms, 22:25645
  use to determine cesium-137 and potassium content of man, 22:38218
  uses, 22:2365
hole-Body Counting
    see Radioisotope Scanning
IGNER EFFECT
    (Energy storage in graphite lattices due to atom displacement following neutron bombardment)
  formation in graphite, use of model to study, 22:2712 (CEA-R-3226)
IGWAM OPERATION
  oceanography of Pacific Ocean test area in, 22:10410
  oceanography of Pacific Ocean test area in, 22:10411
  zooplankton migration in Pacific Ocean test site in, (E), 22:10409
Wilson Burst
    see Plumbob Operation
WIND
  atmospheric, due to flare-produced geomagnetic variations, (E/T), 22:26320
  direction and speed of ANL, fifteen-year data compilation on, 22:40255 (ANL-7084, pp 31-274)
  direction and speed of ANL, fifteen-year data compilation on, 22:40256 (ANL-7084, pp 275-497)
  direction and speed of ANL, in relation to Chicago Midway and O'Hare International Airports, fifteen-year data compilation on, 22:40257 (ANL-7084, pp 499-671)
  direction and speed of, effects on atmospheric transport and diffusion, 22:45192 (TID-24190, pp 13-63)
  direction and velocity of, at Ispra, 22:10379
  effect of atmospheric, on height of F2-layer peak at middle and high latitudes, (E), 22:22015
  effect of trade, on deposition and distribution of fallout in Atlantic Ocean, 22:25555
  effect on acoustic--gravity wave from atmospheric nuclear explosion, (T), 22:26302
  effect on dispersion of gaseous radioactive wastes released from stacks, 22:12563(T) (JPRS-43977)
  effects of neutral air, on critical frequency of ionospheric F2 layer, (T), 22:52667
  effects on aerosol diffusion, 22:6484 (SC-DC-67-2343)
  effects on atmospheric radioactivity in Thailand, 1961 to 1963, 22:25539
  effects on distribution of natural radioactivity in atmosphere, 22:37882
  effects on electron density distributions in equatorial F2 region, (T), 22:19856
  effects on F-layer phenomena, (T), 22:19874
  effects on F2 and E/sub s/ layers at middle latitudes, (E), 22:19881
  effects on fallout content of atmosphere, 22:12444
  effects on fallout deposition on mountainous area of Colorado, 22:40269
  effects on ground pressure waves from low altitude nuclear explosions, 22:47248
  effects on ionosphere, atmospheric, 22:5254
  effects on ionospheric F2 peak, (E), 22:19870
  effects on microbarographic oscillations induced by nuclear explosions, 22:42883
  effects on nuclear-explosion generated infrasound, (T), 22:13360
  effects on plume rise from high stacks, theory of, 22:40260 (NP-17543)
  effects on pressure waves from nuclear explosions, 22:30725
  effects on radon-222 distribution in soil, 22:2231
  electric currents in ionosphere induced by nonperiodic, (T), 22:15423
  ionospheric, up to 180 km at Yuma, (E), 22:29349
  loading on missiles from gusts of, harmonic analysis of, 22:25231(T) (SC-T-68-1504)
  profiles at NRTS, use for LOFT Reactor operation, 22:10375(R) (IDO-12059)
  profiles due to changes in surface roughness, 22:40245 (AECL-2787, pp 463-75)
  profiles of ionospheric, dynamic model of, (T), 22:41482
  profiles over inhomogeneous terrain roughness, effects of stability on, 22:40244 (AECL-2787, pp 453-61)
  shear and turbulence of, effects on aircraft operations at airports, 22:40235 (AECL-2787, pp 292-306)
  shearing effect on formation of sporadic-E, (T), 22:9214
  turbulence in lower atmosphere, measurement to 87 m, 22:10120 (BNWL-SA-1541)
  turbulence measurements at Brookhaven National Laboratory, 22:4277 (BNL-11889)
  turbulence measurements at Dallas, Texas, 22:3987 (TID-24122)
  turbulence of, effects of meteorological factors on, 22:18951 (BNWL-481-1, pp 8-27)
  turbulence spectra of natural, in atmospheric surface boundary layer, (E/T), 22:176 (BNL-11800)
  velocity at Vandenberg Air Force Base, effects on air pollution, 22:12159 (BNWL-572(Vol.1))
WIND TUNNELS
  control system for Sandia 18-inch hypersonic, design of digital pitching sector, 22:6220 (SC-DC-67-2120)
  gas in, use of electron beams for measuring density and temperature of, 22:387
  pumping system for low density, development and testing of neon cycle cryogenic, 22:10459
  use for evaluating effects of flow turbulence on efficiency of compressor cascades, 22:27525(T) (K-Trans-31)
  use of subsonic, to determine aerodynamic behavior of swept compressor cascades, 22:23214(T) (K-Trans-28)
  use of subsonic, to determine dynamic stability of flat plates, 22:18664 (SC-DC-67-1951)
  use of subsonic, to determine dynamic stability of flat plates and right circular cylinders, 22:18666 (SC-RR-67-778)
WINDOWS
  design and testing of thin film plastic, for liquid hydrogen containment, 22:15495
  fabrication of infrared, for ultrahigh vacuum use,

22:12567
  fabrication of potassium bromide, for vacuum monochromators, 22:12567
  testing materials for microwave antenna, in re-entry environments, 22:13064 (SC-DR-67-793)
  use of sapphire, for viewing objects at high temperatures, 22:51141

WINDSCALE ADVANCED GAS-COOLED REACTOR
  boilers for, construction of, 22:22728
  design parameters and layout for, 22:16146 (GA-8075)
  development of, 22:20831
  fuel cycle economics for, optimization of, 22:22730
  fuel element assemblies for, fabrication of, 22:50750
  fuel element burnup in, flux distribution analysis for optimum, (E/T), 22:22774
  materials for, evaluation testing of, 22:20830
  operating experience of, 22:6055
  operating experience of, evaluation of testing and, 22:42211 (TRG-Report-1693)
  physics measurements for, comparison of computer codes with, 22:22842
  pressure vessel liner for, construction of, 22:22728
  tubes for, analysis of corrosive effects of carbon dioxide on austenitic chromium--nickel--titanium steel, (E), 22:44857

Wines
    see Beverages

Wings (Aircraft)
    see Aerodynamics

Winter
    see Seasons

Wire Recorders
    see Magnetic Recording Systems

WIRES
    (See also specific metals from which wires are fabricated.)
    see also Exploding Wire Phenomena
  cutting of semiconductor lead, design of tool for, 22:12714(P)
  design for tamper-indicating reactor safing system, 22:37910 (RL-REA-2228)
  design of tantalum-182, for interstitial radiotherapy, 22:12890
  design parameters for 0.25 to 10.0 MW Nuclear Auxiliary Power Systems, analysis of optimum, 22:35572 (SAN-679-4)
  electric fields between parallel, effect of wire size and spacing on, (E/T), 22:20984 (GEPP-19)
  electrical and defect properties of thin metallic, research on, 22:2608(R) (COO-1247-7)
  heat transfer to liquid helium from bare and enameled manganin, 22:11365
  inspection of drawn, equipment and method for, 22:6549(P)
  insulation for cupron and tophel thermocouple, evaluation of ceramics, organics, and silicones for, 22:37936 (GA-7976)
  overload protection of superconducting, in electric power equipment, 22:46080
  properties of high-temperature tungsten, effects of aluminum, potassium, and silicon on, 22:8761
  stability of current-carrying, in magnetic fields, (T), 22:20034
  thickness of filament, design of beta-backscatter gage for measuring, 22:19180(P)
  use for hairpin- and crank-shaped spot-welded flexible spacers for reactor fuel elements, description of, 22:42567(P)
  welding of small, design of pulsed-arc welder for, 22:14657
  winding on surfaces of revolution, 22:14397 (SCL-DR-65-102)

WISCONSIN
  cobalt distribution in lakes of, 22:18912 (COO-1281-5)
  radium-226 and stable strontium content of human skeletons in, during 1957 to 1961, 22:38267 (UCRL-18140, pp 175-95)
  tritium fallout during 1961 to 1967, effects of 1961--1962 nuclear explosions on, 22:25536

WISTARIN
  radioprotective effects of, on enzyme activity in liver of mice, effects of time of administration on x, 22:33851

WITWATERSRAND GOLD FIELDS (UNION OF SOUTH AFRICA)
  ores from, neutron activation method for analysis of, 22:14449

WITWATERSRAND REEFS (UNION OF SOUTH AFRICA)
  bed formation and mineral content of fibrous aggregates of uranium bearing conglomerates in, 22:2253
  gold distribution in, literature review of, 22:48955 (NIM-269)
  uranium distribution in, literature review of, 22:48955 (NIM-269)

Wolfram
    see Tungsten

Wolframates
    see Tungstates

WOLLASTONITES
  radiation effects on electric insulating materials of, neutron, 22:776

WOOD
    see also Cellulose
    see also Coke
    see also Lignin
  age determination of, carbon-13 to carbon-12 ratio analysis for, 22:48940
  age of bristlecone pine, carbon-14 and dendrochrologica methods for estimation of, 22:6454
  age of, in Illinois geological deposits, carbon-14 meth for estimation of, 22:23141
  analysis for bromine, comparison of gamma and x-ray spectrometry in activation, 22:24788 (IA-1128, pp 55 77)
  analysis for water by gamma absorption or neutron moderation, 22:40043
  combustion and smoldering of, opacity of smokes from, 22:16374 (UCRL-70794)
  development of plastic-impregnated, 22:23692 (AECL-270 pp 50-9)
  development of polymer-impregnated, 22:52302 (BARC-331
  gamma radiation absorption by lime, effects of moisture content on, 22:52306
  paper production from, control of stream pollution by plants for, 22:30779
  properties of, tabulations of mechanical and physical, 22:4731
  radiation effects on birch, combined effects of polystyrol and polyvinylacetate on γ, 22:28713
  radiation effects on mechanical properties of, β, 22:38644
  radiation effects on monomer-impregnated, 22:12381
  radiation effects on pine, combined effects of polymethylmetacrylate on γ, 22:28713
  radiation effects on plastic-treated, effects of, on termites eating such wood, γ, 22:36428
  radiation effects on, review of, 22:108
  radiation effects on, review of, 22:10283
  radiation processing of, description of Swedish facilities for gamma, 22:48987
  radioinduced polymerization of chloroethylene impregnate in, tensile strength studies on, 22:48891(P)
  radioinduced polymerization of monomers impregnated in, to improve structural properties, 22:10283
  radioinduced polymerization of monomers in, gamma, 22:52302 (BARC-331)
  radioinduced polymerization of monomers in, review of, 22:108
  radioinduced polymerization of various monomers in, 22:14525
  smoke properties of various types of, 22:45357(R) (UCRL 50007-68-1)
  sorptive properties for radioactive contaminants in water, effects of impregnation with metallic silicates on, 22:30671(P)
  stress effects on redwood, sugar, pine, and balsa, at shock loads of 300 to 17000 psi, 22:2316 (IITRI-578- 21-22)
  x-ray scattering by, secondary radiation from, 22:28497
  acrylonitrile--wood, radioinduced polymerization of, kinetics of, 22:35858
  methyl methacrylate--wood, radioinduced polymerization of, effects of type of wood and dose on, 22:107
  methyl methylacrylate--wood, radioinduced polymerization of, kinetics of, 22:35858
  plastic--wood, bonding and mechanical fastening of, 22:15268 (ORO-2945-9)
  plastic--wood, commercial development and uses of, 22:23041
  plastic--wood, mechanical and physical properties of, 22:23041
  plastic--wood, radiation curing of, economics of, 22:2140
  plastic--wood, radioinduced formation of, 22:23055
  plastic--wood, radioinduced polymerization in, gamma, 22:19683
  plastic--wood, radioinduced production of, review of, 22:108
  plastics--wood, conference on, Sacramento, California, June 9, 1967, 22:42751
  plastics--wood, radiation processing of, review on, 22:35866
  plastics--wood, radioinduced formation of, 22:25371 (CONF-660706-, pp 195-9)
  plastics--wood, radioinduced formation of, 22:26097 (CONF-660706)
  plastics--wood, radioinduced formation of, 22:42751
  plastics--wood, radioinduced production of composite, survey of, 22:8854
  styrene--wood, radiation effects on, to improve structural properties, 22:10283
  styrene--wood, radioinduced polymerization of, kinetics of, 22:35858

WOOL
    see also Rock Wool
  analysis for carbon-14 and tritium by liquid scintillation counting, effects of fiber diameter on, 22:33230
  fiber diameter measurements for, use of carbon-14 and liquid scintillation counting in, 22:33610
  radiation effects on solubility in acids, alkalis, urea-bisulfite, or urea, effects of nitrogen or oxygen on 22:47174
  radioinduced graft polymerization of New Zealand, with

acrylonitrile, effects of allyl methacrylate, formic acid, and water on γ, 22:48875 (INS-R-58)
radioinduced grafting of polystyrene to, location of grafted polymer in, 22:35859
radioinduced grafting of styrene to, effects of diffusion on γ, 22:6352

WR-1
see Whiteshell Reactor No. 1

Wriggle Instability
see Pinch Effect

WRRR
see Walter Reed Research Reactor

WSMR-FBR
see Fast Burst Reactor Facility

WUERGASSEN POWER REACTOR
core for, reactivity balance and coefficients for first, 22:30214
description of, 22:10023
design of, safety standards for, 22:30208
design parameters for, 22:30214
electrical systems for, description of, 22:30215
emergency core cooling system for, description of, 22:30215
operating parameters for, 22:30214
steam and power conversion systems for, description of, 22:30215

WWER-1
see Novo Voronezh Power Reactor, Unit 1

WWR-type Reactors
see Reactors, Research

WYLFA REACTORS
(Two units comprising the Wylfa Station.)
construction and commissioning of, description of, 22:27445
control system for, description of, 22:6039
control system for, description of computerized, 22:27445
cooling system water intakes for, description of, 22:48659
description of 1200 MW, 22:6039
design parameters and layout for, 22:16146 (GA-8075)
design parameters for, 22:22712 (STI/PUB-174)
pressure vessel cables for, description of Astrolan 39 anticorrosion compound for, 22:35487
pressure vessel cables in, hydrocarbon protective compound for, 22:12984
pressure vessel liners for, cutting equipment and methods for, 22:12992
shutdown amplifier for, design of, 22:400

WYOMING
graywackes of, strontium-86/-87 ratio of, 22:6435 (MIT-1381-15)
radiation monitoring of water of mountain bogs in, γ and β, 22:25833

X

X-110
see D-43 (Niobium Alloy)

X AGENT
effects on aqueous solutions of dyes, effects of heat radiation on, 22:49247
effects on aqueous solutions of neutral red, effects of season on, 22:49248

X RADIATION
see also Bremsstrahlung
see also Gamma Radiation
see also Photons
absorbed dose of, method for determining from exposure, 22:40712
absorption between 140 and 160 km, satellite observations of solar, 22:2962
absorption by argon and neon, electron emission from, 22:31651
absorption by concrete, lead, and steel at 6 MeV, coefficients for, 22:24370
absorption coefficients for gases, in 2- to 200-A region, 22:11199
absorption in gold up to 30 keV, calorimeter for measuring energy fluence in, 22:43040
absorption in interstellar space of soft, effects on Sco X-1 spectrum, (T), 22:52435
absorption in platinum and tantalum, photoionization cross sections for ultrasoft, (E/T), 22:24475
absorption in rare earth phosphors, calculations for, 22:40413
absorption spectra of rare earths, soft, 22:3209
absorption spectra of soft, in beryllium and beryllia, (E), 22:45938
angular and energy distribution behind absorbers, design of thallium-activated sodium iodide detectors for measuring, 22:21345
anisotropy of galactic cosmic-ray-electron-produced, (T), 22:17433
attenuation coefficients for gold, lead, silver, tin, and tungsten below K-absorption edge, 22:29199
attenuation during radiography, effects of wavelength on, 22:51803
attenuation in barytes concretes at 4 MeV, effects of depth on, 22:29536
attenuation in boiling metals, use to measure void fraction, (E), 22:21283
attenuation in chest wall of man following inhalation of radioactive aerosols, 22:21501
attenuation in concrete, 22:26443
attenuation in tissue-equivalent phantom, development of materials for, 22:25848
background in Universe, diffuse, (T), 22:808
book: Handbook of X-Rays, 22:5454
book: Introduction to the Physics of X and Gamma Radiation, 22:15734
book: Laboratory Handbook of Toxic Agents, 22:36289
book: Protection Against Ionizing Radiation : A Manual, 22:40730
Bragg diffraction of, evaluation using β excited x-ray source, 22:251 (ORNL-IIC-10(Vol.2), pp 629-38)
correlation with gamma beams, 22:24037
cosmic background, origin of isotropic, (E), 22:43950
depth dosimetry for therapy using Linear Accelerator, 22:31094
detection aboard OGO-I and III satellites, ionization chamber for, 22:43041
detection and dose measurements of low-energy, low-level, design of inflated balloon ionization chambers for, 22:40380
detection and image dissection of soft, use of channel electron multipliers for, 22:40409
detection and measurement in space, equipment and methods for, 22:49093
detection and measurement of pulsed, film-recording monitor for, 22:14433 (ORNL-4196, pp 66-89)
detection and measurement of, efficiency of anthracene crystals for, 22:6317(R) (PRNC-107)
detection and measurement of, use of germanium semiconductor detector for, 22:45314
detection and measurement using leuco triarylmethane derivatives, 22:25682
detection by monkeys, role of olfactory system in, 22:49488(R) (ORO-2903-43)
detection by olfactory organs of rats, 22:28625 (NYO-2147-13, pp 181)
detection by rats, interchangeability of ozone and ethyl butyrate as conditional stimuli for, 22:28282 (NYO-2147-13, pp 182-92)
detection from focused z-pinch devices, 22:34726 (AD-665416)
detection in coincidence with positrons, method for, 22:23273
detection in plutonium-238-contaminated wounds, response of thin thallium-activated sodium iodide scintillation detectors for determining, 22:37995 (SC-TM-68-416)
detection of 1- to 8-angstrom, proportional counter for, 22:47340(P)
detection of 10- to 400-A, review of photoelectric detectors for, 22:10547
detection of 100-keV, energy absorption and ionization in aluminum-walled ionization chambers for, 22:38049
detection of 2 to 12 A solar, (E), 22:24191
detection of annihilation, for detecting positrons, design of coincidence scintillator for, 22:40359 (INP-605/PL)
detection of auroral-zone microbursts of, (E), 22:22053
detection of cosmic, design of rocket-borne, thin-window proportional detectors for, 22:38022
detection of cosmic, effects of instrument noise on scintillation detectors used for, 22:26107
detection of cosmic, reduction of cosmic background in proportional detectors through risetime discrimination for, 22:28078
detection of fission fragment, in coincidence with fission, bent-crystal Johansson-type spectrometer for, 22:23313
detection of high-energy, semiconductor detector for, 22:23304(P)
detection of low-energy, development of scintillation detector system for monitoring water by, 22:30825(R) (UCRL-50007-67-3)
detection of soft fluorescent, sensitivity of photoelectric diode for, 22:8341 (UCID-15248)
detection of soft, from intergalactic plasma, (E), 22:41178
detection of soft, in microanalysis, use of end-window proportional detectors for, 22:6612
detection of, calibration of silicon detectors for, 22:14754 (UCID-15277)
detection of, characteristics of tissue-equivalent proportional detectors for, 22:38050
detection of, charge collection efficiency of lithium-drifted germanium and silicon detectors for, 22:28087
detection of, comparison of radiation detectors used in analysis of low-grade ores for, 22:2347 (ORNL-IIC-10(Vol.1), pp 393-423)
detection of, design and testing of thin-window proportional detectors for, 22:37991 (N-68-11367)
detection of, design of gallium arsenide scintillation detector for, 22:47355(P)
detection of, design of lithium-drifted silicon detector for, 22:33649
detection of, design of spark chamber for, 22:2385(P)
detection of, development of gas-filled image brightness intensifier for, 22:40425
detection of, effects of extreme operating conditions on

stability of proportional detectors for, 22:2346 (ORNL-IIC-10(Vol.1), pp 376-92)
detection of, efficiency of germanium and silicon detectors for, 22:40430
detection of, efficiency of scintillation detectors for, 22:40430
detection of, fabrication and testing of thallium-activated cesium iodide and sodium iodide scintillation detectors for, 22:19100 (UCRL-70773)
detection of, pulse-shape discrimination for background reduction in proportional detectors for, 22:45273 (AERE-R-5749)
detection of, quantum efficiency of argon, krypton, and neon phosphors for, 22:28112
detection of, spectral sensitivity of films for, 22:12584
detection of, stretching of polypropene for use as windows of gas-filled ionization chambers for, 22:38020
detection of, use of low-noise preamplifiers with silicon detectors for, 22:2350 (UCRL-17818)
diffraction from crystals, elastic quasi-mosaic effect for, (E), 22:38739
diffraction in anomalous transmission through nearly perfect copper crystals, absolute intensities of, (E/T), 22:3200
diffraction on lithium fluorides, Debye--Scherrer, (E), 22:3179
diffraction through perfect crystals, theory of anomalous, 22:48157 (UCRL-50439(Pt.2))
diffuse cosmic background, contribution of electron synchrotron emission to, (T), 22:29308
discrimination in monkeys, effects of olfactory system on, 22:49487 (ORO-2903-39)
dose absorbed at embryo of dry rice seed, calculation of, 22:43344
dose calibration for 30-MV, of thimble ionization chambers in water phantoms, 22:380
dose distribution in cadaver of dogs and in phantom, measurement of, 22:36279
dose distribution in frozen and phantom rats, measurement of, 22:40723
dose distribution in recumbent and seated swine, thermoluminescent dosimeter measurements of, 22:51575
dose distribution of, twin current amplifiers and ratio meter for ionization chambers used for measuring, 22:25680
dose for dogs, lethal, 22:40941
dose for sterilization of drugs, standards for, 22:21643
dose for visual perception by man, effects of area and time of stimulation on, 22:52018
dose from target housing of linear accelerator, performance of film badges and ionization chambers for measurement of, 22:28498
dose in tissues, method for calculation of depth, 22:49356
dose rate measurements of, design of polystyrene--zinc sulfide scintillation detectors for, 22:16913
dose rate measurements of, review of concepts for, 22:43118
dose to body and thyroid of man during radiological examination of goiter, calculation of, 22:4623
dose to body, lens, skin, and testes of man, maximum permissible, 22:6819
dose to bone marrow of man during radiography of chest, method for reduction of, 22:33829
dose to chickens and rabbits, effects of, on cause of death, 22:8594 (CONF-670305-, pp 76-80)
dose to fetus and mother during pelvimetry, effects of equipment design on, 22:36280
dose to fetus during diagnosis using fluoroscopy or film, 22:19450
dose to finger tips, lithium fluoride thermoluminescent dosimeter for measuring, 22:2427 (AEEW-R-497)
dose to gonads and skin of man during dental radiography, 22:10807
dose to gonads and skin of man during dental radiography, 22:49373
dose to gonads and skin of man during diagnosis of heart disease, 22:47530
dose to gonads in man from diagnostic radiography, 22:28531
dose to gonads of man during betatron therapy of chest, 22:36395
dose to gonads of man during diagnostic radiology, 22:15015
dose to gonads of man during medical radiology, 22:21506
dose to gonads of man in New York City from diagnostic radiography, 22:28532
dose to hands during dental radiography, 22:28486
dose to heart following therapy of thoracic tumors, 22:15077
dose to human fetus during pelvic radiography, 22:8537
dose to human fetus from radiography during pregnancy, 22:51799
dose to human fetuses during radiography, 22:47539
dose to human gonads during dental radiography, 22:28462
dose to human gonads during dental radiography, 22:49440
dose to human gonads during diagnostic radiography, calculation of, 22:38323
dose to human mouth and thyroid during dental radiography, 22:12870
dose to human population in United States from dental
medical use, estimate of, 22:28613
dose to major bones of dogs, measurement of whole-body, 22:38280
dose to man and medical personnel during dental radiology, design of equipment for reduction of, 22:38282
dose to man and medical personnel during diagnosis of therapy, methods for reduction of, 22:4624
dose to man and medical personnel during radiology of nerves, 22:33830
dose to man and medical personnel, methods for protecti
against, 22:45510
dose to man and personnel during dental radiography, recommendations for protection against, 22:45551
dose to man and personnel during dental radiography, 22:43339
dose to man during dental examination, scattered, 22:38299
dose to man during dental radiography, review of hazard
of, 22:45524
dose to man during dental radiography, use of standard man phantoms for measurement of, 22:25840
dose to man during dental radiography, use of standard man phantoms for measurement of, 22:25839
dose to man during dental radiography, use of standard man phantoms for measurement of, 22:25838
dose to man during diagnosis and therapy of cleft palat
22:51602
dose to man during electron therapy, use of absorbers f
attenuation of scattered, 22:28615
dose to man during gynecological examination, review of
22:51660
dose to man during roentgenokymography, method for reduction of, 22:45573
dose to man during skeletal fluoroscopic examinations, 22:43374
dose to man following injection of mixture of mercury-1
and mercury-203, 22:6804 (ORNL-4168, pp 289-311)
dose to man from Crook's tube, 22:15012
dose to man from plutonium-239 in lungs following inhalation of palladium-103-labeled aerosols, use of proportional counter for measurement of soft, 22:433
(AERE-PR/HPM-12)
dose to man holding large and small animals during radiography, 22:51810
dose to man, methods of estimating localized and whole-body, 22:43341
dose to man, use of frequency of chromosome aberrations in cultured lymphocytes for estimation of, 22:43298 (AD-666713)
dose to maternal ovaries from radiography during pregnancy, 22:2513
dose to medical personnel in Japan during 1962 to 1966, 22:36263
dose to medical personnel, following diagnostic use, 22:49358
dose to mice, protective effects of lead sieve shield against lethal, 22:8542
dose to pregnant women during examination, ICRP standard
for, 22:6896
dose to tissues, measurement of, using electron spin resonance spectroscopy, 22:47531
dose to veterinary personnel, use of film dosimeters to determine, 22:45514
dosimetry and quality factor measurements of, equipment for, 22:28181
dosimetry at bone-tissue interface, 22:38314
dosimetry at surface interfaces, ion-dose curve for, 22:38313
dosimetry during diagnostic radiography, 22:38324
dosimetry following nuclear accident, performance of various dosimeters for, 22:8395
dosimetry for mice, use of count of erythrocytes and nucleated cells in bone marrow for, 22:51915
dosimetry for orthovoltage therapy, 22:31086
dosimetry for partial exposure, effects of scattering on
22:10777
dosimetry for protection of personnel, performance of photographic emulsions for, 22:49350
dosimetry for protection of personnel, performance of photographic emulsions for, 22:49351
dosimetry for radiography personnel, 22:43332
dosimetry for rotation, and static therapy, 22:49366
dosimetry for whole-body exposure of man, 22:8513 (CONF-670219)
dosimetry in catalase, development of method using ferric-thiocyanate complex for, 22:30933(R) (PRNC-12)
dosimetry in gonads of man during diagnostic examination, 22:2510
dosimetry in guinea pigs, use of segmentation index of granulocytic leukocytes for, 22:38432
dosimetry in human bladder, kidneys, and ovaries following injection of mercury-197- or mercury-203-labeled neohydrin, 22:6803 (ORNL-4168, pp 231-88)
dosimetry in human bones, design and performance of LiF powder thermoluminescent dosimeter for, 22:38326
dosimetry in human children following scalp therapy for ringworm, 22:31085
dosimetry in human phantom in relation to photon energy measurements for bone marrow, 22:51626

dosimetry in man and mice, use of lymphocyte morphology for, 22:23537
dosimetry in man, development of transistorized electronic equipment for whole-body, 22:8531
dosimetry in man, use of chromosome aberrations in leukocytes of circulating blood for, 22:23536
dosimetry in mixed beta, gamma, and x radiation, performance of photographic film for, 22:36112 (SZS-6/68)
dosimetry in mixed radiation fields, individual dose evaluation of photographic film, 22:19165
dosimetry in personnel, methods for, 22:21512
dosimetry in personnel, performance of photographic film detectors for, 22:21523
dosimetry in personnel, performance of photographic film detectors for, 22:21513
dosimetry in personnel, performance of thermoluminescent detectors for partial-body and whole-body dose measurements for, 22:21526
dosimetry in phantoms for use in calibration of ferrous sulfate dosimeter, 22:10774
dosimetry in phantoms, performance of ionization chambers and thermoluminescent detectors for, 22:28529
dosimetry in rat cadavers, use of thermoluminescent microdosimeters for, 22:28476
dosimetry in soft tissues adjacent to plane bone interfaces, use of polyethylene-film dosimeters to measure, 22:510
dosimetry in superficial tissues, high-energy, 22:49357
dosimetry in swine, performance of thermoluminescent detectors for, 22:23532
dosimetry in testicles during treatment of neoplasms, 22:2544
dosimetry in tissue-equivalent plastic phantoms, 22:45544
dosimetry in trabecular bones, thermoluminescence methods for, 22:38310
dosimetry in water-equivalent biological objects, 22:47542
dosimetry of 100-keV, response of lithium fluoride--Teflon thermoluminescent dosimeters for interface, 22:38114
dosimetry of 20- to 250 keV, use of surface-barrier silicon detectors for, 22:14860
dosimetry of 4- to 15-keV, development of poly-3,3-(bischloromethyl)oxetane for 4- to 15-keV x rays, 22:379
dosimetry of 5- to 20-keV, supralinear response of lithium fluoride thermoluminescent dosimeters for, 22:21357 (COO-1105-129)
dosimetry of 60-keV, yield of Fricke--Miller ferrosulfate dosimeter for, 22:23332
dosimetry of 7.5-MeV, with Fricke dosimeter, 22:51259
dosimetry of bremsstrahlung, methods for, 22:4613
dosimetry of high-energy, use of Farmer--Baldwin and Victrometer ionization chambers for, 22:25681
dosimetry of pulsed, photomultiplier tubes for, 22:6655
dosimetry of, design and performance of thermoluminescent dosimeters for, 22:36114
dosimetry of, design of ionization chamber for personal, 22:4488
dosimetry of, design of photoluminescent dosimeter for, 22:36113(P)
dosimetry of, design of solid-state digital integrating dosimeter for, 22:25679
dosimetry of, design of tandem lithium fluoride and manganese-activated calcium fluoride thermoluminescent dosimeters for, 22:14854
dosimetry of, development of lithium fluoride thermoluminescent dosimeters for, 22:21355 (AAEC/TM-412)
dosimetry of, development of lithium fluoride thermoluminescent dosimeters for, 22:4486
dosimetry of, effects of total dose on energy dependence of lithium fluoride thermoluminescent dosimeters, 22:28184
dosimetry of, efficiency of calcium and lithium compound thermoluminescent dosimeters for, 22:30870
dosimetry of, efficiency of photographic film dosimeters for, 22:10611
dosimetry of, ionization chamber for, 22:49129(P)
dosimetry of, methods for, 22:377
dosimetry of, particle size effects on efficiency of lithium fluoride for thermoluminescent, 22:43116
dosimetry of, performance of heteropolyacids of molybdenum and tungsten for, 22:28180
dosimetry of, photoluminescent dosimeter for, 22:38110(P)
dosimetry of, research at National Physical Laboratory, Teddington, England on, 22:43129
dosimetry of, response of thermoluminescent lithium fluoride and calcium fluoride for, 22:25678
dosimetry of, standards for, 22:14861
dosimetry of, use of calcium fluoride thermoluminescent dosimeter for, 22:6662(P)
dosimetry of, use of manganese-doped zinc fluoride and lithium fluoride thermoluminescent dosimeters for, 22:19162(T) (NSJ-tr-99)
dosimetry of, use of phosphate glass for photoluminescent, simultaneous with neutron activation dosimetry, 22:14859
dosimetry of, use of photographic film dosimeters for, 22:6653 (RT/PROT-(67)12)
dosimetry of, use of plastic phosphor with cadmium sulfide photoresistance cell for, 22:25674
dosimetry of, use of pyroelectric tourmaline for, 22:19160(R) (NYO-3409-4)
dosimetry of, uses of cadmium sulfide detectors for, 22:6661
dosimetry using combined (fluorescent and transistor) detectors, 22:38296
dosimetry using extrapolation-ionization chamber, 22:40713
dosimetry using ionization chambers filled with various gases, 22:49352
dosimetry using isodose curves constructed by decrement-line method, 22:28530
dosimetry using tissue-equivalent phantoms, 22:51597
effect of Compton emission on cosmic background, (T), 22:17303
effect on biological material, effects of pulse frequency on RBE of, 22:23667
effect on chromosomes of Chinese hamster cells, aberrant, 22:51497
effect on thermoluminescence of barium oxides, calcium oxides and strontium oxides, 22:41674
effects of color centers induced in sodium chlorides by, on gold deposition on sodium chlorides, 22:39212
effects of millirad doses of, on thermoluminescent response of lithium fluoride, 22:2432
effects of pulsed, on acidic and alkaline solutions, reactions of hydrated electrons during and after, 22:18815
effects of pulsed, on heavy water, reactions of deuterated electrons from, 22:16630
effects of pulsed, on polymerization of isobutyl vinyl ether, absolute rate constants for, 22:51013
effects of solar, on lunar surface, (E), 22:29312
effects of solar, on production of electrons in D region, (T), 22:19894
effects of solar-flare-produced, on middle ionosphere, (E), 22:34467
effects on 2-methylpseudourea, ESR spectra of free radicals from, 22:27788
effects on 3,3-bis(chloromethyl)oxetane polymer, 22:47154
effects on absorption and excretion of tritium-labeled water by intestine of rats, effects of dose on, 22:49233
effects on abundance of antibody plaque-forming cells in spleen of mice, whole-body, 22:38223
effects on abundance of bacteria on human skin following therapy, acute, 22:49658
effects on abundance of lymphocytes in medical personnel, chronic low-dose, 22:49611
effects on acatalasemic mice, acute and chronic whole-body, 22:45626
effects on acceptor function of RNA specific to different amino acids, 22:23421
effects on acetylcholinesterase activity and protein content in brain and spinal cord of developing rats, 22:447
effects on acetylcholinesterase activity in spinal bone marrow of chick embryos, 22:4579
effects on acid phosphatase and proteins in rat neoplasms, 22:459
effects on acid secretion and bioelectric potential in rat stomach, 22:49226
effects on acne vulgaris in man, effects of age, previous treatment, and type of acne on therapeutic, 22:47553
effects on acridine orange-sensitized E. coli phage, 22:596
effects on activated and pure filamentary alkali metal halide crystals, electronic processes in, 22:9444
effects on activation of Varicella-Zoster in man following therapy, 22:51936
effects on activity and electrophoretic characteristics of alkaline phosphatase in liver, serum, and spleen of rats, whole-body, 22:2484
effects on activity of acid and alkaline phosphatases in subcellular fractions of liver and spleen cells in rats, whole-body, 22:6730
effects on activity of acid hydrolases in tumor cells of rats, 22:28377
effects on activity of acid phosphatase, ATPase, and DNAase II in adrenals of rats, 22:429
effects on activity of adrenal cortex in rats, relation of, to survival, 22:36398
effects on activity of alanine aminotransferase and aspartate aminotransferase in blood of rats, whole-body, 22:40909
effects on activity of alanine aminotransferase and aspartate aminotransferase in rats, protective effects of saturated fatty acids against, 22:12796
effects on activity of alcohol dehydrogenase from yeasts, 22:21445
effects on activity of aldolase and lactate dehydrogenase in blood serum of rabbits whole-body, 22:33765
effects on activity of alkaline phosphatase in tissues of mice, effects of intensity on, 22:10724
effects on activity of alpha-amylase and alpha-glucan phosphorylase in blood serum and liver of rabbits, combined effects of embitol on, 22:49277

effects on activity of aminotransferases in subcellular fractions of rat brain, effects of dose on, 22:51350
effects on activity of arylesterase in blood serum and organs of rats, whole-body, 22:33735
effects on activity of ATPase in brain of mice, 22:28375
effects on activity of carboxypeptidase A, mechanism of protective effects of cysteine against, 22:45605
effects on activity of catalase at different energy levels, effects of beam resonance on, 22:49180(R) (PRNC-14)
effects on activity of catalase, monoamine oxidase, and transaminases in guinea pigs, 22:38471
effects on activity of cholinesterase in subcellular fractions of brain, 22:51375
effects on activity of coacetokinase in yeasts, 22:43219
effects on activity of dehydrogenases in Paramecium, 22:36184
effects on activity of DNAase in liver and spleen of rats, protective effects of AET and cysteamine against, 22:4661
effects on activity of enzymes and content of amino acids in brain tissue of rats, 22:23447
effects on activity of enzymes and mitosis in ascites hepatoma of rats, effects of sulfhydryl content on, 22:31272
effects on activity of enzymes in liver of mice, effects of radioprotective compounds and starvation on whole-body, 22:40523
effects on activity of enzymes in rats, 22:25753
effects on activity of glutamate dehydrogenase in rats, 22:19295
effects on activity of γ-glutamyltranspeptidase in liver and spleen of rats, 22:43226
effects on activity of hexokinase from brain and muscles of mice, 22:49265
effects on activity of hydroxytryptophan decarboxylase and kynureninase in liver of mice, protective effects of serotonin against x, 22:31011
effects on activity of hydroxytryptophan decarboxylase and kynureninase in liver of mice, combined effects of wound trauma on whole-body, 22:49280
effects on activity of inorganic pyrophosphatase in brain of mice, acute, 22:51428
effects on activity of ion pumps and permeability of cell wall of Chara, 22:45508(R) (PG-Report-826)
effects on activity of leucine aminopeptidase in liver and spleen of rats, 22:43226
effects on activity of lipoprotein lipase in adipose tissues of rabbits, 22:40564
effects on activity of lysozyme and ribonuclease, effects of oxygen deficiency and pH on, 22:25915
effects on activity of lysozyme in oxygen-free solution, protective effects of cysteine, ethanol, glycerol, and histidine against, 22:25915
effects on activity of oestradiol 17-β-dehydrogenase, protective effects of NAD and NAPD against, 22:33836 (BMwF-FBK-67-85)
effects on activity of phosphatase, content of bacteria, and taste of milk, 22:12772
effects on activity of proteases from liver and spleen of mice, effects of AET, carbon monoxide, and MEA on, 22:19268
effects on activity of RNAase in cotyledons of peanut seeds, 22:31014
effects on activity of RNAase, effects of water content on, 22:30972
effects on activity of Rous sarcoma viruses in cells from virogenic tumors of rats and chick embryo fibroblasts in mixed cultures, 22:33991
effects on activity of solutions of bradykinin, 22:47466
effects on adaptive function of RNA of Azotobacter, 22:19259
effects on adenine uptake by cultured rat thymocytes, 22:47616
effects on adenocarcinomas in kidneys of man, design of apparatus for prevention of secondary injury during therapeutic, 22:12915
effects on adenohypophysis and hypothalamo-hypophyseal neurosecretory system of rats, effects of dose on chronic, 22:31260
effects on adrenal cortex activity in rats, protective effects of cysteamine against, 22:23576
effects on adrenal cortex of rabbits, histological study of, 22:31233
effects on adrenal gland function in rats, protective effects of antibiotics, bone marrow, and drugs against, 22:45628
effects on adrenal gland of rats, physiological, 22:45665
effects on adrenal glands and blood of mice, effects of hexonium on, 22:19434
effects on adrenalectomized and intact mice, protective effects of serotonin against, 22:45617
effects on adrenergic and cholinergic neurohormonal transmitting substances, 22:45394
effects on adrenergic and cholinergic structures of brain of pigeons, rabbits, and rats, 22:23621
effects on adult life span and metamorphosis in flour beetles, effects of exposure of pupae on, 22:10824 (BNWL-480, pp 1-19)

effects on aerated and deaerated iron sulfate, effects cystamine on yields in, 22:40142
effects on aging and life span of houseflies, 22:4340
effects on aging of mice and rats, 22:43422
effects on air of sanitoria, sterilizing, 22:52048
effects on albumin and macrophage stimulation of DNA synthesis in rabbit spleen cell cultures, immunologi study of, 22:51416
effects on aldolase in aqueous solutions, protective effects of cystamine and cysteine against inactivati 22:40533
effects on alfalfa, effects of seed exposure on geneti 22:49306
effects on alimentary tract of man, protective effects metoclopramide against, 22:8582
effects on aliphatic amines, study of physical factors affecting, 22:45443
effects on alkali fluorides at 20°K, (E/T), 22:13605
effects on alkali halides, Stark effect in color cente 22:22199 (COO-1105-128)
effects on alkali metal halides, evidence for Frenkel defects from, (E), 22:37045
effects on alkaline ribonuclease content of mucosa of intestine, role of neuroendocrine reactions in acute, 22:49272
effects on allosteric function of muscle phosphorylase 22:473
effects on allosteric properties of phosphorylase by, 22:30955
effects on aluminophosphate glass, of composition $MgO \cdot P_2O_5 \cdot Al_2O_3 \cdot 3P_2O_5$, (E), 22:9435
effects on aminocaproic acid, pentosan SP 54, sanguina deproteinase, and SD-SK, effects of, on formation of stem cells in animals, 22:16990
effects on aminotransferase activity in rabbits, combin effects of embitol on, 22:33736
effects on ammonia in solid krypton, infrared spectra o radicals from, 22:4225
effects on ammonia-glutamine system of brain of rats, 22:49234
effects on ammonium halides, EPR spectra of, 22:32006
effects on ammonium perchlorates, effects of impurities on decomposition kinetics in, 22:47173
effects on amyloidosis induction by injection of spleen cells of mice, 22:33720
effects on animals, effects of dose on carcinogenic, 22:38484
effects on anthracene, 22:121
effects on anthracene crystals, analysis of delayed and prompt fluorescence from, (E/T), 22:17798
effects on anthracene, induced photoconductivity from, 22:41690
effects on antibody formation in guinea pigs, combined effects of booster injections on, 22:51420
effects on antibody formation in mice, standardization c antigen-elimination test using, 22:14974
effects on antibody formation in presence of antigen in mice following injection of spleen cells from syngenei donors, 22:23477
effects on antibody formation in rats, effects of lymphocyte injections on, 22:4573
effects on antibody formation in spleen cells following transplantation into mice, 22:51394
effects on antibody synthesis by spleen cells of mice, 22:28629 (ORNL-4100, pp 104-9)
effects on antibody-forming potential of spleen cells, effects of antigen on recovery from, 22:28289 (ORNL-4100, pp 178-201)
effects on antigen localization in lymphoid follicles of rats, 22:28621 (ANL-7278, pp 1-94)
effects on antigenicity and virulence of hookworm larvae for dogs, 22:14939
effects on antigenicity of ascites tumor cell transplant in mice, protective effects of sulfhydryl compounds against, 22:28611
effects on antigenicity of drug- or virus-induced tumor cells for rats, review of, 22:47462
effects on antigenicity of mammary carcinoma cells in tumor cells in mice, 22:12810
effects on Antirrhinum majus, effects of suppressor gene on mutagenic, 22:40635
effects on antitoxin-localizing ability in tissue of rabbits, effects of dose on, 22:6712(R) (COO-1172-7)
effects on antitoxin-localizing response in rabbits, effects of diurnal rhythm on, 22:6712(R) (COO-1172-7)
effects on approach and following behavior of chickens following embryonic exposure, 22:10836
effects on aqueous barium hydroxide, perchloric acid, sodium carbonate, and sulfuric acid solutions, spectra studies on kinetics of pulse, 22:33371 (AD-662736)
effects on aqueous solutions of aliphatic amino acids, u spectrophotometric analysis of lytic, 22:33763
effects on aqueous solutions of chlorine dioxide, mechanism of, 22:16583
effects on aqueous solutions of sodium salicylate, excitation processes in, 22:48878(R) (NYO-3242-29)
effects on aqueous solutions of thymine, lytic, 22:5147
effects on Arabidopsis, genetic, 22:6787
effects on Arabidopsis, mutagenic, 22:23484(R) (COO-1512-5)
effects on arylamine content of blood in rats, effects o metabolic activity on, 22:28347
effects on aspartate aminotransferase activity in blood

serum and liver tissues of rats, effects of liver excision on, 22:28348
effects on ataxia telangiectasia and lymphosarcomas in man, death resulting from therapeutic, 22:51924
effects on ATP, protective effects of organoselenium compounds against, 22:25904
effects on ATP-inhibition of phosphorylase, 22:30955
effects on ATPase activity of myosin, effects of histamine, histidine, and imidazole on, 22:40594
effects on axenic mice, protective effects of DNA against lethal, 22:4659
effects on axillary lymph nodes following therapy for human breast cancer, histological study of, 22:30987
effects on α-glucan phosphorylase and glycogen in livers of rats, effects of adrenalectomy and fasting on whole-body, 22:40569
effects on bacteria, effects of LET and oxygen enhancement ratio on, 22:6928
effects on bacteria, mutagenic and physiological, 22:40615(R) (EUR-3889)
effects on bacterial and mammalian cells, protective effects of anoxia against, 22:6844
effects on bacterial survival, nutrients, and taste of foods, 22:15126
effects on bacteriocidal and phagocytic activities of leukocytes in man, 22:2543
effects on bacteriophages Ec9 and T6, inactivating, 22:49645
effects on barium hydroxide solutions, 22:12340 (NYO-2668-15)
effects on barium meal aversion in rats, role of gastric emptying in, 22:23605
effects on Barkhausen effect in glycine sulfate and potassium sodium tartrate crystals, 22:18843
effects on barley plants, effects of seed exposure on combined β and, 22:33794
effects on barley seed, comparison of mutagenic, to EMS, fast neutrons, and γ, 22:51498
effects on barley, mutagenic, 22:51502
effects on barley, mutagenic, 22:17004 (RLO-353-15)
effects on basal and carbohydrate metabolism in rats, effects of acetylcholine, adrenaline, histamine, noradrenaline, and serotonin on, 22:40584
effects on base content of DNA in rabbit bone marrow, 22:33737
effects on beagles, effects of dose fractionation on partial-body and whole-body, 22:33907 (UR-49-913)
effects on beagles, effects of dose rate on pathological, 22:40941
effects on beans, effects of seed exposure on, 22:10889
effects on behavior and metabolism of rats, effects of age on, 22:49500
effects on behavior and physiology of rats, chronic, 22:51902
effects on behavior of electrons and holes in anthracene crystals and polymers, 22:33401
effects on behavior of Hassall's corpuscles in guinea pigs, 22:51349
effects on behavior of insects following exposure of supraesophageal ganglia, 22:19430
effects on behavior of mice following exposure of male parent, 22:19308(R) (ORO-3260-2)
effects on behavior of rats, combined effects of apomorphine and lithium chloride on, 22:12932
effects on behavior of rats, effects of age on, 22:25965
effects on behavior of rats, effects of dose fractionation on, 22:51990
effects on benign and malignant tumors in human children, development of deformed and shortened bones following therapeutic, 22:31151
effects on benign diseases in man, incidence of injuries following therapeutic, low-dose, 22:28556
effects on benign diseases, late pathological, 22:2535
effects on benign diseases, therapeutic, 22:40741
effects on biliary, duodenal, and pancreatic secretion following therapy, 22:36354
effects on binding energy in carbon monoxide—oxygen—water solutions, 22:12389
effects on binding of p-hydroxymercuribenzoate to bacteria, 22:23410(R) (NYO-3319-17)
effects on bioelectric activity of nerve fibers of cats, 22:45390
effects on bioelectric impulses in hippocampus neurons of rabbits, 22:45442
effects on biological activity of transfer RNA of Escherichia coli, liver, and yeast, 22:51421
effects on biological materials in relation to physical properties, 22:28326
effects on biological materials, combined effects of alkylating agents on, 22:12840
effects on biological materials, RBE for, in comparison to γ and proton, 22:38476
effects on biological systems, mechanisms for small dose, 22:38485
effects on biosynthesis of DNA in mice, early, 22:19243
effects on birth weight of swine, genetic, 22:10869
effects on bladder carcinomas in man, combined effects of high-energy electrons on therapeutic, 22:51723
effects on bladder carcinomas in man, development of complications following therapeutic, 22:47612
effects on bladder function in man following therapy for carcinomas of uterus, 22:28569
effects on bladder neoplasms in man, evaluation of supervoltage, 22:2553
effects on bladder of man following therapy in area of minor pelvis, 22:49385
effects on bladder, intestine, and parametria following therapy of cervical cancer, 22:49423
effects on bladder, rectum and skin following therapy for carcinomas of human ovaries and uterus, protective effects of trihydroxyethylrutoside against, 22:31163
effects on blood and bone marrow of young chickens, 22:47587
effects on blood and skin of medical personnel, 22:36382
effects on blood circulation in chicken embryos, cinemicrographic study of, 22:31253
effects on blood circulation in dogs, dynamics of whole-body, 22:45687
effects on blood circulation to retina of rabbits, effects of dose on, 22:23665
effects on blood clotting, therapeutic, 22:43437
effects on blood coagulation in man, effects of energy level and dose on, 22:49515
effects on blood of rats in comparison to effects of protons, 22:15078
effects on blood pressure and epinephrine synthesis in rats, whole-body, 22:45666
effects on blood pressure and kidneys of rats, partial and whole-body, 22:49521
effects on blood pressure and serum biochemistry of dogs following kidney exposure and unilateral nephrectomy, 22:38227
effects on blood pressure in man following therapy for malignant tumors, effects of dose, dose rate, and treatment with noradrenaline derivate on, 22:31128
effects on blood proteins and liver weight of mice, protective effects of ginseng extract against whole-body, 22:36330
effects on blood serum of rabbits, biophysical whole-body, 22:10680
effects on blood serum of rabbits, effects of spleen shielding on, 22:19233(R) (COO-209-144)
effects on blood serum proteins and fetal bone system of rats, effects of thyroidectomy on, 22:19445
effects on blood vessels and mucosa in rat intestine, 22:49556
effects on blood vessels in mandible of man following arteriography, infectious and neoplastic, 22:10831
effects on blood vessels of rats, combined effects of hypertension on, 22:45602
effects on blood, body weight, and electrocardiograms of monkeys, in utero, 22:49485 (NYO-2740-5, pp 267-98)
effects on blood, body weight, and survival of mice and rabbits, protective effects of glutathione against chronic, 22:49464
effects on body and eyes of man, recommendations for protection of x ray laboratory personnel against, 22:28518
effects on body weight and incidence of tumors in mice, effects of sex on, 22:49485 (NYO-2740-5, pp 267-98)
effects on body weight and internal organs of mice, protective effects of methandrostenolone on, 22:40775
effects on body weight of mice, use of, for assay of radioprotective compounds, 22:8586
effects on body weight, incidence of cataracts, and survival in preimplantation embryos of mice, in utero, 22:49485 (NYO-2740-5, pp 267-98)
effects on bone development and serum proteins in rats, combined effects of thyroidectomy on chronic, 22:36387
effects on bone marrow and peripheral blood cells, quantitative dynamics of, 22:49582
effects on bone marrow cells and thymus of mice, effects of treatment with 19S α-2 globulin on, 22:28566
effects on bone marrow cells in mice, mutagenic, 22:21479
effects on bone marrow cells of mice in vitro, effects of temperature on, 22:36373
effects on bone marrow in rats, effects of dose on regeneration of pathological, 22:43399
effects on bone marrow of mice and rats, 22:40844
effects on bone marrow of mice, RBE of 15 MeV betatron and 200 kV, 22:40925
effects on bone marrow of mice, repopulation of stem cell compartment following, 22:45711
effects on bone marrow of rats, regeneration of, 22:31271
effects on bone marrow regeneration in dogs, effects of partial and whole-body exposure on, 22:45661
effects on bone marrow stem cells of dogs, effects of nonuniform exposure on, 22:49581
effects on bone marrow, intestine, and testes of chickens and rabbits, effects of degree of cell maturity on, 22:8594 (CONF-670305-, pp 76-80)
effects on bone marrow, intestine, lungs, and skin of dogs, effects of transplants of bone marrow and spleen cells on pathological, 22:45712
effects on bone marrow, of rabbits, protective effects of bone marrow transplants on, 22:33871
effects on bone tumors, effects of, on skeletal system, therapeutic, 22:4636
effects on bones and bone marrow components of monkeys, 22:33713(R) (NYO-3728-2)
effects on bones of growing rabbits, effects of egg

shells, androsterone, and vitamin D_2 on x, 22:38366
effects on bones of human children, carcinogenic, 22:49451
effects on bones of man following therapy, 22:10876
effects on bones of man, following therapy, carcinogenic, 22:8635
effects on bones of rats following head exposure, tumorigenic, 22:40932
effects on box elder trees, effects of dose on mutagenic, 22:40624
effects on brain of monkeys, electroencephalographic and histologic study of, 22:36379
effects on brain of monkeys, pathological, 22:33897 (BNL-12348)
effects on brain of rats, behavioral and histological analysis of direct, 22:38464
effects on brain tissue of man following use for pituitary gland surgery, 22:15031
effects on brains of monkeys, latent necrotic, 22:51932
effects on branching in mustard plants, effects of seed exposure on, 22:17009
effects on breast neoplasms in man, effects of dose fractionation on, 22:15029
effects on breasts following therapy of mammary carcinomas in man, neoplastic, 22:15107
effects on bromouracil-induced mutants of Serratiaphage kappa, mutagenic, 22:40637
effects on bronchial carcinomas of man, bronchographic study of therapeutic, 22:15053
effects on bronchial carcinomas, supervoltage, 22:45637
effects on bronchogenic carcinomas, in man, combined effects of 5-fluorouracil on therapeutic, 22:8570
effects on buffer solutions, effects of, on yeasts, 22:28720
effects on butyramide, isobutyramide, and propionamide, ESR study of free radicals from, 22:48884
effects on β fructofuranosidase activity in brain, heart, kidney, and liver of rats, 22:23422
effects on β-glucuronidase activity in rats, whole-body, 22:33755
effects on cadmium sulfide monocrystals at -110 to +130°C, 22:19675
effects on calcite, empirical decay law for luminescence from, 22:24463
effects on calcium fluoride, use of, for in vivo generation of uv radiation, 22:51882
effects on calcium fluorides, electron emission and thermoluminescence from, (E), 22:7356
effects on calcium fluorides, formation and optical bleaching of Fcenters from, (E), 22:41670
effects on calcium tungstate single crystals, EPR and thermoluminescence from, 22:44248
effects on calcium, mucopolysaccharide, and strontium metabolism in rats, whole-body, 22:49225
effects on calcium, potassium, and water flux in excised onion roots, micropotometric determination of, 22:28705
effects on cancer of cervix uteri in man, incidence of leukemia following therapeutic, 22:33858
effects on cancer of man, development of pemphigoid following, 22:36384
effects on capillaries and glial cells in brain of rats, 22:4693
effects on carbon dioxide adsorbed on alumina, 22:42728(T) (RFP-Trans-32)
effects on carbon dioxide production by starved yeast cells, metabolic factors in, 22:51402
effects on carboxypeptidase A and labeled chromosomes, resonance studies of monochromatic, 22:47448(R) (PRNC-69)
effects on carcinoma of bladder in dogs, effects of hypothermia on, 22:4660
effects on carcinoma of bladder in man, combined effects of 5-fluorouracil on, 22:4644
effects on carcinoma of colon of rabbits, preoperative, 22:10798
effects on carcinoma of human lung, combined effects of oxygen and synkavit on, 22:19385
effects on carcinoma of lungs of man, combined effects of duazomycin A and methotrexate on, 22:19360
effects on carcinoma of squamous cell transplants in mice, effects of dose fractionation and oxygen abundance on, 22:4648
effects on carcinomas following transplantation in mice, effects of triiodothyronine on, 22:19398
effects on carcinomas in lungs, effects of dose and histologic type on therapeutic, 22:4678
effects on carcinomas of cervix in man, combined effects of radium γ on therapeutic supervoltage, 22:40812
effects on carcinomas of esophagus in man, development of constrictive pericarditis following therapeutic, 22:31141
effects on carcinomas of human cervix uteri, complications following therapeutic, 22:15027
effects on carcinomas of human cervix, effects of dose on development of complications following, 22:47599
effects on carcinomas of larynx in man, therapeutic, 22:45600
effects on carcinomas of larynx of man, effectiveness of therapeutic, in comparison to surgery, 22:36385
effects on carcinomas of liver in animals, therapeutic, 22:28646
effects on carcinomas of man, combined effects of hydroxyurea on, 22:25920
effects on carcinomas of man, comparison to laser of therapeutic, 22:2529
effects on carcinomas of mice effects of sieve shieldi on therapeutic, 22:38386
effects on carcinomas of ovaries in man, therapeutic, 22:25913
effects on catalase activity, 22:30933(R) (PRNC-12)
effects on cauliflower, cucumber, lettuce, pea, pepper, and tomato plants, effects of genotype and seed exposure on, 22:10753
effects on cell count in peripheral blood of rats, combined effects of open skin wounds on, 22:45707
effects on cell cycle and DNA synthesis in excised roct of pea plants, effects of carbohydrate supply on, 22:28390
effects on cell differentiation in cultured tissues fro lungs and thymus of embryonic mice, effects of uretha on, 22:21550
effects on cell renewal systems in hematopoiesis and intestinal mucosa of rats, lethal, 22:49491 (UCSF-10 P-2-40)
effects on cell wall synthesis in bacteria, 22:4712
effects on cell-size distribution in bone marrow of mic use of, as index of injury, acute, 22:49493
effects on cells and organisms, use of nucleic acids to restore, 22:40766
effects on cells from spleen of mice, effects of transplants following, on mortality from wasting disease, 22:47474
effects on cells of ascites tumor of mice, development resistance following, 22:40781
effects on cells of barley plants, mutagenic, 22:49313
effects on cells of Ehrlich's ascites carcinomas, protective affects of thiol compounds against, 22:38354
effects on cells of epithelium in hamster cheek pouch, pathological, 22:40651
effects on cells of mice, effects of hypoxia on fractionated, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on cells, effects of cell phase on type of aberrant, 22:8594 (CONF-670305-, pp 76-80)
effects on cells, review of role of radiotoxins in recovery from, 22:25910
effects on cellular components of spleen in mice, effec of adrenalectomy and hydrocortisone on, 22:40929
effects on cellular composition of thymus in mice, 22:43401
effects on cellular repopulation of Peyer's patches in mice following injection with bone marrow and lymphcid cells, 22:19416
effects on central nervous system of human children, pathological, 22:43398 (NP-17495)
effects on central nervous system of monkeys and rats, 22:14906 (BNL-50057, pp 123-37)
effects on central nervous system of rats following prenatal exposure, protective effects of AET against, 22:45623
effects on central nervous system of rats, mechanism of combined effects of convulsant drugs on, 22:47625
effects on cerebral blood flow in rabbits, localized and whole-body, 22:12752(T) (NASA-TT-F-413, pp 122-9)
effects on cerebral cortex of brain of monkeys, electroencephalographic and histologic study of, 22:36378
effects on cerebral cortex of brain of monkeys, electroencephalographic analysis of, 22:36380
effects on cerebral cortex of monkeys, histopathologic study of, 22:36370
effects on cerebral cortex of monkeys, summary of functional and structural changes following, 22:38450
effects on cerebrospinal fluid pressure in dogs, 22:574
effects on cervical carcinomas in man, combined effects of radium treatment on, 22:15028
effects on cervical carcinomas in man, development of bladder complications following postoperative therapeutic, 22:31133
effects on cervical carcinomas, development of proctosigmoid injuries following therapeutic, 22:4561
effects on cervical neoplasms, therapeutic, 22:49434
effects on cervical neoplasms, therapeutic, 22:49441
effects on cestodes, effects of, on immunity of hosts, 22:14971
effects on chemical and microbiological properties of sugars used in canning of foods, ionizing, 22:40991
effects on chemical and physical properties of DNA, 22:25713 (COO-78-163, pp 64-125)
effects on chemical carcinogenesis in mice, effects of removal of thymus on, 22:19439
effects on chemiluminescence of oleic acid, effects of nitrogen and temperature on, 22:28343
effects on chemistry and histology of rat liver, effects of dose, 22:442
effects on chemocytology of amoebae, effects of dose on, 22:49189
effects on chicken fibroblast cells, effects of, on interferon activity, 22:47642
effects on chickens, 22:51445
effects on chickens and rabbits, effects of dose on nature of lethal, 22:8594 (CONF-670305-, pp 76-80)

effects on Chinese cabbage and radish plants, mutagenic, 22:36241
effects on Chinese hamster cells, 22:12837
effects on Chinese hamster cells, effects of age on, 22:25786
effects on Chlamydomonas reinhardi, photoreactivation of, 22:31286
effects on Chlorella, combined effects of streptomycin on mutagenic, 22:51511
effects on Chlorella, comparison of mutagenic uv and, 22:51496
effects on Chlorella, effects of continuous exposure during cell cycle on, 22:12945 (NP-17125)
effects on chloroform, 22:33376 (DP-MS-66-85)
effects on chlorophyl breakdown and protein content of barley leaves, effects of kinetin on, 22:28342
effects on chlorophyll of barley plants following seed exposure, mutagenic, 22:15119
effects on chloroplast pigments in barley, mutagenic, 22:25801(R) (COO-332-2)
effects on chloroplasts of barley, mutagenic, 22:36234
effects on cholinesterase activity and content of acetylcholine in brain of rabbits, 22:45437
effects on cholinesterase activity in brain of rats, 22:19241
effects on cholinesterase activity in liver and muscles of rats, 22:23446
effects on cholinesterase activity in liver and skeletal muscles of rats, 22:19296
effects on chordomas, in man, therapeutic, 22:21564
effects on chromatids of pollen in Tradescantia, aberrant, 22:28421
effects on chromatographic media, thermoluminescence from, (E), 22:34778
effects on chromosome number and growth of Streptocarpus wendlandii, effects of pollen exposure on, 22:40647
effects on chromosome number and survival of Ehrlich ascites tumor cells in vitro, 22:49294
effects on chromosome replication in Escherichia coli, effects of oxygen on, 22:31294
effects on chromosome replication in Escherichia coli, effects of 5-bromouracil on, 22:6786
effects on chromosomes and cytoplasm of Chlorella, mutagenic, 22:21474
effects on chromosomes and mitosis in root cells of Vicia faba, effects of heterologous and isologous DNA on recovery from, 22:47524
effects on chromosomes in blood and skin of man, aberrant, 22:10751
effects on chromosomes in bone marrow and spermatogonia of mice, RBE for aberrant, 22:21478
effects on chromosomes in bone marrow cells of mice, effects of dose and dose fractionation on aberrant, 22:51871(T) (JPRS-45744)
effects on chromosomes in bone marrow of mice, aberrant, 22:21479
effects on chromosomes in bone marrow of monkeys, protective effects of MEA against, 22:21554
effects on chromosomes in bone marrow of monkeys, effects of age on, 22:21554
effects on chromosomes in bone marrow of monkeys, latent aberrant, 22:21482
effects on chromosomes in calf liver cells, protective effects of DNA and deoxyribonucleotides against aberrant, 22:36327
effects on chromosomes in cells of hamster cheek pouch epithelium, aberrant, 22:40651
effects on chromosomes in chickens, aberrant, 22:33785
effects on chromosomes in cultured human leukocytes, effects of dose rate on aberrant, 22:51871(T) (JPRS-45744)
effects on chromosomes in cultured human leukocytes, effects of antigen-stimulation on frequency of aberrant, 22:28433
effects on chromosomes in cultured human leukocytes, aberrant, 22:28429
effects on chromosomes in cultured human leukocytes, effects of dose on aberrant, 22:28430
effects on chromosomes in cultured leukocytes from man, relation of dose to in vivo dose for aberrant, 22:28435
effects on chromosomes in cultured mammalian cells, aberrant, 22:33899(R) (EUR-3906)
effects on chromosomes in dormant seeds of Crepis capillaris, effects of water content on aberrant, 22:8508
effects on chromosomes in Drosophila, aberrant, 22:21484
effects on chromosomes in germ cells of Schistocerca, aberrant, 22:31026
effects on chromosomes in HeLa cells, effects of dose on rate of aberrant, 22:33796
effects on chromosomes in HeLa cells, oxygen-enhancement ratios for, 22:36245
effects on chromosomes in human cells, combined effects of γ rays on aberrant, 22:45500
effects on chromosomes in human leukocytes, aberrant, 22:28403 (ORNL-4100, pp 70-4)
effects on chromosomes in human leukocytes, aberrant, 22:8506
effects on chromosomes in human lymphocytes of peripheral blood of man, aberrant x, 22:43278
effects on chromosomes in human medulla cells in culture, protective effects of cysteine and thioctic acid against aberrant, 22:33881
effects on chromosomes in invertebrates and vertebrates, effects of high natural background radioactivity on aberrant, 22:21464
effects on chromosomes in leukocytes in peripheral blood of man, effects of dose on aberrant, 22:40855
effects on chromosomes in leukocytes of man, effects of dose on aberrant, 22:4595
effects on chromosomes in leukocytes of man, effects of low-dose on latent aberrant, 22:51910
effects on chromosomes in leukocytes of medical radiology personnel, aberrant, 22:28439
effects on chromosomes in leukocytes of personnel, 22:471
effects on chromosomes in liver cells of mice, aberrant, 22:33782
effects on chromosomes in liver cells of mice, recovery from aberrant, 22:43286
effects on chromosomes in liver of mice, effects of cell cycle on recovery from aberrant, 22:17006
effects on chromosomes in liver of mice, protective effects of carbon monoxide against aberrant, 22:17043
effects on chromosomes in man, aberrant, 22:21577
effects on chromosomes in offspring of newts following exposure of male parent, aberrant, 22:23645
effects on chromosomes in pollen of Tradescantia bracteata, effects of LET and oxygen on aberrant hard and soft, 22:12832
effects on chromosomes in primary spermatocytes of Drosophila melanogaster, abberant, 22:8512
effects on chromosomes in rat cornea, combined effect of adrenalectomy on aberrant, 22:4596
effects on chromosomes in root tip cells of jute, aberrant, 22:43279
effects on chromosomes in roots of Crepis capillaris, effects of cell phase on aberrant, 22:21487
effects on chromosomes in sperm of mice, persistence of, in embryo fibroblast cultures, 22:17038
effects on chromosomes in testes of mice, effects of pronuclear-embryonic exposure on aberrant, 22:14982
effects on chromosomes in testes of mice, effects of dose fractionation on aberrant, 22:21480
effects on chromosomes in wheat seed, aberrant, 22:482
effects on chromosomes of Aedes aegypti, review of aberrant, 22:49319
effects on chromosomes of barley plants, effects of seed exposure on, 22:10886
effects on chromosomes of barley, aberrant, 22:36231
effects on chromosomes of barley, effects of oxygen abundance and temperature on repair of, 22:14984
effects on chromosomes of cereal root-tip cells and human leukocytes, theory on aberrant, 22:25820
effects on chromosomes of Crepis capillaris, effects of dose fractionation on aberrant, 22:43281
effects on chromosomes of Crepis capillaris, mechanism of aberrant, 22:43280
effects on chromosomes of Crepis capillaris, RBE for aberrant, 22:21488
effects on chromosomes of cultured human leukocytes, effects of time of fixation on aberrant, 22:45494
effects on chromosomes of cultured leukocytes of man, review of aberrant, 22:40631
effects on chromosomes of cultured neoplastic and normal cells from humans, aberrant, 22:36247
effects on chromosomes of cultured root tip cells from Vicia faba, effects of cell phase and prior irradiation on aberrant, 22:43276 (UCSF-10-P-2-39, pp 52-124)
effects on chromosomes of Drosophila ananassae, aberrant, 22:17011
effects on chromosomes of Drosophila melanogaster, effects of, on recombination, aberrant, 22:31038
effects on chromosomes of Drosophila spermatogonia and spermatozoa, comparison of mutagenic, 22:17017
effects on chromosomes of Drosophila virilis, aberrant, 22:47526
effects on chromosomes of Drosophila, effects of actinomycin on aberrant, 22:31018 (NP-17337)
effects on chromosomes of Drosophila, effects of intensity and wavelength on aberrant, 22:31021
effects on chromosomes of Drosophila, effects of temperature on aberrant, 22:31029
effects on chromosomes of Ehrlich ascites cells of mice, aberrant, 22:49315
effects on chromosomes of fruit flies, effects of dose fractionation on aberrant, 22:28411
effects on chromosomes of grasshopper spermatocytes, protective effects of anoxia and drugs against, aberrant, 22:36318
effects on chromosomes of hamster cells, effects of hydroxyurea on aberrant, 22:28274 (ANL-7278, pp 250-82)
effects on chromosomes of house flies, aberrant, 22:6791
effects on chromosomes of human leukocytes, frequency of post-operative, 22:21472
effects on chromosomes of intestinal epithelial cells of mice during mitosis, effects of dose on aberrant, 22:25817
effects on chromosomes of leukocytes in man, aberrant, 22:28425
effects on chromosomes of leukocytes of man, aberrant,

22:36248
effects on chromosomes of liver cells of rats, effects of dose fractionation on aberrant, 22:31054
effects on chromosomes of man following therapy, aberrant, 22:49290
effects on chromosomes of man, aberrant, 22:51549
effects on chromosomes of man, Tradescantia, and Vicia, comparisons of aberrant, 22:40649
effects on chromosomes of mice and rats, protective effects of chemical agents against aberrant, 22:47554
effects on chromosomes of Nitella flagelliformis, aberrant, 22:14990
effects on chromosomes of rats, aberrant, 22:8577
effects on chromosomes of root tip cells of onions, protective effects of food additives and natural food substances against, 22:49320
effects on chromosomes of seeds of Allium, protective effects of soaking in heteroauxin against, 22:33864
effects on chromosomes of seeds, duration of aberrant, 22:19316
effects on chromosomes of Tradescantia microspores, effects of dose on aberrant, 22:12830
effects on chromosomes of Vica faba, combined effects of inhibitors of DNA synthesis on aberrant, 22:47505
effects on chromosomes of Vicia faba, combined effects of maleic hydrazide on aberrant, 22:28414
effects on chromosomes of Vicia faba, effects of gravitational force on, 22:28701 (ANL-7278, pp 297-303)
effects on chromosomes of Vicia faba, effects of hydroxyurea on aberrant, 22:31022
effects on chromosomes of Vicia faba, effects of mitotic cycle on aberrant, 22:14988
effects on chromosomes, DNA synthesis, and mitosis in hamster cells, 22:33781
effects on chromosomes, mechanism, of effects of LET and OER on aberrant soft, 22:25818
effects on chromosomes, mitosis, and survival of cultured cells of Haplopappus gracilis, 22:19457
effects on circuit resistors, technique of analyzing, 22:13043
effects on circulating blood cells and rate of fibrinogenesis in mice, protective effects of imidazole against, 22:21570
effects on circulating eosinophil count in rats, effects of ACTH and corticoid content on local and whole-body, 22:23631
effects on circulatory system of man, chronic, 22:40885
effects on cis-trans conversion in various compounds, 22:16571
effects on citrus plants, effects of bud and seed exposure on mutagenic, 22:43292
effects on clone formation in postirradiation subcultures of Amoeba proteus, effects of dose on, 22:8628
effects on clover, effects of seed exposure on mutagenic, 22:6784
effects on coagulation of blood in dogs, effects of dose on, 22:45662
effects on cold resistance of Citrus sp., horticultural study of mutagenic x, 22:45473(R) (ORO-2909-7)
effects on colony formation in spleen of mice, effects of circadian clock on, 22:49220
effects on colony forming cells in spleen of mice, effects of hypoxia on repair of whole-body, 22:38454
effects on colony-forming ability of Escherichia coli mutants, 22:52055
effects on colony-forming ability of spleen cells of mice, in vitro and in vivo, 22:38226
effects on colony-forming capability of spleen cells from mice, effects of dose on in vitro and in vivo, 22:28392
effects on colony-forming units in bone marrow of mice, effects of hypoxia on, 22:19265
effects on color center induction in alkali silicate glass, spectral studies on, 22:50995
effects on color center induction in sodium chloride after quenching, influence of cadmium doping on, (E), 22:24464
effects on color centers of iodine and iodine--lead activated potassium chloride, 22:36964 (AD-665980)
effects on color centers of sodium chlorate, ESR studies of, 22:1340
effects on coloration in potassium chloride crystals, (E/T), 22:48192
effects on coloration of potassium chloride crystals containing calcium ions, 22:41659
effects on composition of fatty acids in cancer-bearing mice, acute, 22:47483
effects on conditioned learning behavior of rats, 22:28686
effects on conditioned reflexes of rats, combined effects of vibrations on, 22:12759(T) (NASA-TT-F-413, pp 229-43)
effects on constituents in blood in vitro, 22:51477
effects on consumption by rats of water flavored with hydrochloric acid and quinine, 22:38426(R) (NYO-3698-1)
effects on content of acetate, potassium ions, and sodium ions in yeasts, 22:43219
effects on content of acid mucopolysaccharide in rabbit ears, 22:51335
effects on content of adrenal hormones and pyrocatecho
in brain and muscles of adrenalectomized mice, 22:51944
effects on content of anthocyanin in leaves of Rumex a
higher plants, 22:31285
effects on content of β-lipoproteins in organs and tissues of rats, 22:8488
effects on content of catecholamines in adrenal glands
mice, effects of diethylstilbestrol on, 22:19377
effects on content of cerebrosides in brain of rats, effects of prenatal exposure on, 22:33924
effects on content of cholesterol and neutral fats in liver of rats, lethal whole-body, 22:36198
effects on content of cholesterol, nitrogen, phospholipids, and total protein in stroma of erythrocytes in rabbits, whole-body, 22:40824(T) (JPRS-44070, pp 19-23)
effects on content of corticosteroids in adrenal glands
and blood of rats, 22:23616
effects on content of cytochromes, enzymes, and nicotinamide nucleotides in adrenal glands of rats, combined effects of ACTH on whole-body, 22:14957
effects on content of deoxycytidine in blood plasma of rats, use of, for dcsimetry, 22:43201 (AD-664676)
effects on content of fatty acids and total lipids in heart muscle and kidneys of rats, whole-body, 22:339
effects on content of fatty acids in blood plasma of fetal and maternal rats, whole-body, 22:49565
effects on content of glycerophosphate in liver of mice
whole-body, 22:21444
effects on content of glycogen and nitrogen in liver of
rats, effects of fasting on, 22:12917
effects on content of glycogen in thymus of mice, effec
of age on whole-body, 22:8464
effects on content of γ-globulin on surface of transplanted Ehrlich ascites carcinoma cells in mice, 22:51454
effects on content of Heinz bodies in human erythrocyte
22:19425
effects on content of hexosamines, hexoses, and protein
in serum of rats, whole-body, 22:40909
effects on content of histamine in aqueous solution, effects of dose on, 22:12795
effects on content of hydroxyproline and lipids in lung
of rats, 22:10825 (BNWL-480, pp 55-83)
effects on content of isoagglutinins in man, 22:43474
effects on content of melanin in cells of skin of mice, effects of dose fractionation on, 22:33937
effects on content of melanin in melanomas of mice, 22:49196
effects on content of melanocytes in muscles of mice, 22:49510
effects on content of mercapto groups in heart of rats, 22:12808
effects on content of non-esterified fatty acids in ser
of mice, 22:28381
effects on content of nucleotides in cells and nuclei o
thymus in rats, whole-body, 22:30951
effects on content of nucleotides in liver of rats, effects of dose on, 22:51914
effects on content of phosphatides in liver of newborn rats, 22:10699
effects on content of pigments in hair of mice, 22:495
effects on content of polydeoxyribonucleotides in lymph tissues in mice, 22:23445
effects on content of RNAase in blood plasma and tissues of guinea pigs and rats, whole-body, 22:40538
effects on content of soluble fats and proteins in myocardium of rats, whole-body, 22:40579
effects on content of transplantable spleen colony-forming units in bone marrow of mice, protective effects of phytohemagglutinin against, 22:10796
effects on conventional and germfree mice, whole-body, 22:49541
effects on copper atoms in alkali metal halide crystals, EPR study of stabilization by, (E), 22:22219
effects on Corchorus capsularis, mutagenic, 22:14997
effects on corn, mutagenic, 22:23485(R) (COO-1512-6)
effects on corneas from rabbits, cytology and immunology of grafts following, 22:47485
effects on cortisol-induced glycogen synthesis in liver of adrenalectomized rats, 22:40834
effects on cotton plants, horticultural evaluation of mutagenic, 22:51503
effects on count of erythrocytes and nucleated cells in bone marrow of mice, effects of dose on, 22:51915
effects on Crepis capillaris, combined effects of colchicine on mutagenic, 22:21486
effects on Crocker sarcoma in mice, protective effects o
sodium cysteinesulfonate against, 22:21545
effects on crossing-over in Megaselia scalaris, combined effects of temperature on, 22:2495
effects on crystals of potassium bromide, monochromatic, 22:47448(R) (PRNC-69)
effects on crystals, formation mechanism of F centers produced in, 22:46247
effects on cultured cells, comparison of, with laser, 22:6736
effects on cultured cells, mutagenic, 22:38239
effects on cultured cells, normal tissues, and tumors of mammals, 22:40869
effects on cultured Chinese hamster cells in plateau

phase of growth, effects of crowding on ability to repair damage from, 22:31229
effects on cultured Chinese hamster cells, mutagenic, 22:28419
effects on cultured Chinese hamster ovary cells, effects of Crabtree effect on, 22:25714 (COO-78-163, pp 126-36)
effects on cultured human cells in comparison to γ, pulsed high intensity,, 22:23417 (UCRL-17481, pp 133-7)
effects on cultured human kidney cells, mechanisms of survival following fractionated acute, 22:49619
effects on cultured human lymphocytes, use of, to determine lifespan of circulating lymphocytes, 22:28434
effects on cultured leukocytes, effects of dose and interphase stage on, 22:45460
effects on cultured mammalian cells in comparison to nitrosoguanidine, triethylene melamine, and uv irradiation, mutagenic, 22:28289 (ORNL-4100, pp 178-201)
effects on cultured mammalian cells, combined effects of ultrasonic waves on, 22:30938 (UCRL-17751, pp 27-40)
effects on cultured mammalian cells, dark repair of, 22:31217
effects on cultured mammalian cells, effects of hydroxyurea, leurocristine sulfate, and statolon on, 22:28621 (ANL-7278, pp 1-94)
effects on cultures of murine leukemic lymphoblasts, combined effects of IUDR, 22:25912
effects on cystamine sulfate, 22:2142
effects on cysteine mixtures with ribonucleic acid and trypsin, EPR studies on protective effect of polyanions against, 22:2143
effects on cystine, production of cysteic acid by, 22:10271
effects on cytaster formation in amphibian eggs, 22:43448
effects on cytotoxicity of lymphoid cells of mice, effects of antibody treatment on, 22:19275
effects on deep tissue neoplasms, comparison of therapeutic, with γ rays, negative pion, and positive ion, 22:33838 (LA-DC-9402)
effects on deformed and undeformed calcium and strontium oxide single crystals, F centers from, (E), 22:17770
effects on delay of division in hamster cells, 22:28274 (ANL-7278, pp 250-82)
effects on demographic characteristics of snails, effects of dose on, 22:6885
effects on dendrites of brain cells of monkeys, 22:36371
effects on deoxyribonucleoprotein, protective effects of AET and mercaptopropylamine against, 22:47566
effects on deposition of fibrinogen in tumor-bearing rats, effects of epsilonaminocaproic acid on, 22:49486(R) (NYO-3359-4)
effects on detoxication of benzoate and resorcinol in rats, role of coenzyme A in, 22:23474
effects on deuterated and normal ethyl iodides and tetramethyllead, recoil energy spectra and relative abundance of fragment ions produced in, 22:37798
effects on developing dental tissues of rats, effects of age on, 22:4696
effects on developing teeth in human children, 22:28674
effects on development and estrogenic activity of ovaries in rats, 22:33959
effects on development and survival of fetuses of man and mice, 22:6879
effects on development of allergic encephalomyelitis in agammaglobulinemic chickens, 22:8626
effects on development of amyloidosis in mice following injection with serum or spleen from sensitized donors, 22:16985
effects on development of amyloidosis in mice injected with azocasein-sensitized spleen cells, 22:8439
effects on development of aplastic anemia in mice, protective effects of lymph node cell transplants against, 22:10882
effects on development of bones and teeth in mice, 22:10845
effects on development of brain of young cats, effects of dose fractionation on, 22:4674
effects on development of candidiosis in mice, whole-body, 22:8605
effects on development of cell colonies in spleen of mice following transplantation of bone marrow, 22:23632
effects on development of chicken embryos, effects of exposure prior to incubation on, 22:8636
effects on development of ciliated epithelium and rudimentary cilia in lungs of rats, 22:579
effects on development of collateral lymph circulation in rabbits, effects of dose on, 22:28657
effects on development of embryonic organs of mice, 22:38425 (NYO-3355-31)
effects on development of embryos of chickens, protective effects of hypothermia against, 22:10789
effects on development of feathers in chick embryos, 22:28652
effects on development of fish and fish embryos, effects of temperature on, 22:40832(R) (RLO-2049-1)
effects on development of flowering plants and seeds of tomatoes, effects of species on, 22:17050(R) (EUR-3606)
effects on development of glomerulosclerosis in rats, effects of age and dose fractionation on, 22:43422
effects on development of human embryos and fetuses, radiographic, 22:49603
effects on development of intestinal mucosa in chick embryos and chicks, 22:51986
effects on development of lungs and salivary glands in embryos of mice, 22:19401(R) (EUR-3885)
effects on development of mitochondria in heart myoblasts from chickens, electron and phase microscopy of, 22:10678 (JUL-492-ZO)
effects on development of mosaic eggs of Tubifex, 22:8610
effects on development of neurons in brain of rats, effects of dose on, 22:23597(R) (MIT-3045-34)
effects on development of nymphs of red cotton bugs, effects of dose on, 22:51971
effects on development of rat teeth, histological study of, 22:45697
effects on development of renal neoplasms in mice, effects of age on, 22:43422
effects on development of spermatogonia in testes of monkeys, local, 22:21610
effects on development of spleen colonies in mice following injection of human bone marrow cells and lymphocytes, 22:43257
effects on development of Tribolium, effects of centrifugation and dose on, 22:31208 (UCRL-17751, pp 41-51)
effects on development of vibrissae in embryos of mice, ultrastructural study of, 22:36219
effects on diabetes retinitis, comparison of therapeutic, to effects of hypophysectomy, 22:31150
effects on differentiation of stem cells in bone marrow of mice, 22:28654
effects on digestion in intestine of rats, effects of dose on, 22:49509
effects on digestion in rats, 22:47624
effects on dimethyl (9-fluorenyl) sulfonium bromide, ESR spectra of free radicals from, 22:23053
effects on disease incidence and life span in germfree mice, 22:43410
effects on distribution of exogenous peroxidase in intestines of mice, 22:31219
effects on distribution of substance P in central nervous system and small intestines of rats, effects of age on whole-body, 22:36201
effects on disulfidic groups of insulin in aqueous solutions, 22:21112
effects on DNA and protein synthesis of Saccharomyces, 22:38240
effects on DNA and RNA synthesis in nerve cells of rabbits, whole-body, 22:36183
effects on DNA content in kidney of mice, effects of dose fractionation on, 22:43422
effects on DNA content of nuclei of lymphocytes in liver and spleen of rats, whole-body, 22:21433
effects on DNA from reconstituted nucleohistones, 22:16974(R) (ORO-2832-56)
effects on DNA in brain of rats, effects of enzymes on, 22:25723 (UCLA-12-668, pp 71-84)
effects on DNA in Escherichia coli, protective effects of cysteamine against, 22:25780
effects on DNA metabolism in isolated perfused rat intestine, 22:49227
effects on DNA of Bacillus subtilis, mutagenic, 22:45496
effects on DNA of bacteria repair of lytic, 22:28288 (ORNL-4100, pp 166-77)
effects on DNA of Escherichia coli, effects of purine or thymidine starvation on, 22:25780
effects on DNA of human amnion cells, lytic, 22:49212
effects on DNA of mammalian cells, mechanisms of repair of, 22:38200 (UCSF-10-P-2-41)
effects on DNA of Tetrahymena, effects of light on repair of, 22:21587
effects on DNA synthesis and levels of DNA polymerase in yeast cells, 22:40605
effects on DNA synthesis by cells of thymus gland of mice, whole-body, 22:4572
effects on DNA synthesis by tumors of rats, effects of dose fractionation on, 22:2481
effects on DNA synthesis in bacteria, 22:4712
effects on DNA synthesis in developing sea urchin eggs, 22:28337
effects on DNA synthesis in epithelial cells of intestine in silver salmon, effects of temperature on, 22:10740 (BNWL-480, pp 153-93)
effects on DNA synthesis in HeLa cells, carbon-14 and tritium tracer study of, 22:43209 (UCSF-10-P-2-39, pp 2-51)
effects on DNA synthesis in intestine and liver of rats, 22:12814
effects on DNA synthesis in nerve cells and regeneration of hypoglossal nerve in rabbits, 22:43455
effects on DNA synthesis in normal proliferating tissues, combined effects of endoxan on, 22:43436
effects on DNA synthesis in uv-irradiated HeLa cells, 22:43209 (UCSF-10-P-2-39, pp 2-51)
effects on DNA synthesis in yeast, 22:426
effects on DNA, ESR study of protective effects of cysteamine against acute, 22:49463

effects on DNA, mechanisms for, 22:12824
effects on DNA, protective effects of normal aliphatic amines, cystamine and β,β'-diaminodiethylsulfide against, 22:38379
effects on DNP, effects of dose and protein content on, 22:28389
effects on dogs and rats, effects of dose fractionation on RBE for, 22:23652
effects on dogs and rats, effects of radioprotective compounds on, 22:25896
effects on dogs, effects of dose and seasonal changes on, 22:8640
effects on dogs, effects of prophylactic measures on treatment of, 22:38408
effects on dogs, effects of, on influence of hypothalamus on motor activity of intestine, 22:45389
effects on dogs, mice, and rats, effects of epsilon--amino--caproic acid on, 22:43350
effects on dogs, physiology of injury and recovery from, 22:43412
effects on dogs, use of bone marrow transplants and blood substitutes for treatment of, 22:19388
effects on dried fruit moth, mutagenic, 22:51505
effects on Drosophila melanogaster, effects of dose on sterilizing, 22:23618
effects on Drosophila melanogaster, effects of sigma virus on expression of mutagenic, 22:10749
effects on Drosophila melanogaster, genetic, 22:49291
effects on Drosophila melanogaster, lethal mutagenic, 22:31032
effects on Drosophila melanogaster, localization of mutagenic, 22:40911
effects on Drosophila melanogaster, mutagenic, 22:6790
effects on Drosophila melanogaster, mutagenic, 22:49298
effects on Drosophila melanogaster, non-random localization of mutagenic, 22:40911
effects on Drosophila serrata, mutagenic, 22:31034
effects on Drosophila sperm, effects of nitrogen and oxygen posttreatment on, 22:40615(R) (EUR-3889)
effects on Drosophila, effects of dose fractionation or ethylenimine on mutagenic, 22:51490(R) (ORO-3014-3)
effects on Drosophila, effects of female germ cell exposure on mutagenic, 22:28397 (ANL-7278, pp 144-69)
effects on dry and wet weight of organs of mice, effects of dose on, 22:40947
effects on durum wheat, mutagenic, 22:40619 (RT/BIO-(68)20)
effects on ectopic kidneys in man following therapy of carcinomas in ovaries, 22:19405
effects on EEG of rats, protective effects of AET against, 22:15103
effects on egg and sperm of Oenothera berteriana, mutagenic, 22:10746
effects on eggs of male Ascardidia galli, lethal, 22:40898
effects on Ehrlich ascites tumor cells of mice, effects of oxygen on protective effects of cysteamine against, 22:25888
effects on Ehrlich's ascites tumor cells in relation to development of anemia in host mice, 22:51363
effects on electric and optical properties of thin films of rare earths, 22:14550
effects on electric conductivity and carrier activation energy of lithium fluoride single crystals, (E/T), 22:50255
effects on electric conductivity of insulators, 22:12721
effects on electric conductivity of ionic crystals, (E), 22:34748
effects on electric conductivity of p-type single crystals of antimony--indium alloys, (E), 22:34789
effects on electric conductivity of phospholipid membranes, effects of dose on, 22:45413
effects on electric potential, resistance, and threshold of stimulation of cell membranes of Nitella, 22:16983
effects on electric properties of polymer dielectrics, transient, (E), 22:39200
effects on electrical activity of cerebral cortex of dogs, combined effects of traumatic shock on whole-body, 22:43449
effects on electrolyte transport and voltage measurements in rat ileum, combined effects of bile salts on, 22:49543
effects on electrolyte transport in intestines of rats, 22:10824 (BNWL-480, pp 1-19)
effects on electrophoretic behavior of proteins from lungs of rats, 22:51423
effects on electrophoretic mobility of negative silver iodide sols, 22:27837
effects on embryogenesis of planaria, electron microscopy of, 22:40928
effects on embryogenesis of spiders, morphogenetic analysis of, 22:28637
effects on embryogenesis of tomatoes, effects of dose and pollen exposure on, 22:21636
effects on embryos of fruit flies, effects of age on mutagenic, 22:31035
effects on embryos of mice in relation to developmental anomalies, whole-body, 22:40934
effects on embryos of mice, histologic study of, 22:36366
effects on embryos of rats, protective effects of diapause and progesterone against preconception, 22:45642
effects on emission spectra of cadmium sulfide crystals, influence of dislocations on, (E), 22:26527
effects on endocrine system of rats, pathogenesis of tumorigenic, 22:28647
effects on endosperm of wheat, mutagenic, 22:51540
effects on endurance of mice, 22:15080
effects on energy mechanisms in liver mitochondria of rats, protective effect of mustard gas solutions against, 22:19378
effects on enyzme activity in mitochondria of mice, effects of fasting on, 22:31009
effects on enzyme activity and content of proteins in bone marrow of rats, whole-body, 22:45414
effects on enzyme activity and phagocytosis in guinea pigs, acute, 22:49281
effects on enzyme activity and respiration in erythrocytes of rabbits, effects of chemical compounds on whole-body, 22:45428
effects on enzyme activity and ultrastructure of dog pancreas, 22:49563
effects on enzyme activity in intestines of rats, whole-body, 22:40595
effects on enzyme activity in liver of mice, effects of starvation on whole-body, 22:31010
effects on enzyme activity in liver of mice, effects of time of administration on protective effects of wistarin against, 22:33851
effects on enzyme activity in liver of mice, protective effects of glycine against, 22:45601
effects on enzyme activity in plasma of rats, protective effects of dimethyl sulfoxide against, 22:38358
effects on enzyme content of epithelium in intestine of mice, 22:14910(R) (COO-1244-12)
effects on enzyme pathways of glycogen synthesis in bone marrow cells of rabbits, 22:33728
effects on enzymes in rat liver microsomes, localized and whole-body, 22:33759
effects on epidermis of onions, cytochemical study of, 22:25725
effects on epithelial lining of intestines of man, 22:566
effects on epithelium of trachea in rabbits, effects of dose fractionation on, 22:31257
effects on eruption of teeth of rats, 22:52012
effects on erythroblast cleavage in Triton, dynamics of, 22:33954
effects on erythrocyte count, hemoglobin level, and leukocyte count in blood of man for extended periods of time following radiotherapy of cervical neoplasms, 22:19447
effects on erythrocyte stem cells differentiation in mice, effects of erythropoietin on, 22:38459
effects on erythropoiesis and ferroerythrokinetics in dogs, 22:47634
effects on erythropoiesis and leukopoiesis in bone-marrow following transplantation in mice, effects of previous exposure of host on, 22:23419
effects on erythropoiesis in dogs, partial-body, 22:21624
effects on erythropoiesis in mice following injection of spleen cells, 22:28630 (ORNL-4100, pp 118-26)
effects on erythropoiesis in mice, effects of dose and dose fractionation on, 22:40908
effects on erythropoiesis in rats, effects of 19-nortestosterone phenylpropionate on, 22:36368
effects on erythropoiesis in rats, effects of repeated exposure on, 22:2532 (AD-647907)
effects on erythropoiesis in rats, effects of stem cell activity on, 22:560
effects on erythropoietin levels in mice, combined effects of hypoxia on, 22:23413(R) (ORO-3547-6)
effects on erythropoietin response of erythroid cells, effects of, in rats, 22:28653
effects on Escherichia coli and mice, protective effects of derivatives of cysteamine and cysteine against, 22:28598
effects on Escherichia coli mutants, effects of cell size on, 22:28404 (ORNL-4100, pp 97-103)
effects on Escherichia coli, analysis of mutagenic and sublethal, 22:31040
effects on Escherichia coli, comparison of, to effects of α radiation effects in nitrogen, 22:25873
effects on Escherichia coli, effects of growth medium and temperature on lethal, 22:25874
effects on Escherichia coli, effects of strain difference on recovery from, 22:36412
effects on Escherichia coli, mutagenic, 22:25822
effects on Escherichia coli, protective effects of cysteine against, 22:43361
effects on Escherichia coli, protective effects of extracts from Micrococcus radiodurans against, 22:31172
effects on Escherichia coli, protective effects of AET, cysteamine, and cysteine against, 22:40793
effects on Escherichia coli, review of lethal and mutagenic, 22:40622
effects on Escherichia coli, role of protein synthesis in repair of, 22:33752
effects on Escherichia coli, time of development and repair of pathological, 22:26009

effects on ESR spectra of vanadium ions in calcium tungstate crystals, 22:20052
effects on estrogen secretion by human females, chronic, low-dose, 22:49600
effects on ether-induced narcosis in cats and mice, protective effects of s-methoxytryptoamine and AET against, 22:31173
effects on Euglena gracilis, effects of dyes and light on mutagenic, 22:25823
effects on europium-activated alkali metal halide crystals, luminescence and photoluminescence from, 22:9441
effects on europium-activated alkali metal halide crystals, structure of activator centers from, 22:9442
effects on excretion of 17-hydroxycorticosteroids and 17-ketosteroids by man, 22:31273
effects on excretion of 2'-deoxycytidine by rats, effects of age, dose, and splenectomy on whole-body, 22:12916
effects on excretion of 5-hydroxyindoleacetic acid in rats in relation to radiosensitivity, 22:28658
effects on excretion of deoxycytidine in urine of rats, 22:43461
effects on excretion of taurine by mice, measurement of acute, 22:45689
effects on excretion of taurine in urine of mice, 22:36314
effects on excretion of uropepsin in human children, effects of region of body irradiated on, 22:51770
effects on exoelectron emission from solids, (T), 22:26454(T) (UCRL-Trans-10225)
effects on explants of gastric mucosa, protective effects of skin covering against, 22:528
effects on expression of sex and spikelet morphology in rice, 22:17005
effects on eyes of man following in utero exposure, 22:38482
effects on eyes of man, pathological, 22:49622
effects on eyes of mice, effects of dose on cataractogenic, 22:12924
effects on eyes of rats, RBE of, for cataract induction, 22:40854
effects on F-center formation in alkali metal halides at 78 and 300°K and 13.4 or 14.1 keV, (E), 22:31945 (TID-24503)
effects on facial skin of man following therapy for acne vulgaris, carcinogenic, 22:10863
effects on fat absorption in small intestine of mice, protective effects of AET against, 22:49546
effects on fatty acids in epididymus of rats, effects of adrenalectomy on, 22:12789
effects on fatty acids of rat liver mitochondria, whole-body lethal and sublethal, 22:33733
effects on fecundity of Drosophila melanogaster, 22:23618
effects on feet of mice, effects of occlusion of legs on pathological, 22:21620
effects on feldspars, EPR and thermoluminescence studies of defects from, 22:9463
effects on female beagle dogs, effects of dose fractionation on incidence of neoplastic, 22:10827(R) (UCD-472-114)
effects on female rats, cumulative genetic, 22:40652
effects on fertility and growth of durum wheat, effects of seed exposure on mutagenic, 22:8654
effects on fertility and life span of female beagle dogs, effects of dose fractionation on whole-body, 22:10827(R) (UCD-472-114)
effects on fertility and oocyte numbers in mice, 22:43417
effects on fertility of Datura, mutagenic, 22:14991
effects on fertility of fruit flies, 22:33967
effects on fertility of human females exposed to abdominal fluoroscopy during childhood, 22:40870
effects on fertility of mice, effects of fetal exposure on, 22:6884
effects on fertility of mice, effects of gestation and in utero exposure on, 22:47589
effects on fertility of sunflower seeds, 22:21495
effects on fetus and germ cells of man, legal aspects of, 22:15010
effects on fetuses of man, standards for protection against diagnostic, 22:40903
effects on fetuses of mice, effects of dose and stage of gestation at exposure on, 22:6882
effects on fetuses of mice, incidence of malformations following, 22:38478
effects on fibrinolytic activity of streptodornase-streptokinase, 22:4576
effects on filtering capacity of lymph nodes of rabbits for erythrocytes and tumor cells, 22:21617
effects on fish, effects of dose fractionation, dose rate, and temperature on lethal, 22:15070
effects on fitness of mice, combined effects of genetic stress on background, 22:28397 (ANL-7278, pp 144-69)
effects on flower color and shape in Dahlia, mutagenic, 22:45477
effects on flowering of Xanthium, effects of gibberellic acid on, 22:28700 (ANL-7278, pp 283-96)
effects on fluorescence of melanocytes in human skin, 22:45458
effects on fluorides of barium and strontium, photo- and thermostimulation of exoelectron emission from, (E), 22:31969
effects on food, effects of, on incidence of mutations in Drosophila following ingestion, 22:12831
effects on formation of cornea in skin grafts of tadpoles, effects of dose on, 22:33926
effects on formation of free radicals in trypsin, 22:10703
effects on formation of puparium by insects, effects of ecdysone on, 22:31147
effects on formation of thiocyanic acid esters, 22:37804
effects on fracture surface energy of potassium chloride, 22:33431
effects on fragility and permeability of capillaries of rabbits, effects of drugs on, 22:28559
effects on free ion lifetime in cyclohexane, electric conductivity measurements on, 22:8127
effects on free ion lifetimes in cyclohexane, electric conductivity measurements on, 22:42712(T) (AEC-tr-6937, pp 96-103)
effects on free radical formation in tadpole tissues, kinetic studies of, 22:28296
effects on free radical formation in wheat seed, effects of anoxia on, 22:8440
effects on frequency of chromosome recombinations in mutant algae, 22:47517
effects on frequency of congenital malformations in embryos of trout, effects of egg and sperm exposure on, 22:15072
effects on frequency of crossing over in chromosomes of spermatocytes of fruit flies, 22:14986
effects on frequency of mutations in mice, effects of interval between exposure and conception on, 22:28405 (ORNL-4100, pp 110-16)
effects on Friend virus, effects of syngeneic spleen cells on inhibitory, 22:45732
effects on frogs, protective effects of cysteamine against effects of dose on, 22:10816
effects on frozen aqueous solutions of penicillamine and sephadex, ESR analysis of effects of pH on, 22:45439
effects on fruit flies, effects of nitrogen and oxygen on genetic, 22:14987
effects on fruit flies, protective effects of cysteamine and cysteine against mutagenic, 22:47518
effects on fruit fly populations, frequency of mutagenic, 22:47514
effects on function and morphology of cerebral cortex of monkeys, latent, 22:47603
effects on function and structure of heart in rabbits, 22:28682
effects on function of retina in tadpoles, effects of dose on, 22:33926
effects on function of thyroid gland of dogs, effects of surgery on, 22:28622 (ANL-7278, pp 95-131)
effects on functioning of kidneys in dogs, effects of unilateral nephrectomy on, 22:21435
effects on fungus diseases of head of man, incidence of recurrence following therapeutic, 22:23562
effects on gametes of Drosophila, effects of sigma virus on mutagenic, 22:33780(R) (NYO-3905-2)
effects on gametes of gold fish, effects of sex on, 22:51871(T) (JPRS-45744)
effects on gaseous chloroform, 22:12337(R) (COO-1116-6)
effects on gaseous hydrochloric acid, effects of chlorine and sulfur hexafluoride on mechanisms of hydrogen formation in, 22:18823
effects on gaseous hydrogen bromide, 22:23050
effects on gastric mucosa of dogs, effects of stimulation on, 22:45440
effects on gastric mucosa of rabbits, combined effects of cortisone on, 22:36372
effects on gastrointestinal tract of man following therapy, 22:51906
effects on gastrointestinal tract of mice in comparison to fast neutrons, 22:40935
effects on gastrointestinal tract of mice, long-term, 22:49549
effects on gel formation in 3,3-bis(chloromethyl)oxetane polymer, 22:47156
effects on genes determining enzyme activity in Drosophila, 22:28401 (ORNL-4100, pp 54-61)
effects on genetic fitness of mice, quantitative, 22:45472(R) (NYO-1979-27)
effects on genetic stability of Amoeba proteus in ethanol and methionine, 22:36236
effects on genetic variability in inbred populations of Drosophila, effects of, on fitness, 22:51537
effects on genetics of alfalfa, effects of seed exposure on, 22:6785
effects on germinal cells of mice and monkeys, 22:51871(T) (JPRS-45744)
effects on germination and metabolism of potato tubers, effects of dose and temperature on, 22:49188
effects on germination and survival of seeds of box-elder, effects of dose on, 22:40624
effects on germination of grass seeds, effects of dose, storage, and variety on, 22:33975
effects on germination of onion seeds, effects of variety on, 22:33974
effects on germination of seed and length of first coleoptile leaf in durum wheat, effects of proembryo exposure on, 22:8652

effects on germination of spores of parasitic fungi, effects of dose on, 22:33992
effects on giant cell formation by Escherichia coli mutant, 22:23495
effects on globulin content in blood, effects of dose on, 22:465
effects on glucose metabolism in brain of rats, 22:448
effects on glucuronic acid synthesis in rats whole-body, 22:43253
effects on glycine peptides, yields of free radicals from, 22:18850
effects on glycine transport in Ehrlich ascites tumor cells, effects of oxygen and serum albumin on, 22:45640
effects on glycine, EPR spectrum of effects of temperature on, 22:30970
effects on glycogen content of megakaryocytes of rabbits, 22:47481
effects on glycolysis in thymocytes of rats, 22:45431
effects on glycolytic metabolism in rats, whole-body, 22:33764
effects on goats, pathological, 22:40593
effects on goldfish, effects of thyroid activity on, 22:6872
effects on grafts of apple, cherry, pear, and rose, genetic, 22:17050(R) (EUR-3606)
effects on grain yield of corn, 22:23484(R) (COO-1512-5)
effects on grass hybrids and parent varieties, analysis of, 22:36407
effects on grasses, in relation to ploidy, 22:45726
effects on growth and development of tobacco, effects of dose on, 22:28704
effects on growth and metabolism of human tumor cells in vitro, 22:43211
effects on growth and nodulation in alfalfa, effects of auxin on, 22:4704
effects on growth and reproduction of gypsy moths, 22:8642
effects on growth and survival of Pteris longifolia following spore exposure, effects of sowing time on, 22:47638
effects on growth cycle of Micrococcus radiodurans, 22:23410(R) (NYO-3319-17)
effects on growth of bones in rats, effects of age on, 22:8643
effects on growth of carcinoma cells following transplantation in mice, 22:23634
effects on growth of carcinomas following transplantation in mice, effects of triiodothyronine on, 22:36302
effects on growth of chicken embryo myoblasts in vitro, 22:573
effects on growth of chickens following exposure of embryos, 22:28621 (ANL-7278, pp 1-94)
effects on growth of chickens, effects of exposure of embryo on, 22:17046
effects on growth of copper sulfate crystals from aqueous solution, 22:31531
effects on growth of corn and radish shoots, effects of seed exposure on, 22:33977
effects on growth of corn and radishes, effects of seed exposure on, 22:38499(T) (JPRS-44845)
effects on growth of Escherichia coli, effects of incubation in thymine-deficient medium on, 22:49648
effects on growth of green algae, effects of dose fractionation on, 22:36404
effects on growth of hair of mice, effects of dose on, 22:19419
effects on growth of hepatomas following transplantation in mice, combined effects of partial hepatectomy on, 22:31263
effects on growth of homogeneous bone marrow transplants in mice, effects of pretreatment with homogeneous spleen grafts on, 22:33927
effects on growth of human leukemia cells following transplantation into newborn hamsters, 22:36167
effects on growth of KB cells, method for assaying effects of dose on, 22:2542
effects on growth of leukocytes in serum of leukemia patients following spleen exposure, 22:21440
effects on growth of mammary tumors following transplantation in mice, effects of triiodothyronine on, 22:36302
effects on growth of mungo beans and peas, protective effects of glutathione and thiol groups against, 22:21549
effects on growth of pea internodes, effects of indoleacetic acid on, 22:17050(R) (EUR-3606)
effects on growth of pea roots, combined effects of growth-inhibitor drugs and, 22:31284
effects on growth of poplar roots, combined effects of light on, 22:4700(R) (TID-24146)
effects on growth of rats following exposure of head, effects of dose on, 22:6910
effects on growth of sunflower seedlings, protective effects of withholding essential nutrients against, 22:43478
effects on growth of teeth of rats, effects of dose on, 22:15095
effects on growth of tibia of rats in comparison with effects of hard γ rays and high-energy electrons, effects of dose on, 22:38463
effects on growth of transplants of cells of sarcomas, i mice, additive and synergistic effects of immune macrophages and serum on x, 22:25749
effects on growth of tumor transplants in mice, 22:8647
effects on growth of vertebrae in tails of young rats, effects of oxygen on, 22:36355
effects on growth, oxidative phosphorylation, and oxygen consumption in Phycomyces, 22:16980
effects on guinea pigs, effects of chronic exposure on leukemogenic, 22:6898
effects on guinea pigs, prophylactic effects of repeated uv irradiation on lethal, 22:47571
effects on guinea pigs, protective effects of gibberelli acid against, 22:51843
effects on hair of mice, effects of dose and growth phase on, 22:43391 (ACRH-28, pp 101-4)
effects on hair regrowth on mice, mechanism for protective effects of cysteamine against latent, 22:49624
effects on halide ions in inorganic glasses, spectral studies on, 22:30606
effects on hamster cells, determination of number of generations for fixation of transformation, 22:19245
effects on hamsters, effects of dose fractionation on recovery from, 22:25995
effects on hands of personnel following accidental exposure, 22:25983
effects on haploid yeast, dark recovery from, 22:43491
effects on hardened areas of sodium chloride single crystals, (E), 22:13554
effects on hardness of crystals prehardened by plastic deformation, microhardness method for study of, 22:41657
effects on healing wounds of rats, protective effects of B vitamins against, 22:36303
effects on heart following therapy of carcinoma of breast, pathological, 22:25997
effects on heart function in man following therapy of breast carcinomas, 22:43404
effects on heart of frogs, effects of local exposure on, 22:12905
effects on heart of rabbits, electrocardiogram analysis of, 22:21423
effects on heart of rabbits, whole-body, 22:43446
effects on heavy water, 22:25379
effects on HeLa cells, comparison of, to radiomimetic effects of isopropyl methanesulfonate, 22:28638
effects on HeLa cells, effects of acetoxycyclohexamide, hydroxyurea, and phleomycin on, 22:8436(R) (NYO-910-58)
effects on HeLa cells, effects of age and dose on RBE of, 22:6878
effects on HeLa cells, effects of cell cycle on lethal and mutagenic, 22:28410
effects on HeLa cells, effects of oxygen on, 22:47630
effects on HeLa cells, RBE for, 22:10794
effects on hemangiomas in children, development of radiation injuries following therapeutic, 22:15050
effects on hemangiomata in children, dose to gonads following therapeutic, 22:38285
effects on hematopoiesis and immune reactions in rats, combined protective effects of AET, cysteamine and serotonin and marrow transplants against, 22:45648
effects on hematopoiesis and survival of mice, protective effects of ATP against, 22:49381
effects on hematopoiesis and survival of rats, protective effects of methandrostenolone against, 22:45627
effects on hematopoiesis and survival of several mammals, effects of dose on, 22:49578
effects on hematopoiesis in adult and fetal mice, 22:33918
effects on hematopoiesis in bone marrow of dogs and rats, effects of dose on, 22:52009
effects on hematopoiesis in bone marrow of rabbits, following local exposure of femur, kinetic studies of, 22:28665
effects on hematopoiesis in bone marrow of rats, effects of shielding on, 22:40850
effects on hematopoiesis in mice, 22:578
effects on hematopoiesis in mice, effects of partial body shielding on, 22:28621 (ANL-7278, pp 1-94)
effects on hematopoiesis in mice, effects of splenectomy or thymectomy on, 22:38466
effects on hematopoiesis in mice, kinetics of recovery from, 22:43390 (ACRH-28, pp 23-34)
effects on hematopoiesis in mice, protective effects of AET, cysteine, glutathione, and serotonin against, 22:33923
effects on hematopoiesis in rats, 22:38461
effects on hematopoiesis in rats, 22:33713(R) (NYO-3728-2)
effects on hematopoiesis in rats, effects of dose homogeneity on, 22:8638
effects on hematopoiesis in rats, protective effects of bone marrow shielding against acute, 22:49363
effects on hematopoiesis in rats, protective effects of isogenic marrow lymphocytes against, 22:8567
effects on hematopoiesis in reticular tissues of mice, effects of limb shielding on, 22:12903
effects on hematopoietic organs of rat fetuses, 22:49583
effects on hematopoietic stem cell recovery in rats, effects of repeated sublethal doses on, 22:38435

effects on hematopoietic system in man, effects of dose fractionation on, 22:38439
effects on hematopoietic system of mice, prophylactic effects of serum-α-macroglobulin on, 22:45625
effects on hematopoietic system of mice, rate of recovery from whole-body, 22:43389 (ACRH-28, pp 14-22)
effects on hematopoietic system of rabbits and rats, RBE for, in comparison to β and fast neutron, 22:40822(T) (JPRS-44070, pp 1-9)
effects on hematopoietic tissue in spleen of mice, 22:556
effects on hemin solutions, protective effects of heterocyclic nitrogen compounds against, 22:8562 (NP-16875)
effects on hemolysin response in radiation chimeras of mice, 22:36186
effects on hemolysin synthesis by spleen cells, effects of antigen-injection time on, 22:45468
effects on hemolysin-forming spleen cells of mice, effects of endotoxin on whole-body, 22:49213
effects on hemopoiesis in dogs, effects of lethal dose on, 22:51925
effects on hemopoietic cells of mice, effects of temperature on, 22:36348
effects on hemopoietic organs of mice, 22:51392
effects on hemopoietic stem cell proliferation in mice, effects of hypoxia on, 22:21403 (ACRH-1000-39)
effects on Hibiscus sp., lethal, and mutagenic, 22:49302
effects on histochemical reactions and morphology of adrenal glands of rats, whole-body, 22:429
effects on histochemistry of small intestine in mice, lethal, 22:12906
effects on histology of brain following prenatal exposure of rats, 22:23592(R) (COO-1474-11)
effects on Hodgkin's disease in man, combined effects of vinblastine on, 22:31199
effects on home range behavior of mice in field enclosures, 22:14979(R) (COO-1406-2)
effects on homograft response of adult mice, combined effects of thymectomy on, 22:51369
effects on human bladder and rectum following therapy of bladder sarcinomas, 22:8622
effects on human bone following therapy of cervical carcinoma, neoplastic, 22:45668
effects on human bones following superficial therapy, 22:31244
effects on human brain tumors, therapeutic, 22:38391
effects on human breast carcinoma, morphology of tissues following therapeutic, 22:30981
effects on human cells, 22:23416(R) (UCRL-17481)
effects on human cervical cancer, therapeutic supervoltage, 22:45596
effects on human children, effects of dose on carcinogenic, 22:51938
effects on human children, leukemogenic, 22:49532
effects on human chromosomes following therapy for malignant tumors, aberrant, 22:28408
effects on human chromosomes following therapy for cancer, aberrant, 22:38243
effects on human chromosomes, aberrant, 22:38246
effects on human chromosomes, effects of therapeutic exposure on aberrant, 22:38244
effects on human esophageal carcinomas, effects of age, sex, and tumor morphology on therapeutic, 22:45597
effects on human eyes following therapy of eyelid tumors, 22:40905
effects on human eyes, latent cataractogenic, 22:45680
effects on human fetus, effects of exposure during pregnancy on, 22:6896
effects on human fetus, review of hazards of diagnostic, 22:43472
effects on human fetuses, review of, 22:4668
effects on human gastrointestinal tract, use of metoclopramide for treatment of, 22:51865
effects on human hands, 22:51988
effects on human hands following therapy of eczema, 22:31238
effects on human heart following therapy for carcinoma of thyroid, 22:36383
effects on human kidney cells and rat thymocytes, use of chromium-51 binding for assessing, 22:51995
effects on human kidney T1 cells, RBE for, 22:12825
effects on human leukocyte chromosomes, RBE for aberrant, 22:51596
effects on human malignant tumors, evaluation of, by pathologists, 22:43382
effects on human neoplasms, combined effects of hyperbaric oxygen on therapeutic, 22:38413
effects on human neoplasms, effects of dose fractionation on therapeutic, 22:31153
effects on human rib following therapy of mammary carcinomas, necrotic, 22:28568
effects on human skin following therapy, carcinogenic, 22:51961
effects on human skin, comparison of ointments containing eucerin, petrolatum, or steroids for topical treatment of, 22:28618
effects on human skin, cytological analysis of chronic inflammatory, 22:38442
effects on human skin, effects of age and sex on sensitivity to, 22:47614
effects on human skin, protective effects of chrysomallin against, 22:49397
effects on human spinal cord following radium therapy of hypopharynx carcinoma, 22:10850
effects on human spinal cord following therapy of carcinomas of head and neck, 22:31213
effects on human thymus following therapy for myasthenia, neoplastic, 22:51930
effects on human thymus, effects of, on incidence of thyroid disease, 22:23599 (UCRL-50376)
effects on human thyroid following therapy for acne, cheloid, eczema, and vascular naevi, latent, 22:51772
effects on human tongue following therapy of neoplasms, carcinogenic, 22:49527
effects on hydrated barium chlorate, ultraviolet radiation influence on, 22:20089
effects on hydrocarbons, ESR study of radicals from, 22:27816
effects on hydrogen discharge plasma, time, 22:24318
effects on hydrolytic enzymes in reticular cells of thymus gland of rats, whole-body, 22:441
effects on hydroxide-doped sodium fluorides, influence of impurities on color center formation from, (E), 22:39190
effects on hypothalamus of monkeys, latent, 22:49497
effects on hypoxic spleen cells of mice, use of endogenous colony-forming ability of cells to determine effects of dose fractionation on whole-body, 22:43349 (UCSF-10-P-2-39, pp 125-260)
effects on hypoxic tumor cells, sensitizing effects of N-ethylmaleimide on, 22:49422
effects on immune reactions in guinea pigs following injection of live Brucellosis vaccine, 22:23449
effects on immune reactions in guinea pigs following infection with Mycobacterium tuberculosis, 22:23443
effects on immune reactions in lymphoid cells of mice, 22:444
effects on immune reactions in mice, 22:30944
effects on immune reactions in mice, 22:51452
effects on immune reactions in mice, 22:14929
effects on immune reactions in mice following injection of Shigella-stimulated lymphoid cells and macrophages from normal mice, 22:28329
effects on immune reactions in mice following injection of macrophages from Shigella-antigen-treated normal or irradiated mice, 22:28356
effects on immune reactions in mice following transplantation of bone marrow, 22:23419
effects on immune reactions in mice following transplantation of bone marrow or spleen cells, effects of surgical removal of thymus gland on, 22:33928
effects on immune reactions in mice following transplantation of bone marrow from homologous or isologous donors, 22:51474
effects on immune reactions in mice to transplanted methylcholanthrene-induced sarcomas, effects of methylcholanthrene treatment on, 22:25746
effects on immune reactions in mice to transplants of cells or skin from congenic donors, 22:40531
effects on immune reactions in mice, following injection of Shigella antigen, 22:28329
effects on immune reactions in mice, following injection of macrophages from irradiated mice, 22:28329
effects on immune reactions in rabbits, effects of antibiotics on, 22:21446
effects on immune reactions of guinea pigs to Q fever vaccines, effects of dose on whole-body, 22:51469
effects on immune reactions of guinea pigs to viable Pasteurella tularensis vaccine, 22:38205
effects on immune reactions of hematopoietic chimeras, 22:47486
effects on immune reactions of mice, 22:30995
effects on immune reactions of mice to transplantation of sarcoma cells simultaneously with immune macrophages, 22:25747
effects on immune reactions of mice to transplants of sarcomas, effects of simultaneous injection of immune serum on, 22:25748
effects on immune reactions of mice, development of neoplasms following, 22:28670
effects on immune reactions of rats to bovine serum albumin, sheep erythrocytes, and tetanus toxoid, effects of lymphocytes on, 22:51360
effects on immune reactions of spleen, combined effects of urethan on, 22:6713(R) (COO-1455-2)
effects on immune reactions to bone marrow transplants in mice, effects of normal and tolerant thymus transplants and thymectomy on, 22:40588
effects on immune reactions to corneal transplants in rabbits, 22:51395
effects on immune reactions to skin transplants in rabbits, 22:51430
effects on immune reactions to tissue transplants, 22:425(T) (AEC-tr-6726)
effects on immune reactions to viruses in mice, 22:51999
effects on immune response in rabbits, effects of bovine γ-globulin on whole-body, 22:19279
effects on immune response of dogs and rats to skin transplants, extracorporeal, 22:49221
effects on immune response of dogs, effects of, on differentiation and proliferation of transplanted bone marrow stem cells, 22:49254

effects on immune response of guinea pigs to lymphocyte transplants, review of, 22:45448
effects on immune response of mice to trophoblast transplants, 22:51413
effects on immune response of mice, effects of preimmunization with Corynebacterium parvum on whole-body, 22:40537
effects on immune response of mice, repair of, by circulating lymphocytes, 22:40575
effects on immune response of mice, use of, for studies of immunological memory, 22:43217
effects on immune response of monkeys, whole-body, 22:49214
effects on immune response of rats, effects of lymphocyte transplants on recovery from, 22:14920
effects on immune response of rats, role of lymphocytes in, 22:30945
effects on immune response to sarcoma transplants in isogenic mice, whole-body, 22:8446
effects on immune responses in mice, 22:12765
effects on immune responses of mice to Mycobacterium leprae, effects of thymectomy on lethal and sublethal, 22:12811
effects on immune responses of mice to spleen cells from antigen treated donors, effects of, on graft-versus-host skin transplant reactions, 22:40530
effects on immune system of mice, protective effects of cysteamine, serotonin, and TACE against, 22:43353
effects on immune system of mice, release of leukemogenic agent from tissue following, 22:28633
effects on immunity following tumor therapy, combined effects of cytostatic drugs on, 22:45418
effects on immunity of sheep inoculated against anthrax, effects of dose on, 22:43251
effects on immunocompetent spleen cells of mice, compartmental analysis of, 22:10682
effects on immunogenic properties of cells of Friend-virus-induced lymphomas following transplantation in mice, 22:36166
effects on immunogenicity of cells of lymphomas, in mice, 22:10732
effects on immunologic competence of spleen cell transplants in conventional and germ-free mice, 22:19278
effects on immunological paralysis in mice, effects of preimmunization with bovine γ-globulin on, 22:14974
effects on in vitro colony forming ability of bone marrow cells of mice whole-body, 22:38465
effects on in vitro oxygen consumption by spleen of mice, whole-body, 22:49524
effects on inactivation of alcohol dehydrogenase in solutions, 22:43218
effects on incidence of atherosclerosis in pigeons, combined effects of cholesterol on, 22:8615
effects on incidence of autosomal translocations in oocytes of Drosophila melanogaster, 22:23493
effects on incidence of cancer in children following prenatal exposure, 22:43368
effects on incidence of cancer in children following prenatal exposure, 22:43369
effects on incidence of caseinate amyloidosis in mice, effects of thymectomy on, 22:19288
effects on incidence of chromosome aberrations in human leukocytes, effects of dose rate on, 22:15086
effects on incidence of disease and life span of mice, effects of germ-free state on, 22:28644
effects on incidence of fetal anomalies in mice, effects of primi- or multiparous condition of female on, 22:49485 (NYO-2740-5, pp 267-98)
effects on incidence of leukemia in man, effects of clinical exposure and prenatal exposure on, 22:4688
effects on incidence of leukemia in man, effects of dose on, 22:38440
effects on incidence of leukemia in mice, whole-body, 22:31212
effects on incidence of leukopenia in mice, protective effects of marinamycin against, 22:31166
effects on incidence of lymphomas in mice, 22:31212
effects on incidence of mammary tumors in mice, combined effects of urethane on, 22:15062
effects on incidence of polyhedrosis in silkworms, 22:36423
effects on incidence of pulmonary metastases following therapy of mammary cancer in rats, 22:21616
effects on incidence of rectal lesions following uterine cancer therapy, 22:2550
effects on incidence of streptomycin-induced albinism in wheat, protective, 22:43479
effects on incidence of Tyzzer's disease in laboratory animals following inoculation from infected mice, 22:47586
effects on incidence of XO female mice following gonad exposure of male parent, 22:40646
effects on incisor teeth of rats, histologic study of, 22:51895
effects on incorporation of nucleotide precursors into DNA of splenic lymphocytes from hamsters, 22:23604
effects on incorporation of tritium-labeled thymidine by splenic lymphocytes from hamster, 22:23603
effects on indium antimonides, annealing in, 22:15635
effects on inducer for colony formation by cultured granulocytes and macrophages, 22:28318
effects on induction of amorphous defects and chain scission in polyoxymethylene crystals, 22:27751
effects on industrial and medical personnel, protective measures against, 22:51592
effects on infectivity and transformation in Polyoma virus, direct and indirect, 22:21640
effects on infectivity of helminth larvae in animal hosts, 22:52085
effects on infectivity of Rift Valley Fever virus for mice, combined effects of cortisone on, 22:23639
effects on inflorescences of Nicotiana alata, mutagenic, 22:2499
effects on inhibition of immunologic properties of corneal transplants in rabbits, 22:51395
effects on inhibitory activity of DNA in transformation of Bacillus subtilis, 22:15120
effects on inner ear of guinea pigs, 22:51890
effects on inner ear of guinea pigs and rabbits, pathological, 22:23600(T) (N-67-18922)
effects on inoperable lung neoplasms in man, effects of dose fractionation on, 22:2524
effects on insects for population control, 22:17068
effects on inseminated eggs of Drosophila melanogaster, latent lethal and mutagenic, 22:40910
effects on insulated-gate silicon FET, (E), 22:41208
effects on interferon induction in rats, effects of adrenalectomy, cortisol, and sindbis virus on whole-body, 22:52000
effects on intestinal epithelium of Carassium auratus, effects of temperature on, 22:49540
effects on intestinal flora in mice, 22:49548
effects on intestinal flora of mice, 22:28621 (ANL-7278 pp 1-94)
effects on intestinal function in rats, combined effects of bile on, 22:49544
effects on intestinal mucosa and survival of Necturus maculosus, 22:49555
effects on intestinal mucosa of mice and rats in comparison with γ and neutron, acute, 22:49552
effects on intestinal mucosa of pigs and rats, combined effects of bile on, 22:49561
effects on intestine of guinea pigs, acute pathological, 22:49553
effects on intestine of mice and rabbits, combined effects of serotonin on, 22:49550
effects on intestine of mice, combined effects of endoxan on, 22:43436
effects on intestine of mice, protective effects of mixtures of AET, cysteine, glutathione, and serotonin against, 22:31236
effects on intestine of monkeys, relation of colitis and dysentery to, 22:38436
effects on intestines of man following therapy for cancer, 22:51887
effects on intestines of mice, pathological, 22:49557
effects on intestines of rats, combined effects of urethan on, 22:36316
effects on iodine-131 uptake by thyroid of mice, whole-body, 22:31222
effects on ionic crystals, color centers and thermoluminescence from, (E), 22:34748
effects on ionization in near-maximum part of E layer, (T), 22:34408
effects on ionization of liquids, 22:27824
effects on ionosphere, (T), 22:15291
effects on ionosphere, sudden frequency deviations from solar-flare, 22:2936
effects on iron-59 uptake by bones and erythrocytes of splenectomized mice, 22:45674
effects on iron-59 uptake by erythrocytes of mice, 22:49577
effects on isolated brain of rats, luminescent, 22:40923
effects on jute plants, effects of dose on mutagenic, 22:14998
effects on jute plants, effects of dose on mutagenic, 22:14996
effects on jute plants, mutagenic, 22:8503
effects on keratin and lysozyme, ESR spectra of, 22:33760
effects on kidney soluble protein biosynthesis in rabbits, electrophoretic and tracer study of, 22:33739
effects on kidneys of aging rodents, 22:43225
effects on kidneys of mice, effects of lymphoid tissue on pathological, 22:40833(R) (UCSF-34-P-41-18)
effects on kidneys of parabiont rats, 22:19423
effects on kidneys of rabbits with nephritis, electron microscopic study of, 22:43435
effects on kinase activity in regenerating liver of rats, protective effects of AET against, 22:4589
effects on kinetics of muscle and nerve cells in mice, autoradiographic and histological studies of, 22:38221
effects on L cells deficient in ATP, protective effects of dinitrophenol against, 22:6749
effects on L cells, repair of lethal fractionated, 22:43423
effects on labeling index of mast cells in rats, 22:14941
effects on labile electrical characteristics of spinal cord in cats, 22:28626 (NYO-2147-13, pp 193-5)
effects on lactate dehydrogenase content of organs and plasma of mice, acute, 22:49274

effects on larvae of Hemonchus, effects of, on immunity of sheep following vaccination, 22:51356
effects on larvae of Trichinella, immunity in mice following, 22:51357
effects on lead nitride crystals, 22:42764
effects on lecithins and lipoproteins of human plasma, 22:23456
effects on Lemba variety cocksfoot, effects of seed exposure on mutagenic, 22:2500
effects on lens epithelium of mice and rabbits, 22:15063
effects on lens of eyes in mice, 22:14906 (BNL-50057, pp 123-37)
effects on lens of rabbits, RBE for, in comparison to fast neutron, 22:51966
effects on Lepidoptera, use of, to study kinetic organization of chromosomes, mutagenic, 22:6778(T) (ORNL-tr-1817)
effects on lethality and leukocyte count in peripheral blood of thymectomized mice, effects of age on, 22:23640
effects on leucine hydrochloride, ESR studies of radicals from, 22:45096
effects on leukemogenic properties of cell-free extracts from leukemic mice, 22:21458
effects on leukocyte abundance of rabbits, protective and therapeutic effects of marinamycin against, 22:28561
effects on leukocyte content of blood of human leukemia patients following extracorporeal exposure, 22:31277
effects on leukocyte count and survival of dogs, protective effects of typhoid vaccine against, 22:4631 (USNRDL-TR-67-87)
effects on leukocyte count in dogs and mice, protective effects of endotoxins against, 22:21560
effects on leukocyte count in donor rats, effects of, on development of leukocytosis in recipients of blood transfusions, 22:19414
effects on leukocyte count in man and rabbits, 22:19437
effects on leukocyte count in peritoneum of rats, whole-body, 22:33913
effects on leukocyte count in rabbits, focal, 22:6712(R) (COO-1172-7)
effects on leukocyte count of man and mice following therapy of dermatitis, 22:45698
effects on leukocytes and lymphocytes of man following therapeutic exposures,, 22:36363
effects on leukocytes and survival in mice, effects of taurine administration on, 22:36314
effects on leukocytes following therapy of basal carcinomas of eyelids, 22:15110
effects on leukocytes in culture, effects of phytohemagglutinin on, 22:19292
effects on leukocytes of mice, 22:40901
effects on leukocytes, use of, for study of effects on unidirectional stimulation in cultured leukocytes, 22:40561
effects on liberation of lambda phage, combined protective effects of cystamine and magnesium ions against, 22:47559
effects on liberation of lambda prophage, effects of physiological conditions on, 22:40974
effects on life span and lymphoma incidence in mice, combined effects of triethylene melamine on, 22:28289 (ORNL-4100, pp 178-201)
effects on life span and wing retention in house flies, effects of exposure of pupae on, 22:555
effects on life span in mice, combined effects of age and sex on, 22:43420
effects on life span of Artemia, effects of dose and ploidy on, 22:43470
effects on life span of chickens and rabbits, effects of lethal dose on, 22:8594 (CONF-670305-, pp 76-80)
effects on life span of erythrocytes in rabbits in comparison to effects of phenylhydrazine, 22:33731
effects on life span of mammals, 22:40881
effects on life span of mice, 22:28629 (ORNL-4100, pp 104-9)
effects on life span of mice and rats, effects of age and dose fractionation on, 22:8645
effects on life span of mice, effects of split dose on, 22:43414
effects on life span of wasps, effects of anoxia on, 22:40860
effects on life spans of mice, effects of dose fractionation on, 22:31249
effects on life-shortening of Drosophila, combined effects of age on, 22:43407
effects on light emission by tryptophan, 22:12822
effects on light response of cells of retina in rabbit, 22:23414(R) (ORO-3599-1)
effects on linkage of DNA to 3,4-benzpyrene, 22:25716(R) (NYO-3538-7)
effects on lipid balance in maternal liver, fetal liver, and placenta of pregnant rats, 22:435
effects on lipid biosynthesis of yeasts, 22:52021
effects on lipid content, size, and weight of adrenal glands of mice, effects of dose on, 22:19427
effects on lipids of rats, 22:30929 (BMwF-FBK-67-84)
effects on liquid pentane, 22:12337(R) (COO-1116-6)
effects on lithium fluoride crystals, nature and interconversion of F-aggregate centers from, (E), 22:36968 (COO-1054-40)
effects on lithium fluoride crystals, stages in coloring from, (E), 22:46242
effects on lithium fluoride single crystals, calculation of F-center concentration and lattice-constant changes from, 22:17782
effects on lithium fluorides, annealing and re-irradiation behavior of F band between 80 and 300°K, 22:44228
effects on litter size and weight of mice, prenatal whole-body, 22:49293
effects on liver melanocytes of Amphiuma, effects of pigmentation on, 22:21580
effects on liver of human adolescents following therapy, histologic and radiologic study of, 22:40858
effects on liver of rats following acute exposure, 22:25969
effects on localization of acid mucopolysaccharides in absorptive cells of rat intestine, acute, 22:49273
effects on localization of injected protein in tissue of rabbits, effects of inflammation on, 22:6712(R) (COO-1172-7)
effects on localization of radioiodine-labeled serum albumin in rabbits, 22:6712(R) (COO-1172-7)
effects on long bones of man following therapy, 22:31214
effects on low-temperature alkali halides, Frenkel defects from, 22:31981
effects on luminescence in natural and indium-activated potassium iodides, decay characteristics in, 22:26526
effects on luminescence in thallium-activated sodium iodides, at 5 to 80°K, 22:40422
effects on luminescence in uranium-activated lithium fluoride, (E), 22:9434
effects on luminescence of amino acids and enzymes, 22:12365
effects on luminescence of hemoglobin and trypsin, 22:14519(T) (CEA-tr-R-1907)
effects on luminescence of solutions of albumins, amino acids, dyes, and synthetic polymers, 22:28294
effects on luminescence of solutions of polymers and proteins, 22:28302
effects on luminescence of tryptophan, effects of water on, 22:51446
effects on luminescence of zirconium silicates, (E), 22:13582
effects on luminescence spectra of tryptophan and tryosine in aqueous solutions, 22:19283
effects on lung cancer of man, combined effects of γ-rays on therapeutic, 22:40788
effects on lung tissues following therapy of mammary cancer, 22:33936
effects on lung tissues of rats, effects of parabiosis on, 22:40862
effects on lung tumors in man, combined effects of Actinomycin D and 5-fluorouracil on therapeutic, 22:12888
effects on lungs of hamsters and rats, pathological, 22:4671
effects on lungs of man following therapy for esophageal carcinoma, 22:19440
effects on lungs of man following therapy for metastatic rhadomyosarcoma, carcinogenic, 22:10832
effects on lymph node metastases, methods for therapeutic, 22:45612
effects on lymph nodes and lymphocytes of mice, protective effects of cysteamine against x, 22:25887
effects on lymph nodes and vessels of dogs, 22:21618
effects on lymph nodes of rabbits, histological study of effects of antigens, appendectomy and thymectomy on, 22:25879
effects on lymphocyte nuclei in mammals for use in dosimetry, 22:38422 (EUR-3939)
effects on lymphocytes and plasma cells in lymph nodes of mice and rats immunized by typhoid-paratyphoid vaccine, 22:436
effects on lymphocytes in peripheral blood of rats, extracorporeal and whole-body, 22:31227
effects on lymphocytes of mice, leukemogenic, 22:23644
effects on lymphoma cells of mice, comparison of γ and pion to, 22:23418 (UCRL-17481, pp 145-53)
effects on lymphoma cells, effects of 5-iodo-2'-deoxyuridine on, 22:40779
effects on macromolecules and penicillamine, electron spin resonance measurements of effects of heat on, 22:36194
effects on macrophages in relation to antibody formation in mice, 22:21411
effects on macrophages of chimeras of mice, 22:30968
effects on maize seeds, effects of temperature on mutagenic, 22:33784
effects on maize, effects of pollen exposure on mutagenic, 22:31044
effects on male cockchafers, field evaluation of sterilizing, 22:47654
effects on male germ cells of mice, effects of age on, 22:15088
effects on malformations of bones of fetuses of pregnant mice, effects of strain on, 22:33968
effects on malignant embryomas and seminomas of testicles, complications following therapeutic, 22:6851
effects on malignant neoplasms of man, review of effects of hydrogen peroxide and hyperbaric oxygen on,

22:28600
effects on malignant tumors in man, evaluation of dose schedules for therapeutic, 22:43373
effects on malignant tumors of man, review of preoperative, therapeutic, supervoltage, 22:28593
effects on malignant tumors, use of computers for calculation of dose distribution during, 22:25844
effects on mammalian cells, comparison of aberrant and lethal, 22:43285
effects on mammalian cells, effects of age on, 22:28676
effects on mammalian cells, protective effects of chemicals against, 22:38407
effects on mammalian cells, repair of, in comparison to repair of uv-radioinduced lesions, 22:14912(R) (NYO-3834-1)
effects on mammalian systems, RBE of, in comparison to cobalt-60 γ, 22:15024
effects on mammals in relation to microwave effects, 22:554(R) (UR-49-810)
effects on mammals, biological, 22:19383
effects on mammals, effects of dose distribution on, 22:12922
effects on mammary carcinomas in mice, effects of hyperbaric oxygen on therapeutic, 22:12889
effects on mammary carcinomas of man, treatment of conditions arising from therapeutic, 22:15044
effects on mammary glands of rats, carcinogenic, 22:28623 (ANL-7278, pp 132-43)
effects on mammary glands of rats, effects of DNA synthesis on carcinogenic, 22:28623 (ANL-7278, pp 132-43)
effects on mammary tissue of rats in vitro, carcinogenic, 22:51948
effects on man during chest fluoroscopy, precautions against, 22:38364
effects on man during therapy of adenocarcinomas in kidneys, design of apparatus for prevention of, 22:12915
effects on man following accidental radiological exposure, classification of genetic and somatic, 22:10835
effects on man following diagnosis or therapy in New Zealand, survey of leukemogenic, 22:40927
effects on man following therapy for carcinoma of cervix, pathological, 22:8618
effects on man following therapy of breast cancers, supervoltage, 22:36381
effects on man following therapy of breast carcinomas, fibrosarcomatous, 22:31231
effects on man following therapy of Hodgkin's disease, leukemogenic, 22:6890
effects on man following therapy, carcinogenic, 22:4687
effects on man following therapy, carcinogenic, 22:28639
effects on man following therapy, case study of carcinogenic, 22:40865
effects on man following therapy, pathological, 22:38448
effects on man, complications following surgery after therapeutic, 22:28690
effects on man, design of protective aprons and screens against, 22:49341
effects on man, determination of dose-time-fractionation factors on therapeutic, 22:40684
effects on man, effects of dose on carcinogenic, 22:38484
effects on man, fibrosarcomatous, 22:31247
effects on man, genetic, 22:21595
effects on man, method for calculation of RBE of, 22:38288
effects on man, neoplastic, 22:19453
effects on man, pathological, 22:21595
effects on man, pattern of development of erythematous, 22:40888
effects on man, protective effects of batylol against, 22:51849
effects on man, protective effects of shielding against, diagnostic, 22:10780
effects on man, review of dental and therapeutic, 22:28464
effects on man, review of early history of pathological, 22:31254
effects on man, standards for protection against, in Alabama, 22:40701
effects on man, standards for protection against, in Philippines, 22:4611
effects on man, standards for protection against, in Louisiana, 22:40702
effects on mandibles of rats, effects of tetracycline on necrotic, 22:40873
effects on marrow plasma volume, 22:33713(R) (NYO-3728-2)
effects on marsupial leukocytes in culture, protective effects of dithiothreitol against, 22:21566
effects on mast cells in blood of man and rats, use of saponin-hemolysis method for study of, 22:40525
effects on mastocytomas in dogs, effects of dose fractionation on therapeutic, 22:33910
effects on maternal-embryonic interactions in rats, protective effects of cysteamine against, 22:47635
effects on mature larvae of flour beetles, 22:10824 (BNWL-480, pp 1-19)
effects on maxillofacial tumors in man, development of osteonecrosis of jaw following therapeutic, 22:31197
effects on mechanical properties of pure and uranium-containing sodium fluoride single crystals, (R), 22:22249
effects on medical personnel, pathological, 22:51978
effects on medical personnel, study of pathological, 22:45513
effects on medullary blastomas in man, combined effects of γ radiation on therapeutic, 22:43354
effects on membrane permeability and transport system of hamster cells, 22:16974(R) (ORO-2832-56)
effects on membrane potential of Nitella, 22:43264
effects on membranes of human erythrocytes, role of sulfhydryl groups in recovery from acute, 22:49276
effects on membranes of muscle cells, effects of ammonium and cesium ions on, 22:33708(R) (AD-662723)
effects on membranes of yeast cells, mechanisms for protective effects of cystamine against acute, 22:49461
effects on metabolism in human leukocytes during phagocytosis, 22:36180
effects on metabolism of calcium-45 and phosphorus-32 in rats, effects of dose on, 22:51482
effects on metabolism of chlorides, rubidium-86, and sodium-22 in rats, 22:51483
effects on metabolism of DNA and RNA in barley embryos, phosphorus-32 tracer study of effects of developmental stage and tissue differentiation on, 22:28360
effects on metabolism of glucose in cultured animal cells, 22:25744
effects on metabolism of glucosides in man following therapy of extra-abdominal neoplasms, 22:28650
effects on metabolism of glyceryl trioleate and oleic acid by rats, tracer study of whole-body, 22:43469
effects on metabolism of glycogen in rabbits, 22:23623
effects on metabolism of hexobarbital in microsomes of rat liver, 22:8592(R) (AD-629311)
effects on metabolism of iodine-131-labeled triiodothyronine in dogs and mice, whole-body, 22:6760
effects on metabolism of nucleic acids in liver of rats, 48-hour postexposure, 22:49259
effects on metabolism of phosphates by tomato plants, 22:2483
effects on metabolism of thymidine by intestine of cultured chicken embryos, protective effects of RNA against, 22:40733
effects on metamorphic stages of cereal leaf beetle, 22:45681
effects on methane in solid argon and krypton, 22:4225
effects on methionine, ESR spectra of free radicals from, 22:27796
effects on mice and rabbits, protective effects of vitamin B_6 against, 22:6850
effects on mice and rats in comparison to γ and neutron, 22:12908
effects on mice and rats, protective effects of AET and sodium cysteine thiosulfonate against, 22:36304
effects on mice and rats, protective effects of cysteamine and related substances against, 22:4656
effects on mice, combined effects of dose and season on teratogenic, 22:31270
effects on mice, combined effects of tourniquet injury on pathological, 22:25979
effects on mice, combined effects of transplant of spleen cells on whole-body pathological, 22:36173
effects on mice, combined effects of urethan on leukemogenic, 22:25877
effects on mice, effects of age on reception of bone marrow transplants following, 22:51344
effects on mice, effects of age, dose, and strain on, 22:28648
effects on mice, effects of anoxia on recovery from, 22:548
effects on mice, effects of dose rate on mutagenic, 22:31027
effects on mice, effects of dose rate on whole-body carcinogenic, 22:38481
effects on mice, effects of erythropoietin and plethora on bone marrow transplants following, 22:40924
effects on mice, effects of hematoporphyrin on leukopenic, 22:10802
effects on mice, effects of hyaluronate lyase injections on bacteremia incidence following, 22:36388
effects on mice, effects of hypobaric oxygen exposure on lethal, 22:8592(R) (AD-629311)
effects on mice, effects of injection of irradiated macrophages on antibody formation following, 22:21411
effects on mice, effects of microbial population on leukemogenic, 22:28284 (ORNL-4100, pp 127-34)
effects on mice, effects of mutations on, 22:28397 (ANL-7278, pp 144-69)
effects on mice, effects of smallpox vaccination on leukemogenic, 22:36189
effects on mice, effects of thymic injury and impairment on development of lymphoma following, 22:25877
effects on mice, effects of time between exposure and conception and doses on mutagenic γ and, 22:8498 (CONF-670305-, pp 81-7)
effects on mice, effects of vaccination on, 22:45694
effects on mice, effects of, on life span and reproductivity of nonirradiated progeny, 22:51872 (LA-3848, pp 62-74)

effects on mice, effects of, on resistance to transplanted ascites lymphoma cells, 22:40563
effects on mice, effects of, on vigor of nonirradiated progeny, 22:51872 (LA-3848, pp 62-74)
effects on mice, genetic, 22:40616(R) (NYO-1979-26)
effects on mice, genetic analysis of, 22:49288
effects on mice, incidence of bacterial infections following treatment with bone marrow cells, 22:23612
effects on mice, leukemogenic, 22:6889
effects on mice, mathematical model for relation of dose to, 22:40839
effects on mice, mechanisms of leukemogenic, 22:28670
effects on mice, mutagenic, 22:23496
effects on mice, observations on progeny from consecutively irradiated generations regarding, 22:51872 (LA-3848, pp 62-74)
effects on mice, protective effects of 5-methoxytryptamine against, 22:25882
effects on mice, protective effects of AET, cysteine, glutathione and serotonin against, 22:25878
effects on mice, protective effects of anticancer agents against, 22:31188
effects on mice, protective effects of bone marrow injections against leukemogenic, 22:51851
effects on mice, protective effects of Bunte salts and phosphorothioates against, 22:45629
effects on mice, protective effects of calf spleen extract against, 22:33873
effects on mice, protective effects of cystamine adsorbed on carriers and in solution against, 22:45621
effects on mice, protective effects of cystamine and cysteamine against, 22:40798
effects on mice, protective effects of cystamine, ionol, and phenols against, 22:28548
effects on mice, protective effects of cysteamine, histamine and serotonin against, 22:40736
effects on mice, protective effects of DMSO vapor against, 22:45595
effects on mice, protective effects of magnesium pemoline against, 22:25921
effects on mice, protective effects of naphthidone against, 22:45604
effects on mice, protective effects of stored bone marrow against lethal, 22:31187
effects on mice, protective effects of sulfhydryl peptides against, 22:28541 (ORNL-4100, pp 152)
effects on mice, RBE for, 22:40891
effects on mice, RBE for, 22:12929
effects on mice, RBE of whole-body, 22:15090
effects on mice, strain differences in genetic and somatic, 22:2496
effects on mice, synthesis of compounds for protection against, 22:45629
effects on mice, use of tumor induction as measure of mutagenic, 22:49318
effects on microbial populations in feces of rats, whole-body, 22:6927
effects on microhardness of potassium chloride and sodium chloride whisker crystals, (E), 22:46241
effects on microsomal enzyme systems in liver of rats following head exposure, 22:23467
effects on microspores of Tradescantia, effects of 5-fluorodeoxyuridine on aberrant, 22:19322
effects on middle cerebral artery in man following therapy for pituitary tumor, 22:28554
effects on migratory orientation of Salamanders, 22:6771(R) (NYO-3554-6)
effects on mitochondria of rats, lethal whole-body, 22:23453
effects on mitosis and morphology of cultured human fibroblast and HeLa cells, 22:51885
effects on mitosis in animal cells, mathematical analysis of inhibitory, 22:31240
effects on mitosis in antibody-forming cells in spleen of mice, 22:4569
effects on mitosis in cells of birds, grasshoppers, and mammals, 22:28407(R) (ORO-2575-41)
effects on mitosis in cells of regenerating liver in rats, 22:8468
effects on mitosis in chromosomes of cultured human lymphocytes, 22:484
effects on mitosis in cornea of mice, use of colcemid and tritium-labeled thymidine for determination of, 22:28621 (ANL-7278, pp 1-94)
effects on mitosis in corneal epithelium of mice, protective effects of diethylstilbestrol against, 22:19365
effects on mitosis in corneal epithelium of mice, effects of hexonium and redergam on remote, 22:19434
effects on mitosis in cultures of lymphocytes, effects of dose on, 22:14924
effects on mitosis in duodenal crypt cells in intestine of mice, effects of dose on, 22:12745 (CONF-671120-1)
effects on mitosis in germ cells of chicken embryos, 22:19422
effects on mitosis in human cell cultures, protective effects of yeast extract against, 22:8590
effects on mitosis in regenerating liver and tumor tissue of rats, 22:40851
effects on mitosis in T cells, effects of cell phase on, 22:38494
effects on mitosis of corneal epithelium, RBE for, 22:17044
effects on mitosis of ovary cells of Chinese hamster, relation of RNA synthesis to, 22:49519
effects on mitosis rate in cells of carcinomas following transplantation in mice, effects of triiodothyronine on, 22:36302
effects on mitosis rate in cells of hamster cheek pouch epithelium, 22:40651
effects on mitosis, survival, and synthesis of DNA in cells of intestine and melanomas in mice, whole-body, 22:49219
effects on mitotic activity in cells of liver of rats, RBE of, 22:8463
effects on mitotic activity of bone marrow in mice, effects of dose on whole-body, 22:40840
effects on mixed lymphocyte suspensions from man as a measurement of histocompatibility, 22:45450
effects on mixtures of oxygen, hydrocarbons, and sulfur dioxide to yield sulfonic acids, 22:4221(P)
effects on molecular composition of myelin in brain of rats, effects of head exposure on, 22:21448
effects on molecular composition of myelin of rats, effects of age on, 22:25723 (UCLA-12-668, pp 71-84)
effects on molecular crosslinking in organisms in relation to aging, diagnostic, 22:49193
effects on molecular weight of DNA in bacteria in relation to radiosensitivity, 22:45410
effects on molecules, theoretical studies on activating, 22:25400
effects on monocrystals of potassium sulfate, ESR studies on, 22:47162
effects on morphogenesis of ciliary body and iris of rats, 22:38467
effects on morphogenesis of ear of Ambystoma maculatum, effects of temperature on, 22:40921
effects on morphology and number of nucleoli in cells of regenerating liver in rats, whole-body, 22:10733
effects on morphology and physiologic processes of amoeba, effects of dose on, 22:45682
effects on morphology and survival of cells in normal tissues and sarcomas in rats, effects of dose fractionation on RBE for, 22:49419
effects on morphology and survival of embryos of man, 22:15096
effects on morphology and weight of kidneys in rats, effects of unilateral nephrectomy on, 22:45708
effects on morphology of cerebellum in brain of infant rats, effects of dose fractionation on, 22:49533
effects on morphology of chromosomes and rate of meiosis in chickens, 22:31019
effects on morphology of Ehrlich ascites tumor cells, effects of dose and storage temperature on, 22:10704
effects on morphology of Ehrlich carcinoma cells in mice, 22:49191
effects on morphology of Fasciola hepatica following exposure of metacercariae, 22:25985
effects on morphology of mitochondria in Ehrlich tumor cells, effects of dose on, 22:33958
effects on morphology of nuclei in thymocytes of rats, effects of respiration on, 22:21437
effects on morphology of peritoneal mast cells of rats, 22:43427
effects on morphology of the intestinal mucosa of man, 22:49562
effects on morphology of thyroid in man and mice, 22:40933
effects on morphology of trout following embryo exposure, 22:45685
effects on morphology, physiology, and reproductive capacity of flour beetles, combined effects of DDT and temperature on, 22:4664 (BNWL-SA-571)
effects on mortality in young chickens, protective effects of AET against, 22:8591
effects on mortality of animals and man, techniques for statistical analysis of, 22:43430
effects on mortality of mice and rats, effects of dose and skin wounds on, 22:21596
effects on mortality of mice, effects of bone marrow transplants and hypoxia on, 22:28630 (ORNL-4100, pp 118-26)
effects on mortality of mice, effects of temperature on, 22:28621 (ANL-7278, pp 1-94)
effects on mortality rate for various diseases following use for treatment of metropathia hemorrhagica, long-term, 22:40835
effects on moss, mutagenic, 22:40641
effects on moths, comparison of, to mutagenic mustard gas effects, 22:51501
effects on mouth of hamsters, effects of dose on, 22:12880
effects on mucous membrane and skin of man following therapy of tumors, 22:47572
effects on multiplication of foot and mouth virus in hamsters and rats, 22:51429
effects on muscle regeneration in rats, effects of coamides on, 22:8438
effects on muscular tone of intestine and uterus of guinea pigs, 22:38426(R) (NYO-3698-1)
effects on mutants in E. coli, 22:592
effects on mutants of Escherichia coli B in relation to oxygen enhancement ratios, mechanisms for, 22:28715

effects on mutation frequency in mice, effects of dose fractionation on, 22:8498 (CONF-670305-, pp 81-7)
effects on mutation frequency of histocompatibility genes in mice, 22:475(R) (UCLA-34-P-8-15)
effects on mutations and survival in mice, protective effects of carbon monoxide against, 22:19374
effects on N-carbamoylalanine, 22:21093(R) (TID-24147)
effects on NAD content of host liver and Ehrlich carcinomas in animals, 22:28646
effects on NAD synthesis in mice, whole-body, 22:45396
effects on naso-pharyngeal neoplasms, evaluation of therapeutic, 22:31146
effects on nasopharyngeal cancer in man, therapeutic, 22:49430
effects on nature of catabolism of RNA by Escherichia coli,, 22:23475
effects on neoplasms in bladder, development of cystitis following, 22:4677
effects on neoplasms in human tissues, effects of oxygen content on therapeutic, pulsed, high intensity, 22:23417 (UCRL-17481, pp 133-7)
effects on neoplasms in lungs of men, combined effects of chemo- and radium therapy on therapeutic, 22:28545
effects on neoplasms in man, combined effects of hyperbaric oxygen on therapeutic, 22:36507
effects on neoplasms in man, combined effects of respired ozone on therapeutic, 22:38410
effects on neoplasms in man, development of osteochondritis following therapeutic, 22:12910
effects on neoplasms in skin of man, effects of technique on therapeutic, 22:38377
effects on neoplasms of animals and man, effects of hyperbaric oxygen on therapeutic, 22:38383
effects on neoplasms of human lymph nodes, effects of dose and energy on therapeutic, 22:49394
effects on neoplasms of soft tissues, therapeutic, 22:49451
effects on neoplasms, development of fibrosis following therapeutic, 22:49528
effects on neoplasms, effects of 5-bromodeoxyuridine infusion on therapeutic, 22:49395
effects on neoplasms, therapeutic, 22:49454
effects on neoplasms, therapeutic, supervoltage, 22:38411
effects on neoplasms, therapeutic, supervoltage, 22:38412
effects on neoplastic and normal tissues of man, RBE for high-energy electron and, 22:38276
effects on nervous system of mammals, 22:12935
effects on nervous system of rats, in utero, 22:51892
effects on nervous system of rats, use of electroshock seizures as indicator of, 22:36390
effects on neuraminic acid and mucoproteins of blood serum of rabbits, mechanisms for, 22:28312
effects on neuroblasts in eye of fetal mammals, 22:49485 (NYO-2740-5, pp 267-98)
effects on neurons of spinal cord in rats, effects of parabiosis on supralethal whole-body, 22:49567
effects on neurosecretory processes in hypothalamus and posterior pituitary of rats, protective effects of cystamine and cysteamine against, 22:40565
effects on Neurospora crassa, molecular and mutagenic, 22:12835
effects on Neurospora crassa, mutagenic, 22:477
effects on Neurospora crassa, mutagenic, 22:17018
effects on Neurospora crassa, mutagenic analysis of, 22:19318
effects on Neurospora, mutagenic, 22:28400 (ORNL-4100, pp 48-53)
effects on newborn human following radiography, mutagenic, 22:33797
effects on newborn infants of man, evaluation of radiography for determination of maturity in relation to, 22:28551
effects on nickel-activated sodium chloride crystals, relation between luminescence and F-center concentration in, 22:9443
effects on nodulation in alfalfa, effects of seed exposure on, 22:10890
effects on non-protein sulfhydryl content of Ehrlich ascites tumor cells, effects of oxygen on, 22:36162
effects on nonphotosynthetic bacteria, effects of carotenoid pigments on lethal, 22:4707
effects on nuclear division in Saccharomyces, effects of metabolism and ploidy of chromosomes on repair of, 22:26005
effects on nucleated bone marrow cells of rats, combined effects of cytotoxic drugs on, 22:45624
effects on nuclei of leukocytes of guinea pigs, effects of dose and time on whole-body, 22:38432
effects on nucleic acid content of rat brain, in utero, 22:49249
effects on nucleic acid metabolism in Escherichia coli, 22:19266
effects on nucleic acid metabolism in rats, effects of fat content of diet on, 22:45444
effects on nucleic acid synthesis in lung cells of mice, combined effects of influenza virus on, 22:31012
effects on nucleic acids and sulfhydryl compounds, 22:421(R) (NYO-910-57)
effects on nucleic acids in normal and denervated muscl of rabbits, whole-body, 22:49217
effects on offspring of man, in utero, 22:51889
effects on olfactory bulb neurons in rabbits and rats, 22:552(R) (COO-1669-1)
effects on olfactory receptors of rats, 22:38426(R) (NYO-3698-1)
effects on olfactory system of rabbits and rats, mechanisms in acute, 22:51870(R) (COO-1669-4)
effects on oocytes and oogonia in young monkeys, effect of stage of gametogenesis on, 22:28422
effects on oocytes of Artemia salina, effects of ploidy on, 22:43277
effects on oocytes of Drosophila, effects of dose on repair of dominant lethal, 22:45673
effects on oocytes of mice, effects of age on, 22:4341
effects on optical properties of lithium fluoride singl crystals as function of impurity content, (E), 22:36975(T) (UCRL-Trans-10248)
effects on oral cancers of man, external orthovoltage, 22:15039
effects on orchid embryos, effects of fruit exposure cn, 22:40953(R) (UH-235-P-6-5)
effects on organisms, comparison of, with uv radiation, biophysical, 22:52048
effects on organs of mammals, repair of, 22:38409
effects on organs of rats, protective effects of AET against, 22:21551
effects on orientation of calcium phosphate crystallites in bone, 22:12803
effects on osmotic pressure and pH of blood of wax moth, effects of time on, 22:43462
effects on ova of mice, 22:51940
effects on ovarian cancer in man, effects of pretreatmen with L-phenylalanine mustard on therapeutic, 22:8572
effects on ovaries and frequency of ovulation of chickens, 22:45696
effects on ovaries and uterus following use for therapeutic human sterilization, 22:51977
effects on ovaries of beetles, following exposure of eggs, 22:19433
effects on ovaries of fish, histological analysis of, 22:10870
effects on oxidation of hydrocarbons, formation of peroxide compounds from, 22:33394
effects on oxidation-reduction potential of muscles in invertebrates and vertebrates, effects of high natural background radiation on, 22:21464
effects on oxidative phosphorylation in mitochondria fro brain of mice, effects of substrate on, 22:16994
effects on oxidative phosphorylation in mitochondria of liver and spleen of rats, whole-body, 22:6750
effects on oxidative phosphorylation in mitochondria of rat tissues, 22:16981
effects on oxygenation in osteosarcomas of mice, in vitro and in vivo, effects of dose fractionation on, 22:43273
effects on p-hydroxymercuribenzoate, toxic effects of, on Micrococcus radiodurans, 22:23410(R) (NYO-3319-17)
effects on p-terphenyl in cyclohexane, luminescence of ionic processes in, 22:35872
effects on pancreas of rabbits, effects of dose on, 22:558
effects on pancreatic transplants in dogs, 22:43260
effects on paramagnetic defect centers in single-crystal calcite, 22:8165
effects on paramagnetic species in glassy poly(methyl methacrylate), spectral studies on, 22:35847
effects on parent and recombinant strains of Escherichia coli, 22:28397 (ANL-7278, pp 144-69)
effects on passage time in human gastrointestinal tract following therapy of abdomen, 22:28649
effects on passive transfer of delayed hypersensitivity by lymph node and peritoneal exudate cells, in vitro, 22:45467
effects on Pasteurella avium infection in chickens, 22:4680
effects on patients and personnel during dental radiography, code of practice for protection against, 22:31175
effects on patients and personnel during medical diagnosis, 22:47626
effects on patients during radiotherapy, 22:51760
effects on peanuts, mutagenic, 22:40618(R) (ORO-1747-14)
effects on peas, effects of seed exposure on mutagenic, 22:28413
effects on performance of Kodak Personal Neutron Monitoring Film type A, 22:51266
effects on permeability of blood vessels in rabbits, effects of dose on, 22:23614
effects on permeability of blood vessels in skin of rabbits, effects of temperature on topical, 22:43403
effects on permeability of capillaries in epithelium of intestine in mice, combined effects of taurocholic acid on, 22:14910(R) (COO-1244-12)
effects on permeability of human erythrocyte membranes, 22:38211
effects on permeability of membranes of erythrocytes of man, 22:23426
effects on permeability of vessels of lymph system in dogs, 22:52005
effects on peroxidase activity in barley seed and seedlings, 22:17050(R) (EUR-3606)

effects on peroxidase reaction of granulocytes from bone marrow and peripheral blood of guinea pigs, 22:38215
effects on phagocytic activity of reticulo-endothelial system in mice, 22:43438
effects on phagocytosis of Escherichia coli by guinea pig leukocytes, in vitro, 22:51909
effects on phosphate uptake by embryos of barley, effects of water content on,, 22:6723
effects on phosphene production in human eyes, medical uses and review of, 22:28580
effects on phosphenes of frogs, effects of light on, 22:43252
effects on phospholipase activity in rat intestinal mucosa, 22:553(R) (ORO-3329-3)
effects on phosphonium iodide single crystals, EPR study of I_2^- centers from, 22:20056
effects on phosphoprotein metabolism in brain of guinea pigs, protective effects of folic acid on, 22:19454
effects on phosphorus content of blood and lymph of dogs, 22:45437
effects on phosphorylcreatine metabolism in rats, effects of insulin on, 22:31167
effects on photoconductivity of crystals and liquids, 22:50999
effects on photographic film at 0.005 to 1.3 MeV, quantitative calibration of, 22:8360
effects on photoluminescence spectra of thallium-activated sodium iodide crystals, 22:1344
effects on physical properties of cadmium selenide single crystals, (E), 22:29586
effects on physiology of cerebral cortex of rats, 22:575
effects on physiology of potato tubers, 22:21633
effects on physiology of rabbits, effects of dose on, 22:33920
effects on phytohemagglutinin-induced mitosis in lymphocyte cultures, 22:16996
effects on pituitary adenomas in man, development of fibrosarcomas following therapeutic, 22:4669
effects on pituitary gland of man, histological analysis of, 22:8616
effects on pituitary glands, pathogenesis of tumorigenic, 22:15082
effects on pituitary hormones of rats, effects of head exposure on, 22:40539
effects on planarians, protective effects of serotonin-creatinine sulfate complex against, 22:23579
effects on plastically deformed alkaline earth metal fluoride crystals, color centers from, (E), 22:17772
effects on plastically deformed calcite crystals, formation of color centers from, (E), 22:52870
effects on ploidy of chromosomes of Dactylis glomerata, 22:47522
effects on ploidy of Ehrlich ascites tumor cells, effects of, on radiosensitivity, 22:33790
effects on ploidy of sugar beets, 22:51507
effects on poly(ethylene terephthalate), ESR studies on, 22:35870
effects on polycythemia patients, therapeutic, 22:51830
effects on polyribosomes in liver of rats, effects of regeneration on whole-body, 22:45388
effects on polyvinyl chlorides, permittivity dispersion from, 22:3178
effects on poplars, effects of dose and indole acetic acid treatment on, 22:4700(R) (TID-24146)
effects on population dynamics of Drosophila melanogaster, 22:21611
effects on populations of wheat plants following seed exposure, genetic, 22:49314
effects on populations, biological model for analysis of mutagenic, 22:36243
effects on postoperative healing of anastomoses in intestine of dogs, 22:38472
effects on potassium and rubidium bromide crystals, F center production in, (E), 22:44206 (CONF-680902-3)
effects on potassium bromides and chlorides, low temperature volume expansion from, 22:22236
effects on potassium bromides at energies near bromine K edge, F center formation from, (E), 22:5421 (PRNC-106)
effects on potassium bromides, temperature effects on V and F centers produced by, 22:1331
effects on potassium chlorates, optical and thermal bleaching of infrared and ultraviolet absorption bands from, (E), 22:7385
effects on potassium chloride and sodium chloride whisker crystals, relation of surface-to-volume ratio to defect production from, (E), 22:46241
effects on potassium chloride crystals containing iodide ions, ESR and optical studies of ICl- V/sub K/ centers from, 22:44230
effects on potassium chloride crystals, production and bleaching of F centers from, (E), 22:13551
effects on potassium chloride crystals, production and thermal annealing of Frenkel defects from, (E), 22:13594
effects on potassium chloride crystals, simultaneous production and bleaching of F centers in, (E), 22:11559
effects on potassium chloride fiber crystals, kinetics of accumulation of F centers from, (E), 22:41684
effects on potassium chloride single crystals, mechanism of thermal annealing of defects from, (E), 22:34795
effects on potassium chlorides and rubidium bromides, energy for F center formation from, 22:5421 (PRNC-106)
effects on potassium chlorides, luminescence caused by deformation after, 22:5452
effects on potassium content of spleen cells in mice, low-dose, 22:45508(R) (PG-Report-826)
effects on potassium dihydrogen phosphate, ESR study of, 22:12347
effects on potassium iodides, capture by thallium activator of holes produced by, (E), 22:5441
effects on potato beetle, laboratory evaluation of sterilizing, 22:47656
effects on potato tubers, mutagenic, 22:21633
effects on potatoes, mutagenic, 22:28424
effects on presence and distribution of lysosomal enzymes in rat intestine, 22:49558
effects on priming ability of DNA in fibroblasts of young chickens, 22:45427
effects on priming activity of DNA for DNA-nucleotidyltransferase, 22:25713 (COO-78-163, pp 64-125)
effects on production and secretion of corticosteroids in rats, protective effects of cysteamine against, 22:31170
effects on production of anti-sheep-erythrocyte hemolysin in intact and splenectomized rabbits, 22:8469
effects on production of carbon dioxide by yeasts, effects of hexitols and sugars on, 22:8657
effects on production of luminescence in dyes, effects of hydrated electrons on, 22:30994
effects on production of nickel ions in nickel oxide, effects of dose on, 22:10272
effects on production of nitrogen oxides and ozone in nasal mucosa of monkeys, effects of, on ability to detect exposure, 22:49487 (ORO-2903-39)
effects on production of virus by human leukocytes in culture with virus-carrying lymphoma cells, 22:36349
effects on productivity of hybrid fruit trees, effects of pollen exposure on, 22:45481
effects on progesterone use in guinea pigs and rats, 22:25998
effects on progress of reticulum cell lymphoma transplants in mice, local or extended-field, 22:51980
effects on proliferation kinetics of L cells, 22:36356
effects on proliferation of cell types involved in scar formation in spinal cord of rats, 22:40926
effects on proliferation of maternal blood cells in male rats, effects of exposure of fetus on, 22:6893
effects on properties and structure of fibrinogen and serum albumin, 22:38190 (CEA-R-3012)
effects on protein and RNA synthesis by synchronous HeLa and human leukemic cells, tracer study of, 22:8436(R) (NYO-910-58)
effects on protein content of blood serum of rabbits, high and low energy, 22:28387
effects on protein patterns of blood, bone marrow, and liver of rats, 22:446
effects on protein synthesis and ribosome content of mammary tumors in mice, 22:36360
effects on protein synthesis and serum content of rabbits with nephritis, 22:6751
effects on protein synthesis by liver mitochondria of rats, 22:453
effects on proteins in skin of rats, chromatographic and electrophoretic analyses of, 22:51886
effects on proteins, ESR spectra of, 22:49261
effects on proteolytic activity of blood of dogs and rats, 22:23429
effects on protozoa, proposed mechanism for recovery from high dose, 22:40879
effects on pupae of holyhock seed moth in relation to sterilization, 22:52122
effects on pure lithium fluoride, ESR of [111] interstitial defect produced in, (E), 22:31970
effects on quartz, relation of electron processes and dielectric constants to luminescence and thermoluminescence from, 22:29556
effects on rabbit liver, pathological, 22:6904
effects on rabbits, determination of RBE for, 22:51900
effects on rabbits, effects of postirradiation blood transfusions on acute, 22:31201
effects on racemization of potassium trisoxalato chromium(III) complex, 22:14546
effects on rat fetuses following maternal exposure to whole-body, 22:12897 (SZS-12/67)
effects on rat intestines, combined effects of in vivo uv on, 22:51882
effects on rate of mitosis in carcinoma cells in mice, 22:12764
effects on rate of mitosis in cells of chickens, 22:33785
effects on rate of mitosis in cultured fibroblast cells from embryos of mice, effects of cell phase on, 22:21477
effects on rate of mitosis in tumor cells of mice, protective effects of Complamin against, 22:40792
effects on rate of mitosis in tumor cells, RBE of electron and γ, 22:12763
effects on rats and Vietnamese swine, protective effects of vitamin B_{12} against, 22:47549
effects on rats, assessment of protective effects of ACTH and serotonin on, 22:33879

effects on rats, carcinogenic, 22:28636
effects on rats, carcinogenic, 22:28661
effects on rats, combined effects of diet and bacterial flora in feces on whole-body, 22:557
effects on rats, combined effects of drum trauma and partial-body shielding on pathological, 22:25978
effects on rats, combined effects of iodine-131 on neoplastic, 22:43452
effects on rats, determination of dose for lethal, 22:21612
effects on rats, effects of continuous or fractionated dose on, 22:23656
effects on rats, effects of food restriction and uninephrectomy on, 22:40859
effects on rats, effects of local hypoxia on, 22:40949
effects on rats, effects of shock on lethal, 22:40846
effects on rats, effects of Teflon implants on carcinogenic, 22:28623 (ANL-7278, pp 132-43)
effects on rats, protective effects of nortestosterone against, 22:51775
effects on rats, protective effects of plasma factors against mutagenic, 22:12833
effects on rats, protective effects of sulfur-containing compounds against whole-body, 22:4657
effects on rats, radioprotective effects of pyridoxine against, 22:15041
effects on rats, RBE of, 22:33943
effects on rats, RBE of 17.5 MeV, 22:33943
effects on rats, sensitizing effects of vitamin K_3 on, 22:49396
effects on rats, therapeutic effects of vasotropic compounds and vitamins on acute, 22:49436
effects on reaction between benzene and potassium nitrate, 22:51005
effects on reactions of cytochrome c and enzyme-linked cytochrome, 22:47186
effects on recovery of rat brain and nerves from wound trauma, effects of dose and dose rate on, 22:51941
effects on rectal tumors in man, combined effects of high-energy electrons on therapeutic, 22:51722
effects on rectum following therapy of cervical cancer, 22:19444
effects on recurrent skin diseases, combined effects of plastic surgery on therapeutic, 22:31142
effects on regeneration of bone marrow in plethoric rats, 22:38470
effects on regeneration of epithelial cells in skin of mice, effects of dose fractionation on, 22:6902
effects on regeneration of limbs of Triturus viridescens, effects of normal skin grafts on, 22:43451
effects on regeneration of striated skeletal muscle in mice and rabbits, acute, 22:31226
effects on reparative capacity of peripheral nerves in leg of rats, effects of dose fractionation on, 22:45714
effects on replication of adenoviruses in cells of human kidney in vitro, 22:51457
effects on replication of DNA in HeLa cells, effects of dose on, 22:6742
effects on replication of virus particles in intrarenal thymus grafts in mice, 22:23633
effects on reproduction and colony survival of spores of Bacillus megaterium, effects of oxygen, temperature, and water content on, 22:38507
effects on reproduction and survival of cultured Chinese hamster fibroblasts, 22:49284 (NYO-2740-5, pp 201-66)
effects on reproduction in rats in relation to production of sex hormones, 22:15099
effects on reproduction of algae, effects of DNA content and photoperiod on, 22:31280
effects on reproduction of cultured cells, effects of dose, drugs, and metabolism on, 22:25711 (COO-78-163, pp 1-38)
effects on reproduction of Mycoplasma pneumoniae, 22:52046
effects on reproduction of Rhodnius prolixus, laboratory evaluation of sterilizing, 22:47653
effects on reproductive capacity and survival of female beagles, fractionated whole-body, 22:49475 (CONF-680410-, pp 11.1-14)
effects on reproductive capacity of cells of Oedogonium in relation to formation of giant cells, 22:17055
effects on reproductive capacity of female mice, effects of dose and paternal exposure on, 22:15073
effects on reproductive capacity of melon fly and screwworm, 22:17068
effects on reproductive capacity of moths following exposure of pupae, 22:17070
effects on reproductive fitness of mice, population dynamics of, 22:45492
effects on reproductive integrity of bone marrow CF cells, RBE for, 22:49583
effects on resistance of erythrocytes of mice to hydrogen peroxide, whole-body, 22:15094
effects on resistance of mice to EMC virus, effects of neutralizing antibody injections on, 22:30965
effects on resistance of rats to low temperature, effects of dose on whole-body, 22:43392 (AD-665664)
effects on resistance of sheep to babesia-bearing ticks, 22:49570
effects on resistance of soybeans to Pseudomonas glycinea, mutagenic, 22:36240
effects on resonance frequency of different sections of quartz plates, (E), 22:41695
effects on respiration in rat brain in vitro, effects of dose on, 22:49495
effects on respiration in thymocytes of rats, 22:21437
effects on respiration of leukocytes of rats, 22:23607
effects on respiration of mice following uptake of carbon-14-labeled serine, 22:28630 (ORNL-4100, pp 118-26)
effects on response of cultures of human lymphocytes to phytohemagglutinin, 22:43200 (AD-664651)
effects on response of dogs to acute hemorrhage, 22:31206 (UR-49-943)
effects on response of frog sciatic nerve to electrical stimuli, effects of carbon dioxide, cocaine, and pH on, 22:21568
effects on response of man to laryngectomy for carcinomas, review of therapeutic, 22:28692
effects on response of rabbits to epinephrine, effects of dose fractionation on, 22:25994
effects on response of rats to fructose, glucose, maltose, saccharin, and sucrose, 22:49488(R) (ORO-2903-43)
effects on response of rats to saccharin, 22:49486(R) (NYO-3359-4)
effects on response of rats to saccharin and sucrose, effects of time of exposure on, 22:49606
effects on response of rats to saccharin and sucrose, 22:10858
effects on response of rats to saccharin, effects of age and dose on, 22:36346
effects on response of rats to saccharin, effects of anosmia on, 22:8646
effects on response of rats to saccharin, effects of anesthesia on, 22:36345
effects on response of rats to sucrose, effects of dose and time on, 22:43447
effects on response of shielded parabiont rat to saccharin, effects of dose on, 22:4665 (USNRDL-TR-67-95)
effects on response of stem cells in bone marrow of mice to erythropoietin, 22:43439
effects on reticulocytes in mice and spermatocytes in rats, determination of RBE for fast electron and, 22:51884
effects on retina of dogs, effects of dose on whole-body, 22:15092
effects on retina of eye, effects of oxygen on, 22:25796
effects on rice plants, effects of seed exposure on mutagenic, 22:21629
effects on ripening and yield of maize, 22:45437
effects on RNA metabolism in crown gall tissue cultures, phosphorus-32 tracer study of, 22:8482
effects on RNA metabolism of PHA-transformed lymphocytes, 22:28629 (ORNL-4100, pp 104-9)
effects on RNA nucleotide content of crown gall tumors in tissue culture, 22:40958
effects on RNA synthesis in liver of newts, effects of hypoxia on, 22:47489
effects on RNAase composition and structure, 22:33753
effects on Rochelle salt, relation to use of x rays for structure studies, (E), 22:20053
effects on rodent teeth of rats, 22:15111
effects on rodents, combined effects of drum trauma and tourniquet injury on pathological, 22:25978
effects on root growth in corn seedlings, effects of chloramphenicol on, 22:31283
effects on root growth in maize, combined effects of chloramphenicol on, 22:31278
effects on root tip cells of Vicia faba, comparison of continuous and intermittent, 22:51528
effects on roots of bean seedlings, effects of oxygen on, 22:25810
effects on roots of Vicia faba, combined effects of hypoxia and indanetrione on, 22:49635
effects on ruby single crystals, luminescence, (E), 22:11507
effects on saccharin, sucrose, and water, effects of, on avoidance behavior of mice, 22:23613
effects on Saccharomyces cerevisiae, aberrant and mutagenic, 22:40632
effects on Saccharomyces cerevisiae, comparison of mutagenic, with uv radiation, 22:31020
effects on Saccharomyces cerevisiae, mutagenic, 22:8502
effects on Saccharomyces mutants, genetic control of, 22:51491 (UCRL-18404)
effects on saccharose digestion in intestine of rats, effects of bile on, 22:23622
effects on Salamander larvae, histological analysis of lethal, 22:38479
effects on Salamanders, effects of, on tissue grafts, 22:52010
effects on saliva parotin-A activity in rabbits, 22:51437
effects on salivary glands, use of, for study of function and morphology, 22:36292
effects on sarcomas of lymph system, therapeutic, 22:23560
effects on sarcomas of mice and rats, effects of dietary protein on therapeutic, 22:40856
effects on sciatic nerve cells in rats, combined effects

of crush injury on, 22:31221
effects on secondary immune reactions in mice and rats, 22:12805
effects on secondary sex ratio in rats, 22:40643
effects on secretion of adrenocorticotropin by rats following exposure of head, 22:36393
effects on secretion of aldosterone and corticosterone by adrenal gland of rats, whole-body, 22:4690
effects on seeds and seedlings in relation to taxonomic differences, 22:36411
effects on seeds in relation to thermoluminescence, analysis of, 22:31287
effects on seeds of barley, cress, peas, and wheat, genetic, 22:17050(R) (EUR-3606)
effects on seeds of corn, effects of storage and water content on genetic, 22:45491
effects on seeds of Oenothera, mutagenic, 22:51504
effects on seeds of Phaseolus mungo, mutagenic, 22:21630
effects on seeds of Vicia faba, comparison of photon to, 22:40960
effects on seeds, effects of water content on, 22:21627
effects on selection response in Drosophila melanogaster, 22:10741
effects on selenium, internal photoeffect spectral distribution from, (E), 22:20077
effects on semiconductor diodes, diffusion component of transient, 22:8428 (CONF-670708-4)
effects on sensitivity of dogs to Escherichia coli endotoxin, 22:33930
effects on sensitivity of erythrocytes of rabbits to hypotonic solutions of sodium chloride, 22:6867 (LFEN-56)
effects on sensitivity of reflex actions of cats to cystamine, 22:31245
effects on serotonin content of blood and platelet count in mice, protective effects of spleen shielding against, 22:19436
effects on Serratia marcescens, protective effects of inositol, oxygen, and water against, 22:43492
effects on Serratia marcescens, protective effects of humidity and inositol against, 22:49435
effects on serum enzyme release by sheep, mechanism for effects of LET on, 22:21427
effects on serum enzymes of man following therapy for cervical carcinoma, 22:19267
effects on serum lactic dehydrogenase and serum malic dehydrogenase activity following therapy for carcinomas of human female genitals, 22:31103
effects on serum properdin titer in man, 22:545
effects on serum proteins of mice, effects of thymectomy on, 22:28379
effects on serum proteins of rats, whole-body, 22:463
effects on sex ratio of progeny of Drosophila following exposure of males, 22:15102
effects on sex type expression of Cucumis sativus and Momordica charantia, effects of dose on, 22:31282
effects on sexual maturation of female rats, effects of hypothalamic lesions on, 22:49634
effects on sheep, effects of dose on recovery from pathological, 22:12930
effects on Shigella flexneri, effects of dose rate in relation to oxygen-enhancement ratio on, 22:28712
effects on Shigella flexneri, protective effects of anoxia and glycerol against, 22:6929
effects on shoot apex of potatoes, mutagenic, 22:6781
effects on silicon, inverse current increase from, 22:3205
effects on silkworms, rate of mutagenic, 22:17014
effects on silver-activated phosphate glass, optical and ESR studies of, 22:106
effects on single crystals of lithium fluoride, (E), 22:13589
effects on site of lymphosarcoma transplant, effects of, on growth and vascularization of tumor, 22:12920
effects on size of nucleus and nucleus-cytoplasm ratio in cells of epithelium of axolotl, effects of RNA on latent, 22:51362
effects on skin grafts in mice, effects of age, sex, and thymectomy on, 22:6869 (USNRDL-TR-67-92)
effects on skin of guinea pigs following sensitization to dinitrochlorobenzene, acute, 22:45690
effects on skin of human hands, prednisone treatment of, 22:49465
effects on skin of mammals, effects of dose fractionation on, 22:49480 (CONF-680410-, pp 21.1-25)
effects on skin of man following therapy for epitheliomas, 22:25976
effects on skin of man, carcinogenic, 22:23627
effects on skin of man, effects of iontophoresis on pathological, 22:38441
effects on skin of man, histological analysis of, 22:28672
effects on skin of man, pathological, 22:49599
effects on skin of mice, 22:12790
effects on skin of mice, combined effects of chrysomallin on, 22:45614
effects on skin of mice, effects of dose fractionation and oxygen abundance on, 22:547
effects on skin of mice, pigs, and rats, RBE of, 22:8596 (CONF-670305-, pp 128-42)
effects on skin of mice, repair of, 22:12931
effects on skin of rats, tumorigenic, 22:21576
effects on skin of swine, effects of dose fractionation on, 22:572
effects on skin of swine, protective effects of β-methasone-17-valerate against, 22:33852
effects on small colony formation by hamster cells, effects of age on, 22:28274 (ANL-7278, pp 250-82)
effects on small intestine of dogs, protective effects of pancreatectomy against, 22:21547
effects on small intestine of rats, effects of exposure of abdomen or whole-body, 22:28656
effects on small intestines of dogs, effects of bile, and secretions from intestines and pancreas on, 22:28632
effects on small mammals, fractionation and protraction factors associated with late γ, neutron, and, 22:49468 (CONF-680410-, pp 2.1-27)
effects on sodium and potassium bromides, temperature dependence of color centers produced in, 22:52894
effects on sodium and water transport in intestines of rats, protective effects of AET and cysteine against, 22:10824 (BNWL-480, pp 1-19)
effects on sodium chlorate crystals, optical and thermal bleaching of absorption bands from, (E), 22:13603
effects on sodium chloride single crystals, photostimulated exoemission of electrons and luminescence during deformation following coloration by, (E), 22:41656
effects on sodium chloride, transient effects in F-coloring in, 22:48167
effects on sodium chlorides, kinetics of color center production by exoelectron emission after, 22:31973
effects on sodium content of serum of man treated for carcinoma of bronchus, 22:52016
effects on sodium content of small intestine of rats, effects of bile on, 22:51998
effects on sodium fluorides, relation of F-to-M conversion to delayed luminescence from, 22:31948
effects on sodium iodides, recombination luminescence from, 22:7361
effects on sodium sulfate, ESR spectra from, 22:115
effects on soft tissue sarcomas in man, comparison of high-energy electron to therapeutic, 22:51716
effects on solar plexus ganglia, histologic study of repair of, 22:49505
effects on soluble proteins in tissues of brain and intestinal walls of rats, 22:28696
effects on sorption of carbon monoxide and oxygen by aluminum oxide, 22:42729(T) (RFP-Trans-33)
effects on sorption of vitamin B_{12} by rat intestine, 22:49545
effects on soybean seeds, selection studies on mutagenic, 22:36244
effects on spatial avoidance behavior of rats, effects of confinement on, 22:40893
effects on sperm of mice, effects of strain on mutagenic, 22:17039
effects on spermatids and spermatozoa of Drosophila, effects of dose rate and posttreatment with nitrogen or oxygen on mutagenic, 22:25821
effects on spermatocytes and spermatogonia of hamsters, 22:21583
effects on spermatocytes in Drosophila, effects of dose and germ-cell stage on mutagenic, 22:31045
effects on spermatogenesis in beagles, effects of dose fractionation on, 22:38430 (UR-49-876)
effects on spermatogenesis in man, 22:6877
effects on spermatogenesis in rats, effects of cell phase on, 22:33953
effects on spermatogonia of male mice, latent mutagenic, 22:40642
effects on spermatogonia of mice effects of dose fractionation on mutagenic, 22:28418
effects on spermatogonia of mice in comparison to effects of strontium-90 administration, 22:8629
effects on spermatogonia of mice, generational analysis of genetic, 22:25819
effects on spermatogonia of mice, RBE for mutagenic, 22:12839
effects on spermatogonia of swine, effects of, on weight of offspring, 22:33970
effects on spermatozoa of Drosophila, analysis and localization of, 22:45493
effects on spinal cord in man, pathological, 22:31246
effects on spinal cord of man following therapy, effects of dose on pathological, 22:28679
effects on spinal cord of rats, 22:28640
effects on spinal cord of rats, 22:49569
effects on spleen colony formation in different strains of mice, combined effects of hypoxia on, 22:23602
effects on spleen colony-forming ability of bone marrow cells of mice, effects of partial-body shielding of donors on, 22:23590 (BNL-12313)
effects on spleen of mice, protective effects of bone marrow transplants against, 22:19251
effects on spongioblastoma in head of man, histological degeneration of glioma following postoperative, 22:28581
effects on spontaneous motility of isolated segments of duodenum from rats, whole-body, 22:25981
effects on spores of Colletotrichum gloeosporoides, comparison of uv and, 22:36406
effects on squamous cell carcinoma of lower mandible of

man, development of necrosis of cheek mucosa following therapeutic, 22:31200
effects on squash plants, effects of seed exposure on, 22:33979
effects on stability of DNA in lambda bacteriophage, effects of oxygen and temperature on, 22:23476
effects on staining reactions of human leukocytes, 22:23398 (IA-1128, pp 147-55)
effects on stem cell function of bone marrow in mice, 22:28339
effects on stem cells in small intestine of mice, protective effects of mixtures of AET, glutathione, and serotonin against, 22:21557
effects on sterility of bacon for human consumption in USA, 22:33998
effects on storage life of food, comparison of, with other forms of ionizing radiation, 22:49669
effects on storage life of foods, 22:52061 (CONF-670945)
effects on stored energy in sodium chloride, (E), 22:24488
effects on strontium-85 uptake by rats, effects of aging on, 22:33713(R) (NYO-3728-2)
effects on structural decomposition of barium methacrylate dihydrate, 22:12371
effects on structure of barium and strontium tungstate crystals at 77°K, EPR spectral studies on, 22:27828
effects on structure of DNA, 22:2502 (AECL-2665)
effects on structure of fatty acids in organs of rabbits, 22:16992
effects on sulfhydryl groups in proteins of hen eggs, 22:23439
effects on sulfur radical formation in penacillamine-sephadex mixture, effects of heat on, 22:6734
effects on sunflower plants, effects of seed exposure on, 22:21495
effects on survival and tongue of mice, protective effects of locally applied AET, cysteamine and PAPP against whole-body, 22:43367
effects on survival and transforming ability in beagle dogs, 22:10827(R) (UCD-472-114)
effects on survival of adrenalectomized rats, effects of lack of secretion of adrenal cortical hormones on, 22:45709
effects on survival of animals, protective effects of preirradiation against, 22:15083
effects on survival of ascites leukemia cells following transplantation into mice, effects of dose on, 22:38493
effects on survival of ascites tumor cells in mice, effects of cell concentration and exposure at low oxygen tension on, 22:40913
effects on survival of auxotrophic Escherichia coli, mechanism for synergistic effects of uv on, 22:43485
effects on survival of bacteria, 22:52042
effects on survival of bacteria and bacteriophages in water aerosol, protective effects of inositol against, 22:45643
effects on survival of cartilage cells in rats, effects of anoxia on, 22:23637
effects on survival of cells from hamsters, effects of bromocytidine on, 22:40897
effects on survival of cells in bone marrow of mice, effects of cell phase during exposure on, 22:38446
effects on survival of cells in bone marrow of rats, effects of dose on, 22:38437
effects on survival of cells in growth cartilage of tibia in rats, effects of hypoxia on, 22:36357
effects on survival of cells in skin and tumors of man, computer method for comparison of, following dose fractionation, 22:43458
effects on survival of chick embryos, 22:28621 (ANL-7278, pp 1-94)
effects on survival of chickens, effects of Plasmodium gallinaceum infection on whole-body, 22:45676
effects on survival of Chinese hamster cells, combined effects of hydroxyurea on, 22:28660
effects on survival of Chinese hemster cells in comparison to actinomycin, 22:49508
effects on survival of citrus exposed to wintering, 22:4591 (ORO-2909-6)
effects on survival of Cordylophora caspia, protective effects of cysteamine against, 22:51913
effects on survival of cultured Chinese hamster cells, effects of cell phase and temperature on, 22:40892
effects on survival of cultured Chinese hamster cells, effects of cell phase on, 22:28355
effects on survival of cultured Chinese hamster cells, 22:49632
effects on survival of cultured Chinese hamster cells, effects of culture medium and temperature on, 22:49631
effects on survival of cultured Chinese hamster cells, repair of sublethal, 22:49633
effects on survival of cultured hamster cells, effects of age in generation cycle on, 22:28274 (ANL-7278, pp 250-82)
effects on survival of cultured lymphocytes from normal man and patients with Hodgkin's disease, effects of phytohemagglutinin and tuberculin on, 22:28333
effects on survival of cultured mammalian cells, 22:33899(R) (EUR-3906)
effects on survival of cultured sarcoma cells from rats, x, 22:25984
effects on survival of cultured thymocytes from rats, effects of dose on, 22:40883
effects on survival of cultures of Chlamydomonas reinhardti, effects of iodoacetamide on sub-lethal, 22:40963
effects on survival of dogs, effects of diversion of intestinal contents on, 22:47557
effects on survival of dogs, effects of dose-rate on, 22:40884
effects on survival of dogs, protective effects of fresh and preserved bone marrow transplants against, 22:23574
effects on survival of dogs, protective effects of typhoid-paratyphoid vaccine against, 22:40889
effects on survival of endogenous cell colonies following transplantation in mice, effects of dose fractionation on, 22:28697
effects on survival of epidermoid carcinomas in mice, 22:23606
effects on survival of Escherichia coli, comparison of, with effects on Tetrahymena pyriformis, 22:36421
effects on survival of Escherichia coli, RBE for conventional and low-energy, 22:38502
effects on survival of Escherichia coli, relation of single-strand breaks of DNA to, 22:49231
effects on survival of fetuses of rats, effects of progesterone on, 22:38350
effects on survival of fish, 22:28621 (ANL-7278, pp 1-94)
effects on survival of hamster cells, 22:28621 (ANL-7278, pp 1-94)
effects on survival of hamster cells in vitro, effects of argon, dose fractionation, and oxygen on, 22:38489
effects on survival of hamster cells, effects of anoxia on, 22:40836
effects on survival of HeLa and L cells, combined effects of heat treatment on, 22:10884
effects on survival of HeLa and lymphoma cells, RBE for, 22:45430
effects on survival of HeLa cells, combined effects of methotrexate on, 22:31258
effects on survival of invertebrates and vertebrates, effects of high natural background radioactivity on, 22:21464
effects on survival of large animals, review of effects of dose-protraction on, 22:49476 (CONF-680410-, pp 12.1-23)
effects on survival of liver transplants in dogs, combined effects of actinomycin C and azathioprine on local, 22:19272
effects on survival of lymphocytes in mice, 22:49574
effects on survival of lymphocytes in mice following injection into homologous hosts, 22:36359
effects on survival of male mice, effects of dose fractionation and paternal exposure on, 22:15074
effects on survival of mammalian cells, in vitro, 22:38488
effects on survival of mice with bone marrow and spleen transplants, effects of splenectomy on, 22:45675
effects on survival of mice with tapeworm infections, protective effects of streptomycin against, 22:38207
effects on survival of mice, combined effects of Citrobacter freundii infection on, 22:49548
effects on survival of mice, combined effects of immune state and uv-irradiation on, 22:43445
effects on survival of mice, combined effects of ozone on, 22:40751
effects on survival of mice, combined effects of virus infections on, 22:51999
effects on survival of mice, effects of bacterial infections on, 22:28621 (ANL-7278, pp 1-94)
effects on survival of mice, effects of bone marrow transplants and spleen shielding on whole-body, 22:31228
effects on survival of mice, effects of bone marrow and spleen cell transplants on, 22:51989
effects on survival of mice, effects of dose and hematopoietic cells from hybrids on, 22:31154
effects on survival of mice, effects of dose of β particles on, 22:12912
effects on survival of mice, effects of erythropoiesis on, 22:36344
effects on survival of mice, effects of germfree state, nutrients, and strain of animals, 22:47619
effects on survival of mice, effects of respired ozone on, 22:38410
effects on survival of mice, effects of sieve exposure on whole-body, 22:49415
effects on survival of mice, effects of splenectomy on, 22:47632
effects on survival of mice, mechanisms of, 22:23620
effects on survival of mice, protective effects of thiophosphoryl compounds against whole-body, 22:533
effects on survival of mice, protective effects of serotonin against, 22:40794
effects on survival of mice, protective effects of india ink-adsorbed cystamine against, 22:8565
effects on survival of mice, protective effects of magnesium pemoline against, 22:40746
effects on survival of mice, protective effects of 5-hydroxytryptophan against, 22:43372

effects on survival of mice, protective effects of histamine against, 22:40740
effects on survival of mice, protective effects of derivatives of 3',3-dimercaptoacrylonitrile against, 22:51860
effects on survival of mice, protective effects of Complamin against, 22:40792
effects on survival of mice, protective effects of dimethyl sulfoxide and nembutal vapor against, 22:31252
effects on survival of mice, protective effects of endotoxins against, 22:17028
effects on survival of mice, protective effects of injections of fetal liver or isogenic bone marrow against, 22:51768
effects on survival of mice, protective effects of magnesium pemoline against, 22:40754
effects on survival of mice, protective effects of spleen tissue extracts against, 22:21562
effects on survival of mice, protective effects of topically applied dimethyl sulfoxide against whole-body, 22:40755
effects on survival of microorganisms on foods, 22:43515
effects on survival of monolayer cultures of mammalian cells, comparison of growth inhibition and minimum-clone-size techniques for determining, 22:43402
effects on survival of mycoplasma, 22:49649
effects on survival of new-born mice, protective effects of thymus shielding against, 22:36356
effects on survival of new-born mice, protective effects of transplants of thymus tissues against, 22:36358
effects on survival of normal and tumor-bearing mice and rats, protective effects of cysteine combined with fructose and N-acetyl-homocysteine-thiolactone against, 22:40791
effects on survival of Paramecium caudatum in relation to stage of nuclear reconstruction, 22:21607
effects on survival of planarians, role of stem cells in, 22:49517
effects on survival of protozoa, effects of actinomycin D on, 22:28537 (ANL-7278, pp 170-84)
effects on survival of protozoa, protective effects of injections of unirradiated protoplasm against, 22:28537 (ANL-7278, pp 170-84)
effects on survival of rabbits in relation to body weight and blood changes, 22:21578
effects on survival of rats following pre-fertilization maternal exposure, 22:40644
effects on survival of rats in relation to mercapto group content of bone marrow, 22:19393
effects on survival of rats, effects of bone marrow transplants on lethal, 22:49491 (UCSF-10-P-2-40)
effects on survival of rats, effects of spatial distribution of tissue dose on, 22:51951
effects on survival of rats, protective effects of serotonin against, 22:31261
effects on survival of rats, protective effects of intravenous pyridoxal-5-phosphate against whole-body, 22:31137
effects on survival of sarcoma KHT cells, effects of anoxia on, 22:31161
effects on survival of skin and tumor cells in man, mathematical model for comparison of effects of dose fractionation on, 22:43459
effects on survival of spores and vegetative forms of Bacillus, effects of pH and cell density on, 22:52076
effects on survival of tadpoles, effects of dose fractionation on, 22:28663
effects on survival of tadpoles, protective effects of chlorobutanol and urethane against, 22:28552
effects on survival of transplanted ascites lymphoma cells in mice, effects of host-resistance on, 22:40563
effects on survival of uv-irradiated ascites tumor cells, effects of dose on, 22:443
effects on survival of wheat seed, effects of dose and volume of interphase chromosome on, 22:52031
effects on survival of yeast, 22:45437
effects on survival of yeasts, effects of incubation in distilled water prior to plating on, 22:31292
effects on survival of yeasts, lethal sectoring of, 22:40972
effects on susceptibility of albumins to enzyme hydrolysis, 22:23442
effects on susceptibility of mice to Salmonella enteritidis infection, 22:36369
effects on susceptibility of nuclei to degradation by endogenous DNAase, 22:25760
effects on susceptibility of proteins in erythrocyte cell membranes to enzymatic hydrolysis, 22:23442
effects on swine, effects of dose on pathological, 22:38438
effects on synaptic reflexes in spinal cord of cats, 22:28684
effects on synchronized Chinese hamster cells, protective effects of cystamine and cysteamine against lethal, 22:15033
effects on synthesis and secretion of milk by erythrocyte perfused lactic glands of goats, 22:25765
effects on synthesis and utilization of ATP in nuclei of thymus cells of rats, whole-body, 22:30951
effects on synthesis of antibodies in rabbits, effects of colchicine on, 22:28621 (ANL-7278, pp 1-94)
effects on synthesis of cholesterol in adrenal glands and liver of rats, 22:33766
effects on synthesis of cortisol in adrenal glands of guinea pigs and rats, whole-body, 22:25998
effects on synthesis of DNA in cells of cervical neoplasms in man, tracer studies of, 22:40943
effects on synthesis of DNA in cultured diploid cells from human amnion, carbon-14-labeled thymidine tracer study of, 22:43214
effects on synthesis of DNA in Escherichia coli, repair of, 22:8493
effects on synthesis of DNA in HeLa cells, combined effects of uv on, 22:36402
effects on synthesis of DNA in HeLa cells, effects of dose on, 22:36212
effects on synthesis of DNA in human kidney cells in vitro, 22:51457
effects on synthesis of DNA in macronucleus of Paramecium caudatum, effects of temperature adaptation on, 22:21608
effects on synthesis of DNA in regenerating cells in injured spinal cord of rats, 22:40926
effects on synthesis of DNA in regenerating liver of rats, effects of iodine-125-labeled IUDR on, 22:28621 (ANL-7278, pp 1-94)
effects on synthesis of DNA in Tetrahymena, 22:12744 (BL-207)
effects on synthesis of DNA, nucleoprotein, and RNA in germ cell nuclei of male rats, 22:51418
effects on synthesis of DNA, proteins, and RNA in hamster cells, 22:28274 (ANL-7278, pp 250-82)
effects on synthesis of glycerolphosphate dehydrogenase in brain of rats, 22:33718 (UCLA-12-640, pp 61-80)
effects on synthesis of histones in cell nuclei, 22:2502 (AECL-2665)
effects on synthesis of interferon in mice following injection of Newcastle or Sindbis virus, 22:45429
effects on synthesis of proteins and RNA in cotyledons of peanut seeds, 22:31014
effects on synthesis of proteins and RNA in fish embryos, 22:51353
effects on synthesis of proteins in liver of rats following whole-body exposure, 22:19258
effects on synthesis of proteins in peanut seedlings, effects of seed exposure on, 22:40959
effects on synthesis of RNA by cells of rat ascites hepatoma in vitro and in vivo, 22:30957
effects on synthesis of tryptophan pyrrolase in rats following administration of hydrocortisone or tryptophan, 22:36210
effects on taurine content of urine in man following extracorporeal lymphocyte therapy, 22:10825 (BNWL-480, pp 55-83)
effects on testes development of mice, prenatal low-dose, 22:19441
effects on testes of infants, design of shielding for protection against, 22:8534
effects on testes of mice, effects of age and dose on, 22:19411
effects on testes of mice, effects of age of embryos at exposure on, 22:19429
effects on testes of mice, RBE of genetic, 22:51908
effects on testes of turtles, effects of dose on, 22:4697
effects on testicles of monkeys, effects of cumulative doses on, 22:51871(T) (JPRS-45744)
effects on tetracycline-sensitivity of coliform bacteria of swine, whole-body, 22:43489
effects on Tetrahymena, effects of caffeine, growth cycle, and recovery capacity on, 22:49455
effects on thallium-activated alkali metal halides, quantum efficiency of scintillations produced in, 22:34769
effects on thermal decomposition of solid orthorhombic ammonium perchlorate at 193 to 238°C, 22:47169
effects on thermal decomposition of solid orthorhombic ammonium perchlorate at 193 to 238°C, kinetics of, 22:47170
effects on thermal degradation of ionic salts, 22:18847
effects on thermoelastic materials, 22:6354(P)
effects on thermoluminescence of inorganic compounds, 22:16593
effects on thermoluminescence of inorganic phosphorus compounds, 22:30635
effects on thermoluminescence of tomato seeds at low temperatures, 22:38230
effects on thermoluminescent response of lithium fluoride phosphors, 22:25373 (COO-1105-119)
effects on thin-film capacitors, 22:710(R) (AD-648742)
effects on thiouracil, thiouridine, and transfer ribonucleic acid, 22:33460
effects on thioureas, ESR study of, 22:25381
effects on thymus cells of rats, in vitro and in vivo study of mechanism of acute lethal, 22:49618
effects on thymus gland of mice, effects of isologous bone marrow transplants on regeneration of, 22:51848
effects on thymus gland of rats, effect of age, castration of sex, endocrine status, and sex on, 22:31223
effects on thymus of children, development of neoplasms in man following therapeutic, 22:33934

effects on thymus of mice, histological study of whole-body, 22:28642
effects on thymus of mice, protective effects of injections of myeloid cells against, 22:10715
effects on thymus of rats, effects of shielding on, 22:40848
effects on thyroid following therapy for Hodgkin's disease, neoplastic, 22:49566
effects on thyroid gland of man, pathological, 22:2534(R) (COO-1243-8)
effects on thyroid gland of rats, response to goitrogenic stimulus following, 22:33969
effects on thyroid glands of man, effects of dose and exposure age on tumorigenic, 22:49592
effects on thyroid glands of rats, effects of, on incidence of gonadotropic pituitary adenomas, 22:10871
effects on thyroid of man following therapy of thymus enlargement during infancy, 22:19448
effects on thyroxine and its analogs, Auger effect in, 22:30585(R) (COO-1728-1)
effects on tissue regeneration by planaria, 22:40842
effects on tissue regeneration in man following surgery, therapeutic, 22:51893
effects on tissue regeneration in salamanders, effects of transplants on, 22:45688
effects on tissues in hand of man, following therapy, latent pathological, 22:43440
effects on tissues, measurement of integral dose for, 22:25836
effects on tobacco plants, effects of variety on mutagenic, 22:8501
effects on tolerance to transplantation antigens in parabiosis of mice, 22:21419
effects on tomato plants, combined effects of heat treatment on, 22:49299
effects on tomato plants, effects of seed exposure on, 22:33973
effects on tomato plants, mutagenic, 22:2494
effects on tomatoes, mutagenic, 22:6779
effects on tongue base tumors in man, comparison of high-energy electron to therapeutic, 22:51735
effects on Torulopsis utilis, mutagenic, 22:21475
effects on toxicity of bone marrow suspensions to carcinomas and sarcomas in rats, 22:25862
effects on toxicity to mice of contrast media containing iodine, acute, 22:52112
effects on transfer of galactose, glucose, and sorbose in intestines of rats, whole-body, 22:43216
effects on transformation of human amnion cells by Simian virus 40, 22:31033
effects on transforming activity of DNA in Bacillus subtilis system, 22:25713 (COO-78-163, pp 64-125)
effects on transistors, 22:413 (AD-648236)
effects on transplantability of mammary carcinomas in mice, effects of mammary-tumor-agent on, 22:12812
effects on transplantation tolerance of mice, combined effects of unrelated antigens on, 22:38216
effects on transplanted embryos of wheat, effects of, on frequency of chromosome aberrations in root tip cells, 22:14983
effects on transplants of kidney in dogs, combined effects of immunosuppressive drugs on acute, 22:51354
effects on transport function of endoplasmic reticulum of chicken myoblast cells in vitro, 22:49250
effects on transport of carbon-14-labeled auxin in maize, effects of gravity on, 22:28701 (ANL-7278, pp 297-303)
effects on transport of glucose and water in intestines of rats, protective effects of AET against, 22:45647
effects on Tribolium confusum larvae, chemical and physical factors affecting, 22:45672
effects on trichloroacetaldehyde, effects of dose rate on electric conductivity in, 22:8150
effects on trypsin in dry state and aqueous solution, effects of oxygen and temperature on, 22:45425
effects on trypsin, effects of dose and hydroxyl radicals on, 22:33762
effects on tumor viruses in fibroblasts from man and mice, effects of dose on transformation, 22:49655
effects on tumors in mammals, 22:43424
effects on tumors in mice, combined effects of ethylhydrazide of podophyllic acid on therapeutic, 22:17031
effects on tumors in rats, effects of dose fractionation on, 22:49480 (CONF-680410-, pp 21.1-25)
effects on tumors of salivary glands of mice, histochemical and histological study of, 22:23459
effects on tumors, development of model for calculation of effects of anoxia on therapeutic, 22:12886
effects on tumors, dosimetry and techniques of therapeutic, 22:28466
effects on ultrastructure of cells in adrenal cortex of rats, electron microscopy of, 22:45395
effects on ultrastructure of cells in intestinal epithelium of mice, whole-body, 22:49229
effects on ultrastructure of cells in thyroid gland transplants in rats, effects of dose on, 22:12813
effects on ultrastructure of cells of epidermis in rabbits, use of electron microscopy to determine, 22:30963
effects on ultrastructure of cerebral cortex of monkeys, 22:38458
effects on ultrastructure of liver cells of rats, effe of age on whole-body, 22:14963
effects on ultrastructure of lysosome organelle in fet brain of monkeys, 22:49485 (NYO-2740-5, pp 267-98)
effects on ultrastructure of nerve cells of solar plex in rats, effects of dose on, 22:10723
effects on ultrastructure of nuclei of duodenal crypt cells of mice, supralethal, 22:33963
effects on ultrastructure of pancreas in dogs, protecti effects of alloxan against, 22:6894
effects on ultrastructure of thymus cells, in mice, 22:36195
effects on uptake of amino acids by ACTH during synthes in pituitary gland of rats, 22:23458
effects on uptake of carbon-14-labeled glycine by proteins in tissues of rats, 22:28675
effects on uptake of iodine-131 by erythrocytes of rats effects of housing regimen on, 22:2548
effects on uptake of proteins by lymph nodes, spleen, a thymus of guinea pigs, 22:14975
effects on uptake of Thorotrast by liver cells, 22:14910(R) (COO-1244-12)
effects on uptake of thymidine by DNA in L cells, effec of cell phase on, 22:36202
effects on uptake of trace elements by isolated mitochondria of spleen of rats, whole-body, 22:40853
effects on uptake of tritium-labeled DL-serine or selenium-75-labeled L-selenomethionine by growing and resting hair of rodents, 22:36392
effects on uptake of tritium-labeled thymidine by intestine of embryos of chickens, protective effects c cysteamine against, 22:19373
effects on uracil, effects of ascorbic acid, nitrogen, and oxygen on, 22:14530
effects on urease activity, protective effects of 2-amino-4,5-dimethylselenazol hydrochloride against, 22:25904
effects on ureter in rabbits, pathological, 22:19449
effects on uterine carcinomas in man, protection of ovaries during therapeutic, 22:10833
effects on uv absorption by DNA of hydras and sponges, 22:51407
effects on uv fluorescence of cells from blood and bone marrow of rats, 22:33931
effects on uv-fluorescence of ascites cells of rats, 22:33772
effects on vaccinia virus in L cells, multiplicity reactivation of, 22:19368
effects on vaginal cancer, development of complications following therapeutic, 22:6888
effects on vaginal carcinomas in man, therapeutic, 22:40737
effects on valine, ESR analysis of, 22:45462
effects on variability of morphology and physiology in wheat populations, 22:49639
effects on vascular permeability of rats, iodine-131 tracer study of acute, 22:49621
effects on vesicular stomatitis virus, effects of peptone on, 22:595
effects on vestibular-analyzer function in rabbits, effects of localized exposure on, 22:6905
effects on viability coefficients of chromosomes in Drosophila populations, 22:10745
effects on viability coefficients of chromosomes in progeny of Drosophila, effects of paternal exposure on, 22:10744
effects on Vicia faba, protective effects of serotonin-creatinine sulfate complex against, 22:10811
effects on virulence of Schistosoma cercariae in mice and monkeys, 22:12809
effects on virus-induced interferon production by mice, 22:598
effects on visual responses in rats, effects of prenatal exposure on, 22:19421
effects on vitamin B_{12} sorption in intestines of rats, 22:10824 (BNWL-480, pp 1-19)
effects on vulgare wheat, mutagenic, 22:51535
effects on Walker 256 rat carcinosarcomas, combined effects of endotoxin on, 22:40811
effects on warts on human hand, therapeutic, 22:49591
effects on water vapor containing methanol, 22:35853
effects on water vapor, effects of various electron scavengers on yields from, 22:27798
effects on weight of fruit of Lycopersicum, effects of pollen exposure on, 22:21635
effects on weight of small intestines of mice, combined effects of hematoporphyrin on, 22:10800
effects on weight of spleen in mice, effects of hematoporphyrin on, 22:10801
effects on weight of testes in mice in comparison with effects of fission neutrons, 22:28621 (ANL-7278, pp 1-94)
effects on weight of testes in mice, combined effects of endoxan on, 22:51734
effects on weight of testes of mice in comparison to γ radiation, 22:47593
effects on weight of testes of mice, RBE of, 22:28274 (ANL-7278, pp 250-82)
effects on wheat plants, effects of physiological condition of seeds during exposure on, 22:31289
effects on wheat plants, effects of seed exposure on, 22:21493

effects on wheat sprouts, effects of continuous and fractionated dose on, 22:23667
effects on wheat, cytogenetic analysis of mutagenic, 22:38242
effects on white clover plants, effects of seed exposure on mutagenic, 22:8656
effects on wing scales of Indian meal moth following larval exposure, mutagenic, 22:51531
effects on wound healing in rats, protective effects of bone marrow against, 22:25851
effects on X chromosome loss in oocytes of Drosophila, 22:51544
effects on X chromosomes of Drosophila melanogaster in comparison to temperature effects, aberrant, 22:28415
effects on yeast cells, effects of glucose on irreversibility of, 22:25866
effects on yeast cells, protective effects of tetrahydroxyquinones against, 22:10790
effects on yeast cells, use of sodium arsenate to determine time of, 22:26002
effects on yeast, effects of ploidy on recovery from, 22:25872
effects on yeast, mechanisms of lethal, 22:2502 (AECL-2665)
effects on yeasts, effects of genetic make-up of yeast on, 22:586
effects on yeasts, effects of thiopyronin on dark recovery of, 22:45644
effects on yeasts, mutagenic, 22:51506
effects on yeasts, RBE for, 22:12836
effects on yield of hydrated electrons, hydrogen atoms and hydroxyl radicals in solutions, effects of pH on pulsed, 22:36205
effects on yield of vegetable plants, mutagenic, 22:45489
effects on young male mice, protective effects of dithiopropioamidine against genetic and somatic, 22:40900
effects on zinc acetate dihydrate, ESR studies of, 22:40140
effects on, on rate of proliferation of cells, 22:8594 (CONF-670305-, pp 76-80)
emission by cadmium-109, attenuation by suspended sediments in surface streams, 22:4273
emission by rare earths, wavelengths and energy levels in, 22:24023 (CONF-670502-, pp 101-11)
emission by target materials at 100 to 1000 eV, (E), 22:52526
emission during auroral zone electron precipitation events, (E), 22:24178
emission during auroral-zone pulsation event of Sept. 2, 1966, (E), 22:22018
emission during solar maximum, (T), 22:43725
emission from atomic K shells, characteristic, (T), 22:15351
emission from auroral zone, (T), 22:9222
emission from auroral, periodicity in, (E), 22:47902
emission from auroral-zone electron precipitation events, (E), 22:24188
emission from auroral-zone precipitating electrons, (E), 22:22052
emission from beta sources, (E), 22:13248
emission from cosmic radio sources, (T), 22:17303
emission from Cyg X-1, (E), 22:23911 (UCRL-50384)
emission from Cyg XR-1 of high-energy, (E), 22:853
emission from Cyg XR-1, twofold increase of, (E), 22:8973
emission from discrete cosmic sources, (T), 22:49965
emission from flare of July 7, 1966, satellite observations of, 22:4991
emission from flares and coronal condensations, (E), 22:26138
emission from gamma irradiated aluminum, cobalt, and nickel, 22:42986
emission from gamma irradiated lead, effects of backing thickness on yield of, (E), 22:48186
emission from gamma irradiated lead, yield of, (E), 22:48187
emission from HI regions due to cosmic-ray interaction, (T), 22:38826 (N-68-21755)
emission from Jupiter, Mars, and Venus, upper limits for, (E), 22:15292
emission from Large Magellanic Cloud, search for, (E), 22:4944
emission from lunar surface, (E), 22:29312
emission from M87 radio galaxy, (E), 22:21834
emission from μ-mesic atoms, high-resolution studies of, (E), 22:5817(R) (NYO-GEN-72-28)
emission from neutron star accreting matter from dwarf companion, (T), 22:29082
emission from plutonium at 8 to 75 A, 22:5122
emission from precipitating electrons following sudden storm commencements, (E), 22:47937
emission from proton irradiated aluminum, copper, and tungsten single crystals, (E), 22:960
emission from quiet sun, (E), 22:17209
emission from radio galaxy M87, (E), 22:11116
emission from rapidly pulsating radio sources, (T), 22:34191
emission from Sco XR 1, Tau XR-1, Cyg XR-1, Cyg XR-2, and Vel XR-1, (E), 22:854
emission from solar corona and active regions, (T), 22:26154
emission from solar flare on Dec. 29, 1965, (E), 22:21787
emission from solar flares in July and August 1967, (E), 22:34197
emission from solar flares, (E), 22:879
emission from Sun at solar minimum, (E), 22:13172
emission from Sun on Feb. 23—24, 1964, (E), 22:2734
emission from Sun, association with flares, (T), 22:38681
emission from sun, history and spectrum of, 22:25787
emission from Sun, measurements on, (T), 22:34196
emission from Sun, Soviet research on, (T), 22:26159
emission from sunspot areas, (T), 22:38681
emission from supernova remnants, (E), 22:34201
emission from supernovae, upper limits on, (T), 22:34193
emission from three solar flares on May 23, 1967, (E), 22:29038
emission from turbulent-heated plasma in magnetic mirror machines, (E), 22:52764
emission from Virgo region of hard, detection of, (E), 22:19696
emission in auroral pulses, effect of primary particle velocity dispersion on, (E), 22:47938
emission in auroral zone, relation to electron bursts in magnetotail, (E), 22:52652
emission in electron bombardment of bulk crystals, orientation dependence of, (E), 22:19752
emission in neon ion reactions with aluminum, magnesium, and neon, spectra of, (E), 22:21843 (NYO-2962-6, pp 20-9)
emission in plasma focus experiments, 22:1281 (LA-3770, Paper C6)
emission in space, effects of solar flares on, 22:6919
emission of 80 to 1000 keV, during solar flare of July 7, 1966, (E), 22:13148
emission of diffuse cosmic background, (E), 22:38653 (N-68-16483)
emission of soft, during solar flares, (E), 22:41195
emission of solar, (T), 22:15291
emission of solar, from C VI and N VII, 22:34230
emission of ultrasoft, from Sun, (E), 22:49901
emission of, wavelength standards for, (E/T), 22:11204
emission spectra from Tokamak TM-3 machine, (E), 22:22128
emission spectra of solar active regions, (E), 22:26139
energies for Z = 1 to 100 elements, tables of, 22:5869 (LA-3753)
energy fluence of 50 kV-maximum, use of calorimetric, chemical, gaseous, and solid-state ionization dosimeters for measuring, 22:25651
energy flux and beam power of 5- to 20-keV, design of calorimeter for measuring, 22:16876
energy in initial states of impulse spark in streamer chamber, 22:16905
energy measurements in xenon bubble chambers, precision of, 22:38084
energy measurements using cavity ionization chamber method, absolute, (E), 22:44653
energy spectra at 200 to 500 km, rocket measurement of solar, 22:2919
excitation by magnetospheric electrons on lunar surface, (T), 22:15445
exposure timers for pediatrics, design of ionization chamber, 22:25635
flux from eta Carinae, (T), 22:5032
flux measurements of 5 to 15 keV, development of total absorption calorimeter for, 22:47448(R) (PRNC-69)
flux measurements of low-energy, G-values of ferrous sulfate dosimeters used for, 22:40474
flux of anisotropic cosmic soft, detection of background, (E), 22:8868
flux of cosmic background, at 50 to 290 keV, isotropic, (E), 22:17209
flux of cosmic background, in lunar vicinity, (E), 22:29312
flux of galactic cosmic-ray-electron-produced, (T), 22:17433
flux of solar, below 5 A, (E), 22:17204
flux of solar, during IQSY, (E), 22:17206
focusing telescope for cosmic, (E), 22:36567 (N-68-16582)
generation and absorption in cosmic-ray processes, (T), 22:29102
hazards to man during diagnosis and therapy of thorax, 22:2539
induced glomerulosclerosis in rats, effects of malnutrition and uninephrectomy on ultrastructure of, 22:36341 (AD-661795)
intensity in auroral zone, balloon observations of, 22:2927
intensity of diffuse cosmic background, instruments for, (E), 22:36761
intensity variations of auroral, 22:2958
interaction with matter, production of photo- and Auger electrons from, (E), 22:36700(R) (AD-662607)
interpretation of diffuse cosmic background, (T), 22:13193
mass absorption coefficients for various materials, 22:43130
measurement of solar, in USSR, 22:2729

microbursts of, in auroral zone, (E), 22:29373
Milky Way opacity to soft, (T), 22:13097
monitoring of pulsed, scintillation detector--film recording event, 22:6596
monitoring of scattered, alarm system for, 22:49089
monitoring of scattered, from x-ray diffraction apparatus, 22:19226
penetration tests using, review of, 22:49043
performance in radiography of boron cermets, 22:4374
polarization of characteristic, in proton or electron collision processes, (T), 22:21896
polarization of soft, design of detector for, 22:36066
polarization of solar-flare, method of analyzing, 22:4999
production by positive ion reactions with insulator targets at 40 to 70 keV, 22:50507
production for medical use, linear accelerator for 6-MeV, 22:29807
production from exploding tungsten wires in vacuum, 22:21238 (UUIP-562)
production in atmosphere by primary cosmic particles, (E), 22:34295
production in interstellar gas, galactic halo, and intergalactic medium, (T), 22:921
production in thin films by proton bombardment for thickness measurement, 22:10616
production of hard, in solar flares, (T), 22:820
production of high intensities of monochromatic, evaluation of methods for, 22:47448(R) (PRNC-69)
production of high-energy, for partial exposure, design of equipment for, 22:40296
production of monochromatic α-excited, evaluation of α sources for, 22:249(R) (NYO-3491-2)
production of monochromatic, bibliography on methods for, 22:20041 (NP-17314)
production of, description of electron synchrotron for, 22:20400(P)
production of, design of electron linear accelerator and target for, 22:15911(P)
production of, use of electron accelerators for, 22:11863(P)
production of, with particular wavelengths, use of gamma sources and special target-materials for, 22:388(P)
protection against hazards from medical use of, in Netherlands, regulations for, 22:2518
protection against hazards from, in dental radiography in New Zealand, 22:40683
protection against, specifications for lead barium silicate and lead silicate glasses for, 22:31111
pulsation of auroral-zone, fast, (T), 22:34376
radiative transfer of, (T), 22:34132(R) (AD-661573)
reaction with absorption K-edge of germanium, interference in, 22:13246
reactions with atoms, Auger processes in, 22:2810
reactions with atoms, central potential model for determining ionization cross sections for, 22:39956 (ISS-67/30)
reactions with atoms, central-potential model for ionization in, 22:9052
reactions with foods, criteria for limiting, 22:8677
reactions with high-Z targets, expressions for bremsstrahlung spectra for, (T), 22:36710 (SC-DC-67-2399)
reactions with iron, tin, and uranium at 412 to 1332 keV, photoelectric cross sections for, 22:5082
reactions with thorium and uranium layers at 3.1 to 26 keV, total absorption cross sections for, (E), 22:29208
reactions with xenon, production of multiply charged ions from, (E), 22:34291
reflection by building materials during dental radiography, measurement of, 22:40724
relation of diffuse cosmic background, to extended radio sources, (T), 22:41144
relation to rapidly changing auroral forms, (E), 22:41466
relative biological effectiveness of, comparison of, with high-energy bremsstrahlung, 22:49642
scattering at small angles by liquid helium-3, sound velocity determination using, (E), 22:26331
scattering by ammonia and aqueous solutions of ammonia at 4°C, 22:18739 (ORNL-4221)
scattering by atoms and ions, factors computed from numerical Hartree--Fock wave functions for, 22:19736 (LA-3816)
scattering by chromium single crystals, 22:20037(R) (COO-525-30)
scattering by concrete, lead, Presdwood, and steel phantoms, attenuation of secondary radiation from, 22:28497
scattering by crystals, quantum theory of, 22:29568
scattering by homogeneous liquids, small-angle, (E), 22:9078
scattering by lead crystals, Kohn anomalies in thermal diffuse, 22:20037(R) (COO-525-30)
scattering by liquids, study of structure and transport properties by, (T), 22:13920
scattering by silicon at small angles, calculation of incoherent, 22:34250
scattering factors for many electron atomic systems for, (T), 22:36746
scattering from edge-type dislocation rings in metals, theory of small-angle, 22:23817
scattering from fluids near critical point, asymptotic form of radial distribution function for small-angle, 22:20096 (TP-210)
scattering in liquid helium-3, structure factor from, (E), 22:15366
scattering in martensite and ferrite, calculations of diffuse, 22:48148 (BNL-12711)
scattering of, conference on small-angle, 22:23711
scattering of, effects of, on calibration of equipment, 22:515
scattering on argon, structure factor from, 22:29177 (LPTHE-TH-68/9)
scattering on crystals, effects of thermal vibrations on, (T), 22:29584
shielding at electron beam welding installations, calculations for, 22:44204
shielding of human eye lens from scattered, during electron therapy, 22:28616
source of diffuse cosmic, (T), 22:8961
sources in commercial, industrial, and medical use, hazards of exposure to, 22:49335
spectra analysis of elements with adjacent atomic numbers, 22:43097
spectra analysis of, for determining incident differential energy spectra, method containing gain shift, zero-drift, and background compensation for, 22:36097
spectra from flash discharge tubes, (E), 22:17395
spectra from μ-mesic atoms, condensed-state effects in, (E), 22:26262
spectra from primary fission fragments of specific mass and atomic number, (E), 22:39640 (UCRL-17989, pp 127-57)
spectra of celestial bodies, analysis of, (T), 22:49939
spectra of K and L, from meson (μ^-) capture in calcium, magnesium, silicon, and sulfur, (E), 22:1008
spectra of K, from meson (μ) and (π) capture in liquid helium, (E), 22:1007
spectra of K, isotope shifts of, (E), 22:27190
spectra of pulsating, in auroral zone, 22:2958
spectra of soft, use of Geiger--Mueller detectors for measuring, 22:4466
spectra of solar, (T), 22:790(T) (TT-65-50400/4-6, pp 5-15)
spectra of solar, below 25 A, (E), 22:34137 (AD-663415)
spectra of solar, spatial variability of, (E), 22:52338
spectral distribution in atmosphere, 1- to 1.5-keV, (E), 22:13286
spectral measurement of filtered continuous, using scintillation spectrometer, 22:4462
spectrum of diffuse cosmic background at 4 to 40 keV, (E), 22:11169
spectrum of solar, (E), 22:41168
spectrum of solar, near minimum activity, (T), 22:11183
stopping power ratios for high-energy, 22:28106
telescope using asymmetric Bragg crystal-plane diffraction for focusing on one small detector, 22:36029 (D-1-82-0720)
topographic study of molybdenum single crystals using, (E), 22:3186
transmission of 17-keV, from plutonium-238 through plastics and polyvinyl chloride, 22:38261(R) (SC-CR-67-2845)
transport theory for, electron momentum in Monte Carlo, 22:48146
use for analysis of radiation effects on carbide fuels, description of, 22:17188
use for biological studies of tumor radiotherapy, 22:43359
use for defect detection in germanium and silicon, 22:46206
use for dental diagnosis, assay of film developer for use with, 22:40785
use for diagnosis and therapy, control of dose during, 22:51659
use for fine structure mapping in Saccharomyces cerevisiae, 22:31037
use for flaw detection in metals, 22:23776
use for quality control of welds on reactor fuel rods, 22:43560(P)
use in holography, method for obtaining interference patterns for, 22:45358(P)
use in measurement of strain-stress of niobium single crystals, 22:13029
use in medicine, recommendations for protection against hazards from, 22:51571 (NP-17507)
use in medicine, safety standards for, 22:49324(R) (NP-17266)
use in nondestructive materials testing, 22:14738 (CONF-671011-, pp 247-55)
use in podiatry profession, radiation protection study of, 22:31101
use in radiometric well logging, 22:14586
use in therapy, comparison of, to cesium-137 and cobalt-60, 22:522
use of radioinduced, for measurement corrosion film thickness on metals, 22:49687(P)
uses in industry, review of, 22:19056
uses in pulse radiolysis, 22:4174
yields from uranium-235 thermal neutron fission

- fragments, mass dependence of, (E), 22:20622

X-RAY-ABSORPTION ANALYSIS
- book: Handbook of X-Rays, 22:5454
- developments in, review on, 22:25300
- equipment for polychromatic and monochromatic, design and operation of, 22:43131(R) (COO-1239-16)

X-RAY BEAMS
- attenuation by copper sheets, effects of wavelength on, 22:51803
- direction in patients during radiotherapy, method for, 22:49408
- dosimetry of micro-beam, use of ionization chambers for, 22:23531
- dosimetry of, method for, 22:40672
- polarization of weak 10-keV, optimization of counter dimensions and scatterers for determination of, 22:25673

X-RAY CAMERAS
- design of high-temperature vacuum, for structural analysis of metals and alloys, 22:21374 (INR-869/XIV/PS)
- design of scatter-hole, (E), 22:43840
- design of spark chamber, for medical use, 22:37973 (CEA-R-3320)
- source for diffraction, evaluation of iron-55 as, 22:252 (ORNL-IIC-10(Vol.2), pp 639-47)
- use for radiodiagnosis of liver and lung conditions, use of superimposed photoscans with, 22:6856

X-RAY-DIFFRACTION ANALYSIS
- anomalous transmission in crystals, theory, 22:48157 (UCRL-50439(Pt.2))
- book: Handbook of X-Rays, 22:5454
- book: X-ray Diffraction Methods, 22:20092
- Bragg intensities in, computer program for correction of measured integrated, 22:34739 (AERE-R-5725)
- conference on small-angle scattering, 22:23711
- development of small-angle scattering, 22:8736 (ORNL-4170, pp 54-62)
- developments in, review on, 22:25356
- developments in, since 1953, 22:8780
- equipment for direct recording of diffraction patterns for, image intensifier—television system, 22:40503
- evaluation of, using iron-55 and beta stimulation, 22:23218 (COO-1239-15)
- for liquid metals, (T), 22:15374
- intensity asymmetries in, (T), 22:46729(R) (AECL-3157)
- line strengths in graphite patterns, calculations, 22:49845
- method for measuring anisotropy factor in pyrolytic carbon, 22:41116 (SGAE-M-17/1968)
- method for nondestructive materials testing, review of, 22:10527
- method for powders at high temperatures, 22:10935
- method for thick crystals, (T), 22:52851 (IAE-1476)
- method for zirconium oxides at high temperatures, 22:28958
- method for, determining stacking faults in thorium, 22:19568
- methods for residual surface stress of materials, 22:14737 (CONF-671011-, pp 168-83)
- performance for determination of structure of thymine dimers, 22:28289 (ORNL-4100, pp 178-201)
- photographic method for, precision of, 22:36707 (ISS-67/41)
- powder patterns of crystal structure of unknown symmetry from, computer program for indexing, 22:39958 (LA-3920)
- research progress on, 22:42653(R) (NP-17448)
- review of anomalous, through perfect crystals, 22:41652 (UCRL-50439(Pt.1))
- theory of, Darwin dynamical, 22:8736 (ORNL-4170, pp 54-62)
- topography of uranium alloys, 22:52198 (CEA-R-3494)
- trace characterization by, 22:30490
- use for determination of crystal and molecular structure of meso α,β-dibromosuccinic acid, 22:28274 (ANL-7278, pp 250-82)
- use for determination of molecular structure of uv-radioinduced dimers in DNA thymine, 22:36216
- use for measurement of radiation effects on SAP—aluminum oxide, 22:19673
- use for structure analysis of liquid metals and alloys, 22:9428(R) (YALE-2560-18)
- use in determining stacking faults in cold-rolled thorium, 22:21716 (BARC-298)
- use in research on nuclear fuels, 22:4315
- use in structure studies of crystals and molecules, general structure factor formalism for, 22:7391
- use in structure studies of liquid alloys, 22:28820
- use of small-angle scattering in physical metallurgy, review, 22:23824

X-RAY DIFFRACTOMETERS
- book: X-ray Diffraction Methods, 22:20092
- cooling stage for Picker theta—theta, design of, 22:49147 (UCRL-18410)
- description for studying neutron radiation effects on crystal structure, 22:19200
- design and fabrication of, to study Bragg diffraction of x rays, 22:251 (ORNL-IIC-10(Vol.2), pp 629-38)
- design and operation of PDP-5 computer-controlled Picker four-circle, 22:10633 (ORNL-4143)
- design and use of double-crystal, 22:4512
- design for crystal structures of high temperature refractory phases, 22:36498
- design for measurement of Debye—Waller factors and elastic constants, 22:20037(R) (COO-525-30)
- design of ultrasoft, 22:342 (ORNL-IIC-10(Vol.2), pp 522-56)
- development for use in analysis of alpha-emitting samples, 22:27622 (EUR-3897)
- development of computer controlled, 22:43596 (ANL-7299, pp 280-9)
- development of DIFFPET, 22:4514
- filter box for, design of automatic balanced, 22:14649
- furnace for operation up to 2500°C, design of, 22:28201 (AERE-R-5695)
- handling of, safety during, 22:19226
- pulse analyzer for, description of continuously averaging multichannel, 22:23379
- sample control system for high-temperature controlled-atmosphere, design of, 22:10625 (ANL-7257)

X-RAY EQUIPMENT
- (See also specific items of equipment.)
- see also X-Ray-Diffraction Analysis
- alarm system for long exposure, modification of household door chimes for use as, 22:25696
- calibration of, effects of x-ray scattering on, 22:515
- code of practice for use of, for medical diagnosis in Australia, 22:28536
- collimation of beam size on, effects of, on dose to man, 22:28531
- current regulator for x-ray tube, design of feedback, 22:30910(P)
- design and operation of, safety features in, 22:4620
- design for dental radiography in relation to dose to man, 22:31100
- design for improved dosimetry and irradiation techniques, 22:15004
- design for measuring small-angle scattering by low-temperature aged metallic samples, 22:49169
- design for obtaining interference patterns for holography, 22:45358(P)
- design for production of micro-beams, 22:23531
- design for use in dental radiography, 22:12870
- design for use in stereo fluoroscopy, 22:40810
- design of autofluoroscope, 22:6693
- design of grid-controlled x-ray tube, 22:51291
- design of high dose rate, for partial exposure, 22:40296
- design of medical, effects of, on radiation dose to human fetus during pelvimetry, 22:36280
- design of nanosecond pulsed x-ray tube, 22:47424
- design of vacuum tube, for diffraction analysis at elevated temperatures, 22:21389 (UCID-15254)
- design, effects of, on radiation dose to man during diagnostic radiography, 22:19349
- development for human therapy, review of, 22:31123
- development of 30-kV x-ray tubes, 22:25579
- development of aircraft, for range determination for formation flight, 22:38129
- evaluation for use in radiobiology, 22:23430
- exposure timers for pediatrics, design of ionization chamber, 22:25635
- fabrication for producing x-ray photographs at large and small angles, 22:38163
- film drive design for Moessbauer spectrometer, 22:14637
- filter development for, 22:2400 (ORNL-IIC-10(Vol.1), pp 356-75)
- fluorescent screen for radiographic, design of, 22:21368(P)
- hazards to medical personnel during pregnancy, standards for protection against, 22:25841
- measurement of scattered radiation dose from dental, use of phantom for, 22:38299
- measurement of spectra from diagnostic, use of portable spectrometer for, 22:43300 (AERE-PR/HPM-12)
- monitoring program for, in North Carolina, 22:51603
- operation in medical schools, regulations for, 22:499
- operation of, voltage-sensing device for monitoring primary voltage lines for safe, 22:4531
- performance of actuator, for impedance pneumography, 22:49400
- performance of conventional, for radiotherapy of humans in comparison with supervoltage γ radiation, review of, 22:28600
- performance of fluoroscopic, for diagnosis of bone fractures in man, 22:43374
- personnel exposure to, accidental radiation from, 22:8516 (CONF-670305-, pp 88-93)
- protection against hazards from, during installation and operation, standards in U.S.S.R. for, 22:6809(T) (AEC-tr-6467/2(pp 177-94))
- protection of personnel against scattered or direct exposure from, methods for, 22:28518
- radiation exposure from dental, in Israel, 22:43304 (NP-17517)
- radiation protection during use of dental, standards for, 22:19334
- radiation protection for medical use of, up to 10 MeV, NCRP report on, 22:23506 (NP-17328)
- safety of dental radiography, 22:15009
- safety system for, design of, 22:6697
- shielding for dental radiography, 22:28468
- shielding, calculation of requirements for dental

- radiography, 22:19350
- spectra from dental, use of sodium iodide scintillation spectrometers for measuring, 22:8372
- spectra from flash discharge tubes, (E), 22:17395
- standards for use of, in medical diagnosis, 22:38286
- standards for use of, in medicine, 22:4628
- survey of dental, in Colorado during 1961 to 1965 for compliance with state safety regulations, 22:36260
- survey on design and operation of, used for dental radiography in Pennsylvania, 22:31100
- transformer for flash x-ray tubes, design of high-voltage pulse-generating, 22:30908(P)
- use for diagnosis and therapy, characteristics of, 22:51659
- use for examination of chest of man, precautions for, 22:38364
- use in bone scanning, 22:38400
- use in dental radiography, safety evaluation of, 22:45525
- use in industry, protection of personnel during, 22:23525

X-RAY FLUORESCENCE ANALYSIS
- application to mail sorting in France, 22:259 (ORNL-IIC-10(Vol.2), pp 786-804)
- data from, computer program for converting to true chemical composition, 22:52478 (NLCO-1014)
- development for measuring thickness of electrolytic deposits, 22:28188 (NP-17351)
- development of equipment for, 22:4313
- developments in, review on, 22:25311
- equipment for beta-excited, for analysis of gases, 22:21397(P)
- equipment for carbon determination in silicon carbide--uranium dicarbide fuel elements, correction in electron-probe microanalyzer, 22:2458
- equipment for radioisotopic, design and performance of portable, 22:4430 (ORO-3224-12)
- equipment for, balanced filters in, 22:1957 (ORNL-IIC-10(Vol.1), pp 336-55)
- equipment for, development of avalanche-type semiconductor detector, 22:45280 (NYO-3246-TA-2)
- equipment for, development of portable, 22:310 (ORNL-IIC-10(Vol.2), pp 817-4)
- equipment for, use of semiconductor detector, 22:19096 (INR-820/II/PS)
- equipment for, with isotope radiation source, design and performance of portable, 22:30883
- filters for use in, fabrication of balanced, 22:2400 (ORNL-IIC-10(Vol.1), pp 356-75)
- gamma source for use in, evaluation of cesium-137, 22:42585 (CEA-N-674)
- low-energy photon sources for, French developments in, 22:255 (ORNL-IIC-10(Vol.2), pp 696-722)
- low-energy radiation sources for, Australian developments in, 22:254 (ORNL-IIC-10(Vol.2), pp 663-95)
- low-energy radiation sources for, Japanese developments in, 22:256 (ORNL-IIC-10(Vol.2), pp 723-45)
- method and theory of, review on, 22:30489
- method for detection of uranium in fuel element cladding, 22:43002
- method for determining small thicknesses, 22:28208 (NP-17365)
- precision and accuracy of gamma-excited, 22:27534 (NBS-TN-421)
- radiation sources and detectors for, of binary and ternary systems, 22:30831
- radiation sources for, Polish developments in low-energy, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
- radioisotope uses in, 22:2010
- radioisotopes as radiation sources for, 22:14453
- sample holder for, design and performance of rotating, 22:16354 (GEPP-8)
- sample holder for, design of rotating, 22:30762
- sensitivity and accuracy of, for multiple-component samples, 22:1959 (ORNL-IIC-10(Vol.1), pp 465-82)
- sensitivity of, influence of energy of primary radiation on, 22:42613
- sensitivity of, matrix correction for improving, 22:27616(P)
- spectrometer for multi-element, sensitivity of semiconductor, 22:38076
- techniques and uses of, 22:33211
- use for determining silver content in photographic film, 22:45343
- use in analysis of archaeological materials, 22:37998 (UCRL-17989, pp 261-95)
- use in chemistry, 22:25236 (CEA-N-616, pp 20-71)
- use in forensic science, problems in, 22:39986(R) (ORO-3561-1)
- use in measurement of zinc coating weight on steel sheet, 22:260 (ORNL-IIC-10(Vol.2), pp 805-16)
- use in research on nuclear fuels, 22:4315
- use in wear measurement, 22:4353 (EUR-3627)
- use to determine distribution of chromium, iron, nickel, and tin in Zircaloy-2, 22:7024
- uses in industry, 22:2312 (ORNL-IIC-10(Vol.1), pp 1-17)

X-RAY MICROSCOPY
- bibliography on uses in materials science, 22:36966 (AERE-R-5729)
- book: Handbook of X-Rays, 22:5454

X-RAY MONOCHROMATORS
- design for studying photon scattering, 22:33700
- design of DVM-1 two-beam vacuum, with range from 10 to 2 A, with compensating recording system, 22:4507
- recalibration of solar, (E), 22:49901
- use of lithium fluoride crystal, in x-ray diffractometer 22:19200

X-Ray Radiography
- see Radiography, Industrial

X-RAY SOURCES
- (For x-ray tubes see also X-Ray equipment.)
- see also Cosmic X-Ray Sources
- see also Gamma Sources
- see also X-Ray Equipment
- applications and research on low-energy, in Japan, 22:256 (ORNL-IIC-10(Vol.2), pp 723-45)
- conference on low energy, 22:2311 (ORNL-IIC-10(Vol.1))
- conference on low-energy, Austin, Texas, March 27 to 29, 1967, 22:250 (ORNL-IIC-10(Vol.2))
- design and operation of beta-excited, for absorption analysis, 22:43131(R) (COO-1239-16)
- design of alpha-excited monochromatic, 22:49036(P)
- design of isotope-powered, for detection of arrival of interface in pipes, 22:43137(P)
- design of low-voltage gun-type, 22:49326 (NYO-2740-5, pp 6-200)
- design of miniature, for measurement of energy loss distributions and single electron spectra, 22:49326 (NYO-2740-5, pp 6-200)
- design of miniature, for use as low-energy calibration source for proportional detector, 22:28187
- design of monochromatic, 22:27985(P)
- design with beta-emitting gas and target with high atomic number, 22:33587(P)
- development of intense pulsed continuum, 22:22148 (TID-24331, pp 167-209)
- development of low-energy, for use in industry and medicine, 22:2312 (ORNL-IIC-10(Vol.1), pp 1-17)
- development of low-energy, in Australia, 22:254 (ORNL-IIC-10(Vol.2), pp 663-95)
- evaluation of iron-55, for portable stress analysis equipment, 22:252 (ORNL-IIC-10(Vol.2), pp 639-47)
- preparation using iron-55, 22:37943
- production and use of low-energy, in France, 22:255 (ORNL-IIC-10(Vol.2), pp 696-722)
- radioisotope use in spectroscopy as, 22:37668
- radioisotope, for use in diagnosis, 22:4634
- use for industrial chemical analysis, 22:4494
- use in determination of ash content of coal, 22:42591(T) (NSJ-tr-129)
- use of beta excited, for diffraction analysis, 22:23218 (COO-1239-15)
- use of isotopic iron-55, for diffraction analysis, 22:37951
- use of low-activity, in radiometric analysis, 22:311 (ORNL-IIC-10(Vol.2), pp 944-62)
- use of low-energy, for radiometric analysis, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
- use of radioisotope, for analysis of materials, 22:47297
- uses in analysis, 22:33211

X-RAY SPECTROMETERS
- control of, use of SDS 910 computer linked to magnetic disks by IBM 1401 computer for, 22:340 (IS-1701)
- description for measuring absolute bremsstrahlung spectra from thick target, 22:25667
- description of, using ferroelectric detector, 22:12580
- design and performance of large sodium iodide scintillation, for measurement of linac thick-target bremsstrahlung spectra, 22:38065 (CONF-680706-1)
- design and performance of lithium-drifted germanium, with germanium junction FET preamplifier, 22:40450
- design and performance of scintillation, at 15 and 25 MeV, 22:8373
- design and performance of URS-31, for fine structure studies, 22:36092
- design and use of 10- to 150-A, 22:342 (ORNL-IIC-10(Vol.2), pp 522-56)
- design for isotopic analysis of nitrogen, conversion of spectrograph to, 22:21393
- design of α-excited, for analysis of lunar rocks, 22:262 (ORNL-IIC-10(Vol.2), pp 929-43)
- design of bent-crystal Johansson-type, for detection of fission fragment x rays in coincidence with fission x rays, 22:23313
- design of curved crystal, 22:8365 (EGG-1183-387)
- design of high-resolution, using lithium-drifted silicon detector, 22:32627
- design of high-sensitivity, using proportional detectors, 22:6621
- design of lithium-drifted germanium, with germanium FET preamplifier, 22:19136 (UCRL-17901)
- design of lithium-drifted silicon, 22:19134 (JINR-P13-3718)
- design of rocket-borne high-resolution proportional, 22:28146
- design of scintillation, with quartz monochromator, 22:51291
- design of soft, using Geiger--Mueller detectors, 22:4466
- design of thallium-activated sodium iodide, for measuring x-ray energy distribution behind absorbers, 22:21345
- design of vacuum, 22:30840
- detectors for, use of lithium-drifted silicon, 22:2401 (ORNL-IIC-10(Vol.1), pp 424-41)

development of soft, 22:309 (ORNL-IIC-10(Vol.2), pp 557-73)
development using proportional detectors, 22:14826
efficiency of scintillation, mathematical model for error analysis for, 22:49106
energy resolution of proportional detector, for determination of elements with adjacent atomic numbers, 22:43097
fabrication and performance of silicon surface-barrier, 22:21344
noise reduction in biomedical sodium iodide scintillation, 22:36078 (CONF-680303-, pp 205-12)
performance for determination of trace elements in foods and tissues, 22:6717 (UCD-472-210)
performance for measurements of fallout deposition dose rate, mobile, 22:23552
performance for use in electron probe microanalysis, tables on, 22:44977 (NBS-TN-406)
performance of lithium-drifted germanium, 22:38063 (CONF-670545-, pp 171-6)
performance of semiconductor, 22:14433 (ORNL-4196, pp 66-89)
sensitivity of semiconductor, for x-ray fluorescence analysis, 22:38076
use in activation analysis, 22:24788 (IA-1128, pp 55-77)
use of lithium-drifted germanium, for measuring energy level transitions in mesic atoms, 22:14835
use of portable, to measure spectra from diagnostic machines, 22:43300 (AERE-PR/HPM-12)
use of sodium iodide scintillation, for measuring spectra from dental x-ray equipment, 22:8372

-RAY SPECTROSCOPY
book: Handbook of X-Rays, 22:5454
efficiency in trace analysis, precipitation techniques used in, 22:25285
equipment and methods for use in chemical analysis, 22:4029
mass absorption coefficients of elements for use in, tables of, 22:30426 (AAEC/TM-454)
methods and instrumentation for 50- to 1000-eV, 22:19146
performance in fuel assay for nuclear materials management, 22:18705
research progress on, 22:14430 (ORNL-4196, pp 55-9)
sources for, use of radioisotopes as, 22:37668
use for estimating content of crystalline and amorphous silicon dioxides in lake sediments, 22:170 (ORNL-IIC-10(Vol.2), pp 613-28)
use in development of electron theory of metals and alloys, 22:680

ANTHENE, 9-PHENYL-
deuterium exchange between dimethyl sulfoxide--methanol and, 22:35816
deuterium exchange between methyl sulfoxide--methanol and, kinetics of potassium methoxide-catalyzed, 22:21065

NTHIC ACID, ETHYL ESTER
complexes with actinides, preparation of, 22:30515

NTHIC ACID, (2-METHYLCYCLOHEXYL)-, S-METHYL ESTER
pyrolysis of, effects of deuterium on, 22:25354

NTHINE
analogs of, effects of, on mutagenic uv radiosensitivity of Escherichia coli, 22:51538
effects on rats, carcinogenic, 22:6868(R) (NYO-910-60)
radioinduced free radicals in dry, uv, 22:6868(R) (NYO-910-60)

nthine, 1,3-Dimethyl-
see Theophylline

NTHINE OXIDASE
analysis of electrophoretic patterns of, in Habrobracon, 22:28402 (ORNL-4100, pp 62-9)
radiation effects on activity of, in milk in comparison to heat effects, γ, 22:25742

nthine, 1,3,7-Trimethyl-
see Caffeine

NTHINOL NIACINATE
radioprotective effects of, on mitosis in Ehrlich ascites tumor cells in mice, x, 22:40792
radioprotective effects of, on survival of mice, x, 22:40792

nthotoxin
see 5-Benzofuranacrylic Acid, 6-Hydroxy-7-methoxy-, delta-lactone

NATES
see also Perxenates

NON
see also Rare Gases
abundance in chondrites, 22:2727
abundance in meteorites, 22:4995
abundance in unequilibrated ordinary chondrites, 22:11115
activity in EBR-II cover gas, measurement of, 22:30118 (ANL-7438)
alkali halide molecule scattering by, velocity dependence of total cross sections for, (E), 22:11235
alpha reactions with electric-field-immersed, luminescence from, (E/T), 22:17390
atomic weight of, based on carbon-12 = 12, 22:42698
autoionization of atomic, effects on spectra of, 22:36755
bibliography on physical and physicochemical properties of, 22:23004 (JUL-Bibl.-13)
buildup and decay in Peach Bottom, Unit 1, comparison of measurement and calculation of, 22:16148(R) (GA-8370)
buildup in EL-4 reactor, use of neutron absorbers for controlling, 22:16110 (CEA-R-3274)
buildup in reactors, use of soluble poisons for control of, 22:30176
buildup in Sena Power Reactor, determination of equilibrium concentration for, 22:16164 (WCAP-2785)
buildup in Shippingport Pressurized-Water Reactor, effects on neutron flux distributions of, 22:39792 (WAPD-PWR-TE-207)
burnout in Shippingport Core 2 Seed 1, measurements on, 22:14147(R) (WAPD-MRP-122)
cesium atom scattering by, total cross sections for, (E/T), 22:11235
cesium reactions at 6 to 2300 eV, quantum effects on cross sections for, (E/T), 22:19771
collisions with sodium, total cross sections for inelastic, (E), 22:993
concentration and collection from contaminated gas streams by selective absorption using fluorocarbon refrigerants, 22:42814 (K-L-6198)
condensation in meteorites, (T), 22:5023
content in meteorites, 22:6462
content in Renazzo and Murray meteorites, fissiogenic, 22:809
content in Russian uraninites, use in age estimation, 22:10367
content in uranium minerals, mass spectrometric method for measurement of, 22:25505
control in shutdown power reactors, use of maximum principle for, (T), 22:6031
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
decay of, isotope separator on-line studies of, 22:12418
desorption from (100) tungsten surface, temperature spectrum of, 22:48189
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination during reactor shutdown, use of Pontryagin's theory for optimal, 22:14308
determination in irradiated fuels, gas chromatographic, 22:33258
determination in Molten Salt Reactor core by gas chromatography, 22:33257
determination in reactor coolant gas by trapping and gamma spectrometry, 22:6257 (PG-Report-807)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination of, use of gas chromatography in, 22:12229(T) (MLM-1472(tr))
deuterium hydride ion reactions up to 50 eV with, cross sections and isotope ratios for dissociation in, (E), 22:52524
diffusion from lightly sintered uranium dioxide at 400 to 800°C, 22:17169
diffusion in copper, formation energies and lattice strain fields of vacancy clusters from, (T), 22:25133 (NAA-SR-12549)
diffusion in neutron-irradiated rubidium iodide single crystals, (E), 22:34792
diffusion in normal and uranium-activated calcium fluoride crystals, mechanism of, 22:14488
diffusion of fission-product, in aluminum, 22:31353
effects of concentration on reactor shutdown, 22:3862
effects on emission spectra and work function of rhenium, 22:41046
effects on γ-radiolysis of normal and deuterated cyclohexane at 77°K, 22:27797
effects on induced reactor flux oscillations of, analysis of, (T), 22:27478 (BNL-12390)
effects on large PWR stability, effects of core parameters on, 22:1776(R) (WCAP-3680-5)
effects on radiolysis of liquid propane, 22:2155
effects on radiolysis of mixture of normal and deuterated butane, 22:45124
effects on radiolysis of propane, ionic fragmentation patterns for, 22:2161
electric discharges in, properties of low-voltage arc, 22:46161
electron elastic scattering at 2.35, 42, and 202 eV by atoms of, calculation of cross sections for, 22:41297
electron reactions with atomic, excitation cross sections for, (E), 22:21857
electron reactions with solid, energy loss and optical constants for 51-keV, (E/T), 22:41354
electron reactions with, alignment of ionic ground state in, 22:31639
electron reactions with, angular dependence of spin polarization for, (E/T), 22:38767
electron reactions with, excitation of Rydberg states in, (E), 22:19794
electron reactions with, excitation of the 1470 A resonance line by, (E), 22:41312
electron reactions with, production of long-lived excited states from, (E), 22:29275
electron reactions with, resonances in total cross sections for metastable excitation in, (E), 22:21873
electron scattering at 40 kV by, cross sections for, (E/T), 22:5108
electron scattering below 200 eV by, comparison between

relativistic and nonrelativistic theory for, 22:52535
emission from uranium dioxide during irradiation, 22:41126 (CEA-R-3446)
energy level excitation by 400-eV electrons, generalized oscillator strengths from differential cross sections for, (E/T), 22:52539
energy transfer efficiency for deactivation of vibrationally excited methane, 22:25364
energy-level population inversion in 5d--6p transitions in positive discharge column of helium--xenon, mechanism, (E), 22:5065
helium atom reactions with, probability of Penning ionization by metastable, (T), 22:24051
hydrogen atom and ion reactions at 5 to 50 keV with, cross sections for charge-change processes in, (E), 22:43884
hydrogen ion (H_2^+) reactions with, energy spectra of protons produced in, (E), 22:50058
instabilities in large pressurized water reactors, effects of spatial, 22:30163 (WCAP-3680-20)
iodine-125 specific activity in neutron-irradiated, method for determining, 22:21150
ion mobility in, doubly charged, 22:9085
ionization in shock-heated gas mixtures of, up to 30,000°K, mass-spectrometric study of initial stage of thermal, (E), 22:29294
ionization of, production of multiply charged ions from x-ray, (E), 22:34291
lead-206 recoil reactions with, ionization, energy loss, and particle range in, (E), 22:29225
light output of, as phosphor in proportional scintillation detectors, 22:40427
measurements in Peach Bottom Power Reactor-1, 22:12023(R) (GA-8153)
mercury atom collisions with, cross sections for, 22:7178
mesic deuterium atom reactions with, muon transfer in, 22:9024
meson (π) reactions at 9 GeV in bubble chamber, energy and emission angle for photon production from, (E), 22:17865 (INR-P-844/VI/PH)
meson (π^-) interactions at 9 GeV in, π^0 production from, 22:41751
meson (π^+) reactions at 2.34 GeV/c, production of single π^0 in, (E), 22:39280 (JINR-P1-3822)
meson (π^-) reactions at 8 GeV/c in xenon bubble chamber, lower limit for ω production from, (E), 22:5517
meson (π^-) reactions at 9 GeV in bubble chamber, azimuthal asymmetry in secondary particle emission in, (E), 22:37084
meson (π^-) reactions at 9 GeV in xenon bubble chamber, p--p correlations from azimuthal asymmetry of secondary emission from, (E), 22:5506 (INR-P-819/VI)
meson (π^-) reactions at 9 GeV/c in xenon bubble chamber, strong angular correlation of mesons (π) in, (E), 22:29626 (INR-P-882/VI/PH)
meson (π^-) reactions at 9 GeV/c, angular and momentum distributions and multiplicities of slow π^+ in, (E), 22:44334
meson (π^-) reactions at 9 GeV/c, slow π^+ production from, (E), 22:15678 (JINR-P1-3640)
neutron reactions (n,α) at 12.5 to 18.0 MeV, cross-section excitation function and α spectra for, (E), 22:3713
neutron scattering and total cross sections and resonance parameters at 1 to 400 eV, (E), 22:18192
oscillations in heavy water gas cooled natural uranium power reactors, difference equations for describing, 22:16162 (UJV-1860)
oscillations in reactors, reactor stability effects of large, 22:5984
oscillations in Shippingport Core 2 Seed 1, use of flux wires for determining, 22:14147(R) (WAPD-MRP-122)
oscillations of, calculation of complex natural modes in, (E/T), 22:3849 (WAPD-TM-673)
permeability through permselective membrane filters, effects of carrier gas on, 22:27416(R) (ORNL-4228)
photoabsorption cross sections at 300 to 2500 eV, effects of subshells on, (E), 22:31597 (ORNL-4238, pp 105-15)
photoelectric cross sections for gaseous, measurement of, 22:19148
photoionization cross sections at 670 to 800 eV, (E), 22:17372
photoionization of, central-potential model for soft x-ray, 22:9052
photon reactions at 100 to 2000 MeV, fluctuations in development of showers in, (E), 22:41722 (JINR-P1-3919)
photon reactions with, bound states in ionization by, 22:31634
physical properties of, bibliography on, 22:23004 (JUL-Bibl.-13)
plasma of, confinement in C stellarator, (E), 22:24242 (MATT-Q-25, pp 30-117)
plasma of, continuous spectra from, (T), 22:17660
plasma of, damping and reflection of ion--acoustic waves in, (E), 22:41573
plasma of, electric conductivity of highly turbulent, (E), 22:46179
plasma of, ion mobility measurements in, 22:31833
plasma of, Langmuir probe for diagnosing low-pressure, 22:26367
plasma of, measurement of electron thermal diffusion i 22:1222
plasma of, partition of recombination energy in decayi (E/T), 22:1204
plasma of, properties in low-voltage arcs, 22:34624(R (AD-661073)
plasma of, properties in low-voltage arcs, 22:34625(R (AD-661304)
poisoning peak lowering single power pulses in WWR-S Reactor, Bucharest, (E/T), 22:44893 (IFA-FR-64)
poisoning reduction in thermal reactors, optimum power reduction method for, 22:50873
potassium atom reactions with, cross sections for fine structure transitions in, (E/T), 22:2800
potassium reactions at 6 to 2300 eV, quantum effects o cross sections for, (E/T), 22:19771
power spatial transients in reactors, application of dynamic programming to optimal control of, (T), 22:33090 (KAPL-M-6725)
power spatial transients of, use of three-dimensional model for optimum control sequence for thermal power reactor reactivity, (E/T), 22:39931
production in power reactors, economic aspects of, 22:119
radioinduced formation in ceramic fuels, 22:31529
reactions of excited atoms of, with H_2 and HD, ion production cross sections and isotope effects in (E/T 22:50053
reactions with alkali metal atoms, mixing in ^2P state i inelastic, (T), 22:29284
reactivity effects on Halden Boiling Reactor, analysis startup, 22:35464(R) (HPR-99)
reactivity effects on HWOCR, two-dimensional finite differences method for analysis of, 22:1791
reactor spatial oscillations due to, linearized lambda-mode analysis techniques for, 22:3942
removal from Peach Bottom Unit 1, flow diagrams for, 22:22692 (GAMD-7902)
rubidium atom scattering by, total cross sections for, (E/T), 22:11235
scattering by silver (111) plane, velocity dependence o (E), 22:45951
scattering of mercury-198 atoms on, polarization in 6^3P state, (E), 22:17381
separation from air using thin silicone rubber membrane 22:2323(R) (ORNL-TM-1887)
separation from air, krypton, and radon, 22:18688 (HNS 1229-57)
separation from argon by activated charcoal sorption, 22:21760 (TRG-Report-1578)
separation from contaminated gas streams by sorption in fluorocarbon solvent, 22:45144(R) (K-1745)
separation from fuel processing off gases, methods for, 22:37900 (BNL-50082, pp 153-80)
separation from radioactive wastes from fuel reprocessing, 22:40172 (KR-126, pp 267-78)
separation from reactor gas streams, design of absorpti process for, 22:8253(R) (K-1725)
shock wave interactions with, radiations from, (E), 22:26430
shock wave interactions with, thermal ionization in, 22:3129
shock wave reflection in, structure of, (E/T), 22:52776
sodium atom scattering by, total cross sections for, (E/T), 22:11235
sodium reactions at 6 to 2300 eV, quantum effects on cross sections for, (E/T), 22:19771
sodium-atom scattering on, interference in, (E/T), 22:9079
solid, melting phenomena in, (T), 22:1123
sorption by graphitized carbon blacks, tracer method for determination of, 22:27638
sorption by tungsten, mechanism of, 22:10966
spectra from pure and nitrogen-containing, in diffuse discharges, 22:5373
stability calculation for power reactors, description of computer programs for, (T), 22:32742 (BNWL-738)
stability characteristics in large pressurized-water reactors, effects of finite time-steps on calculated spatial, 22:5983
stability in large pressurized-water reactors of, two- and three-dimensional diffusion theory analysis of, (T), 22:44842(R) (WCAP-3680-7)
stability of pressurized water reactors, analysis of spatial, 22:32883
thermal conductivity and viscosity of pure, effects of temperature on, 22:45243 (TID-24636)
transients in large pressurized water reactors, one-dimensional analysis of, 22:30162(R) (WCAP-3680-6)
transients in large thermal power reactors, numerical characteristics of, 22:32882
transients in reactors, optimal control of spatial, 22:5985
triton reactions up to 3 MeV with, LET for, 22:10761 (MIT-952-4, pp 132-201)
x-ray absorption coefficients for, in 2- to 200-A region 22:11199
xenon ion reactions with, cross sections for symmetric resonance charge exchange in, (E), 22:50039
xenon-124 concentration in, by thermal diffusion, 22:28013 (MLM-1430)

xenon-131 concentration in, by thermal diffusion, 22:49024 (MLM-1495)
xenon-ion reactions with, charge transfer in, 22:9061
Ar--Xe, scintillation properties of, effects of electric field intensity and presence of wave-length shifts on, 22:6595
Cs--Xe, excitation cross sections for, optically pumped, (E), 22:955
He--Xe, scintillation properties of, effects of electric field intensity and presence of wave-length shifter on, 22:6595
XENON CHLORIDES
formation and molecular structure of, Moessbauer study of, 22:20054
XENON FLUORIDES
neutron reactions (n,2n) with fluorine-19 in, reactions of recoil fluorine-18 from, 22:40118
preparation of XeF_2, design of glass apparatus for, 22:2040
radiation effects on, production of iodine-125 in neutron, 22:45156
separation of carrier-free iodine-125 from neutron-irradiated, 22:45156
use in preparation of iodine-131-labeled potassium periodate, 22:4227(T) (ANL-Trans-538)
XENON IONS
desorption from Pyrex glass after bombardment, (E), 22:9462
effects on iridium, field-ion microscopic studies of, (E), 22:28842 (AERE-R-5747)
effects on single-crystal germanium, 5- to 50-eV, (E), 22:24430
production by pulsed duoplasmatron, 22:9724(T) (ANL-Trans-535)
production from electron reactions with oxygen, long-lived excited states in, (E), 22:29275
production of multicharged, from arc-discharge cyclotron ion sources, 22:29816
range distribution at 40 keV in single crystals, effects of crystal properties on, (E), 22:26479
range in aluminum, beryllium, and carbon at 500 keV to 2 MeV, (E), 22:11538
range in aluminum, gold, and tungsten, effect of temperature on, (E), 22:994
range in copper, nickel, and vanadium at 500 keV to 1.75 MeV, (E), 22:11538
range in gold, effect of temperature on, (E), 22:995
reactions with copper single crystals at 20 to 80 keV, thermal gas release following, (E), 22:26485
reactions with copper, energy spectra for 43-keV, (E), 22:43939
reactions with copper, gold, and silver at 20 to 450 keV, thermal gas release and depth distribution of residual ions following, (E), 22:26495
reactions with germanium monocrystals at 5 to 50 eV, 22:23849
reactions with gold, energy spectrum of sputtered atoms from 43- and 66-keV, (E), 22:43938
reactions with molybdenum surfaces, analysis of, 22:15227
reactions with oriented gold foils at 50 keV, sputtering, (E/T), 22:44212 (NP-17564)
reactions with potassium halide crystals up to 85 keV, inert gas diffusion and release in, (E), 22:17774
reactions with silicon at 450°C, implanted-atom location and lattice disorder in, (E), 22:9456
reactions with tungsten crystals, thermal release of gas following, (E), 22:26483
reactions with uranium at high energy, with Coulomb fission, (T), 22:27336
reactions with xenon and molecular oxygen, charge transfer in, 22:9061
reactions with xenon, cross sections for symmetric resonance charge exchange in, (E), 22:50039
sputtering on copper, computer simulation of, 22:41341
sputtering on metals at low energies, effects of trapped gas on, (E), 22:19753
sputtering reactions on potassium at 28 keV, energy spectra from, 22:948
wave functions for ground-state Xe III, tables of Slater integrals and other quantities related to, 22:2792
XENON ISOTOPES
abundance in Angra dos Reis, Norton County, and Nuevo Laredo achondrites, relation to fission-xenon sources, 22:19725
abundance in Carbo and Misteca iron meteorites, (E), 22:8976
abundance in carbonaceous and disequilibrium chondrites, (E), 22:13185
abundance in carbonaceous chondrites, (E), 22:13186
abundance in dark phases of Leighton meteorite, (E), 22:23946
abundance in meteorites, (E), 22:49974
abundance in stony meteorites, (E), 22:34161
abundance in stony meteorites, (E), 22:13128
abundances in Fayetteville meteorite, (E), 22:13205
concentration in argon cover gas for liquid sodium-cooled reactors, calculation of, 22:25098(R) (ORNL-TM-2164)
content and composition of fission-produced, in meteorites, 22:6462
detection in meteorites, (T), 22:23910 (ORO-2529-17)
determination of radioactive, in air, 22:18688 (HNS-1229-57)
determination of stable, in bismuth--tellurium ore, 22:18721
diffusion in irradiated uranium oxide (UO_2) of gaseous, effects of burnup at 1400°C on, 22:27484(R) (EURAEC-1978)
diffusion of fission product, from uranium dioxide fuel elements, 22:2709 (RT/FIMA-(67)2)
effects on stability of thermal reactors of, Lyapunov analysis of, (T), 22:35510
energy levels of even, (E), 22:30023
energy levels of even--even, large-spin rotational, (E/T), 22:9868
energy levels of, calculations using extended random phase approximation for rotational, (T), 22:48577 (JAERI-1158, pp 84-9)
gamma spectra of, from californium-252 spontaneous fission, (E), 22:22602
gas accumulation of, effects of burnup on Yankee Power Reactor fuel elements, 22:24978 (WCAP-6087)
gas release to FTR cover gas of, analysis of, 22:42164(R) (BNWL-775)
measurement in DIDO 1A of, analysis of, 22:37525 (AERE-R-3912)
measurement of Shippingport Pressurized-Water Reactor shutdown, analysis of transient test, 22:32789(R) (WAPD-MRP-124)
nuclear potential radius for, isotope shift in, (T), 22:30074
nucleon pairing energies for, (E), 22:11983
production in power reactor spent fuel elements, estimates to 1990 of, 22:24933 (BNWL-SA-1529)
production in proton reactions with cesium-133 at 660 MeV, relative cross sections for, (E), 22:37363
production of stable, by US power reactors through 1990, 22:45245 (BNWL-716)
properties of short-lived, 22:20975(R) (BMwF-FBK-67-89)
release rate to atmosphere from 3000 MW(t) fast reactor, (T), 22:7808(R) (GEAP-5522)
retention in meteorites, (T), 22:38668
separation by thermal diffusion, 22:49024 (MLM-1495)
separation by thermal diffusion, 22:2308(R) (MLM-1419)
separation by thermal diffusion, 22:23221 (MLM-1455)
separation by thermal diffusion, effects of column length on, 22:25471(T) (MLM-1491(tr))
yields from plutonium-242 spontaneous fission, (E), 22:1678
yields from proton spallation of barium at 730 MeV, (E), 22:13974
yields in plutonium-239 thermal neutron fission, (E), 22:44680(R) (IN-1189)
yields in uranium-238 neutron fission at 14 MeV, cumulative, (E), 22:35325
XENON ISOTOPES Xe-123
electron-capture and beta decay scheme for, β and γ spectra for, (E), 22:5849
XENON ISOTOPES Xe-124
abundance in meteorites, (T), 22:2741
concentration in xenon by thermal diffusion, 22:2308(R) (MLM-1419)
concentration in xenon by thermal diffusion, 22:28013 (MLM-1430)
determination in Shallowater achondrite, (E), 22:21798
energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
neutron capture by, activation cross sections and resonance integrals for thermal, (E), 22:46768 (NYO-3664-6)
XENON ISOTOPES Xe-125
electron-capture decay of, conversion-electron-γ coincidence spectra for, (E), 22:5813 (INR-P-812/IA/PL)
electron-capture decay of, iodine-125 energy levels from, (E), 22:9894
gamma spectra for, (E), 22:20648
gamma spectra of isomeric, (E), 22:46768 (NYO-3664-6)
isomeric transitions in, conversion coefficients and multipolarities of, (E), 22:46768 (NYO-3664-6)
XENON ISOTOPES Xe-126
abundance in meteorites, (T), 22:2741
determination in Shallowater achondrite, (E), 22:21798
energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
energy-level transitions from vibrational states, angular anisotropy of conversion electrons for, (E), 22:20645
neutron capture by, activation cross sections and resonance integrals for thermal, (E), 22:46768 (NYO-3664-6)
XENON ISOTOPES Xe-127
electron-capture decay of, conversion-electron-γ coincidence spectra for, (E), 22:5813 (INR-P-812/IA/PL)
electron-capture decay of, iodine-127 energy levels from, (E), 22:9894
electron-capture decay scheme, (E), 22:30028
gamma spectra of isomeric, (E), 22:46768 (NYO-3664-6)
gamma-gamma angular correlation in decay of gaseous, pressure dependence of gaseous, (E), 22:46793
isomeric transitions in, conversion coefficients and multipolarities of, (E), 22:46768 (NYO-3664-6)
XENON ISOTOPES Xe-128

  abundance in meteorites, (T), 22:38685
  abundance in meteorites, (T), 22:2741
  determination in Shallowater achondrite, (E), 22:21798
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy levels from beta decay of cesium-128, (E), 22:14051
  energy levels from cesium-128 and iodine-128 decay, (E), 22:39634 (N-68-15328)
  energy levels from cesium-128 and iodine-128 decay, (E), 22:3721
  neutron capture cross section for, thermal, (E), 22:22608
XENON ISOTOPES Xe-129
  abundance in chondrites, (T), 22:36627
  content in Bruderheim chondrite, (T), 22:34236
  determination in Shallowater achondrite, (E), 22:21798
  energy level at 39.6 keV, magnetic-moment measurement using Moessbauer effect, (E), 22:46780
  energy levels from cesium-129 decay, lifetimes, spins, parities, and transition multipolarities for, (E), 22:9911
  hyperfine structure of infrared levels of, 22:19742
  Moessbauer effect in xenon chlorides and oxides, (E), 22:20054
  neutron strength functions at 0 to 4000 eV, (E), 22:37340(R) (EANDC(E)-89(U))
  nuclear magnetic resonance in gaseous, liquid, and solid xenon, local magnetic field shift in, 22:34787
  xenon-129 and -131 NMR in gaseous, liquid, and solid, local magnetic field shift in, 22:34787
XENON ISOTOPES Xe-130
  abundance in meteorites, (T), 22:2741
  determination in Shallowater achondrite, (E), 22:21798
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy levels from cesium-130 and iodine-130 decay, (E), 22:53199
  neutron capture cross section for, thermal, (E), 22:22608
  neutron strength functions at 0 to 4000 eV, (E), 22:37340(R) (EANDC(E)-89(U))
XENON ISOTOPES Xe-131
  abundance in meteorites, (T), 22:2741
  concentration in xenon by thermal diffusion, 22:49024 (MLM-1495)
  decay of isomeric, 22:18688 (HNS-1229-57)
  determination in Shallowater achondrite, (E), 22:21798
  diffusion of nuclear explosion-produced, through geologic media, 22:35964 (NVO-1229-85)
  emanation in beta decay of iodine-131 in periodite solutions, 22:21119
  nuclear magnetic resonance in gaseous, liquid, and solid xenon, local magnetic field shift in, 22:34787
  production of carrier-poor isomeric, by beta transformation of iodine-131 and absorption method, 22:45103
  range and stopping power in aluminum, copper, lead, silver, uranium, and water, (T), 22:45926 (UCRL-18127)
  yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
  yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
XENON ISOTOPES Xe-132
  abundance in meteorites, (T), 22:2741
  determination in Shallowater achondrite, (E), 22:21798
  energy levels from (α,2n) and (α,3n) reactions, (E), 22:27160
  energy-level transitions from cesium-132 decay, (E), 22:42079
  neutron capture cross section for, thermal, (E), 22:22608
  yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
  yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
XENON ISOTOPES Xe-133
  activity measurement in Peach Bottom Power Reactor Unit 1 fuel assembly, 22:22690(R) (GA-8500)
  clearance from kidneys of rats simultaneously with krypton-85, 22:4575
  concentration in NPD Reactor coolant during 1962 to 1967 of fission product, measurement of, 22:35417 (AECL-3085)
  containment system for Halden Boiling Reactor fuel element release of, performance of, 22:22701 (HPR-93)
  content in chimney gas from Project Gasbuggy underground nuclear explosion, measurement of, 22:18999 (PNE-1003)
  decay of, 22:18688 (HNS-1229-57)
  determination using internally filled detectors, 22:18688 (HNS-1229-57)
  diffusion from neutron-irradiated cesium halides, 22:16600
  diffusion in cesium iodide single crystals, (E), 22:11562
  diffusion in Halden Boiling Reactor of fission product, analysis of, 22:35464(R) (HPR-99)
  diffusion in single-crystal cesium iodide, methods of measuring, 22:52292
  diffusion in uranium dioxide solid solutions, (E), 22:19624 (CONF-650513-10)
  diffusion of nuclear explosion-produced, through geolog media, 22:35964 (NVO-1229-85)
  diffusion of recoil, in aluminum, 22:31353
  diffusion through human epidermis in relation to sweating, 22:51355
  distribution in human knee joint, effects of arthritis on, 22:43270
  distribution in rabbits and rats, in vivo determination of, 22:4575
  dose to man following exposure in a limited volume of air, calculation of maximum permissible β and γ, 22:40665 (NP-17467)
  dosimetry in man following inhalation, 22:40664 (NP-17466)
  fission product detection in JPDR of, effects of fuel element failure on, 22:16152 (JAERI-1147)
  fission product release from ceramic fuels, effects of temperature on, 22:30386
  gamma dosimetry for interstitial implant sources of, 22:31087
  ion range in gold, effect of temperature on, (E), 22:99
  measurement in PRTR plutonium oxide (PuO_2)--uranium oxid (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
  production for use as tracer by fission of uranium-235, 22:27638
  radiation effects on clearance rate of, in neoplastic tissues, 22:38231
  radiation effects on diffusion in cesium iodide monocrystals at 200 to 500°C, fast-neutron, 22:6315(R (ORO-3508-3)
  removal from lipids in human muscle, use of, for determining blood circulation, 22:8571
  solubility in muscles of man, measurement of, 22:14934
  spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
  transport from glass vial shipping containers, method for, 22:28589
  uptake by human skin, for study of skin blood flow, atraumatic method for, 22:51382
  uptake by tissues of rabbits following inhalation, 22:51398
  use as tracer for measurement of gas flow in large-scale chemical processes, 22:14720
  use as tracer in sand movement studies, 22:38146 (ORNL-TM-2212)
  use for determining blood flow through prostate gland of dogs, 22:10694
  use for determining cerebral blood flow, 22:38334(R) (COO-1653-45)
  use for determining lung function, 22:45631
  use for lung scanning, 22:25775
  use for measurement of blood circulation in brain, 22:25949
  use for measurement of blood circulation in frozen sections of human skin, 22:25947
  use for measurement of blood circulation in uterus during pregnancy, 22:25948
  use for measurement of ventilation rate of enclosed space, 22:30976
  use for measuring blood flow in muscle of cats in relation to direct recording technique, 22:40799
  use for radiospirometry in rabbits, 22:40578
  use for scanning blood circulation in kidneys, 22:43385
  use for scanning localized blood circulation, 22:25946
  use for scanning lungs, 22:51794
  use for scanning lungs, 22:51791
  use for scanning of blood circulation in brain, 22:28614
  use in measurement of blood circulation in intestinal mucosa, evaluation of, 22:51678
  use in radiodiagnosis of heart and lung functions, design of equipment for, 22:23589(P)
  use with scintillation cameras for determining regional pulmonary functions in lungs of man, 22:45302
  yield ratios for isomeric, in proton fission of thorium-232, uranium-233, uranium-235, and uranium-238, (E), 22:35324
  yields from fission of thorium-232, mass spectrometric and gamma measurements of, 22:50912
XENON ISOTOPES Xe-134
  abundance in meteorites, (T), 22:2741
  content in xenon gas samples, mass spectrometer for measuring, 22:6690
  determination in Shallowater achondrite, (E), 22:21798
  gamma spectra of isomeric, (E), 22:46768 (NYO-3664-6)
  isomeric transitions in, conversion coefficients and multipolarities for, (E), 22:46768 (NYO-3664-6)
  yield from absolute thermal fission of uranium-235, (E), 22:25129(R) (IN-1178)
  yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
XENON ISOTOPES Xe-135
  activity measurement in Peach Bottom Power Reactor Unit 1 fuel assembly, 22:22690(R) (GA-8500)
  beta decay scheme of 9.2-h isomer of, (E), 22:29983 (MIT-905-108, pp 1-32)

  buildup in Portuguese RPI, measurement of, 22:37533 (LFEN-NI.-34-a)
  concentration in NPD Reactor coolant during 1962 to 1967 of fission product, measurement of, 22:35417 (AECL-3085)
  concentration with time in AVR and THTR reactor, methods for analysis of, (T), 22:20845
  containment system for Halden Boiling Reactor fuel element release of, performance of, 22:22701 (HPR-93)
  content in SNAP-8 coolant flow of, determination of, 22:18543 (NAA-SR-Memo-11131)
  decay of, 22:18688 (HNS-1229-57)
  diffusion from carbon coated uranium carbide fuel particles, 22:11046 (ORNL-TM-2061)
  distribution in human lung, method for analysis of, 22:31120
  energy levels from beta decay of 6.7-h iodine-135, (E), 22:29983 (MIT-905-108, pp 1-32)
  fission product detection in JPDR of, effects of fuel element failure on, 22:16152 (JAERI-1147)
  oscillation control in pressurized water reactors, description of part length control rods for, 22:22867 (WCAP-7072)
  oscillations, effects of reactor core parameters on, (T), 22:50839 (DPST-68-372)
  poisoning effects in multiregional cylindrical and rectangular core reactors, description of XKINEQ computer program for calculating, 22:25131 (LA-DC-8100)
  poisoning effects on reactivity in Peach Bottom Power Reactor, Unit 1 of, computer analysis of, 22:24959 (GAMD-7910)
  poisoning equilibrium in reactors, description of boron solution concentration control system for, 22:27510(P)
  poisoning in 2000 MW(e) Molten Salt Breeder Reactor, effects of coated graphite on, 22:48652 (ORNL-4254, pp 50-87)
  reactivity effects on Peach Bottom Power Reactor Unit 1, analysis of, 22:22690(R) (GA-8500)
  removal from molten-salt breeder reactor fuel of, description of helium bubble mass transfer, 22:46916 (ORNL-TM-2245)
XENON ISOTOPES Xe-136
  abundance in chondrites, (T), 22:36627
  abundance in meteorites, (T), 22:2741
  content in Bruderheim chondrite, (T), 22:34236
  content in xenon gas samples, mass spectrometer for measuring, 22:6690
  determination in Shallowater achondrite, (E), 22:21798
  deuteron reactions (d,p) and (d,t) at 12 to 13 MeV, angular distributions and excitation functions for, (E), 22:35293(R) (ORNL-4230)
  deuteron reactions (d,p) at 13 MeV, cross-section angular distributions and spectra for, (E), 22:11949(R) (ORO-2972-47)
  energy levels from proton inelastic scattering, (E), 22:11949(R) (ORO-2972-47)
  proton elastic and inelastic scattering at 9.8 to 12.6 MeV, resonances in, (E), 22:35293(R) (ORNL-4230)
  proton elastic and inelastic scattering at 9.8 to 12.6 MeV, isobaric analog resonances in, (E), 22:11949(R) (ORO-2972-47)
  yields from fast fission of uranium-235 in fuel burnup, 22:42588(R) (IN-1207)
XENON ISOTOPES Xe-137
  beta decay of, cesium-137 energy levels and transitions from, (E), 22:30034
  beta decay of, γ singles and coincidence spectra for, (E), 22:48546
  decay studies of fission-product, (E), 22:30030
  energy levels from xenon-136 (d,p) reactions, spectroscopic factors for, (E), 22:11949(R) (ORO-2972-47)
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
XENON ISOTOPES Xe-138
  activity measurement in Peach Bottom Power Reactor Unit 1 fuel assembly, 22:22690(R) (GA-8500)
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
  yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
XENON ISOTOPES Xe-139
  beta decay of, cesium-139 energy levels and transitions from, (E), 22:30034
  beta decay of, half-life and γ spectra for, (E), 22:22602
  beta decay scheme of, (E), 22:14053
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
XENON ISOTOPES Xe-140
  beta decay of, half-life and γ spectra for, (E), 22:22602
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
  gamma spectra, (T), 22:7706
XENON ISOTOPES Xe-141
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
  gamma spectra, (T), 22:7706
  half-life, (E), 22:22602
XENON ISOTOPES Xe-142
  energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
  gamma spectra, (E), 22:7702(R) (PPAD-631-D)
  gamma spectra, (T), 22:7706
XENON ISOTOPES Xe-143
  energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
  gamma spectra, (T), 22:7706
XENON ISOTOPES Xe-144
  energy-level scheme and decay properties of, evaluated data compilation on, (E), 22:3735
XENON OXIDES
  effects on oxidation of hexavalent neptunium ions, 22:48846(T) (ANL-Trans-670)
  formation in beta decay of iodine-131 in periodite solutions, 22:21119
  molecular structure of, Moessbauer study of, 22:20054
  reaction with hexavalent neptunium to produce heptavalent neptunium, 22:45058
XENON SYSTEMS
  Ar--D--Kr--Xe, thermal conductivity of, at 40 to 90°C, 22:40102
  Ar--Xe, light output of, as phosphor in proportional scintillation detectors, 22:40427
  D--Xe, thermal conductivity of, at 40 to 90°C, 22:40102
  He--Xe, energy-level transitions in positive discharge column of, (E), 22:5065
  He--Xe, thermal conductivity and viscosity of, effects of temperature on, 22:45243 (TID-24636)
  hexafluoroethane--Xe, radiolysis of liquid, effects of oxygen on energy transfer in γ, 22:10287
  N_2--Xe, light output of, as phosphor in proportional scintillation detector, 22:40427
  Na--Xe, interatomic potential fitting from molecular beam scattering from, (T), 22:41349
  Ne--Xe, shock wave interactions with, thermal ionization in, 22:3129
  Ne--Xe, thermal diffusion factors for, 22:28013 (MLM-1430)
XENONIUM COMPOUNDS
  phenylxenonium perchlorate, formation by beta decay of iodine-131 in diphenyliodonium perchlorate, 22:6362(T) (ANL-Trans-537)
Xerography
    see Electrophotography
XIPHOSURA
  Limulus polyphemus, development of yolk in oocytes of, 22:28283 (ORNL-4100, pp 75-96)
XYLEM
  radiation effects on development of, in yellow and white oak trees, γ and thermal neutron, 22:21625(R) (ORO-3400-3)
XYLENE
  analysis for hydrogen by neutron slowing-down method, 22:4005
  effects as diluent on solvent properties of nitric acid--TBP--water for actinide and rare earth nitrates, gas chromatographic studies on, 22:6405
  effects on γ-induced polymerization of ethylene, 22:4167
  effects on solvent properties of dioctyl phosphate for europium and terbium, 22:6400
  effects on stretching properties of polymers produced by radioinduced polymerization of styrene and cellulose, 22:42703(T) (AEC-tr-6937, pp 21-32)
  effects on stretching properties of polymers produced by radioinduced graft polymerization of styrene and cellulose, 22:8119
  hydrogen abstraction from, effects of tritium on, 22:37732
  reactions with deuterium or heavy water on titanium dioxide catalyst, kinetics of, 22:2066
  solvent properties for chromium on uranyl complexes of 2,4-pentanedione and uranyl complexes of 8-quinolinol, 22:12298
  thermodynamic properties of isomers of, application of significant structure theory to, 22:4156
  4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione--xylene, solvent properties for berkelium-249 in radioactive solutions, 22:44995
  toluene--xylene, exchange reactions with tritium, kinetics of, 22:78
p-XYLENE, α-CHLORO-
  solvolysis of, effects of deuterium on, 22:8037(R) (COO-1008-3)
XYLENOL ORANGE
  use in spectrophotometric determination of rare earths in alkaline medium in presence of cetylpyridinium bromide, 22:40000
Xylocaine
    see Lidocaine
XYLOSE
  radiation effects on aqueous solutions of, effects of, on growth of artichoke roots, 22:40519
  radiation effects on content of, in human urine following therapy of extra-abdominal neoplasms, x, 22:28650
  radiolysis of, yield of deoxy compounds from electron or γ, 22:42750

Y

Yankee Atomic Electric Co. Reactor
    see Yankee Power Reactor
YANKEE POWER REACTOR
    see also Connecticut Yankee Power Reactor
  control elements reactivity worth, effects of boron

  concentration on, 22:30167(R) (WCAP-3708)
  control rod performance in Core I of, examination of silver--indium--cadmium alloy, 22:30198
  core for, evaluation of, 22:1778(R) (WCAP-6085)
  core system for, description of hydraulic model studies of, 22:37406 (BNWL-518(Del.))
  effect on Deerfield River water temperature, 22:8205 (BNWL-628)
  fuel assemblies for, description of, 22:24978 (WCAP-6087)
  fuel cycle efficiency for, analysis of, 22:7826
  fuel cycle performance of, CELL and FUEL computer programs analysis of, 22:39781 (MIT-2073-8)
  fuel rods of, analysis of fission gases in irradiated, 22:24978 (WCAP-6087)
  fuel samples from, heavy nuclide formation in, 22:19669 (BNWL-624, pp 2.1-32)
  ionization chambers for, analysis of performance of, 22:30167(R) (WCAP-3708)
  operations history of, total, 22:1821
  pressure vessel for, radiation effects on ductility of Type A302-B steel, 22:47671 (CONF-671007-3)
  pressure vessel for, results of Charpy V-notch tests on stainless steels for, 22:10016
  pressure vessel of, neutron radiation effects on ductility of type A302-B steel, (E/T), 22:35413 (AD-661803)
  radioactive waste-management experience at, tabular summary of, 22:22750
  waste disposal for, review of methods for, 22:2323(R) (ORNL-TM-1887)
  waste disposal management at, 22:10532 (ORNL-4070)
Yeasts
  see Eumycota
YELLOWKNIFE AREA (NORTHWEST TERRITORIES)
  lead isotope ratio in ore deposits at, 22:51088
  sulfur isotope ratio in ore deposits at, 22:51088
Yolks
  see Egg Yolks
YTTERBIUM
  amalgamation in lithium citrate solution, electrolytic, 22:18748
  analysis for zirconium in solutions of, using methylene blue, polarographic, 22:16552
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Uncommon Metals, 22:10981
  cathodoluminescent properties in yttrium oxide, 22:22996 (CONF-670502-, pp 271-82)
  complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
  complexes with 2,4-pentanedione, structure of, 22:14566 (ORO-2124-12)
  complexes with acetates, spectrophotometric studies of, 22:42605
  complexes with aluminon, structure and stability of, 22:14501
  complexes with o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]benzenearsonic acid, spectrophotometric studies on, 22:1993
  crystal structure of, comparison of layer stacking sequence with ytterbium trialuminide, 22:2650
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
  determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by activation techniques, 22:47079
  determination by emission spectroscopy using acetylene--nitrous oxide flame, 22:37663
  determination by neutron activation methods, methods of separation in, 22:4034
  determination by photon activation methods, 22:27591
  determination in basalt by isotope dilution method, 22:42617
  determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
  determination in other rare earths by oscillopolarography, 22:18719
  determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
  determination in phosphate rocks by atomic-absorption flame photometry, 22:2001
  determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
  determination in presence of mercury and alkaline earth elements, chelatotitration methods for, 22:4046
  determination in rare earth mixtures by aerosol-spark method, 22:6281
  determination in rare earth oxides and concentrates by polarography, 22:45017
  determination in raw opium by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
  determination in rock samples by neutron activation methods after chemical group-separation, 22:25286
  determination in scandium, spectroscopic, 22:18727
  determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
  determination in yttrium oxide matrix by cathode-ray-excited emission spectroscopy, 22:25270
  determination of distribution of traces of, between pyroxenes and host lava, activation, 22:50939
  determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
  determination of traces of, in yttrium oxides, spectrographic, 22:22950
  determination of, spectrometric, 22:42597
  determination using cetylpyridinium bromide and Xylenol Orange, spectrophotometric, 22:8017
  determination using o-[[1,8-dihydroxy-7-[(1-hydroxy-3,8-disulfo-2-naphthyl)azo]-3,6-disulfo-2-naphthyl]azo]-benzenearsonic acid, spectrophotometric, 22:1993
  distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
  distribution in hydrochloric acid, coefficients for, 22:42625
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  effects on spectra of uranyl ions in dihydroxymaleic acid in acetone, ethanol, and methanol solutions, 22:33222
  electric properties of thin films of, 22:24399 (CONF-670502-, pp 581-90)
  Fermi surface of, 22:34780
  hardening and recrystallization of, effects of impurities on, 22:4756
  hyperfine field measurements on recoil-implanted, in ferromagnets, (E), 22:11535
  infrared laser emission from vapors of, (E), 22:49997
  ionization potential of, surface ionization comparison measurement of first, 22:24458
  ionization potentials of, 22:14431 (ORNL-4196, pp 59-62)
  magnetic ordering of, 22:44220
  magnetic properties of single-crystal, (E), 22:15617
  magnetic susceptibility of single-crystal, de Haas--van Alphen effect in, (E), 22:3183
  magnetoresistance at 1.3°K in magnetic fields up to 20 kOe, (E), 22:34780
  neutron absorption and scattering cross sections for, thermal, (E), 22:18281
  neutron paramagnetic scattering cross section at 0.001 to 0.12 eV, (T), 22:22537
  neutron total cross section at 0.001 to 1.0 eV, (E), 22:18281
  neutron total cross section for, time-of-flight measurement of thermal, (E), 22:20562 (BNL-12263)
  nuclear level density parameters from neutron inelastic scattering at 5, 6, and 7 MeV, (E), 22:27104
  optical properties and band structure of, 22:1328
  optical properties of thin films of, 22:24399 (CONF-670502-, pp 581-90)
  oscillopolarographic behavior of, 22:18719
  photoionization efficiency at 1350 to 2000 A, (E), 22:52523
  polarographic properties of, effects of acidity on, 22:2078
  properties for laser action, 22:24391 (CONF-670502-, pp 228-38)
  reactions with carbon in tantalum bomb, preparation of ytterbium dicarbide and ytterbium sesquicarbide by, 22:27648
  separation by extraction using sodium amalgams, 22:37718 (UCRL-17989, pp 181-252)
  separation from acidic chloride solutions by solvent extraction using bis(2-ethylhexyl) phosphate, 22:6367 (IS-T-188)
  separation from alkaline earth and other rare earth elements, effects of lactic acid on anion-exchange, 22:18882
  separation from aqueous hydrochloric acid solutions by solvent extraction using D2EHPA, 22:45157
  separation from aqueous solutions by extraction chromatography using DEHPA, 22:163
  separation from hydrochloric acid, effects of water-miscible organic solvents on ion exchange, 22:21153 (ANL-7415)
  separation from lutetium, chromatographic, 22:18864 (NP-17286)
  separation from praseodymium by solvent extraction using mixtures of thenoyltrifluoroacetone and TBP, 22:51049
  separation from rare earths by solvent extraction using naphthenic acids, 22:27868
  separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
  separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
  separation from thorium or uranium in hydrochloric acid solution, ion exchange, 22:40192
  separation of lutetium-177 from neutron-irradiated, by electrophoresis, 22:42826
  separation of trace amounts of, from uranium by ion exchange, effects of fluorides on, 22:47215
  spectra of Yb II, energy levels and observed and classified lines in, (E), 22:26250
  thermal capacity at 0.4 to 4°K, analysis of data on, 22:23757 (CONF-670502-, pp 568-80)
  valence state in solid solution alloys with palladium, 22:48165

  x-ray absorption edges in compounds and metal, M, (E), 22:24061
  x-ray absorption spectra for, soft, 22:3209
  x-ray emission spectra of, self-absorption effects in soft, 22:7149
  x-ray spectra of, L, (E), 22:24062
YTTERBIUM ALLOYS AND SYSTEMS
  Ag--Yb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
  Al--Yb, crystal structure of intermetallic compound $YbAl_3$ in, 22:6299
  Al--Yb, crystal structure of intermetallic $YbAl_3$, 22:2650
  Au--Yb, magnetic susceptibility and EPR in solid solutions of, (E), 22:15615
  Au--Yb, Moessbauer spectra of, at 4.2 to 300°K, 22:24396 (CONF-670502-, pp 506-9)
  Au-base--Yb, phase studies of, 22:23818
  Cu--Yb, crystal structure and interatomic distances of $YbCu_5$, (E), 22:13542
  Eu--Yb, europium-151 Moessbauer effect in, (E), 22:44263
  Eu--Yb, Moessbauer studies of spin and charge density in, (E), 22:46260
  Ga--Ni--Yb, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
  Ga--Yb, phase studies on intermetallic compounds of, 22:2649
  Ge--Yb, preparation of intermetallic YbGe, 22:2593
  Hg--Yb, phase diagram, (E), 22:28836
  Mg--Yb, crystal structure of, x-ray diffraction analysis of, 22:19559
  Ni--Yb, crystal structure and interatomic distances of $YbNi_5$, (E), 22:13542
  Pb--Yb, phase diagram of, 22:23808 (CONF-670502-, pp 440-8)
  Pb--Yb, preparation of intermetallic YbPb, 22:2593
  Pd--Yb, ytterbium electronic state in solid solution alloys of, 22:48165
  Sb--Yb, crystal structure of intermetallic compounds in, 22:24388 (CONF-670502-, pp 145-54)
  Sb--Yb, electric and magnetic properties of intermetallic, 22:22216
  Sb--Yb, magnetic susceptibility of, 22:23804 (CONF-670502-, pp 29-35)
  Sb--Yb, ytterbium valence variations in intermetallic compounds in, 22:23804 (CONF-670502-, pp 29-35)
  Sn--Yb, preparation of intermetallic YbSn, 22:2593
  Yb--Zn, phase diagram, 22:36501
  Yb--Zn, phase studies of, 22:2560(R) (IS-RD-11)
YTTERBIUM ALUMINATES
  aluminum-27 NMR in, quadrupole splittings and paramagnetic shifts in, 22:24416
YTTERBIUM BORIDES
  magnetic properties of YbB_6, 22:5434
YTTERBIUM BROMIDES
  preparation of anhydrous, by dehydration of hexahydrates, 22:45046
  structure of anhydrous, crystal and molecular, 22:45046
YTTERBIUM CARBIDES
  hydrolysis of, with and without nitrogen, products of, 22:16514
  preparation by direct reaction of elements in tantalum bomb, 22:27648
  vaporization at 1100 to 1550°K, thermodynamics of, 22:27648
YTTERBIUM CHLORIDES
  polarographic behavior in lithium chloride--potassium chloride eutectic, 22:27690
YTTERBIUM FERRATES $Yb(FeO_2)_3$
  ytterbium-170 Moessbauer spectra in garnet, 22:7348 (NYO-2028-2, pp 63-6)
YTTERBIUM FLUORIDES
  thermodynamic properties of, at high temperatures, 22:14495
  x-ray absorption edges for ytterbium ions in, M, (E), 22:24061
  CaF_2--YbF_3, phase diagram of, 22:45081
YTTERBIUM HYDRIDES
  crystal structure of, at 25 to 600°C, x-ray diffraction studies on, 22:37728
  moderating properties for fast and thermal optimum performance rocket reactors, 22:25062 (DLR-MITT-66-07, pp 11-27)
YTTERBIUM HYDROXIDES
  precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6375
YTTERBIUM IONS
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  effects on fluorescence of holmium ions in calcium fluoride crystals, 22:22994 (CONF-670502-, pp 249-58)
  electron paramagnetic resonance in thorium oxides, stress dependence of g factors of, 22:15584
  energy levels of Yb II, interpretation of $4f^{13}5d^2$, 22:29230
  neutron paramagnetic scattering cross section for trivalent, thermal, (E), 22:20562 (BNL-12263)
  neutron paramagnetic scattering cross section for Yb^{3+}, thermal, (E), 22:53192
  radioinduced formation of divalent, as dilute solutes in alkaline earth halides, 22:30622
  reduction by alkali metal amalgams, 22:50983
  spectra in calcium fluorides, (E), 22:26500
  spin--lattice relaxation of cubic centers of, in cerium dioxide single crystals, 22:50252
YTTERBIUM ISOTOPES
  alpha reactions (α,3n) and (α,4n) at 40.5 MeV, γ spectra from, (E), 22:53210
  electric quadrupole moments of even--even, Moessbauer determination of relative, 22:34786
  energy levels of, electric quadrupole moments from Moessbauer measurements following Coulomb excitation, (E), 22:5875
  energy-level transitions from deuteron inelastic scattering, collective, (E), 22:27149
  energy-level transitions in ground-state rotational bands of even-A, (E), 22:53210
  nuclear magnetic dipole and electric quadrupole moments of, measurements using Moessbauer effect with Coulomb excitation, (E), 22:46801
  nuclear quadrupole moments, (E/T), 22:11957
  separation of, erosion of ion-exit slit in, 22:37938 (ORNL-4271)
YTTERBIUM ISOTOPES Yb-158
  energy-level transitions in ground-state rotational band, (E), 22:5860
  energy-level transitions in rotational bands, (E), 22:27163
YTTERBIUM ISOTOPES Yb-160
  energy-level transitions in ground-state rotational band, (E), 22:5860
  energy-level transitions in rotational bands, (E), 22:27163
YTTERBIUM ISOTOPES Yb-162
  energy levels in γ-vibrational bands, rotational, (T), 22:20647
  energy-level transitions in ground-state rotational band, (E), 22:5860
  energy-level transitions in rotational bands, (E), 22:27163
YTTERBIUM ISOTOPES Yb-163
  half-life, (E), 22:9884
  half-life, (E), 22:46765 (JINR-P6-3945)
YTTERBIUM ISOTOPES Yb-164
  conversion-electron spectra following terbium-159 (B-11,6n) reactions at 86 MeV, (E), 22:30027
  energy levels in γ-vibrational bands, rotational, (T), 22:20647
YTTERBIUM ISOTOPES Yb-165
  beta and electron-capture decay scheme of, β and γ spectra and log-ft values for, (E), 22:42041
YTTERBIUM ISOTOPES Yb-166
  conversion-electron spectra following terbium-159 (B-11,4n) reactions at 56 MeV, (E), 22:30027
  energy-level transition rotational constants for, (E), 22:30027
YTTERBIUM ISOTOPES Yb-168
  deuteron inelastic scattering at 12 MeV, deuteron spectra from, (E), 22:18264
  energy levels from deuteron inelastic scattering, collective, (E), 22:18264
  energy-level transition probabilities for 0^+ and 2^+ states in, (T), 22:30096
  energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
  energy-level transitions from lutetium-168 decay, (E), 22:44718
  energy-level transitions in ground-state rotational band, (E), 22:9800(R) (COO-535-571)
  fluorine-19 reactions (F-19,xn) with, production of alpha-active gold isotopes by, (E), 22:18261
  gyromagnetic ratio of, calculation of collective, (T), 22:20684
  neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
  neutron capture by, gamma spectra from thermal, (E/T), 22:46769(T) (ORNL-tr-1954)
  neutron capture by, γ spectra from thermal, (E), 22:37355
  neutron resonance absorption in foils of, in enriched plutonium--water lattices, (E/T), 22:30329
  neutron resonance parameters at 23 and 171 eV, (E), 22:37281(R) (NYO-72-191)
YTTERBIUM ISOTOPES Yb-169
  determination of, in tantalum converter of Frascati synchrotron, 22:25276
  electron-capture decay of, γ singles and coincidence spectra for, (E), 22:30044
  electron-capture decay of, K-Auger spectrum of thulium-169 from, (E), 22:16039
  energy level at 191.4 keV, half-life and transition probabilities for, (E), 22:53215
  energy levels from thermal neutron capture by ytterbium-168, calculations on structure of, (E/T), 22:46769(T) (ORNL-tr-1954)
  energy levels from ytterbium-168 neutron capture, (E), 22:26999
  energy levels from ytterbium-168 thermal neutron capture, low-lying, (E), 22:37355
  energy levels from ytterbium-168 thermal neutron capture,

- (E), 22:3698 (KFK-616)
- energy levels from ytterbium-168 thermal neutron capture, (E), 22:37340(R) (EANDC(E)-89(U))
- energy levels of, calculation of nonrotational, (T), 22:9934
- energy levels of, K = 1/2 rotational, (T), 22:20664
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- half-life of, 22:25276
- photon emission by, for use in medical radiography, 22:2521 (ORNL-IIC-10(Vol.1), pp 197-232)
- radiographic characteristics of, 22:253 (ORNL-IIC-10(Vol.2), pp 648-62)
- use for radiography source, 22:4634

YTTERBIUM ISOTOPES Yb-170
- deuteron inelastic scattering at 12 MeV, deuteron spectra from, (E), 22:18264
- deuteron reactions (d,p) at 12 MeV, angular distributions for, (E), 22:27148
- energy level transition, hyperfine center-of-gravity shift for E2, (T), 22:43897
- energy levels and transitions from beta and electron-capture decay of lutetium-170, (E), 22:1649 (JINR-P6-3452)
- energy levels from deuteron inelastic scattering, collective, (E), 22:18264
- energy levels of, calculation of coefficients of nonadiabaticity for rotational, (T), 22:16074
- energy levels of, g-factors for, (E), 22:53095 (BMwF-FBK-68-11)
- energy levels of, magnetic moments from Moessbauer hyperfine splittings, (E), 22:5846
- energy-level transition probabilities for 0^+ and 2^+ states in, (T), 22:30096
- energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
- energy-level transitions from lutetium-170 decay, (E), 22:35353
- energy-level transitions from rotational states, isomer shift measurements on, (E), 22:46774
- energy-level transitions from thulium-170 decay, conversion coefficients for, (E), 22:16005 (IS-1730)
- energy-level transitions from thulium-170 decay, conversion doefficients for, (E), 22:42068
- fluorine-19 reactions (F-19,xn) with, production of alpha-active gold isotopes by, (E), 22:18261
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- hyperfine structure of, using Coulomb-excited Moessbauer levels in ytterbium oxides Yb_2O_3, (E), 22:9109
- internal conversion coefficient of K level for 84.3-keV gamma ray from beta decay of thulium-170, (E), 22:20660
- internal conversion M/L and (N + O)/M ratios for E2 transitions in, (E), 22:7730
- Moessbauer effect in ytterbium iron garnet, 22:7348 (NYO-2028-2, pp 63-6)
- neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
- neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
- neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:50649
- neutron reactions (n,2n) at 14.7 MeV, cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
- neutron resonance parameters at 40 to 358 eV, (E), 22:37281(R) (NYO-72-191)
- neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)
- nuclear charge distribution in rotational states, analysis of isomer shift measurements for, (E), 22:46774
- nuclear charge radius of, effects of collective excitations on, (E), 22:27192

YTTERBIUM ISOTOPES Yb-171
- deuteron reactions (d,p) and (d,t) at 12 MeV, cross sections and proton and triton spectra from, (E), 22:18264
- deuteron reactions (d,p) at 12 MeV, cross sections for exciting gamma-vibrational levels in ytterbium-172 by, (T), 22:3726
- energy level at 122.4 keV, half-life and transition probabilities for, (E), 22:53215
- energy levels from ytterbium-170 (d,p) reactions, spectroscopic factors for, (E), 22:27148
- energy levels of, calculation of nonrotational, (T), 22:9934
- energy levels of, K = 1/2 rotational, (T), 22:20664
- energy-level transitions from lutetium-171 decay, conversion coefficients and multipolarities of, (E), 22:16015 (NP-17220)
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
- neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
- neutron resonance parameters at 8 to 355 eV, (E), 22:37281(R) (NYO-72-191)
- neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)

YTTERBIUM ISOTOPES Yb-172
- alpha inelastic scattering at 11 to 15 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
- deuteron inelastic scattering at 12 MeV, deuteron spectra from, (E), 22:18264
- deuteron reactions (d,p) at 12 MeV, angular distributions for, (E), 22:27148
- deuteron reactions (d,p) at 12 MeV, angular distributions and spectra for, (E), 22:20624
- electron-capture decay of, γ—γ angular correlations in, (E), 22:9864
- energy levels from beta decay of thulium-172, transition probabilities of vibrational and two-quasi particle, (E), 22:50632
- energy levels from thulium-172 beta decay, spins and parities of, (E), 22:9696
- energy levels from thulium-172 decay, spin-parity assignments for, (E), 22:30040
- energy levels in rotational and vibrational bands from Coulomb excitation, multiple mixing ratios and transition probabilities for, (E), 22:48523 (ORNL-TM-2211)
- energy levels of, collective, (E), 22:18264
- energy levels of, g-factors for, (E), 22:53095 (BMwF-FBK-68-11)
- energy levels of, magnetic moments from Moessbauer hyperfine splittings, (E), 22:5846
- energy-level excitation in ytterbium-171 (d,p) reactions at 12 MeV, cross sections for gamma-vibrational, (T), 22:3726
- energy-level transition probabilities for 0^+ and 2^+ states in, (T), 22:30096
- energy-level transitions from thulium-172 decay, (E), 22:53095 (BMwF-FBK-68-11)
- energy-level transitions from thulium-172 decay, (E), 22:24835(R) (BARC-305)
- energy-level transitions in rotational band from lutetium-172 decay, multipole mixing ratios for, (E), 22:42022 (UUIP-577)
- energy-level transitions in, from K = 3 rotational band, (E), 22:16050
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- hyperfine structure of, using Coulomb-excited Moessbauer levels in ytterbium oxides Yb_2O_3, (E), 22:9109
- Moessbauer spectra following Coulomb excitation, (E), 22:34786
- neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
- neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
- neutron resonance parameters at 140 to 2725 eV, (E), 22:37281(R) (NYO-72-191)
- neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)
- oxygen-16 inelastic scattering at 42 to 52 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
- proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
- proton reactions (p,n) at 17.5 MeV, production of isomeric lutetium-172 by, (E), 22:1676

YTTERBIUM ISOTOPES Yb-173
- deuteron reactions (d,p) and (d,t) at 12 MeV, cross sections and proton and triton spectra from, (E), 22:18264
- deuteron reactions (d,p) at 12 MeV, cross sections for exciting gamma-vibrational levels in ytterbium-174 by, (T), 22:3726
- energy levels from ytterbium-172 (d,p) reactions, spins of low-lying, (E), 22:20624
- energy levels from ytterbium-172 (d,p) reactions, spectroscopic factors for, (E), 22:27148
- energy levels of, calculation of nonrotational, (T), 22:9934
- energy-level transitions from thulium-173 decay, (E), 22:53095 (BMwF-FBK-68-11)
- gyromagnetic ratio of, calculation of collective, (T), 22:20684
- hyperfine structure of, coherent anticrossing in, (E), 22:11201
- neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
- neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
- neutron resonance parameters at 18 to 371 eV, (E), 22:37281(R) (NYO-72-191)
- neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)
- proton reactions (p,2n) at 17.5 MeV, production of isomeric lutetium-172 by, (E), 22:1676

YTTERBIUM ISOTOPES Yb-174
- alpha inelastic scattering at 11 to 15 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
- alpha inelastic scattering by, angular distributions for, (E), 22:27205

detection in drugs, use of neutron activation analysis for, 22:12230
deuteron inelastic scattering at 12 MeV, deuteron spectra from, (E), 22:18264
deuteron reactions (d,p) at 12 MeV, angular distributions for, (E), 22:27148
deuteron reactions (d,p) at 12 MeV, angular distributions and spectra for, (E), 22:20624
energy level at 76.5 keV, gyromagnetic ratio from Moessbauer measurements following Coulomb excitation, (E), 22:3719
energy levels in rotational and vibrational bands from Coulomb excitation, multiple mixing ratios and transition probabilities for, (E), 22:48523 (ORNL-TM-2211)
energy levels of, collective, (E), 22:18264
energy levels of, g-factors for, (E), 22:53095 (BMwF-FBK-68-11)
energy levels of, gyromagnetic ratios from Moessbauer measurements following Coulomb excitation, (E), 22:7694 (NYO-2028-2, pp 1-11)
energy levels of, magnetic moments from Moessbauer hyperfine splittings, (E), 22:5846
energy-level excitation in ytterbium-173 (d,p) reactions at 12 MeV, cross sections for gamma-vibrational, (T), 22:3726
energy-level spins and transitions from thulium-174 decay, (E), 22:24885
energy-level transition probabilities for 0^+ and 2^+ states in, (T), 22:30096
energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
energy-level transitions from thulium-174 beta decay, (E), 22:27179
energy-level transitions from thulium-174 decay, (E), 22:53095 (BMwF-FBK-68-11)
fluorine-19 reactions (F-19,xn) with, production of alpha-active gold isotopes by, (E), 22:18261
gyromagnetic ratio of, calculation of collective, (T), 22:20684
hyperfine structure of, using Coulomb-excited Moessbauer levels in ytterbium oxides Yb_2O_3, (E), 22:9109
Moessbauer spectra following Coulomb excitation, (E), 22:34786
neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
neutron reactions (n,p) at 15 MeV, cross section for, (E), 22:24885
neutron resonance parameters at 342 to 3290 eV, (E), 22:37281(R) (NYO-72-191)
neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)
nuclear deformation of, measurement using α inelastic scattering at 50 MeV, (E), 22:3700 (UCRL-17547(Exp.))
nuclear deformation parameters from α inelastic scattering, (E), 22:27205
nuclear shape in ground-state rotational band, Y_{40} and Y_{60} components of, (E), 22:14007
oxygen-16 inelastic scattering at 42 to 52 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304
proton elastic and inelastic scattering, (E), 22:11952
proton reactions (p,2n) at 17.5 MeV, production of isomeric lutetium-173 by, (E), 22:1676

YTTERBIUM ISOTOPES Yb-175
energy levels from ytterbium-174 (d,p) reactions, spectroscopic factors for, (E), 22:27148
energy levels from ytterbium-174 (d,p) reactions, spins of low-lying, (E), 22:20624
energy levels of, calculation of nonrotational, (T), 22:9934
energy levels of, K = 1/2 rotational, (T), 22:20664
energy-level transitions from thulium-175 decay, (E), 22:53095 (BMwF-FBK-68-11)
gyromagnetic ratio of, calculation of collective, (T), 22:20684

YTTERBIUM ISOTOPES Yb-176
alpha differential inelastic scattering cross section at 50 MeV, angular distribution for, (E), 22:3700 (UCRL-17547(Exp.))
alpha inelastic scattering at 11 to 15 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
alpha inelastic scattering by, angular distributions for, (E), 22:27205
deuteron inelastic scattering at 12 MeV, deuteron spectra from, (E), 22:18264
energy level at 1050 keV, spin-parity assignment for isomeric, (E), 22:37340(R) (EANDC(E)-89(U))
energy level at 82.2 keV, gyromagnetic ratio from Moessbauer measurements following Coulomb excitation, (E), 22:3719
energy levels in rotational and vibrational bands from Coulomb excitation, multiple mixing ratios and transition probabilities for, (E), 22:48523 (ORNL-TM-2211)
energy levels of, collective, (E), 22:18264
energy levels of, gyromagnetic ratios from Moessbauer measurements following Coulomb excitation, (E), 22:7694 (NYO-2028-2, pp 1-11)
energy-level spins and transitions in isomeric, (E), 22:5823
energy-level transition probability rates in, ratios of rotational and vibrational, (T), 22:16043
energy-level transitions from thulium-176 decay, conversion coefficients for, (E), 22:24886
gyromagnetic ratio of, calculation of collective, (T), 22:20684
hyperfine structure of, using Coulomb-excited Moessbauer levels in ytterbium oxides Yb_2O_3, (E), 22:9109
isomeric transition in, conversion coefficient and multipolarity of, (E), 22:5823
isomeric transition in, multipolarity of, (E), 22:37340(R) (EANDC(E)-89(U))
Moessbauer spectra following Coulomb excitation, (E), 22:34786
neutron absorption cross sections and resonance integrals for, thermal and epithermal, (E), 22:20562 (BNL-12263)
neutron capture cross section at 0.005 to 3 MeV, (E), 22:32596
neutron cross sections and resonance parameters for, transmission measurements of, (E), 22:53192
neutron inelastic scattering at 14.7 MeV, cross sections for short-lived isomer production in, (E), 22:13966
neutron reactions (n,α) at 14.8 MeV, production of erbium-173 by, (E), 22:16019
neutron reactions (n,p) at 15 MeV, cross section for, (E), 22:24886
neutron resonance parameters at 98 to 3236 eV, (E), 22:37281(R) (NYO-72-191)
neutron total cross section for, time-of-flight measurement of thermal and epithermal, (E), 22:20562 (BNL-12263)
nuclear deformation of, measurement using α inelastic scattering at 50 MeV, (E), 22:3700 (UCRL-17547(Exp.))
nuclear deformation parameters from α inelastic scattering, (E), 22:27205
nuclear shape in ground-state rotational band, Y_{40} and Y_{60} components of, (E), 22:14007
oxygen-16 inelastic scattering at 42 to 52 MeV with Coulomb excitation, γ angular anisotropy and yields from, (E), 22:48523 (ORNL-TM-2211)
proton differential elastic and inelastic scattering cross sections at 16 MeV, (E), 22:18304

YTTERBIUM ISOTOPES Yb-177
beta decay of, γ spectra and log-ft values for, (E), 22:11944(R) (AECL-2780)
energy levels of, calculation of nonrotational, (T), 22:9934
energy levels of, K = 1/2 rotational, (T), 22:20664

YTTERBIUM MANGANATES
crystal structure of, effects of pressure on, 22:4799

YTTERBIUM NITRATES
complexes with triphenylarsine oxide, binding energy, electric conductivity, and ir spectra of, 22:21060
separation by extraction chromatography using methylenebis[bis(2-ethylhexyl)phosphine oxide] and methylenebis[(dihexyl)phosphine oxide], 22:16665

YTTERBIUM OXIDES
effects on electric conductivity of zirconium oxides, (E), 22:31483
emittance at 1400 to 3000°K, hemispherical spectral, (E), 22:28929
precipitation from molten alkali metal nitrate--rare earth nitrate mixtures, 22:23001 (CONF-670502-, pp 385-90)
reactions with uranium oxides, phases formed in, 22:4108
solubility in boron oxide--strontium oxide systems at 1100°C, 22:41123
spectra of, widths of forbidden zones in reflected, 22:4107
x-ray absorption edges for ytterbium ions in, M, (E), 22:24061
ytterbium isotope hyperfine spectra in, Moessbauer level study of, (E), 22:9109
CaO--Yb_2O_3, phase studies of, 22:23898 (CONF-670502-, pp 213-22)
La_2O_3--Yb_2O_3, crystal structure of $LaYbO_3$ in, 22:19630
SiO_2--YbO, phase studies of, 22:11081
ThO_2--Yb_2O_3, phase studies of, 22:23898 (CONF-670502-, pp 213-22)
U_2O_5--Yb_2O_3, phase studies of, 22:12317
UO_2--Yb_2O_3, phase studies, 22:4890 (KFK-521)
UO_2--Yb_2O_3, phase studies of, 22:2018(R) (BMwF-FBK-67-76)
Yb_2O_3--PdO, phase relations of, in air, 22:19664
Yb_2O_3--ZrO_2, electrolytic properties of solid systems of, as function of ytterbium content, (E), 22:44218

YTTERBIUM PHOSPHIDES
magnetic coupling in, NMR studies of s-f exchange energy for, 22:24383 (CONF-670502-, pp 68-77)

YTTERBIUM SELENIDES
see also Manganese Ytterbium Selenides

YTTERBIUM SILICIDES
preparation and crystal structure of, 22:2593

YTTERBIUM SULFATES
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

YTTERBIUM SULFIDES
  crystal structure of, 22:24390 (CONF-670502-, pp 225-7)
YTTERBIUM TELLURIDES
  crystal structure of, 22:24388 (CONF-670502-, pp 145-54)
YTTERBIUM TUNGSTEN BRONZES
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
YTTERBIUM VANADATES
  crystal structure and preparation, (E), 22:49812
YTTRIUM
  abundance in carbon stars, (E), 22:23975
  abundance in early A stars, (T), 22:29016
  abundance in γ Capricorni, (E), 22:38692
  abundance in HD 122563, (E), 22:869
  abundance in HD 1909 and 53 Tauri, (E), 22:47730
  abundance in HR 4072, (E), 22:11172
  abundance in Sun, (E), 22:36643
  analysis for hydrogen, spectral-isotopic method for, 22:19534
  analysis for thorium, 22:10196
  analysis of, 22:27694
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Analytical Chemistry of Rare Earth Elements and Yttrium, in Russian, 22:2015
  book: Uncommon Metals, 22:10981
  book: Yttrium (In Russian), 22:38511
  compatibility with uranium, at 1150 to 1400°C, 22:2560(R) (IS-RD-11)
  complexes with (1,2-cyclohexylenedinitrilo)tetraacetic acid, ion exchange affinity of, 22:23097 (INR-P-860/VIII/C)
  complexes with 2,4-pentanedione, structure of, 22:14566 (ORO-2124-12)
  complexes with 8-quinolinol, mass spectra of, 22:25344
  complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
  complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
  corrosion by chromium--uranium eutectics, 22:2560(R) (IS-RD-11)
  corrosion by uranium at less than 1300°C, 22:21651
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
  determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
  determination as oxide by fast neutron activation, 22:6282
  determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by isotope dilution method, substoichiometric, 22:27618
  determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
  determination by neutron activation techniques, 22:47079
  determination by photon activation methods, 22:27591
  determination by photon activation methods, 22:27589
  determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 55-77)
  determination by spectrophotometry using molybdophosphoric acid, 22:44583
  determination in alkali medium in presence of cetylpyridinium bromide by spectrophotometry using Xylenol Orange, 22:40000
  determination in aluminum alloys following solvent extraction using 8-quinolinol, spectrophotometric, 22:8004
  determination in binary alloys with aluminum, x-ray spectrographic, 22:4 (AERE-R-5452)
  determination in mixture with yttrium using barium sulfate, complexometric, 22:27553
  determination in presence of mercury and alkaline earth elements, chelatotitration methods for, 22:4046
  determination in presence of zirconium, chelometric, 22:2000
  determination in rare earth mixtures by aerosol-spark method, 22:6281
  determination in rare earth mixtures by stylometric methods, 22:18716
  determination in scandium, spectroscopic, 22:18727
  determination in seawater, fluorimetric, 22:30443
  determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
  determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
  determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
  determination of trace amounts of, radiometric, 22:30
  determination of, spectrographic method using sifter electrode and carrier distillation for, 22:4054
  determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
  determination simultaneously with cerium and lanthanum by spectrophotometry using Chrome Azurol S, 22:40037
  determination using 1-(2-pyridylazo)-2-naphthol as indicator, complexometric, 22:50946
  determination using octamethylpyrophosphoramide, spectrochemical, 22:30468
  diffusion in alpha- and beta-zirconium, 22:6992
  diffusion of molybdenum and niobium in, at 1000 to 1300°C, 22:38547
  distillation of, effects of residual gas pressures on vacuum, 22:52152
  distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
  distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
  effect on oxidation and tensile properties of austenitic and ferritic steels, 22:4747
  effects of inclusions of, on critical current density of superconducting niobium--titanium alloys containing oxygen, 22:1099
  effects on creep, hardness, and microstructure of chromium, 22:38549
  effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
  effects on determination of metals by displacement chromatography on acidic cation exchange resin, 22:12416
  effects on ductility of electron beam-melted molybdenum, (E), 22:31368
  effects on ferromagnetism of zinc--zirconium alloys, (E), 22:1320
  effects on lanthanum determination by flame photometric titration, 22:48836
  effects on magnetostriction in dysprosium iron garnets, 22:24397 (CONF-670502-, pp 510-21)
  effects on phase equilibria in titanium alloys and zirconium alloys, 22:52201
  effects on photometric determination of indium, 22:2007
  effects on recrystallization of molybdenum alloys, 22:10928(T) (AD-659666)
  effects on spectra of uranyl ions in dihydroxymaleic acid in acetone, ethanol, and methanol solutions, 22:33222
  effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
  effects on yttrium-90 uptake by Ulva lactuca, 22:2488
  electric and optical properties of thin films of, effects of aging on, 22:14550
  electric conductivity at 2 to 300°K, 22:31375
  electron band structure of, from x-ray bremsstrahlung isochromats, 22:34783
  electron emission spectra of heat-treated, secondary, (E), 22:34762
  electrophoresis in formic acid solutions, 22:45069
  gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
  Hall effect in single crystals of, temperature dependence of anisotropy of, (E), 22:44270
  hardening and recrystallization of, effects of impurities on, 22:4756
  magnetic susceptibility at 80 to 300°K of single-crystal, temperature dependence of, (E), 22:9475
  magnetic susceptibility of, anomaly in, (E), 22:17813
  melting point and transition temperature of, effects of titanium on, 22:23775
  neutron cross section measurements of, 22:16265(R) (ANL-7403)
  neutron elastic and inelastic scattering cross sections at 6 MeV, (E), 22:35285(R) (AERE-PR/NP-13)
  neutron scattering and polarization measurements for, optical--model parameters fitting to, (E/T), 22:24925(R) (ANL-7427)
  neutron total cross section for, 22:32959 (ANL-7310, pp 1-30)
  neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
  polarographic properties of, effects of acidity on, 22:2078
  positron annihilation in single crystals of, photon angular distributions from, 22:24024 (CONF-670502-, pp 487-94)
  positron annihilation in single-crystal, angular correlation of photons from, (E/T), 22:24436
  preparation by direct electrolysis of oxides in fluoride melts, 22:23728 (CONF-670502-, pp 714-27)
  preparation of metallic, 22:2560(R) (IS-RD-11)
  preparation of, procedures and equipment for, 22:27654
  production of, commercial, 22:23089 (CONF-670502-, pp 678-90)
  properties of, review of, 22:38511
  proton reactions at 660 MeV, rubidium isotope production by, (E), 22:35283
  radiation effects on optical and electric properties of thin films of, x, 22:14550
  radioactivity standards of, users' guide for, 22:33474 (NP-17502)
  reactivity measurement of, in ARMF fast flux converter, 22:6096 (IN-1143)
  separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
  separation by solvent extraction using 3,6-bis[(4-chloro-2-phosphonophenyl)azo]-4,5-dihydroxy-2,7-naphthalenedisulfonic acid, 22:6396
  separation from alkaline earth and other rare earth

- elements, effects of lactic acid on anion-exchange, 22:18882
- separation from aqueous solutions by extraction chromatography using DEHPA, 22:163
- separation from aqueous solutions by solvent extraction using naphthenic acids, 22:6379
- separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
- separation from cerium by selective precipitation, 22:33544 (TID-24469)
- separation from europium and promethium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
- separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
- separation from hydrochloric acid by solvent extraction using bis(2-ethylhexyl) ester of phosphoric acid, effects of impurities on, 22:42844
- separation from lanthanide--yttrium mixtures by cation exchange using HEDTA, 22:37858
- separation from lanthanum, scandium, and thorium by thin-layer chromatography in dioxane--hydrochloric acid, 22:45176
- separation from nitrate solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
- separation from nitric acid by solvent extraction using trialkylphosphine oxide, 22:18876
- separation from other fission products by electrophoretic focusing of ions, 22:35912
- separation from other fission products by solvent extraction with bis(2-ethylhexyl) phosphate, 22:27836
- separation from other metals using alginic acid, ion exchange, 22:45170
- separation from other rare earths by ion exchange, 22:27883
- separation from other rare earths by ion-exchange chromatography, 22:18888
- separation from rare earths by complexing with hydrazodiacetic acid and ion exchange, 22:30662
- separation from rare earths by solvent extraction using naphthenic acids, 22:27868
- separation from rare earths using lactic acid, calculations for ion exchange, 22:12417
- separation from rare earths using N-(carboxymethyl)-N'-(2-hydroxyethyl)-N,N'-ethylenediglycine or EDTA, effects of temperature on ion exchange, 22:10337
- separation from samarium and scandium by ion exchange using (1,2-cyclohexylenedinitrilo)tetraacetic acid, 22:23097 (INR-P-860/VIII/C)
- separation from scandium and uranium by thin-layer chromatography in dioxane--nitric acid, 22:45176
- separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
- separation from strontium, 22:42598
- separation from strontium by electrodialysis, 22:40135
- separation from strontium by ion exchange using tin phosphate, 22:33552
- separation from strontium by solvent extraction using naphthenic acids, 22:6379
- separation from strontium by sorption on magnesium dioxide, 22:157
- separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
- separation from thorium or uranium in hydrochloric acid solution, ion exchange, 22:40192
- separation from titanium by paper chromatography, 22:25257
- separation from tungsten by paper chromatography, 22:25257
- separation of gadolinium and terbium from, quantitative electrolytic, 22:10332
- separation of scandium from, by precipitation using diphenic acid, 22:35887
- separation of strontium from, using barium sulfate, 22:27553
- separation of thorium and uranium from trivalent, by ion exchange, 22:142
- separation of trace amounts of, from uranium by ion exchange, effects of fluorides on, 22:47215
- separation of traces of dysprosium, europium, gadolinium, and samarium from, by chromatography, 22:40032
- separation of uranium from, in acetic acid, paper electrochromatographic method for, 22:16672
- separation of uranium from, ion exchange method for, 22:33550(P)
- sorption and ion exchange on montmorillonite suspensions in water, 22:10323 (LF-37)
- sorption by cation exchange resin in aqueous formic acid solutions, 22:45069
- sorption by manganese dioxide from nitric acid, 22:157
- sorption from seawater by glass, polyethylene, and suspended particles, 22:30443
- sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
- superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
- surface friction in vacuum, 22:52177
- thermoelectron emission by, measurement at 1150 to 1400°K, 22:4783
- uptake by marine mollusks, 22:51329
- use of tritium-impregnated films of, for neutron production, lattice parameters for, 22:26762(R) (NP-17412)
- uses of, review of, 22:38511
- valency-band structure of, 22:21721
- x-ray K-absorption spectra in yttrium compounds, 22:29590

YTTRIUM ACETATES

- preparation of anhydrous, 22:23000 (CONF-670502-, pp 366-73)
- stability constants for, paper electrophoretic studies on, 22:8051

YTTRIUM ALLOYS AND SYSTEMS

- see also C-129Y (Niobium Alloy)
- properties of, review of, 22:38511
- Tb--Y, magnetic ordering temperatures of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
- Ag--Y, crystal structure of intermetallic compound Ag_3Y in, 22:28819
- Ag--Y, phase diagram of, statistical prediction of, 22:31396
- Ag--Y, thermal capacity of YAg at 1.3 to 5°K, 22:52889
- Al--Cr--Fe--Y, shock testing of, 22:15179 (GEMP-1002, pp 83-93)
- Al--Cr--Fe--Y, tensile properties of, 22:15179 (GEMP-1002, pp 83-93)
- Al--Cr--Fe-base--Y, aging and crystal structure of, 22:612(R) (GEMP-69)
- Al--Cr--Fe-base--Y, creep-rupture of, effects of stress and temperature on, 22:612(R) (GEMP-69)
- Al--Cr--Fe-base--Y, oxidation by carbon dioxides at 800 to 1000°C, films formed in, 22:23716 (RD/B/N-1006)
- Al--Cr--Fe-base--Y, oxidation by high-temperature carbon dioxide, film structure from, 22:43534
- Al--Cr--Fe-base--Y, radiation effects on creep and tensile properties of Type 1541, fast neutron, 22:43615(R) (BNWL-710)
- Al--Cr--Fe-base--Y, radiation effects on creep of, neutron, 22:15225 (GEMP-1002, pp 38-64)
- Al--Cr--Fe-base--Y, radiation effects on creep-rupture of 1541 Alloy, neutron, 22:612(R) (GEMP-69)
- Al--Er--Y, crystal structure of intermetallic compounds of, 22:26060
- Al--Pr--Y, magnetic and crystallographic properties at low temperatures, (E), 22:39165 (NYO-3454-22, Paper 4)
- Al--Y, analysis for yttrium, x-ray spectrographic, 22:4 (AERE-R-5452)
- Al--Y, oxidation of intermetallic compounds in, phase studies on anodic, 22:50990
- Au--Y, phase diagram of, statistical prediction of, 22:31396
- Au-base--Y, phase studies of, 22:23818
- Be--Y, phase diagram, 22:10986(T) (JPRS-43479)
- C--H--Y, crystal and electronic structure of solid-phase, 22:15215
- C--Y, phase diagrams, 22:31409
- Ce--Y, crystal structure, stability, and axial ratios of, 22:696
- Ce--Y, magnetic susceptibility and thermopower due to s--f anomaly in, (T), 22:29566
- Co--Fe--Y, crystal structure of intermediate intermetallic compounds from YFe_2 to YCo_2, 22:47685
- Co--Fe--Y, magnetic and structural properties of intermetallic compounds in, (E), 22:39169 (NYO-3454-22, Paper 8)
- Co--Fe--Y, magnetic characteristics of intermediate intermetallic compounds from YFe_2 to YCo_2, 22:47685
- Co--Fe--Y, magnetic properties of Laves phase intermetallic compounds of, itinerant electron moment in, (E), 22:44227
- Co--Fe--Y, phase studies of intermetallic $CoFe_2$--YFe_2, 22:10980
- Co--Ta--Y, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Co--Y, magnetic and crystallographic properties of YCo_5, (E), 22:26511
- Co--Y, magnetic behavior of cobalt in intermetallic compounds of, (T), 22:15598
- Co--Y, magnetic properties of intermetallic compounds in, thermal variations of, (E), 22:9479
- Co--Y, magnetic properties of intermetallic YCo_2, YCo_3, and YCo_5, 22:13001 (CONF-661216-2)
- Co--Y, magnetic properties of intermetallic YCo_5, thermal variations of, (E), 22:9480
- Co--Y, magnetic properties of powders of intermetallic YCo_5, 22:24401 (CONF-670502-, pp 603-14)
- Co--Y--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Cr-base--Hf--Th--Y, stress rupture rates of warm-rolled at 750°C, 22:612(R) (GEMP-69)
- Cr-base--Hf--Th--Y, stress-rupture of, effects of impurities on, 22:15179 (GEMP-1002, pp 83-93)
- Cr-base--Hf--Th--Y, stress-rupture rates of warm-rolled, at 750°C, 22:612(R) (GEMP-69)
- Cr-base--Mo--Y, hot hardness of, 22:15179 (GEMP-1002, pp 83-93)
- Cr-base--TZC--Y, hardness at 750°C, effects of impurities on, 22:15179 (GEMP-1002, pp 83-93)
- Cr-base--TZC--Y, stress-rupture rates of warm-rolled at 750°C, 22:612(R) (GEMP-69)

- Cr-base--W--Y, hot hardness of, 22:15179 (GEMP-1002, pp 83-93)
- Cr-base--Y, internal friction at high and low temperatures, 22:26040
- Cr-base--Y, stress-rupture rates of warm-rolled at 750°C, 22:612(R) (GEMP-69)
- Cu--Ni--Y, thermal capacity of $YCu_{0.9}Ni_{0.1}$ at 1.3 to 5°K, 22:52889
- Cu--Si--Y, crystal structure of Y_2Cu_3Si, 22:2647
- Cu--Y, thermal capacity of YCu at 1.3 to 5°K, 22:52889
- Cu--Y--Zn, thermal capacity of $YCu_{0.9}Zn_{0.1}$ and $YCu_{0.8}Zn_{0.2}$ at 1.3 to 5°K, 22:52889
- Dy--Fe--Y, magnetic properties of intermetallic compounds in, (E), 22:15596
- Er--Ni--Y, crystal structure of, 22:28821
- Er--Ni--Y, phase studies of, 22:28821
- Er--Si--Y, crystal structure of, 22:28821
- Er--Si--Y, crystals structure of, 22:28821
- Er--Si--Y, phase studies of, 22:28821
- Er--Y, phase studies of, 22:705
- Fe--Mn--O--Y, Moessbauer study of crystal and magnetic structure and quadrupole coupling in ionic compounds of, 22:7345 (NP-17133)
- Fe--Mn--Y, magnetic properties of intermetallic compounds in, from 80 to 1500°K, (E), 22:15601
- Fe--Ti--Y, magnetic and structural properties of pseudobinary systems in, (E), 22:39161(R) (NYO-3454-22)
- Fe--Y, iron-57 Moessbauer effect in cubic Laves intermetallic compounds, (E), 22:52873
- Fe--Y--Zr, magnetic and structural properties of pseudobinary systems in, (E), 22:39161(R) (NYO-3454-22)
- Ga--Ni--Y, crystal structure of intermetallic compounds of, 22:23805 (CONF-670502-, pp 156-65)
- Gd--Y, crystal structure, phase diagrams of and thermodynamic properties, 22:10924(R) (DRI-2437)
- Gd--Y, electric conductivity at 4.2 to 1100°K, spin-disorder measurements of, 22:15196
- Gd--Y, electron structure of, effects on alloying behavior, 22:10924(R) (DRI-2437)
- Hf--Ta--W--Y, properties, 22:31323
- Mg--Y, corrosion by demineralized water at 95°C, 22:28732 (CEA-N-816, pp 102-39)
- Mg--Y, phase studies on, using differential thermal analysis, 22:8047
- Mg-base--Y, corrosion by sodium chloride, electrochemical studies on, 22:26026 (CEA-N-616, pp 106-44)
- Mn--Y, magnetic structure of intermetallic Y_6Mn_{23}, polarized neutron study of, 22:31968
- Ni--Pr--Y, magnetic properties at 4 to 300°K, 22:41061
- Ni--Y, crystal structure of, 22:28821
- Ni--Y, magnetic behavior of nickel in intermetallic compounds of, (T), 22:15598
- Ni--Y, magnetic properties of intermetallic Y_2Ni_{17}, (E), 22:39167 (NYO-3454-22, Paper 6)
- Ni--Y, magnetic properties of intermetallic Y_2Ni_{17}, (E), 22:46201
- Ni--Y, magnetic properties of Y_2Ni_{17} compounds, 22:52883
- O--Y--Zr, preparation by decomposition of alcoholates, 22:4901
- O--Y--Zr, properties of, chemical and physical, 22:4901
- Pb--Y, formation of intermetallic compounds in, 22:23807 (CONF-670502-, pp 428-39)
- Pb--Y, phase studies of, 22:23807 (CONF-670502-, pp 428-39)
- Pd--Y, phase diagram of, statistical prediction of, 22:31396
- Pr--Y, crystal structure, stability, and axial ratios of, 22:696
- Pr--Y, magnetic susceptibilities at low temperatures, (E), 22:39164 (NYO-3454-22, Paper 3)
- Pu--Y, phase studies of, 22:2655
- Re-base--Y, work function for, (E), 22:34761
- Rh--Y, phase diagram of, statistical prediction of, 22:31396
- Ru--Y, phase diagram of, statistical prediction of, 22:31396
- Sc--Y, magnetic properties of, effects of temperature on, (E), 22:3212
- Si--Y, crystal structure of, 22:28821
- Sm--Y, crystal and electron structures of, effects on alloying behavior, 22:10924(R) (DRI-2437)
- Sm--Y, crystal structure, phase diagrams, and thermodynamic properties of, 22:10924(R) (DRI-2437)
- Sn--Y, decomposition and formation of intermetallic compounds in, 22:31410
- Sn--Y, phase diagram of, 22:31410
- Sn--Y, phase studies of, 22:2560(R) (IS-RD-11)
- Sn--Y, phase studies of, 22:705
- Sr--Y, separation from plutonium by solvent extraction using nitromethane, 22:33521
- Tb--Y, crystal structure of, effects of pressure on, 22:24379 (CONF-670502-, pp 18-28)
- Tb--Y, effect of dissolving terbium by yttrium on helicoidal structure of, 22:22244
- Tc--Y, phase diagram of, statistical prediction of, 22:31396
- Ti--Y, melting points and transition temperatures of, 22:23775
- U--Y, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
- U-base--Y, production and properties of, using carrier metal, 22:28754 (LA-3911)
- Y--Zn--Zr, magnetic properties of, 22:39174
- Y--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Y--Zr, diffusion at 1000 to 1300°C in, 22:38547

YTTRIUM BORIDES
- crystal structure and preparation of YB_6, 22:8843
- electron emissive properties and preparation of, 22:28884
- emission properties of YB_6, 22:8834

YTTRIUM BROMIDES
- preparation of anhydrous, by dehydration of hexahydrates, 22:45046
- structure of anhydrous, crystal and molecular, 22:45046

YTTRIUM CARBIDES
- phase diagrams for, 22:47709

YTTRIUM CARBONATES
- preparation from anhydrous acetates, 22:23000 (CONF-670502-, pp 366-73)

YTTRIUM CHLORIDES
- hydrolysis of vapor-phase, thermodynamics of, 22:14476 (BMwF-FBK-67-87)
- hydrolysis of, vapor-phase, 22:2018(R) (BMwF-FBK-67-76)
- polarographic behavior in lithium chloride--potassium chloride eutectic, 22:27690
- preparation by reaction of yttrium oxide with carbon tetrachloride, 22:2560(R) (IS-RD-11)
- rare earth ion energy levels in crystals of, lifetimes of trivalent, (E), 22:50244
- $Ce(NH_4)_2(NO_3)_6$--$La(NO_3)_3$--YCl_3, precipitation of CeO_2 from solutions of, at 210°C, 22:33544 (TID-24469)

YTTRIUM CITRATES
- effects on plutonium retention by rats, 22:8480

YTTRIUM ETHYL SULFATES
- proton polarization in neodymium-doped single crystals of, low-temperature dynamic, (E), 22:1357

YTTRIUM FERRATES
- iron-57 Moessbauer effect in, (E), 22:24424
- spin-wave interactions in, parametrically excited, (E), 22:20039 (COO-1488-9)

YTTRIUM FERRATES $Y_3Fe_5O_{12}$
- ferromagnetic relaxation in, effects of gamma and neutron irradiation on, 22:5451
- neutron scattering by coherent parametrically excited spin waves in, slow, (E), 22:44258
- radioinduced defects in, uranium-235 fission fragment, (E), 22:31972

YTTRIUM FLUORIDES
- volatility in molten beryllium fluoride--lithium fluoride systems, 22:10324 (ORNL-TM-2058)
- volatility in molten-salt fuel reprocessing, 22:27861 (ORNL-4204, pp 60-7)
- BeF_2--YF_3, phase diagram of, 22:45079
- CaF_2--YF_3, phase diagram of, 22:45081
- KF--YF_3, phase diagram of, 22:45079

YTTRIUM HYDRIDES
- development for reactor moderators, 22:614
- electric conductivity at 1000 to 1200°K, (E), 22:13549
- phase studies of, analysis of mechanical properties from, 22:30387
- use as moderator in dispersion fuel elements for spacecraft reactors, 22:23885(P)
- use as moderator in refractory nuclear fuel element, 22:21714(P)
- use for multi-zone cylindrical fast rocket reactors self-regulating control systems, description of, 22:46999 (N-68-24559)
- UO_2--YH, fuel--moderator elements of, description of enamel-coated refractory metal-clad, 22:42556(P)

YTTRIUM HYDROXIDE OXIDES
- production of single-crystal, from molten salts, 22:8840 (ORNL-4170, pp 3-7)

YTTRIUM HYDROXIDES
- crystallization of yttrium oxide in precipitates in, 22:52235
- precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6380
- precipitation with tungsten, 22:18793
- use in separation of chromium, molybdenum, and rhenium by precipitation, 22:23104

YTTRIUM IONS
- abundance in carbon stars of singly ionized, (E), 22:23975
- chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
- chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- effects on indium precipitation from alkaline solutions with hydroxide, 22:14575
- electrophoretic mobility in acetate buffers, 22:27567
- entropies of, 22:4147
- spectral emission lines in lower chromosphere of, intensity of, (E), 22:52441
- spectral line intensities in 73 Draconis, 22:11158
- transition probabilities of permitted lines of, (E), 22:36643

YTTRIUM ISOTOPES

proton spallation at 660 MeV, neutron-deficient isotope production from, (E), 22:35284

YTTRIUM ISOTOPES Y-86

energy level at 243 keV, g-factor and lifetime for, (E), 22:46744

YTTRIUM ISOTOPES Y-87

beta and electron-capture decay of, branching ratio for, (E), 22:1615(T) (ORNL-tr-1796)
beta and electron-capture decay scheme of isomeric, half-life, log-ft values, and β and γ spectra for, (E), 22:11934

YTTRIUM ISOTOPES Y-88

beta and electron-capture decay of, gamma transition energies in, (E), 22:7674
beta and electron-capture decay scheme of, measurements using γ-γ coincidence method, (E), 22:5867 (CEA-R-3260)
electron-capture decay of, γ spectra from, (E), 22:24835(R) (BARC-305)
energy levels from yttrium-89 (He-3,α) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
energy levels from yttrium-89 (He-3,α) reactions, spectroscopic factors for neutron-hole, (E), 22:26988
energy levels from yttrium-89 (p,d) and zirconium-90 (d,α) reactions, 0^+, (E), 22:35292 (ORNL-4217, pp 1-81)
neutron reactions (n,p) at 0.1 to 1.0 MeV, cross-section calculations using statistical theory, 22:20677 (UCRL-50359)
production and properties of short-lived isomeric, by proton reactions with strontium at 10 MeV, (E), 22:24874

YTTRIUM ISOTOPES Y-89

alpha reactions (α,3n) at 34 and 54 MeV, cross sections and isomeric cross-section ratios for, (E), 22:1622
deuteron elastic and inelastic scattering at 52 MeV, optical model analysis of elastic and inelastic, (E), 22:48509(R) (BMwF-FBK-68-22)
deuteron elastic scattering at 13.6 MeV, diffraction structure in angular distributions for, (E), 22:48501
deuteron elastic scattering at 52 MeV, angular distributions from, (E), 22:26971
deuteron elastic scattering at 52 MeV, optical model analysis of angular distributions from, (E), 22:46711 (BMwF-FBK-68-16)
deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
deuteron reactions (d,p) at 12 MeV, angular distributions of differential cross sections for, (E), 22:11949(R) (ORO-2972-47)
deuteron reactions (d,p) at 12 MeV, yttrium-90 energy levels from, (E), 22:20584
deuteron reactions (d,p) at 4.8 to 10.8 MeV, charge-exchange effects in, (E), 22:11949(R) (ORO-2972-47)
deuteron reactions (d,p) below Coulomb barrier, angular distributions and spectra for, (E), 22:27050
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
energy level at 0.908 MeV, from proton inelastic scattering, (E), 22:1630
energy levels from electron inelastic scattering at 65 and 70 MeV, (E), 22:15970
energy levels from proton capture in strontium-88 at 5.85 to 8.4 MeV, isobaric analog, (E), 22:7675
energy levels from proton elastic scattering by strontium-88, isobaric analog, (E), 22:11949(R) (ORO-2972-47)
energy levels from proton inelastic scattering, (E), 22:18256
energy levels from proton inelastic scattering, (E), 22:44659
energy levels from strontium-88 (He-3,d) reactions, spectroscopic factors for, (E), 22:27141
energy levels from strontium-88 proton elastic and inelastic scattering, isobaric analog, (E), 22:32516 (MIT-2098-422, pp 43-68)
energy levels from strontium-88 proton inelastic scattering, spins of isobaric analog, (E), 22:27210
energy levels from yttrium-89 (d,p) reactions, spectroscopic factors for, (E), 22:11949(R) (ORO-2972-47)
energy levels in strontium-88 proton elastic scattering, widths of isobaric analog, (T), 22:24846
energy levels of, calculations using independent quasi particle model, (T), 22:1734
energy levels of, damping widths of isobaric analog, (T), 22:37393
energy levels of, shell-model calculations of elastic proton decay and damping widths of isobaric analog, (T), 22:44724
energy-level transitions from electron inelastic scattering, (E), 22:26911
energy-level transitions from strontium-88 (He-3,d) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
energy-level transitions from zirconium-89 decay, (E), 22:53138
energy-level transitions in, multipole mixing ratios and widths for, (E), 22:44635
helium-3 elastic and inelastic scattering at 43.7 MeV, angular distributions for, (E), 22:15999
helium-3 elastic scattering at 25, 31, and 41 MeV, optical-model parameters for, (E), 22:27230
helium-3 reactions (He-3,α) at 18 MeV, angular distributions for, (E), 22:39602 (CONF-670970-, pp 101-15)
helium-3 reactions (He-3,α) at 18 MeV, angular distributions for, (E), 22:26988
helium-3 reactions (He-3,d) at 25 MeV, angular distributions for, (E/T), 22:46808
helium-3 reactions (He-3,d) at 25 MeV, deuteron spectra from, (E), 22:5851
neutron capture at 0.1 to 2 MeV, cross section for, (E), 22:37312 (ANL-7450, pp 105-7)
neutron capture by, γ spectra from thermal, (E), 22:5809(R) (ANL-7354)
neutron capture by, γ spectra from thermal, (E), 22:20578 (WASH-1079)
neutron capture by, γ spectra from, (E), 22:9910
neutron capture cross section at 0.005 to 3 MeV, (E), 22:32596
neutron capture cross section for, fast, (E), 22:27086 (ANL-7375, pp 176-7)
neutron differential elastic scattering cross section and polarization at 0.4 to 1.5 MeV, (E), 22:20578 (WASH-1079)
neutron elastic scattering by, Legendre expansion coefficients of angular distributions for fast, (T), 22:22523 (NAA-SR-12533)
neutron inelastic scattering at 14.7 MeV, cross sections for short-lived isomer production in, (E), 22:13966
neutron inelastic scattering in reactor spectrum, activation cross section for, (E), 22:50586
neutron inelastic scattering with isomeric excitation, cross section for fast, (E), 22:7705
neutron reactions (n,2n) in reactor spectrum, average cross section for, (E), 22:37340(R) (EANDC(E)-89(U))
neutron reactions (n,α) and (n,p) at 14.8 MeV, cross sections for, (E), 22:48499
neutron reactions (n,p) at 14 MeV, cross section for, (E), 22:35261
neutron strength function and scattering radius at 0 to 16 keV, (E), 22:18285
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
nuclear charge distribution of, measurement using electron scattering, (E), 22:26911
nuclear resonance fluorescence and absorption measurements of transition strengths in, (E), 22:44635
photon reactions (γ,p) at 17.5 to 24.0 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27224
production of isomeric, by zirconium-90 (d,αn) reactions, (E), 22:27128
proton differential inelastic scattering cross sections at 61 MeV, angular distributions for, (E), 22:1630
proton elastic and inelastic scattering at 19 MeV, angular distributions for, (E), 22:11942
proton inelastic scattering at 9.06 and 9.98 MeV, proton spectra from, (E), 22:44659
proton inelastic scattering by, isobaric analog resonances in, (E), 22:18256
proton inelastic scattering cross sections at 5.5 to 11 MeV, (E), 22:5808
proton reactions (p,2p) at 46 MeV, proton angular correlations in, (E), 22:13927(R) (USC-136-132)
proton reactions (p,d) and (p,t) at 55 MeV, isobaric analog resonances in, (E), 22:27140
proton reactions (p,d) with, angular distributions and coincidence spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
proton reactions (p,γ) at 4 to 18 MeV, differential cross sections for, (E), 22:7685
proton reactions (p,n) at 3.6 to 5.8 MeV, cross sections for, (E), 22:7670

YTTRIUM ISOTOPES Y-90

activity of solutions of, results of international comparisons of, 22:6545
beta decay of, bremsstrahlung angular correlations and spectra for, (E), 22:9873
beta decay of, bremsstrahlung emission in, (T), 22:9958
beta decay of, electron depolarization and energy losses in aluminum, (E), 22:9904
beta decay of, internal pair formation and internal conversion in, (E/T), 22:5806
beta decay of, internal pair formation in, (T), 22:35397
beta decay of, K-shell autoionization in, (E), 22:18123(R) (RLO-1925-11)
beta dose to rabbit ear, determination of integral absorbed, 22:45546
beta dosimetry in bones using point source method, 22:19324 (AERE-R-5679)
beta emission by, effects of, on arthritic inflammation of joints of man, 22:49407
beta emission by, effects of, on brain tissues of man following use for pituitary gland surgery, 22:15031
beta emission by, effects of, on early development of embryos in rats, 22:28275 (NYO-2147-13, pp 11-15)

  beta emission by, effects of, on human pituitary gland following implant therapy, 22:49526
  beta emission by, effects of, on tumors in lungs of rabbits, therapeutic, 22:38416
  beta emission by, use of, for extracorporeal irradiation of human blood, 22:28533
  beta energy yield from, use of Geiger--Mueller detectors for determining, 22:6592
  complexes with high molecular weight polymers in soil samples, 22:6795(R) (COO-414-6)
  contamination of polyvinylchloride foil, glass, and steel, removal of, by detergents, 22:4626
  contamination of surfaces for determination of detector efficiency, 22:23548
  content in lake silts, effect on strontium-90 and yttrium-90 equilibrium in lake waters, 22:12431(T) (MLM-1470(tr))
  content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
  detection in man for use in calibrating γ-spectrometers, 22:8556
  determination in atmospheric water precipitations by ion exchange and beta counting, 22:27551
  distribution in tissues of dogs, guinea pigs, rabbits and rats, 22:8473
  distribution in tissues of rat, 22:8474
  effects on decomposition of 2-propanol in yttrium oxides, 22:2106
  effects on determination of strontium-90, 22:42598
  effects on pituitary gland in man following implantation, 22:51975
  effects on survival of fish embryos, effects of dose on, 22:51954
  energy levels from yttrium-89 (d,p) reactions at 12 MeV, (E), 22:20584
  energy levels of, calculations using delta function interaction, (T), 22:42133
  energy levels of, calculations using jj-coupling shell model, (T), 22:48587 (JAERI-1158, pp 138-44)
  energy-level transitions from yttrium-89 neutron capture, (E), 22:9910
  energy-level transitions from yttrium-89 thermal neutron capture, (E), 22:5809(R) (ANL-7354)
  equilibrium with strontium-90 in rats following oral administration, 22:25772
  gamma emission by, effects of, on human pituitary gland following implant therapy, 22:49526
  gamma emission by, effects of, on pituitary carcinomas in man, development of complications following therapeutic, 22:51820
  gamma emission by, effects of, on tumors in lungs of rabbits, therapeutic, 22:38416
  half-life of, accurate measurement of, (E), 22:29990
  implants of, effects of, on pituitary gland, 22:51298(R) (COO-1484-3)
  ingestion by rats, effects of, on liver function, 22:28667
  inhalation by rats, dynamics of, 22:8538
  movement through Mohave sandy loam soils, effects of chelating agents on, 22:33565
  neutron separation energy from yttrium-89 neutron capture, (E), 22:9910
  preparation of high-purity carrier-free, 22:40135
  production in isotope generator, paper electrophoretic study of purity in, 22:27819
  reactions with alkylarylsulfonic acid in aqueous solutions, extraction studies on, 22:10317
  reactions with alkylarylsulfonic acids, effects of salts of alkali and alkaline earth metals on, 22:45166
  retention in blood and soft tissues of mice, 22:28621 (ANL-7278, pp 1-94)
  separation from barium-140, lanthanum-140, and strontium-90 by ring-oven method, 22:37844
  separation from crushed bone in vitro, use of nitric acid for, 22:49204
  separation from strontium-90 by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
  separation from strontium-90 by sorption on glass powders, 22:30684
  separation from strontium-90 by thin-layer electrophoresis, 22:8183
  separation from strontium-90 on carboxymethylcellulose filter papers by ring-oven method, 22:37844
  separation from strontium-90 using silicotungstate, paper chromatographic method for, 22:8176
  separation from uranium using silicotungstate, paper chromatographic method for, 22:8176
  separation of carrier-free, from strontium-90--yttrium-90 mixture by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4237
  shipments by BNL during 1965 and 1966, 22:37776 (BNL-50082, pp 79-92)
  sorption by crushed bone, in vitro, 22:49204
  uptake by Ulva lactuca, effects of pH and stable yttrium concentration on, 22:2488
  use by therapy, monitoring of patients following, 22:51641
  use for contact therapy, 22:51787
  use for removal of static charges from oils, 22:14732
  use for therapy of chronic lymphoid and myeloid leukemia, colloidal, 22:10805
  use for therapy of human brain tumors, 22:38391
  use of implants of, for therapy of pituitary gland tumors, evaluation of, 22:31122
  use of microspheres of, for interstitial radiotherapy of human lung cancer, 22:40769
  use of microspheres of, for treatment of pulmonary metastases in rats, 22:36367
  use with scintillator as standard light source, luminosity of, 22:47415
  ^{90}Sr--^{90}Y, separation of carrier-free yttrium-90 from, by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4237
  strontium-90--yttrium-90, thermal output of, 22:14433 (ORNL-4196, pp 66-89)
YTTRIUM ISOTOPES Y-91
  beta emission by, effects of, on beagle dogs following inhalation as aerosols, toxic, 22:23403 (LF-38, pp 40-64)
  containment of rocket reactor exhaust, performance of water scrubbing system for, 22:35567 (LA-DC-9555)
  content in fallout near Milan, Italy from seventh Chinese nuclear explosion, 22:27922
  content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
  deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
  diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
  effects on decomposition of 2-propanol in yttrium oxides, 22:2106
  effects on hematopoiesis in bone marrow of dogs and rats following injection, 22:52009
  energy levels from strontium-90 decay, (E), 22:44681 (IS-T-234)
  fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
  fission product release from silicon carbide (SiC)-coated uranium carbide (UC_2) and uranium oxide (UO_2) at 1700 and 2000°C, analysis of, 22:42200(R) (ORNL-4200)
  gamma emission by, effects of, on beagle dogs following inhalation as aerosols, toxic, 22:23403 (LF-38, pp 40-64)
  half-life for isomeric, (E), 22:44681 (IS-T-234)
  incorporation into insoluble fused clay aerosols, 22:23245 (LF-38, pp 92-100)
  inhalation by dogs, toxic effects of, 22:15002 (SC-M-67-2959)
  inhalation by rats, effects of EDTA on kinetics of, 22:8476
  ion exchange processes with, 22:23245 (LF-38, pp 92-100)
  metabolism in beagle dogs following inhalation as aerosols, 22:23403 (LF-38, pp 40-64)
  metabolism in mice, effects of diet on, 22:43210
  metabolism in rats, effects of adrenalin, diuretics, and EDTA on, 22:12787
  separation by ion exchange in alcohol--water solutions containing aluminum or lithium nitrates or nitric acid, 22:35905
  separation by solvent extraction using naphthenic acid, 22:35904
  separation from calcium-45 and cesium-137 by ion exchange, 22:2180
  sorption by intestines of rats, effects of barium sulfate, calcium fluorite, EDTA, espatite-1, lead sulfate, and turfite on, 22:8481
  sorption from aqueous solutions by synthetic zeolites, effects of sodium chloride and humus materials on, 22:35903
  toxicity to beagle dogs following inhalation, 22:23403 (LF-38, pp 40-64)
  uptake and metabolism by animals and man, 22:8644
  uptake by bones of dogs, monkeys, and rats, autoradiographic study of, 22:2486
  use with strontium-90 in sealed β source, 22:19046 (N-67-23959)
  yields from nuclear explosions, effects of, on radiation dose to man, 22:23511 (UCRL-70788)
YTTRIUM ISOTOPES Y-93
  yield in thermal neutron fission of uranium-235, (E), 22:29983 (MIT-905-108, pp 1-32)
YTTRIUM ISOTOPES Y-95
  nuclear spin of ground state of, (E), 22:26938
YTTRIUM ISOTOPES Y-97
  beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
YTTRIUM ISOTOPES Y-98
  half-life of, from uranium-235 thermal neutron fission, (E), 22:46767 (NP-17532)
YTTRIUM ISOTOPES Y-99
  half-life of, from uranium-235 thermal neutron fission, (E), 22:46767 (NP-17532)
  half-life, (E), 22:46732 (NP-17528)
YTTRIUM NITRATES
  complexes with pyridine-1-oxide, precipitation and solubility of, 22:33360
  complexes with triphenylarsine oxide, preparation and properties of, 22:21060
  effects of neutron-irradiated, on decomposition of 2-propanol in radioactive yttrium oxides, catalytic, 22:2106
  separation by solvent extraction using nitric acid--TBP--

  water, chromatographic studies on effects of diluents on, 22:6405
YTTRIUM OXALATES
  preparation and properties of radioactive kryptonates of, for use as indicators in chelatometric titrations, 22:18698
  use of kryptonate of, as end-point indicator in radiochelatometric titration of iron, 22:42639
YTTRIUM OXIDES
  addition to hypostoichiometric dioxides of thorium and uranium for reactor fuels, 22:38611(P)
  analysis for cerium by differential polarographic titration using hydroquinone, 22:50929
  analysis for cerium, spectrofluorimetric, 22:25279
  analysis for dysprosium, europium, gadolinium, and samarium by neutron activation methods, 22:40032
  analysis for europium and terbium by fluorimetry using 1,10-phenanthroline, 22:33220
  analysis for europium by cathode-ray-excited emission spectroscopy, 22:44987
  analysis for rare earths by cathodoluminescence method, 22:22978
  analysis for rare earths by spectrophotoluminescence, 22:8025
  analysis for trace amounts of rare earths, spectrographic, 22:22950
  analysis for trace rare earths by cathode-ray-excited emission spectroscopy, 22:25270
  analysis of garnets of, for impurities by neutron activation methods, 22:14438
  cathodoluminescence of rare earth-activated, 22:22996 (CONF-670502-, pp 271-82)
  corrosion by lithium at high temperatures and velocities, 22:38514 (N-68-11617)
  crystal growth in yttrium hydroxide precipitates, 22:52235
  diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
  diffusion of oxygen in, self-, 22:36537
  dissociation energies of gaseous, 22:4117
  effects as stabilizer on stress relief of zirconium dioxide, 22:21772
  effects of neutron-irradiated, on decomposition of 2-propanol, 22:2106
  effects on electric conductivity of zirconium oxides, (E), 22:31483
  effects on stress rupture properties of zirconium, 22:31355
  effects on thermal conductivity of thorium oxide, uranium dioxide, and thorium oxide--uranium oxide, 22:13070(P)
  elastic properties of Y_2O_3, 22:49837
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  emittance at 1400 to 3000°K, hemispherical spectral, (E), 22:28929
  luminescence effects of bismuth ions in, 22:1304
  microstructure of, effects of thorium oxide additive on, 22:11077
  multiphonon orbit-lattice relaxation of excited rare earth ions in crystals of, (E/T), 22:48183
  neodymium-ion spectra in single crystal, 22:17802
  optical constants of, (E), 22:22237
  oxygen diffusion in, effects of temperature on, 22:2560(R) (IS-RD-11)
  porosity of polycrystalline Y_2O_3, 22:49837
  preparation method for microspherical particles of, for incorporation in fuels, 22:49801(P)
  preparation method for microspherical particles of, for incorporation in fuels, 22:49827(P)
  preparation of polycrystalline Y_2O_3, 22:49837
  preparation of spheres of, aquasol method for, 22:43644(P)
  preparation of transparent disks of, using vacuum hot forging, 22:4855
  properties as coating on tungsten alloy cathode, 22:37753
  properties for use in high-temperature thermionic converters, 22:34095 (LA-3822)
  purification by ion exchange, 22:27883
  radiation effects on properties of, literature survey, 22:36553 (N-68-17095)
  rare earth ion energy level transitions in, calculation of spontaneous emission probabilities for, 22:36724
  reactions with barium and lithium at 1000°C, 22:34095 (LA-3822)
  reactions with carbon tetrachloride for conversion to chloride, 22:2560(R) (IS-RD-11)
  reflectance of sintered, effects of sintering temperature on spectral, (E), 22:31461
  separation of strontium-89 from neutron-irradiated, by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:4237
  sintering of, effects of thorium oxide on grain growth in, 22:11077
  spectra of, widths of forbidden zones in reflected, 22:4107
  thermal expansion coefficients for, 22:2560(R) (IS-RD-11)
  thermal expansion of Y_2O_3, at 25 to 1100°C, 22:15183 (IS-T-212)
  toxicity to beagle dogs following inhalation during exercise, effects of, on blood lactic acid, erythrocyte volume, and histology of lungs, 22:33744
  vaporization from solid solutions with zirconium dioxide at ca 2200°C, 22:34111
  $4UO_{2.3}$--Y_2O_3, diffusion of xenon-133 at 900 to 1350°C in, 22:19624 (CONF-650513-10)
  BeO--Y_2O_3, crystal structure, 22:8736 (ORNL-4170, pp 54-62)
  CeF_3--Y_2O_3, phase studies, 22:17178
  CeO_2--Y_2O_3, crystal structure of nonstoichiometric, 22:45782
  Cr_2O_3--Y_2O_3, phase studies, 22:31524
  Fe_2O_3--Ga_2O_3--Y_2O_3, phase studies on, 22:27689
  Fe_2O_3--Nb_2O_5--TiO_2--U_3O_8--Y_2O_3, reactions with chlorine gas, avoidance of $NbOCl_3$ formation in, 22:50984
  HfO_3--Y_2O_3, phase studies, 22:23903
  Mo--Sc_2O_3--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
  Mo--Y_2O_3, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
  Nb--Sc_2O_3--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
  Sc_2O_3--Ta--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
  Sc_2O_3--V--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
  Sc_2O_3--W--Y_2O_3, exchange reactions of, thermodynamics of, 22:23717
  Ta--Y_2O_3, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
  ThO_2--Y_2O_3, properties as electrolytes, 22:72
  ThO_2--Y_2O_3-base, elastic moduli at 25 to 1100°C, (E), 22:28931
  U_2O_5--Y_2O_3, magnetic properties of, 22:12318
  U_2O_5--Y_2O_3, phase studies of, 22:12317
  $UO_{2.2}$--$1.5Y_2O_3$, diffusion of xenon-133 at 900 to 1350°C in, 22:19624 (CONF-650513-10)
  $UO_{2.2}$--Y_2O_3--ZrO_2, diffusion of xenon-133 at 900 to 1500°C in, 22:19624 (CONF-650513-10)
  UO_2--Y_2O_3, preparation and properties of high-temperature reactor fuels of, 22:23879(P)
  UO_2--YO_2, oxygen partial pressure over solid solutions of, at 1100 to 1400°C, 22:11053
  UO_2-base--Y_2O_3, fabrication and properties of reactor fuels of, 22:41093(P)
  UO_3--Y_2O_3, molecular structure of hydrated, 22:34119
  W--Y_2O_3, compatibility at 1700 to 1900°C, 22:10481(R) (ALO-3634-6)
  Y_2O_3--PdO, phase relations of, in air, 22:19664
  Y_2O_3--Zr, fabrication of, 22:31355
  Y_2O_3--Zr, microstructure of dispersions of, effect of heat treatments and hot rolling on, 22:21768 (AECL-2798)
  Y_2O_3--Zr, sintering of, effects of temperature and time on, 22:21768 (AECL-2798)
  Y_2O_3--Zr, tensile properties of, 22:31355
  Y_2O_3--ZrO_2, thermal expansion coefficients, 22:2698
  YO_2--ZrO_2, fabrication of resistor furnace elements of, 22:8812(P)
YTTRIUM SULFATES
  see also Yttrium Ethyl Sulfates
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
YTTRIUM SULFIDES
  dissociation energies of gaseous, 22:4117
  preparation and electronic structure of single crystals of, (E), 22:5436
YTTRIUM TANTALATES
  crystal structure of $Y_{0.33}$ TaO_3, 22:19652
  BaO--B_2O_3--$YTaO_4$, phase studies of, 22:4892
YTTRIUM TUNGSTATES
  $Th(WO_4)_2$--$Y_2(WO_4)_3$, phase studies in, effects of annealing on, 22:34121
YTTRIUM TUNGSTEN BRONZE
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
YTTRIUM TUNGSTEN OXIDES
  preparation of Y_2WO_6 by reaction of tungsten oxide and yttrium oxide, 22:34103
  U--Y_6WO_{12}, fluorescences of, 22:37768
YTTRIUM URANATES
  crystal structure of, 22:30523
  preparation of, 22:30523
  stability of, thermal, 22:30523
YTTRIUM VANADATES
  crystal structure and preparation, (E), 22:49812
  fluorescence of europium-containing, effects of temperature on ultraviolet-induced, 22:38632
  fluorescence of rare earth-doped, 22:22997 (CONF-670502-, pp 283-94)
  fluorescence under ultraviolet light, effects of temperature on, 22:38632
  preparation and properties of, 22:22997 (CONF-670502-, pp 283-94)
Yucca
  see under Angiospermidae
YUGOSLAVIA
  nuclear research centers in, review of, 22:27972
  radiation dose to gonads of man in, from diagnostic radiography, 22:38321
  radioactivity of atmosphere and deposited dusts in, 22:19341

  uranium ore processing in, status of, 22:18992

Z

ZEBRA (Exponential Pile)
    see Exponential Piles
ZEBRA REACTOR
  Doppler activation measurements in, analysis of uranium-238 foil, (T), 22:35652
ZED-2 (Chalk River)
    see Reactors, Research
Zenith
    see High-Temperature Gas-Cooled Reactor Experiment
Zeolites
    see Ion Exchange Materials
Zero-Energy Tank Reactor (ZETR)
    see Critical Assemblies
Zero Gradient Synchrotron (ZGS)
    see Argonne Synchrotron
Zero-Power Reactors
    see Critical Assemblies
Zeta
    see Thermonuclear Reactors
ZETR-II
    see Critical Assemblies
ZGS
    see Argonne Synchrotron
ZINC
  abundance in chondrites, 22:2727
  abundance in γ Capricorni, (E), 22:38692
  accumulation by maize, selection of populations according to differential uptake, 22:33712(R) (NYO-2744-53)
  alpha elastic scattering at 24.7 MeV, optical model analysis of, (E/T), 22:3645 (INP-558/PL)
  alpha reactions at 24.7 MeV, total cross section from transmission method, (E), 22:7688
  alpha total cross section at 24.7 MeV, measurement using transmission method, (E), 22:3645 (INP-558/PL)
  analysis for cadmium, copper, and lead, polarographic, 22:9(R) (NBS-TN-425)
  analysis for gallium and indium using extraction-photometric method, activation, 22:1950 (JAERI-1148)
  analysis for gallium by titration using EDTA, 22:7979(T) (UCRL-Trans-10161)
  analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
  analysis for trace amounts of cadmium by neutron activation and isotope dilution methods, 22:52
  analysis for trace elements, methods for, 22:37679
  analysis for uranyl ions using benzamidoxime, spectrophotometric, 22:27715
  analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
  analysis of zone-refined, for cobalt and silver by neutron activation methods, 22:44988
  argon ion sputtering at 1 to 5 keV, yields and ejection patterns from, (E), 22:36729
  argon--ion reactions at 90 keV, characteristic x-ray production in, (E), 22:29215
  atomic weight of, based on carbon-12 = 12, 22:42698
  book: Hot Dip Galvanizing, 22:8717
  cadmium and zinc diffusion in single crystals of, isotope effect for, 22:9488
  charge exchange with protons at 5 to 40 keV in vapor of, 22:26233
  chelation of cysteine, radioprotective effects of, on carboxypeptidase A, 22:45605
  chromatographic behavior on cerium phosphate paper, 22:153
  chromatographic behavior on thin layers of cellulose and silica gel impregnated with tributyl phosphate, 22:23115
  coating thickness on iron sheet, measurement by x-ray fluorescence method, 22:255 (ORNL-IIC-10(Vol.2), pp 696-722)
  coating thickness on steel sheets, radiometric gage for measuring, 22:14868
  coating weight on steel sheet, use of x-ray fluorescence gage to measure, 22:260 (ORNL-IIC-10(Vol.2), pp 805-16)
  coatings of, deposition on metal substrates using bias sputtering and ion plating, 22:34042 (MLM-1453)
  complexes with [ethylenebis[[(carboxymethyl)imino]ethylenenitrilo]] tetraacetic acid, stability constants for nonprotonated, 22:45038
  complexes with 2,4-pentanedione, preparation of, for use as secondary standards, 22:45039
  complexes with 6-hydroxy-2-methyl-7-oxo-1,3,5-cycloheptatriene-1-carboxylic acid, stability of, 22:10236
  complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
  complexes with β-ketoenols, preparation and properties of, review of, 22:2061
  complexes with diketones and rare earths, preparation of, 22:14386(R) (NYO-906-80)
  complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
  complexes with tetraphenylporphine, γ radiolysis of, 22:16610
  complexes with TTA, fractional sublimation of, 22:3591
  condensation in meteorites, (T), 22:5023
  content in ores, use of x-ray sources for determining, 22:4494
  content in Par Pond of Savannah River Plant, 22:37875 (DP-MS-66-81)
  content of blood and urine, determination of, by neutro activation analysis, 22:17049
  content of circulating blood, use of, in γ dosimetry, 22:38284
  content of diet of rats, effects of, on uptake of zinc-65, 22:28383
  content of human blood, effects of radiotherapy on, 22:45436
  content of marine algae, crustaceans, fish, and mollusks 22:22903 (PRNC-104, pp 57-67)
  content of marine organisms and sediments, minerals, rocks, seawater, seston, and soils in Puerto Rico, 22:43311(R) (PRNC-85)
  content of mice in different habitats, 22:14979(R) (COO 1406-2)
  content of pancreas of dogs, guinea pigs, man, and rabbits, 22:6721(T) (UCRL-Trans-10099)
  content of water, effects of, on zinc-65 uptake by crustaceans, 22:51449
  content of zooplankton in Puerto Rico, 22:22902 (PRNC-104, pp 24-53)
  corrosion effects on rhenium alloys, 22:33528
  corrosion-induced removal from aluminum-containing alpha brass pipes in seawater condensers, 22:45749
  creep of, 22:4869(R) (LA-3821)
  crystal structure of, research using slow neutron inelastic scattering, 22:37340(R) (EANDC(E)-89(U))
  crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:1711
  Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
  cycling in aquatic ecosystems, 22:14980
  deformation of single-crystal, effects of stress and temperature on twin-boundary motion from, 22:45745 (UCRL-18043, pp 107-53)
  detection of, performance of atomic absorption spectrophotometer for, 22:37666
  determination as impurity in amorphous boron, spectrographic, 22:16429
  determination as impurity in gallium arsenide, activation, 22:1969
  determination as impurity in thorium and thorium dioxide, spectrographic, 22:1994
  determination as impurity in uranium oxide (U_3O_8), spectrochemical method for, 22:50937
  determination as trace impurity in gallium by activation methods, 22:14456
  determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-C-3/68)
  determination as trace impurity in iron oxide and thorium nitrate, by solvent extraction and activation, 22:12240
  determination as trace impurity in petroleum by neutron activation methods, 22:1989
  determination as trace impurity in silicon dioxide by activation, ion-exchange chromatography, and gamma spectrometry, 22:12227(T) (AD-662383)
  determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
  determination by amperometric titration, theoretical corrections for, 22:4037
  determination by atomic-absorption spectroscopy using induction plasma, 22:1985
  determination by displacement chromatography on acidic cation exchange resin, 22:12416
  determination by gravimetry using sodium salt of benzilic acid, 22:4026
  determination by isotope dilution or neutron activation methods, substoichiometric, 22:27618
  determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
  determination by neutron activation methods, radiochemical column separation procedures in, 22:25284
  determination by titration using EDTA, indicator for, 22:39962 (MLM-1536)
  determination by titration, theoretical-slope method of end point detection for, 22:37685
  determination by x-ray fluorescence methods, 22:14453
  determination in airborne particulates by neutron activation methods, 22:30501
  determination in aluminum, activation method for, 22:21036
  determination in aluminum-base alloys by atomic absorption spectroscopy, 22:16466
  determination in ammoniacal and succinate media by titration with EDTA using manganese dioxide electrode, potentiometric, 22:8008
  determination in ancient copper coins and bronze objects by fast neutron activation methods, 22:27592
  determination in argyric skin by neutron activation, 22:50906
  determination in atherosclerotic arteries of man and rats by neutron activation methods, 22:30497

determination in atmosphere, polarographic, 22:21029 (SC-M-67-3044)
determination in biological materials by irradiation, ion-exchange separation, and counting, 22:21028 (PRNC-104, pp 102-6)
determination in biological materials by neutron activation methods including radiochemical separation technique, 22:25261
determination in biological materials by neutron activation techniques, 22:44972 (BNWL-SA-2010)
determination in biological materials, automatic separation system for, 22:8020
determination in biological materials, radiochemical method for, 22:30437
determination in biological samples by co-oxidation of rubeanic acid, polarographic, 22:4057
determination in blood by neutron activation methods, 22:12259
determination in calcium--zinc mixture by chelometric titration using TTHA, 22:22965
determination in Canadian foods by neutron activation methods, 22:30502
determination in cerium--zinc mixture by chelometric titration using TTHA, 22:22965
determination in chromium by activation methods using γ-spectrometry after ion exchange, 22:33245
determination in copper, activation, 22:27558
determination in distilled water, polarographic, 22:9(R) (NBS-TN-425)
determination in drugs by neutron activation methods, 22:10200
determination in fertilizers, polarographic, 22:22966
determination in gallium arsenide monocrystals in presence of copper using dithizone, activation, 22:12242
determination in gallium by neutron activation methods, 22:42614
determination in glass by neutron activation and photonuclear activation methods, 22:16400 (GA-8171, pp 147-60)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in hair by neutron activation methods, 22:16405 (GA-8171, pp 221-36)
determination in hair by neutron activation methods, 22:16404 (GA-8171, pp 203-20)
determination in high-purity bismuth by neutron activation methods, 22:4050
determination in high-purity indium, polarographic, 22:22961
determination in human blood by x-ray activation techniques, 22:42642
determination in hydrochloric and nitric acids, neutron activation method for, 22:4050
determination in iron meteorites by neutron activation methods, 22:3 (AERE-R-5254)
determination in iron ores, spectrochemical, 22:27615
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in lanthanum--zinc mixture by chelometric titration using TTHA, 22:22965
determination in lead--zinc ores by photon activation, 22:12249
determination in lead-zinc ores and slags, γ absorption method for, 22:254 (ORNL-IIC-10(Vol.2), pp 663-95)
determination in lungs by neutron activation methods, 22:10184
determination in manganese nodules by atomic absorption spectroscopy, 22:16390 (COO-1540-8)
determination in marine organisms by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in meteorites by chemical and neutron activation methods, 22:10199
determination in mixtures of light elements, electromagnetic isotope separation in activation methods for, 22:47090
determination in ''moonshines'' by neutron activation methods, 22:16397 (GA-8171, pp 103-16)
determination in nickel-activated zinc silicon fluorides, polarographic, 22:9(R) (NBS-TN-425)
determination in niobium, solvent extraction, ion exchange chromatographic, and spectrophotometric methods for, 22:30484
determination in ores by radiometric methods, 22:40048
determination in ores by x-ray-fluorescence methods, 22:33211
determination in ores, x-ray fluorescence method for, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
determination in paints by neutron activation methods, 22:16399 (GA-8171, pp 133-44)
determination in pelagic sediments by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in products in mineral processing plants by x-ray fluorescence techniques, 22:47061 (AAEC/TM-473)
determination in raw opium by neutron activation methods, 22:16395 (GA-8171, pp 63-78)
determination in rice plants by neutron activation, 22:33286
determination in rice plants by neutron activation methods, 22:50
determination in scandium, spectroscopic, 22:18727
determination in seawater after concentration on chelating resins by atomic absorption spectrophotometry, 22:14442
determination in seawater by neutron activation methods, 22:37642 (BNWL-SA-1776)
determination in seawater, separation and activation methods for, 22:27564
determination in selenium, neutron activation method for, 22:4050
determination in semiconductor material by activation methods, separation techniques for, 22:4049
determination in silicates, anodic stripping voltammetric method for, 22:9(R) (NBS-TN-425)
determination in silicates, spectrometric, 22:22960
determination in single-crystal slices of silicon by neutron activation, 22:37703
determination in soil solutions, activation, 22:1998
determination in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
determination in uranium and its compounds by atomic absorption spectroscopy, 22:16411 (GAT-507)
determination in uranium and its compounds, colorimetric and polarographic methods for, 22:27530 (CEA-N-816, pp 9-65)
determination in uranium and uranium compounds by atomic absorption, 22:45014
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in vulcanized rubber by bremsstrahlung activation, 22:12260
determination of extractable complexes of, with amines by paper chromatography, 22:14569
determination of radioactive, in water after separation by ion exchange by gamma spectroscopy, 22:18722
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace amounts of, by radiometric titration using EDTA, 22:12263
determination of trace amounts of, in germanium by neutron activation methods, 22:14441
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using rhodizonic acid, 22:7998
deuteron differential inelastic scattering cross sections at 26 MeV, (E/T), 22:7681
deuteron elastic scattering at 21.6 MeV, Akhieser-Pomeranchuk-Blair model analysis of, (T), 22:29940 (AECD/TP-23)
deuteron elastic scattering by, analysis using Akhieser--Pomeranchuk--Blair model, (T), 22:27247
diffusion at 289 to 418°K in single-crystal, isotope effect in self-, (E), 22:3201
diffusion in alloys and metals, determination by isotope effect, 22:43593 (ANL-7299, pp 246-50)
diffusion in aluminum, tracer studies of temperature dependent, 22:43593 (ANL-7299, pp 246-50)
diffusion in ion exchanger Dowex 50 W, kinetics of, 22:40100
diffusion in zinc single crystals, isotope effect for, 22:9488
diffusion of silver in, anisotropic, 22:45765(R) (RPI-1044-18)
dislocation mobility in monocrystals of, measurement of, 22:49751(R) (CALT-473-28)
dislocations in, effects of elastic anisotropy on, 22:49761
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in aquatic ecosystems, role of vascular hydrophytes in, 22:19299(R) (NYO-3018-18)
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in skeletal systems of man, 22:2506(R) (NYO-3086-7)
distribution in starfish from coast of Puerto Rico, 22:21408 (PRNC-104, pp 54-6)
effects as addition on magnesium--neodymium--zirconium alloys, properties and structure, 22:23779
effects of trace additions of, on crystal zone formation in beryllium--copper alloys, 22:28798
effects on ability of Bacillus megaterium to form colonies after γ-irradiation, synergistic, 22:28716
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on determination of copper in liver tissue by neutron activation methods, 22:16467
effects on determination of fluorine in organic and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of strontium-90 in oyster flesh, 22:18684 (AAEC/TM-394)
effects on direct titrimetric determination of molybdenum

using ceric sulfate, 22:4025
effects on distribution of zinc-65 in pear trees, 22:2492
effects on hydrogen peroxide yields in radiolysis of concentrated nitrate ion solutions, 22:23034 (IA-1128, pp 78-96)
effects on properties of magnesium--neodymium--zirconium alloys, 22:2562
effects on radioprotective effects of AET and serotonin in mice, 22:17032
effects on recombination radiation spectra from electron-excited gallium arsenides, (E), 22:24421
effects on restoration of irradiated aluminum, 22:19594
effects on solubility of fertilizers in aqueous solutions, polarographic measurements on, 22:22966
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of molybdenum, 22:18717
effects on spectrophotometric determination of trace amounts of ruthenium using 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:22975
effects on titrimetric determination of lanthanum using sodium rhodizonate and ceric sulfate, 22:27555
effects on titrimetric determination of uranium, 22:22972
elastic constants for hcp crystals of, higher-order, 22:13601
electromigration of, crystalline anisotropy in, 22:45765(R) (RPI-1044-18)
electron reactions at 250 to 2200 eV with, energy dependence of single- and double-ionization cross sections for, (E), 22:17407
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electronic band structure of, 22:10159 (UCRL-50307)
electrophoresis in formic acid solutions, 22:45069
electrophoretic behavior of, dissolved in molten alkali nitrates, 22:14493
energy level structure of, in magnetic fields, (T), 22:9425 (RPI-1995-7)
equilibrium concentration in sulfate solutions at 200 to 360°C, effects of sulfides of copper, iron, lead, and zinc on, 22:35935
extrusion pressures in conical dies, nomogram for predicting, 22:43542 (TRG-Report-1523)
fixation by zeolites, 22:37834 (EUR-3452(Vol.2))
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
gamma elastic and inelastic scattering by, γ spectra for, 22:27079
gamma resonance scattering using neutron capture beams, spectra for, (E), 22:48510 (IA-1097)
gamma resonance scattering using neutron capture beams, (E), 22:48477 (JAERI-1158, pp 17-20)
gamma resonance scattering using neutron capture γ rays, (E), 22:24854 (IA-1128, pp 12-20)
growth of whiskers of, on single-crystal substrate, (E), 22:3192
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
ionization at low temperature, 22:28806
ionization by electron impact, calculations of cross sections and rate coefficients of, 22:43856 (IPP-1/76)
joining to low-carbon steels, explosive method for, 22:38528
meson (π-) absorption and scattering cross sections at 0.6 to 1.6 MeV, optical model analysis of, (E/T), 22:48455
metabolism in cattle, effects of age and content of diet on, 22:28359
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
neutron elastic scattering at 0.50 to 1.75 MeV, angular distributions for, (E), 22:26932(R) (NP-17434)
neutron inelastic scattering at 14 MeV, effects of exchange interaction on, (T), 22:44675
neutron inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
neutron total cross section at 14.7 MeV, (E), 22:44649
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
neutron total cross section for, 22:32959 (ANL-7310, pp 1-30)
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
nucleon inelastic scattering at 14 MeV, generalized optical model for, (T), 22:44772
optical properties of single crystals of, 22:10159 (UCRL-50307)
oxidation at various temperatures, structure of film formed by, (E), 22:15576(T) (UCRL-Trans-10207)
partitioning in benthic infaunal communities in relation to stable element analysis, 22:43311(R) (PRNC-85)
performance as coating for metals, evaluation of flame-sprayed, 22:10932
performance as reducing agent in vapor deposition of refractory metals, 22:43549
phonon dispersion curves of, comparison with potentials, 22:48170
phonon dispersion relations for, Kohn anomalies in, (E), 22:24835(R) (BARC-305)
photon reactions (γ,p) in giant resonance region, proton angular distributions and spectra for, (E/T), 22:7687
photon resonance scattering by, high-excitation states from, (E), 22:35278
plastic deformation in, effects on cleavage cracks, 22:17115(R) (NYO-2394-31)
positron annihilation in liquid and solid, angular correlation of gamma rays from, (E), 22:15372
positron annihilation in, angular correlation of γ radiation from, (E), 22:49992
precipitation by means of potassium or sodium ferrocyanides, conditions for, 22:35793
protective effects against injuries in rat intestine induced by cadmium, 22:51325
radiation effects on crystal structure of, alpha, 22:4817
radiation effects on electric conductivity of hcp single crystals of, alpha, 22:3204
radiation effects on electrochemical properties of electrodes of, effects of oxides on slow-neutron, 22:6330
radiation effects on metabolism of, in swine, effects of dietary calcium and zinc on neutron, 22:51963
radiation effects on solubility of, in water, 22:12388
radiation effects on uptake of, by mitochondria isolated from spleens of rats, whole-body x, 22:40853
radiation effects on x-ray diffuse scattering by, gamma, 22:31438
radioactivity standards of, users' guide for, 22:33474 (NP-17502)
radioinduced atomic displacements in, production rates and threshold energies for electron, (E/T), 22:31930 (BNL-50083, pp 314-26)
rare gas atom reactions with, cross sections for transitions between fine structure components in, 22:11205
reactions with mercury atoms, effective cross sections for second-order, (E), 22:29220
reactions with niobium chlorides for vapor deposition of niobium layers on aluminum oxide, 22:21751 (EUR-3743)
reactions with uranyl acetate, preparation of uranium(IV) acetate by reduction, 22:45076
separation by ion exchange using aliphatic monocarboxylic acids of C_7 to C_9 fraction, 22:4087
separation by ion exchange, role of complexation reactions in, 22:33517
separation from aqueous solution by solvent extraction using 3-methyl-4-octanoyl-1-phenyl-2-pyrazolin-5-one, 22:8193
separation from aqueous solutions by solvent extraction using Amberlite LA-2, distribution of iodide complexes in, 22:18886
separation from arsenic by paper chromatography, 22:25257
separation from cadmium in hydrochloric acid solution, ion exchange, 22:40192
separation from calcium phosphate matrix of bone and teeth, method for quantitative, 22:2506(R) (NYO-3086-7)
separation from gallium by solvent extraction and ion exchange, 22:14456
separation from germanium by precipitation, 22:50932
separation from liquid drops of zinc or zinc--lead alloys by drop extraction using fused salts, 22:8085
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals by precipitation using cinnamic acid, 22:37855
separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from metals using sodium benzilate, 22:30660
separation from nitrate solution by solvent extraction using 2-ethylhexyl ester of phenylphosphonic acid, effects of zirconium on, 22:48905
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from other fission products by thin-layer chromatography, 22:8001
separation from other metals by ion exchange chromatography, 22:33520
separation from other metals using alginic acid, ion exchange, 22:45170
separation from oxalic acid by ion exchange, distribution coefficients in, 22:33520
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from seawater by sorption on Chelex 100 ion exchanger, 22:33477 (AD-663129)
separation from solution containing lithium iodide, enthalpy of extraction using esters of phosphonic and phosphoric acids or trioctylphosphine oxide, 22:47209
separation from solution containing potassium

thiocyanate, enthalpy of extraction using esters of phosphonic and phosphoric acids or trioctylphosphine oxide, 22:47209
separation from sulfuric acid systems with hydrobromic acid or potassium iodide by solvent extraction using benzene, 22:16658
separation from titanium by paper chromatography, 22:25258
separation from tungsten by paper chromatography, 22:25257
separation from uranium by ion exchange, 22:12427
separation of alkali metals from, by ion-exchange paper chromatography, 22:18881
separation of alkali metals simultaneously from, ion exchange, 22:37866
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of thorium and uranium from divalent, by ion exchange, 22:142
separation of trace amounts of, from rare earths, thin-layer chromatographic, 22:27881
slip modes of hexagonal-close-packed, 22:1314
solvent properties for beryllium, thermodynamic studies of, 22:28785
solvent properties for chromium at 400 to 800°C, 22:22653(R) (ANL-7419)
solvent properties for plutonium of liquid, 22:24925(R) (ANL-7427)
solvent properties for uranium at 974 to 1125°K, 22:28786
sorption by cation exchange resin in aqueous formic acid solutions, 22:45069
sorption by manganese dioxide from nitric acid, 22:157
sorption from acetic acid by Dowex 1-X8, 22:35914
sorption from seawater by ion exchange resins Chelex-100 and Permutit S1005, 22:14442
sorption from seawater onto various container surfaces, effects of addition of hydrochloric acid on, 22:45043
sorptive properties for ionic radioisotopes in aqueous solutions, effects of acidity on, 22:35767(T) (AEC-tr-6776)
sorptive properties for radioisotopes, 22:4129
strength of coated crystals of, 22:40993(R) (COO-1198-534)
superconducting transition temperature of, isotope effects on, (E), 22:7251
superconducting transition temperatures of layers of lead and, as function of lead thickness, (E), 22:13393
superconducting transition temperatures, isotope effects on, (E), 22:11397
superconductivity of, isotope effect in, 22:41502 (COO-1098-17)
superconductivity transition temperature of thin-film, 22:15141 (BNL-50057, pp 79-100)
thickness in galvanizing process, beta-backscatter gage for measuring, 22:12664
ultrasonic attenuation measurements in normal and superconducting, 22:50106
uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
uptake by calves, use of zinc-65 to study effects of protein content of diet and feeding methods on, 22:40831 (ORO-657, pp 46-64)
uptake by internal organs of pelagic fish, 22:2491
use for decladding fast reactor fuel assemblies, 22:25442 (ANL-7375, pp 19-45)
use in reduction of trivalent mendelevium ions to divalent state, 22:10255
use in separation of thorium and rare earths, 22:42819
x-ray fluorescence yield from zinc-69 decay, (E), 22:41996
zinc-65 exchange between drops of, and zinc chloride, 22:8085
ZINC ACETATES
radiolysis of single crystals of dihydrate of, ESR studies of free radicals from x, 22:40140
ZINC ACID SULFIDES
use for determination of molybdenum in milk, 22:33279
use in colorimetric determination of molybdenum in sediments and soils, 22:42621
ZINC ALLOYS AND SYSTEMS
Al-base--Zn, radiation effects at low temperatures on precipitation in, fast neutron, 22:43614 (ANL-7299, pp 290-308)
analysis of, methods for, 22:37679
book: Hot Dip Galvanizing, 22:8717
ferromagnetic properties of intermetallic $ZrZn_2$, comparison of itinerant-electron model with, 22:15595
Ag--Al-base--Cr--Cu--Mg--Zn--Zr, analysis for individual components by atomic absorption spectroscopy, 22:16466
Ag--Sn--Zn, activity coefficients and reaction parameters of, determination by torsion-effusion method, 22:31389
Ag--Zn, transformation of, effects of stress on beta-to-zeta phase, 22:40993(R) (COO-1198-534)
Ag-base--Zn, magnetic resonance of, effects of copper content on, 22:43595 (ANL-7299, pp 265-7)
Al--Cu--Fe--Mn--Zn, wear in sliding contact with copper, measurement of manganese bronze, 22:19487
Al--Cu--Zn, corrosion by seawater in condensers of power reactors, 22:47661 (CONF-671007-6)
Al--Zn, diffusion of silver in, 22:13003(R) (ORO-2036-5)
Al--Zn, electron irradiation recovery in, 22:50260
Al--Zn, radiation effects on electric conductivity of, relations of annealing with 2 MeV electron, 22:13024
Al--Zn, radiation effects on mechanical properties of, neutron, 22:4813 (TID-24148)
Al--Zn, radiation effects on plasticity of single-crystal, electron, 22:15224 (COO-1367-16)
Al--Zn, radiation effects on tensile properties of, at 20°K, electron, 22:719
Al--Zn, radiation effects on work hardening of, electron, 22:15224 (COO-1367-16)
Al--Zn, radioinduced Guinier--Preston zone formation in, neutron, 22:11503
Al--Zn, relaxation measurement, 22:40993(R) (COO-1198-534)
Al--Zn, solvent properties for chromium, iron, and nickel, 22:51044 (ANL-7425, pp 19-41)
Al-base--Zn, nuclear magnetic relaxation measurements on aluminum-27 in, 22:3162 (COO-1198-486)
Al-base--Zn, radiation effects on rate of Guinier--Preston zone formation in, neutron, 22:23850
Al-base--Zn, radiation effects on rate of Guinier--Preston zone formation in, fast neutron, 22:23850
Bi--Zn, critical opalescence of neutrons in, temperature dependence of, (E), 22:44595
Bi--Zn, neutron critical inelastic scattering by liquid, cold, (E), 22:13896 (AERE-R-5627)
Ca--Zn, reactions of intermetallic compounds in, with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Cd--Zn, phase diagram, 22:28783(T) (TT-66-59003-4/A)
Cd--Zn, radiation effects on, electron, 22:15262(R) (N-66-37213)
Cd--Zn, thermodynamic functions of zinc at 350, 500, and 700°C in, 22:28783(T) (TT-66-59003-4/A)
Ce--Zn, crystals structure of intermetallic Ce_3Zn_{22}, 22:38581
Cu--Tb--Zn, magnetic properties of, (E), 22:20078
Cu--Y--Zn, thermal capacity of $YCu_{0.9}Zn_{0.1}$ and $YCu_{0.8}Zn_{0.2}$ at 1.3 to 5°K, 22:52889
Cu--Zn, diffusion of zinc in intermetallic CuZn, determination by isotope effect, 22:43593 (ANL-7299, pp 246-50)
Cu--Zn, performance as coating for metals, evaluation of flame-sprayed, 22:10932
Cu--Zn, phase studies, 22:34066 (ORO-3395-5)
Cu--Zn, properties of single-crystal, neutron diffraction determination of, 22:4777
Cu--Zn, radiation effects on rate processes in, 22:15230
Eu--Zn, Moessbauer and magnetic properties of intermetallic, 22:22246
Gd--Zn--Zr, magnetic properties and zirconium-91 NMR of, (E), 22:15594
Ge--Zn, phase diagrams and thermodynamic properties of, 22:4803
Hf--Zn--Zr, ferromagnetism of intermetallic (Zr/sub 1-x/Hf/sub x/)Zn_2, 22:31983
Hf--Zn--Zr, magnetic properties of, 22:39174
Hg--Zn, use in reduction of trivalent mendelevium ions to divalent state, 22:10255
Hg--Zn, use in separation of zinc radioisotopes from reactor cooling water, 22:10338
Ho--Zn, elastic properties of intermetallic $HoZn_2$, at 90 to 298°K, 22:38565 (NYO-3560-12)
Ho--Zn, lattice structure of intermetallic $HoZn_2$, at high temperatures, 22:23819
Ho--Zn, preparation of intermetallic $HoZn_2$, powder metallurgy method for, 22:38564 (NYO-3560-8)
Ho--Zn, x-ray diffraction patterns of intermetallic compound, at 25 and 60°C, 22:10935
Li--Zn, reactions of intermetallic compounds in, with hydrogen, 22:37707 (BNL-50082, pp 27-39)
Mg--Pu--Zn, thermodynamic properties of, 22:25442 (ANL-7375, pp 19-45)
Mg--Zn, cerium distribution between magnesium chloride--potassium chloride--sodium chloride and, effects of temperature on, 22:25442 (ANL-7375, pp 19-45)
Mg--Zn, neptunium distribution between calcium chloride--magnesium chloride--sodium chloride and, at 700°C, 22:25442 (ANL-7375, pp 19-45)
Mg--Zn, phase disengagement studies on entrainment of, in ternary salts, 22:22653(R) (ANL-7419)
Mg--Zn, plutonium distribution between magnesium chloride--potassium chloride--sodium chloride mixture and, 22:25442 (ANL-7375, pp 19-45)
Mg--Zn, solvent properties for plutonium at 600 to 800°C, 22:25442 (ANL-7375, pp 19-45)
Mg--Zn, solvent properties for plutonium of liquid, 22:24925(R) (ANL-7427)
Mo--Zn, structure of $MoZn_{22}$ intermetallic, 22:38566
Nb--Zn, lattice constants and phase studies of, 22:38578
Nb--Zn, preparation and properties of, 22:6971
Nb--Zn--Zr, magnetic properties of, 22:39174
Ni-base--Zn, neutron magnetic scattering by, (E), 22:24809
Pb--Zn, zinc-65 exchange between drops of, and zinc chloride, 22:8085
Pu--Zn, crystals structure of intermetallic Pu_3Zn_{22}, 22:38581
Pu--Zn, phase studies of, 22:2655
Pu--Zn, physical properties of, 22:2627
Ti--Zn--Zr, magnetic properties of, 22:39174

  U--Zn, preparation of intermetallic U_2Zn_{17} in, thermodynamics of, 22:28786
  U--Zn, single crystal x-ray data for intermetallic, 22:2560(R) (IS-RD-11)
  U--Zn, vaporization of intermetallic compounds in, thermodynamics of, 22:25335(T) (ANL-Trans-584)
  U--Zn, vaporization of intermetallic compounds in, thermodynamics of, 22:59 (UJV-1783)
  Y--Zn--Zr, magnetic properties of, 22:39174
  Yb--Zn, phase diagram, 22:36501
  Yb--Zn, phase studies of, 22:2560(R) (IS-RD-11)
  Zn--Zr, ferromagnetism of impure and pure intermetallic $ZrZn_2$, 22:5437
  Zn--Zr, ferromagnetism of $ZrZn_2$, isotope effect in theory of very weak itinerant, 22:44231
  Zn--Zr, ferromagnetism of, effects of additions of hafnium, niobium, titanium, and yttrium on, (E), 22:1320
  Zn--Zr, magnetic moment of intermetallic $ZrZn_2$ up to 150 kG, (E), 22:5437
  Zn--Zr, magnetic moments in intermetallic $ZrZn_2$, magnetic and NMR study of localized, 22:15594
ZINC ALUMINATES
  diffusion of cations in, 22:52288
ZINC, BIS(ALANINATO)-
  radiation effects on solid, yields from γ, 22:25419
ZINC, BIS(GLYCINATO)-
  radiation effects on solid, yields from γ, 22:25419
ZINC BISMUTH NITRATES
  gadolinium ion EPR spectra in single crystals of hydrated, 22:24384 (CONF-670502-, pp 78-88)
Zinc Cadmium Sulfides
    see Cadmium Zinc Sulfides
ZINC CHLORIDES
  metabolism of zinc-65-labeled, by fish in natural environments, 22:10728
  use of zinc-69-labeled, for liver scanning, 22:6860
  zinc-65 exchange between, and drops of zinc or zinc--lead alloys, 22:8085
ZINC CHLORIDES, INDOLYL-
  protonation by heavy water, kinetics of, 22:2049
ZINC CHROMATES
  effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
ZINC CHROMITES
  diffusion of chromium in, 22:52288
  diffusion of zinc in, 22:52288
ZINC COUPLES
  Al/Al--stainless steel/Zn, corrosion by aqueous media, (E), 22:23718
Zinc Dithol
    see Zinc Acid Sulfides
ZINC FERRATES $Zn(FeO_2)_2$
  diffusion of cations in, 22:52288
ZINC FERROCYANIDES
  solubility of, radiochemical method for measuring, 22:35793
ZINC FLUORIDES
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
  use of manganese-doped, for x-ray dosimetry, 22:19162(T) (NSJ-tr-99)
ZINC FLUOROSILICATES
  proton transport in, stopping power and additivity for 1-MeV, (E), 22:17416
ZINC HALIDES
  distribution between lithium nitrate--potassium nitrate and polyphenyl, effects of temperature on, 22:23003 (IA-1128, pp 97-146)
ZINC IONS
  chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
  chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
  chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
  detection and isolation from human hair, 22:10197
  diffusion in silver chloride, 22:13003(R) (ORO-2036-5)
  electrophoretic mobility in acetate buffers, 22:27567
  implantation in germanium and silicon, for fabrication of radiation detectors, 22:40387
  radiation effects on sodium pyrophosphates containing, neutron, 22:16613
  radiation effects on yields from neutron-irradiated sodium pyrophosphates containing, γ, 22:16613
ZINC ISOTOPES
  Coulomb displacement energies for, measurement using (p,n) reactions, (E), 22:30048(R) (PUC-937-307)
  production from copper in stainless steel by neutron transmutations, 22:43615(R) (BNWL-710)
  production of foils of, for nuclear research, 22:263
  separation from reactor cooling water using zinc amalgam exchange, 22:10338
ZINC ISOTOPES Zn-60
  energy level excitation in gamma resonance scattering by zinc, (E), 22:35278
  nuclear data sheets for, 22:29958
ZINC ISOTOPES Zn-61
  nuclear data sheets for, 22:29958
ZINC ISOTOPES Zn-62
  beta and electron-capture decay of, γ spectra from, (E), 22:29947
  energy levels and transitions, evaluated data on, (E/T), 22:29957
ZINC ISOTOPES Zn-63
  energy levels and transitions, evaluated data on, (E/T), 22:29957
  energy levels from copper-63 (p,n) and nickel-60 (α,n) reactions, spins and transition multipolarities of, (E), 22:18187
  energy levels from zinc-64 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
  energy-level transitions from copper-63 (p,n) reactions at 3.1 to 5.2 MeV, multipole mixing ratios for, (E), 22:32549
  energy-level transitions from copper-63 (p,n) reactions, internal conversion coefficients and multipolarities for, (E), 22:11935
  energy-level transitions from nickel-60 (α,n) reactions at 6.5 to 9.3 MeV, multipole mixing ratios for, (E), 22:32549
  half-life, (E), 22:41980
  uptake by vascular tissues of plants, 22:10708
ZINC ISOTOPES Zn-64
  alpha elastic and inelastic scattering at 21 MeV, angular distributions for, (E), 22:13978
  alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
  alpha reactions (α,d) at 50 MeV, Q-value for formation of high-spin state in, (E), 22:39616
  deuteron inelastic scattering at 13.6 MeV, calculation of angular distributions for, (T), 22:13956
  deuteron reactions (d,He-3) at 23 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
  deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
  deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:9828
  deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:20578 (WASH-1079)
  energy level excitation in gamma resonance scattering by zinc, (E), 22:35278
  energy levels and transitions, evaluated data on, (E/T), 22:29957
  energy levels from copper-63 (α,t) reactions, collective 3-, (E), 22:53159
  energy levels from copper-63 (He-3,d) reactions at 18 MeV, (E), 22:1640
  energy levels from γ resonance scattering, (E), 22:7661(R) (NYO-3525-26)
  energy levels from projected Hartree--Fock calculations, (T), 22:20689
  helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
  helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
  neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
  neutron capture at thermal energies, circular polarization of gamma rays from, (E), 22:7671
  neutron capture cross section and resonance integral for, thermal, (E), 22:9815
  neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
  neutron inelastic scattering cross sections at 1.2 to 2.2 MeV, (E), 22:26932(R) (NP-17434)
  neutron reactions (n,2n) at 14.8 MeV, cross section for, (E), 22:32536
  neutron reactions (n,2n) at 14.8 MeV, cross section for, (E), 22:24835(R) (BARC-305)
  neutron reactions (n,2n) at 14.8 MeV, cross sections for, (E), 22:29973
  neutron reactions (n,p) and (n,np) at 14 MeV, proton angular and energy distributions from, (E/T), 22:22561(T) (ORNL-tr-1850)
  neutron reactions (n,p) at 1.0 to 2.2 MeV, cross section for, (E), 22:18195
  neutron reactions (n,t) at 14.7 MeV, cross section for, (E), 22:48504
  neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
  nuclear radius and surface thickness from alpha elastic scattering at 44 MeV, (E/T), 22:16052
  photon reactions (γ,n) at threshold to 23 MeV, vibrational splitting of giant dipole resonance in, (E), 22:27222
  proton differential elastic and inelastic scattering cross sections at 50 MeV, (E), 22:5800
  proton differential elastic and inelastic scattering cross sections at 49 MeV, angular distributions for, (E), 22:27027
  proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
  proton inelastic scattering at 50 MeV, description using collective-model generalization of optical model for, (T), 22:48497
  proton reactions (p,2p) at 156 MeV with quasielastic scattering, proton energy spectra and angular distributions from, (E), 22:1642
  proton reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) at 370 MeV, cross sections for, (E/T), 22:18201

- proton reactions (p,pn), (p,p2n), (p,2pn), and (p,2p2n) at 370 MeV, cross sections and mechanisms of, (E/T), 22:20552
- superconducting transition temperature of, (E), 22:7251
- transition temperature of, (E), 22:11397
- triton reactions (t,α) at 13 MeV, angular distributions for, (E), 22:48509(R) (BMwF-FBK-68-22)
- triton reactions (t,α) at 13 MeV, α angular distributions and spectra for, (E), 22:3639 (BMwF-FBK-67-75)

ZINC ISOTOPES Zn-65
- beta and electron-capture decay of, half-life and branching ratio for, (E), 22:53163
- beta decay, (E), 22:26969
- beta emission by, effects of, on bone marrow and peripheral blood cells, quantitative aspects of, 22:49582
- content in Columbia River fish, 22:18964 (BNWL-SA-1606)
- content in farm produce in Richland, Wash., environs, 22:18964 (BNWL-SA-1606)
- content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
- content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
- content of algae in White Oak Lake, 22:6772 (ORNL-4168, pp 61-118)
- content of Columbia River, effects of, on uptake by periphyton, 22:21591
- content of drinking water in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
- content of ecosystems, 22:28447 (ANL-7278, pp 304-13)
- content of ecosystems in Columbia River estuary, 22:45469
- content of fish, fruit, meat, milk, and vegetables in environs of Hanford reactors, 22:16998 (BNWL-SA-1449)
- content of fish, mussels, oysters, and sea urchins in Columbia River, 22:40614(R) (RLO-2047-2)
- content of freshwater mussels from Columbia River, 22:10740 (BNWL-480, pp 153-93)
- content of human organs following ingestion of contaminated oysters, compartmental analysis of, 22:23502 (BNWL-SA-683)
- content of leaves of tropical forest plants in Puerto Rico during 1966, 22:23481(R) (PRNC-102)
- content of liver of tuna from Pacific coast of North America during 1962 to 1966, 22:51667
- content of mallards in Columbia Basin area, 22:4602(R) (COO-1514-3)
- content of man exposed to fallout from testing of nuclear weapons, 22:10818
- content of marine animals of Oregon, effects of diel, geographic location, and season on, 22:31015
- content of milk in North and South America during 1966, 22:23522
- content of organisms in Columbia River, effects of reactor shutdown on, 22:10740 (BNWL-480, pp 153-93)
- content of oysters in Blackwater estuary and Irish Sea, 22:40671
- content of sea mussels, rate of loss of, 22:4571
- content of shell and soft tissues of snails, 22:4581
- content of tissues in fish from Columbia River, 22:10740 (BNWL-480, pp 153-93)
- determination in oysters, spectrophotometric, 22:50913
- determination in reactor coolant water, 22:12258
- determination in seawater, 22:27561
- diffusion in silver chloride, 22:13003(R) (ORO-2036-5)
- distribution and metabolism in mice, effects of liver damage on, 22:51312
- distribution between cell sap and plant surface in Valonia, 22:43311(R) (PRNC-85)
- distribution in aquatic ecosystems, effects of zinc exchange phenomena on, 22:14980
- distribution in estuarine ecosystems, effects of, on uptake by man, 22:474
- distribution in germinating seeds of soybeans, effects of light on, 22:10709
- distribution in germinating tissues of maize, 22:45403
- distribution of bark injected, in pear trees, effects of EDTA and stable zinc on, 22:2492
- effects on self-diffusion in zinc at 289 to 418°K, (E), 22:3201
- electrochemical properties of electrodes of, effects of oxide films on, 22:6330
- electron capture decay of, K x ray--γ directional correlation in K^-, (E), 22:39669
- electron-capture decay of, branching ratio for, (E), 22:24835(R) (BARC-305)
- electron-capture decay of, comparison of experimental and theoretical L/K ratios for, (E/T), 22:22631
- electron-capture decay of, gamma transition energies in, (E), 22:7674
- electron-capture decay of, probability of, (E), 22:42003
- energy levels from gallium-65 decay, spin-parity assignments and transition multipolarities for, (E), 22:26953
- energy levels from thermal neutron capture in zinc-64, (E), 22:7671
- energy levels from zinc-64 (d,p) reactions, (E), 22:20578 (WASH-1079)
- energy levels from zinc-64 (d,p) reactions, spin, parities, and spectroscopic factors for, (E), 22:9828
- energy levels from zinc-66 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
- energy-level transitions from copper-65 (p,n) reactions, internal conversion coefficients and multipolarities for, (E), 22:11935
- exchange between zinc or zinc--lead alloys and zinc chloride, 22:8085
- excretion in snails, 22:49282(R) (PRNC-119)
- excretion of DTPA- and EDTA-incorporated, in urine of rats, effects of dose on, 22:40521
- fixation in calcareous soils, effects of, on availability to tomatoes, 22:14933
- gamma emission by, effects of, on bone marrow and peripheral blood cells, quantitative dynamics of, 22:49582
- incorporation in silicon oxide during controlled growth of monodisperse particles, 22:12395 (UR-49-867)
- metabolism by blue-green and green algae, 22:25754
- metabolism in brain of mice, autoradiographic study of, 22:51327
- metabolism in cattle, effects of age and zinc content of diet on, 22:28359
- metabolism in normal and zinc-deficient calves and goats, effects of dietary cadmium and EDTA on, 22:10698
- metabolism in rats, effects of age and sex on, 22:30941
- metabolism in rats, effects of cirrhosis on, 22:45385
- metabolism in rats, effects of corticosterone on, 22:28384
- metabolism in rats, effects of corticosterone, adrenalectomy, and administration of stable zinc on, 22:28383
- metabolism in swine, effects of content of calcium and zinc in diet on, 22:38427(R) (ORO-659)
- metabolism of zinc chloride-incorporated, by fish in natural environment, 22:10728
- mixture with manganese-54, comparison of methods using well-type scintillation detector for assay of, 22:51185
- precipitation in seawater, characteristics of, 22:35954
- production in meteorites, 22:12338(R) (COO-1167-3)
- removal from aluminum, chemical and electrolytic methods for, 22:12422
- retention by euryhaline fish, effects of feeding habits and physiology on, 22:8491
- retention in rabbits, effects of leukemia on, 22:51308 (ORAU-106, pp 171-93)
- separation from VVR-S reactor cooling water, 22:6132
- sorption by blue-green algae, effects of temperature on, 22:38191 (DP-MS-66-88)
- sorption by seston in Par Pond of Savannah River Plant, 22:37875 (DP-MS-66-81)
- sorption of ionic, by metal surfaces, 22:35767(T) (AEC-tr-6776)
- sorption on metal and oxide surfaces, 22:4129
- standardization of, use of coincidence scintillation detectors for, 22:14765
- tracer study of zinc uptake in calves, 22:40831 (ORO-657, pp 46-64)
- transport in sea, effects of molting of Euphausia pacifica on vertical, 22:28322
- transport through salt-marsh ecosystem, 22:6773(R) (ORO-3238-3)
- uptake and distribution by salmon eggs, effects of dyes, pH, and temperature on, 22:51334
- uptake and distribution in tissues of mice, autoradiographic study of, 22:28361
- uptake and metabolism by animals and man, 22:8644
- uptake by algae in seawater, (E), 22:12455(R) (EUR-3635)
- uptake by Ankistrodesmus falcatus, 22:23138
- uptake by benthic algae, effects of bacteria on, 22:43311(R) (PRNC-85)
- uptake by bones of dogs, monkeys, and rats, autoradiographic study of, 22:2486
- uptake by Chinook salmon, effects of age and water temperature on, 22:10740 (BNWL-480, pp 153-93)
- uptake by crustaceans, effects of zinc content of water on, 22:51449
- uptake by Ehrlich ascites tumor cells of mice, effects of amino acids on, 22:28516
- uptake by epididymus and testes of mice and rats, 22:51365
- uptake by fish from ecosystem, 22:28447 (ANL-7278, pp 304-13)
- uptake by infaunal invertebrates, effects of trophic level on, 22:43311(R) (PRNC-85)
- uptake by intestine of chickens, effects of Eimeria-induced infection on, 22:14947
- uptake by marine algae, effects of size on, 22:43311(R) (PRNC-85)
- uptake by parasitic snails of Schistosoma, 22:4585
- uptake by periphyton in Columbia River, effects of isotope content of river on, 22:21591
- uptake by periphyton, rate of, 22:10740 (BNWL-480, pp 153-93)
- uptake by plankton, 22:51488
- uptake by starfish in Puerto Rico, correlation of, with feeding habits, 22:21408 (PRNC-104, pp 54-6)
- uptake from seawater by algae, 22:23481(R) (PRNC-102)
- uptake from soil by plants, chemical and physical factors affecting, 22:423(R) (TID-23955)
- use as gamma source for excitation of x radiation for undergraduate laboratories, 22:42986
- use as indicator in radiochelatometric determination of

- lead, 22:16462
- use as tracer for measurement of complex compound movement through soils, 22:23156
- use as tracer for measurement of Danube River gravel movement, 22:19064
- use as tracer for process material flow studies in aluminum oxide production plants, 22:14705
- use as tracer to measure underground water movement, 22:14694
- use in tracer technique for measurement of rubber tire tread wear, 22:10518

ZINC ISOTOPES Zn-66
- alpha differential elastic and inelastic scattering cross sections at 12 to 17 MeV, angular distributions for, (E), 22:20551
- alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
- alpha reactions (α,d) at 50 MeV, Q-value for formation of high-spin state in, (E), 22:39616
- deuteron differential elastic scattering cross section at 14.5 MeV, optical-model analysis of, (E), 22:44639
- deuteron reactions (d,He-3) at 23 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
- deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
- deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:9828
- deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:20578 (WASH-1079)
- energy level at 7368 keV from γ resonance scattering, (E), 22:48477 (JAERI-1158, pp 17-20)
- energy levels from copper-65 (α,t) reactions, collective 3-, (E), 22:53159
- energy levels from copper-65 (He-3,d) reactions at 18 MeV, (E), 22:1640
- energy levels from gallium-66 decay, (E), 22:37317
- energy levels from γ resonance scattering at 7368 keV, spin assignments for, (E), 22:50591
- energy levels from γ resonance scattering, (E), 22:7661(R) (NYO-3525-26)
- energy levels from projected Hartree—Fock calculations, (T), 22:20689
- energy levels from proton inelastic scattering, zinc-67 (p,d) reactions, and zinc-68 (p,t) reactions, (E), 22:26986
- energy-level transitions from gallium-66 decay, (E), 22:53095 (BMwF-FBK-68-11)
- energy-level transitions from γ inelastic scattering, (E), 22:27079
- gamma resonance scattering at 7368 keV, angular distributions for, (E), 22:50591
- helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
- helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
- neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
- neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
- neutron inelastic scattering cross sections at 1.2 to 2.2 MeV, (E), 22:26932(R) (NP-17434)
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- proton differential elastic and inelastic scattering cross sections at 50 MeV, (E), 22:5800
- proton differential elastic and inelastic scattering cross sections at 49 MeV, angular distributions for, (E), 22:27027
- proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
- proton differential inelastic scattering cross sections at 55 MeV, angular distribution for, (E), 22:26986
- proton inelastic scattering at 50 MeV, description using collective-model generalization of optical model for, (T), 22:48497
- superconducting transition temperature of, (E), 22:7251
- transition temperature of, (E), 22:11397
- triton reactions (t,α) at 13 MeV, angular distributions for, (E), 22:48509(R) (BMwF-FBK-68-22)
- triton reactions (t,α) at 13 MeV, α angular distributions and spectra for, (E), 22:3639 (BMwF-FBK-67-75)
- triton reactions (t,p) with, angular distributions for, (E), 22:35263

ZINC ISOTOPES Zn-67
- content in Bay of Banyuls sediments, 22:35955
- energy level at 184 keV, g-factor, lifetime, and transition multipolarity for, (E), 22:5796
- energy levels from zinc-66 (d,p) reactions, (E), 22:20578 (WASH-1079)
- energy levels from zinc-66 (d,p) reactions, spins, parities, and spectroscopic factors for, (E), 22:9828
- energy levels from zinc-68 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
- energy-level transition probabilities for, l-forbidden M1, (T), 22:39708
- neutron capture at thermal energies, circular polarization of gamma rays from, (E), 22:7671
- neutron capture by, γ spectra for thermal, (E), 22:13964
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:1405
- nuclear magnetic moment of ground state of, (T), 22:39708
- proton reactions (p,d) at 55 MeV, angular distributions and spectra for, (E), 22:26986
- proton reactions (p,n) at 15.5 to 18.0 MeV, isobaric analog states from, (E), 22:30048(R) (PUC-937-307)

ZINC ISOTOPES Zn-68
- alpha differential elastic and inelastic scattering cros sections at 12 to 17 MeV, angular distributions for, (E), 22:20551
- alpha reactions (α,d) and (α,t) at 50 MeV, deuteron and triton spectra for, (E), 22:39639 (UCRL-17989, pp 43-99)
- alpha reactions (α,d) at 50 MeV, Q-value for formation o high-spin state in, (E), 22:39616
- deuteron differential elastic scattering cross section a 14.5 MeV, optical-model analysis of, (E), 22:44639
- deuteron reactions (d,α) with, differential cross sections for, (E), 22:32551
- deuteron reactions (d,He-3) at 23 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
- deuteron reactions (d,n) at 12 MeV, neutron polarization from, (E), 22:48500
- deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
- deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
- deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
- deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:9828
- deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:20578 (WASH-1079)
- energy level at 1655.7 keV from gallium-68 decay, spin-parity assignment for, (E), 22:53146
- energy level at 184 keV, g-factor for, (E), 22:48509(R) (BMwF-FBK-68-22)
- energy level excitation in gamma resonance scattering by zinc, (E), 22:35278
- energy levels from gallium-68 decay, zinc-66 (t,p) reactions, and zinc-68 proton inelastic scattering spin-parity assignments for, (E), 22:35263
- energy levels from thermal neutron capture in zinc-67, (E), 22:7671
- energy levels from zinc-70 (p,t) reactions, (E), 22:1598(R) (COO-1265-49)
- energy-level transitions from zinc-67 thermal neutron capture, (E), 22:13964
- helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
- helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
- neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
- neutron capture at 24 keV, isomeric cross-section ratio for, (T), 22:32537
- neutron capture by, isomeric cross-section ratio and spin-cutoff parameter for, (T), 22:48498
- neutron capture by, isomeric cross-section ratios for thermal and epithermal, (E), 22:15977
- neutron differential elastic and inelastic scattering cross sections at 4.5 to 8.0 MeV, (E), 22:27067
- neutron inelastic scattering cross sections at 1.2 to 2.2 MeV, (E), 22:26932(R) (NP-17434)
- neutron resonance integrals, (E), 22:16901
- neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
- proton differential elastic and inelastic scattering cross sections at 50 MeV, (E), 22:5800
- proton differential elastic and inelastic scattering cross sections at 49 MeV, angular distributions for, (E), 22:27027
- proton differential elastic and inelastic scattering cross sections at 11 MeV, data tabulation for, 22:3646 (ORNL-4182)
- proton inelastic scattering at 50 MeV, description using collective-model generalization of optical model for, (T), 22:48497
- proton reactions (p,n) at 3.1 to 5.2 MeV, gamma angular distributions from, (E), 22:32549
- proton reactions (p,n) at 4.05 and 4.25 MeV, γ angular distributions for, (E), 22:26998
- proton reactions (p,n) with, conversion-electron and γ spectra from, (E), 22:11935
- proton reactions (p,n) with, γ angular distribution from, (E), 22:18187
- proton reactions (p,t) at 55 MeV, angular distributions and spectra for, (E), 22:26986
- superconducting transition temperature of, (E), 22:7251
- transition temperature of, (E), 22:11397
- use in multi-element activation detectors, 22:16901
- x-ray spectra of μ-mesic atoms of, (T), 22:35378

ZINC ISOTOPES Zn-69
- beta and electron-capture decay schemes of isomers of, (E), 22:29983 (MIT-905-108, pp 1-32)
- beta decay measurements of, 22:8366 (NP-17188)
- beta decay of, β spectra for, (E), 22:41996
- effects on self-diffusion in zinc at 289 to 418°K, (E), 22:3201

energy level at 436 keV, spin and parity of isomeric, (E), 22:3664
energy levels from zinc-68 (d,p) reactions, (E), 22:20578 (WASH-1079)
energy levels from zinc-68 (d,p) reactions, spins, parities, and spectroscopic factors for, (E), 22:9828
energy levels from zinc-70 (He-3,α) reactions, spectroscopic factors for, (E), 22:27085
gamma spectra of isomeric, high-resolution, (E), 22:30006
isomeric transition in, conversion coefficient and multipolarity of, (E), 22:3664
isomeric transition in, conversion coefficient for, (E), 22:41996
nuclear level density parameter for, calculation from isomeric cross-section ratio for neutron capture, (T), 22:32537
production at Hahn--Meitner Institute, Berlin, 22:6312 (HMI-B-52)
use as tracer for process analyses of aluminum production methods, 22:14711
use of zinc chloride-incorporated, for liver scanning, 22:6860

ZINC ISOTOPES Zn-70
deuteron reactions (d,He-3) at 23 MeV, angular distributions for, (E), 22:48507(R) (ANL-7436)
deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:9828
deuteron reactions (d,p) at 10 MeV, angular distributions and Q-value for, (E), 22:20578 (WASH-1079)
deuteron reactions (d,p) with, analog resonance threshold in, (E), 22:5809(R) (ANL-7354)
helium-3 reactions (He-3,α) at 33 MeV, angular distributions for, (E), 22:27085
helium-3 reactions (He-3,α) at 33 MeV, α angular distributions for, (E), 22:5809(R) (ANL-7354)
neutron activation cross sections at 14.4 MeV, tables of, (E), 22:22589 (ORO-3346-18)
neutron capture by, isomeric cross-section ratio for thermal, (E), 22:15977
neutron total cross section at 14.2 MeV, isospin dependence of optical potential from, (E/T), 22:14057
proton differential elastic and inelastic scattering cross sections at 50 MeV, (E), 22:5800
proton differential elastic and inelastic scattering cross sections at 49 MeV, angular distributions for, (E), 22:27027
proton inelastic scattering at 50 MeV, description using collective-model generalization of optical model for, (T), 22:48497
proton reactions (p,n) with, isobaric analog resonances in, (E), 22:20578 (WASH-1079)
proton reactions (p,t) at 40 MeV, triton spectra from, (E), 22:1598(R) (COO-1265-49)

ZINC ISOTOPES Zn-71
beta decay of isomers of, energies and relative intensities of gamma rays from, (E), 22:29983 (MIT-905-108, pp 1-32)
energy levels from zinc-70 (d,p) reactions, (E), 22:20578 (WASH-1079)
energy levels from zinc-70 (d,p) reactions, spins, parities, and spectroscopic factors for, (E), 22:9828
gamma spectra of, high-resolution, (E), 22:30006
gamma spectra, (E), 22:28148

ZINC ISOTOPES Zn-72
beta decay of 46.5-h isomer of, energies and relative intensities of gamma rays from, (E), 22:29983 (MIT-905-108, pp 1-32)
beta decay scheme, (E), 22:29948

ZINC LANTHANUM NITRATES
gadolinium ion EPR spectra in single crystals of hydrated, 22:24384 (CONF-670502-, pp 78-88)

Zinc Manganese Ferrates
see Manganese Zinc Ferrates

ZINC NIOBATES
preparation of monocrystals of, chemical transport reactions for, 22:52296

ZINC NITRATES
see also Zinc Lanthanum Nitrates

ZINC ORES
Pb--Zn, analysis for iron, lead, and zinc by photon activation, 22:12249

ZINC OXIDES
analysis for oxygen by neutron activation, 22:30457
diffusion in, tracer technique for, 22:11071 (ORNL-3795(Pt.5))
effects of films of, on electrochemical properties of irradiated silver electrodes, 22:6330
effects of semiconductor impurities of aluminum- and lithium-doped and pure, on radiolysis of ammonium, potassium, and sodium nitrates, 22:30632
effects on deuterium exchange between hydrogen and water, catalytic, 22:37737
effects on gamma-radioinduced polymerization of 3-methyl-1-butene and 4-methyl-1-pentene with and without solvents, 22:8097(T) (AEC-tr-6908, pp 64-73)
effects on hydrogenation of ethylene, flow-reactor kinetics of catalytic, 22:2024 (CU-2791-6(App.))
effects on hydrogenation of ethylene, kinetics of catalytic, 22:2096 (CU-2791-6)
effects on radiolysis of potassium and sodium nitrates, 22:33398
effects on rate of radioinduced polymerization of 2-methylpropene, 22:4177
effects on yields in uv photolysis of liquid nitromethane, 22:10297
electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
electron spin resonance spectra of, 22:35775(R) (NYO-1158-25)
europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
oxygen-18 exchange between molecular oxygen and cobalt, copper, manganese, and zinc oxides, kinetics of, 22:27633
photoconductivity of films of, effects of dyes on, 22:20038(R) (COO-1052-9)
purity of research-grade evaluation of, 22:52289
radiation damage to zinc-activated, by heavy ions below 110 keV, (E), 22:9457
radiation effects on catalytic activity of solid, reactor, 22:2096 (CU-2791-6)
radiation effects on catalytic oxidation of carbon monoxide on, at 270°C, γ, 22:42727(T) (RFP-Trans-31)
radiation effects on sorption of carbon monoxide by, γ, 22:42730(T) (RFP-Trans-34)
radiation effects on structure of single-crystal, electric resistivity studies of gamma, 22:5427
radiation effects on zinc-activated, deterioration depth, energy loss, and light output in heavy ion, (E), 22:13586
radioinduced defects in single crystals of lithium-doped, fast-neutron and high-energy electron, (E), 22:17731
radioinduced paramagnetic center in lithium-doped, structure of, (E/T), 22:50241
reflectance of sintered, effects of sintering temperature on spectral, (E), 22:31461
structure factors for, fixed-scattering-angle neutron spectrometer for determining, 22:14822 (RISO-164)
structure of thin films of, formed on zinc at various temperatures, (E), 22:15576(T) (UCRL-Trans-10207)
use of gallium-activated, for detection of alpha particles, 22:28100
Al_2O_3--BaO--CaO--SiO_2--ZnO, use of glasses of, in ionization chamber for use at high temperatures, 22:30827(P)
Al_2O_3--ZnO, effects on radiolysis of potassium and sodium nitrates, 22:33398
Li_2O--ZnO, effects on radiolysis of potassium and sodium nitrates, 22:33398
Nb_2O_5--ZnO, phase diagrams of, effects of substitution of cobalt, copper, or nickel for zinc on, 22:19655
Ta_2O_5--ZnO, phase diagrams of, effects of cobalt, copper, nickel substitution for zinc on, 22:19655
U_3O_8--ZnO, preparation and properties of, 22:31454

ZINC PERCHLORATES
radiolysis of concentrated aqueous solutions of, yields in γ, 22:33451

ZINC PHOSPHIDES
see also Zinc Tin Phosphides

ZINC SELENIDES
diffusion in ZnSe, self, 22:43650(R) (SU-283-6)
Raman spectrum at 15,000 atm pressure, 22:36774 (ANL-7450, pp 90-104)

ZINC SILICATES
production of radioluminescent bodies of, by addition of promethium, 22:21084(P)
radioinduced thermoluminescence in manganese-doped, x, (E), 22:34778
solubility in iron silicates, (E), 22:11494(T) (UCRL-Trans-10165)
Fe_2SiO_4--Zn_2SiO_4, optical properties of solid solutions of, as function of composition, (E), 22:11494(T) (UCRL-Trans-10165)

ZINC SILICON FLUORIDES
analysis of nickel-activated, for nickel and zinc, polarographic, 22:9(R) (NBS-TN-425)

ZINC SULFATES
analysis of electrolytic solutions of, for molybdenum and rhenium by neutron activation methods, 22:25289
analysis of electrolytic solutions of, for trace elements by neutron activation methods, 22:25277
decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)

ZINC SULFIDES
see also Cadmium Zinc Sulfides
analysis for trace rare earths by cathode-ray-excited emission spectroscopy, 22:25270
analysis of phosphors of, for traces of cobalt, iron, manganese, and nickel by neutron activation, 22:30467
crystal growth in precipitates of, 22:52235
current measurement in neutron-irradiated, 22:13587
defects in, ESR study of fast-neutron or mechanically induced F-center, 22:1330
defects in, optical and photoelectric properties of F-center, 22:1338
diffusion path networks in, 22:13065 (UCRL-70149)
electric conductivity of doped, thermal-stimulated, 22:22248
electroluminescence of doped, using ion implantation doping, 22:9800(R) (COO-535-571)
photoconductivity measurements of neutron-irradiated, (E/T), 22:13588

  photoelectronic properties of single crystals of, effects of defects and impurities on, (E), 22:11557
  polystyrenes--ZnS(Ag), use in scintillation detectors for gamma and x radiation dose rate measurements at 0.03 to 3 MeV, 22:16913
  preparation of phosphors of, effects of firing in sulfur-35-labeled hydrogen sulfide atmosphere on, 22:42660
  radiation effects on monocrystals of, effects of annealing on neutron, 22:4169
  radiation effects on photoconductivity and thermally stimulated current of single crystals of, electron, (E), 22:43196
  radiation effects on, ESR studies of unstable intermediates in, 22:25405
  radioinduced color centers in single crystals of, dose dependence of fast neutron, (E), 22:29594
  radioinduced luminescence in silver-activated, alpha and electron, 22:30842
  radioinduced luminescence of silver-activated, infrared effects on alpha, 22:3208
  sulfur-35 effects on crystals, 22:1316
  sulfur-35 exchange between hydrogen sulfide and, 22:42660
  thermoluminescence of doped, 22:22248
  use as tracer, for instantaneous plume detection, 22:18953 (BNWL-481-1, pp 33-43)
  use for uv dosimetry employing pyroelectric effect, 22:19160(R) (NYO-3409-4)
  use of bismuth-doped, for uv dosimetry, 22:19160(R) (NYO-3409-4)
  use with promethium-147 in luminous compounds, 22:47291 (BMwF-FBK-68-07)
  FeS--ZnS, effects of marmatite, on equilibrium concentrations of uranium in sulfate solutions, 22:35935
  FeS--ZnS, effects of marmatite, on equilibrium concentrations of copper in sulfate solutions, 22:35935
  FeS--ZnS, effects of marmatite, on equilibrium concentrations of iron in sulfate solutions, 22:35935
  FeS--ZnS, effects of marmatite, on equilibrium concentrations of lead in sulfate solutions, 22:35935
  FeS--ZnS, effects of marmatite, on equilibrium concentrations of zinc in sulfate solutions, 22:35935
  LiF--polyethylene--ZnS(Ac), use as phosphor for measurement of thermal neutron flux in subcritical assembly, 22:2374
  T--ZnS, preparation of self-luminescent phosphors of, 22:21083(P)

ZINC TELLURIDES
  electrical and optical properties of ZnTe, 22:43650(R) (SU-283-6)
  growth of crystalline ZnTe, 22:43650(R) (SU-283-6)
  tin-119 Moessbauer effect in semiconducting, isomer shift in, (E), 22:26506
  use of oxygen-doped, as scintillation phosphor, 22:40428

ZINC TIN PHOSPHIDES
  electron reactions with crystals of, recombination radiation from, 22:34759

ZINC TUNGSTATES
  $PbWO_4$--$ZnWO_4$, phase studies of, 22:31491

ZINC TUNGSTEN OXIDES
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298

ZINC URANATES
  complexes with acetic acid, properties and structure of, 22:45076

Zinn Fast Reactor
  see Experimental Breeder Reactor

ZION POWER REACTOR, UNIT 1
  construction of, application for permit for, 22:32752 (DOCKET-50295-3)
  containment design for, 22:32754 (DOCKET-50295-5)
  containment instrumentation for, description of, 22:32756 (DOCKET-50295-7)
  containment spray system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  containment structure for, in-service surveillance program for tendons for prestressed concrete, 22:32755 (DOCKET-50295-6)
  containment system for, analysis of coolant loss pressure transients in, 22:32757 (DOCKET-50295-8)
  containment system for, leak rate detection systems for, 22:32757 (DOCKET-50295-8)
  containment system for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  containment systems for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  containment ventilation system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  control systems and instrumentation for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  cooling system for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  cooling systems for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  core for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  core for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  design criteria for, 22:32754 (DOCKET-50295-5)
  diesel-generators for, load requirements for emergency, 22:32757 (DOCKET-50295-8)
  electrical system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  electrical systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  emergency and auxiliary systems for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  emergency and auxiliary systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  engineered safeguards systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  instrumentation for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  operator training programs for, 22:32756 (DOCKET-50295-7)
  quality control program for, 22:32754 (DOCKET-50295-5)
  quality control program for, description of, 22:32756 (DOCKET-50295-7)
  radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  safety evaluation of, preliminary, 22:32751 (DOCKET-50295-2)
  safety evaluation of, USAEC Division of Reactor Licensing, 22:48637 (DOCKET-50295-9)
  safety injection system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  seismic criteria for, 22:32754 (DOCKET-50295-5)
  site for, coolant loss accident radiation doses at boundary of, 22:32757 (DOCKET-50295-8)
  site for, geological and seismological studies on, 22:32751 (DOCKET-50295-2)
  site for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  site for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  steam and power conversion system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)

ZION POWER REACTOR, UNIT 2
  construction of, application for permit for, 22:32752 (DOCKET-50295-3)
  containment design for, 22:32754 (DOCKET-50295-5)
  containment instrumentation for, description of, 22:32756 (DOCKET-50295-7)
  containment spray system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  containment structure for, in-service surveillance program for tendons for prestressed concrete, 22:32755 (DOCKET-50295-6)
  containment system for, analysis of coolant loss pressure transients in, 22:32757 (DOCKET-50295-8)
  containment system for, leak rate detection systems for, 22:32757 (DOCKET-50295-8)
  containment system for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  containment systems for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  containment ventilation system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  control systems and instrumentation for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  cooling system for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  cooling systems for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  core for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  core for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  design criteria for, 22:32754 (DOCKET-50295-5)
  diesel-generators for, load requirements for emergency, 22:32757 (DOCKET-50295-8)
  electrical system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  electrical systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  emergency and auxiliary systems for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  emergency and auxiliary systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  engineered safeguards systems for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  instrumentation for, revised 1/29/68 information on, 22:32755 (DOCKET-50295-6)
  operator training programs for, 22:32756 (DOCKET-50295-7)
  quality control program for, 22:32754 (DOCKET-50295-5)
  quality control program for, description of, 22:32756 (DOCKET-50295-7)
  radiation protection and radioactive waste handling at, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  safety evaluation of, preliminary, 22:32751 (DOCKET-50295-2)
  safety evaluation of, USAEC Division of Reactor Licensing, 22:48637 (DOCKET-50295-9)
  safety injection system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)
  seismic criteria for, 22:32754 (DOCKET-50295-5)
  site for, coolant loss accident radiation doses at boundary of, 22:32757 (DOCKET-50295-8)

  site for, geological and seismological studies on, 22:32751 (DOCKET-50295-2)
  site for, preliminary safety analysis of, 22:32750 (DOCKET-50295-1)
  site for, revised 11/15/67 information on, 22:32753 (DOCKET-50295-4)
  steam and power conversion system for, preliminary safety analysis of, 22:32751 (DOCKET-50295-2)

Zippers
  see Fasteners

ZIRCALOY
  (For unspecified Zircaloy Alloys)
  analysis for alloying elements, spectrographic, 22:22926 (BARC-312)
  analysis for chromium, iron, nickel, and tin by x-ray fluorescence, 22:47097
  analysis for deuterium and hydrogen by mass spectroscopy, 22:39975 (AERE-R-5758)
  analysis for hafnium by isotope dilution method, 22:18699
  analysis for hafnium by neutron activation methods, 22:40020
  analysis for phosphorus, extraction method for spectrophotometric, 22:4043
  analysis for uranium-235 by neutron activation, 22:50925
  analysis of irradiated, for hydrogen by inert sweep gas method, 22:39991 (TRG-Report-1669)
  brazing alloy for, preparation of beryllium--zirconium, 22:12994(P)
  brazing procedures for reactor fuel element cladding of, 22:25156
  channels of finned, heat transfer in, 22:22813 (EUR-3886)
  cladding for pressurized-water reactor fuel elements of, analysis of thermal and wear testing of, 22:30166(R) (WCAP-3707)
  cladding of thorium oxide (ThO_2)--uranium oxide (UO_2) fuel elements, effects of time and temperature on failure of, 22:33174
  cladding of, effects of metallurgical properties on use in water-cooled reactors of fuel element, 22:35493
  cladding of, fabrication of CANDU Reactor bundle-type uranium oxide (UO_2) fuel element, 22:42152 (AECL-3067, pp 45-52)
  cladding of, thermal effects on metallurgy of, 22:22810 (DP-995)
  cladding of, ultrasonic-probing method for defect detection in, 22:14169
  corrosion by steam, effects of silicon dioxide in autoclave test water on, 22:28736 (KAPL-M-6748)
  corrosion by water at high temperatures, effects of impurities on, 22:21663
  corrosion of, effects of preoxidation and hydrogen absorption on, 22:23722
  corrosion of, model of hydrogen supercharging during, 22:40999 (WAPD-TM-759)
  corrosion resistance, review of, 22:52184
  extrusion of copper clad tubes of, 22:49002(P)
  fabrication effects on hydride platelet orientation in tubular, 22:662
  fabrication of tubular, control of hydride platelet orientation in, 22:661
  fabrication processes for, effects of hydride orientation on, 22:48788
  fabrication, machining, and welding of tubes of, 22:19493
  failure testing of pipes of, analysis of 2400°F, 22:25135(R) (SNE-38)
  machining of, electro-discharge machine for precision, 22:12493
  mechanical properties of, effects of texture on anisotropy of, 22:8758
  oxygen saturation of, intercomparison of mathematical models for, 22:42160(R) (BMI-1844)
  oxygen saturation of, time dependence of, 22:42160(R) (BMI-1844)
  pressure tubes of, method for cladding inside surface using aluminum, 22:17097(P)
  radiation effects on fuel cladding of, analysis of neutron, 22:27492
  radioinduced creep in, model of neutron, 22:36512 (WAPD-TM-756)
  radioinduced creep of, determination of mechanisms of in-pile, 22:28857
  reactions with steam in reactor coolant-loss accidents, 22:5979
  separation of uranium from cans of, by electrolytic dissolution, 22:8192
  strains in tubes of annealed, 22:8758
  tensile properties of, effects of texture on, 22:8688 (ORNL-4170, pp 142-7)
  testing of brazing alloys for, in hot water loops, 22:34013(R) (IITRI-578-P-29-23)
  tube fabrication methods for reactor fuel cladding in Japan, 22:14177
  ultrasonic testing of thin-walled tubes of, 22:45258
  uses in chemical and nuclear equipment, review of, 22:52184
  welding of, for use in nuclear reactors, explosive, 22:6944
  welding procedures for reactor fuel element cladding of, 22:25156
  welding to magnesium or magnesium alloys, to form sealed joints, 22:12995(P)
  U--Zircaloy, separation of fission products from irradiated, fluidized-bed volatility process for, 22:8181

ZIRCALOY-2
  acoustic emission characteristics of, during fatigue and tensile testing, 22:51189 (BNWL-727)
  analysis for chromium, iron, nickel, and tin by x ray fluorescence, 22:7024
  analysis for chromium, iron, nickel, and tin, spectrographic, 22:4006
  analysis for hydrogen in layers under oxide coating on, effects of organic solvents on, 22:43615(R) (BNWL-710)
  analysis for hydrogen, hot-extraction method for, 22:26
  analysis of laser-sampled, matrix effect in spectrochemical, 22:47081
  analysis of, spectrographic, 22:16356 (KR-116)
  bonding to stainless steel, 22:10915 (WERL-1114-3)
  bonding to stainless steel for fuel element cladding used in steam cooled superheaters, 22:36485
  braze alloys for, evaluation of, 22:8703(R) (IITRI-578-P-29-17)
  burnable poisons of, fabrication for PM-1 and PM-3A reactors of, 22:14229 (HIT-242)
  cladding for 1000 MW(e) heavy water-moderated organic-cooled power reactors fuel elements, performance analysis of, 22:50741 (WASH-1083)
  cladding for 87 percent density uranium oxide (UO_2) fuel rods of, fabrication of, 22:16280 (GEAP-5100-H)
  cladding for HWCTR uranium--zirconium driver fuel elements, fabrication of, 22:44896 (NMI-4379)
  cladding for Indian Point Power Reactor Unit 1 Core A thorium oxide (ThO_2)--uranium oxide (UO_2) fuel elements of, profilometer and metallographic analysis of burnup effects on, 22:53261(R) (BAW-3809-4)
  cladding for thorium--uranium--zirconium fuel elements of, performance during burnup of, 22:53456 (BNWL-861)
  cladding for uranium oxide (UO_2) fuel elements of, post-irradiation analysis of performance of, 22:32821
  cladding for uranium oxide (UO_2) fuel elements, effects of transient irradiations on, 22:32984
  cladding for uranium oxide (UO_2) fuel rods of, fabrication of, 22:16281 (GEAP-5100-K)
  cladding for uranium oxide (UO_2) IFA-10 fuel assemblies of, irradiation performance in HBWR of, 22:46898 (HPR-101)
  cladding for uranium oxide (UO_2) pellets of, with axial voids, 22:30392(P)
  cladding of aluminum alloy--uranium alloy-lined cylindrical uranium ceramic and cermet fuel elements, fabrication of, 22:48769(P)
  cladding of HBWR uranium oxide (UO_2) and plutonium oxide (PuO_2)--uranium oxide (UO_2) fuel elements of, performance during burnup of, 22:48646 (HPR-102)
  cladding of radiation testing of uranium oxide (UO_2) fuel element, 22:35460(R) (GEAP-5605)
  cladding of thorium--uranium fuel elements of, fabrication of, 22:53456 (BNWL-861)
  cladding of uranium oxide (UO_2) fuel elements in heavy water-moderated reactors, analysis of performance of, 22:30263
  cladding of uranium oxide (UO_2) sintered pellet and compacted powder fuel elements, fabrication of, 22:27415(R) (GEAP-5585)
  cladding of, analysis of failures in Halden Boiling Reactor fuel elements of, 22:35464(R) (HPR-99)
  cladding of, measurement of neutron radiation effects on Spert 4 Capsule Driver Core fuel element, (E), 22:35596(R) (IDO-17260)
  cladding of, pelletized and vibra-packed uranium oxide (UO_2) fuel rod performance during water-submerged meltdown of, 22:53260 (ANL-7425, pp 130-71)
  coating with oxide layers, method for, 22:10922(P)
  corrosion and hydriding by aqueous chemical shim solutions, 22:23713 (BAW-3765-5)
  corrosion at 300 to 450°C of, effects of water and steam and neutron flux on, 22:42338
  corrosion by demineralized water at 360°C, 22:28732 (CEA-N-816, pp 102-39)
  corrosion by heavy water solutions of lithium hydroxide, 22:19670 (BNWL-624, pp 6.1-20)
  corrosion by hydrogen and terphenyl, effects of surface preoxidation on, 22:19486
  corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
  corrosion by PRTR decontamination process, analysis of, 22:22816 (HW-75557(Rev.)(Del.))
  corrosion by pure water under heat transfer conditions, 22:6934(R) (BAW-3765-4)
  corrosion by steam and water at 300 to 450°C, effects of surface treatments on, 22:617 (EURAEC-1894)
  corrosion by steam and water at 400°C, 22:21656
  corrosion by steam and water at high temperatures, 22:28738 (WAPD-TM-619)
  corrosion by steam at 400°C, 22:19520(R) (RISO-151)
  corrosion by steam at 400°C, effects of pickeling on, 22:52127(R) (RISO-179)
  corrosion by steam or water, effects of fluorine and surface preparation on, 22:15147
  corrosion by steam, effects of structure on, 22:21720

corrosion by steam--water mixtures at 250 to 280°C, in-pile, 22:52139
corrosion by water and steam at 300 to 400°C of, analysis of, 22:32895
corrosion by water, effects of prefilming on, 22:12979
corrosion in air and steam at 1050 to 1800°C, analysis of, 22:30388
corrosion of extruded fuel element cladding of, by high-temperature steam--water mixtures, 22:49690
corrosion of oxide-coated, by water, 22:10922(P)
corrosion of tubes of, by saturated steam and water, 22:49713(R) (GEAP-5649)
corrosion of, effects of internal stresses on, 22:8700
crack propagation characteristics of irradiated and unirradiated pressure tubes of, 22:53454 (BNWL-828)
creep at 520 to 620°C, measurement of, 22:30388
crystal orientation in rolled, effects of rolling temperature on, (E), 22:8772
crystallization of, effects of temperature on, 22:21711
defects in oxide films on, mercury porosimeter for determination of, 22:41118
defects in pressure tubes of, effects of stress on through-the-wall, 22:43578
deformation of hydrided, effects of orientation on, 22:21657
deformation of single-crystal, 22:8688 (ORNL-4170, pp 142-7)
deformation of single-crystal, effects of oxygen on, 22:664
dislocation mechanisms, at low temperature in, 22:43571 (TID-24570)
dissolution of fuel cans of, 22:40164 (KR-126, pp 54-73)
ductility of tubes of, effects of circumferentially aligned hydride layer on, 22:8760
embrittlement of, effects of hydrogen sorption on, 22:21657
fabrication, 22:31323
fabrication and properties for reactor cooling systems, 22:19526
fabrication for cladding of vibratory compacted fuel rods, 22:4868 (GEAP-5100-G)
fabrication of, cladding for compacted powder and cored pellet uranium oxide (UO_2) rod-shaped fuel elements, 22:16279 (GEAP-5100-2)
fabrication of, cladding for hollow sintered uranium oxide (UO_2) pellets in rod-shaped fuel elements, 22:16282 (GEAP-5100-L)
failure of reactor pressure tubes of, effects of radiation on, 22:268 (BNWL-545)
fatigue of hydrided and unhydrided, at room temperature, 22:17120
fracture properties of reactor pressure tubes of, under operating conditions, 22:268 (BNWL-545)
fracture toughness of cold-worked, effects of water at 280°C on, 22:13036 (BNWL-473, pp 7.1-71)
heat transfer in Spert 3 E-core fuel element cladding of, analysis of, (T), 22:35596(R) (IDO-17260)
hydridation at less than 100°C in electrolytic cells, effects of etching on, 22:19483
hydridation in lithium hydroxide by corrosion cycling at 300°C, 22:709
hydride orientation in tubes of, 22:4743
hydride orientation in tubing of, effect of directional strain history on, 22:52200 (DP-1138)
hydride platelet orientation in, 22:8688 (ORNL-4170, pp 142-7)
hydrided surfaces on, crystal structure of, 22:28957
hydriding in Hanford reactor process tubes, 22:24991
hydriding in pure water under heat transfer conditions, 22:6934(R) (BAW-3765-4)
joints with different materials, metallography of, 22:43553
mechanical properties, 22:19520(R) (RISO-151)
mechanical properties and metallography tubes of, 22:52127(R) (RISO-179)
mechanical properties of anisotropic, 22:10969
mechanical properties of fuel cans of, 22:16356 (KR-116)
mechanical properties of hydrogenated, effect of selenium additions on, 22:17099 (AERE-R-5639)
mechanical properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)
mechanical properties of, effects of cold working temperature on, 22:31414 (BNWL-532, pp 12.1-88)
mechanical properties of, evaluation of, 22:35461 (GEMP-482)
microstructure of recrystallized, 22:19547 (CISE-E-581)
neutron cross sections for, analysis of effective total and resonance absorption, 22:42428
oxidation at 600 to 800°C, 22:2579
oxidation by demineralized water at 200 to 300°C, 22:19489
oxidation by fused nitrate--nitrite salt, film potential measurements during, 22:2566 (AECL-2777)
oxidation by oxygen at 350 to 500°C, effects of pressure on, 22:17076
oxidation by oxygen at 650°C, 22:10922(P)
oxidation by steam of, analysis of, (E/T), 22:35461 (GEMP-482)
oxidation by water vapor at 350 to 500°C, effects of pressure on, 22:17076
oxide films of, failure under stress, 22:19523(T) (NSJ-tr-94)
oxide films on, crystal structure of, 22:21720
performance as cladding for compacted thorium dioxide--uranium dioxide fuels, 22:49798
performance as cladding for vibrationally packed uranium dioxide, in-pile, 22:41124 (BNWL-SA-1674)
performance as high-temperature fuel cladding, for thorium dioxide--uranium dioxide fuels, 22:21775 (AECL-3008)
physical properties of, evaluation of, 22:35461 (GEMP-482)
pressure tubes of, failure testing of SGHWR, 22:1780
processing spent fuel cladding of, safety of shear-leach, 22:283 (ORNL-4061)
properties of cold-worked, review of effects of annealing on, 22:21698 (WAPD-TM-590)
radiation effects at 280°C on fracture toughness of hydrogen-charged, in-pile, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on corrosion by superheated steam, in-pile, 22:21664
radiation effects on corrosion by superheated steam, fast neutron, 22:34084(T) (WAPD-Trans-87)
radiation effects on corrosion of, in-pile, 22:19670 (BNWL-624, pp 6.1-20)
radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
radiation effects on creep of cold worked, neutron, 22:21729
radiation effects on creep of reactor pressure tubes of, fast neutron, 22:28859
radiation effects on creep of tubular, in-pile, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on creep of, in-pile, 22:28860
radiation effects on creep of, in-pile, 22:43615(R) (BNWL-710)
radiation effects on creep of, measurement of in-pile, 22:4828
radiation effects on deformation of, neutron, 22:43571 (TID-24570)
radiation effects on ductility and strength of annealed, fast neutron, 22:47671 (CONF-671007-3)
radiation effects on fracture toughness of cold-worked, effects of annealing on neutron, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on fracture toughness of cold-worked, effects of vacuum annealing on fast neutron, 22:13036 (BNWL-473, pp 7.1-71)
radiation effects on fuel cladding of, in-pile, 22:49857 (GEAP-5626)
radiation effects on fuel cladding specimens of, in-pile, 22:49713(R) (GEAP-5649)
radiation effects on hydrided specimens of, in-pile, 22:4824
radiation effects on mechanical properties of, neutron, 22:21730
radiation effects on mechanical properties of, neutron, 22:4823
radiation effects on mechanical properties of, neutron, 22:21729
radiation effects on oxidation in water of, fast-neutron, 22:17072 (AECL-2797)
radiation effects on pressure tubing of, in-pile, 22:17154
radiation effects on properties of, review of neutron, 22:52192
radiation effects on rate of creep, neutron, 22:28855
radiation effects on strain aging in annealed, fast neutron, 22:41078
radiation effects on tensile properties of, fast neutron, 22:19597
radiation effects on tensile properties of, measurement of fast neutron, 22:35419 (AECL-3126)
radiation effects on tensile properties of, neutron, 22:16281 (GEAP-5100-K)
radiation effects on tensile properties of, neutron, 22:34038 (BNWL-SA-1805)
radiation effects on tensile properties of, relations of time and temperature with neutron, 22:28853
radiation effects on tubes of, fast neutron, 22:23845 (IN-1131, pp 83-90)
radiation effects on, review of in-pile, 22:21651
radiation testing of uranium oxide (UO_2) fuel element cladding of, 22:32988
radioinduced corrosion by high-pressure water, fast neutron and gamma, 22:21661
radioinduced corrosion by steam and water, neutron, 22:21730
radioinduced corrosion by water vapor at 350°C, fast neutron, 22:26026 (CEA-N-616, pp 106-44)
radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
radioinduced creep at 300 and 350°C, in-pile, 22:34037 (BNWL-SA-1458)
radioinduced hydriding of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
radioinduced oxidation of, in-pile, 22:47671 (CONF-671007-3)
sorption of hydrogen in, effects of temperature on, 22:48789
sorptive properties for hydrogen in high-temperature

  water and steam, 22:28738 (WAPD-TM-619)
  sorptive properties for radioactive anions and cations, 22:28741
  stress rupture properties at high temperatures, 22:34039(R) (GEAP-5603)
  surface treatment of tubular, process for corrosion inhibition, 22:10940(P)
  tensile properties at 77 to 900°K, (E), 22:21697(R) (ORO-3262-5)
  tensile properties at various temperatures, statistical estimation of, 22:36457 (WAPD-TM-767)
  tensile properties of, effects of cold working, and thermal treatments on, 22:34038 (BNWL-SA-1805)
  tensile properties of, effects of cold-working and annealing on, 22:35419 (AECL-3126)
  thermal conductivity of uranium oxide (UO_2) cladding of, at 2750°C, 22:35457 (GEAP-5100-6)
  thermal performance of fuel element cladding of, effects of uranium oxide (UO_2) rod center-melting on, 22:22698 (GEAP-5591)
  thermal performance of fuel rod cluster cladding of, analysis of effects of central melt conditions on, 22:16279 (GEAP-5100-2)
  thermal performance of fuel rod cluster cladding of, analysis of effects of central melt conditions on, 22:16282 (GEAP-5100-L)
  thermal properties of, analysis of digital computer input for, (E/T), 22:35665 (KAPL-3300)
  tin distribution in, homogeneity of, 22:7024
  tubes of, burst strength of fuel cladding, 22:33618
  tubes of, collapse pressure prediction for elastic modulus anisotropic, 22:52165
  vibration damping in, internal, 22:6142
  welding characteristics of, for use as fuel canning, 22:30343(R) (EURAEC-1992)
  welding for assembly into reactor components, methods for, 22:41059
  welding of fuel tubes and end plugs of, electric arc, 22:49694
  welding tubes of, to Type 18/8 stainless steel tubes by hammering, 22:49721(P)
ZIRCALOY-3
  properties of cold-worked, review of effects of annealing on, 22:21698 (WAPD-TM-590)
ZIRCALOY-4
  cladding for uranium oxide (UO_2) ETR-type fuel element of, analysis of burnup failures in, 22:53422 (WCAP-3269-61-A)
  cladding for uranium oxide (UO_2) fuel assemblies, radiation effects in NRU Reactor on, 22:47003 (AI-CE-75)
  corrosion and hydridation by water at high temperatures, 22:4740
  corrosion and hydriding by aqueous chemical shim solutions, 22:23713 (BAW-3765-5)
  corrosion by heavy water solutions of lithium hydroxide, 22:19670 (BNWL-624, pp 6.1-20)
  corrosion by lithium hydroxide at 315 to 360°C, analysis of, 22:30388
  corrosion by lithium hydroxide at high temperatures, 22:4734 (WAPD-TM-656)
  corrosion by pure water under heat transfer conditions, 22:6934(R) (BAW-3765-4)
  corrosion by steam and water at 400°C, 22:21656
  corrosion by steam and water at high temperatures, 22:28738 (WAPD-TM-619)
  corrosion by steam at 400°C, 22:19520(R) (RISO-151)
  corrosion by steam at high temperatures, effects of niobium additions on, 22:19480 (WAPD-TM-647)
  corrosion by water and steam at 300 to 400°C of, analysis of, 22:32895
  corrosion by water, effects of prefilming on, 22:12979
  corrosion in air and steam at 1050 to 1800°C, analysis of, 22:30388
  deformation kinetics of hot-rolled plates of, 22:21693 (KAPL-P-3406)
  deformation of single-crystal, 22:8688 (ORNL-4170, pp 142-7)
  dissolution of hydride platelets in, kinetics of, 22:41044
  heat treatment for increased grain size, 22:41034 (MIT-3635-2)
  hydridation by hot pressurized water, effects of heat transfer rate and isothermal conditions on, 22:38516 (WCAP-3269-56)
  hydridation of, effects of niobium additions on, 22:19480 (WAPD-TM-647)
  hydride morphology in tubes of, 22:4742
  hydride orientation in tubes of, 22:4743
  hydride platelet orientation in, 22:8688 (ORNL-4170, pp 142-7)
  hydrided surfaces on, crystal structure of, 22:28957
  hydriding in pure water under heat transfer conditions, 22:6934(R) (BAW-3765-4)
  hydrogen iodide deposition on, mass transfer rate of vaporous, 22:30121(R) (BMI-X-10229)
  hydrogen pickup in lithium hydroxide at high temperatures, 22:4734 (WAPD-TM-656)
  iodide deposition on prefilmed, 22:14132(R) (BMI-X-10213)
  iodine deposition on prefilmed, (E), 22:42161(R) (BMI-X-10237)
  joint to Type 316 stainless steel in pressure tube, testing and cold-working of transition, 22:43543 (WCAP-3374-7-P)
  mechanical properties at 70 to 800°F of tubing of, effects of hydrogen on, (E), 22:28776 (BAW-3765-6)
  mechanical properties of, effects of hydrogen and hydride distribution on, 22:6934(R) (BAW-3765-4)
  mechanical properties of, effects of hydrogen on, 22:4741
  mechanical properties of, effects of niobium additions on, 22:19480 (WAPD-TM-647)
  mechanical properties of, evaluation of, 22:35461 (GEMP-482)
  oxidation by hot pressurized water, effects of heat transfer rate and isothermal conditions on, 22:38516 (WCAP-3269-56)
  oxidation by steam at 1100 to 1800°C, 22:15143 (GEMP-1002, pp 123-36)
  oxidation by steam of, analysis of, (E/T), 22:35461 (GEMP-482)
  oxidation of, analysis of simulation of coolant-loss accident at 1200 to 1800°C of steam and air, 22:53459 (GEMP-619)
  physical properties of, evaluation of, 22:35461 (GEMP-482)
  plasticity of, phase studies analysis of, 22:702
  properties, 22:31323
  properties of cold-worked, effects of annealing on, 22:21698 (WAPD-TM-590)
  property alteration by cold-working, electric conductivity and x-ray line sharpening equations for recovery from, 22:21698 (WAPD-TM-590)
  radiation effects at 130 to 775°F on mechanical properties of, fast neutron, 22:52221
  radiation effects in presence of hydrogen on mechanical properties at 650 to 775°F of, fast neutron, 22:4825
  radiation effects on cladding of, for low-density uranium dioxide rods, 22:41133 (WAPD-TM-596)
  radiation effects on corrosion of, in-pile, 22:19670 (BNWL-624, pp 6.1-20)
  radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
  radiation effects on mechanical properties of pressure tubes of, analysis of neutron, 22:35428 (CVNA-289)
  radiation effects on mechanical properties of, neutron, 22:21729
  radiation effects on pressure tubes of, in-pile, 22:4822
  radiation effects on tensile properties at 55 to 415°C of, analysis of fast neutron, 22:30388
  radiation induced strain relaxation in, fast neutron, 22:28858
  radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
  radioinduced strain relaxation of, temperature dependence of fast neutron, 22:43622 (WAPD-TM-746)
  rupture of tubes of, effects of heating rates and internal pressure on, 22:15143 (GEMP-1002, pp 123-36)
  shear fracture during uniaxial and plane strain compression testing, 22:41034 (MIT-3635-2)
  sorption of hydrogen in, effects of temperature on, 22:48789
  sorptive properties for hydrogen in high-temperature water and steam, 22:28738 (WAPD-TM-619)
  surface structure, effects of hot-rolling pass sequence on, 22:21693 (KAPL-P-3406)
  surface treatment of tubular, process for corrosion inhibition, 22:10940(P)
  tellurium deposition on prefilmed, (E), 22:42161(R) (BMI-X-10237)
  tensile properties of, effects of temperature on, 22:53459 (GEMP-619)
  thermal properties of, effects of heat treatments on, 22:53459 (GEMP-619)
  welding for assembly into reactor components, methods for, 22:41059
  UO_2--Zircaloy-4, radiation effects on, evaluation of neutron, 22:11087 (AI-CE-76)
ZIRCON
  radiation effects on flotation behavior of, beta, 22:42796
ZIRCONATES
    see also Calcium Zirconates
    see also Lead Titanate Zirconates
    see also Lead Zirconates
    see also Lithium Zirconates
    see also Strontium Zirconates
Zirconia
    see Zirconium Oxides
ZIRCONIUM
  abundance in carbon stars, (E), 22:23975
  abundance in early A stars, (T), 22:29016
  abundance in γ Capricorni, (E), 22:38692
  abundance in HD 122563, (E), 22:869
  abundance in HD 1909 and 53 Tauri, (E), 22:47730
  abundance in zeta Lyr A, (E), 22:29147
  activity in niobium--zirconium alloys, 22:28790
  analysis for calcium by flame photometry, 22:25236 (CEA-N-616, pp 20-71)
  analysis for carbon by helium-3 activation, sensitivity limits for, 22:12236

analysis for carbon by helium-3 and helium-4 activation methods, 22:27593
analysis for chlorine by pyrohydrolysis at 1000 to 1100°C, colorimetric and potentiometric, 22:16381 (AECL-2799)
analysis for cobalt, spectrophotometric, 22:22930(R) (NBL-242)
analysis for fluorine by pyrohydrolysis at 1000 to 1100°C, spectrophotometric, 22:16381 (AECL-2799)
analysis for gases, gas chromatographic, 22:33258
analysis for hafnium by neutron activation methods, 22:40020
analysis for hafnium by neutron activation methods, 22:33225
analysis for hydrogen, hot-extraction method for, 22:26
analysis for hydrogen, spectral-isotopic method for, 22:19534
analysis for niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:16440
analysis for niobium, spectrophotometric, 22:22971
analysis for nitrogen, fusion method for, 22:27530 (CEA-N-816, pp 9-65)
analysis for oxygen by alpha activation methods, 22:27593
analysis for oxygen by helium-3 activation, 22:12236
analysis for oxygen by helium-3 and helium-4 activation methods, 22:27593
analysis for oxygen by helium-3 or helium-4 activation, 22:8005
analysis for oxygen by helium-4 activation, 22:12236
analysis for oxygen by neutron activation methods, 22:1948 (EUR-3565)
analysis for phosphorus, extraction method for spectrophotometric, 22:4043
analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
analysis for trace elements, methods for, 22:37679
analysis for trace hafnium by x-ray fluorescence spectroscopy after separation by ion exchange, 22:27572
analysis of solutions of, for trace amounts of cobalt, copper, and nickel, chromatographic, 22:22976
argon ion sputtering at 1 to 5 keV, yields and ejection patterns from, (E), 22:36729
argon ion sputtering at 5, 11, and 17 keV, mechanism of, 22:36704(T) (ANL-Trans-627)
atomic weight of, based on carbon-12 = 12, 22:42698
behavior under carbon monoxide, effects of temperature on, 22:11030
bonding to vanadium, methods and quality of diffusion, 22:28818 (BARC-303)
book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
book: Uncommon Metals, 22:10981
bremsstrahlung spectra from beta-excited, (E), 22:13248
cathodic behavior in sulfuric acid solutions of benzaldehyde or oxalic acid, 22:52172
chemical and physical properties, review of, 22:52184
chemistry of, as related to TBP extraction process, 22:40052 (KR-126, pp 101-19)
chromatographic behavior on cerium phosphate paper, 22:153
cladding of thin foils of, description of fabrication for uranium rods of, 22:20865(P)
cladding of titanium nitride coated, fabrication of uranium oxide (UO_2) pellet fuel element, 22:42553(P)
coating for, protective, 22:41009(P)
coating of sintered, method for, 22:6946
coating of, process using molten aluminum, 22:21679
coating with chromium by electrolysis and thermal evaporation, 22:17123
coating with chromium by electrolysis and thermal evaporation, 22:43573(T) (WAPD-Trans-0094)
coating with nickel, method for, 22:26035(P)
combustion of fused droplets of, in oxygen--rare gas mixtures, 22:42977(R) (SC-PR-68-451)
compatibility with uranium phosphide at 1600 to 2000°C, 22:43631 (ANL-7299, pp 120-37)
complexes with 1,2,3,5,6,7-hexahydroxyanthraquinone, effects of acidity and temperature on stability of, 22:40025
complexes with 8-quinolinol, solvent extraction and polarographic studies on, 22:50930
complexes with β-diketones and halogens, preparation and properties of, 22:4153
complexes with β-diketones, fractional sublimation for separation studies on, 22:4097
complexes with β-ketoenols, preparation and properties of, review of, 22:2061
complexes with organic compounds, tables of thermodynamic stability constants for, 22:58 (UCRL-50200)
complexes with phthalocyanine, Szilard-Chalmers reactions in, recoil energies in, 22:37776 (BNL-50082, pp 79-92)
complexes with polyaminocarboxylate ions, potentiometric studies on, 22:16537
complexes with TTA, fractional sublimation of, 22:35911
compounds of, properties for use in analytical chemistry, 22:45011
compounds of, solubility in solvents containing hydrogen fluoride, 22:10320 (CEA-R-3205)
compounds with Schiff bases, preparation and properties of, 22:48854
content in igneous rock samples from Pennsylvania and Tasmania, 22:48959
content of radioactive, in fallout in Czechoslovakia following Chinese nuclear tests during 1964 to 1967, 22:45517
corrosion by air at 1000°C, kinetics of, 22:23721
corrosion by aqueous inorganic acids, electrochemical studies of, 22:15152
corrosion by carbon dioxide, at 300 to 400°C, 22:21660
corrosion by fused potassium chloride--sodium chloride, 22:2583
corrosion by high-temperature steam and water, effects of alloying additions on, 22:21659
corrosion by moist carbon dioxide, 22:21662
corrosion by oxygenated sulfuric acid at 100 to 300°C, 22:31321
corrosion by steam and water at 300 to 400°C, 22:21660
corrosion by steam, effects of impurities, oxide films, and temperature on, 22:4736
corrosion by steam, effects of niobium and tantalum additives on, 22:4736
corrosion by superheated steam, effects of copper and iron on, 22:34084(T) (WAPD-Trans-87)
corrosion by water vapor at 1000°C, 22:23721
corrosion of high-purity, factors affecting and mechanisms of, 22:8688 (ORNL-4170, pp 142-7)
corrosion of reactor cladding and fuel of, by aqueous and gaseous media, 22:773
corrosion of, anodic film growth in, 22:26029 (ORNL-4229, pp 71-83)
corrosion of, effects of internal stresses on, 22:8700
corrosion resistance of nuclear materials containing, 22:31357
corrosion, recent developments in, 22:31322
cost, production, and uses of, review of 1967, 22:31320
crack nucleation and propagation in hydride precipitates in, 22:31354
crystal orientation in rolled, effects of rolling temperature on, (E), 22:8772
crystal structure, 22:11000
crystal structure of sputtered films of, 22:8777
crystal structure vacancy formation and migration energies in, effects of Debye temperature on, 22:17119
crystallization of, effects of temperature on, 22:21711
crystallography of monoclinic, 22:23833
Curie levels and Roentgen rates for neutron-irradiated, at 1-, 10-, 100- and 1000-min irradiation time, 22:23035 (MLM-1457)
decomposition of beta-phase, in niobium--zirconium alloys, kinetics of, 22:38567
decontamination in first contactor in TBP fuel reprocessing, 22:16678
decontamination in fuel reprocessing, effects of solvent degradation on, 22:16650(T) (ORNL-tr-1902)
deformation at -196°C, effects of hydride precipitates on, 22:31354
deformation faulting analysis of, (T), 22:699
deformation textures of monocrystals of, 22:36507
deposition of, electrolytic, 22:47161
deposition on aluminum oxide, using electron beams, 22:23870
deposition on graphite by arc welding using wire, 22:43558
detection by atomic absorption spectroscopy using acetylene--nitrous oxide flame, 22:37662
determination as ascorbate, spectrophotometric, 22:2009
determination as thiocyanate complex by paper chromatography, 22:21040
determination as trace impurity in glass fragments by mass spectrometry, 22:33205 (AWRE-O-3/68)
determination by activation methods, detection limits for, 22:16392 (GA-8171, pp 7-40)
determination by atomic absorption or fluorescence spectroscopy, microwave-excited electrodeless discharge tubes for, 22:48844
determination by chemiluminescence reaction in luminol--copper(II)--zirconium(IV)--hydrogen peroxide system, 22:33219
determination by gravimetric precipitation with o-nitrobenzoic acid, 22:25269
determination by neutron activation, 22:30500
determination by neutron activation methods, γ-ray spectra and sensitivity of, 22:42611
determination by photon activation methods, 22:27589
determination by photoneutron counting, activation, 22:24788 (IA-1128, pp 56-77)
determination in acetic acid and inorganic acids by complexing with molybdic acid, photometric, 22:30495
determination in alloys and ores, absorptiometric, 22:48826
determination in alloys with uranium, comparison of chemical and x-ray fluorescence, 22:4 (AERE-R-5452)
determination in aluminum-, copper-, magnesium-, nickel-, and zirconium-base alloys using gallocyanine, colorimetric, 22:33287
determination in aluminum-base alloys by atomic absorption spectroscopy, 22:16466
determination in boron after ion exchange separation, spectrochemical methods for, 22:22935 (SC-RR-68-138)
determination in cerium--thorium--titanium--zirconium mixtures by ring-oven method, 22:18708

determination in concentrates and sands by x-ray fluorescence, method for, 22:4040
determination in corrosion water and sodium sulfate by x-ray fluorescence spectrometry, 22:33280
determination in fuel reprocessing plant streams, 22:16356 (KR-116)
determination in glass by neutron activation and photonuclear activation methods, 22:16400 (GA-8171, pp 147-60)
determination in graphite, molybdenum, and tungsten by neutron activation methods, 22:16387 (CEA-R-3267)
determination in hafnium--zirconium alloys, titrimetric method for, 22:40025
determination in high-purity niobium, 22:1981
determination in high-purity water by x-ray fluorescence spectroscopy, 22:27552
determination in hydrochloric acid by spectrophotometry using 3,3',4',5,6,7-hexahydroxyflavone, 22:33239
determination in lacustrine and marine deposits from Viskan Valley in Sweden, activation, 22:1944 (AE-296)
determination in magnesium--zirconium and magnesium--manganese--zirconium alloys by spectrophotometry, 22:37669
determination in mild steel by x-ray spectroscopy, 22:30481
determination in molybdenum or tungsten by neutron activation method, 22:50910
determination in niobium alloys, ion-exchange separation in, 22:48838
determination in niobium--uranium--zirconium alloy by x-ray absorption edge method, 22:8023
determination in ores by radiometric methods, 22:40048
determination in ores by x-ray-fluorescence methods, 22:33211
determination in ores, x-ray fluorescence method for, 22:257 (ORNL-IIC-10(Vol.2), pp 746-63)
determination in plutonium dioxide--uranium dioxide fuels, spectrographic, 22:8847(R) (NUMEC-3524-37)
determination in pottery clays by neutron activation methods, 22:4002 (UCRL-17937)
determination in presence of hafnium by hydrolysis of borohydrides, 22:35751
determination in presence of hafnium, radiochemical, 22:50931
determination in presence of manganese and ytterbium, using methylene blue, polarographic, 22:16552
determination in presence of plutonium and uranium using Alizarin Red-S, colorimetric, 22:48817 (MLM-1542)
determination in presence of yttrium, chelometric, 22:2000
determination in pure salts and zircon, gravimetric, 22:33264
determination in rocks by x-ray fluorescence, 22:27605
determination in sand, x-ray fluorescence, 22:16436
determination in silicates, spectrometric, 22:22960
determination in single-crystal slices of silicon by neutron activation, 22:37703
determination in solutions from processing of irradiated plutonium, 22:37640(T) (ANL-Trans-628, pp 2-50)
determination in solutions of refractory materials, spectrographic, 22:21032
determination in steels, photometric, 22:2005
determination in thorium--titanium--uranium--zirconium mixture by ring-oven method, 22:18708
determination in uranium by colorimetry after solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
determination in uranium oxides by spectrography, 22:27538 (NIM-153)
determination in various materials by spectrographic method, 22:48810 (AERE-R-5799)
determination in various materials by x-ray fluorescence spectroscopy after precipitation, 22:25285
determination in zircon and zirconium dioxide using acidic EDTA titration, relation of polymerization to complexometric, 22:23
determination of radioactive, in water after separation by ion exchange by gamma spectroscopy, 22:18722
determination of trace amounts of, by high-current impulse argon arc method, spectrographic, 22:40012
determination of trace, in hafnium by x-ray fluorescence spectroscopy after separation by ion exchange, 22:27572
determination of trace, in plutonium by direct current arc method, spectrographic, 22:35758
determination of trace, in plutonium by direct current arc methods, effects of hydrofluoric acid on spectrographic, 22:35758
determination of, efficiency of atomic fluorescence flame spectrometry for, 22:44992
determination of, review of methods for, 22:18728
determination of, review on methods for, 22:45011
determination of, use of sodium cerium EDTA in EDTA titrimetric, 22:47102
determination using Alizarin Red S, voltammetric, 22:39996
diffusion creep mechanisms in, models of, 22:38560
diffusion in alpha-phase, model of self, 22:41074
diffusion in alpha-phase, parameters for self, 22:47678
diffusion in beta, themo- and electrotransport in, 22:13600
diffusion in hcp phase, self, 22:43577
diffusion in molybdenum, 22:10991
diffusion in titanium, 22:13009
diffusion in zirconium hydride, 22:21749
diffusion of chromium, iron, molybdenum, and tungsten in, 22:13009
diffusion of hydrogen in, 22:19525(T) (WAPD-Trans-86)
diffusion of nonvolatile, from neutron-irradiated graphite--uranium carbide--uranium dioxide systems, 22:45140 (BMwF-FBK-68-08)
diffusion of oxygen in, 22:34116(T) (WAPD-Trans-0091)
diffusion of oxygen in, coefficients and mechanisms of, 22:674
diffusion of oxygen in, determination using oxygen-16(d,p) reaction, (E), 22:23720
diffusion of rubidium in, effects of temperature on, 22:41016
diffusion of silicon in, 22:17136
diffusion of vanadium in, effects of temperature on, 22:10977
diffusion of yttrium in alpha- and beta-, 22:6992
diffusion of, dependence on temperature of self, 22:686
dislocation climb and polygonization in deformed single crystals of alpha, temperature range for, (E), 22:8771
dislocation mechanisms at low temperature in, 22:43571 (TID-24570)
dislocation velocity in crystalline, model of, 22:36506
dislocations in, effects of elastic anisotropy on, 22:49761
dissolution of fuel cans of, 22:40164 (KR-126, pp 54-73)
distribution coefficients for, in hydrochloric acid solution on Amberlite CG4B, 22:40192
distribution in dimethyl sulfoxide--hydrochloric acid--methanol system, ion exchange studies on, 22:21171
distribution in hydrochloric acid--hydrofluoric acid mixtures with alcohol or ketone, chromatographic studies on, 22:30570
distribution in products from fuel reprocessing by fluidized-bed fluoride volatility process, 22:30664
distribution of hydrogen in, effects of temperature gradients on, 22:6991
distribution of hydrogen in, model for, 22:40999 (WAPD-TM-759)
distribution on ion exchanger of Napolitan yellow tufa, 22:35883 (EUR-3922)
effects as additive on tungsten corrosion at high temperatures, 22:43537
effects of metallic, on corrosion of steel loops by boiling mercury, 22:4745
effects on boron hardenability of low-carbon structural steel, 22:49745
effects on colorimetric determination of nickel in indium and other metals using 5-(dimethylamino)-2-(2-thiazolylazo)phenol, 22:25246
effects on colorimetric determination of uranium, 22:33262
effects on determination of aluminum in uranium, 22:37639(T) (ANL-Trans-610, pp 1-56)
effects on determination of fluorine in organic compounds and metal-organic compounds by neutron activation methods, 22:14439
effects on determination of hafnium, 22:50931
effects on direct titrimetric determination of molybdenum using ceric sulfate, 22:4025
effects on hydrolysis of carbohydrate phosphates in acid and alkaline solutions, catalytic, 22:4567
effects on lanthanum determination by flame photometric titration, 22:48836
effects on lattice constant of molybdenum, 22:2638
effects on mechanical properties of molybdenum-base alloys, 22:41054
effects on photometric determination of indium, 22:2007
effects on properties of niobium alloys, 22:23706 (BM-RI-7116)
effects on separation of cations from chloride and nitrate solutions using 2-ethylhexyl ester of phenylphosphonic acid, 22:48905
effects on separation of thorium from uranium by ion exchange, 22:16386 (CEA-R-3222)
effects on solvent extraction of protactinium from aqueous acid solutions, 22:12414
effects on spectrophotometric determination of aluminum using Chrome Azurol S and hexadecyltrimethylammonium chloride, 22:18701
effects on spectrophotometric determination of iron in plutonium, 22:10172 (LA-3781)
effects on spectrophotometric determination of iron using 2,4-dihydroxypropiophenone oxime, 22:36
effects on spectrophotometric determination of uranium in ores using thiobarbituric acid in ethanol solution, 22:30572
effects on strength of niobium, 22:2641
effects on superconductivity and transition temperatures of intermetallic Nb_3Sn, 22:6984(T) (CONF-640310-1)
effects on titrimetric determination of uranium, 22:22972
electric conductivity at 2 to 300°K, 22:31375
electron band structure of, from x-ray bremsstrahlung isochromats, 22:34783
electron-capture ratio for, calculation of L/sub I//K, (T), 22:32496
electronic structure, x-ray isochromat spectral study of,

22:17747
electrophoresis in formic acid solutions, 22:45069
electroplating on uranium from alkali metal fluoride melts, 22:52143 (BNWL-825)
emission spectra excitation in, by β particles of carbon-14 or promethium-147, 22:27844
erosion by microsecond temperature rise, spall threshold temperature determination from tests of, 22:52131 (BNWL-756)
fabrication, 22:31323
fabrication of powder shapes of, by molding and sintering, 22:638(P)
fabrication of thin-walled tubular, with longitudinal helical grooves, 22:39944(P)
fabrication processes for, description of, 22:30389
fabrication, recent developments in, 22:31322
fuel cladding effects on uranium-238 resonance integral, use of modified Dancoff correction for two-region analysis of, (T), 22:42401
fusion of, measurement of latent heat of, 22:2617
gamma activation of, at 30 MeV, gamma spectra of products from, 22:6361 (AERE-R-5547)
gamma differential elastic scattering cross section at 1.33 MeV, (E), 22:32647
group cross sections for, tables of, 22:44895 (IN-1067)
growth of large single crystals of, 22:41034 (MIT-3635-2)
hardness of α-phase, after oxidation at 850°C for 400 hr, 22:47664
hydrided surfaces on, crystal structure of, 22:28957
hydrogen equilibrium pressure in α-, in ultrahigh vacuum at 450 to 750°C, thermodynamics of dissolved, 22:81
hydrogen--ion reactions at 3 to 30 keV, trapping in, 22:1005
inhalation by personnel during production of alloys and compounds, hazards from, 22:10160(T) (AEC-tr-6710)
interactions of tetravalent, with pyrocatechol violet in presence of Complexon III, 22:27579
ion recoil ranges in, at 0.22 to 5.2 MeV, (E), 22:11968
ion-exchange behavior in nitric acid, comparison of, with that of niobium, 22:10345
ion-exchange behavior in oxalic acid, 22:10349
joining to graphite as transition metal bond between graphite shapes, 22:43632 (LA-3960)
machining behavior, 22:41028
machining hazards, 22:26032
mechanical properties of hydrogenated, effect of selenium additions on, 22:17099 (AERE-R-5639)
melting and casting using plasma electron beam, 22:6941
melting in electron beam furnace, 22:23734
melting of, heat transfer to water-cooled crucibles during vacuum arc, 22:232 (BM-RI-7035)
metallurgical properties of nuclear materials containing, 22:31357
metallurgy of, 22:8688 (ORNL-4170, pp 142-7)
metallurgy of, review of, 22:12957
neutron absorption cross section at 24 keV, measurement using transmission method in spherical geometry, (E), 22:18288
neutron capture by, activation cross section for, 22:24862 (WANL-TME-1746)
neutron capture cross section at 0.01 to 1.0 eV, (E), 22:24853 (GA-8557)
neutron cross sections for, analysis of effective total and resonance absorption, 22:42428
neutron differential elastic scattering cross sections at 2.8 MeV, optical-model analysis of, (T), 22:24917
neutron inelastic scattering at 0.3 to 1.5 MeV, excitation cross section for, (E), 22:18194
neutron reactions (n,α) at 14 MeV, angular correlations and energy spectra for, (E), 22:35261
neutron scattering cross sections for, thermal and epithermal, 22:24862 (WANL-TME-1746)
neutron slowing down in zirconium-water lattices, measurement using accelerator sources, (E), 22:5710 (WAPD-T-2015)
neutron spatial distribution in water lattices of, (E), 22:5727
neutron total cross section at 4.5 to 7.5 MeV, fluctuations in, (E), 22:20537
neutron total cross sections at 4.5 to 7.5 MeV, (E), 22:9842
neutron total cross sections for, calculations using optical and statistical models, (T), 22:32468
oxidation at 1100°C, microstructure of oxide film before and after heat treatment, (E), 22:28739
oxidation at 300°C by dry oxygen at 760 torr, 22:10909 (AECL-2794)
oxidation by fused nitrate--nitrite salt, film potential measurements during, 22:2566 (AECL-2777)
oxidation by oxygen or water vapor, effects of noble metal coatings on, 22:21667
oxidation kinetics at 700 to 1050°C, 22:12976
oxidation kinetics at 700 to 1050°C, 22:41000(T) (WAPD-Trans-0092)
oxidation kinetics at high temperatures and low pressures, 22:622
oxidation kinetics of alpha-, at 750 to 850°C, 22:31331
oxidation mechanisms of, 22:43528 (ANL-7299, pp 309-21)
oxidation of, 22:10917
oxidation of α-phase, at 850°C for 400 hr, 22:47664
oxidation of mechanisms of, high-temperature, 22:7068
oxidation of surface of, use of deuteron beam to study, 22:29926
oxidation of, crystal structure of oxide films from, 22:15151
oxidation of, electronic conduction of films from anodic, 22:26080 (AECL-3082)
oxidation of, mathematical model for kinetics of, 22:674
oxidation of, mechanisms of breakaway in, 22:28748
oxidation of, oxygen transport during, 22:52239
oxidation of, tracer studies of ionic mobilities in anodic, 22:11026
oxidation, theoretical consideration of, 22:31321
oxidation-rate constant at 77 to 298°K and 10^{-6} to 10^{-8} torr oxygen, method for, 22:38519
oxide films of, failure under stress, 22:19523(T) (NSJ-tr-94)
oxide layers on, analysis of, by laser sampling and emission spectroscopy, 22:1984
oxygen content of α-phase, after oxidation at 850°C for 400 hr, 22:47664
performance and uses in nuclear industry, 22:13040
photon reactions (γ,p) at 17.5 to 24.0 MeV endpoint energy, proton angular and energy distributions for, (E), 22:27224
physical properties and thermal treatment of nuclear materials containing, 22:31357
polarographic properties of, effects of acidity on, 22:2078
polarography in chloride, nitrate, and perchlorate electrolytes, effects of acid additions and methylene blue on mechanism of, 22:16552
precipitation from aqueous sulfuric acid solutions by cupferron, 22:33359
precipitation from boiling acid solutions by phytin, 22:33319
precipitation of alpha-phase, in niobium--zirconium alloys, kinetics of, 22:38567
precipitation with uranium in copper--magnesium alloy, 22:25442 (ANL-7375, pp 19-45)
preparation, 22:36471
preparation by powder metallurgy, review, 22:49682
preparation from zircon, 22:31324
preparation from zirconium carbide by fused salt electrolysis, 22:52147
preparation of calcium oxide stabilized, for high temperature furnace heating elements, 22:52237
preparation of high-purity, method for, 22:23803
preparation of micron size metal powder by calcio-thermic reduction of oxide, 22:43557
preparation of powdered, 22:38602(T) (JPRS-45339)
production and properties of, review on, 22:8691
production from baddeleyite by extraction using tributyl phosphate, 22:10937
production from zircon sand, 22:41029
production from zirconium oxide by reduction using aluminum, carbon, or silicon in electron bombardment furnace, 22:10931
production in Euratom countries, catalog of facilities for, 22:4303 (EUR-3568)
production of nuclear-grade sponge, from Indian zircon, 22:6942
production of ultrapure, methods for, 22:49701
properties and uses of, review of, 22:15182 (IS-1757)
properties and uses of, review of, 22:23803
properties for use in vacuum systems, 22:16828
properties of and uses for, in the chemical industry, review of, 22:21712
properties of cold-worked, review of effects of annealing on, 22:21698 (WAPD-TM-590)
properties of compressed forms of, x-ray analysis of, 22:13036 (BNWL-473, pp 7.1-71)
properties of powder compacts of, prepared by high-velocity impact, 22:43562
properties of zone-melting purified, 22:2597
properties of, effects of prestrain at 77°K on anelastic, 22:49746
proton reactions at 10 MeV, production of short-lived niobium-90 isomers by, (E), 22:24874
proton reactions at 9.1 MeV, total cross section for, (E), 22:26970
purification by electron-beam zone refining, 22:8730 (ORNL-4170, pp 27-31)
purification by electrotransport, 22:2560(R) (IS-RD-11)
purification by zone melting, 22:2597
purification by zone transformation, 22:12990
purification in oxygen by distillation, 22:16653
purification of industrial solutions of, 22:37871(P)
radiation damage in, fast neutron, 22:34075 (AECL-3086)
radiation effects on corrosion of electrodes of, in basic solutions for use in electrochemical studies, γ, 22:37775 (BNL-50082, pp 40-78)
radiation effects on corrosion of, in superheated steam fast neutron, 22:34084(T) (WAPD-Trans-87)
radiation effects on deformation of, neutron, 22:43571 (TID-24570)
radiation effects on embrittlement of, neutron, 22:21728
radiation effects on mechanical properties of, neutron, 22:21729
radiation emission spectrum at 1422°K, infrared, 22:52194
radioactivity standards of, users' guide for, 22:33474

(NP-17502)
radioinduced electric conductivity changes in, recovery at low temperatures from electron, 22:24446
reactions with boron trifluoride at 1600°C, preparation of zirconium borides by, 22:7034
reactions with carbon at 1500 to 2200°C, phase studies of, 22:31506
reactions with oxygen, kinetics and structure of suboxides formed by, 22:17181
reactions with phosphonazo III, spectral studies on, 22:48867
reactions with strontium titanate at 950 to 1600°C, 22:25320 (AERE-R-5671)
reactions with zirconium tetrachloride, effects of temperature on mechanism of, 22:27721
reactivity measurement of, in ARMF fast flux converter, 22:6096 (IN-1143)
reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
reactivity measurements in ZPR-9 assemblies 11 and 12, 22:32734 (ANL-7310, pp 137-248)
refining by electrolysis of fused salts, equipment for, 22:38610(P)
separation by solvent extraction using 3,6-bis[(4-chloro-2-phosphonophenyl)azo]-4,5-dihydroxy-2,7-naphthalenedisulfonic acid, 22:6396
separation from acid solution by precipitation using cinnamic acid, 22:37848
separation from actinides and fission products by ion exchange using 2-methyllactic acid as eluting agent, 22:47233
separation from actinides, methods for, 22:25455 (CEA-N-616, pp 295-368)
separation from aqueous solutions of hydrochloric acid by ion exchange, effects of organic solvents on, 22:30680
separation from beryllium by electrodeposition of hydroxides, 22:45164
separation from beryllium sulfate solutions by solvent extraction using amines, 22:30644 (AAEC/E-189)
separation from calcium, cobalt, magnesium, manganese, nickel, and zinc by precipitation using cinnamic acid, 22:37855
separation from chloride nitrate, and sulfate solutions by solvent extraction using phosphoryl compounds, 22:6403
separation from feed solutions in fuel reprocessing prior to solvent extraction, 22:40166 (KR-126, pp 87-100)
separation from fission products by solvent extraction using bis(2-ethylhexyl) phosphate, 22:33271
separation from fission products using sulfur hexafluoride and sodium fluoride beds, 22:33545
separation from gallium and thorium by cation exchange, 22:45069
separation from hafnium, 22:40062
separation from hafnium by ion exchange, 22:12423
separation from hafnium by ion exchange and solvent extraction, 22:45179(T) (NSJ-tr-119)
separation from hafnium by solvent extraction, 22:8204(P)
separation from hafnium in chloride solutions by solvent extraction using amines, 22:51051(P)
separation from hafnium, method for, 22:25451 (CEA-N-616, pp 145-51)
separation from hafnium, review of methods for, 22:40206
separation from hydrochloric acid by solvent extraction using 1-octanol, mathematical model for, 22:42845
separation from hydrochloric and perchloric acid solutions by solvent extraction using N-phenylbenzohydroxamic acid or 4,4,4-trifluoro-1-(2-thienyl)-1,3-butanedione, 22:6395
separation from iron by anion exchange, 22:10328
separation from irradiated fuels by fluidized-bed volatility process, 22:8181
separation from irradiated fuels in Purex Process, 22:8185
separation from Korean zircon caustic frit using silica gel, 22:27884
separation from lead and molybdenum by ion exchange using dimethyl sulfoxide--hydrochloric acid--methanol, 22:21171
separation from low-level waste by ion exchange, 22:47206(T) (ORNL-tr-1771)
separation from metallic mixtures by solvent extraction using cupferron, systematic scheme for, 22:6416
separation from metals by precipitation using cinnamic acid, 22:37855
separation from metals in hydrofluoric acid--organic solvent media by ion exchange on Dowex 50 x 8, 22:10341
separation from mixture of metals by ring-oven method, 22:18880
separation from niobium and tantalum, 22:2012
separation from niobium by extraction chromatography, 22:40029
separation from niobium by ion exchange, 22:37833 (CEA-R-3451)
separation from niobium by paper chromatography, 22:23111
separation from niobium by phosphate precipitation, 22:18905
separation from niobium using methylenebis(dihexylphosphine oxide), chromatographic, 22:146
separation from nitrate solutions by solvent extraction using di-n-butyl phosphate, 22:131 (AERE-R-2945)
separation from nitric acid solutions by solvent extraction using RBP, 22:16662
separation from nitric acid solutions by solvent extraction using di-p-tolyl phosphate, 22:35897
separation from nitric acid solutions by solvent extraction using N-(di-n-butylphosphoro)-succinimide, 22:16666
separation from nitric acid solutions of plutonium and uranium by solvent extraction using trioctylamine, 22:21166
separation from nitric and sulfuric acid solutions by solvent extraction using bis(2-ethylhexyl) phosphate in kerosene, 22:33537
separation from nitric and sulfuric acid solutions by solvent extraction using TBP, composition of solvate in, 22:12419
separation from ores, 22:40191
separation from other cations by ion exchange, 22:33490
separation from other fission products, 22:37833 (CEA-R-3451)
separation from other fission products by electrophoretic focusing of ions, 22:35912
separation from other fission products by solvent extraction with bis(2-ethylhexyl) phosphate, 22:27836
separation from other fission products by thin-layer chromatography, 22:8001
separation from other materials by ion exchange using tin phosphate, 22:33552
separation from other metals by chromatography on stannic phosphate and stannic tungstate papers, 22:4248
separation from phosphorus and titanium by ion exchange, 22:37871(P)
separation from plutonium, 22:33501
separation from plutonium and uranium by solvent extraction using TBP, effects of aluminum nitrate, nitric acid, and sodium tartrate concentrations on, 22:6409
separation from plutonium dioxide--uranium dioxide fuels, solvent extraction method for, 22:27845 (CEA-N-816, pp 150-276)
separation from rare earth minerals, 22:33225
separation from sea water by solvent extraction using TTA, 22:23086 (ANL-7421)
separation from spent fuels by solvent extraction using TBP, 22:16679
separation from sulfuric acid solutions by solvent extraction using thiocyanate and ethyl acetate, 22:23117
separation from sulfuric acid solutions by solvent extraction using TBP, 22:23119
separation from thallium by solvent extraction using glycine and phenol in petroleum ether, 22:160
separation from thorium by solvent extraction, 22:10196
separation from titanium by paper chromatography, 22:25257
separation from uranium by ion exchange chromatography, 22:33502
separation from uranium by solvent extraction, 22:16356 (KR-116)
separation from uranium by solvent extraction, 22:37639(T) (ANL-Trans-610, pp 1-56)
separation from uranium by solvent extraction using N-phenylbenzohydroxamic acid, 22:33238
separation from uranium fuel elements by hydrochlorination in gas-fluidized bed, 22:33539
separation from various elements by precipitation using cinnamic acid, 22:37848
separation of barium from, by cation exchange chromatography in hydrochloric acid--organic solvent eluents, 22:25479
separation of enriched targets of, from niobium-96 after proton irradiation, method for, 22:50994
separation of hafnium and impurities from recrystallization method for, 22:6942
separation of lead from, by complexing with thionalide, 22:4024
separation of lead, silver, and zinc from, by precipitation using sodium benzilate, 22:30660
separation of protactinium from, by precipitation uwing hydrogen peroxide, 22:37849
separation of uranium from, by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
sintering powdered carbides and nitrides of, using inert gas atmospheres, 22:742(P)
slip modes of hexagonal-close-packed, 22:1314
solubility in liquid copper--magnesium alloys at 600 to 810°C, 22:25442 (ANL-7375, pp 19-45)
solubility in liquid magnesium, effects of metallic additions on, 22:36458
solubility in liquid plutonium at 700 to 1000°C, 22:38555
solubility in mercury at 500 to 750°C, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
solubility in nitrogen oxide--hydrogen fluoride or antimony fluoride--hydrogen fluoride systems, 22:10320 (CEA-R-3205)
solubility in Solvesso 100, 22:16684
solubility of zirconium oxide-coated, in ammonium

- fluoride--ammonium nitrate, 22:37827 (BNWL-600)
- solvent distribution in tetrabutyl pyrophosphate in mixture with mineral acids or tetrabutyl hypophosphate, 22:27853 (INP-591/C)
- solvent properties for hydrogen, 22:19525(T) (WAPD-Trans-86)
- solvent properties for hydrogen at 300°C, 22:49833
- solvent properties of alpha-, for niobium at 600°C, 22:52196 (AECL-2715)
- sorption by cation exchange resin in aqueous formic acid solutions, 22:45069
- sorption by Dowex 1X8 from hydrofluoric acid--sulfuric acid solutions, 22:10336
- sorption by manganese dioxide from nitric acid, 22:157
- sorption of hydrogen in, effects of temperature on, 22:48789
- sorption of oxygen on surface of, 22:34116(T) (WAPD-Trans-0091)
- sorption on tungsten, effects of temperature on, 22:31365
- sorptive properties for hydrogen, effects of iron, nickel, and niobium on, 22:21659
- sorptive properties for sulfate anions, 22:10917
- spectral emissivity of single-crystal, effects of anisotropy on, (E/T), 22:38763
- strength at operating temperatures, effects of copper additions on, 22:21729
- stress rupture testing of, effects of yttrium oxide dispersions on, 22:31355
- sublimation of thermodynamics of, 22:8722 (BM-RI-7063)
- sulfur diffusion in, at 870 to 1250°C, 22:615
- superconducting critical temperature of, resonating-valence-bond theory for, 22:38970
- superconductivity of, isotope effect in, 22:41502 (COO-1098-17)
- surface finishing process for, 22:28750(P)
- surface friction and wear of, effects of crystal structure and properties on, 22:52177
- tensile deformation of polycrystalline, effects of oxygen on, 22:38529
- tensile properties at 4 to 813°K, (E), 22:21697(R) (ORO-3262-5)
- tensile properties of hcp, effects of interstitial nitrogen and oxygen on, 22:23769
- tensile properties of, determination by electric conductivity at cryogenic temperatures, 22:34052
- tensile strength of, effects of hydrogen on annealed, 22:21729
- thermal conductivity at room temperature, 22:679
- thermal diffusion of hydrogen in, equation for nondilute solutions, 22:17801
- thermal expansion of polycrystalline, at 2 to 30°K, 22:43576
- thermodynamic properties, 22:52190
- thermodynamics of deuterium and hydrogen in α-, at 450 to 800°C, 22:82
- uptake and excretion by man, 22:6803 (ORNL-4168, pp 231-88)
- use as intermediate layer in welding graphite, 22:15242
- use as structural material in pressurized-water fast reactor, 22:20884(P)
- use in sheathed reactor fuel elements to retard migration of carbon, 22:18632(P)
- use of beds of particles of, for purification of terphenyl, 22:30653(P)
- use with rhenium in tungsten-base alloys for high temperature strength and reduced ductile-brittle transition temperature, 22:47681(P)
- uses in chemical and nuclear equipment, review of, 22:52184
- uses, recent developments in, 22:31322
- valency-band structure of, 22:21721
- vapor pressures of liquid, 22:8722 (BM-RI-7063)
- welding of fuel tubes and end plugs of, electric arc, 22:49694
- welding of, electron beam method for, 22:19505
- x-ray spectra from beta-excited, (E), 22:13248
- Fe--Nb--V--Zr, production for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)

ZIRCONIUM ALLOYS AND SYSTEMS

- see also B-66 (Niobium Alloy)
- see also Cb-132M (Niobium Alloy)
- see also Cb-752 (Niobium Alloy)
- see also Cb-753 (Niobium Alloy)
- see also D-36 (Niobium Alloy)
- see also D-43 (Niobium Alloy)
- see also FS-85 (Niobium Alloy)
- see also Ozhennite (Zirconium Alloy)
- see also TZC (Molybdenum Alloy)
- see also TZM (Molybdenum Alloy)
- see also Vanstar-7
- see also Vanstar-9
- see also Zircaloy-2
- see also Zircaloy-3
- see also Zircaloy-4
- see also Zirconium Steel
- analysis for deuterium and hydrogen by mass spectroscopy, 22:39975 (AERE-R-5758)
- analysis for hydrogen isotopes by gas chromatography, 22:16383 (AERE-R-5606)
- analysis for hydrogen, hot-extraction method for, 22:26
- analysis for molybdenum using phosphoric acid, titrimetric, 22:22948
- analysis for niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:16440
- analysis of, methods for, 22:37679
- bonding to aluminum or stainless steels, processes for, 22:6978(P)
- cladding for nickel--iron--chromium alloy-brazed stainless steel-spaced multiple pellet-type uranium oxide (UO_2) fuel elements, fabrication of, 22:42503(P)
- cladding for uranium alloy-insulated uranium fuel elements, configuration of, 22:42487(P)
- cladding of annular fuel element inner surface with description of, 22:42264(P)
- cladding of reactor fuel elements dual-jackets and end-plugs, description of, 22:37571(P)
- coating for, protective, 22:41009(P)
- coatings for, to improve wear resistance properties, 22:31321
- corrosion and radiation embrittlement of, in fuel cladding and pressure tubes of British reactors, 22:47660 (CONF-671007-2)
- corrosion by aqueous media, review, 22:21651
- corrosion by carbon dioxide, at 300 to 400°C, 22:21660
- corrosion by steam and water at 300 to 400°C, 22:21660
- corrosion by steam at 400°C, 22:19520(R) (RISO-151)
- corrosion by water or superheated steam, 22:38513 (CEA-N-856, pp 87-121)
- corrosion of, effects of internal stresses on, 22:8700
- corrosion of, review of, 22:12957
- corrosion protection by coating with aluminum zirconium silicides, 22:34014(P)
- creep of, 22:10956
- deformation of, research program on shear fracture in, 22:41034 (MIT-3635-2)
- development for reactor moderators, 22:614
- development in, 22:31322
- diffusion creep mechanisms in, models of, 22:38560
- electric conductivity of, effects of 1 per cent metallic additions on, 22:8730 (ORNL-4170, pp 27-31)
- fabrication and properties for fuel cladding, review of, 22:28769
- fabrication and properties of shaped bodies of, 22:6979(P)
- fabrication of bars and tubes of, for use in reactors, 22:41025(P)
- fabrication of dispersion-strengthened, for corrosion resistance at 500°C, 22:19520(R) (RISO-151)
- fabrication of projections on tubes of, 22:2604(P)
- fabrication, recent developments in, 22:31324
- ferromagnetic properties of intermetallic $ZrZn_2$, comparison of itinerant-electron model with, 22:15595
- grain growth of, review, 22:21651
- hydrogen sorption by oxidized, effects of reactor conditions on, 22:11023
- machining of, recovery of scrap from, 22:6952
- metallurgy of, review of, 22:12957
- oxidation at high temperature and low pressure, 22:2568(R) (N-67-16673)
- oxidation of, effects of additions of tin and titanium on, 22:7068
- oxidation transformations at high temperatures, 22:7068
- phase equilibria in, effects of transition metal additions on alpha (cph) reversible beta (bcc), 22:52201
- preparation by vacuum melting, addition agents for, 22:28759
- properties and uses of, review of, 22:23803
- properties for use in reactors, 22:10956
- properties for use in vacuum systems, 22:16828
- radiation effects on mechanical properties of structural, data compilation on neutron, 22:36511 (N-68-16876)
- radiation effects on properties of reactor fuel cladding of, 22:773
- separation of neptunium and uranium from fuels of, using boric acid and hydrofluoric acid, method for, 22:23095 (IN-1091)
- solubility of zirconium oxide-coated, in ammonium fluoride--ammonium nitrate, 22:37827 (BNWL-600)
- surface finishing process for, 22:28750(P)
- tensile strength of, effects of hydrogen on annealed, 22:21729
- thermal capacity at 4.2°K, effects of additions of molybdenum, niobium, rhenium, and ruthenium on, 22:8730 (ORNL-4170, pp 27-31)
- thermodynamic properties of intermetallic compounds in, 22:45029 (UCRL-18043, pp 7-105)
- use as structural material in pressurized-water fast reactor, 22:20884(P)
- use for gettering oxygen from liquid sodium, 22:1749 (AD-648248)
- use in organic-cooled reactor pressure tubes, optimum operating temperature for, (E/T), 22:18483
- use in sheathed reactor fuel elements to retard migration of carbon, 22:18632(P)
- use of beds of particles of, for purification of terphenyl, 22:30653(P)
- uses in nuclear reactors, conference on, 22:21647
- uses in reactors, conference on, 22:21648
- Ag--Al-base--Cr--Cu--Mg--Zn--Zr, analysis for individual components by atomic absorption spectroscopy, 22:16466
- Ag--Zr, brazability and corrosion by water at 680°F,

22:8703(R) (IITRI-578-P-29-17)
Al--Cr--Cu--Zr, phase diagrams, 22:10990
Al--Cr--Zr, phase diagrams, 22:10990
Al--Cu--Zr, phase diagrams, 22:10990
Al--Mo--Si--Sn--Ti-base--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Mo--Si--Sn--Ti-base--Zr, properties, 22:31323
Al--Mo--Sn--Ti-base--Zr, mechanical properties of alpha-type, 22:23744(P)
Al--Mo--Sn--Ti-base--Zr, mechanical properties of beta-phase forged, 22:45768
Al--Mo--Sn--Zr-base, properties for reactor structures of, in layered fabrications with corrosion resistant alloys incorporating zirconia separating barrier, 22:36467(P)
Al--Mo--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Al--Mo--Zr-base, oxidation process in steam and moist air, 22:2565 (AECL-2776)
Al--Ni--Zr, analysis for zirconium, absorptiometric, 22:48826
Al--Si--Ti-base--W--Zr, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Al--Si--Zr, crystal structure of, 22:28821
Al--Si--Zr, phase studies of, 22:28821
Al--Ti--Zr, fracture properties of, effects of oxygen and hydrogen contents on delayed, 22:2630
Al--Ti--Zr, phase studies, 22:52203
Al--Ti-base--V--Zr, mechanical properties of plates and weldments of, 22:2619
Al--Ti-base--Zr, failure of, effects of hydrogen and oxygen on delayed, 22:6997 (KFK-638)
Al--U--Zr, oxidation of intermetallic $U(ZrAl)_2$ at 400 to 700°C, 22:8699
Al--U--Zr, phase diagram, 22:15170 (BMwF-FBK-67-88)
Al--U--Zr, phase studies on, 22:13032
Al--UO_2--Zr, radiation effects on, neutron, 22:11007(R) (WCAP-3850-1)
Al--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Al--Zr, phase diagram, 22:15170 (BMwF-FBK-67-88)
Al--Zr-base, oxidation process in steam and moist air, 22:2565 (AECL-2776)
Al-base--Zr, recrystallization characteristics, 22:2602
Au--Mo--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Au--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Au--Ta--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Au--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
B--C--Co-base--Cr--Ti--W--Zr, morphology of, effects of molybdenum, niobium, nitrogen, tantalum, and vanadium additions on, 22:13025
B--Cr--Zr, phase studies on, 22:4891
B--H--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
B--Mo--Zr, phase diagram, 22:19551
B--Pt--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
B--Re--Zr, phase studies of cast, 22:45789
B--Ta--Zr, phase diagram, 22:19551
B--W--Zr, phase diagrams at 1400°C, 22:36548
B--W--Zr, phase studies on, 22:4891
B--Zr, phase diagrams, 22:36548
B--Zr, thermodynamics of surface alloying of rhenium and tungsten with, 22:30575
Be--Cr--Zr, mechanical properties of, effects of annealing temperatures on, 22:30387
Be--Zr, fabrication of wires of, from eutectics, 22:12994(P)
Be--Zr, phase diagram, 22:10986(T) (JPRS-43479)
Be--Zr, properties of intermetallic compounds of, 22:10986(T) (JPRS-43479)
Be--Zr, properties of intermetallic $ZrBe_{13}$ at low temperatures, (E), 22:36985
Bi--Zr, structure of intermetallic $ZrBi_2$, 22:28835
C--Co--Fe--Ti--W--Zr, magnetic and mechanical properties at high temperatures, (E), 22:15631
C--Co--Ti--W--Zr, magnetic properties at high temperatures, (E), 22:15631
C--Co-base--Fe--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Co-base--Ti--W--Zr, magnetic properties at high temperatures, 22:38538 (N-68-18145)
C--Cr--Fe--V--Zr, cost of LMFBR fuel cladding of, 22:21699(R) (WARD-3791-13)
C--Cr--Fe--V--Zr, performance as fuel cladding for LMFBR, physics calculations for evaluation of, 22:21699(R) (WARD-3791-13)
C--Cr--Fe--V-base--Zr, fabrication of Vanstar-7, for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Cr--Fe--V-base--Zr, mechanical properties of Vanstar-7, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Cr--Fe--V-base--Zr, preparation and properties, 22:8710(R) (WCAP-3791-9)
C--Cr--Ta--V-base--Zr, fabrication of Vanstar-8 for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, mechanical properties of Vanstar-8, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Cr--Ta--V-base--Zr, preparation and structure, 22:8710(R) (WCAP-3791-9)
C--Cr--Ta--V-base--Zr, radiation effects on mechanical properties of Vanstar-8, in-pile, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, fabrication of Vanstar-9, for fuel element cladding, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, mechanical properties of Vanstar-9, testing for cladding uses, 22:34046(R) (WARD-3791-17)
C--Fe--Nb--V-base--Zr, preparation and properties, 22:8710(R) (WCAP-3791-9)
C--Fe--Nb--V-base--Zr, preparation and properties of Vanstar-9, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--Fe--Nb--V-base--Zr, radiation effects on mechanical properties of Vanstar-9, in-pile, 22:34046(R) (WARD-3791-17)
C--Fe--V-base--Zr, preparation and properties of Vanstar-7, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--H--Zr, crystal and electronic structure of solid-phase, 22:15215
C--H--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
C--Mo--Zr, phase diagrams, 22:10991
C--Mo-base--Zr, precipitation hardening of, effects of tempering on, 22:13014
C--Nb--Zr, electric properties of complex defective monocarbides in, 22:41111
C--Nb--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
C--Nb--Zr, phase diagram, 22:21651
C--Nb--Zr, properties and uses of, review of, 22:23803
C--Nb--Zr, reaction energies of non-stoichiometric, 22:28813
C--O--Zr, phase studies of, 22:2687(R) (N-67-15390)
C--Si--Zr, phase diagrams at 1300°C, 22:36548
C--Sn--U--Zr, equilibrium concentrations in, effects of uranium dicarbide on, 22:52270
C--Ta--V-base--Zr, preparation and properties of Vanstar-8, for sodium-cooled reactor fuel cladding, 22:45757(R) (WARD-3791-20)
C--U--Zr, performance as liquid heat exchangers for hydrogen at 9000 and 10,000°R, calculations for, 22:49022
C--V--Zr, phase studies at 1000°C of, 22:19667
C--Zr, phase studies of, 22:7064
C--Zr, thermodynamics, 22:36541
C--Zr-base, thermal activation energy at 77 to 700°K, 22:49709 (BARC-325)
Ce--Th--Ti--Zr, analysis for individual elements by ring-oven method, 22:18708
Co--Cu-base--Zr, properties of, 22:6987
Co--Fe--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Co--Fe--Zr, Moessbauer spectra of intermetallic $ZrCo_2$--$ZrFe_2$ phases, hyperfine field distributions in, (E), 22:17734
Co--Mo--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Nb--Zr, crystal structure of, effects of heat treatments on, 22:13030
Co--Nb--Zr, hardness of, 22:13030
Co--Nb--Zr, phase studies of, 22:13030
Co--Ta--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Ti--Zr, crystal structure of intermediate intermetallic compounds from $TiCo_2$ to $ZrCo_2$, 22:47685
Co--Ti--Zr, magnetic and structural properties of intermetallic compounds in, (E), 22:39169 (NYO-3454-22, Paper 8)
Co--Ti--Zr, magnetic characteristics of intermediate intermetallic compounds from $TiCo_2$ to $ZrCo_2$, 22:47685
Co--Ti--Zr, phase studies of intermetallic $TiCo_2$--$ZrCo_2$, 22:10980
Co--Y--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Co--Zr, phase studies on splat-cooled, 22:47683
Co-base--Cr--Fe--Ni--W--Zr, radiation effects on mechanical properties of Ht 586, neutron, 22:34077 (BNL-12438)
Co-base--Ni--Ti--Zr, creep strength of, measurement at 1050 to 1150°F, 22:12975
Cr--Cu--Zr, hardness of, effects of homogenization temperature on, 22:17088
Cr--Cu--Zr, microstructure and properties of, effects of composition on, 22:19570
Cr--Cu--Zr, phase diagrams of, 22:19570
Cr--Cu--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cr--Cu-base--Pb--Zr, machining of, effects of lead content on, 22:31371
Cr--Cu-base--Zr, properties of, 22:6987
Cr--Cu-base--Zr, properties of, electric and mechanical, 22:6990

Cr--Fe--Ni--Sn--Zr-base, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Cr--Fe--Sn--Zr, corrosion behavior of, analysis of, 22:48788
Cr--Fe--Sn--Zr-base, corrosion by steam and water at high temperatures, hydrogen sorption during, 22:21655 (WAPD-TM-517)
Cr--Fe--V--Zr, cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
Cr--Fe--Zr, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Cr--Fe--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Fe--Zr-base, corrosion by steam and water at 300 to 450°C, effects of surface treatments on, 22:617 (EURAEC-1894)
Cr--Fe--Zr-base, corrosion by steam and water at high temperatures, hydrogen sorption during, 22:21655 (WAPD-TM-517)
Cr--Fe--Zr-base, corrosion by steam at 350°C, 22:52127(R) (RISO-179)
Cr--Fe--Zr-base, corrosion of tubes of, by saturated steam and water, 22:49713(R) (GEAP-5649)
Cr--Fe--Zr-base, phase transformation of, effects of cooling rate on β-α, 22:47690
Cr--Fe--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Cr--Fe--Zr-base, radiation effects on fuel cladding specimens of, in-pile, 22:49713(R) (GEAP-5649)
Cr--In--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Mn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Mo--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Cr--Mo--U-base--Zr, crystal structure transformation kinetics of, 22:38576
Cr--Nb--Zr, effect of thermal treatment on hardness and tensile properties of, 22:6980 (BARC-295)
Cr--Nb--Zr, tensile properties of, description of, 22:48788
Cr--Nb--Zr-base creep properties at 300 to 470°C, 22:23753 (BARC-308)
Cr--Nb--Zr-base, radiation effects on tensile properties of, thermal neutron, 22:23841 (BARC-300)
Cr--Ni--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Si--U--Zr, welding of, electron beam, 22:34057
Cr--Si--U-base--Zr, crystal structure transformation kinetics of, 22:38576
Cr--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Ti--Zr, phase diagram of $TiCr_2$--$ZrCr_2$ intermetallic system, 22:2659
Cr--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cr--Zr, crystal structure of intermetallic $ZrCr_2$, 22:47685
Cr--Zr, dissociation pressures for hydrided, analysis of, 22:30387
Cr--Zr, formation of intermetallic $ZrCr_2$, protective effects on zirconium surfaces, 22:17123
Cr--Zr, formation of intermetallic $ZrCr_2$, protective effects on zirconium surfaces, 22:43573(T) (WAPD-Trans-0094)
Cr--Zr, magnetic and structural properties of intermetallic $ZrCr_2$, (E), 22:39169 (NYO-3454-22, Paper B)
Cr--Zr, magnetic characteristics of intermetallic $ZrCr_2$, 22:47685
Cr--Zr, phase diagram, 22:41072
Cr--Zr, phase diagram of, 22:38575
Cr--Zr, phase transformations in intermetallic $ZrCr_2$, mechanisms of, 22:41072
Cr--Zr, polymorphic modifications of $ZrCr_2$ intermetallic, 22:2659
Cr--Zr, properties of intermetallic Cr_2Zr, 22:10980
Cr--Zr-base, corrosion by steam at high temperatures, 22:34039(R) (GEAP-5603)
Cr--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cr--Zr-base, corrosion by water at 300 to 500°C, 22:34016 (GEAP-5589)
Cr--Zr-base, mechanical properties of tubes of, 22:34039(R) (GEAP-5603)
Cr--Zr-base, mechanical properties of, effect of heat treatment on, 22:34033 (BARC-306)
Cr--Zr-base, performance as fuel cladding, evaluation of, 22:34039(R) (GEAP-5603)
Cr--Zr-base, preparation and properties for corrosion resistant fuel cladding, 22:34016 (GEAP-5589)
Cr--Zr-base, radiation effects test program for, description of, 22:34016 (GEAP-5589)
Cr-base--Zr, oxidation resistance at 1100 and 1200°C, effects of zirconium content on, 22:2584
Cu--Fe--Zr, corrosion by superheated steam, 22:34084(T) (WAPD-Trans-87)
Cu--Fe--Zr, corrosion by water vapor at 500°C, 22:38513 (CEA-N-856, pp 87-121)
Cu--Fe--Zr, corrosion of, effects of molybdenum and silicon on, 22:38513 (CEA-N-856, pp 87-121)
Cu--Fe--Zr, corrosion, stability, and strength of silver solders of, 22:17090
Cu--Fe--Zr, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Cu--Fe--Zr-base, corrosion by demineralized water at 360°C, 22:28732 (CEA-N-816, pp 102-39)
Cu--Fe--Zr-base, corrosion by superheated steam, 22:21664
Cu--Fe--Zr-base, corrosion by superheated water vapor at 500°C, oxygen diffusion during, 22:26026 (CEA-N-616, pp 106-44)
Cu--Fe--Zr-base, corrosion by water vapor at 500°C, effects of chromium and niobium additions on kinetics of, 22:28732 (CEA-N-816, pp 102-39)
Cu--Fe--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Cu--Mo--Zr, corrosion by carbon dioxide at 700°C, 22:6952
Cu--Mo--Zr, diffusion of magnesium in, effects on mechanical properties, 22:21704
Cu--Mo--Zr, mechanical properties of sintered, 22:6952
Cu--Mo--Zr, production by sintering hydride powders, 22:6952
Cu--Mo--Zr-base, analysis for trace amounts of niobium using 4-(2-pyridylazo)resorcinol, spectrophotometric, 22:25268
Cu--Mo--Zr-base, corrosion by moist carbon dioxide, 22:21662
Cu--Mo--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cu--Nb--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cu--Nb--Zr-base, properties for reactor structures of, in layered fabrications with high-strength alloys incorporating zirconia separating barrier, 22:36467(P)
Cu--Nb--Zr-base, radiation induced strain relaxation in, fast neutron, 22:28858
Cu--Nb--Zr-base, radioinduced strain relaxation of, temperature dependence of fast neutron, 22:43622 (WAPD-TM-746)
Cu--Ni--Zr, corrosion, stability, and strength of solders of, 22:17090
Cu--Zr, analysis for copper, electro-gravimetric, 22:27530 (CEA-N-816, pp 9-65)
Cu--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Cu--Zr, coating with chromium, 22:37704(T) (ANL-Trans-610, pp 57-63)
Cu--Zr, corrosion by carbon dioxide at 700°C, 22:6952
Cu--Zr, corrosion studies of, 22:31324
Cu--Zr, embrittlement of, effects of oxygen on, 22:38593
Cu--Zr, fabrication, 22:31324
Cu--Zr, mechanical properties of sintered, 22:6952
Cu--Zr, mechanical properties of, effects of irradiation and temperature on, 22:30241
Cu--Zr, phase diagram, 22:4770 (NP-17123)
Cu--Zr, phase studies of tempered, 22:17143
Cu--Zr, phase studies on splat-cooled, 22:47683
Cu--Zr, phase transitions of, effects of quenching on, 22:38579
Cu--Zr, production by sintering hydride powders, 22:6952
Cu--Zr-base phase studies, 22:43597 (CEA-R-3448)
Cu--Zr-base, corrosion by superheated water vapor at 500°C, 22:26026 (CEA-N-616, pp 106-44)
Cu--Zr-base, diffusion of oxygen in, determination using oxygen-16(d,p) reaction, (E), 22:23720
Cu--Zr-base, forging embrittlement of, elimination by cooling prior to second preheating, 22:43605
Cu-base--Pb--Zr, machining of, effects of lead content on, 22:31371
Cu-base--Si--Zr, properties of, 22:6987
Cu-base--Zr, properties of, effects of additional elements on, 22:6987
Cu-base--Zr, properties of, literature survey on, 22:4770 (NP-17123)
Dy--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Er--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Fe--Mn--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe--Mo--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Fe--Mo--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe--Nb--V--Zr, cladding for liquid metal-cooled fast breeder reactor fuel elements, economics analysis of, 22:32909
Fe--Nb--V--Zr, mechanical properties of, for LMFBR fuel cladding, 22:21699(R) (WARD-3791-13)
Fe--Nb--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe--Ti--Zr, thermal capacity of, electronic, (E), 22:39161(R) (NYO-3454-22)

Fe--V--Zr, crystal structure and magnetism of Laves-type intermetallic compounds in, 22:15625
Fe--Y--Zr, magnetic and structural properties of pseudobinary systems in, (E), 22:39161(R) (NYO-3454-22)
Fe--Zr, analysis for aluminum using stilbazo, photometric, 22:18700
Fe--Zr, analysis for iron in presence of hydrogen peroxide by high-frequency titration with cupferron, 22:25281
Fe--Zr, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Fe--Zr, corrosion by superheated steam, 22:34084(T) (WAPD-Trans-87)
Fe--Zr, corrosion by water vapor at 500ºC, 22:38513 (CEA-N-856, pp 87-121)
Fe--Zr, iron-57 Moessbauer effect in cubic Laves intermetallic compounds, (E), 22:52873
Fe--Zr, lattice structure of Laves phase ZrFe$_2$ containing excess iron, (E), 22:3196
Fe--Zr-base, corrosion by demineralized water at 360ºC, 22:28732 (CEA-N-816, pp 102-39)
Fe--Zr-base, corrosion by water vapor at 500ºC, kinetics of, 22:28732 (CEA-N-816, pp 102-39)
Fe--Zr-base, sorptive properties for hydrogen, effects of iron on, 22:21659
Ga--Mo--Zr-base, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Ga--Ta--Zr-base, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Ga--Zr, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Gd--Zn--Zr, magnetic properties and zirconium-91 NMR of, (E), 22:15594
Ge--Zr, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
H--N--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
H--O--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
H--Si--Zr, ternary compounds in, search for hexagonal, 22:43660 (NAA-SR-Memo-11849)
H--U--Zr, phase transformations in (α + delta) region of, determination for SNAP fuel, 22:52284 (AI-AEC-12703)
H--U--Zr-base, properties of, thermophysical, 22:656 (NAA-SR-11959)
H--Zr, phase diagram, 22:26059(T) (AD-663333)
Hf--Nb--Zr, phase studies of, 22:31324
Hf--Zn--Zr, ferromagnetism of intermetallic (Zr/sub 1-x/Hf/sub x/)Zn$_2$, 22:31983
Hf--Zn--Zr, magnetic properties of, 22:39174
Hf--Zr, analysis for ratios, titrimetric method for, 22:40025
Hf--Zr, Debye temperature and specific heat at 1.1 to 4.2ºK, (E), 22:24203
Hf--Zr, properties of, from iodide-type hafnium, 22:6993
Hf--Zr, thermal capacity at 1.1 to 4.2ºK, 22:8730 (ORNL-4170, pp 27-31)
Hf-base--Mo--Zr, corrosion by steam, 22:10979(P)
Hf-base--Mo--Zr, tensile properties of, 22:10979(P)
Hf-base--Nb--Sn--Zr, corrosion by steam, 22:10979(P)
Hf-base--Nb--Sn--Zr, tensile properties of, 22:10979(P)
Hf-base--Nb--Zr, corrosion by steam, 22:10979(P)
Hf-base--Nb--Zr, tensile properties of, 22:10979(P)
Hf-base--Zr, corrosion by steam, 22:10979(P)
Hf-base--Zr, tensile properties of, 22:10979(P)
In--Mn--Zr-base, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
In--Ni--Zr-base, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
La--Si--Zr, crystal structure of, 22:28821
La--Si--Zr, phase studies of, 22:28821
La--W--Zr, thermoelectron emission by cathodes of, 22:4781
La--Zr, analysis for lanthanum, x-ray spectrographic, 22:4 (AERE-R-5452)
Mg--Mn--Zr, analysis for manganese and zirconium by spectrophotometry, 22:37669
Mg--Zr, analysis for zirconium by spectrophotometry, 22:37669
Mg--Zr, analysis for zirconium, absorptiometric, 22:48826
Mg--Zr, corrosion by water vapor at 300ºC, 22:28732 (CEA-N-816, pp 102-39)
Mg--Zr, creep and grain structure of, effects of high-temperature carbon dioxide on, 22:49748
Mg--Zr, creep at 400 to 450ºC, diffusion, 22:8759
Mg--Zr, creep at 450ºC, 22:41045
Mg--Zr, design for use as cladding for uranium fuel elements in carbon dioxide at 500ºC, 22:1840(P)
Mg--Zr, fatigue at 430ºC and alternating stress of 1400 psi, effects of heat treatments, 22:43581
Mg--Zr, grain boundary migration in, crystal nucleus transfer by, 22:43611
Mg--Zr, mechanical properties of cast, effects of defects on, 22:15200
Mg--Zr, mechanical properties of sintered, at temperatures to 525ºC, 22:7059
Mg--Zr, performance as welding alloy for sealing thermocouples in clad fuel elements, 22:12995(P)
Mg--Zr, phase diagram, 22:7019(T) (UCRL-Trans-10160)
Mg--Zr, removal from irradiated fuel by melting, 22:8175(T) (ANL-Trans-544)
Mg-base--Mn--Zr, mechanical properties, 22:31379
Mg-base--Mn--Zr, structure of, effects of heat treatment in presence of water vapor on, 22:31397
Mg-base--Nd--Zr, crystal structure and mechanical properties of, effects of zinc on, 22:23779
Mg-base--Nd--Zr, properties of, effects of zinc at 0.1 to 1 percent on, 22:2562
Mg-base--Th--Zr, dispersion strengthening and precipitation hardening of, 22:41070
Mg-base--Zr, creep of, effects of low strain sensitivity on, 22:23790
Mg-base--Zr, dispersion strengthening and precipitation hardening of, 22:41070
Mg-base--Zr, effects of ternary additions on plutonium diffusion in uranium fuel element cladding of, 22:37575(P)
Mg-base--Zr, mechanical properties, 22:31379
Mg-base--Zr, structure of, effects of heat treatment in presence of water vapor on, 22:31397
Mg-base--Zr, surface nitridation for high-temperature use in gas-cooled reactors, process for, 22:28751(P)
Mn--Si--Zr-base, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Mn--Zr, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Mo--Nb--Ti--Zr, mechanical properties of, 22:7016
Mo--Nb--Ti--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Mo--Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)
Mo--Nb--U-base--Zr, preparation and properties for reactor fuels, 22:23743(P)
Mo--Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Mo--Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000ºC on, 22:48788
Mo--Nb--Zr, coating of, deposition methods for protective, 22:52174
Mo--Nb--Zr, phase diagrams for, analysis of solubility boundaries of, 22:52204
Mo--Nb-base--W--Zr, corrosion by hydrochloric acid, lithium at 1000ºC, or sulfuric acid, 22:17118
Mo--Nb-base--W--Zr, preparation and properties of, 22:17118
Mo--Nb-base--W--Zr, welding of, 22:17118
Mo--Ni--Sn--Zr-base, preparation of corrosion resistant, for use in steam and water, 22:38520(P)
Mo--Ti--Zr, phase studies of, 22:36493
Mo--U-base--Zr, fabrication of fine-grain cast, 22:8720(P)
Mo--Zr, brazability and corrosion by water at 680ºF, 22:8703(R) (IITRI-578-P-29-17)
Mo--Zr, dissociation pressures for hydrided, analysis of, 22:30387
Mo--Zr, phase diagrams, 22:31411
Mo-base--rare earth--Ti--V--Zr, mechanical properties of, effects of carbide, nitride, or oxide phases on, 22:23788
Mo-base--Ti--Zr, mechanical properties of hot-forged, effects of extrusion on, 22:49725
Mo-base--Zr, hardness of, effects of aging on, 22:8767(T) (UCRL-Trans-10162)
N--Nb--Zr, preparation and superconducting properties of wires of, (E), 22:17559
N--Nb--Zr, superconducting properties of reactively sputtered thin film, 22:29428
Nb--Ni--Zr, phase equilibria in, 22:45786
Nb--O--Zr, phase studies, 22:49769
Nb--Sn--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Nb--Sn--Zr-base, radiation effects on mechanical properties of, neutron, 22:21730
Nb--Sn--Zr-base, radioinduced corrosion by steam and water, neutron, 22:21730
Nb--Sn--Zr-base, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Nb--Ti--Zr, critical current density of superconducting, in magnetic fields, 22:38548
Nb--Ti--Zr, critical currents in superconducting, (E), 22:24197
Nb--Ti--Zr, ductility of electron-beam-melted ingots of, 22:47669
Nb--Ti--Zr, magnetic properties of annealed, effects of oxygen reactions and zirconium content on, 22:17128
Nb--Ti--Zr, phase studies of, 22:23823
Nb--Ti--Zr, superconducting properties of, 22:31766
Nb--Ti--Zr, superconductivity destruction in, phase composition and structure during, (E), 22:19923
Nb--Ti--Zr, superconductivity of, effects of critical current density in high magnetic field on, 22:49729
Nb--Ti--Zr, superconductivity of, effects of crystal structure on, 22:49729
Nb--Ti--Zr-base, analysis for zirconium using gallocyanine, colorimetric, 22:33287
Nb--U--Zr, analysis for components by x-ray absorption edge method, 22:8023
Nb--U--Zr, elasticity and shear of, measurements in

vacuum at temperatures up to 2000°C, 22:52175
Nb--U--Zr, x-ray diffraction data at 150 to 573°C, 22:21389 (UCID-15254)
Nb--U-base--Zr, composition and preparation of, 22:28757(R) (UCRL-13341)
Nb--U-base--Zr, stress cracking of, effects of dry and wet air on delayed, 22:19479 (UCID-15256)
Nb--V--Zr, phase studies at 500, 700, and 1000°C, 22:19550
Nb--V--Zr-base, performance as braze alloy for joining beryllium oxide to niobium--zirconium alloys, 22:652(R) (N-67-22066)
Nb--W--Zr, corrosion by lithium, 22:6985(T) (JPRS-43171)
Nb--W--Zr, mechanical properties of, 22:6985(T) (JPRS-43171)
Nb--W--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Nb--W--Zr, tensile properties of, effects of liquid lithium at 1000°C on, 22:48788
Nb--Zn--Zr, magnetic properties of, 22:39174
Nb--Zr, alternating current losses in superconducting, (E), 22:46040 (N-68-19140)
Nb--Zr, analysis for niobium by x-ray fluorescence, 22:47097
Nb--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Nb--Zr, cladding for uranium oxide (UO_2) fuel elements, design and performance parameters for Zr--2.5 w/o Nb, 22:35415 (AECL-2758)
Nb--Zr, corrosion by liquid potassium, (E), 22:32926 (GMAD-3078-32(Vol.2))
Nb--Zr, corrosion by mercury at 500°F, 22:647(R) (BNL-50077)
Nb--Zr, corrosion of oxygen contaminated, by reflux-boiling sodium at 1095°C, 22:33152
Nb--Zr, crack propagation characteristics of hydrided and unhydrided pressure tubes of, 22:53454 (BNWL-828)
Nb--Zr, critical current density and pinning strength of superconducting, temperature and magnetic field dependence of, 22:11345
Nb--Zr, crystal orientation in rolled, effects of rolling temperature on, (E), 22:8772
Nb--Zr, defects in oxide films on, design of mercury porosimeter for determining, 22:41118
Nb--Zr, deposition as corrosion-resistant coatings for 316 stainless steel, chemical vapor, 22:6966
Nb--Zr, design of Nb--75 Zr superconducting magnet for 85 kG, 22:41514
Nb--Zr, ductility of electron-beam-melted ingots of, 22:47669
Nb--Zr, effects of low-temperature aging on resistive transition of superconducting, in pulsed magnetic fields, 22:1101
Nb--Zr, electric conductivity of superconducting joints, (E), 22:1090
Nb--Zr, hardness of, effects of nitrogen on, 22:677
Nb--Zr, magnetic flux distribution in superconducting, observation of, 22:5294
Nb--Zr, magnetization and energy losses in superconducting wires of, ac-induced, (T), 22:13423
Nb--Zr, maximum completely stabilized current density in superconducting, (E), 22:41527
Nb--Zr, mechanical properties of neutron-irradiated, 22:45798
Nb--Zr, mechanical properties of, effects of absorbed oxygen on, 22:6982 (IS-T-131)
Nb--Zr, mechanical properties of, effects of carburization and nitriding on, 22:12968
Nb--Zr, microstructure of thin foils of bcc, electron metallographic, 22:2661
Nb--Zr, niobium-93 nuclear spin--lattice relaxation in superconducting, 22:31780
Nb--Zr, oxidation at 870 to 1000°C, kinetics of breakaway transition in, 22:45751
Nb--Zr, oxidation of, analysis of, 22:48788
Nb--Zr, oxidation of, effects of copper on, 22:21660
Nb--Zr, persistent currents in superconducting solenoid, decay rate of, (E), 22:24206
Nb--Zr, phase boundaries in, $\alpha/(\alpha + \beta)/\beta$, 22:52196 (AECL-2715)
Nb--Zr, phase studies, 22:49769
Nb--Zr, phase studies, 22:31323
Nb--Zr, precipitation of nitrides in, effects of nitrogen on, 22:677
Nb--Zr, radiation effects on fuel cladding of, neutron, 22:22830
Nb--Zr, radiation effects on oxidation in water of, fast-neutron, 22:17072 (AECL-2797)
Nb--Zr, separation from nitric acid by solvent extraction using tridodecylamine, effects of plutonium on, 22:37862
Nb--Zr, separation from plutonium by solvent extraction using nitromethane, 22:33521
Nb--Zr, source of instability in superconducting, (E), 22:44024
Nb--Zr, spin--lattice relaxation processes in superconducting, (E), 22:31739
Nb--Zr, stress analysis of, effects of cold working on, 22:708
Nb--Zr, structure of, effects of oxygen on, 22:6994
Nb--Zr, superconducting critical currents in, effects of chemical composition on, 22:44060
Nb--Zr, superconducting critical surface of wire of, 22:46082
Nb--Zr, superconducting flux jumps at liquid helium temperatures, 22:48062
Nb--Zr, superconducting magnet coils of, performance of semistabilized, 22:22082
Nb--Zr, superconducting performance in magnet coils, 22:46079
Nb--Zr, superconducting properties of, effect of structure on, 22:1096
Nb--Zr, superconducting properties of, effects of dispersed precipitation on, (E), 22:31748
Nb--Zr, superconducting rings of, stabilized levitated, 22:29455
Nb--Zr, superconducting solenoids of, design of partially stable 90-kG, 22:29387
Nb--Zr, superconducting transition currents in solenoids in helium I and II, liquid temperature effects on, 22:46074
Nb--Zr, superconducting transport current distribution in sheets of, (E), 22:5293
Nb--Zr, superconductivity destruction in, phase composition and structure during, (E), 22:19923
Nb--Zr, superconductivity in, quenching of, 22:11356
Nb--Zr, superconductivity of, effects of oxygen on, 22:6994
Nb--Zr, tensile properties of, effects of cold-working and annealing on, 22:35419 (AECL-3126)
Nb--Zr, thermodynamic properties of, 22:28790
Nb--Zr, transition temperatures of superconducting, 22:38545
Nb--Zr, use in electromagnetic induction pump cell, effect on cavitation and performance, 22:8256 (ORNL-TM-1793)
Nb--Zr, use of superconducting, in delay lines, 22:6684
Nb--Zr-base, corrosion by aqueous hydrogen fluoride--nitric acid--sulfuric acid, measurement of, 22:21665
Nb--Zr-base, corrosion by hydrogen and terphenyl, effects of surface preoxidation on, 22:19486
Nb--Zr-base, corrosion by pressurized water, effects of preparation on, 22:21702
Nb--Zr-base, corrosion by water at 400°C, effects of cold deformation on, 22:36431(T) (JPRS-45460)
Nb--Zr-base, creep of, effects of oxygen content on, 22:21702
Nb--Zr-base, creep of, in-pile testing of, 22:19580 (BNWL-455, Paper 12.1-100)
Nb--Zr-base, creep resistance of, effects of annealing temperature on, 22:21702
Nb--Zr-base, crystal structure after strain relieving, 22:19552
Nb--Zr-base, development for reactor components, 22:49739
Nb--Zr-base, fracture of, effects of cold work, heat treatment, and hydriding on, 22:648 (BNWL-560)
Nb--Zr-base, mechanical and physical properties of, effects of preparation on, 22:21702
Nb--Zr-base, mechanical properties at 30 to 600°C, effects of hydrogen on, 22:41042
Nb--Zr-base, mechanical properties of, effect of heat treatment on, 22:34033 (BARC-306)
Nb--Zr-base, mechanical properties of, effects of temperature on, 22:41042
Nb--Zr-base, oxidation by fused nitrate--nitrite salt, film potential measurements during, 22:2566 (AECL-2777)
Nb--Zr-base, oxidation kinetics at 300 to 500°C, 22:623
Nb--Zr-base, phase compositions in, 22:52196 (AECL-2715)
Nb--Zr-base, phase transformations in, ω, 22:28837
Nb--Zr-base, plasticity of cold formed, 22:21729
Nb--Zr-base, radiation effects on corrosion of, relations with coolant composition and alloy pretreatment, (E), 22:19582 (BNWL-SA-1611)
Nb--Zr-base, radiation effects on creep of reactor pressure tubes of, fast neutron, 22:28859
Nb--Zr-base, radiation effects on creep of, in-pile, 22:28860
Nb--Zr-base, radiation effects on creep of, measurement of in-pile, 22:4828
Nb--Zr-base, radiation effects on creep of, neutron, 22:28855
Nb--Zr-base, radiation effects on creep of, relations with stress and temperature, (E), 22:19581 (BNWL-SA-1598)
Nb--Zr-base, radiation effects on creep-rupture of heat-treated, in-pile, 22:13036 (BNWL-473, pp 7.1-71)
Nb--Zr-base, radiation effects on mechanical properties of, neutron, 22:21729
Nb--Zr-base, radiation effects on stress relaxation of, fast neutron, 22:19597
Nb--Zr-base, radiation effects on tensile properties of, in-pile, 22:43615(R) (BNWL-710)
Nb--Zr-base, radioinduced corrosion by water, effects of air on in-pile, 22:21658
Nb--Zr-base, radioinduced corrosion of, effects of variables on in-pile, 22:34009 (BNWL-SA-1719)
Nb--Zr-base, radioinduced creep at 300°C, in-pile, 22:34037 (BNWL-SA-1458)
Nb--Zr-base, sorptive properties for hydrogen, 22:21729
Nb--Zr-base, sorptive properties for hydrogen, effects of niobium on, 22:21659

Nb--Zr-base, superconductivity of, 22:8730 (ORNL-4170, pp 27-31)
Nb--Zr-base, tubes of, properties of resistance butt welded, 22:2596
Nb--Zr-base, zirconium-alpha-phase precipitation in, kinetics of, 22:38567
Nb--Zr-base, zirconium-beta-phase decomposition in, kinetics of, 22:38567
Nb-base--Ti--V--Zr, oxidation by air at 900 to 1200°C, mechanisms of, 22:2581
Nb-base--Ti--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Ti--Zr, magnetic properties of wires of, at 4.2°K, 22:13012
Nb-base--V--Zr, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
Nb-base--W--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Zr, brazing to beryllium oxide ceramics, tests of, 22:652(R) (N-67-22066)
Nb-base--Zr, compatibility with potassium--sodium alloys in high-temperature radiator loops, 22:31327
Nb-base--Zr, corrosion by lithium at 1100 to 1350°C, 22:8695 (ORNL-4170, pp 93-6)
Nb-base--Zr, corrosion by lithium at high temperatures and velocities, 22:38514 (N-68-11617)
Nb-base--Zr, corrosion by low-oxygen sodium at 1350°C, 22:43629(R) (LA-3933)
Nb-base--Zr, corrosion by oxygen-contaminated sodium at 650°C, 22:28731 (ANL-6982)
Nb-base--Zr, corrosion by pH-10 ammoniated water at 280°C, 22:43615(R) (BNWL-710)
Nb-base--Zr, corrosion by potassium at high temperatures, 22:8695 (ORNL-4170, pp 93-6)
Nb-base--Zr, corrosion by sodium at 1200 to 1600°F, effects of oxygen on, 22:31326
Nb-base--Zr, diffusion of nitrogen in, 22:8737 (ORNL-4170, pp 65-79)
Nb-base--Zr, extrusion with stainless steel to form tubes, evaluation of, 22:631 (N-67-22891)
Nb-base--Zr, flow stress of solid-solution, strain rate dependence of, (E), 22:31369
Nb-base--Zr, hardness and tensile strength at 300 and 600°C, 22:31432
Nb-base--Zr, mechanical and sorptive properties of, effects of high-temperature gases in ATR model loop on, 22:13036 (BNWL-473, pp 7.1-71)
Nb-base--Zr, oxidation by air at 500 to 900°C of, effects of composition on, 22:52138
Nb-base--Zr, performance on bearings of high-temperature lithium and potassium--sodium pumps, effects of carbide coatings on, 22:2576
Nb-base--Zr, phase transformations in nitrided, 22:19554
Nb-base--Zr, radiation effects on hardness and tensile strength at 300 and 600°C, fast neutron, 22:31432
Nb-base--Zr, radioinduced hydriding of, in ETR water loop, 22:19580 (BNWL-455, Paper 12.1-100)
Nb-base--Zr, radioinduced oxidation of, in ETR water loop, (E), 22:19580 (BNWL-455, Paper 12.1-100)
Nb-base--Zr, tensile properties of, effects of high-temperature vacuum annealing on, 22:52181
Nd--Ni--Zr, crystal structure of, 22:28821
Nd--Ni--Zr, phase studies of, 22:28821
Ni--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ni--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ni--Zr, crystal structure of, 22:28821
Ni--Zr, phase studies on splat-cooled, 22:47683
Ni--Zr-base, sorptive properties for hydrogen, effects of nickel on, 22:21659
O--Y--Zr, preparation by decomposition of alcoholates, 22:4901
O--Y--Zr, properties of, chemical and physical, 22:4901
O--Zr, crystal structure of solid-solution, 22:23826
O--Zr, phase studies, 22:26088
O--Zr, phase studies on, 22:17184
O--Zr, plastic deformation of monocrystals of, at 77 to 950°K, 22:49755
O--Zr, thermal deformation in dilute, effects of strain rate and temperature on, 22:31525
Pd--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pd--Zr, phase studies on splat-cooled, 22:47683
Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pt--Si--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pt--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Pu--U--Zr, burnup of sodium-cooled fast reactor fuel of, analysis of, 22:18511
Pu--U--Zr, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
Pu--U--Zr, phase diagram, 22:31385
Pu--U--Zr, phase equilibria of, 22:2612(R) (MLM-1402)
Pu--U--Zr, phase studies, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Pu--U--Zr, phase-equilibrium states for, measurement of, 22:30386
Pu--U--Zr, phases of solid-solution reactions of, 22:43627 (ANL-7299, pp 14-113)
Pu--U--Zr, power performance of fuels of, analysis of optimum, 22:46928 (WASH-1106)
Pu--U--Zr, radiation effects on, 22:16265(R) (ANL-7403)
Pu--U--Zr, radiation effects on, 22:7788(R) (ANL-7382)
Pu--U--Zr, radiation effects on, postirradiation analyses of, 22:12006(R) (ANL-7399)
Pu--U-base--Zr, compatibility with stainless steel and vanadium-base cladding materials at high temperatures, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, enthalpy and thermal capacity of, 22:19538
Pu--U-base--Zr, fabrication of fuel pins of, methods development, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, penetration by liquid, into stainless steel and vanadium-base fuel cladding, 22:43526 (ANL-7299, pp 114-19)
Pu--U-base--Zr, radiation effects on clad, at 4.7 to 5.1 at. percent burnup, 22:43627 (ANL-7299, pp 14-113)
Pu--U-base--Zr, thermal capacity and content at 25 to 1150°C, 22:43627 (ANL-7299, pp 14-113)
Pu--V--Zr, phase studies, 22:34065(R) (MLM-1445)
Pu--Zr, diffusion in, effects phase transformations on, 22:4796 (CEA-R-3275)
Pu--Zr, hardness of, 22:2632
Pu--Zr, mechanical properties of, summary of, 22:2632
Pu--Zr, phase diagram of, analysis of equilibrium, 22:52197 (BNWL-402)
Pu--Zr, phase diagrams and properties, 22:36495
Pu--Zr, phase studies of, 22:2655
Pu--Zr, properties of, data sheets on, 22:87~~2~~4 (MLM-1441)
Pu--Zr, radiation effects on fuels of, review on, 22:8804
Pu--Zr, reactions of, kinetics of solid-state, 22:2633
Sb--Zr, structure of intermetallic $ZrSb_2$, 22:28835
Sc--Zr, specific heat at 1.1 to 4.2°K, 22:8730 (ORNL-4170, pp 27-31)
Se--Zr, Debye temperature and specific heat at 1.1 to 4.2°K, (E), 22:24203
Si--Sn--Zr-base, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Si--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Si--Zr, combustion of, lower concentration limit of explosive, (E), 22:28808
Si--Zr, crystal structure of, 22:28821
Sn--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Sn--Zr, oxidation by oxygen, breakaway mechanisms of, 22:625
Sn--Zr-base, corrosion by high-temperature water and steam effects of chromium, iron, and niobium additions on, 22:28738 (WAPD-TM-619)
Sn--Zr-base, radiation effects on creep rate of, neutron, 22:28855
Sn--Zr-base, sorptive properties for hydrogen in high-temperature water and steam, effects of chromium, iron, and niobium additions on, 22:28738 (WAPD-TM-619)
Ta--V--Zr, phase diagrams of, 22:17144
Ta--V--Zr, properties of, effects of composition on corrosion and tensile, 22:52186
Ta--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ta--Zr, transition temperature of superconducting, increase in, 22:26347
Th--Ti--U--Zr, analysis for individual elements by ring-oven method, 22:18708
Th--U--Zr, burnup in fuel elements of, analysis of Zircaloy 2-clad, 22:53456 (BNWL-861)
Th--U--Zr, radiation effects on fuel elements of, in-pile, 22:2662 (BNWL-479)
Th--U--Zr, radiation effects on mechanical properties of fuel elements of, analysis of neutron, 22:30386
Th--U--Zr, radiation effects on Zircaloy clad fuel elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
Th--U--Zr, radioinduced swelling of, effect of temperature on in-pile, 22:12999 (BNWL-473, pp 9.1-18)
Th--Zr, properties of, description of mechanical and physical, 22:53456 (BNWL-861)
Ti--Zn--Zr, magnetic properties of, 22:39174
Ti--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
Ti--Zr, combustion of, lower concentration limit of explosive, (E), 22:28808
Ti--Zr, Debye temperature, low-temperature specific heat, and superconducting transition temperature of, (E), 22:24203
Ti--Zr, phase studies of omega transformations in, 22:49752 (COO-588-14)
Ti--Zr, radiation effects on corrosion and electrochemical behavior of, thermal neutron, 22:52224
Ti--Zr, strength of, effects of oxygen as alloying impurity on, 22:23773
Ti--Zr, use as brazing alloys, 22:31321
Ti-base--Zr, heat resistance and physical properties of solid-solution, 22:10960
U--Zr, analysis for tin, polarographic, 22:37639(T) (ANL-Trans-610, pp 1-56)
U--Zr, analysis for uranium by volatilization of halides, 22:27847 (CEA-N-816, pp 324-58)
U--Zr, analysis for zirconium, comparison of chemical and

x-ray fluorescence, 22:4 (AERE-R-5452)

- U--Zr, dissociation pressures for hydrided, analysis of, 22:30387
- U--Zr, dissolution in hydrofluoric acid, 22:8185
- U--Zr, dissolution in hydrofluoric acid--nitric acid solutions, 22:6382
- U--Zr, fabrication and properties for outer zone of two-zone uranium-base fuel elements, 22:38605(P)
- U--Zr, fuel elements for HWCTR, fabrication of Zircaloy-2-clad driver, 22:44896 (NMI-4379)
- U--Zr, mechanical and physical properties of, 22:4728 (BMI-X-455(Pt.1))
- U--Zr, performance of driver fuels of, analysis of FTR optimum, 22:27458 (BNWL-514)
- U--Zr, processing by volatilization of halides, 22:25454 (CEA-N-616, pp 246-94)
- U--Zr, processing of enriched fuels of, methods for chemical, 22:25452 (CEA-N-616, pp 154-214)
- U--Zr, processing of irradiated highly enriched, nonaqueous methods for, 22:47213
- U--Zr, reprocessing of enriched uranium-containing fuels of, 22:47221
- U--Zr, reprocessing of fuels of, 22:47223
- U--Zr, reprocessing of irradiated, volatility method for, 22:150
- U--Zr, separation of uranium from irradiated, 22:8175(T) (ANL-Trans-544)
- U--Zr, separation of uranium from irradiated, fluoride volatility process for, 22:37825(T) (ANL-Trans-626, pp 36-58)
- U--Zr, separation of uranium from, by electrorefining in fused salts, 22:25454 (CEA-N-616, pp 246-94)
- U--Zr, thermal capacity at 1.1 to 4.2°K, 22:8730 (ORNL-4170, pp 27-31)
- U--Zr, thermodynamic properties of, effects of uranium content on, 22:52190
- U-base--Zr, heat treatment and properties of, 22:2618
- UH--Zr, ablation tests on, 22:6078
- UO_2--Zr, oxidation of, effects of temperature on, 22:53459 (GEMP-619)
- V--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- V--Zr, dissociation pressures for hydrided, analysis of, 22:30387
- V--Zr, superconducting critical fields and transition temperatures of, (E), 22:48041
- V--Zr, superconducting transition temperature of intermetallic ZrV_2, effects of niobium on, (E), 22:31754
- Y_2O_3--Zr, fabrication of, 22:31355
- Y_2O_3--Zr, microstructure of dispersions of, effect of heat treatments and hot rolling on, 22:21768 (AECL-2798)
- Y_2O_3--Zr, sintering of, effects of temperature and time on, 22:21768 (AECL-2798)
- Y_2O_3--Zr, tensile properties of, 22:31355
- Y--Zn--Zr, magnetic properties of, 22:39174
- Y--Zr, brazability and corrosion by water at 680°F, 22:8703(R) (IITRI-578-P-29-17)
- Y--Zr, diffusion at 1000 to 1300°C in, 22:38547
- Zn--Zr, ferromagnetism of impure and pure intermetallic $ZrZn_2$, 22:5437
- Zn--Zr, ferromagnetism of $ZrZn_2$, isotope effect in theory of very weak itinerant, 22:44231
- Zn--Zr, ferromagnetism of, effects of additions of hafnium, niobium, titanium, and yttrium on, (E), 22:1320
- Zn--Zr, magnetic moment of intermetallic $ZrZn_2$ up to 150 kG, (E), 22:5437
- Zn--Zr, magnetic moments in intermetallic $ZrZn_2$, magnetic and NMR study of localized, 22:15594
- Zr--ZrC--ZrN, phase diagram at 1600°C, 22:23902
- Zr--ZrN, phase diagrams, 22:36548
- Zr--ZrO_2, crystal structure and thermodynamics of, effects of electronic bonding on, 22:17182

ZIRCONIUM ARSENATES

- properties as ion-exchange material, 22:33552

ZIRCONIUM BORATES

- properties as ion-exchange material, 22:33552

ZIRCONIUM BORIDES

- bonding forces between atoms in ZrB_2, x-ray line-broadening measurements of, 22:49840
- cadmium ion sputtering at 100 to 500 eV, (E), 22:36727
- chemical and crystallographic properties of plasma-sprayed, 22:47704
- compatibility with zirconium dioxide at high temperatures, 22:21767
- crystal structure and orientation of single-crystal ZrB_2, 22:38641
- density of plasma-sprayed, 22:47704
- effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
- effects on creep strength of niobium--tungsten and niobium--tantalum--tungsten alloys, 22:26049
- electric conductivity of, temperature coefficient, (E), 22:28932
- fabrication of tools from, 22:31322
- incorporation in stainless steel--uranium dioxide fuels, methods for, 22:4856
- isotope effect in superconducting ZrB_{12}, boron, (E/T), 22:17548
- mechanical properties of plasma-sprayed, 22:47704
- oxidation at 700 to 1050°C, 22:49781
- oxidation of, effects of temperature on, 22:2580
- oxidation resistance of plasma-sprayed, 22:47704
- oxidation resistance of, effects of metals and compound phase additions on, 22:36502
- preparation and properties of hot-pressed, 22:2684
- preparation by borothermic reduction of oxide in vacuum, 22:2678
- preparation by reactions of zirconium with boron trifluoride at 1600°C, 22:7034
- production of nonporous, by activated sintering, 22:28890
- properties as crucible for liquid metals, 22:43654
- properties for incorporation in control elements, 22:21749
- properties of, used for electrodeposited coatings on metals, 22:2590
- radiation effects at <100°C on, thermal neutron, 22:34086
- reactions with tungsten at 2500°C, 22:4894
- sintering of, 22:47700
- specific heat as function of temperature from 0 to 17°K, 22:13385
- thermal conductivity at room temperature, 22:679
- Al_2O_3--ZrB_2, neutron absorption cross sections in burnable poison samples of, (E), 22:42394 (RT/FI-(68)8)
- graphite--ZrB_2, ablation testing of composite, in plasma arc at 700-Btu/ft^2 sec, 22:52230
- MoB_2--TiB_2--UO_2-base--ZrB_2, sintering method for dense, 22:36532(P)
- UO_2--ZrB_2, fabrication of fuel elements of, 22:11034(P)
- W--ZrB_2, performance as round-hole extrusion die nibs, 22:8719
- ZrB_2--ZrC, sintering of, 22:47700

ZIRCONIUM BOROHYDRIDES

- hydrolysis by hydrochloric acid for use in chemical analysis, 22:35751

ZIRCONIUM CARBIDE HYDRIDES

- phase studies, 22:31507

ZIRCONIUM CARBIDES

- argon ion sputtering at 5, 11, and 17 keV, mechanism of, 22:36704(T) (ANL-Trans-627)
- characteristics of powders of, effects of morphology on, 22:23764 (LA-DC-8964)
- chemical analysis, density, and morphological structure of commercial grade powdered, 22:751 (LA-3653)
- compatibility with molybdenum-base alloys, rhenium, and tungsten at 2450 to 2500°C, 22:49825
- crystal and electronic structure of solid-phase, 22:15215
- density of sintered, effects of particle size on, 22:23861
- deposition on carbon fibers, method for, 22:15248(P)
- diffusion of carbon in, 22:15201
- effects of liquid dispersions of, on hot-worked graphite electric and thermal conductivity, 22:45817
- effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
- effects on creep strength of niobium--tungsten and niobium--tantalum--tungsten alloys, 22:26049
- effects on hardness and porosity of sintered nickel, 22:23774
- electric conductivity at 1200 to 3500°K, (E), 22:26084
- electric conductivity at 2 to 300°K, 22:31375
- electric conductivity at 20 to 2000°C, (E), 22:39181
- electric conductivity of, temperature coefficient, (E), 22:28932
- electrolysis for production of zirconium metal, 22:52147
- electron- and ion-emission by, in cesium vapor, (E), 22:24454
- emissivity at 1200 to 3500°K, total hemispherical and spectral, (E), 22:26084
- enthalpy and thermal capacity of, temperature effects on, 22:23889
- enthalpy at 1300 to 2500°K, 22:23889
- formation by reactions of zirconium with carbon monoxide at 1100°C, 22:11030
- magnetic susceptibility of, effects of carbon content on, 22:47705
- mechanical behavior of, review of, 22:49826
- oxidation by oxygen at 1100 to 1550°C, solubility studies on, 22:50972
- oxidation of, effects of temperature on, 22:2580
- particle size distribution in commercial-grade powdered, use in characterization, 22:751 (LA-3653)
- polishing of, effects of preparation on, 22:740
- preparation and properties, 22:612(R) (GEMP-69)
- production from zirconium oxide by reactions with carbon, 22:52147
- production of porous, using soot reduction, (E), 22:31456
- production on semi-industrial scale, 22:31455
- properties and uses, 22:52275
- properties of, used for electrodeposited coatings on metals, 22:2590
- radiation effects at 300 to 700°C, fast-neutron, 22:21779
- radiation effects on crystal structure of, in-pile, 22:45829(T) (EURFNR-503)
- radiation effects on gross volume gain of, analysis of

  fast neutron, 22:48788
  radiation effects on lattice constants of, fast neutron, 22:41132 (KFK-745)
  radiation effects on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
  refining of, optimium conditions for electrolytic, 22:38609
  sintering green briquettes of, effects of initial compacting on, 22:23861
  sintering in vacuum, addition of nickel for activation, 22:15240
  sintering of, 22:47700
  solvent properties for oxygen, spectral studies on electronic band structures in, 22:50972
  superconductivity in interstitial, 22:22117
  thermodynamics, 22:36541
  thermoelectric power at 20 to 2000°C, (E), 22:39181
  wettability by liquid copper, effects of nickel additions on, 22:23752 (AERE-M/R-1746)
  C--UC--ZrC, phase studies of, 22:41114 (JUL-516-RW)
  C--ZnC, preparation and high-temperature properties of, 22:49680(R) (USBM-RC-1347)
  C--ZrC, thermodynamics of vapor composition over, at 2000 to 2660°K, 22:13066(T) (LA-tr-67-91)
  CeC--UC--ZrC, phase studies, 22:31510
  CeC--UC--ZrC, phase studies at 1500°C, 22:21700(T) (EURFNR-387)
  graphite--ZrC, ablation testing of composite in plasma arc at 500- and 700-Btu/ft^2 sec, 22:52230
  HfC--ZrC, effects on hardness and porosity of sintered nickel, 22:23774
  Mo--Re--ZrC, preparation and properties of cermets of, 22:49824
  Mo--ZrC, welding of, method for diffusion, 22:6943
  MoC--UC--ZrC, fuel pellets of, description of cylindrical clad, 22:25067(P)
  Nb--ZrC, welding of, method for diffusion, 22:6943
  NbC--UC--ZrC, phase studies, 22:15208 (IS-T-219)
  NbC--ZrC, electric properties of, effects of niobium content on, 22:17730
  NbC--ZrC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
  NbC--ZrC, thermal expansion of solid solutions of, 22:47706
  PuC--ZrC, phase relations and properties of, 22:2699
  Ta--ZrC, welding of, method for diffusion, 22:6943
  TaC--ZrC, crystal structure and melting point of, 22:15208 (IS-T-219)
  TaC--ZrC, effects on hardness and porosity of sintered nickel, 22:23774
  TaC--ZrC, superconducting transition temperature of solid solutions, 22:48034(T) (LA-tr-68-31)
  TiC--ZrC, miscibility at 1200°C to critical point, 22:43653
  UC--ZrC, diffusion through vapor deposited tungsten cladding, 22:7008
  UC--ZrC, fuel pellets of, description of cylindrical clad, 22:25067(P)
  UC--ZrC, fuels for thermionic reactors, physics measurements on, (T), 22:32946
  UC--ZrC, fuels of colloidal suspensions of, physics measurements on hydrogen moderated, 22:32943
  UC--ZrC, mechanical properties of carbon coated and uncoated, effects of temperature on, 22:35568 (LA-DC-9589)
  UC--ZrC, preparation and properties of solid-solution, 22:38602(T) (JPRS-45339)
  UC--ZrC, preparation of carbon-coated microspheres of, 22:49789
  UC--ZrC, radiation effects on carbon-coated microspheres of, in-pile, 22:49789
  VC--ZrC phase studies and solubilities of systems of, 22:49850
  Zr--ZrC--ZrN, phase diagram at 1600°C, 22:23902
  ZrB_2--ZrC, sintering of, 22:47700
  ZrC--ZrH, crystal structure of carbohydride, (E), 22:31521
  ZrC--ZrH_2, thermodynamics of, 22:28943
  ZrC--ZrN, phase studies on physicochemical properties of, 22:35826
ZIRCONIUM CHLORIDES
  complexes with 8-quinolinol, ir spectra of, 22:48857
  complexes with cyclopentadiene, radiation effects on, reactions of recoils from neutron, 22:25391
  decomposition of, effects of temperature on, 22:27721
  reactions with zirconium, effects of temperature on mechanism of, 22:27721
  separation from hafnium chloride by thermal diffusion, 22:28021
  separation from hafnium chlorides, evaluation of thermal diffusion process for, 22:16785
  separation from molten lithium chloride--potassium chloride eutectic by column crystallization and zone melting, 22:16670
  $AlCl_3$--$POCl_3$--$ZrCl_4$, phase studies on, 22:8068
  $HfCl_4$--$ZrCl_4$, thermal diffusion of mixtures of, 22:28021
ZIRCONIUM CITRATES
  effects on plutonium retention by rats, 22:8480
ZIRCONIUM DEUTERIDES
  moderating properties of, effects of densities and geometries on, 22:14364(P)
  moderating rods for reactors, description of variable slowing-down power, 22:37600(P)
  neutron total cross section for, thermal, (E), 22:1566
ZIRCONIUM, DICHLORODICYCLOPENTADIENYL-
  Szilard-Chalmers reactions in liquid and solid, recombination in, 22:37776 (BNL-50082, pp 79-92)
ZIRCONIUM FLUORIDES
  complexes with 8-quinolinol, ir spectra of, 22:48857
  solubility in sodium fluoroborates, 22:25327 (ORNL-4229, pp 3-21)
  volatility in molten beryllium fluoride--lithium fluoride systems, 22:10324 (ORNL-TM-2058)
  volatility in molten-salt fuel reprocessing, 22:27861 (ORNL-4204, pp 60-7)
  BeF_2--LiF--UF_4--ZrF_4, irradiation testing of molten, as reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
  BeF_2--LiF--UF_4--ZrF_4, performance of fused fuels of, in ORR in-pile loop, 22:7900 (ORNL-TM-1960)
  BeF_2--LiF--UF_4--ZrF_4, radiation effects on fission product penetration in graphite from, analysis of, 22:48736 (ORNL-4254, pp 174-82)
  BeF_2--LiF--ZrF_4, electrochemical properties of molten, 22:10139(R) (ORO-3518-4)
  BeF_2--LiF--ZrF_4, phase studies at 350 to 1000°C, 22:37746
  BeF_3--LiF--ThF_4--UF_4--ZrF_4, corrosive effects on Hastelloy N and type 304L stainless steel at 675 to 705°C, 22:8696 (ORNL-4170, pp 192-205)
  NaF--ZrF_4, solvent properties of molten, for zirconium dioxide, 22:33307
  NaF--ZrF_4--ZrO_2, surface tension of, effects of carbon dioxide and carbon monoxide on, 22:33306
ZIRCONIUM HYDRIDES
  activation energies and volumes for, effect on deformation, 22:13075
  crystal morphology in Zircaloy-4 tubes, 22:4742
  crystal orientation in Zircaloy-2 and Zircaloy-4 tubes, 22:4743
  crystal plane habit of, 22:43591 (ANL-7299, pp 227-37)
  crystal structure of, central force dynamical model for, 22:46217
  crystal structure on Zircaloy-2, 22:28957
  crystal structure on Zircaloy-4, 22:28957
  crystal structure on zirconium, 22:28957
  deformation of single-crystal, effects of air cooling and quenching on, 22:13075
  development for reactor moderators, 22:614
  diffusion of hydrogen into porous beds of, reactivity control in reactors by, (E/T), 22:16331
  diffusion of zirconium in, 22:21749
  diffusion of, pulsed neutron method for measurement of self, 22:2690
  effects of layers of, on ductility of Zircaloy-2 tubing, 22:8760
  electric conductivity at 1000 to 1200°K, (E), 22:13549
  fracture of, effects of crack-length-dependence and grain size on ductile, 22:8757
  moderating properties for fast and thermal optimum performance rocket reactors, 22:25062 (DLR-MITT-66-07, pp 11-27)
  moderating properties of, effects of densities and geometries on, 22:14364(P)
  moderating rods for reactors, description of variable slowing-down power, 22:37600(P)
  neutron angular scattering by, at elevated temperatures, (E/T), 22:11873(R) (GA-8085)
  neutron differential inelastic scattering cross sections at 0.24 to 0.65 eV, (E), 22:3592 (RPI-328-101)
  neutron differential scattering cross section at 0.008 to 1.0 eV and 296 and 700°K, (E), 22:15918 (GA-8345)
  neutron differential scattering cross section for, calculations using central force model, (T), 22:20409(R) (GA-8449)
  neutron doubly differential inelastic scattering cross sections at 77 and 295°K, (E), 22:29864
  neutron energy distributions in, (E), 22:20423(T) (JPRS-43682, pp 199-222)
  neutron energy spectra at room temperature as α function of slowing-down time in, (E), 22:48412(T) (AERE-Trans-1088)
  neutron inelastic scattering at 0.1 to 1.0 eV, cross sections for, (E), 22:53076
  neutron scattering cross section at 25 to 890°C, (E), 22:1566
  neutron scattering law at 296 to 1000°K, (T), 22:20409(R) (GA-8449)
  neutron scattering law for, (E/T), 22:13908 (RPI-328-100, pp 120-39)
  neutron scattering law for, (T), 22:29864
  neutron slowing down and thermalization in, time dependence of, (T), 22:29879
  neutron slowing down time in, measurements using pulsed source technique, (E), 22:48412(T) (AERE-Trans-1088)
  neutron spectra in, time-dependent thermal, (E/T), 22:29887
  neutron spectra in, time-dependent, (T), 22:29879
  neutron thermalization in, time-dependent, (E/T), 22:29887
  neutron total cross section for, thermal, (E), 22:1566
  phase studies, 22:31474
  phase studies at high hydrogen content, using samples containing 4 at. percent uranium, 22:49853

- phase studies of, analysis of mechanical properties from, 22:30387
- positron lifetime in, delayed coincidence system study of, (E), 22:38732
- precipitation in alpha-phase zirconium, kinetics of, 22:49833
- precipitation in Zircoloy-2 tubes, effect of directional strain history on orientation of, 22:52200 (DP-1138)
- precipitation of, effects on creep in magnesium--zirconium alloys, 22:49748
- preparation and properties, 22:38602(T) (JPRS-45339)
- production by reduction of oxide, 22:33365(P)
- properties of, electric and magnetic, 22:4099
- reactivity measurements in large uranium carbide fast ZPR-6, 22:32734 (ANL-7310, pp 137-248)
- thermal diffusion of hydrogen in, equation for nondilute solutions, 22:17801
- TiH_2--ZrH_2, thermodynamics of, 22:28943
- U--ZrH, radiation effects at 1175ºC on clad elements of, TRIGA pulse tests of in-pile, 22:31474
- U--$ZrH_{1.8}$, thermal capacity, 22:21749
- ZrC--ZrH, crystal structure of carbohydride, (E), 22:31521
- ZrC--ZrH_2, thermodynamics of, 22:28943
- ZrH--ZrH, crystal structure of nitrohydride, (E), 22:31521

ZIRCONIUM HYDROXIDES
- precipitation of molybdenum and tungsten with, effects of foreign ions on, 22:8063
- precipitation with selenite from solutions using potassium hydroxide as precipitant, effects of pH on, 22:6380
- precipitation with tungsten, 22:18793
- properties as ion-exchange material, 22:33552
- sorptive properties for sufur-, 22:16454
- use in separation of chromium, molybdenum, and rhenium by precipitation, 22:23104
- $Hf(OH)_4$--$Zr(OH)_4$, reactions with thallium oxides at 1000ºC, 22:30571

ZIRCONIUM IODIDES
- formation of, enthalpy of, 22:52257 (ANL-7425, pp 94-129)
- laser beam reactions with, plasma production in, (E), 22:22189
- sintering spheres of, mechanisms in helium and vacuum at 1200 to 1800ºC, 22:45777

ZIRCONIUM IONS
- chromatographic behavior in hydrochloric acid--1-propanol, 22:16673
- chromatographic behavior in hydrochloric acid--2-methyl-2-propanol, 22:16674
- chromatographic behavior in hydrochloric acid--pentyl alcohols, 22:16675
- effects on indium precipitation from alkaline solutions with hydroxide, 22:14575
- polymerization in aqueous solutions of zirconyl nitrate, 22:18780

ZIRCONIUM ISOTOPES
- abundance in S-type star HR 1105, (E), 22:26142
- deuteron reactions (d,np) with, proton decay of isobaric analog states in, (E), 22:50549
- energy levels of, energies and transition probabilities of I/sup n/ = 3^- states by random phase approximation method, (T), 22:44628 (UJV-2024)
- yields in plutonium-239 thermal neutron fission, (E), 22:44680(R) (IN-1189)
- yields in uranium-238 neutron fission at 14 MeV, cumulative, (E), 22:35325

ZIRCONIUM ISOTOPES Zr-89
- beta and electron-capture decay of, γ spectra and log-ft values for, (E), 22:53138
- decay constant in barium titanate, effect of internal electric field on, (E), 22:35269
- energy levels from yttrium-89 (p,n) reactions at 3.6 to 5.8 MeV, (E), 22:7670
- energy levels from zirconium-90 (He-3,α) reactions, (E), 22:39602 (CONF-670970-, pp 101-15)
- energy levels from zirconium-90 (He-3,α) reactions, spectroscopic factors for neutron-hole, (E), 22:26988
- energy levels from zirconium-90 (p,d) reactions, (E), 22:35292 (ORNL-4217, pp 1-81)
- energy levels from zirconium-90 (p,d) reactions, isobaric analog, (E), 22:26987
- energy levels from zirconium-90 (p,d) reactions, spin--parity assignments and spectroscopic factors for, (E), 22:50572
- energy levels from zirconium-90 (p,d) reactions, spin-parity assignments for, (E), 22:44732

ZIRCONIUM ISOTOPES Zr-90
- alpha differential inelastic scattering cross sections at 42 MeV, angular distributions for, (E), 22:50560(R) (RLO-1062-681)
- alpha inelastic scattering at 31 MeV, angular distributions for, (E), 22:48534
- alpha reactions at 10 to 120 MeV, recoil level densities from, (E), 22:37316(R) (UR-3591-9)
- alpha reactions at 10 to 80 MeV, recoil ranges from, (E), 22:11968
- analysis for impurities, mass-spectrometric, 22:14431 (ORNL-4196, pp 59-62)
- deuteron elastic scattering at 34.4 MeV, optical-model parameters for, (E), 22:27230
- deuteron reactions (d,αn) at 21.8 to 27.4 MeV, isomeric cross-section ratios for, (E), 22:27128
- deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E), 22:27230
- deuteron reactions (d,He-3) at 34.4 MeV, proton ground-state configuration from, (E), 22:18231
- deuteron reactions (d,He-3) at 34.4 MeV, spin dependence of angular distributions for, (E/T), 22:20625
- deuteron reactions (d,He-3) at 82 MeV, angular distributions for, (E), 22:27007
- deuteron reactions (d,n) and (d,p) at 5 to 10 MeV, t . T interaction in, (T), 22:11949(R) (ORO-2972-47)
- deuteron reactions (d,n) and (d,p) at 5 to 11 MeV, charge exchange coupling in, (E), 22:11949(R) (ORO-2972-47)
- deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
- deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
- deuteron reactions (d,p) at 10 MeV, spectroscopic factors for, 22:30100
- deuteron reactions (d,p) below Coulomb barrier, angular distributions for, (E), 22:27199
- deuteron reactions (d,p) with, analog resonance threshold in, (E), 22:5809(R) (ANL-7354)
- deuteron reactions (d,p) with, distorted-wave analysis with nonlocal potentials, (E/T), 22:20726
- energy levels from α inelastic scattering, spin--parity assignments for, (E), 22:48534
- energy levels from proton elastic and inelastic scattering, (E), 22:11949(R) (ORO-2972-47)
- energy levels from proton inelastic scattering on yttrium-89 at 5.5 to 11 MeV, isobaric analog, (E), 22:5808
- energy levels from yttrium-89 (He-3,d) reactions, isospin components for 1p-1h, (E), 22:5851
- energy levels from yttrium-89 (He-3,d) reactions, spectroscopic factors for T = T/sub Z/, (E/T), 22:46808
- energy levels from yttrium-89 (p,n) reactions at 3.6 to 5.8 MeV, (E), 22:7670
- energy levels from yttrium-89 proton inelastic scattering, isobaric analog, (E), 22:18256
- energy levels from zirconium-91 (p,d) reactions, (E), 22:44732
- energy levels in eigenchannel reaction theory, isobaric analog, (T), 22:7732
- energy levels in giant dipole resonance region, collective, (T), 22:27225
- energy levels of, calculations using shell model with tensor forces for vibrational, (T), 22:7716
- energy levels of, description using shell model with effective interaction, (T), 22:27135
- energy levels of, effects of core polarization on, (T), 22:53135
- energy-level spin--orbit splitting in, calculation of Hartree--Fock single-particle, (T), 22:16086
- energy-level spins and transitions from proton inelastic scattering, (E), 22:27108
- energy-level transition densities for dipole excitations of, (T), 22:1723
- energy-level transitions from niobium-90 decay, conversion coefficients and multipolarities of, (E), 22:14002 (UUIP-555)
- energy-level transitions from niobium-90 decay, conversion coefficients and multipolarities of, (E), 22:11959
- giant dipole resonance in, isospin splitting of, (E), 22:7685
- helium ion reactions at 25 to 80 MeV, excitation functions and recoil ranges for, (E), 22:37361
- helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
- helium-3 elastic and inelastic scattering at 43.7 MeV, angular distributions for, (E), 22:15999
- helium-3 elastic scattering at 25 MeV, optical-model potential for, (T), 22:27364
- helium-3 reactions (He-3,2p) at 44 MeV, proton angular correlations for, (T), 22:11949(R) (ORO-2972-47)
- helium-3 reactions (He-3,α) and (He-3,d) at 18 MeV, angular distributions for, (E), 22:39602 (CONF-670970-, pp 101-15)
- helium-3 reactions (He-3,α) at 18 MeV, angular distributions for, (E), 22:26988
- helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
- helium-3 reactions (He-3,α) with, analysis using distorted-wave Born approximation, (T), 22:9800(R) (COO-535-571)
- helium-3 reactions (He-3,d) at 18 MeV, angular distributions for, (E), 22:27141
- helium-3 reactions (He-3,d) at 31 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
- meson (π^+) reactions (π^+,π^-) at 200 MeV, differential cross sections for, (E), 22:53118
- meson (π^+) reactions (π^+,π^-) at 200 MeV, double charge exchange in, (E), 22:13933 (PPAD-633-F)

  meson (π^+) reactions (π^+,π^-) at 200 MeV, magnetic spectrometer with wire spark chamber study of double charge exchange in, (E), 22:37090
  neutron inelastic scattering cross section at 1.8 to 3.6 MeV, calculations using energy-dependent potentials, (T), 22:32435
  neutron reactions (n,2n) at 14.7 MeV, isomeric cross-section ratio and spin-cutoff parameter for, (E), 22:50583
  neutron reactions (n,p) at 0.1 to 1.0 MeV, cross-section calculations using statistical theory, 22:20677 (UCRL-50359)
  neutron total cross section and resonance parameters at 2 to 60 keV, (E), 22:14043
  nitrogen-15 reactions (N-15,N-17) with, differential cross sections for, (E), 22:27196
  proton configuration in ground state of, (E), 22:27230
  proton decay of isobaric analog in yttrium-89 (d,n) reactions, 22:53164
  proton differential elastic and inelastic scattering cross sections at 12.7 MeV, angular distributions for, (E), 22:27108
  proton elastic and inelastic scattering at 6 to 10 MeV, isobaric analog resonances in, (E), 22:11949(R) (ORO-2972-47)
  proton elastic scattering at 6.6 to 6.9 MeV, proton polarization in, (E), 22:20629
  proton elastic scattering by, isobaric analog resonance in, (E), 22:39653
  proton elastic scattering near 5.8 and 6.8 MeV with excitation of isobaric analog resonances, neutron spectroscopic factors from, (T), 22:50671
  proton inelastic scattering at 20 MeV using polarized protons, asymmetry in, (E), 22:27010
  proton inelastic scattering at 5 to 7 MeV, analysis of isobaric analog resonances in, (T), 22:32725
  proton reactions (p,2p) at 156 MeV with quasielastic scattering, proton energy spectra and angular distributions from, (E), 22:1642
  proton reactions (p,d) and (p,t) at 55 MeV, angular distributions and spectra for, (E), 22:26987
  proton reactions (p,d) at 31 MeV, deuteron spectra and angular distributions for, (E), 22:44732
  proton reactions (p,d) at 55 MeV, angular distributions for, (E), 22:50572
  proton reactions (p,d) at 61 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
  proton reactions (p,γ) at 7 MeV, γ decay of isobaric analog resonance in, (E), 22:53166
  proton reactions (p,n) with, production of isomeric niobium-90 in, (E), 22:25664
  triton elastic scattering at 20 MeV, optical-model potential for, (T), 22:27364
  triton inelastic scattering at 20 MeV, angular distributions for, (E), 22:37360
  triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
  wave function for ground state of, (E/T), 22:35292 (ORNL-4217, pp 1-81)
ZIRCONIUM ISOTOPES Zr-91
  deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
  deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
  deuteron reactions (d,p) at 4.5 to 8.0 MeV, charge exchange in, (E), 22:11949(R) (ORO-2972-47)
  energy level at 2.06 MeV, spin-parity assignment for, (E), 22:39653
  energy levels at 1.21 and 2.06 MeV, neutron spectroscopic factors for isobaric analog, (T), 22:50671
  energy levels from zirconium-92 (He-3,α) reactions, spectroscopic factors for, (E), 22:27142
  energy levels from zirconium-92 (p,d) reactions, (E), 22:44732
  energy levels of, spin determination using neutron capture data, (E), 22:3689(R) (GA-7820)
  helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
  helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
  helium-3 reactions (He-3,d) at 31 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
  neutron resonance parameters at 159 to 3900 eV, 22:24853 (GA-8557)
  neutron resonance parameters at 239 to 1537 eV, (E), 22:3689(R) (GA-7820)
  neutron resonance parameters at 240 to 1537 eV, (E), 22:20578 (WASH-1079)
  neutron resonance parameters for, spin systematics of, (E/T), 22:53166 (CEA-R-3385)
  neutron strength function and scattering radius 0 at 0 to 2.5 keV, (E), 22:18285
  nuclear magnetic resonance in gadolinium--zinc--zirconium alloys, (E), 22:15594
  proton reactions (p,d) and (p,t) at 55 MeV, isobaric analog resonances in, (E), 22:27140
  proton reactions (p,d) at 11 to 13 MeV, charge exchange in, (E), 22:20610
  proton reactions (p,d) at 31 MeV, deuteron spectra and angular distributions for, (E), 22:44732
  proton reactions (p,np) at 12 to 16 MeV, differential cross sections and spectra for, (E), 22:27211
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  yields in thermal fission, uranium fuel burnup analysis by absolute, 22:1880(R) (IN-1113)
ZIRCONIUM ISOTOPES Zr-92
  alpha differential elastic and inelastic scattering cross sections at 66 MeV, optical-model analysis of angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
  deuteron elastic scattering at 34.4 MeV, optical-model parameters for, (E), 22:27230
  deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E), 22:27230
  deuteron reactions (d,He-3) at 34.4 MeV, proton ground-state configuration from, (E), 22:18231
  deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
  deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
  deuteron reactions (d,p) at 10 to 15 MeV, charge-exchange effects in, (E), 22:14011
  deuteron reactions (d,p) at 4 to 11 MeV, charge-exchange threshold in, (E), 22:11949(R) (ORO-2972-47)
  deuteron reactions (d,p) below Coulomb barrier, angular distributions for, (E), 22:27199
  energy levels from zirconium-90 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
  energy levels of, description using shell model with effective interaction, (T), 22:27135
  energy-level spins and transitions from proton inelastic scattering, (E), 22:27108
  helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
  helium-3 reactions (He-3,α) at 18 MeV, angular distributions for, (E), 22:27142
  helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
  helium-3 reactions (He-3,d) at 31 MeV, deuteron angular distributions and spectra for, (E), 22:35292 (ORNL-4217, pp 1-81)
  neutron total cross section and resonance parameters at 2 to 60 keV, (E), 22:14043
  nitrogen-15 reactions (N-15,N-17) with, differential cross sections for, (E), 22:27196
  proton configuration in ground state of, (E), 22:27230
  proton differential elastic and inelastic scattering cross sections at 12.7 MeV, angular distributions for, (E), 22:27108
  proton elastic and inelastic scattering at 18.6 MeV, optical-model parameters for, (T), 22:16088
  proton elastic and inelastic scattering at 19 MeV, angular distributions for, (E), 22:11942
  proton elastic scattering by, isobaric analog resonances in, (T), 22:42133
  proton elastic scattering near 6 MeV with excitation of isobaric analog resonances, neutron spectroscopic factors from, (T), 22:50671
  proton inelastic scattering at 20 MeV using polarized protons, asymmetry in, (E), 22:27010
  proton reactions (p,d) and (p,t) at 55 MeV, isobaric analog resonances in, (E), 22:27140
  proton reactions (p,d) at 31 MeV, deuteron spectra and angular distributions for, (E), 22:44732
  proton reactions (p,n) with, isobaric analog resonances in, (T), 22:42133
  proton reactions (p,np) at 12 to 16 MeV, differential cross sections and spectra for, (E), 22:27211
  triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
  wave function for ground state of, (E/T), 22:35292 (ORNL-4217, pp 1-81)
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  yields in thermal fission, uranium fuel burnup analysis by absolute, 22:1880(R) (IN-1113)
ZIRCONIUM ISOTOPES Zr-93
  energy level at 0.96 MeV, neutron spectroscopic factors for isobaric analog, (T), 22:50671
  energy level at 267 keV, lifetime and E2 transition probability for, (E), 22:53213
  energy levels from zirconium-92 (d,p) reactions, (E), 22:14011
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  yields in thermal fission, uranium fuel burnup analysis by absolute, 22:1880(R) (IN-1113)
ZIRCONIUM ISOTOPES Zr-94
  alpha differential elastic and inelastic scattering cross sections at 66 MeV, optical-model analysis of angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
  alpha reactions (α,He-3) at 66 MeV, angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)

  - deuteron elastic scattering at 34.4 MeV, optical-model parameters for, (E), 22:27230
  - deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E), 22:27230
  - deuteron reactions (d,He-3) at 34.4 MeV, proton ground-state configuration from, (E), 22:18231
  - deuteron reactions (d,n) at 7 to 16 MeV, cross section for proton decay of isobaric analog state in, (E), 22:53164
  - deuteron reactions (d,np) at 7 to 16 MeV, with proton decay from isobaric analog states, (E), 22:7662 (RLO-1388-47)
  - deuteron reactions (d,p) at 10 to 15 MeV, charge-exchange effects in, (E), 22:14011
  - energy levels from zirconium-92 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
  - energy levels of, description using shell model with effective interaction, (T), 22:27135
  - energy-level spins and transitions from proton inelastic scattering, (E), 22:27108
  - helium-3 differential elastic and inelastic scattering cross sections at 25 MeV, angular distributions for, (E/T), 22:26962
  - helium-3 reactions (He-3,α) at 25 MeV, angular distributions and spectroscopic factors for, (E), 22:26943
  - neutron total cross section and resonance parameters at 2 to 60 keV, (E), 22:14043
  - nitrogen-15 reactions (N-15,N-17) with, differential cross sections for, (E), 22:27196
  - proton configuration in ground state of, (E), 22:27230
  - proton differential elastic and inelastic scattering cross sections at 12.7 MeV, angular distributions for, (E), 22:27108
  - proton elastic and inelastic scattering at 19 MeV, angular distributions for, (E), 22:11942
  - proton reactions (p,np) at 12 to 16 MeV, differential cross sections and spectra for, (E), 22:27211
  - triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
  - wave function for ground state of, (E/T), 22:35292 (ORNL-4217, pp 1-81)
  - yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  - yields in thermal fission, uranium fuel burnup analysis by absolute, 22:1880(R) (IN-1113)

- ZIRCONIUM ISOTOPES Zr-95
  - activity in atmosphere, use of scintillation detectors aboard aircraft for measurement of, 22:18971
  - activity of, from third Chinese nuclear explosion, γ spectrometry measurement of, 22:16719
  - beta decay of, gamma transition energies in, (E), 22:7674
  - beta decay of, γ branching ratio and spectra for, (E), 22:20560 (AERE-R-5342)
  - beta decay of, γ spectra for, (E), 22:18262
  - content and distribution in fallout from third and fifth Chinese nuclear explosions, 22:51131
  - content and distribution in fallout from third Chinese nuclear explosion, May 9, 1966, 22:12450
  - content in air samples from Purex process building, 22:12474 (BNWL-643)
  - content in airborne dusts in The Netherlands, 1965, 22:2227 (RA-29)
  - content in atmosphere over Atlantic Ocean from June 17, 1967 and Dec. 24, 1967 Chinese nuclear explosions, 22:48954
  - content in atmosphere over western hemisphere, 1959 to 1960, 22:25528 (HASL-193, pp I.208-16)
  - content in Bucharest atmosphere, 1964 to 1966, 22:51103
  - content in Danish atmosphere and precipitation, July through Dec. 1967, 22:51093 (FFR-401/68)
  - content in fallout from Chinese and Soviet nuclear explosions, (E), 22:27920
  - content in fallout from third Chinese nuclear explosion, 22:4284
  - content in fallout near Milan, Italy from seventh Chinese nuclear explosion, 22:27922
  - content in Fayetteville, Arkansas ground-level atmosphere from May 9, 1966 Chinese nuclear explosion, 22:30716
  - content in Greenland atmosphere, Jan. 1967, 22:23164 (NP-17330)
  - content in irradiated Molten Salt Breeder Reactor fuel, 22:25374 (ORNL-4229, pp 22-49)
  - content in lower stratosphere, Project Airstream measurements of, Aug. 1967, 22:25527 (HASL-193, pp I.33-207)
  - content in monthly precipitation in US cities, 1961 to 1967, 22:25530 (HASL-193, pp II.1-30)
  - content in Moscow atmosphere and food products, 1965 to 1966, 22:23163 (A-AC-82/G/L-1192)
  - content in northeast Pacific Ocean from Sept. 1961 weapons tests, 22:2255
  - content in rainwater at selected US sites, data tabulations on, 1957 to 1967, 22:14588(R) (HASL-184(App.))
  - content in seawater, design of sensitive γ radiation detectors for determining, 22:2256
  - content in soils of northeast and east-central Georgia, 22:48939
  - content in surface air samples at stations along 80th meridian west from 76° north to 63° south, 22:21203 (HASL-184, pp II.6-25)
  - content in surface atmosphere at western hemisphere land sites, 1963 to 1968, 22:25531(R) (HASL-193(App.))
  - content in Swedish atmosphere following June 1967 Chinese nuclear explosion, 22:51094 (FOA-4-4369)
  - content in UK ground-level atmosphere, 1967, 22:12439 (AERE-R-5575)
  - content in western hemisphere lower stratosphere during Aug. 1967, 22:21202 (HASL-184, pp I.119-223)
  - content of air, milk, rainwater, and vegetables in France during 1967, 22:6806 (SCPRI(RM)-IX-1967 and Suppl.)
  - content of aquatic fish in Germany during 1964, 22:31076
  - content of atmosphere in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
  - content of atmospheric precipitation at Savannah River Plant environs, July to Dec. 1967, 22:18965(R) (DPST-68-30-1)
  - content of birch leaves and fir, pine, and spruce needles sampled in U.S.S.R. during 1962, 22:51615
  - content of dairy feeds in Colorado during 1967, 22:21460(R) (COO-1171-82)
  - content of food samples in India during 1963 to 1965, 22:40656 (AEET-273)
  - content of rumen of mule deer in Colorado during 1961 to 1967, 22:21459(R) (COO-1156-28)
  - decay of, gamma spectra from, 22:14433 (ORNL-4196, pp 66-89)
  - deposition on earth's surface in Leningrad District, 1954 to 1965, 22:21194 (A-AC-82/G/L-1171)
  - detection and measurement in fallout at Pinstech, Pakistan after May 9, 1966 Chinese nuclear explosion, 22:51097 (PINSTECH/HP-3)
  - determination in fission product solution by gamma spectrometry, 22:25455 (CEA-N-616, pp 295-368)
  - determination in irradiated coated fuel particles, 22:39998
  - determination in liquids by gamma counting and differential decay, 22:1956(R) (MLM-1405)
  - determination in presence of niobium-95 by extraction chromatography and counting, 22:40029
  - determination in seawater, 22:10170 (CEA-R-3284)
  - determination in swimming pool reactor water, method for, 22:35760
  - diffusion coefficient measurement in DIDO 1A, analysis of, 22:37525 (AERE-R-3912)
  - diffusion in uranium oxide (UO_2) fuel elements, effects on burnup of, 22:7930
  - distribution in MSRE after 32,000 Mwhr, 22:47112 (ORNL-4254, pp 88-173)
  - effects on determination of plutonium in aqueous solutions by liquid scintillation, 22:40018
  - energy levels from zirconium-94 (d,p) reactions, (E), 22:14011
  - energy levels from zirconium-96 (p,d) reactions at 19.4 MeV, (E), 22:1679
  - fallout at Leningrad from 1954 to 1965, 22:12453
  - fission product activity in molten salt fuel in-pile loop, analysis of radiation effects on, 22:48736 (ORNL-4254, pp 174-82)
  - inhalation by rats, kinetics of, 22:8476
  - ion-exchange behavior in oxalic acid, recoil effects on, 22:10349
  - measurement in PRTR plutonium oxide (PuO_2)—uranium oxide (UO_2) fuel element failure on September 29, 1965 of, analysis of, 22:32744 (BNWL-SA-668)
  - preparation of, 22:18905
  - production in soil by neutron activation, dose to plant roots from, 22:31080
  - production of carrier-free, electrodeposition techniques in, 22:47161
  - separation by solvent extraction using naphthenic acid, 22:35904
  - separation from uranyl nitrate by solvent extraction using organic phosphorus compounds, 22:25467 (UJV-1912)
  - separation of neptunium from, by solvent extraction using tridodecylamine and ion exchange, 22:27848 (CEA-N-816, pp 359-414)
  - separation of plutonium and uranium from, by solvent extraction using TBP in dodecane, 22:25452 (CEA-N-616, pp 154-214)
  - separation of plutonium from, by solvent extraction using tridodecylamine, 22:25452 (CEA-N-616, pp 154-214)
  - sorption by zeolites, 22:45151
  - spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
  - uptake by man following inhalation, 22:33715 (SZS-15/67)
  - uptake from atmosphere and soil by grasses, 22:45541
  - use as tracer for fine sediments in northern San Francisco Bay, 22:4272 (TID-24140)

- ZIRCONIUM ISOTOPES Zr-96
  - alpha differential elastic and inelastic scattering cross sections at 66 MeV, optical-model analysis of angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
  - alpha reactions (α,He-3) at 66 MeV, angular distributions for, (E), 22:35292 (ORNL-4217, pp 1-81)
  - deuteron elastic scattering at 34.4 MeV, optical-model parameters for, (E), 22:27230
  - deuteron reactions (d,He-3) at 34.4 MeV, angular distributions for, (E), 22:27230
  - deuteron reactions (d,He-3) at 34.4 MeV, proton ground-

  state configuration from, (E), 22:18231
  deuteron reactions (d,n), (d,p), (d,2n), and (d,3n) at 3.8 to 14.1 MeV, cross sections for, (E), 22:7701 (OULNS-67-10)
  deuteron reactions (d,p), (d,n), (d,2n), and (d,3n) up to 14.1 MeV, excitation functions for, (E), 22:15996
  energy levels from zirconium-94 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
  energy levels of, description using shell model with effective interaction, (T), 22:27135
  leaching from cements and clay grouts in geologic formations, 22:16824
  neutron total cross section and resonance parameters at 2 to 60 keV, (E), 22:14043
  proton configuration in ground state of, (E), 22:27230
  proton differential elastic and inelastic scattering cross sections at 19.4 MeV, (E), 22:1679
  proton reactions (p,d) at 19.4 MeV, differential cross sections for, (E), 22:1679
  triton reactions (t,p) at 20 MeV, angular distributions for, (E), 22:39633 (LA-3958)
  yields from thermal fission of plutonium-241, 22:47074(R) (IN-1215)
  yields in thermal fission, uranium fuel burnup analysis by absolute, 22:1880(R) (IN-1113)
ZIRCONIUM ISOTOPES Zr-97
  activity of, from third Chinese nuclear explosion, γ spectrometry measurement of, 22:16719
  beta decay of, niobium-97 energy levels from, (E), 22:16032
  content and distribution in fallout from third Chinese nuclear explosion, May 9, 1966, 22:12450
  content in fallout from third Chinese nuclear explosion, 22:4284
  reactions of recoil, in neutron-irradiated cyclopentadienylzirconium dichloride, 22:25391
  spectra of nuclear explosion produced, estimation of nuclide fractionation from, 22:42881
ZIRCONIUM ISOTOPES Zr-98
  energy levels from zirconium-96 (t,p) reactions, spectroscopic factors for, (E), 22:39633 (LA-3958)
  production as fission product, 22:37833 (CEA-R-3451)
ZIRCONIUM ISOTOPES Zr-99
  beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
ZIRCONIUM ISOTOPES Zr-100
  half-life, (E), 22:46732 (NP-17528)
ZIRCONIUM ISOTOPES Zr-101
  beta decay of, half-life and Q-value for, (E), 22:46732 (NP-17528)
Zirconium Lead Titanates
    see Lead Zirconium Titanates
ZIRCONIUM MINERALS
    see also Baddeleyites
    see also Zircons
ZIRCONIUM MOLYBDATES
  crystal structure of $ZrMo_2O_8$, x-ray diffraction study of, 22:12282
ZIRCONIUM NITRATES
  separation by solvent extraction using nitric acid--TBP--water, chromatographic studies on effects of diluents on, 22:6405
  separation from hydroxamic acids in degraded kerosene, 22:27557
ZIRCONIUM NITRIDES
  cadmium ion sputtering at 100 to 500 eV, (E), 22:36727
  chemical and crystallographic properties of plasma-sprayed, 22:47704
  density of plasma-sprayed, 22:47704
  effects on carbon steel toughness in electrospark alloyed specimens, 22:26030
  electric conductivity of, temperature coefficient, (E), 22:28932
  mechanical properties of plasma-sprayed, 22:47704
  modulus of elasticity of, ultrasonic measurement of, 22:38630
  neutron reactions (n,p) with nitrogen-14 in, production of carbon-14 by, 22:4183
  oxidation of, effects of temperature on, 22:2580
  oxidation resistance of plasma-sprayed, 22:47704
  radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
  radiation effects on lattice constants of, fast neutron, 22:41132 (KFK-745)
  superconducting transition temperature, 22:48034(T) (LA-tr-68-31)
  superconductivity in interstitial, 22:22117
  thermodynamic properties of gaseous ZrN, 22:45821
  CeN--UN--ZrN, phase studies, 22:31510
  CeN--ZrN, phase studies of, 22:21700(T) (EURFNR-387)
  HfN--ZrN, superconducting properties of solid solution, 22:24209
  UN--ZrN, phase studies at 1700 and 2000°C, 22:43664
  UN--ZrN, phase studies of, 22:31487 (KFK-721)
  Zr--ZrC--ZrN, phase diagram at 1600°C, 22:23902
  Zr--ZrN, phase diagrams, 22:36548
  ZrC--ZrN, phase studies on physicochemical properties of, 22:35826
  ZrH--ZrH, crystal structure of nitrohydride, (E), 22:31521
ZIRCONIUM OXIDES
  activation energy on, 22:13074
  adhesion to metals in flame-spray deposition of, 22:15165
  analysis for chlorine by pyrohydrolysis at 1000 to 1100°C, colorimetric and potentiometric, 22:16381 (AECL-2799)
  analysis for fluorine by pyrohydrolysis at 1000 to 1100°C, spectrophotometric, 22:16381 (AECL-2799)
  analysis for hafnium, activation method for, 22:25249
  analysis for oxygen and zirconium stoichiometry in, methods for, 22:8021
  analysis for oxygen by hot extraction in nitrogen current, 22:42589 (JUL-517-RW)
  analysis for traces of lithium using hollow-cathode discharge tube, spectrographic, 22:12245
  analysis for zirconium using acidic EDTA titration, relation of polymerization to complexometric, 22:23
  book: Fundamentals of Metallurgy, Vol. 4, Rare Metals, 22:8763
  book: High Temperature Materials, 22:31360
  coating spheres of, with molybdenum, 22:34100(T) (MLM-1508(tr))
  compatibility of calcium oxide stabilized, with dysprosium oxide dispersions at high temperatures, 22:43661
  compatibility of calcium oxide stabilized, with titanium boride at high temperatures, 22:21767
  compatibility of calcium oxide stabilized, with tungsten boride at high temperatures, 22:21767
  compatibility of calcium oxide stabilized, with zirconium boride at high temperatures, 22:21767
  content in sands of Nettuno, Rome, 22:37891
  crystal growth of ZrO_2 prepared by arc-transfer, 22:52289
  crystal structure of, 22:11078
  crystal structure of films of, on reactor-grade zirconium, 22:15151
  crystal structure of films of, on zirconium, 22:10909 (AECL-2794)
  crystal structure of flame-sprayed, 22:7067
  crystal structure of Zr_3O and Zr_6O, 22:43609
  crystal structure of, effects of high temperatures and pressure at 3.8 to 30 kbars on, 22:31511
  crystallization kinetics of amorphous hydrated, 22:38608
  defects in monoclinic, high-temperature diffractometry determination of, 22:28958
  deformation of monocrystals, at 77 to 950°K, 22:13076
  deformation of single-crystal, effects of oxygen content and temperature on, 22:13074
  deposition on aluminum, copper, nickel, and stainless steel foils, spray coating method for, 22:51177(R) (ALO-3634-10)
  deposition on tungsten for corrosion protection at high temperatures, 22:43537
  dielectric constant of films of, importance of effective, 22:28922
  diffusion of oxygen in, 22:34116(T) (WAPD-Trans-0091)
  diffusion of oxygen in calcium-stabilized, 22:52288
  diffusion of oxygen in hypostoichiometric ZrO_2, mathematical analysis of, 22:41117
  diffusion of oxygen in hypostoichiometric, at 875 to 1050°C, (E/T), 22:41102
  diffusion of oxygen in, at 800 to 1000°C, 22:38628
  diffusion of oxygen in, coefficients and mechanisms of, 22:674
  effects of slow cooling on stability of, 22:45807
  effects on growth processes of corundum crystals, 22:31485
  effects on γ-induced polymerization of substituted oxetane, 22:35848(P)
  effects on radioactivity of chernozem soils from Romania, 22:30690 (IFA-IS-49)
  effects on superconductivity of niobium--tin intermetallic compounds, 22:36874
  effects on surface areas of coprecipitated and mechanically blended plutonium dioxide--uranium dioxide, 22:45816(R) (NUMEC-3505-27)
  electric conductivity of stabilized cubic fluorite-type, (E), 22:31483
  electric pulse effect on ferroelectric $[Pb_{.99}Nb_{.02}(Zr_{.66}Ti_{.34})_{.98}O_3]_{.90}(LaFeO_3)_{.10}$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.65}Ti_{.35})_{.99}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.995}Nb_{.01}(Zr_{.80}Ti_{.20})_{.99}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Bi_{.02}(Zr_{.65}Ti_{.35})_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.50}Sn_{.50})_{.86}Ti_{.14}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}[(Zr_{.60}Sn_{.40})_{.92}Ti_{.08}]_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.65}Ti_{.35})_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electric pulse effects on ferroelectric $Pb_{.99}Nb_{.02}(Zr_{.68}Ti_{.07}Sn_{.25})_{.98}O_3$, 22:4870 (SC-RR-67-730)
  electromotive force measurements on galvanic cells containing, at 25 to 2000°C, 22:27704
  electronic conduction of anodic films of, 22:26080

(AECL-3082)
emittance at 1400 to 3000°K, hemispherical spectral, (E), 22:28929
erosion by high temperature gas currents, factors affecting, 22:49782
erosion by high temperature gases, mechanisms of, 22:11060
erosion of refractory, effects of potassium admixture on, 22:12985
europium fluorescence in, trivalent, 22:22993 (CONF-670502-, pp 239-48)
fabrication and use as ring supports in high-temperature furnaces, 22:42951(P)
films of, breakaway on zirconium surfaces, 22:12976
formation by reactions of zirconium with carbon monoxide at 850°C, 22:11030
formation of solid-solution Pb/sub 1-z/Sr/sub z/Ti/sub 0.46/Zr/sub 0.54/O_3, 22:45827
formation of substoichiometric, kinetics of, 22:17181
formation of tetragonal ZrO_2, at 37 kbars, 22:43615(R) (BNWL-710)
formation on zirconium at 300°C by reactions with 760-torr dry oxygen, 22:10909 (AECL-2794)
fracture temperature difference of, measuring equipment design for, 22:13020
growth kinetics on zirconium, 22:21660
hardness of solid-solution, formed by oxidation of zirconium at 700 and 850°C, 22:19607
hardness of, effects of oxygen diffusion on, 22:11078
hydrogen sorption by effects of reactor conditions on, 22:11023
machining behavior, 22:41028
microhardness of, relations with zirconium concentration, 22:19607
microstructure of zirconium surface of, films, effects of heat treatment on, (E), 22:28739
molecular configuration of, polarity in, 22:4873
performance of dies of, in hot-extrusion of metals and alloys, 22:19632
phase studies, 22:4800
phase studies at high temperatures, 22:7068
phase studies at less than or equal to 1500°C, 22:45825
phase studies of, 22:11078
phase studies on, 22:16508
phase transitions in, mechanisms of pressure-induced, 22:52293
polymerization in acidic solutions, relation of complexometric determination to, 22:23
preparation by sol-gel process for use in industry, 22:11031
preparation method for microspherical particles of, for incorporation in fuels, 22:49801(P)
preparation method for microspherical particles of, for incorporation in fuels, 22:49827(P)
preparation of aquasols of, 22:23030(P)
preparation of pure dense stoichiometric, technique for, 22:52253
preparation of single crystals of, evaporation method for, 22:26077
preparation of spheres of, aquasol method for, 22:43644(P)
preparation of, oxygen transport in, 22:52239
production by thermal decomposition of zirconium sulfate, 22:19615
production of technical-grade, from Baddeleyite concentrates, 22:41095
properties as ion-exchange material, 22:33552
properties as solid electrolyte in study of thermodynamic properties of alloys, 22:27637
properties of compressed forms of, x-ray analysis of, 22:13036 (BNWL-473, pp 7.1-71)
properties of stabilized, effects of prolonged heat treatment at 1200 to 1700°C on, 22:52279
properties of suboxides of, in oxygen--zirconium system, 22:17184
properties of, used for electrodeposited coatings on metals, 22:2590
purity of research-grade evaluation of, 22:52289
radiation effects on crystal structure of, in-pile, 22:45829(T) (EURFNR-503)
radiation effects on electric insulating materials of, neutron, 22:776
radiation effects on lattice constants of, fast neutron, 22:41132 (KFK-745)
radiation effects on properties of, literature survey, 22:36553 (N-68-17095)
radiation effects on, review of, 22:17127
reactions in vacuum at 1200 to 2000°C with silicon monocarbide, 22:52231
reactions of oxygen-deficient, with chlorine, determination of oxygen--zirconium ratio by, 22:8021
reactions of oxygen-deficient, with uranium oxide, determination of oxygen--zirconium ratio by, 22:8021
reactions with americium oxides, solid-state, 22:30548
reactions with iron at high temperatures, 22:23865
reactions with oxygen electrode at high temperature, kinetics of, 22:40094
reactions with uranium mononitride at 600 and 1100°C, mechanism and products of, 22:48849 (KFK-771)
reactions with zirconium borides during activated sintering, 22:28890
reduction of ZrO_2, to metal by calcio-thermic reactions, 22:43557
reduction to metal by aluminum, carbon, or silicon in electron bombardment furnace, 22:10931
reduction with carbon for production of zirconium carbide, 22:52147
separation from Baddeleyites by electromagnetic techniques, 22:41095
separation of black and white films of, during zirconium oxidation, 22:41000(T) (WAPD-Trans-0092)
sintering kinetics of calcium oxide stabilized, 22:28925
sintering mechanisms of, effects of stablizing additions on, 22:49805
sintering of calcium oxide stabilized, 22:31446
sintering of ZrO_2, neck growth at 600 to 1200°C on spheres during, 22:31497
solubility in molten mixtures of sodium fluoride--zirconium tetrafluoride, 22:33307
solubility of coating of, on Zircaloy cladding, in ammonium fluoride--ammonium nitrate, 22:37827 (BNWL-600)
solvent properties for carbon, spectral studies on electronic band structures in, 22:50972
sorption of oxygen on surface of, 22:34116(T) (WAPD-Trans-0091)
sorptive properties of crystalline, for orthophosphate in aqueous solution, 22:47122
spectral absorption lines in red giant stars due to, (E), 22:52343
spectrum of, in S-type star HR 1105, (E), 22:26142
stress relief mechanisms of magnesium oxide stabilized, 22:21772
stress relief mechanisms of yttrium oxide stabilized, 22:21772
tensile properties at high temperature, effect of calcium oxide content on, 22:11059
tensile properties of, effect of monoclinic phase on, 22:11059
thermal behavior with other oxides, 22:38608
thermal conductivity at 200 to 1700°C, 22:42970(R) (ALO-3634-9)
thermal conductivity of, measuring equipment design for, 22:13020
thermal properties of amorphous hydrated, NMR spectral studies on, 22:36557
thermal stability of ZrO_2, effect of phase composition on, 22:34091
thermal stability of, effects of phase composition on, 22:8841
thermodynamic properties, 22:52268
use as crucibles for melting and casting uranium and its alloys, 22:637
use in composites with niobium and tantalum, 22:41018
use in MHD generator channels, 22:5198
use in preparation of actinide oxide fuels, 22:13057(P)
vaporization of calcium oxide stabilizer from ZrO_2 at ca 2000°C, 22:34111
vaporization of yttrium oxide stabilizer from ZrO_2, at ca 2200°C, 22:34111
viscosity during densification, effects of temperature on, 22:49816(R) (COO-1122-14)
$^{233}UO_2$--ZrO_2, blanket elements of, reactivity measurements of hexagonal and rectangular arrays of, at 20°C, 22:14262 (WAPD-TM-614)
Al_2O_3--CaO--SrO--ZrO_2, phase diagrams, 22:23887
Al_2O_3--CaO--SrO--ZrO_2, properties for use as heat-resisting materials, 22:23887
Al_2O_3--ZrO_2, crystal structure of flame-sprayed, 22:7067
Al_2O_3--ZrO_2, phase diagram, 22:38546
BeO--ZrO_2, melting point diagram for, thermodynamics for calculating, 22:2689
C--ZrO_2, preparation of organosol of, 22:25370(P)
CaO_2--UO_2--ZrO_2, radiation effects on mechanical properties of PBF type 304 stainless steel-clad fuel elements of, measurement of neutron, (E/T), 22:35596(R) (IDO-17260)
CaO--HfO_2--ZrO_2, crystal structure and phases of, 22:23901
CaO--P_2O_5--ZrO_2, phase studies at high temperatures, 22:11086
CaO--SiO_2--ZrO_2, analysis for compounds formed in, using alcohol--glycerate, hydrochloric acid, hydrofluoric acid, and hydrofluoric acid--sulfuric acid, 22:50920
CaO--SiO_2--ZrO_2, phase studies of, 22:41119
CaO--UO_2--ZrO_2, dissolution of carbon-coated in nitric acid, 22:22930(R) (NBL-242)
CaO--UO_2--ZrO_2, neutron total cross section at 2 keV and 0 to 700°C, (E), 22:20578 (WASH-1079)
CaO--UO_2--ZrO_2, phase stability at 1000 to 2450°C, 22:11068
CaO--UO_2--ZrO_2, phase studies of, 22:41113 (CEND-2936-335, I.1-22)
CaO--UO_2--ZrO_2, radiation effects on mechanical properties of, analysis of neutron, 22:32789(R) (WAPD-MRP-124)
CaO--UO_2--ZrO_2, radiation effects on stainless steel clad fuel elements of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
CaO--ZrO_2, electric conductivity on gas-flame-deposited, 22:34113
CaO--ZrO_2, fabrication of resistor furnace elements of, 22:8812(P)

  CaO--ZrO_2, phase studies at 1300 to 1700°C, 22:52294
  CaO--ZrO_2, properties as electrolytes, 22:72
  CaO--ZrO_2, thermal expansion coefficients, 22:2698
  CaO--ZrO_2-base, testing as core material for annular-pellet fuel elements, 22:2697
  CeO_2--UO_2--ZrO_2, phase studies, 22:31510
  CeO_2--UO_2--ZrO_2, phase studies at 1600 to 1800°C, 22:21700(T) (EURFNR-387)
  CeO_2--ZrO_2, electric conductivity of, effects of temperature on, 22:17210
  CeO_2--ZrO_2, phase studies on, at high temperatures, 22:33339
  CeO_2--ZrO_2, stability of, effects of slow cooling from high temperature on thermal, 22:45807
  Cr_2O_3--PbO--TiO--ZrO_2, phase studies of, 22:760
  Cr_2O_3--PbO--TiO--ZrO_2, properties of ceramic, 22:760
  Cr_2O_3--ZrO_2, crystal structure of, effects of chromium content on, 22:19657
  Cr_2O_3--ZrO_2, phase diagram, 22:28951
  Gd_2O_3--ZrO_2, electrolytic properties of solid systems of, as function of gadolinium content, (E), 22:44218
  Gd_2O_3--ZrO_2, phase studies of, 22:49847
  HF--H_2O--ZrO_2, complexing in, solubility studies on, 22:45071
  HfO_2--ZrO_2, phase diagram, 22:47715
  HfO_2--ZrO_2, phase studies of, 22:21771
  HfO_2--ZrO_2, preparation of aquasols of, 22:23030(P)
  La_2O_3--ZrO_2, phase studies at 1700 to 2700°C, 22:49846
  MgO--ZrO_2, phase diagram, 22:21724
  MgO--ZrO_2, phase diagram, 22:28783(T) (TT-66-59003-4/A)
  Mo--ZrO_2, metallography of, 22:28926
  Mo--ZrO_2, phase studies of cermets of, 22:763
  Mo--ZrO_2, thermal shock resistance, 22:2702
  N_2O--ZrO_2, radiolysis of, effects of electron scavengers on yields from γ, 22:35851
  NaF--ZrF_4--ZrO_2, surface tension of, effects of carbon dioxide and carbon monoxide on, 22:33306
  Nb_2O_5--ZrO_2, crystal structure and preparation of, 22:52242
  Nd_2O_3--ZrO_2, electrolytic properties of solid systems of, as function of neodymium content, (E), 22:44218
  Nd_2O_3--ZrO_2, properties at high temperatures, electrochemical, 22:23832
  Nd_2O_3--ZrO_2, thermal expansion coefficients, 22:2698
  Pr_2O_3--ZrO_2, preparation and structure of, 22:36546
  PuO_2--UO_2--ZrO_2, crystal structure of, effects of annealing, oxidation, and sintering on, 22:45816(R) (NUMEC-3505-27)
  PuO_2--UO_2--ZrO_2, phase studies of, 22:45816(R) (NUMEC-3505-27)
  PuO_2--UO_2--ZrO_2, physical properties of sintered pellets of, 22:19078(R) (TID-11295(Pt.1)(5th Ed.))
  PuO_2--UO_2--ZrO_2, properties as reactor fuel, 22:45816(R) (NUMEC-3505-27)
  PuO_2--UO_2--ZrO_2, radiation effects on, tests for evaluation of, 22:45816(R) (NUMEC-3505-27)
  PuO_2--UO_2--ZrO_2, surface areas of coprecipitated and mechanically blended, 22:45816(R) (NUMEC-3505-27)
  PuO_2--UO_2--ZrO_2-base, phase diagrams and thermal properties of, 22:19649(R) (NUMEC-3505-30)
  PuO_2--UO_2-base--ZrO_2, analysis for carbon, by gas chromatography, 22:19649(R) (NUMEC-3505-30)
  PuO_2--UO_2-base--ZrO_2, phase diagrams and thermal properties of, 22:19649(R) (NUMEC-3505-30)
  PuO_2--UO_2-base--ZrO_2, radiation effects on, in-pile, 22:19649(R) (NUMEC-3505-30)
  PuO_2--ZrO_2, power density of solid-solution radioisotopic fuels of, 22:49785 (LA-DC-9686)
  PuO_2--ZrO_2, preparation, properties, and phase relations of, 22:2699
  PuO_2--ZrO_2, radiation effects on fuels of, review on, 22:8804
  Re_2O_3--TiO_2--ZrO_2, crystal structure and phases of, 22:23901
  SiO_2--ZrO_2, crystal structure of flame-sprayed, 22:7067
  SiO_2--ZrO_2, radiation effects on, cosmic and solar, 22:11093
  $SrTiO_3$--$SrZrO_3$--TiO_2--ZrO_2, phase studies of, 22:25320 (AERE-R-5671)
  Th_2O_3--ZrO_2, preparation and structure of, 22:36546
  Ti_3O--Zr_3O, brittleness of, 22:19650
  Ti_3O--Zr_3O, phase studies of, 22:19650
  TiC--ZrO_2, phase studies of, 22:49848
  $UO_{2.2}$--Y_2O_3--ZrO_2, diffusion of xenon-133 at 900 to 1500°C in, 22:19624 (CONF-650513-10)
  UO_2--ZrO_2, analysis for oxygen by inert-gas fusion, 22:7987 (ANL-7264)
  UO_2--ZrO_2, corrosion of calcium oxide stabilized, by flowing hot water and steam, 22:41086 (CEND-2936-335, II.1-20)
  UO_2--ZrO_2, creep swelling in fuels of, continuum dilatation model for, 22:2688 (WAPD-TM-649)
  UO_2--ZrO_2, dissolution of Zircaloy-4-clad, 22:4231(R) (IN-1087)
  UO_2--ZrO_2, dissolution of Zircaloy-clad, aqueous-fused salt process for, 22:33529
  UO_2--ZrO_2, fracture of, effects of heat treatment and precipitation on, 22:8819 (KAPL-P-3395)
  UO_2--ZrO_2, hardness of, effects of porosity on, 22:8819 (KAPL-P-3395)
  UO_2--ZrO_2, mechanical properties of, effects of material variables, stress, and temperature on, 22:4871 (WAPD-TM-587)
  UO_2--ZrO_2, preparation of aquasol of, 22:23028(P)
  UO_2--ZrO_2, pressing and sintering for radiation testing specimens, 22:41087 (CEND-2936-335, III.1-10)
  UO_2--ZrO_2, radiation effects at high burnups on clad, post irradiation evaluation of, 22:41128 (CEND-2936-335, V.1-25)
  UO_2--ZrO_2, radiation effects on 347 stainless steel clad, 22:766 (BMI-1809, Sect.F)
  UO_2--ZrO_2, radiation effects on fission gas release at high burnups, evaluation of in-pile, 22:41129 (CEND-2936-335, VI.1-7)
  UO_2--ZrO_2-base, radiation effects on calcium oxide-stabilized at 40 to 70 percent burnup, 22:41127 (CEND-2936-335, IV.1-41)
  UO_2--ZrO_2-base, thermal conductivity as function of temperature, effects of calcium oxide stabilizer on, 22:41086 (CEND-2936-335, II.1-20)
  UO_3--ZrO_2, preparation of aquasols of, 22:21086(P)
  W--ZrO_2, extrusion and oxide deformation of fiber-reinforced composites of, 22:41012 (N-68-18610)
  W--ZrO_2, phase studies of cermets of, 22:763
  Y_2O_3--ZrO_2, thermal expansion coefficients, 22:2698
  Yb_2O_3--ZrO_2, electrolytic properties of solid systems of, as function of ytterbium content, (E), 22:44218
  YO_2--ZrO_2, fabrication of resistor furnace elements of, 22:8812(P)
  Zr--ZrO_2, crystal structure and thermodynamics of, effects of electronic bonding on, 22:17182
Zirconium Oxychlorides
  see Zirconyl Chlorides
ZIRCONIUM PHOSPHATE SILICATES
  ion exchange properties for plutonium, 22:30678
ZIRCONIUM PHOSPHATES
  ion exchange properties for actinide and rare earth isotopes, 22:10335
  ion exchange properties for alkali metals, alkaline earths, cobalt, iron, and scandium, 22:12291
  ion exchange properties of synthetic, as compared to chromium and titanium phosphates, 22:12291
  precipitation of protactinium(IV) and (V) from aqueous solutions with, 22:8177
  properties as ion exchange material, 22:33208(R) (MLM-1456)
  properties as ion-exchange material, 22:33552
  sorptive properties for alkali metal and alkaline earth ions in acidic solutions, 22:47227(P)
  sorptive properties for molybdenum, tungsten, uranium, and vanadium, 22:40204
  sorptive properties for uranyl ions at high temperatures, 22:35809
  stability of crystalline, granular amorphous, and semicrystalline, at high temperatures, 22:35809
ZIRCONIUM PHOSPHIDES
  electron band structure of, magnetic susceptibility and NMR studies of, 22:17807
ZIRCONIUM SELENIDES
  crystal structure of Zr_2Se, 22:38639
ZIRCONIUM SILICATES
  see also Zircon
  see also Zircons
  radioinduced luminescence of rare-earth-activated, (E), 22:13582
  Al_2SiO_5--$ZrSiO_4$, coatings on refractory metal cladding for fuel--moderator elements, description of, 22:42556(P)
ZIRCONIUM SILICIDES
  electric conductivity of, temperature coefficient, (E), 22:28932
  oxidation of, effects of temperature on, 22:2580
  production by auxiliary metal bath procedure, 22:38614
  radiation effects at 150°C on, fast-neutron, 22:26094 (ORNL-4229, pp 142-5)
ZIRCONIUM STEEL
  analysis for hafnium by neutron activation methods, 22:40020
ZIRCONIUM SULFATES
  decomposition and high-temperature properties of, 22:4068 (NSRDS-NBS-7)
  decomposition at 1200°C to produce zirconium oxide, 22:19615
  decomposition at 850, 1000, and 1200°C, 22:19615
ZIRCONIUM SULFIDES
  US--ZrS, oxidation at 100 to 700°C, 22:11027
ZIRCONIUM TITANATES
  see also Lead Zirconium Titanates
ZIRCONIUM TUNGSTATES
  crystal structure of ZrW_2O_8, x-ray diffraction study of, 22:12282
  enthalpy of formation of, 22:12311
  entropy of formation of, 22:12311
  thermal expansion of ZrW_2O_8, (E), 22:28930
  thermodynamics of, development for radar use, 22:52179
ZIRCONIUM TUNGSTEN OXIDES
  effects on electrochemical oxidation of hydrogen, catalytic, 22:33298
ZIRCONIUM VANADATES
  properties as ion-exchange material, 22:33552
Zirconocene Dichloride
  see Zirconium, Dichlorodicyclopentadienyl-
ZIRCONS

  see also Zirconium Silicates
  age of Finnish, lead isotope method for estimation of, 22:21191
  age of French, lead-206/-207 method for estimation of, 22:6466
  age of, lead/uranium method for estimation of discordant, 22:51089
  analysis for zirconium using acidic EDTA titration, relation of polymerization to complexometric, 22:23
  analysis for zirconium, gravimetric, 22:33264
  content in deposits along Luznice River in Czechoslovakia, 22:30701
  content in neogene sediments of Niigata Prefecture, Japan, 22:51118
  crystal structure of flame-sprayed, 22:7067
  particle size distribution of milled, measurement using Coulter Counter, 22:23200
  processing of high-purity, 22:8179
  radiation effects on halo formation in, 22:10393
  reduction to nuclear-grade zirconium sponge, process for, 22:6942
  separation from Westport Beach sands, 22:12425
  separation of hafnium and zirconium from caustic frit of Korean, using silica gel, 22:27884
  thorium content in, determination by autoradiography, 22:2203
  thorium content in, from kimberlites and granites, 22:10399
  uranium content in, from kimberlites and granites, 22:10399
  zirconium production from, 22:41029
  MgO--zircon, electrochemical properties as MHD electrode, 22:11295
  Nd_2O_3--zircon, electrochemical properties as MHD electrode, 22:11295
  Pr_2O_3--zircon, electrochemical properties as MHD electrode, 22:11295

ZIRCONYL CHLORIDES
  analysis for chlorine, microvolumetric, 22:48845

ZIRCONYL NITRATES
  zirconium ion polymerization in aqueous solutions of, cryoscopic studies of, 22:18780

ZIRCONYL PHOSPHATES
  metabolism of colloidal phosphorus-32-labeled, in tissues of mice, 22:6755

ZOE REACTOR
  fuel reprocessing at Eurochemic for, plutonium separation in, 22:45146 (NP-17588)

Zone Melting
  see High Temperature Separation Processes

ZOOCIDES
  see also Insecticides
  see also Pesticides

ZOOLOGY
  research at Hebrew Univ. of Jerusalem, 1965-66, 22:6210(R) (NP-17097)

Zooplankton
  see Plankton

Zorita Reactor (Spain)
  see Reactors, Power

ZPPR (ANL)
  see Critical Assemblies

ZPR-1 Reactor (NASA)
  see Reactors, Research

ZPR-III
  see Critical Assemblies

ZPR-IV
  see Critical Assemblies

ZPR-V
  see Critical Assemblies

ZPR-VI
  see Critical Assemblies

ZPR-VII
  see Critical Assemblies

ZPR-IX
  see Critical Assemblies

ZR-2 Reactor
  see Reactors, Research

ZR-4 Reactor
  see Reactors, Research

Zyglo
  see Dyes

ZYGOTES
  radiation effects on, of tobacco, latent γ, 22:6783
  radioinduced delay of cell division in, of sand dollars, effects of BUdR on uv, 22:43432

Zylonite
  see Celluloid

Zymohexase
  see Fructosediphosphate Aldolase

ZYMOSAN
  use for treatment of radium- and x-radioinduced ulcers in human patients, 22:49439

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